

## V2I Deployment Coalition TWG 4 Monthly Meeting Minutes

July 8, 2015 – 11:00-12:30 (Eastern)

### Actions

1. Bob Arnold will send Elizabeth, for distribution to the full TWG, a summary of the V14 Guidance document comments that were submitted by the group.
2. Elizabeth Birriel will distribute the executive summary of the Footprint Analysis document to the full TWG as an outreach item currently available in relation to Issue 6.
3. All TWG 4 members should email Ginny Crowson by July 31 additional (existing or under development) V2I outreach materials that they are aware of in relation to Issue 6.
4. Ginny Crowson will prepare a summary of outreach materials for discussion at the August TWG 4 meeting.
5. Ginny Crowson will issue schedule poll to confirm regular meeting time for TWG 4.

### Roll call (Elizabeth Birriel)

1. Adler	Jeff	jeff.adler@q-free.com
2. Arnold	Robert	robert.arnold@dot.gov
3. Birriel	Elizabeth	elizabeth.birriel@dot.state.fl.us
4. Crowson	Ginny	crowson@acconsultants.org
5. Dawson	Darryl	ddawson@itsengineering-ltd.com
6. Eddy	Martha Morecock	martha.eddy@timmons.com
7. Heise	Cliff	cdh@iteris.com
8. Koeberlein	Bob	robert.koeberlein@itd.idaho.gov
9. Lamba	Naveen	naveen.lamba@ch2m.com
10. Leader	Shel	shel@sleader.com
11. Lingham	Virginia	vlingham@mtc.ca.gov
12. Lockwood	Steve	lockwoods@pbworld.com
13. Moser	Kelli	Kelli.Moser@dot.state.fl.us
14. Moore	Jonathan	jonathan.moore@kimley-horn.com
15. Olyai	Koorosh	koorosh.olyai@stantec.com
16. Piotrowicz	Gary	gpiotrowicz@rcoc.org
17. Rausch	Bob	robert.rausch@transcore.com
18. Saleem	Faisal	faisalsaleem@mail.maricopa.gov
19. Walker	Jonathan	Jonathan.B.Walker@dot.gov

20. Webb	George	gwebb@pbcgov.org
21. Wolanin	Emil	emil.wolanin@montgomerycountymd.gov

**Recap Guidance document comments submitted to USDOT by 6/29 (Elizabeth Birriel)**

Elizabeth Birriel reported that Bob Koeberlein, Faisal Saleem, Bob Taylor, Gary Piotrowicz, Shel Leader, Virginia Lingham, Steve Lockwood and Daryl Dawson submitted comments to Bob Arnold.

Bob Arnold and Jonathan Walker were asked to summarize comments that were received and how resolution will be addressed. Jonathan Walker noted that most of TWG 4 comments were in line with other comments already received during the formal comment period last fall. The biggest changes made since the initial version of the Guidance was issued are an enhanced introduction and additional references to further information. There were several comments on V2V but Guidance will remain focused on V2I to distinguish it from the NHTSA rulemaking on V2V. While TWG 4 was reviewing the Guidance, FHWA was also going through an internal review so they are still determining which comments are appropriate to address in this revision vs. the next. Shel Leader asked if there's a way to at least illustrate where and how V2I and V2V intersect in the Guidance. Jonathan Walker noted that this is somewhat addressed in the Guidance under a table of V2X applications and additional guidance will be available through other work that FHWA is currently overseeing to develop support tools for agencies making deployment decisions.

Bob Arnold and Jonathan Walker further explained that FHWA has a tracking system for all comments that have been received. They could provide a summary of the comments from there or group could wait until comments are issued in the form of the next version of the guidance this September. FHWA may also issue a summary of comments received in the federal register. Bob Arnold was asked to provide a summary of the TWG 4 comments received.

**Review summary table of deployment issues status by all TWGs (Faisal Saleem)**

Faisal Saleem explained the summary table presents the original 12 deployment issues presented to the coalition, plus three additional issues identified by TWG 1 during the June 4-5 workshop. Descriptions of the three additional issues were provided with the meeting materials. The table also presents the level of interest in each issue as it was expressed by the TWGs during the workshop. The group was asked to review and confirm the level of interest listed for TWG 4.

Naveen Lamba suggested that TWG 4 consider a Support (S) role on Issue 8 because we're developing comments on guidance that should include standards. Faisal Saleem asked if that would be the case for all of the issues. Bob Rausch, Emil Wolanin and Gary Piotrowicz didn't believe that we will review and comment on the standards work. The group agreed to retain the No Action Planned (N) role to manage overall scope.

Steve Lockwood asked for description of Issue 13. Faisal Saleem read the description and it was noted that Issue 5 will likely be a significant obstacle identified in Issue 13. After further discussion about the description for Issue 13, it was agreed that the scope will likely focus more on current infrastructure processes (e.g. environmental review) and security, as a relatively new obstacle, will likely remain

separate. The group asked that the TWG 4 role be changed from No Action Planned (N) to Supporting (S).

Gary Piotrowicz and Elizabeth Birriel noted that we need to be careful about how many issues we get involved with and how we get involved with the issues so we can produce meaningful work.

Steve Lockwood noted that there are many other deployment issues beyond those listed for the V2I DC (e.g. technical development for staff) and he asked how those issues will be addressed. Ginny Crowson explained that the issues identified by the coalition to-date are were intentionally limited to keep the groups focused and encourage the development of meaningful work. Additional issues should be tracked and may be considered as the V2I DC matures. Bob Arnold added that issues not currently addressed in the Guidance should also be suggested by TWG 4 and we could suggest/recommend language for next version of Guidance.

There were questions about the intent of the policy statement in Issue 14. Ginny Crowson explained that TWG 1 is expected to poll members of the Coalition regarding their interest and need for a policy statement. The feedback would be shared with TWG 4 to offer as input to FHWA on the next version of the Guidance. The group suggested that TWG 4's role be S but also acknowledged potential concern for not having a group identified in a Primary (P) role.

Faisal Saleem asked for input on Issue 15 and the group noted that maintenance activities also need to be identified in addition to maintenance costs. It was suggested that TWG 4 have a No Action Planned (N) role for this issue.

### **Review draft work plan (Elizabeth Birriel)**

Elizabeth Birriel explained that the draft work plan was prepared using the notes from the workshop discussions. The actions noted for each issue where TWG 4 has expressed interest are all draft. The purpose of today's review is to confirm or modify the work plan actions and identify general timeframes for their anticipated completion. For each issue, TWG 4 will identify what outreach material and guidance already exists; what is under development (e.g. Jonathan Walker's reference to additional support tools being developed for traffic engineers); and, what additional outreach or guidance may still be needed (e.g. elevator speech discussed during the workshop).

Issue 1 is the one issue that all TWGs have expressed interest in. Actions by each of the groups will focus on clarifying details around the most critical V2I applications. TWG 4's proposed action to identify relevant outreach and guidance needs should follow the other TWG actions. Q1-2016 is suggested as an anticipated completion date.

*No action is planned by TWG 4 for Issues 2-5.*

Issue 6 is another that most TWGs have expressed interest in. There are three proposed actions for TWG 4. The first action – providing input to USDOT on V14 of the Guidance – was complete on 6/29/15. For the second action, TWG 4 will likely need to provide two rounds of input on outreach needs – the first in the near-term and the second after the TWGs have time to complete some of their work. Q3-2015 was suggested as an anticipated completion date for the first round of input and Q2-2016 was suggested for the second round. The third action will coincide with FHWA's release of the next Guidance and TWG 4 suggested Q4-2015 as an anticipated completion date. Regarding the action to identify outreach needs

in the near-term, Elizabeth Birriel mentioned the footprint document and exec summary as a key existing outreach tool that she'll circulate to the group. She also asked all TWG 4 members to identify similar existing (or under development) outreach materials so the group can assess gaps that may exist for overall outreach on V2I deployment.

Issue 7 will involve actions from most of the other TWGs so TWG 4's action to identify outreach and guidance needs related to benefits and costs for V2I deployment will need to take place after that work is complete. Q2-2016 is suggested for an anticipated completion date.

*No action is planned by TWG 4 for Issue 8.*

Issue 9 will require work from TWG 2 to be completed prior to TWG 4 identifying outreach and guidance that may be needed on the research proposed for understanding liability. Q2-2016 is suggested as an anticipated completion date.

*No action is planned by TWG 4 (or any of the other TWGs) for Issue 10.*

Issue 11 is focused on identifying outreach needs and messaging for consumers regarding V2I deployment. TWG 4 is currently the only group with interest in this issue but input from TWG 3 may be useful as work is completed. Q4-2015 is suggested as an anticipated completion date.

*No action is planned by TWG 4 for Issue 12.*

Issue 13 will involve TWG 1 learning about V2I pilot deployment challenges with traditional project processes (e.g. environmental review) before TWG 4 can identify any corresponding outreach and guidance needs. Q1-2016 is suggested as an anticipated completion date.

Issue 14 will be dependent upon TWG 1 polling V2I DC member regarding the policy statement. Ideally, TWG 4 could include results of the poll in further review of the Guidance targeted for completion in Q4-2015.

*No action is planned for TWG 4 for Issue 15.*

#### **Discuss next steps and regular monthly meeting date/time (Elizabeth Birriel)**

The agenda for the next meeting will likely include work and discussion related to Issues 6 and 11 – both of which have near-term anticipated completion dates.

The second Wednesday of each month at 11:00 AM (Eastern) was suggested as a regular monthly meeting target. There were no immediate objections but it was requested that the date be put out to poll for the full group.

## Consolidating and Coordinating TWG Efforts (updated from 7/8 discussion)

Table 1 illustrates the initial 12 V2I deployment issues discussed by each TWG at the workshop. Also, some TWGs have identified additional issues that they will focus on over the next 12 months. Each TWG has determined the role they will play in addressing each issue, and these roles are summarized as either:

- P: Primary role in addressing the Issue. May coordinate with other TWGs. Other TWGs may participate in addressing the issue, but a 'P' represents that the TWG is expected to play a primary role.
- S: Supporting role in addressing the Issue. The TWG does not have plans to lead activities to address this issue, but they are available to support other TWGs who may look to them for input or support while addressing the issue.
- N: No action planned. The TWG believes other TWGs have more to contribute to the issue resolution and the TWG is not expecting primary or supporting actions in the issue resolution.

Issue	TWG 1 Initiatives	TWG 2 Research	TWG 3 Partners	TWG 4 Guidance	TWG 5 Standards
Issue 1: V2X Applications	S	S	S (P?)	S	S
Issue 2: Complementary Communications to DSRC	N	N	S (P?)	N	S
Issue 3: V2I Data	N	N	S (P?)	N	S
Issue 4: Patents-Intellectual Property	N	P	S	N	N
Issue 5: Security	N	N	P	N	S
Issue 6: V2I Outreach	N	S	S	P	S
Issue 7: Understanding the Benefits and Costs of V2I Deployment and Operation	P	S	P	S	TBD
Issue 8: V2I Standards	N	N	N	N	P
Issue 9: Understanding V2I Liability Assignment	N	P	N	S	N
Issue 10: V2I Synergies with Other Emerging Technologies	No action planned at this time				
Issue 11: V2I Consumer Messaging	N	N	N	P	N
Issue 12: V2I Multimodal Applications	No action planned at this time				
Issue 13: Infrastructure Processes as V2I Obstacles	P	TBD	S	<del>N</del> S	N
Issue 14: Federal V2I Policy Statement	S	TBD	TBD	P(?) S	N
Issue 15: Maintaining V2I Infrastructure	P	TBD	TBD	<del>TBD</del> N	N

Table 1 – Summary of Each TWGs Proposed Role in Addressing Each V2I Issue

### **Issue 13: Infrastructure Processes as V2I Obstacles**

The next iteration V2I technologies and systems are being invented quickly. There are existing processes, procedures, and/or regulations (e.g. the environmental review process, the MUTCD and established process to add or edit infrastructure uses in the MUTCD) that could be obstacles for a DOT wishing to implement V2I.

**The V2I industry needs to understand the extent to which existing processes (e.g. MUTCD, environmental reviews) are obstacles to V2I.**

### **Issue 14: Federal V2I Policy Statement**

The recent NHTSA resolution regarding vehicle-to-vehicle communications has helped the V2V industry. Similar strong encouragement from a federal agency to give infrastructure owners and operators a push to deploy V2I would also help V2I. It is recognized that a rulemaking is likely not possible, but perhaps another strong encouragement from a federal agency (e.g. something similar to an “Every Day Counts” EDC model) could be released.

**The V2I industry needs a strong message from a federal agency encouraging V2I deployment.**

### **Issue 15: Concerns about maintaining V2I infrastructure**

Infrastructure owners and operators considering V2I infrastructure investments need to consider long term infrastructure maintenance costs (outside deployment and operating costs). With relatively little actual experience in maintaining the types of infrastructure that will be required for V2I, these costs are largely unknown.

**The V2I industry needs to begin a process to learn as much as possible about anticipated V2I infrastructure maintenance costs.**

TWG 4: Deployment Guidance – Draft Work Plan [\(updated from 7/8 discussion\)](#)

V2I Deployment Issues	Anticipated TWG 4 Actions	Anticipated Completion Date
Issue 1: V2X Applications	<ul style="list-style-type: none"> <li>Identify relevant content from this issue that should be included in the overall outreach in Issue 6 based on TWG 3 findings.</li> </ul>	<a href="#">Q1-2016</a>
Issue 2: Complementary Communications to DSRC	<i>No action planned</i>	
Issue 3: V2I Data	<i>No action planned</i>	
Issue 4: Patents-Intellectual Property	<i>No action planned</i>	
Issue 5: Security	<i>No action planned</i>	
Issue 6: V2I Outreach	<ul style="list-style-type: none"> <li>Provide input to USDOT on V14 of Deployment Guidance.</li> </ul>	<a href="#">Completed 6-29-2015</a>
	<ul style="list-style-type: none"> <li>Identify outreach that may be needed to increase awareness and support of V2I among transportation agencies.</li> </ul>	<a href="#">Q3-2015 and Q2-2016</a>
	<ul style="list-style-type: none"> <li>Provide input to USDOT on additional content for next version of Deployment Guidance.</li> </ul>	<a href="#">Q4-2015</a>
Issue 7: Understanding the Benefits and Costs of V2I Deployment	<ul style="list-style-type: none"> <li>Identify relevant content related to calculating the benefits and costs of V2I <del>A</del>applications <a href="#">based on work by TWG 1</a> that should be included in overall outreach in Issue 6.</li> </ul>	<a href="#">Q2-2016</a>
Issue 8: V2I Standards	<i>No action planned</i>	
Issue 9: Understanding V2I Liability Assignment	<ul style="list-style-type: none"> <li>Identify relevant content related to V2I liability assignment that should be included in overall outreach in Issue 6 based on TWG 2 findings.</li> </ul>	<a href="#">Q2-2016</a>
Issue 10: V2I Synergies with Other Emerging Technologies	<i>No action planned</i>	
Issue 11: V2I Consumer Messaging	<ul style="list-style-type: none"> <li>Develop a description of the type of content and guidelines that are needed to be developed to enable consistent, accurate consumer messaging related to V2I applications.</li> </ul>	<a href="#">Q4-2015</a>
Issue 12: V2I Multimodal Applications	<i>No action planned</i>	
Issue 13: Infrastructure Processes as V2I Obstacles	<p><i>TBD-based-on-description</i></p> <ul style="list-style-type: none"> <li><a href="#">Identify relevant content related to infrastructure processes based on work completed by TWG 1 and TWG 3 that should be included in overall outreach in Issue 6.</a></li> </ul>	<a href="#">Q1-2016</a>
Issue 14: Federal V2I Policy Statement	<ul style="list-style-type: none"> <li>Identify relevant content related to a Federal V2I policy statement <a href="#">based on work done by TWG 1</a> that should be included in feedback on the V2I Guidance documents.</li> </ul>	<a href="#">Q4-2015</a>
Issue 15: Maintaining V2I Infrastructure	<i>TBD-based-on-description No action planned</i>	