CHITTENDEN COUNTY RPC
Communities Planning Together

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Interstate 89 Exit 17 Scoping Study
Study Team Meeting #3 Notes

DATE: Thursday, October 10, 2013
TIME: 1:00 PM
PLACE: CCRPC, 110 W. Canal Street, #202, Winooski, VT
PRESENT:

Amy Bell, VTrans
Meredith Birkett, CCTA
Michele Boomhower, CCRPC (1:35PM)
Katelin Brewer-Colie, Local Motion
Jason Charest, CCRPC
Eleni Churchill, CCRPC (1:30PM)
Richard Hosking, VTrans D5
Roger Hunt, Town of Milton
Chris Jolly, FHWA (1:25PM)
Michael LaCroix, VTrans
Diane Meyerhoff, Third Sector Associates
Bryan Osborne, Town of Colchester
Bethany Remmers, NWRPC
Steve Rolle, Parsons Brinckerhoff
Katherine Sonnick, Town of Milton

1) Introductions and Overview
Jason Charest welcomed everyone and introductions were made.

2) Study Status
Steve Rolle of Parsons Brinckerhoff reported that the environmental report and surveyor's base map (including utilities) should be available this week. There are wetlands, though likely of low quality, in the NE, NW and SE quadrants of the interchange.

3) Purpose & Need Statement
The Purpose & Need Statement was revised (see attached) with comments from the last meeting. Amy asked that Franklin County be added to read (red text added): "…and improve connectivity and access between the Interstate and nearby communities in Chittenden, Franklin, and Grand Isle Counties under current and projected future conditions." Under "Needs": "Exit 17 provides an important connection between the Interstate and the Towns of Colchester, Milton, and Franklin and Grand Isle Counties through US Routes 2 and 7."

Dick Hosking of VTrans District 5 suggested including congestion on Route 7 northbound; it was decided that the Purpose & Need statement should not have this level of detail.

In order to finalize the Purpose & Need for our October 22nd public meeting, team members should send comments to Jason and Steve by **October 15th**.

4. Preliminary Alternatives Evaluation

4a. Near-Term Alternatives (prior to overpass replacement)

Steve described the near-term alternatives using traffic simulations (see chart attached to this document).

Chris Jolly of FHWA asked if the traffic simulations anticipate a twenty-year build-out. Steve responded that a 25-35 percent increase in traffic was anticipated based on regional model projections and historic traffic growth. Bryan expressed concern that these projections are low and it was agreed that Bryan, Sara Hadd, and Jason will review the numbers again. Steve noted that each long-term alternative will be evaluated for reserve capacity.

Steve sees all the near-term alternatives discussed as reasonable and potentially feasible alternatives, with one exception. Maintaining the loop ramp connection likely precludes connecting a second through lane westbound. There was discussion of packaging the alternatives to allow for prioritization based on funding constraints.

Bryan asked if the Colchester Selectboard will be asked to endorse a particular alternative. Michele Boomhower of the CCRPC suggested that the Selectboard can express a preference at this point, but it is early in the process. They need to understand that there will likely be alterations in the future, based on the environmental document, engineering, and design.

4b. Long-Term Alternatives (prior to overpass replacement)

Steve explained that the long-term alternatives include the short-term alternatives. There are several families of possible long-term alternatives, which include variation of roundabouts, diamond interchange, and a diverging diamond interchange. Steve suggested that bridge replacement is a prime opportunity to increase capacity; the long-term alternatives generally assume the bridge is rebuilt and expanded to five lanes.

Roundabout Alternatives

R1 (roundabouts at US2/Northbound I-89 off-ramp only) is the most effective roundabout alternative. It replaces the existing signalized intersection at the NB off-ramp with a two-lane roundabout. Roundabouts did not perform as well at the other two study intersections due to high left turn volumes.

Diamond Alternatives

Two variations of diamond interchanges were discussed. The first is a simple expansion of the existing configuration.

The second adds a new NB off-ramp in the SE quadrant of the interchange, separating and accommodating NB off-ramp movements destined to US 7 (US 2 WB movements would continue to use the loop ramp). Chris Jolly of FHWA described this alternative as a modification of existing access, meaning that it can likely be handled at the state rather than the federal level. Michele suggested that we need to look longer than 20 years for bridge design; we should build capacity recognizing that this is a 50+ year project. She suggested that Steve evaluate both five and six lanes on the overpass.

Diverging Diamond Alternatives

This alternative has potentially the most impacts and highest costs. While it performs well, it doesn't appear to outperform other alternatives.

The group decided to move forward to evaluation three alternatives: Roundabout (R1), Expanded Existing Configuration (D-2) and new NB off-ramp (D-1).

5. Next Steps/Next Meeting

Steve will create a presentation for the Public Meeting, including a package of alternatives, by October 17th for review by the Study Team. The Study Team will meet on Monday, October 21st at 1:00 PM to finalize the alternatives and presentation.

The Study Team doesn't need to choose a preferred alternative prior to the October 22nd Selectboard/Public meeting. If the Team would like, it can meet after the 22nd and make a recommendation to the Colchester Selectboard for their November meeting.

As time was tight, Steve briefly discussed the evaluation criteria for the alternatives and asked for input via email.

The Study Team will meet on **Monday, October 21st at 1:00 PM at the CCRPC** to discuss the refined alternatives.

The meeting was adjourned at 3:11PM.

Exit 17 – Revised DRAFT Purpose and Need Statement (October 8, 2013)

Purpose

The purpose of the Exit 17 Scoping Study is to develop alternatives that enhance the operation of the Exit 17 interchange by reducing traffic congestion at the ramps and the adjacent US 2/US 7 intersection, provide infrastructure for safe and efficient travel by all users, and improve connectivity and access between the Interstate and nearby communities in Chittenden & Grand Isle County under current and projected future conditions.

Needs

Improve safety for all users

- Queuing on the northbound I-89 off-ramp extends onto the Interstate forcing vehicles to queue on the I-89 shoulder.
- The intersection of US 2 and the northbound I-89 ramps is a High Crash Location.
- US 2 is designated as part of the Lake Champlain Bikeways Corridor but is not well suited for use by bicyclists through the interchange area due to lack of dedicated space, high vehicular travel speeds, and conflicts with turning vehicles.
- No accommodations are provided for pedestrians on US 2 across the current overpass or at intersections.

Reduce traffic congestion and enhance mobility for all users.

- Traffic congestion (LOS E and F conditions for specific movements) is present with current peak period travel demands, and there will be insufficient capacity to accommodate future local and regional growth.
- The two signalized intersections east of the US 2 bridge over the Interstate are closely spaced and have inadequate stacking space for vehicles to queue.

Provide access from the Interstate.

- Exit 17 provides an important connection between the Interstate and the Towns of Colchester, Milton, and Grand Isle County through US Routes 2 and 7.
- The current bridge is rated as Structurally Deficient due to the condition of its substructure.

Near-term Alternatives		Description
	US 2/US 7 Intersection	
N-1	Dual NB Left-turn Lane	• Add a second left turn lane northbound on US 7. • Add a second westbound travel lane on US 2 between US 7 and the northbound onramp to I-89.
N-2	Dual SB Right turn Lane	• Add a second right turn lane southbound on US 7. • Add a second westbound travel lane on US 2 between US 7 and the northbound onramp to I-89.
N-3	Dual EB Left turn Lane	• Add a second left turn lane eastbound on US 2. • Add a second northbound receiving lane that tapers back to one lane north of the intersection.
N-4	NB Jug Handle Left	• Replace existing northbound left turn lane with a "Jug Handle" turn (exits to the right and joins the intersection as a new 4th leg).
N-5	Prohibit ROR for SB right turn	• Prohibit right turn on red for the southbound right turn from US 7 to US 2.
	US 2/NB I-89 Ramps	
N-6	Dual SB Left turn lane	• Add a second left turn lane from the offramp to eastbound US 2. Extend 2nd eastbound lane from US 2/US 7 intersection to this intersection.
N-7	EB Left turn lane	• Create a short left turn pocket for eastbound traffic turning onto the northbound I-89 onramp.
N-8	Extend 2nd WB lane (ramp to US 7)	• Extend a second westbound lane on US 2 from the US 2/US 7 intersection through the I-89 northbound ramps intersections, eventually becoming the left turn lane onto southbound I-89.
	US 2/SB I-89 Ramps	
N-9	SB Right turn lane	• Add a right turn pocket on the southbound I-89 offramp.
N-10	Bicycle crosswalk at ramp diverge (EB)	• Create a paved shoulder area for bicyclists to wait for acceptable gaps to cross traffic bound from westbound US 2 to the SB I-89 onramp. • Striping and signage improvements.
	Global	
N-11	Signal System Upgrades	• Upgrade to Adaptive Signal Control with monitoring of queuing on the northbound offramp from I-89.
N-12	Introduce Speed Zone	• Step speed down from 50 mph to 35 mph on US 2 through the interchange area, and from 50 mph to 45 mph on US 7

	Long-term Alternative	Description
	Roundabouts	
R-1	Roundabout at US 2/NB I-89 offramp only.	• Construct a roundabout at the US 2/I-89 northbound ramps intersection. Retain existing loop ramp. • Construct 5-lane section on US 2 between the new roundabout and US 2/US 7 intersection (2 lanes westbound, 3 lanes eastbound). • Replace existing overpass with 5-lane overpass (3 lanes westbound, 2 lanes eastbound). • Includes N-1 and N-3 at US 2/US 7 intersection. • At US 2/southbound I-89 ramps, includes second southbound lane (shared left/right) offramp (effectively allowing for dual left turns), second westbound through lane, and second eastbound through lane.
R-2	Roundabout at US 2/NB I-89 offramp and US 2/US 7 intersections.	• Same as R-1, but construct a 2-lane roundabout at US 2/US 7 as well.
R-3	Roundabouts at all three intersections	• Construct roundabouts at US 2/US 7, US 2/I-89 northbound ramps, and US 2/I-89 southbound ramps intersections. • Replace existing overpass with new 4-lane overpass.
R-4	Roundabouts at I-89 northbound and southbound ramps only.	• Construct roundabouts at US 2/I-89 northbound ramps and US 2/I-89 southbound ramps intersections. • Replace existing overpass with new 4-lane overpass. • Includes N-1 and N-3 at US 2/US 7 intersection.
	Diamond Interchanges	
D-1	Four quadrant diamond with NB loop offramp	• Add a new offramp from northbound I-89 to eastbound US 2 in the southeast quadrant of the interchange. Remove existing signal and north leg of current intersection (new ramp is Yield controlled at intersection).. • Retain loop ramp for connection to westbound US 2. • Replace overpass with new 5-lane overpass. • At US 2/southbound I-89 ramps, includes second southbound lane (shared left/right) offramp (effectively allowing for dual left turns), second westbound through lane, and second eastbound through lane. • Includes N-1 and N-3 at US 2/US 7 intersection.
D-1b	D-1 with signalized NB offramp	• Same as D-1, but maintain traffic signal at northbound ramps.
D-2	Existing configuration with expanded signalized intersections.	• Generally retain current ramp configurations • Replace overpass with new 5-lane overpass • At US 2/southbound I-89 ramps, includes second southbound lane (shared left/right) offramp (effectively allowing for dual left turns), second westbound through lane, and second eastbound through lane. • Includes N-1 and N-3 at US 2/US 7 intersection.
	Diverging Diamond	
DD-1	Signalized ramp terminals	• Replace existing interchange with Diverging Diamond interchange. • I-89 offramp junctions with US 2 controlled by yield signs.
DD-1b	Yield control ramp terminals	• Same as DD-1, but offramp junctions with US 2 controlled by traffic signals.

	Long-term Alternative	Description
	Southbound I-89 Ramps Variations (Could be coupled with R1, R-2, D-1, D-1b, D-2)	
SB-1	2nd WB left turn lane at I-89 SB ramps	• Provide a 2-lane left turn lane from westbound US 2 to southbound I-89 onramp. Maintain 2 through lanes westbound as proposed in other options. • Add additional westbound lane on new overpass (6 total lanes on new overpass).
SB-1b	SB-1 with single through lane	• Provide a 2-lane left turn with only 1 through lane on westbound US 2 (5 total lanes on new overpass).
SB-2	Signal controlled EB right turn onto onramp	• Eliminate sweeping, high-speed ramp from eastbound US 2 to I-89 southbound onramp. Replace with dual right turn movement at the signalized intersection.

Evaluation Measure	Basis
Costs	*Note: Costs not substantively considered during Initial Screening*
Conceptual Cost Estimate	Conceptual cost estimate including construction costs and engineering.
ROW Impacts	Number of parcels and structures affected.
Purpose and Need	
Congestion	Number of LOS E or F Movements
Reserve Capacity	Number of V/C > 0.85 movements
Queuing	Queuing impacts observed in model simulations
Access to Interstate I-89 to/from US 2	Qualitative assessment based on connections provided and LOS results
Access to Interstate I-89 to/from US 7	Qualitative assessment based on connections provided and LOS results
Access between US 2 and US 7	Qualitative assessment based on connections provided and LOS results
Addresses Bridge Deficiency	Yes/No
Reduces queuing onto I-89 ramps	Simulation modeling
Improves intersection geometry/design	Qualitative assessment relative to existing configuration
Improves bicycle accommodation	Qualitative assessment
Improves pedestrian accommodation	Qualitative assessment
Potential Impacts	
Agricultural Lands	Are prime farmlands or active farms potentially affected?
Archeological	Are any known archeological features potentially affected?
Historic Resources	Are any known historic sites or structures potentially affected?
Floodplains	Is the alternative located within a floodplain?
Fish & Wildlife Habitats	Would any fish or wildlife habitats be potentially affected?

Evaluation Measure	Basis
Rare, Threatened and Endangered Species	Are any known Rare, threatened or endangered species potentially affected?
Section 4(f) - Public Lands	Are Section 4(f) properties or lands potentially affected?
Section 6(f) – LWCF Act	Are Section 6(f) properties or lands potentially affected?
Wetlands	Are protected wetlands potentially affected? What is the quality of affected wetlands?
Hazardous Waste	Are any known hazardous waste sites potentially affected?
Aesthetics/Visual	Does the alternative impact the visual quality or overall aesthetics of the area?
Noise	Potential to increase or decrease noise levels at nearby receptors.
Economy	Would the alternative have local or regional economic impacts?
Engineering	
Utilities – Above ground	Above ground utilities potentially affected.
Utilities – Underground	Underground utilities potentially affected.
Design Exceptions	Are design exceptions necessary, and if so, what if so characterize degree of risk in purposing.
Permit Requirements/ Regulatory Issues	
Act 250	Is an Act 250 permit required?
NEPA Process	Class of actions likely (CE, EA, EIS)
Sec 401 Water Quality	Is a Section 401 permit (Clean Water Act – Water Quality Certification) needed?
Sec 404 USACE	Is a Section 404 permit (dredged/fill materials) needed from the USACE?
Vermont Wetland Permit	Is permit required?
Stream Alteration	Is permit required?
Stormwater Permit	Is permit required?
Endangered/Threatened Species	Is permit required?
SHPO Consultation	SHPO should be consulted to confirm historic and archeological findings.
Plan Conformity	Consistency with local, regional and state plans.
FHWA Access Revision Approval	Is FHWA Access Modification approval needed?