Summary of Proceedings
ITS Program Advisory Committee Meeting
July 18, 2017

CONTENTS

1. General

a. The Intelligent Transportation Systems (ITS) Program Advisory Committee (ITSPAC) met on July 18 and 19, 2017 at the DoubleTree Crystal City Hotel, located at 300 Army Navy Drive, Arlington, Virginia 22202.

b. This document provides a summary of the meeting proceedings for day one of the meeting (July 18, 2017). The meeting transcript and other meeting documents are available in the July 18-19, 2017 section of the ITSPAC website at http://www.its.dot.gov/itspac/index.htm.

2. Meeting Attendance

a. Committee members

Ms. Sheryl Wilkerson, Vice President, Government Affairs, Michelin North America (Chair)
Mr. Steve Albert, Director, Western Transportation Institute
Mr. Scott Belcher, Consultant, Intelligent Transportation Systems
Mr. Roger Berg, Vice President, North America R&D, DENSO International America
 Mr. Bob Denaro, Consultant, Intelligent Transportation Systems
Ms. Debra Johnson, Deputy Chief Executive Officer, Long Beach (CA) Transit
Mr. J. Peter Kissinger, Consultant
Mr. Scott McCormick, President, Connected Vehicle Trade Association
Mr. Joe McKinney, Executive Director of National Association of Development Organizations
Ms. Tina Quigley, Regional Transportation Commission of Southern Nevada
Mr. Bryan Schromsky, Director of Technology, Verizon Wireless
Dr. Susan Shaheen, Ph.D., Adjunct Professor, University of California-Berkeley

b. U.S. Department of Transportation

Mr. Egan Smith, Managing Director, ITS Joint Program Office and Designated Federal Officer
Mr. Ken Leonard, Director, ITS Joint Program Office
Mr. Nat Beuse, NHTSA
Ms. Ariel Gold, ITS Joint Program Office
Ms. Kate Hartman, ITS Joint Program Office
Mr. Robert Sheehan, ITS Joint Program Office
Mr. Jonathan Walker, ITS Joint Program Office

c. Others

Julian Gehman, V2X Alliance
Deepak Gopalakrishna, ICF

Kathryn McGirk, McAllister & Quinn
Eric Miller, Transportation Topics
Anita Rasan, Mitsubishi Motors
Walter White, Verizon
Al Stern, Citizant

3. Meeting Action Items

a. All Committee members should read the presentations given at today's session in preparation of discussion at tomorrow's meeting.

4. Meeting Agenda

a. Welcome Remarks

b. Opening Remarks

c. JPO Update / Q & A with Committee

d. Connected Vehicle Pilots Program

e. Mobility on Demand/ATTRI Programs

f. Enterprise Data Program

g. Technology and Active Transportation Subcommittee Discussion

5. Summary of Proceedings

a. Welcome Remarks

(1) Ms. Wilkerson, Committee Chair, welcomed committee members and announced that Ken Leonard, ITS Joint Program Office Director, and Egan Smith, Managing Director and the acting Designated Federal Officer for this meeting, would both be attending today. She also noted that some members could not make both days of the meeting, and some were unable to attend at all. Ms. Wilkerson then asked members of the public to introduce themselves.

b. Opening Remarks

(1) Ms. Wilkerson, Committee Chairperson, welcomed all participants and thanked the ITS JPO for its support and Committee members for taking time from their schedules to serve on the Committee. She noted that Mr. Glasscock could not attend due to a death in the family.

(2) Ms. Wilkerson then walked the Committee members through the agenda, noting some minor adjustments. She then introduced Ken Leonard, ITS JPO Director, and Egan Smith, Managing Director, and asked them to provide an update on recent JPO activities.

c. JPO Update / Q & A with Committee

(1) Mr. Leonard proceeded to give a short summary on current and ongoing ITS JPO activities and noted that three JPO staff members would be providing updates to the Committee on their programs: a) Kate Hartman, Connected Vehicle Pilots; b) Bob Sheehan, Accessible Transportation Technologies Research Initiative (ATTRI); and c) Ariel Gold, ITS Data Program.

(2) In terms of recent activities at the JPO, Mr. Leonard described the progress made on the Smart Cities Columbus and Automated Vehicles, which is becoming a focused area of concern Department-wide. The Automated Vehicle Symposium, sponsored by TRB, has grown in recent years over 1,500 attendees. The JPO is also preparing to move into FY 2018 with a new budget proposal, but there is still uncertainty where US DOT leadership will want to focus activities in the coming months.

(3) After a question regarding Departmental appointments from Mr. McCormick, Mr. Leonard replied that the a few FRA announcements had been named and that Derek Kan, formerly of Lyft, was being considered as Under Secretary at this time. In a related area, Mr. Denaro asked about this Committee's future, in terms of the new Administration's intentions. Mr. Leonard noted that ITS PAC was established by Congress and that all advisory committees at US DOT are being reviewed by the Secretary. As a follow-up, Dr. Shaheen asked about the new Automated Vehicle Advisory Committee; Mr. Leonard said that it had met once in January of this year and is still in place to his knowledge.

(4) Mr. McCormick reiterated a concern he had about automated vehicles and the relationship to artificial intelligence; he felt that policy guidance for automated vehicles needed to reflect a better understanding of how artificial intelligence works. Mr. Leonard agreed, but noted that the guidance issue was being developed by NHTSA, and that this may be a good question for Nat Beuse to address when he attends the meeting tomorrow.

(5) Mr. Albert then raised the issue of rural equity in transportation, which he had heard the new Secretary discuss at her confirmation hearings. He wondered if Mr. Leonard thought there was anything the Committee could do to reinforce that notion. Mr. Leonard stated that he was aware of that commitment and that there are opportunities to address rural-focused projects, especially in the ATCMTD grant program, which allots $60 million a year to states and localities. The ITS JPO contributes $21 million to that program yearly, and thus is very much interested in ensuring the funds are used equitably and awards are made to deserving grantees.

(6) Mr. McCormick mentioned that he understood that Congress was voting on self-driving car legislation this week and that he wanted the Committee to be aware of it. The legislation, as proposed at this time, would allow 100,000 driverless cars on the road without having to meet current safety standards.

(7) Ms. Wilkerson thanked Mr. Leonard for his report and then suggested that the committee move on to the next agenda item, which is an update on the Connected Vehicle Pilots program, presented by Kate Hartman, the program manager.

d. Connected Vehicle Pilots Program Update (Kate Hartman)

(1) Ms. Hartman began her presentation by introducing Jonathan Walker (ITS JPO), who manages the New York City portion of the program. She then introduced Deepak Gopalakrishna who is with ICF, a project partner on the Wyoming DOT part of program. She continued by stating that the goal of the program is to spur early connected vehicle technology deployment, measure the benefits that accrue from the deployment, and then resolve some of the deployment issues. She thanked Ariel Gold, who has been instrumental in getting many technical issues worked through.

(2) In terms of current status, she stated that there are three phases planned; the concept development phase is completed, we're currently in the midst of the design/build test, and the next phase will be to maintain and operate the system. She illustrated the locations of the three deployment sites: Wyoming, Tampa, FL and New York City. The Wyoming effort is focused on freight vehicles and weather, while in New York and Tampa, safety and mobility are the focus. The goal is to get 8-10,000 vehicles per site to participate in the deployment. At that point, Ms. Hartman announced that the Committee would now see a video describing the overall goals of the program across the three test sites.

(3) Following the video presentation, the floor was opened to members for questions. Ms. Johnson asked if results of these efforts will be conveyed to others who may be involved in similar projects in the form of lessons learned. Ms. Hartman replied that this was being done and will be posted to the program website soon. In addition, she asked that if anyone had ideas of how to convey those results in another way, that she would be more than willing to listen.

(4) Mr. Albert asked about the use of roadside signs as data probes in the Wyoming project, seeing as they are few and far between in that area. Mr. Gopalakrishna replied that they were also using satellites and other vehicles in addition to sign gantries to collect data and act as a communications tool for the project. Mr. Kissinger then asked if any regulatory action would result from this program in the near future. Mr. Leonard noted that since this is the first of many anticipated CV pilot programs, regulation may not be in the works for some time. He suggested that the Committee may want to ask Nat Beuse of NHTSA if that was his understanding; in addition, this topic may be one that the Committee wishes to weigh in on in terms of recommendations to the Secretary. Does the Committee feel that the current

thinking on DSRC communications and connected vehicle technologies is valid and should it go the regulatory route? Or should another alternative such as exective orders, be considered as mentioned earlier in the day? US DOT's goal is to reduce collisions and fatalities; is there a better way to achieve this goal other than the connected vehicle paradigm?

(5) Dr. Shaheen then raised the issue of behavioral response to the communications being received by drivers. She would be interested in knowing if anyone is looking into that as part of the CV Pilots efforts; this data would be helpful to evaluate the effectiveness of the communications utilized in the program. Ms. Hartman replied that safety evaluation is indeed being looked at as part of the overall program, but she was unsure if that included the use of in-vehicle cameras to record driver behavior. She also offered to discuss the causality implications of the program with Dr. Shaheen, who has extensive experience in the area of evaluation. Ms. Hartman continued that they could also analyze data coming from the vehicle directly, so as not to raise any privacy protection issues.

(6) Mr. Denaro asked about the time necessary to widely deploy connected vehicles, since an OEM-based solution would be time consuming. Ms. Hartman noted that the program was using aftermarket technology, and that quite a few vendors are cooperating and looking into how they could join the effort. Ms. Wilkerson also expressed concern about the current technologies and apps that are overtaken by new ones that are always being brought forward. Ms. Hartman replied that that was a concern, but that she was heartened by the fact that new vendors have been joining the Pilots project as it moved forward, and this should continue as more outreach and marketing takes place. She thought that an ATCMTD grant might be considered in the near future if an applicant is interested in pursuing this effort.

(7) With regard to the current round of ATCMTD grant awards, Ms. Quigley inquired about when the winner would be announced. Mr. Leonard explained that the applications are currently under review and evaluation; it may not be until later in the year that any announcements are made due to the involvement of US DOT leadership and Congress. Ms. Quigley reiterated her concern that there are a lot of applicants awaiting word on these grants and that the sooner these announcements are made, the better.

(8) As a follow up to an earlier discussion item, Mr. Kissinger took the opportunity to answer Mr. Leonard's question regarding the committee's role in engagement in the regulatory vs. non-regulatory issue; he felt strongly that the Committee should voice its opinion on that topic. Ms. Wilkerson agreed and pointed out that she had made note of his remarks and was hoping to bring it up later in the meeting. Mr. Berg questioned how this could be done if the purpose was to encourage private enterprise to produce aftermarket products. Mr. Kissinger replied he would be open to other ideas if regulations are considered problematic.

(9) Mr. Denaro then asked about the type of communications technology being used in the New York pilot program, cellular or DSRC? Mr. Walker replied that they were primarily using DSRC, but some communications were via cellular as well. Mr. Berg said he was concerned that, due to the density of tall structures in New York, there could be a down side to depending on cellular communications. Mr. Schromsky noted that all cellular providers are aware of those problems and are working quickly to solve them by increasing the number of cell towers in densely populated areas. Mr. Denaro stated that he felt that US DOT should consider embracing cellular more strongly. He thought DSRC has is its role to play, but that cellular coverage has been improving lately to the point that it can be used much more in these types of scenarios.

(10) Mr. Albert raised the issue of wrong-way drivers and noted he experienced that problem when managing highways in Houston; he asked Ms. Hartman if the Tampa pilot was having any better luck with their effort to address stop wrong-way driving. She replied that the program was just kicking off in Tampa and results remain to be seen, but that the problem was quite serious and needed to be addressed.

e. Mobility on Demand and ATTRI Programs Update (Robert Sheehan)

(1) After the morning break, Ms. Wilkerson and a number of other members thanked Ms. Hartman for an excellent presentation. She then introduced Bob Sheehan, who will be describing the programs he manages at the ITS JPO. He began by describing the Mobility on Demand (MOD) program, which focusses on a traveler-centric approach by leveraging emerging mobility services and integrated transit networks. He continued that the program covers a wide variety of modes and public transit has become a large part of the effort recently. In addition, new MOD research and performance metrics are being developed in New York and other sites across the country. He also described a major effort as part to the "MOD sandbox" program where 11 sites have been selected to test shared use and transit-based solutions.

(2) Before moving onto the ATTRI program, Ms. Johnson asked about economic inequality in providing transit and MOD services in economically-depressed areas. She emphasized that people living in these areas should not be left out of the equation when providing access to these services. Mr. Sheehan agreed and noted that one of the sandbox projects (Go Los Angeles) is looking at just such a problem and developing solutions for it.

(3) Dr. Shaheen raised the issue of goods delivery as one important aspect of MOD that was seemingly lacking in interest. She pointed out that there is a central location for Amazon deliveries in Berkeley due to the high number of students using that service in the area. She noted that more needed to be done to address these types of delivery hubs and tying them to trip chains, so that those not using a vehicle will have access to them. Mr. Schromsky agreed and mentioned that we need to get a better handle on the delivery chain in general, with two or three deliveries being made by various services at multiple times to the same address. The environmental and economic

costs of such duplication is massive. Mr. Sheehan added that while we have a goal of reducing personal trips to alleviate congestion, the number of delivery-type trips are growing, thereby cancelling out the benefit.

(4) To end that portion of the presentation, the Committee had a wide-ranging discussion of induced demand, namely, would efforts such as MOD actually increase the number of vehicle trips as opposed to decreasing it? Ms. Quigley was concerned that these programs could prove detrimental to the goal of trip reduction. Dr. Shaheen agreed and felt increased congestion could lead to decreased economic activity in the long run. The entire issue of whether or not ride sharing would be beneficial to the transportation system or detrimental needs to be thought through completely.

(5) With that, Mr. Sheehan closed the presentation on that topic and moved onto the Accessible Transportation Technologies Research Initiative (ATTRI) program. It is a multi-year, multi-modal effort to look at how technology can provide improved mobility and accessibility for those with all types of disabilities. He noted that 19 percent of the population has some of disability; the program also focusses on veterans with disabilities and the aging population. Research topics include way-finding navigation, assistive technologies, robotics, data integration, and enhanced human services in transportation.

(6) After a lengthy presentation describing the many aspects of the ATTRI program, Ms. Johnson asked about Paratransit services which is an ADA requirement for transit agencies. She wanted to know how ATTRI could be applied to this service, which she felt was a very high-cost service for her agency to provide. Ms. Quigley agreed wholeheartedly and noted that she thought that riders were not being served well and that transit agencies are frustrated by high costs and lack of good alternatives to serve this population. Mr. Schromsky added that "aging in place" needed to be taken into consideration as well; elderly people who cannot drive themselves should also be provided with alternative transportation. Dr. Shaheen also raised the issue of somehow addressing the deficiencies with the Paratransit system through the use of Uber and Lyft types of on-demand services. She suggested that these possibilities need to be explored further.

(7) Mr. Sheehan agreed and noted that it was a very contentious issue and was being looked for improvement a number of levels. Mr. Kissinger suggested he look at the Senior Supplemental Transportation initiative, which addresses some of the elderly driver concerns raised by Mr. Schromsky.

(8) Mr. Sheehan continued his presentation by describing a program that has now been completed, the MSAA or Mobility Services for all Americans. Grants were provided under this program to four municipalities across the country; now that they are winding down, he noted that best practices and lessons learned from them is being packaged for distribution very soon. Mr. Leonard added these programs have been recently re-worked in order to introduce the latest trends, including mobility on demand serviced such as Lyft and Uber, as well as the introduction in the near future

of automated vehicles. Dr. Shaheen agreed and reinforced Mr. Leonard's remarks; she felt the convergence of these ideas and programs will result in improved transit for affected populations. Mr. Leonard wrapped up this portion of the discussion by noting that the ITS JPO was doing its best to provide linkages among the six major elements of the Program with the goal of providing the best transportation system possible for all users. Ms. Wilkerson suggested a lunch break at this point and asked that members return afterward for additional JPO presentations.

f. Enterprise Data Program Update (Ariel Gold)

(1) Ms. Wilkerson then asked Ms. Gold to provide her report to the committee. Ms. Gold noted that she had been with the JPO for about a year and is the project manager for the new Enterprise Data Program; the goal is to recognize the importance of data in a new generation of technologies in transportation. She explained that it was an entire paradigm shift in transportation and that there is a lot of data coming that needs to be collected and analyzed. She described the importance of making transportation data available to researchers and independent evaluators on many US DOT projects. Data sharing with the general public is also a goal, but there is a concern with privacy protection.

(2) Mr. Denaro asked her about that issue: what is difference between the two user groups in terms of data security? Ms. Gold replied that the security details have not been worked out yet, but certainly private information would have to be filtered if released to the public and an agreement reached with researchers as well. She noted that there was a concern regarding the work that Ms. Hartman had described in the CV Pilots program; quite a bit of data was generated from the program, and details were recently worked out to the point where live data is being generated and distributed after being filtered for privacy issues.

(3) Dr. Shaheen asked about making some data sets available via the "Cloud;" Ms. Gold replied that she had recently begun to work on such an activity in cooperation with the National Transportation Library, which makes federally-funded research results public. She went on to discuss plans for federated systems of transportation data, and noted that US DOT is in the midst of making that migration now. In addition, future research projects funded though the JPO will be required to share data using the model established in the CV Pilots. Once the data become available, she would encourage all types of researchers to access and use it. Mr. McCormick asked if she would like for him to inform his contacts of the website; Ms. Gold replied it would be a few months before it was up and running, but that it would be very helpful at that point to get the word out.

(4) Ms. Quigley brought up the issue of predictive analytics using large data sets; she noted that her agency recently partnered with a company that uses data to predict where congestion or collisions might occur in the highway system. These predictions can in turn allow jurisdictions to be prepared for emergency response and other services available if something does occur. Ms. Gold continued that she had heard

about that type of data use, and felt it was a good example of how important it is to get data out in real time, so that it can be used immediately. She also noted that in this type of system, data harmonization and standardization is extremely essential.

(5) Mr. Berg raised the concern about the volumes of data that will result once connected vehicles become ubiquitous. This is especially true when considering cooperative/ connected automation, not just independent automation. Ms. Gold stated that they were looking at that consideration and it was discussed extensively at a recent conference on automated vehicles (AVs).

(6) Mr. Leonard agreed with Ms. Gold and added that he felt it was extremely important to better integrate all types of ITS data; however, this project is only the beginning of the process. There's quite a bit of data out there and it will take a concerted effort across the Department to make it work together and benefit users of the system. He noted that just in the area of work zone data, there are so many non-synchronized messages currently that it would take a lot of time and effort to standardize the data so it can be shared in a meaningful way. He then thanked Ms. Gold for her efforts to make these data unifications efforts a reality. Mr. Kissinger agreed and said he supported the goals of the program wholeheartedly, and asked about reactions from others in US DOT about these activities. Ms. Gold replied that there has been very enthusiastic response to it, but it is a very ambitious project that involves a paradigm shift at US DOT. Mr. Leonard agreed and pointed out that there had been some friction generated among agencies at first, but now that it is further along, we are seeing better cooperation.

(7) Ms. Gold then related a data integration success story regarding the use of Google Maps to supply transit information on their site in addition to driving directions. Over time, it has become the primary source of transit way-finding across the nation and is used by scores of individual agencies to great acclaim. Mr. Schromsky followed up with a question regarding the types of data that US DOT may be seeking that it is not getting. Mr. Leonard noted that in the coming years, data from automated vehicles will become available, though not all of it will be released by manufacturers. Ms. Gold added that it would be helpful to determine safety indicators before automated vehicles began producing data in earnest, because safety, of course, is a vital concern for all players in transportation. Mr. Denaro agreed and suggested that the JPO sponsor a session at an upcoming AV conference to get the conversation on that moving ahead. Mr. Leonard agreed and noted that other members of the JPO staff are focused on AVs as well as NHTSA.

(8) After some discussion of how state and local agencies across the nation are handling data integration, Dr. Shaheen applauded the work being done here and suggested that Ms. Gold become involved at the TRB Meeting now being planned for January 2018. She felt it was important for the JPO to unify the data sets coming from the Pilots program and find a way to share them with the transportation community.

(9) To conclude this portion of the meeting, Ms. Wilkerson thanked Ms. Gold for an intriguing presentation, which she felt had stimulated a lot of thinking among the Committee members with regard to the upcoming report to the Secretary.

g. Discussion of Technology and Active Transportation Subcommittee

(1) Following the afternoon break, Ms. Wilkerson asked Mr. McCormick to provide an update on the progress made in the subcommittee that considered technology and active transportation. He noted that, at a high level, they suggested that V2X activities be broadened, coordination and outreach with the ITS community be continued, more public-private partnerships be encouraged, and that lessons learned/best practices be identified and published. He mentioned that Mr. Kissinger further recommended that safety concerns and V2I /smart infrastructure capabilities be highlighted. He wrapped up by noting he was putting these issues on the table for discussion now, with the plan to develop the actual recommendations for review at the next Committee meeting.

(2) Ms. Wilkerson asked Ms. Johnson about defining active transportation and if members thought that a recommendation based on the data presentation that was received today would be appropriate. Mr. McCormick thought it was important to consider how a recommendation related to ITS data would be formulated. He felt that anything the Committee recommends needs to be actionable by the ITS JPO. After considerable discussion by various Committee members, Dr. Shaheen suggested they incorporate data aspects into public/private partnerships and pilots, which both allow access to data. She also thought data management was an important consideration.

(3) Mr. Leonard agreed, but added that what he thought was most important was the Committee's advice with regard to taking a new or experimental technology out into the real world to determine feasibility. Can enough data be gathered to determine if the technology was ready for deployment and stability in the marketplace? Mr. McCormick followed up with a question regarding the JPO budget – how much of it is for research and development and how much for deployment? Mr. Leonard replied that it is all considered R&D funds, but they are allocated differently by the JPO. Mr. Albert suggested the JPO consider broadening the pilot concept by increasing the number of probes involved in each. Mr. Leonard said that has been considered in the past, but it is always constrained by the budget that can be set aside for this type of testing. Dr. Shaheen followed up by stating that she felt evaluation funding should also be increased, which brings us back to the vast amount of data available through these various programs. Can the evaluation aspect be emphasized to counter the increased amount of data? In addition she thought the economic and GDP-related impacts of the JPO's work needed further consideration, especially in light of the new administration's focus on economic constraints.

(4) Mr. Berg raised the issue of commercial vehicles, which had, in previous sets of recommendations, been given a higher priority; perhaps that was food for thought for this Committee as well. Both Mr. Leonard and Mr. McCormick agreed and suggested

that commercial vehicles are going to become extremely important with the advent of automated vehicles.

(5) Ms. Wilkerson closed this portion of the meeting by asking that, in preparation for tomorrow's discussions, members review the presentation materials that will be delivered via e-mail from the JPO this evening.

6. Adjourn

After a brief discussion of the agenda for tomorrow's presentations, Ms. Wilkerson thanked committee members for their participation and adjourned the meeting at 3:30 pm.

We certify, to the best of our knowledge, that the foregoing summary of proceedings is accurate and complete.

_____   _____
Ken Leonard   Sheryl Wilkerson
Director, Intelligent Transportation Systems Committee Chairperson
  Joint Program Office   Vice President, Government Affairs
Federal Highway Administration   Michelin North America
U.S. Department of Transportation