

## Colchester Ave: Bikeways, Parking & Intersection Safety

Advisory Committee Meeting #2 – March 19, 2020, 6:00 – 8:00 PM, Via Skype

The presentation and a video of the meeting are posted at: <http://bit.ly/colchester-ave>

### Meeting Notes

#### 1. Introductions & Agenda Review

The meeting was called to order at 6PM by Jenn Conley of VHB. She shared that the meeting is being recorded. She reviewed the agenda.

#### 2. Public Comment Period. No members of the public spoke.

#### 3. Review Project Purpose & Need

Jenn reviewed the purpose and need statement (see end of this document). The team incorporated comments from the committee; they had to make decisions about conflicting concerns. The concern for parking was retained; the need to ensure safety for **all** transportation modes was added. Karen Sentoff of VHB noted that language was added to include a vision statement. She asked the committee to review the statement and provide comments via email. David Cawley of Ward 1 asked that we consider the lifespan of proposed improvements as a way to understand if the long-term vision would be accomplished through the committee's recommendations.

#### 4. Review and Discuss Corridor Concepts and Intersection Alternatives

Six concepts/alternatives were developed after the committee's discussion at the last meeting. The full list of concepts was narrowed down to three concepts to move forward for further study.

#### Full List of Corridor Concepts Considered

Concept Number	General Description
Concept 1	Maintain curb-to-curb
Concept 2	Separated bike lanes both directions within curb
Concept 3	Shared use path both sides
Concept 4	Raised, separated bike lanes both directions
Concept 4A	Builds on Concept 4: where possible, shifts to allow greenspace, bus pull-offs, parking
Concept 5	Two-way cycle track
Concept 6	Shared use path uphill; separated bike lanes downhill

## Corridor Concepts to Move Forward

Corridor Concepts	General Description
Concept 2	Separated bike lanes both directions within curb
Concept 4	Raised, separated bike lanes both directions
Concept 4A	Builds on Concept 4: where possible, shifts to allow greenspace, bus pull-offs, parking
Concept 6	Shared use path uphill; separated bike lanes downhill

## East Ave Intersection Concepts to Pair with Corridor Concepts

Intersection Alternatives	East Ave. Intersection Alternatives
Alternative 1	Equipment and striping signalized intersection
Alternative 2	Bike separated signalized intersection
Alternative 2A	Bike lane through signalized intersection
Alternative 3	Roundabout

Karen reviewed each of the corridor concepts and complementary East Avenue intersection alternatives (see the presentation for detailed maps: <http://bit.ly/colchester-ave>). It was noted that all intersection alternatives are compatible with any corridor concept.

### **Corridor Concept 4 and Intersection Alternative 2**

*Raised, separated bike lanes both directions / Bike separated signalized intersection*

Chris Damiani of GMT asked that bus routes be overlaid on the concept maps and that conflict points between buses and bike lanes be marked. In response to a question from Eleni Churchill of CCRPC, Karen responded that the travel lane widths were determined with guidance from the city; widths are at least 11 feet where the travel lane is adjacent to curb and shared left-turn pockets are 10 feet.

Lani Ravin of UVM asked about left turns for bicycles. There is space provided in this concept for two-stage turn boxes. Lani asked if there are any underground impediments at the East Avenue intersection. Jenn responded that those will be determined later; the improvements are conceptual at this point. Lani asked about the bike path/sidewalk height differential of two to three inches and whether this is a safety issue. This level of detail will be part of preliminary engineering and it will ensure that a hazard isn't created. For the public presentation, Karen will gather examples of where pedestrians and bicyclists are separated by a grade change. Jack Hanson of the East District suggested examples from Copenhagen.

David Cawley of Ward 1 NPA asked if there are changes to the north side of East Avenue. There is a slight realignment and removal of three 2-hour parking spaces to allow for right-turning traffic. Sharon Bushor of Ward 1 asked about parking in front of the former India House. Drew Gingras of VHB responded that at most three spaces would be removed. Also, existing parking would be removed on Colchester Avenue from East Avenue to Barrett Street.

This concept consists of curb relocation along the entirety of the corridor, resulting in a narrowing of the curb-to-curb width, and minimum expansion of the back of the existing sidewalk. All work remains within the City right-of-way. Committee members asked that the team clarify the impacts to specific houses for parking and front yards, since some of these residences are encroaching in the city's right-of-way.

### **Corridor Concept 4A and Intersection Alternative 2A**

*Where possible, Concept 4A shifts to allow greenspace, bus pull-offs, parking / Alternative 2A: Bike lane through signalized intersection*

This concept has the same design elements as the previous concept, but it includes strategic changes to add other elements such as bus pull-offs, increase parking, etc. It was noted that while these changes allow for a significantly improved corridor, the perceived impact to adjacent property owners appears greater, primarily in terms of the expansion beyond the back of existing sidewalk. Jason Stuffle expressed concern with the East Avenue intersection design, where cyclists travel between the thru and right turn lane, citing that it does not improve the existing condition that is unsafe.

### **Corridor Concept 6 and Intersection Alternative 2A**

*Roundabout / Bike lane through signalized intersection*

Concept 6 provides a shared-use path along the north side of Colchester Avenue between East Avenue and Barrett Street, and includes a conceptual roundabout design at the East Avenue intersection. The roundabout concept provides for safe pedestrian and cyclist crossings set back from the intersection with enhanced pavement markings. This design follows national guidelines; in general, traffic moves slower through the intersection and as a result, provides more favorable conditions for bicyclists and pedestrians. The pedestrian crossings are unsignalized, but highly visible. Designing for separated bike lanes within a roundabout is generally considered a “newer” idea in the US, but plenty of great examples of this practice exist elsewhere in the world.

In a 20-year time horizon, traffic operations for a roundabout are similar to a signalized intersection. East Avenue is a high crash location and a roundabout tends to be safer than a signalized intersection by reducing the number of conflict points.

The roundabout has considerable right-of-way impacts for three of its legs. It is designed to allow large trucks, buses, and ambulances to move through safely and to allow for ambulances to move through at approximately 10 mph without having to mount the inner mountable apron. Ashley has found the ambulance community to be concerned about a roundabout.

### **Corridor Concept 2 and Intersection Alternative 2A**

*Separated Bike Lanes within Curbs / Equipment and striping signalized intersection*

In this concept, cyclists are physically close to the traffic because the buffer is shifted. Vertical separation between cyclists and traffic would need to be determined, but a 3-foot buffer to accommodate the vertical elements was included. Separation between bikes and pedestrians is greater, but in some places the vertical separation is not as great compared to other alternatives. This alternative has the least impact to the existing greenbelt and trees.

## **5. Advisory Committee Feedback on Preliminary Evaluation**

(the Evaluation matrix is at the end of this document)

Jenn asked the committee to review the evaluation matrix and provide feedback via email.

There was discussion about the definition of “reduction” of parking. This is actually elimination of parking. Parking in front of Kampus Kitchen, Kathy’s Flowers, and the former India House is eliminated in all concepts, but replacement parking is provided in concept 4A. Sharon is concerned that these alternatives do not support local small businesses that will not survive with solely neighborhood support.

The former India House is located at a high crash intersection. If the committee wants to add another concept with more parking, it can be done, but it comes at a cost of extending beyond the back of sidewalk into space that area residents, in some cases, use. We are trying to balance a lot of needs in a limited amount of space.

Members expressed interest in UVM, the City, and neighbors working together to look for creative ways to address the parking issue. Will Clavelle of CEDO has been working with the businesses along this corridor and they are concerned about parking. David suggested that we need to talk with the businesses prior to the public meeting and Will is willing to participate in that discussion.

The committee asked that the following items be added to the evaluation matrix: 1) The number of parking spaces lost; and 2) The number of trees lost, especially significant-sized trees (Jason Stuffle noted that significant trees are in front of 316 Colchester Avenue and along the cemetery).

Jason Stuffle suggested that the Kampus Kitchen crosswalk be moved to the west to reduce the conflict with Trinity Campus vehicular traffic.

The group discussed the University Place intersection. This roadway is part of the next Great Streets project and the team does not have details for the improvements yet.

Information from tonight’s meeting is on the project website and can be shared with the public.

## **6. Next Steps**

In the next week, the team will distribute the following for input: The Draft Purpose and Need Statement and an updated Concept Evaluation Matrix. Committee members will have two weeks to respond via email.

Due to the coronavirus, the public meeting (Alternatives Presentation) for April 2<sup>nd</sup> has been postponed. The Project Team asked that members keep the next Advisory Committee meeting date open (April 30<sup>th</sup>, 6-8PM) for a possible rescheduling of the public meeting. Once the public meeting is held, we will schedule the third Advisory Committee meeting.

Meeting was adjourned at 8PM.

## **Participants**

**AC Members:** Ashley Bond, Sharon Bushor, Dave Cawley, Will Clavelle, Chris Damiani, Mario Dupigny-Giroux, Jack Hanson\*, Lani Ravin\*, Jason Stuffle (\*Alternates)

**Study Team:** Jason Charest (CCRPC), Eleni Churchill (CCRPC), Jenn Conley (VHB), Marshall Distel (CCRPC), Drew Gingras (VHB), Nicole Losch (Burlington DPW), Diane Meyerhoff (TSA), Karen Sentoff (VHB).

## Skype Chat Log From Meeting

[3/19/2020 6:09 PM]

Hey everyone! Here's the chat window if you need to use it for questions or comments.

[3/19/2020 6:28 PM] Nicole:

Can you zoom in for the walk-through?

Full screen does not give much more "zoom," but thanks for zooming for us!

[3/19/2020 6:29 PM]

You got it!

[3/19/2020 6:30 PM] Bond, Ashley:

This concept does NOT have physical barriers, correct?

[3/19/2020 6:31 PM]

Hi Ashley - This concept includes a separated bike lane that is off the street at the grade of the sidewalk, with a green belt providing further horizontal separation from the roadway.

[3/19/2020 6:31 PM] Bond, Ashley: ty

[3/19/2020 6:35 PM] Lani:

If you could enlarge the plan, that would be helpful, as you did before. It's really small on the screen. Thank you!

[3/19/2020 6:35 PM] Lani:

Is there a grade difference between the bike lane and the sidewalk?

**Is there a grade change between bike lane and sidewalk?**

[3/19/2020 6:36 PM]

Hi Lani - In this concept, the plan would be for a slight grade separation (~2-3") between the bike lane and sidewalk.

[3/19/2020 6:37 PM] Lani: ty

[3/19/2020 6:37 PM] Lani:

which is higher?

[3/19/2020 6:40 PM]

It's safe to say that we haven't got into that level of design quite yet (that is normally addressed in the preliminary engineering phase with a selected alternative), but generally speaking the sidewalk is higher than the bike lane.

[3/19/2020 6:47 PM] Nicole:

Dropped out for a bit - let me know if I missed anything for DPW.

[3/19/2020 6:47 PM]

Nothing missed.

[3/19/2020 6:56 PM] Nicole:

For areas with encroachment beyond the sidewalk, do you think any locations would impact available off-street parking?

[3/19/2020 6:58 PM] Lani:

Is there a greenbelt in this alternative?

[3/19/2020 6:58 PM]

Yes, on both side of the road.

[3/19/2020 6:59 PM] Lani:

ty. hard to see in these drawings/presentation.

[3/19/2020 7:00 PM] Chris Damiani:

Unfortunately I have to sign off. Thank you for providing this digital meeting and let me know if there are any additional questions as it relates to transit!

[3/19/2020 7:00 PM]

Thanks Chris! The meeting recording will be posted to the wesbite if you'd like to pick up where you left off.

[3/19/2020 7:01 PM] Jack Hanson:

So no greenbelt removal or tree removal in that one?

[3/19/2020 7:01 PM]

Jack, are you referring to Concept 4 that we just reviewed?

[3/19/2020 7:02 PM] Jack Hanson:

Yes

[3/19/2020 7:03 PM]

There would be a curb shift resulting in a relocation of the greenbelt, and potentially the removal of existing trees.

[3/19/2020 7:03 PM] Nicole:

For those who can't see the chat, please describe the general impact to greenbelt and trees with the concepts as we go

[3/19/2020 7:03 PM] Jack Hanson:

Agree with Nicole. I feel we didn't get that piece in the previous alternative.

[3/19/2020 7:04 PM]

Will do, thanks all.

[3/19/2020 7:04 PM] Jack Hanson:

Thanks Drew.

[3/19/2020 7:07 PM] Nicole:

How many parking spaces fit in each of these notched in areas?

[3/19/2020 7:08 PM] Jack Hanson:

Is anyone else not seeing the presentation? I just have a "Loading..." with a little circle and the rest of the screen is black

[3/19/2020 7:08 PM]

Nicole - Generally 3-4 parking spaces.

[3/19/2020 7:08 PM] Nicole:

Jack, mine is still visible. That happened to me earlier when I lost internet for a minute

[3/19/2020 7:09 PM] Lani:

I am seeing the presentation fine. So far.

[3/19/2020 7:09 PM] Diane:

Mine is OK. Diane

[3/19/2020 7:09 PM] Jason Charest:  
Okay here as well.

[3/19/2020 7:13 PM] Jack Hanson:  
Which slide are we on?

[3/19/2020 7:13 PM] Jack Hanson:  
(I'm following using the slides ya'll sent)

[3/19/2020 7:14 PM] Jason Charest:  
23

[3/19/2020 7:14 PM] Jason Charest:  
The roundabout at East Ave.

3/19/2020 7:23 PM] Jason Charest:  
Could you highlight that this is a designated High Crash Location?

[3/19/2020 7:25 PM] Conley, Jenn:  
sorry Jason. missed this.

[3/19/2020 7:26 PM] Jason Charest:  
Thanks!

[3/19/2020 7:29 PM] Nicole:  
Not within existing curblines, but at street level instead of raised (earlier concept) - right?

[3/19/2020 7:31 PM] Nicole:  
Does this have the least impact to greenbelt and trees?

[3/19/2020 7:39 PM] Nicole:  
Could notched in parking work with other concepts beyond the one in which it was shown?

[3/19/2020 7:46 PM] Jason Charest:  
What about notching in some parking just west of Kampus Kitchen?

[3/19/2020 7:47 PM]  
Yep - We touched on that as a potential option dependent upon the direction selected by the advisory committee.

[3/19/2020 7:53 PM] Nicole:  
(Can this chat log be saved?)

[3/19/2020 7:53 PM]  
I can copy and paste it into a Word document and we can have Diane include it as part of the Minutes.

[3/19/2020 7:53 PM] Nicole:  
TY

[3/19/2020 7:59 PM] Jason Charest:  
Friday April 3rd for feedback by?

We saved this conversation. You'll see it soon in the Conversations tab in Skype for Business and in the Conversation History folder in Outlook.

# Colchester Avenue: Bikeways, Parking, and Intersection Safety Study

## Draft Purpose & Need Statement

### Purpose of the Project

The purpose of the Colchester Avenue: Bikeways, Parking, & Intersection Safety Study is to identify and prioritize improvements that align with the City's vision for sustainable transportation infrastructure and enable a continuous and connected multimodal transportation corridor. Specifically, the study will evaluate improvements:

- along Colchester Avenue in its entirety which will enhance mobility and safety for all modes and include solutions for parking demand of businesses, employers, and residents;
- at the intersection of Colchester Avenue and East Avenue which will improve safety for all modes of transportation.

### Needs for the Project

The needs for this project are driven by deficiencies in the current transportation infrastructure. These needs are further articulated below:

**Improve Intersection Safety:** There are four designated High Crash Locations (HCL) along the Colchester Avenue corridor, including three intersections and one section. The HCL intersections of Colchester Avenue / Prospect Street / Pearl Street and Colchester Avenue / Barrett Street / Riverside Avenue have been studied separately with recommendations to improve safety at those intersections. However, the Colchester Avenue / East Avenue intersection, where 44 crashes occurred between 2012 and 2016, remains an HCL requiring further investigation and improvement. A Highway Safety Improvement Program Location Review identified the visibility and alignment of signal heads with each lane they serve as problematic.

**Improve Corridor Safety for all Users:** The section of Colchester Avenue between Mansfield Avenue and East Avenue is the most heavily utilized segment of the corridor and an HCL with 88 crashes over the period from 2012 to 2016. Access to the region's only Level I Trauma Center and one of the largest employers in the state is facilitated by the segment, as well as the movement of people by foot, bike, transit, and vehicle. This makes the corridor a critical link in the region's infrastructure as well as a complex, multimodal corridor in terms of operation. Of the 347 crashes identified for the length of Colchester Avenue from 2014 through 2018, 14 crashes involved bikes and 9 crashes involved pedestrians.

**Enhance Mobility for Bicyclists:** The BTV Walk Bike Master Plan calls for a "more robust treatment in the long-term" to provide protected bicycling infrastructure on Colchester Avenue and the 2017 CCRPC Active Transportation Plan identified Colchester Avenue as a high priority, high feasibility corridor for improvement in the active transportation network. The existing bicycle facilities are inconsistent, changing multiple times along the one-mile corridor, and not well connected, both from segment to segment along the corridor and to other adjacent or intersecting facilities.

**Solutions for Parking Demand of Local Businesses, Employers, and Residents:** The right-of-way available to facilitate this heavily utilized multimodal corridor has limited the on-street parking supply along the roadway. There is a need to coordinate the parking supply located on or near the corridor for residents, employees, and businesses.

Preliminary Evaluation Matrix for Colchester Avenue Corridor Concepts

		Colchester Avenue Corridor				
		Concept 0 No Build	Concept 2 Protected Bike Lanes	Concept 4 Raised and Separated Bike Lanes	Concept 4A Raised and Separated Bike Lanes	Concept 6 Shared Use Path and Separated Bike Lanes
Costs	Costs					
	Total (Not Including ROW)	\$0	\$\$	\$\$\$	\$\$\$	\$\$\$
Engineering	Safety					
	Bicycle Safety	-	<b>Improved</b> <i>Cyclists in separated facility</i>	<b>Improved</b> <i>Cyclists in separated facility</i>	<b>Improved</b> <i>Cyclists in separated facility</i>	<b>Improved</b> <i>Cyclists in separated facility or shared use path</i>
	Pedestrian Safety	-	<b>Improved</b> <i>Pedestrians in separated facility</i>	<b>Improved</b> <i>Pedestrians in separated facility</i>	<b>Improved</b> <i>Pedestrians in separated facility</i>	<b>No Change/Slightly Worse</b> <i>Cyclists and Pedestrians in shared path on North side at east end of project.</i>
	Vehicle Safety	-	<b>Slightly Improved</b> <i>Reduce conflicts with cyclists by defining and separating spaces</i>	<b>Slightly Improved</b> <i>Reduce conflicts with cyclists by defining and separating spaces</i>	<b>Slightly Improved</b> <i>Reduce conflicts with cyclists by defining and separating spaces</i>	<b>Slightly Improved</b> <i>Reduce conflicts with cyclists by defining and separating spaces</i>
	Impacts	-				
	Utility Impacts	-	Major Impacts	Major Impacts	Major Impacts	Major Impacts
	ROW Impacts	-	No Impacts	No Impacts	Slight Impacts	No Impacts
	Constructability	-	Major Effort	Major Effort	Major Effort	Major Effort
	Parking	-	Elimination of On-Street Parking (Colchester Ave)	Elimination of On-Street Parking (Colchester Ave)	Maintains Some On-Street Parking (Colchester Ave)	Elimination of On-Street Parking (Colchester Ave)
	Trees	-	Moderate Impacts to Existing; Some Tree Belt Opportunity	Moderate Impacts to Existing; Some Tree Belt Opportunity	Major Impacts to Existing; Increased Tree Belt Opportunity	Moderate Impacts to Existing; Some Tree Belt Opportunity
Natural Resources	-					
Historical	-	No Impacts	No Impacts	No Impacts	No Impacts	
Wetlands	-	No Impacts	No Impacts	No Impacts	No Impacts	
Stormwater Accommodations	None	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>	
Community Character	-					
Aesthetics	No Change	No Change	No Change	No Change	No Change	
Satisfies Purpose & Need	No	Yes	Yes	Yes++	Yes	

Preliminary Evaluation Matrix for Colchester Avenue / East Avenue Intersection Alternatives

		Colchester Avenue / East Avenue Intersection				
		Alternative 0 No Build	Alternative 1 Equipment and Striping Upgrade	Alternative 2 Bike Through Intersection	Alternative 2A Separated Bike	Alternative 3 Roundabout
Costs	Costs					
	Total (Not Including ROW)	\$0	\$	\$\$\$	\$\$\$	\$\$\$\$
Engineering	Safety					
	Bicycle Safety	-	<b>Slightly Improved</b> <i>Bike Lanes provided westbound through signal</i>	<b>Slightly Improved</b> <i>Cyclists have to travel between thru and right turn lanes, but protected</i>	<b>Improved</b> <i>Bikes provided protected lane and phase - no turn conflicts</i>	<b>Slightly Improved</b> <i>Bikes only conflict with single movement at time, but not fully protected; fewer conflict points</i>
	Pedestrian Safety	-	<b>Improved</b> <i>Protected Crossings with less delay with vehicular phasing</i>	<b>Improved</b> <i>Protected Crossings with less delay with vehicular phasing</i>	<b>Improved</b> <i>Protected Crossings with less delay with vehicular phasing</i>	<b>Slightly Improved</b> <i>Allow additional cross locations, but unsignalized; shorter crossings with lower speed vehicles; fewer conflict points</i>
	Vehicle Safety	-	<b>Slightly Improved</b> <i>by separating users, proper equipment</i>	<b>Slightly Improved</b> <i>by separating users, proper equipment</i>	<b>Improved</b> <i>by fully separating users, proper equipment</i>	<b>Improved</b> <i>Lower vehicle speeds and fewer conflict points</i>
	Impacts	-				
	Utility Impacts	-	Major Impacts	Major Impacts	Major Impacts	Major Impacts
	ROW Impacts	-	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts
	Constructability	-	Minor Effort	Major Effort	Major Effort	Major Effort
	Parking	-	Existing Parking Maintained (East Ave)	Slight Reduction (East Ave)	Slight Reduction (East Ave)	Slight Reduction (East Ave)
	Trees		No Impacts	Minor Impacts to Existing	Minor Impacts To Existing	Minor Impacts to Existing
Natural Resources		-				
	Historical	-	No Impacts	No Impacts	No Impacts	No Impacts
	Wetlands	-	No Impacts	No Impacts	No Impacts	No Impacts
	Stormwater Accommodations	None	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>	<b>Accommodations</b> <i>(Description)</i>
Community Character		-				
	Aesthetics	No Change	No Change	No Change	No Change	No Change
	Satisfies Purpose & Need	No	Yes	Yes	Yes	Yes