

UNITED STATES DEPARTMENT OF TRANSPORTATION

INTELLIGENT TRANSPORTATION SYSTEMS
JOINT PROGRAM OFFICE

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INTELLIGENT TRANSPORTATION SYSTEMS PROGRAM
ADVISORY COMMITTEE

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MEETING

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WEDNESDAY
JULY 19, 2017

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The Committee met in the Monument View Room, DoubleTree Crystal City, located at 300 Army Navy Drive, Arlington, Virginia, at 8:20 a.m., Sheryl Wilkerson, Committee Chair, presiding.

PRESENT

SHERYL WILKERSON, Chair; Vice President,
Government Affairs, Michelin North America
STEVE ALBERT, Director, Western Transportation
Institute, Montana State University
SCOTT F. BELCHER, Consultant, Intelligent
Transportation Systems
ROGER BERG, Vice President, North America R&D,
DENSO International America, Inc.
JOSEPH CALABRESE, Chief Executive Officer and
General Manager, Greater Cleveland Regional
Transit Authority
ROBERT DENARO, Consultant, Intelligent
Transportation Systems
GINGER GOODIN, Director, Policy Research Center,
Texas A&M Transportation Institute
DEBRA JOHNSON, Deputy Chief Executive Officer,
Long Beach Transit
J. PETER KISSINGER, Consultant, Intelligent
Transportation Systems

JOE MCKINNEY, Executive Director, National
Association of Development Organizations
TINA QUIGLEY, General Manager, Regional
Transportation Commission of Southern
Nevada
BRYAN SCHROMSKY, Director of Technology, Verizon
Wireless
SUSAN SHAHEEN, Ph.D., Adjunct Professor, Civil
and Environmental Engineering, University
of California, Berkeley

ALSO PRESENT

KEN LEONARD, Director, ITS Joint Program Office
EGAN SMITH, Managing Director, ITS Joint Program
Office
NAT BEUSE, NHTSA Associate Administrator, Vehicle
Safety
JULIAN GEHMAN, V2X Alliance
TAKAYOSHI KURAMOTO, Mitsubishi Motors
KATHRYN MCGIRK, McAllister & Quinn
ANDY VAICHEKAUSKAS, Mitsubishi R&D America
AL STERN, Citizant

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(8:20 a.m.)

CHAIR WILKERSON: Well, thank you so much for day two and I think yesterday we had productive conversation, at least I heard some good feedback.

MEMBER QUIGLEY: I agree.

CHAIR WILKERSON: And I know that I got e-mails from some of you last night, just following up on some issues. So, thank you for your engagement, and support and leadership.

At the close of business yesterday, for those who were not here, there's a card being sent around for Stephen Glasscock. So please -- did you put it back?

MEMBER QUIGLEY: Oh, yes.

CHAIR WILKERSON: It's already started? Thank you so much. We'll be happy to go over with you some of the topics we discussed, but yesterday -- you've seen the agenda. We had a number of speakers who came and then we started off with our technology discussions.

Scott McCormick, that was where we ended yesterday. And then, we agreed that today we would spend a few minutes this morning just sort of reviewing what we said last year in terms of the report that will be due in January. We had discussed having one more meeting later this fall. I believe we set up a September, October

timeframe. We did not set a specific date. We talked a little bit about the structure that, and template, that we would like to prepare for that. So we will spend just a few minutes talking about some of the ideas we have for revisiting this in light of a new administration, a new Secretary and in some cases, new members of Congress.

So, the rest of the afternoon we will look at traffic safety culture. We will also talk about the connected and automated vehicles and then rural ITS. This is just a rough schedule. We recognize that some of the topics may require us spending more time on those subject matter. So we will just either work into the breaks, work through lunch, so that we are able to wrap up at the end of the day today.

So, the first item -- yes, one more question?

MR. STERN: Visitors.

CHAIR WILKERSON: Oh, yes. I did have that on my list, too. If there is anyone who was not here yesterday, please sign the registration form that is in here and if you could stand up and announce yourself. And tell us who you are and who you work with.

MR. KURAMOTO: Takayoshi Kuramoto. Mitsubishi Motors.

CHAIR WILKERSON: Okay. Thank you very much. Regarding the structure, yesterday we talked -- first of

all, everyone who submitted basically has met and they submitted a working document which was some of them were in draft form and others were final text for documents for consideration for our final advisory memo.

We talked about last year's document which we think we have seen. This is on the website, which you've all seen and submitted. Last year we did -- our advisory report just contained an overview and then we had a summary and then we had a number of recommendations. One of the things we talked about yesterday was providing some more facts and evidence to back up some of our recommendations. And also to write the recommendations in a way that will elicit responses. Other than just sort of yes or no; we do not have funding. So, that's something we've thought about. Some of you may have given that some more thought last night.

We talked about possibly reducing the number of recommendations, you know -- last year I think we had 17 or so, maybe more. But they are contained here and they are, of course, online for you to look at. But the structure was the topic. We provided a little background, we made a recommendation and then the Department provided a response. In some cases they concurred. Others they said yes, but we don't have enough funding to do so.

But we'd like to make sure that we provide a

little bit more backing and provide some context that will educate the new Secretary. And will afford the opportunity for the ITS JPO staff to be able to have a deeper, you know, some more thoughtful discussions with the Secretary's staffs when they discuss these topics.

Any comments from around the table to clarify or provide some other context?

MEMBER ALBERT: I think it's a great idea to look back at what -- where these are. Maybe we're at the outset, we were trying to say we're only going to recommend X number so that we can keep someone's attention reading this rather than 18 different recommendations might be a good idea as well.

CHAIR WILKERSON: Of course. I think providing some context into what has been done in the past is maybe just a paragraph or summary about what has been. Just providing a historical context for what the ITSPAC has done would be helpful so they don't feel like they must go back and read several years' worth of documents. Providing some highlights might be helpful in the opening of the document as well.

Susan, do you have some more comments?

MEMBER SHAHEEN: No, we selected a couple of those high-priority recommendations where we since --

CHAIR WILKERSON: Well, yes. So what we did

was we actually reviewed these --

MEMBER KISSINGER: Right.

CHAIR WILKERSON: -- in one of our past meetings and then we came up with that short list with the subcommittees. We kind of looked back and said are there any. And then we asked each of the subcommittees to also look back to see if there was anything else that they needed to include in their subcommittee discussions.

So, I think the topics we have are pretty -- are fine for me. I don't think we must go into a lot of detail. There may be some subsections in some of those topics, but I don't know if anyone else has thoughts or comments.

MEMBER BERG: Can I say something?

CHAIR WILKERSON: Sure.

MEMBER BERG: Sometimes what we do in the private sector when we review our research plans is we do like a summary or a reflection from what happened last year or the year before. And we summarize that in almost like a chart. It's very simple, here's a thing. Here's what we want to do. Here's the status. If it's not what we expected, here's the action for it. But it's all on one sheet of paper, one matrix. Very simple and as far as the wording, but at least it provides an overview of what the research plan has actually accomplished.

CHAIR WILKERSON: Okay, if you want to share a copy of that, that'd be great --

MEMBER BERG: All right.

CHAIR WILKERSON: -- for the -- okay, well a template. Just a template of what it might look like. I'm not -- not the content, but just the --

MEMBER BERG: Yes.

CHAIR WILKERSON: That'd be great. Any other thoughts or comments, any -- how you'd like to amend the structure other than these two other points that we added: the point that you just made and historical background on the facts. You had talked about -- do you want graphics, are there -- I think some kind of supplemental illustration might be helpful to the extent you can when you're going through this process.

You know, citations are referenced to other documents would be helpful as well. Is that fair?

MEMBER KISSINGER: Yes.

CHAIR WILKERSON: Okay, super.

MEMBER QUIGLEY: I'm all about anytime you can make it visually more friendly to read; do it. Because some people -- humans must read that and that's not fun. It's fun, you know, it's fun when you engage. I always figure that engaging somebody, using visual tools or fine arts or whatever. It's almost your responsibility when

you're conveying information. Otherwise, you're expecting -- you're asking a lot of them to wade through a lot of text.

CHAIR WILKERSON: Any other input from JPO about how we could be of help or that might help without weighing in on the merits, but if there are -- based on what you heard yesterday, do you have any other suggestions or recommendations for us, given the new leadership or --

MR. LEONARD: Well, I made the one suggestion yesterday that this is your first opportunity to make a first impression.

CHAIR WILKERSON: Good impression.

MR. LEONARD: I generally agree with the concept of less is more. You know, 28 recommendations in a 25-page memo -- I understand our Secretary is a reader, but she gets hundreds of pages to take home every night and I think sometimes you can be more impactful with a two-page paper than a 75-page paper.

MEMBER QUIGLEY: It's way more respectful, I think. It's almost the lazy way out putting a whole lot of text in something. It takes a lot of work to really get the point across in your message and --

CHAIR WILKERSON: Well we can put some key -- maybe some key things too under the margins or some other things.

MEMBER QUIGLEY: Yes. Okay.

CHAIR WILKERSON: We'll get a template.

MEMBER KISSINGER: Just sort of a question, which is -- given that -- is there an issue with terminology? I mean, do we need to be concerned about defining things that everyone in this room understands -- probably understands -- and perhaps the Secretary doesn't? Or is it --

MR. LEONARD: I think there are all these issues with terminology. I mean, just automated or autonomous self-driving I mean we still --

MEMBER QUIGLEY: We said that yesterday.

MR. LEONARD: -- those are the facts. I mean, we're -- highly automated vehicles first so -- but I think if you try and get into that, you're leaning towards a 25-page document again. And, I mean, I think you have to be conscious of what you say and then be able to -- you have to understand what you mean when you say whatever terms you use to describe things.

I don't know how much you will have to define it in the document you submit, but I think if you spark interest, you better be able to define your terms in a way that is clear and that they can act on since they understand what you're saying.

MR. SMITH: Yes, I think less is more, graphics

are good and trying to keep it fairly simple; not too many acronyms because the new folks in the building, they're not that tuned into some of these terms that we tend to use and we have to have a glossary online to explain. So, that's not something that they will be able to define.

CHAIR WILKERSON: Okay, but moving further --

MR. SMITH: We also have some graphics that we can probably make available to folks so they can choose from and I think it's available online. So, I'll send you that link too as well.

MEMBER GOODIN: All right. One other idea -- I don't want to create more work, but one of the things we've done with the legislators in our research is we'll have an in-depth document that provides the references and the background that you really need. But then we also have -- we call it a quick read. It's a one-page summary with the staff can then look at real quickly and then anybody who wants to dive deeper can go into the meat of the main document. So, that may have created something else that is a more summary document, but then it provides the in-depth for those who want to go in depth.

MR. SMITH: And that's exactly the strategy we've been using with them right now in terms of finding like an executive summary type one-pager for you to take a quick glance at to get some talking points and more

detailed background information for the folks who are actually bubbling it up to her to take a look at to, kind of, sign off on.

MR. LEONARD: I could think of all different kinds of stylistic and presentation ways that you could couch your advice that would make it more readable --

CHAIR WILKERSON: Yes. How?

MR. LEONARD: -- and I think making it visual, easy to understand, clear what you're recommending. You know, I think that would be powerful.

CHAIR WILKERSON: Any templates you have, submit them following the meeting or ideas that you --

MEMBER QUIGLEY: I found the one page, but I shared it with my staff all the time. She just says, picture. And like I'll send sets of picture messages so it's so easy --

CHAIR WILKERSON: Go ahead.

MEMBER SCHROMSKY: On an administrative front, so we're looking at an October date?

CHAIR WILKERSON: Yes, we had talked about a date in the fall.

MEMBER SCHROMSKY: Okay.

CHAIR WILKERSON: We didn't have an agreement last time because of other conferences and meetings that were coming up so if we can spend some time talking. I

was going to do that at the end of the day; talk about, you know, when is the next draft due. The Subcommittee's probably going to meet one more time. We can send out a template to the people to start putting things so that I don't have to take everybody's stuff and put it into a template.

But if we have a template that we share, we can sort of look at everything that everybody gives us and we can put something together and then folks can -- the subcommittees can fill in the blanks, send the draft out to everyone and then I'm happy to compile them and send them back out.

MEMBER QUIGLEY: Do you have staff or do you have a consultant you can use?

CHAIR WILKERSON: No, because the last time we did this the same way, right? I mean, the work is done; it's just formatting and putting it together so it's no big deal. So, and then we could put that template together and circulate it. So we just need to put that timeline together that works for everybody.

MEMBER SCHROMSKY: Yes, I'd like to hear those teams that are all working on a committee under the leadership stuff that we might want to have a draft circulated for all the committees by mid-September -- the end of September.

My thought is once you do that, then October is almost kind of red-lined last and then we're done. Because if you wait until October 25th, whatever it is, January 1st will be here before you know it and the holidays --

CHAIR WILKERSON: And Ken, do you have a date by which you'd like for us to have it? I know it takes some time for the -- it's January, technically, but we were trying to give us a lot of flexibility so we don't have to get in November, December holidays and all of that. So if you have an idea for us for when you'd think you'd like to have it to address your timeframe.

MR. LEONARD: And again it partly depends on what you recommend. I think the last time we got a 25-page set of recommendations, it took a considerable amount of time for staff to go through it and respond. And then it took a considerable amount of time to go through and say to the staff, you can't like everything unless you've got the budget to support it. And so then we had to do extensive re-writes of what we could say because we didn't want to just say oh, we like your recommendation and leave the impression that we were going to be able to do it because there were not the resources to do it.

CHAIR WILKERSON: Right.

MR. LEONARD: So we wanted it to be handed back

to -- so if we get a two- or three-page recommendation, I think we can review it in fairly quick order.

If we get three dozen recommendations, it will take us a number of weeks, if not months, to review it internally, circulate it and then I have no idea what the -- this new team, in reviewing it for the first time would want to do with it and how extensively it will be. I think when Stephen gets back, he'll --

CHAIR WILKERSON: Okay, that's fine. Well, if we get something to you by October, that should give you -- like by the end of October. That would give you November, December.

MR. SMITH: Yes, October should be fine. What happens is we review it, we try to respond to be sure with the staff and I have to move through the channels exactly how we will be responding to the recommendation. Not just, you know, yes we're going to do this, but actually look at the programs themselves to see how we can actually respond to it to address some of the issues. Like, for example, the data response and get some of the responses and we try to match it with a program that's in the stuff we're going to be trying to accomplish over the next year to see how we're addressing the issues. So --

MR. LEONARD: And in some cases it means reaching out to the local partners because it might not be

worth what we're doing the same work that somebody else is doing that you're making recommendations about. So the first --

CHAIR WILKERSON: How -- is that two months? Does that -- you really don't have two months. It gives you about three weeks because of the holidays in November and December. Does that give you enough time or should we move back --

MR. SMITH: No, we'll look at it and that should be enough time because it's going to be a more of a --

CHAIR WILKERSON: More concise.

MR. SMITH: Yes, more concise looking at --

CHAIR WILKERSON: Oh, okay. All right. Okay, sounds good. So we'll at least keep October in mind and then we also had talked about another meeting in August as well.

MEMBER SCHROMSKY: Yes, if we did do another face-to-face, one of the things -- we didn't, we hadn't really gone over a couple of years ago when we communicated, so I think that would open up a lot of eyes for the intended because we brought all the technology. But once you see the action it started the gears.

So one of the ideas, you know, I'm going to say a travel budget, whatever it may be, is there a DOT location. One of the ideas came up maybe involving Boston

where you could possibly have the meeting in that facility so you cut down costs and you bring in or something, like Panera Bread, or something like that and it'll make it easier.

So -- plus it's, you know, you're looking in DOT's eyes. When we leave the Committee, there are also people might also have a scheduled trip already to go see more people or maybe people already there. So, that was another consideration.

MR. LEONARD: We have talked about that. In fact, we mentioned demonstrations in Wyoming in February.

MEMBER QUIGLEY: What?

CHAIR WILKERSON: Your timing is striking.

MR. LEONARD: Wyoming.

CHAIR WILKERSON: Oh, Wyoming.

(Laughter)

MR. LEONARD: We have talked about what we can do this in another location. And I think, you know, the CV Pilot location has come to mind. Volpe -- aside from the fact that there's the ITS work that they're doing that Volpe is just doing so much.

I'm actually putting on my calendar to get back up to Volpe because the last program reviews I've done with them I've done through video-phone conference with their team up there and my team down here. Just because --

MEMBER SCHROMSKY: I thought if you're going to go up there for one or two days. You can extend it, I don't know --

MR. LEONARD: There's just so much going on with transportation. It's worth doing some of the other tours that are non-ITS to see what they're doing. Yes, I think we can have that discussion.

MEMBER QUIGLEY: What is the telephone conversation about how it, I mean a conference call and I was only half listening, but they had a conference call to discuss the digital cars and consumer protection. They released a self-driving vehicle -- some self-driving vehicle legislation and they were talking about the mark-ups and the comments. Are you guys familiar with that at all?

CHAIR WILKERSON: You mean the --

MEMBER QUIGLEY: The self-driving legislation, yes.

CHAIR WILKERSON: Yes.

MEMBER QUIGLEY: Oh, okay. As I was listening, the proposed legislation creates four different new subcommittees.

CHAIR WILKERSON: Yes.

MEMBER QUIGLEY: I thought that -- I was just -- I'm curious to know how did those subcommittees kind of

interact, you know, with something like our committee in terms of, like, how do we make sure we're not making contrary recommendations or, you know, we're collaborating, sharing in terms of -- and one of the things they were going to do was define what highly-automated -- I guess I'm just curious, how do all these committees kind of --

MR. LEONARD: Now which four new committees are you talking about?

MEMBER QUIGLEY: Those --

MR. SMITH: The four?

MEMBER QUIGLEY: Yes. Oh, yes. They talked about four new committees that were being created.

MR. LEONARD: But at ITS America?

MEMBER QUIGLEY: No, no. They're -- I guess they were just reviewing legislation.

CHAIR WILKERSON: I think it's easy, I mean, I think our focus and our charter is pretty clear. We talked about the discretionary role of the Automation Advisory Committee. So I think to the extent you had topics you want to bring to the Committee for consideration, we can look to see if it fits within our charter or if we want to talk about, but I don't think it's our role to go in and, at least right now, to weigh in on the --

MEMBER QUIGLEY: No, I'm not saying that. I

mean, I was just asking about what the philosophical questions are.

MR. LEONARD: So, philosophically if Congress established it, there are a number of committees and subcommittees that oversee DOT and that specifically, within the ITS Joint Program Office, we routinely brief on any of the House or the Senate side, or we brief their staffs with updates throughout the year.

Congress has the ability to establish more committees and subcommittees and extend jurisdiction and have multiple overlapping jurisdictions. The report, the recommendation you write goes to the Secretary and what Congress used to have us deliver it to both the Senate and the House. Now they're more high-tech; they have us just post it.

So, philosophically that information would be available for any of those committees or anybody in Congress. And, for that matter, the general public to review because rather than just being a letter to Congress, it's now on a website. So those committees would have access to it and they -- it's within their jurisdiction to ask questions like what is the Advisory Committee recommended or what -- they can ask questions about the activities of this committee.

And we occasionally get questions about what

we're doing, what recommendations have we seen the ones that we acted on. And we respond when we get those inputs.

CHAIR WILKERSON: Any other administrative issues regarding -- we can come up with a timeframe for when we need to get those documents at the end.

MEMBER SHAHEEN: I just -- so last night I was working a little bit on furthering the recommendation with Scott and one of the things that --

CHAIR WILKERSON: Scott McCormick?

MEMBER SHAHEEN: Yes. That was crossing my mind was that it felt like it would be helpful to interact more with JPO in terms of the recommendations in advance of formalizing them. Because I feel like we're somewhat hearing you and yesterday's presentations were exceptionally helpful to sort of get a better sense of how to tee up the recommendations in a way that is dovetailing with what you're already doing.

But one of the things I was feeling as I was trying to articulate these things and pulling comments that your team made yesterday was, wouldn't it be helpful if we could -- maybe in October -- talk about the things that we're thinking we'd like to put in this final memo and get feedback versus you getting this document without any of the interaction, or minimal interaction.

MEMBER KISSINGER: I had the exact same thought

sitting here. I had the exact same thought.

MEMBER SHAHEEN: Well, you know, when I was working on it last night I just kept thinking like, gosh, it would be nice to know what Ken and Egan and his team think of this particular recommendation. Is it hitting what I thought we heard? I don't know if this has ever been done prior to this middle of the memo, but it strikes me as more efficient.

MR. SMITH: Well, and to add to your point, yes I think finding some of the information on exactly what we do because that's how I try to respond to comments anyhow. Just trying to do what we are actively trying to do --

MEMBER SHAHEEN: Right. It has to be our recommendations. So, yes.

MR. SMITH: -- in the program. Yes, exactly.

MEMBER SHAHEEN: So we have to be very clear on the charter that we're not --

MR. SMITH: It makes it easier if we can make recommendations based on the fact that you know exactly what we're doing. All the programs, PCB, the Professional Capacity Building program. I spoke about it yesterday. They actually had a kickoff for a course on Monday where we're trying to develop a basic frame of what we think of the workforce is going to need to know of ITS. So for the next couple of years I'm trying to develop all that.

So there's a lot of stuff that may actually trying to do that I think ties into some of the recommendations that folks are thinking about here. So, if we can find a way to actually provide this information a lot easier to you all, I think that would be pretty helpful to making that decision under recommendation.

MEMBER SHAHEEN: Now this is not just with my second report. The first report, I had a subcommittee and I felt like we were working largely in isolation of the JPO. So, not really understanding, did these make any sense to you? Was this going to be overwhelming? Did it jibe with budget? And then you were left with having to spend countless hours responding because we didn't, somehow, have a dialogue with them.

MR. LEONARD: I like where you're taking this because, you know, we thought we had steps briefed for three, or three and a half hours, and for questions. And you saw the tip of the iceberg on three programs.

We have ongoing, about 60 programs and projects. You know, at any one time. So, you're not seeing all of it. So, when we get recommendations sometimes, it would be really better if the JPO did this. It's like I guess we need to brief on it.

And there's a reaction when people say, well I think you should do this. The person who's doing something

like that immediately says but I'm doing that.

CHAIR WILKERSON: Yes.

MR. LEONARD: And if you have recommendations, well, you should really have a Professional Capacity Building program. Maybe that would be good for us to have 15 minutes worth of discussion.

Now this webinar that Egan started up this week was a two-hour webinar, where they're going, there's -- we could spend all day just talking with you about the Professional Capacity Building program, but there's not enough time for you to monitor everything that's going on in the program.

There's not enough time for me to monitor everything that's going on in the program and I work full-time doing it. So, you know, it would be good if we could say well here's where your interests are and we could come back and say now let's give you fact sheets, write-ups, power points, and in some cases dialogue with the staff that are working those areas. So that you could either say, oh well, that was a good idea. We didn't know you were doing it already. We are going to withdraw the recommendation, you know, the two-paragraph recommendation on what you should do and say keep doing what you're doing. Or, no, no, no, you're getting it wrong. We know what you're doing in this area; it's not what we're

recommending. We think you are actually off-track.

And then we can have the discussion that says, okay what do you think we should change and why do you think we should change it and what are we doing that's --

MEMBER SHAHEEN: That's what I was saying --

MR. LEONARD: That would be more focused.

MEMBER SHAHEEN: That's where I was going last night when I was working on this thing. I was like, some of these recommendations I feel are getting too much into the weeds, based on what these recommendations look like. But maybe getting into the weeds is actually what you need, or not in that particular area. I don't know.

But I feel that we spend a lot of time on this two-year initiative and maybe it needs to be a more integrative, collaborative process. I don't know.

MR. LEONARD: Well, certainly if we could see recommendations earlier, we could bring, you know, we could set up. And it wouldn't have to be a meeting.

It could be a series of what's, you know, you could participate in a webinar where we're talking about something and then we could do some offline feedback about well okay, here's the recommendation.

Okay, so I think there are a variety of ways for the Committee to be more informed about the details and the substance of what we do so that -- and again, I

don't really think it's the Committee's role to get in and manage the minutiae.

But sometimes understanding what's happening and seeing the breadth of what's happening would help you understand or reassure you that okay, that's taken care of, let me focus my attention on these big issues.

MEMBER SHAHEEN: And I have one other formatting-related observation because I do spend a lot of time briefing people in Sacramento and these types of things. To me, like, these documents are wonderful but they look, a lot of the material including what we did last year is supplemental.

And it strikes me that something closer to two pages that can say "bum, bum, bum," these are the recommendations, we're recommending this because of this. Any fact based evidence, as I noted yesterday, in the context of that almost like an executive summary.

And then you have the supplemental materials which people may or may not consult. I mean, this stuff is wonderful, but to have to read all of that prior to getting to the substance of the recommendations doesn't seem to me as an effective format, particularly for a new administration that probably just wants to know what our recommendations are and why.

MEMBER GOODIN: That's what Joseph just said.

MEMBER SHAHEEN: I'm just echoing that, that's all.

MR. LEONARD: I do think that is a way to balance the when we have 40 pages of material we want to give to the new Secretary, you know, so if you want to say our top priorities are A, B, and rural development, and you want to do that in a two-page memo, and then say but now see the attached 15 memos that define what automated vehicles are, or define what we, what our interests are in spectrum, or define exactly in detail how we think we should engage with rural America.

That you don't want to have this three pager be the recommendation but say if this resonates with you, I have a more detailed description. You know, that's a way of letting the reader go to where they want to.

On the point that you were talking about, and I'm sure we'll get to this when we get to the rural America piece, one good recommendation says that this paper proposes a collaboration between the US Department of Transportation and the National Association of Counties.

Can't wait to have that discussion because we have a collaboration ongoing with the National Association of Counties. So again, this is a case where we look at this and say --

(Simultaneous speaking)

MEMBER ALBERT: -- context of that when I get to that.

MR. LEONARD: Right, and we'll be going with that discussion.

MEMBER SHAHEEN: But maybe the reshaping of the recommendation in the direction it goes deeper. That is what we need to do.

MEMBER ALBERT: That document, it was also meant to also educate the people around this table who don't have any clue about the role.

MEMBER SHAHEEN: Yes. Our recommendation will be totally different. I totally, that's why the draft document, I understand.

MR. LEONARD: But it's sharing that knowledge so that we can tune the recommendations is exactly the conversation I think you're talking about having.

MEMBER SHAHEEN: I think it would be really helpful. Given that this is my second crack at this, the first crack I just was following along with what had been done previously.

And so I didn't know anything. But now that I'm second term going, it would be really helpful to have a conversation about these recommendations. Before they get submitted.

MR. LEONARD: And I just want to make the

observation, I made this to a couple of you yesterday, I thought yesterday was a phenomenal day. Just the interaction between the Committee members and the discussion.

So I hope you enjoyed it. I found it very valuable. I always like these Committee meetings, but yesterday was just, everybody was so engaged. And I just, I think that's important. And that's what I want out of a Committee like this.

So, and this discussion is important because you're trying to figure out how to do the job we're asking you to do which is to give advice to us and to the Secretary and the Congress about what I think is one of the most important programs in transportation today. So I just, I want to say thank you.

CHAIR WILKERSON: Bob, I think you --

MEMBER DENARO: I just have a couple comments. And I like the discussion we just had. And I especially like your response and how we might do that. I just want to remind us that we are independent. And our job is oversight of the JPO. So we may disagree on some things.

And sometimes we've found in the past, and I think we'll continue to find, that we'll say some things that need to be done that there just isn't budget or resource for it and so forth.

And we've made that decision in the past saying we don't care. You know, we're an independent committee. Congress, you know, asked us to do this and we're reporting to the Secretary. This needs to be done. And if you don't have budget or resources, that's your problem, this is our opinion.

So the clarification step with JPO so that we don't get into something that's already being done, I mean, what's the purpose of that. But we do need to maintain our independence.

And the second thing is I do see a challenge, I like the idea also of reducing down the number of recommendations and focusing and so forth. But that also is a challenge because if you look at the makeup of this committee, specifically the legislation says that there are going to be so many representatives of this sector, that sector, and so forth.

So by design, we all come from different areas. I don't want to quash anybody's inputs. You know, if we didn't have Steve here we wouldn't be talking about rural, I think. But we do have him and so he's going to weigh in with that, and that's going to be important to all of us.

Now I don't understand all if it maybe, but I really appreciate that Steve has that focus and provides that. And that goes with everybody here.

We each come from a different position, and that's a challenge for us to try to cull things down because I don't want any individuals saying all right, if we're going to focus, then I won't speak up.

CHAIR WILKERSON: Well said.

MEMBER DENARO: That shouldn't be the case. You know, we need to get our hand on the table.

CHAIR WILKERSON: Well said.

PARTICIPANT: Agreed.

CHAIR WILKERSON: Okay. So if we go back to the schedule, can we go back to the agenda? It's 9 o'clock so I'm recommending that we get started on the next topic, Traffic Safety Culture.

MEMBER KISSINGER: Well, in the spirit of all he was talking about, we should move on. No. I did, I worked with Steve since the last committee meeting and as well as Dr. Nick Ward who is with the Center for Health and Safety at the Western Transportation Institute that Steve runs.

And we developed almost a one pager on this topic using the format that, you know, we had previously used. So the short background, justification there, and then hopefully a very succinct recommendation.

And hopefully everyone's had a chance to read that. It was sent out I think on the 12th of July. As a

traffic safety professional, I find one death on our nation as highly unacceptable. But one death every 15 minutes is absolutely outrageous.

And yet, we as a nation, as a community, as a transportation community, and even in some cases as a traffic safety community, we're not outraged.

Couple that with what we had seen is that there is an attitude in this country that could probably be best described as complacent, and individual attitudes that we often describe as "do as I say, not as I do" where when we talk to people, large numbers of people will agree that certain risky behaviors like talking on a cell phone while driving, represent a serious risk to them and their families as unacceptable socially.

And yet when we ask them have they done it, a large group of people say yes we have. So, and when we look at the, you know, the result of the traffic crashes, we're seeing 35,000 plus deaths every year.

And the worst part is the last couple years they've been going up. And as somebody mentioned yesterday, the most recent year we may end up at 40,000, back to where we were about a decade ago.

In response to all of that, the traffic safety community has really launched two major and complimentary initiatives. The one was to enhance traffic safety

culture.

There were a couple of national summits that were done as part of an AASHTO effort to develop a national strategic highway safety plan that contains consensus-based recommendations about what could be done to enhance traffic safety culture.

And as shorthand of what we mean by enhancing traffic safety culture is getting away from, moving away from this attitude that I described and the overall complacency to one in which admittedly a better ideal would be that each and every organization and individual would highly value traffic safety and would aggressively work to enhance it on an ongoing basis.

And so there is, you know, before us and before the community a consensus based set of recommendations in this area that are ripe for implementation.

At the same time, the community has come together to recognize that the only serious and legitimate goal is zero deaths on our nation's highways. AASHTO and Federal Highway primarily have led an effort called toward zero death where many state DOTs have adopted that as a goal.

At the same time, it's been a "Vision Zero" effort that has happened at most of the large municipal cities around the country. And most recently, US DOT,

represented by all of the administrations within it, and the National Safety Council have gotten together and organized a coalition to make Vision Zero possible by the year 2030.

And that organization, that coalition has I think about 250 organizations representing on it. And we've been meeting regularly to develop a specific strategic plan as to how we can make that happen.

And without a doubt, all of those discussions that I've participated in have recognized the absolute importance and relevance of connected vehicles, autonomous vehicles, and technology is the way to get to zero.

So you know, given all of that, a proposed recommendation for the Committee's consideration was accordingly the Committee endorses the efforts to enhance traffic safety culture in this country and to achieve a future where there are no traffic deaths.

This will require fully articulating the culture and paradigm for Vision Zero that is best suited for the US context. And as such, it is further hoped that USD will stay fully engaged in these efforts and integrate them into relevant DOT initiatives.

And I think that's important because most of this work happened in the previous administration. We had, the current administration has certainly not stopped

any of those efforts, but I think it's important given that we have the opportunity to go to the Secretary to ask her officially to make sure that they stay engaged in these efforts.

And that's my report. Steve, I don't know if you had anything you want to add?

MEMBER ALBERT: Yes, I was going to add, you know, we're doing a lot of work over in Europe where culture and governments are slightly different than the United States, some which are easier, some which are harder.

But I think sharing that information would be really good to the Committee. You know, we all hear the statistics that 90 percent of crashes are due to the driver. And yet I think in the United States just we're giving lip service to culture.

We truly are. We have Susan bringing up driver behavior stuff that should be on the forefront of our load, not on the back. And I think culture could be the driving force to actually improving safety.

But we're still dealing with construction engineers, traffic engineers who don't necessary believe that psychological understanding is more important than engineering understanding.

And until we change that paradigm, culture is

going to be a nice word to be bantered about. But I think we need somewhere to find a really good home for it and funding for it to get it done at the local level, the state level, et cetera.

MEMBER KISSINGER: Well, the other thing is that, I mean, for as long as I've been in this field we've had maybe six or seven Secretaries of Transportation. And every single one has always said safety is our top priority. And yet it really has never been. And hopefully that is changing. We have a pooled fund study going on with probably 30 to -- 30 states involved. So we have a pretty good handle on what's going on related to traffic safety culture. And I'm sure Peter or Nick would be glad to provide a presentation to that someday.

MEMBER SHAHEEN: It seems like there's a lack of urgency associated with this area. So I don't know what the best way to convey that is. I think the data are pretty powerful. And suggestions around what might be the causes of these increases in collisions and fatalities would probably be helpful. But to me it seems like we need to elevate the urgency of this.

MEMBER KISSINGER: Absolutely.

CHAIR WILKERSON: Bob?

MEMBER DENARO: I'm getting a concept, and I agree with it, that there is no focus on safety culture.

But I'm not at all understanding what's actionable. Are we talking about communication to transporters and drivers so they stop texting?

For example, what kind of authorities are there? We're not talking about designing highways differently or cars differently I don't think because that's moving along quite well. So what is the action here? What are we looking for that isn't happening now is my question.

MEMBER KISSINGER: Well, I think one thing without a question is simply raising the political priority for safety.

MEMBER DENARO: And what would happen if we do that?

MEMBER KISSINGER: More money.

MEMBER DENARO: That does what?

MEMBER KISSINGER: That implements long-term countermeasures. And in addition, there is a whole school of research that's based on changing attitudes and beliefs as a way of eventually affecting behavior.

MEMBER DENARO: Okay.

MEMBER KISSINGER: Now this is a somewhat, you know, nebulous sort of science in the sense that there isn't one thing you can do that's automatically going to lead to X, Y, Z happening.

MEMBER DENARO: So it sounds like a big communication, or there's a lot of messages.

MEMBER KISSINGER: That's a big part of it. And the big part of it is using normative communication as opposed to more traditional communication efforts which quite frankly is what the transportation safety community has almost extensively used throughout, you know, the last three decades.

MEMBER DENARO: Seatbelts and the like, right?

MEMBER SCHROMSKY: Communications --

(Simultaneous speaking)

MEMBER KISSINGER: It's targeted at risky behavior, however the best way --

MEMBER DENARO: So where I was going with this is we're really targeting the individual driver and trying to change that culture, correct?

MEMBER KISSINGER: Yes, and the organizational culture. It's not just the drivers. There's a misperception that the only thing we're worried about is getting the drunks off the highway and crazy people off the highway.

But a big part also is looking at organizations and making sure that they have organizational structures and they have a culture within the organization that enhances safety as a high priority.

MEMBER DENARO: But that still is done I think to the driver through the organization. Am I correct with that? What --

MEMBER KISSINGER: Not necessarily, no.

MEMBER ALBERT: It's more toward the organization actually first, if you can get that kind of battleship change in direction. Then it's really the driver. A lot of this is messaging, attitudinal, trying to understand risky behaviors so you can develop the right messages to go out that's going to affect change.

MEMBER KISSINGER: Well, one of my favorite anecdotes is Oakland County in Michigan which is one of the, well it's a fairly rich county, whatever, in that sense.

But for years the County Commissioner has said, has reported at a TRB meeting that every year he would come in and they would reinforce that safety was their top priority, and then the next day they would sit down and decide what they were going to do that year and they completely forgot that the day before they had said safety was their top priority.

And one morning he came in and said you know, we're going to change that. Every single major act that we consider we're going to say, what is the impact on safety within our jurisdiction? And they started doing

that.

And it was a revolutionary change in the way that what they took on and what they implemented. And it led to one of the lowest fatality rates in the country.

PARTICIPANT: That's a great point.

MEMBER GOODIN: I was just thinking about some of the public policy actions that could happen at the state and local level. I mean, is that what you're talking about too because I know when you say organizational culture --

MEMBER KISSINGER: Organizational policy enforcement.

MEMBER GOODIN: Yes, I think there's a lot of things that state governments can do that can influence from a policy perspective, different models at the state level can have an impact.

As I watch what's going on in Texas with the texting while driving, the municipal versus the state and they're having a special session right now that includes that topic.

But I was just wondering how that fits in and whether that's within the purview of what you're talking about because I think we're really, our recommendations are going at the federal level but there seems like there's so much that can be done at the state and local level.

MEMBER KISSINGER: I would say most of it has

to happen at the state and local levels. And when we talk about culture, we talk about, you know, within your family, within the groups that you work with, your social groups, your faith based groups, your community based, you know, community, city, states, and eventually the whole nation.

But most of it happens or will happen in small groups, not something that, you know, like the President kind of waives some magic wand and all of a sudden we're going to have a new traffic safety culture in the country.

But it involves all of that. I mean, it involves, you know, all of us can articulate probably within the community a long list of safety countermeasures that if we had more money or if we had more political will we could put in place.

Part of what we're trying to do is make that happen. And it really is an attitude adjustment. I mean, I've talked to many, you know, state safety engineers that have told me that they would develop a great strategic plan for increasing, enhancing safety within their state.

And it went to the governor's office and the governor decided he wasn't going to do it because we needed a new road down to the new Walmart because he had made a significant contribution to the governor's campaign.

MEMBER GOODIN: Well, to go with what Susan was I think saying is that I think there's a role for research

to play in this, that if you can get that research that's supporting the actions, then that's, there's a gap there I think in the knowledge at the state and local level.

MEMBER KISSINGER: Absolutely.

MEMBER SHAHEEN: We had a great presentation yesterday and it was about a lot of research is being done to send messages to either truckers or drivers or even peds with some kind of an alert.

And that to me seems to be very relevant to this committee given our focus on ITS. But as a researcher, what I immediately thought of was how the heck do you prove causality, right? That I got the message and then I reacted, and the accident was prevented or the accident was mitigated.

How do we capture that from a research standpoint? But that's what I'm trying to I get square in my mind is how do the recommendations around culture interface with ITS, technology and a potential research role?

MEMBER KISSINGER: Well one, I certainly think that, and I know Steve would agree, that a bulk of what has come out of all these discussions and data is we need to do more research in this area to better understand it and to come up with better countermeasures that can actually lead us in the path that we want to.

Now with respect, I mean, two things. With respect to your specific question, two things that immediately come to my mind are if we're talking connected vehicles, we're talking about technology that will provide warning to drivers which then require these drivers to be vigilant and to take action to enhance, you know.

And we don't, you know, there's an old saying, changing driver behavior is not rocket science, it's harder than rocket science. We haven't had very many countermeasures that have been good at doing that.

And that's part of what is inspiring the traffic culture safety movement which is very much based on public health theory. And a lot of the recommendations are saying, taking some of these theories and principles and practices from more of the public health community and implementing it in traffic safety.

And similarly, with respect to autonomous vehicles, and probably, you know, I would contend that one of the biggest debates are do we jump right over level two and three and go right to five where we don't need any driver interaction.

Or what happens when you've got the driver who all of a sudden has to wake up to situational awareness, be vigilant, and act. And changing those drivers' attitudes and all of their behavior is going to be actually

essential if, you know, these autonomous vehicle technologies are going to be successful in the future. And to do that, a lot of the --

(Simultaneous speaking)

MEMBER KISSINGER: You're not going to do it with the same old, same old. And to a large extent it was in the big picture this was motivated about, you know, if you go back six or seven years and we've been at a plateau of 40,000 deaths every single year, and a lot of us kept saying if we do the same thing we've been doing for the last ten years, ten years from now we're going to be at the same place.

So we really need to take a whole new look at what we're doing and a whole new approach, a whole new attitude. And that's in some sense what this whole traffic safety culture movement's all about.

MEMBER CALABRESE: We do a lot, I think, commercially. I know we contract for our employees, bus operators or rail operators. The culture, when we train them and we discipline them, you know, we have the sensors on the vehicles, hard right, hard turn, soft stop. So there are ways to do it I think corporately, I think really could lead the way here.

Also, when I change my auto insurance company, I put one of those things in. And it scared the hell out

of me. I thought they were going to, like, cancel me. But I got a 15 percent reduction rate.

Here's an example where something in that unit were plugged in said that I was driving safely or safer. But that feedback, my feedback, the feedback that came back to me was the fact that I got a letter from the insurance company saying congratulations, we're going to reduce your rate 15 percent.

But is there a way? There is a way. How do you provide that feedback back to the driver?

MEMBER KISSINGER: There are a lot of systems that do that --

MEMBER KISSINGER: And that won't scare the driver's parents.

MEMBER KISSINGER: Right. There are a lot of systems that do that either in the car or to the parent of the car, or back to someone in the corporate environment, like a safety official.

(Simultaneous speaking)

MEMBER SHAHEEN: Do those sustain behavior? Do you know, Peter? I'm just really curious. Like, the Zendrive and all of these types of, does that sustain behavior. Like, it teaches you what you did wrong --

MEMBER KISSINGER: This kind of feedback?

MEMBER SHAHEEN: Yes, do you know?

MEMBER KISSINGER: They work for teenagers. They don't work for adults. And they very much work in a corporate environment where you've got a fleet where you have, you know, a risk manager or a safety person that's reviewing all that information and enforcing it.

PARTICIPANT: Yes, they do a lot.

MEMBER KISSINGER: One of my favorite examples which Steve reminded me of when he was talking about Europe is again, in this country we know that speed cameras work, but politically they're a non-starter.

MEMBER SHAHEEN: They don't work.

MEMBER KISSINGER: In Europe they ran, there was a couple of experiments that they ran where they had a high crash location and every time, what they did was they set up a speed camera. And every person that went through that street got their picture taken.

If you were above a certain limit above the speed limit you were fined and your money was thrown into a big hopper. If you went through and they took your picture again and you were below the speed limit, you were put in another hopper.

At the end of the month --

PARTICIPANT: Did you get the money?

MEMBER KISSINGER: -- they took, like, a lottery and they took a name out of the good drivers and

they gave them the money that they had collected from all of the fines.

MEMBER QUIGLEY: Was this in Europe?

MEMBER KISSINGER: In Europe. It was actually, I think DW actually was the organization.

MEMBER QUIGLEY: Yes, I saw that video, yes.

MEMBER KISSINGER: Yes, and if you Google it, that will come up or whatever. It's one example, but it's clearly a very different approach than most everything that we've tried in this country.

MEMBER CALABRESE: It would be probably get 50 to 100 negative hits a day and probably 50 positive hits. We try and compliment the positive reactions as well. But importantly, the incidents of repeat offenders goes down considerably and we're coaching and training.

(Simultaneous speaking)

MEMBER KISSINGER: I mean, I think traffic safety culture is absolutely essential, and it's completely relevant to everything JPO's doing. But I do not envision that JPO is going to be, like, a lead organization within DOT to sort of make this happen.

PARTICIPANT: And it's a perfect multi-disciplinary-type focus.

MEMBER SHAHEEN: I think your comments about AV and that transition to AV are very important.

MEMBER KISSINGER: Absolutely.

MEMBER DENARO: I would suggest then that your recommendation is too soft. And I agree with you, I don't think the JPO, they're doing research in that sort of thing. But I think we need the rest of DOT and you mentioned this coalition and so forth, to have a little more "oomph" behind it to enact some of these changes. Otherwise, we just keep talking about it.

And you know, I'm just thinking about you're mentioning things that can be done, or are being done in Europe that you can't do here. Well, why not? Let's stop can't doing it. Let's find a way to do it.

Another example you just talked about insurance, you said based insurance and I was in that for a while. And what we found, like so many things in this country, all the states have their own rules what they could do. And what you were allowed to do in California was minuscule compared to what the insurance companies really wanted to do.

Someone needs to change that. And this traffic safety culture could put pressure on states like California who are restricting certain things based on some concept of privacy but that could actually save lives.

So it sounds like there has to be in an organization that owns this that can look at across the

board all the things that might be done and then go do something and enact it instead of just talking about it.

MEMBER ALBERT: Well, you'll be happy to know that Caltrans and the California Highway Patrol and California Department of Motor Vehicle are at the highest funders of this traffic safety culture.

MEMBER DENARO: Cool, all right.

MEMBER KISSINGER: As you eluded, these kind of technology feedback systems that Joe mentioned are illegal in California.

MEMBER ALBERT: There you go. And you can't track if a person's -- so you can't see if they're --

(Simultaneous speaking)

MEMBER ALBERT: I mean, there's all kinds --

MEMBER DENARO: -- comes in there. We see it in patient service. That --

MEMBER KISSINGER: Well, Steve and I, we're more than happy to beef up the recommendation.

MEMBER SCHROMSKY: Yes, they're not getting the take-aways.

(Simultaneous speaking)

MEMBER DENARO: I think we need to be a little provocative on some things like this. You know, even if it's hard to do and whatever, but we get to do that. We get to say things that are hard to do and you know, hear

what the Department of Transportation responds.

MEMBER CALABRESE: Someone's got to realize that 40,000 deaths a year is unacceptable. So in Ohio, three people die every day in motor vehicle accidents.

Now two deaths is a good day, and that's crazy. Okay? I mean, in our industry, unfortunately if we have a death on the bus, it's front page news. But we have a good day it's only two people died in highway crashes in Ohio. Different standards.

MEMBER KISSINGER: Many of the safety of these had, you know, taken a video camera out on the street and just stopped citizens and asked them questions like do you know how many people died last year in your state. And virtually no one knows the answer. What do you find that's an acceptable goal, and they have no idea or something --

(Simultaneous speaking)

MEMBER KISSINGER: How many people in your family do you think is acceptable to lose next year? That's the thing is to say everybody always says zero.

MEMBER DENARO: So in that example of the culture and most of the technology, we don't know about the tragic accident with the Tesla where the guy in Florida was killed, and that made news for a week.

That day, 99 other people died on the highway and no one talked about it.

MEMBER SCHROMSKY: Well, you had a brand name and you had a connected, an autonomous --

MEMBER DENARO: Well, the point is we're sometimes focused on the wrong things.

MEMBER SCHROMSKY: Yes, I agree with the recommendation. I think it's to your point a little bit further because you mentioned speed cameras, it's on the news today. DC raked in \$99 million in fines last year. In DC proper, since 2007, it's a half a billion dollars. So you as a citizen, in the guise of all-around safety. But in a lot of people's minds it's about revenue --

(Simultaneous speaking)

MEMBER DENARO: But I agree with you. I think one of the things I would want to tell Ken's group at JPO is, when we inject technology, what's the adverse effect? I talk to George about this all the time. I said you won't see me here on 395, but when you drive a lot of hours like I did, guess what happened? We had smart signage, people start slowing down, and then people, you know, start backing into each other.

As cars have gotten smarter and better and safer, people's speed has gone up. I would also wonder, and it's not a recommendation here but I'm curious on the statistics, what's the sampling of that data?

Are people getting older, or we have on that

aspect on that one pendulum. Or do we have more inexperienced or non-veteran drivers moving into that sampling that was the percentage the same just more people on the road and more people driving.

So these are all things that come to my mind, not that they're going to solve -- but I think one of the things taking your recommendation is as we inject more technology in there, to your point is it's a great example in Oakland County, safety should be a priority, right, because I think what we all want is the benefits, but there's also unfortunately unintended consequences that, you know, one of the things in California, one of the biggest complaints when everybody went with the hybrid vehicle, you couldn't hear the vehicle and pedestrian strikes went up.

I mean it was just things like that. So I think it's great. It's just, you know, my recommendation is traffic safety will be whatever as they're developing pilots or whatever it may be. As it was mentioned yesterday, they got in principles. I don't know, I haven't looked at that. Was safety one of those guiding principles? Right, on the MOD, you know, what was talked about yesterday, mobile -- I don't think I saw safety as a guiding principle.

MEMBER SHAHEEN: No. There's so many important

things that have to be evaluated in the context of MOD.
It gets lost.

MEMBER BERG: But if it's number one, it should
be number one.

MEMBER SHAHEEN: This has been incredibly
informative, Peter. I mean, my thinking is that the
urgency piece, if we could somehow convey that, you know,
maybe through some -- a couple of data points and maybe
put a little bit more oomph into your recommendation,
because I think we've already talked about like the
unintended consequences of technology, you know, making us
feel safer than maybe we should, for example.

So now how do we morph the recommendation to be
more actionable maybe or more urgent?

MEMBER KISSINGER: Okay. All right, we can
make that happen.

MEMBER SHAHEEN: Great.

MEMBER ALBERT: Or you could also take that
very sort of theme in the introduction to this document.
Technology is changing faster than it ever was. People
are dying at a faster rate. And maybe set the stage for
urgency rather than just in one small area.

MEMBER SHAHEEN: Yes.

MEMBER ALBERT: Any other questions about
traffic safety culture? If you want any written stuff, we

can send it to you if you'd like.

CHAIR WILKERSON: I think it might be helpful if each of the committees maybe puts one bullet that sort of highlights that.

MEMBER SHAHEEN: Yes.

CHAIR WILKERSON: You know, like what's at the real heart of what you're asking that we can maybe put in a box or something like that.

MEMBER ALBERT: An inset box.

CHAIR WILKERSON: Yes, just something like that, that just sort of hits home.

MEMBER ALBERT: While you were reading this, five people died.

CHAIR WILKERSON: Yes.

MEMBER SCHROMSKY: Because I think to your point, you know, we mentioned before how many deaths on the highway. Well, local barracks, the Maryland State Police barracks used to put how many people are killed on the road. It's far from how many people how many people OD'd on opioids.

So, you know, from a public health, I mean, you're in a kind of battle. I mean, that's just a simple thing you would see. These are how many people die on the road. Now, it's actually how many people have died --

MEMBER BERG: But that's brought to the public

discourse because of the health thing?

MEMBER SCHROMSKY: Yes, but in kind of just a simple --

MEMBER KISSINGER: It's back to the culture, because again, I mean, if you know, some drug company tomorrow came out with a new drug that could reduce some illness by 5 percent, it would be a front-page story. I mean, why wouldn't you agree?

If some traffic safety community comes out with something that would have the same impact, they'll be lucky to get it on the business section on page three. And that's just, you know, that's the culture that we take for granted and unfortunately, we have this sort of sense of complacency about it, you know.

PARTICIPANT: Maybe Nat's the guy to --

CHAIR WILKERSON: Yes.

PARTICIPANT: -- rather than Ken, because that's really what they're supposed to do. Right?

MR. SMITH: Yes, I think the discussion we've been having here, it centers around NHTSA and so it would be good to have NHTSA --

CHAIR WILKERSON: Get his thoughts on it.

MEMBER ALBERT: NHTSA and law enforcement.

MEMBER KISSINGER: NHTSA clearly is leading --

CHAIR WILKERSON: The charge on it.

MEMBER KISSINGER: -- the Vision Zero coalition at this point with the National Safety Council. I mean, FMCSA and FHWA are all involved, but NHTSA clearly has the lead.

PARTICIPANT: I thought you could get Deborah Hersman to come and talk to us about the safety culture.

MEMBER ALBERT: I think, you know, because safety culture is about attitudes and messaging and changing behavior --

CHAIR WILKERSON: You know, with the Road to Zero.

MEMBER ALBERT: Yes, there's a lot of people who can kind of do it ad hoc and then they don't even evaluate what they're doing to say whether it's effective or not. And one of the things we might want to put in here, Peter is maybe beef up the research evaluation language as well.

So we understand that things are replicable based on the settings, not just because you're using the same words in the same place or the same message or public information or whatever.

MEMBER KISSINGER: Yes, I mentioned a little while ago that we have a long list of countermeasures that we know work, but I would also contend that those of us that have taught traffic safety culture, there's a lot of

things we do that quite frankly we know don't work and yet politically we're unable to stop doing those. And evaluation is actually key to all of this.

MR. SMITH: And as on the evaluation, he said he got some piece that JPO could actually chime in on. We do support a lot of the efforts that NHTSA does in terms of human factors as well.

MEMBER ALBERT: This group has also done a lot of the evaluation relating to marijuana as well. I mean, they haven't sat around and sort of got high.

PARTICIPANT: Impaired drivers.

MEMBER ALBERT: Impaired drivers, yes.

CHAIR WILKERSON: Any other comments? Thank you so much for that.

PARTICIPANT: Thank you, Peter.

CHAIR WILKERSON: So I think one of the take-aways was, you know, adding that urgency component. If there's anything else, let us know.

So we are at 9:30. We're a bit early. We can take our break now or we can move on to the connected and automated vehicles to start. What would you like to do?

PARTICIPANT: Keep moving.

CHAIR WILKERSON: Keep moving? Okay. Why don't we go ahead and move to Connected and Automated vehicles.

MEMBER BERG: Here's my presentation. Okay. I intended to initiate the discussion with telling you what we planned on doing, what we did and the results of it in the handout. There should be fruitful discussion based on the results of the subcommittee since the April meeting.

So just a review of what we decided the results of the subcommittee was, you know, here's the intended outcomes. We're going to look at the intersection of connectivity in our nation.

In the general process of the JPO research, they're kind of separated, and we think as we move forward, maybe not this year, but maybe next year or year after or year after that that the idea of a synergy between connectivity and automation ought to become a more prevalent topic, so we thought we'd take a look at that now.

So what we did was looked at the ITS strategic plan proposal for the research initiatives and programs and kind of the incentive behind what the research program plan looked like and then do kind of a gap analysis and a prioritization, so both at the same time.

So we are looking at what was planned for the JPO, said are there anything, you know, here's what they're planning on doing. How would you prioritize that?

And if they're not planning on doing something

we think is important, we ought to stick that in the mix of what should be prioritized and what should be studied.

And then consolidate or cross-populate between the different modes, light vehicle, commercial vehicle and transit. And then you guys can read the methodology clearly summarizing the plan document, review, conclude the recommendations, document the results for the committee review here and that includes a pending concept. Next slide, please.

So here's kind of a timeline. Sheryl has mentioned this before, the intention from the April meeting was to summarize the strategic plan because I don't know if anyone here has the time to read it in detail or, you know, think about what its contents were.

So John and I decided to do that to do that kind of on ourselves and present that kind of a summary document outlining the basic tenets and the basic structure of the strategic plan and then identifying what parts in that strategic plan actually have a specific context of connected automation.

So we did that and provided a review and we analyzed through a conference call and then I summarized the results of the conference call and then we had some follow up by some of the committee members who couldn't make the conference call and that's what I'll present to

you today.

The intention then is to, you know, talk to you all about whether you agree with the results of the subcommittee and if we should change or add anything or change priorities or things like that, so it's more the committee at large, and then plan the submission based on those results for the advice memo. Next slide.

So as I mentioned, we took the strategic plan and I went through all the context, 120 pages or whatever it is, and tried to extract the specific instances where this blending of connectivity into automation was explicitly present.

And primarily that turned out to be in the research questions. There may have been a mention or two in the narrative, but really the specific address of the concept of connected automation was really outlined in the research questions.

It's hard for you to see, but in the bottom right, there's a couple of the figures that are directly extracted from the strategic plan that include questions related to connected automation.

And we think that that sounds good, because we think the research questions are one of the best, if not the best ways, to direct research programs and definitely, we think strategically or annually, these research

questions should be reviewed.

And specifically the context is, are there programs in place that are trying to answer these research questions strategically or are we neglecting some of them?

Have the research programs created new questions that are going unanswered that we think maybe ought to be reprioritized based upon things that the Joint Program Office or the Department of Transportation have learned as a result of the preceding research?

So one of the recommendations I think we have is that we look at the approach that JPO takes towards answering the research questions that they have indicated are a priority and then kind of documenting how those research questions are being answered by attaching them to specific research programs like connected vehicle or connected vehicle pilot or some platooning, you know, research program.

So I think that one of the results of our research that -- or one of the results of subcommittee activity that I think is relevant to putting on a recommendation and maybe that should be done every year and perhaps even these research questions compared with the results of a, you know, TRB conference on connected automation or the AVS conference or the SAE Government Meeting so that we can kind of recalibrate, you know, the

five-year strategic plan, a lot of things have changed. If we have time, I can talk about some of that.

So I think we should, you know, kind of continually update and feedback where those priorities should align based on our collective know-how and assessment of really where the industry is going from a private sector, from a public sector and from academia.

So one of the outcomes, and Ken talked about this, and I think the committee at large has talked about this before is if there were unlimited resources and money, you know, we should probably do everything that's listed in the strategic plan.

So one of the intended outcomes we had of this subcommittee meeting was to address what we thought, or not address, prioritize what we thought was the original direction of the Joint Program Office. And instead of saying, you should do this, you shouldn't do this, you should this, you shouldn't this, was a prioritization.

So we understand the limitation of money, and we understand the limitation of people, and so we thought prioritization was a better thing to do than just make open recommendations.

MEMBER DENARO: May I address?

MEMBER BERG: Yes.

MEMBER DENARO: Quick question. Do we know if

there is -- I wouldn't say it if, I don't know if it exists, is there a mapping between all the -- because there are a lot of research questions in here. Is there a mapping between the research questions and the strategic plan and the programs that are being done by the JPO?

It would be kind of interesting to see on one axis all the questions. Up here we have the research program and which ones are we addressing and are there any gaps? Do we know if that exists?

MEMBER BERG: It's not apparent to me, and I did quite a bit of looking.

MEMBER DENARDO: I would like to do that.

CHAIR WILKERSON: So there's all these research questions?

PARTICIPANT: Yes, yes.

MR. SMITH: No, it does still exist. The research questions are not to the existing six program areas. We've been trying to look at how we can do some of that drill down.

We actually have a subcontractor, a consultant that has been trying to work on that for the past year actually to get a better drill down in terms of how these research questions that should be leading to some sort of outcomes do tie back to the actual program of what we've been delivering on a yearly basis.

That's kind of a work in progress, but we haven't been very successful in tying it together, because the, I guess, the research questions were developed to sort of lead towards that, but the outcomes aren't that clearly defined in the strategic plan.

MEMBER DENARO: I mean, I think it'd be just a little exercise and I certainly wouldn't want to do that, now we're in the department. But it's okay that some research questions established four years ago may no longer be relevant to where -- or whatever. I mean, that's okay.

In fact, my understanding is that and I forget what the forum was, but somebody from the DOT was asked, gee, '19's coming up, are you working on the next one. The answer was no. There will not be another strategic plan in that instead every year it's going to be updated, so it would become kind of an annual update process, which is fine.

MEMBER BERG: I'm not saying that's a bad thing so because of that, maybe this group should be reviewing that annual plan --

MEMBER DENARDO: Sure.

MEMBER BERG: -- to see whether it's moving in the direction that the industry thinks is the best, you know, from our collective knowledge and background, whether it's moving in the right direction or is there some

extraordinary pull from some faction or factor that we think is inappropriate. And I think that's the kind of thing that Ken's asking us for.

MEMBER DENARO: We give them a strategic plan as well as our explicit charter items in the legislation, and I'm not sure we spend enough time doing it. I agree.

MEMBER BERG: It's hard enough to get people for a one-hour conference call.

MEMBER DENARO: I know. Yes.

MEMBER BERG: So that's why we took it upon ourselves to kind of at least summarize so there are 128 pages, but there's an outline. And if you really need some -- it's kind of like what we talked about --

CHAIR WILKERSON: Yes.

MEMBER BERG: If you really need some more background information you can go back to it and read it yourself.

CHAIR WILKERSON: So is there an action item out of this other than the recommendation? No?

MEMBER DENARO: Well, I think that we should just note, I mean, if this becomes a recommendation that JPO create a mapping of current programs to research questions.

You know, if it's not there yet then work on it, fine, but you know, maybe we want to emphasize that

just a little, so let's just take a note on that and use that as a recommendation.

MEMBER BERG: And I agree with that and I think that annual recalibration is important because things change. We learn so --

CHAIR WILKERSON: Right, with a mid-term review of the --

MEMBER BERG: -- much and it could be on automation. Things are happening every day.

MEMBER DENARO: Exactly. Big time. Yes.

MEMBER BERG: Yes. Okay. So next, we can go to the next slide. It's looking at kind of the results. So on the left is the reference so that the tables are where the research questions were explicitly expressed in the strategic plan, and we corrected the eight instances where they were, you know, the idea of connectivity and automation and the combination was specifically addressed.

Now, the strategic plan itself kind of has a dual kind of thrust theme-wise so whether it's a connected vehicle, I think it's called deployment or implementation.

You know, the other thing is about the research phase of automated driving. And remember this was written in 2015, not 2017 so part of the evolution of this idea of connectivity and automation and the defining of those has evolved from 2015.

So I don't expect that, maybe the emphasis that was originally planned for 2015 isn't necessarily in place or correctly calibrated now, and that's one of the reasons why it was under advisory of the annual review are one of what are the access points.

CHAIR WILKERSON: Very good.

MEMBER BERG: So in summary, there's a little description of what the research question was and the -- I can't read the red, but red means low and we can't really tell the difference between the E's and I's down in the green, but that's kind of a color code about the explicit description of connectivity in automation in combination or in tandem that was mentioned.

And so we convened five people maybe, Ginger, five people that discussed this on our WebEx, and these were the prioritizations we arrived at with kind of a justification of why we thought some were more important than others.

CHAIR WILKERSON: What was the rationale on the last two, the low? Just I'd be interested to hearing your thoughts on the two --

MEMBER BERG: The low?

CHAIR WILKERSON: The lowest.

MEMBER BERG: The question was, how was the natural architecture evolved or how has. Do you think

that's wrong? Or have I copied that how it's supposed to be? If so, I apologize for that.

So the natural architecture is pretty much focused on the connected vehicle background and all the use cases for connected vehicle and how the architecture and the implementation of architecture revolves around those particular use cases.

So I think, our conclusion was that maybe that's not complete yet, so if we wanted to add the complexity of adding more automated vehicle technology or use cases to that architecture, it may complicate things even more than they are already.

So I'm not sure that that's -- there are other things we thought were more important to determine than kind of the nitty-gritty of is the architecture, does it fulfill the needs of connected automation when we didn't even know what the benefits for connected automation were.

CHAIR WILKERSON: Okay.

MEMBER BERG: The role of the international collaboration is, you know, kind of before you start to -- get your own house in order before you start to tell other people what to do or collaborate with other people.

CHAIR WILKERSON: Okay.

MEMBER BERG: And again, like we said this morning, it's not like any of these shouldn't be done, it's

just which are more important at this stage of the industry's knowledge base.

CHAIR WILKERSON: Right.

MEMBER BERG: And that's one of the fundamental principles that we did in the subcommittee is let's prioritize what's already in place.

CHAIR WILKERSON: That makes for a good bullet too for us to put at the forefront of your section.

MEMBER QUIGLEY: What's that?

CHAIR WILKERSON: Just about the prioritization.

MEMBER BERG: You understand we can't do everything, and there's a lot of things that should be done and we want to be done, but let's make sure that most important --

CHAIR WILKERSON: Egan has a --

MR. SMITH: One quick question, so in the National Architecture, that's seen as a lower priority?

MEMBER BERG: Yes.

MR. SMITH: Because we have been doing some work in terms of introducing CV to the National Architecture overall.

MEMBER BERG: That's understood. So that's the Connected Vehicle program. This subcommittee acts under the context of the blending of automation and connectivity,

so we didn't -- while it's maybe really important to connect each vehicle domain to us, in terms of the way it's connected automation and combination work, we don't think it should be as high priority in the context of what we're trying to achieve with this.

MR. SMITH: Oh, okay.

MEMBER BERG: And maybe that's one thing that I ought to talk about in these other comments. So a lot of people, you know, talked about defining terms, so what does connected automation entail?

CHAIR WILKERSON: Yes.

MEMBER BERG: I think I mentioned it yesterday, but in the mind of the subcommittee, it's about cooperative automated behavior, so that means not necessarily a Google car driving down the street with, you know, operating in the context of human-piloted vehicles. It's about cooperative behavior due to this connectivity.

MR. LEONARD: Due to the connectivity, the automation is allowed to be connected to the other vehicles, so it's more of a system.

MEMBER BERG: So a very simple example is platooning or cooperative ACC.

CHAIR WILKERSON: That's a good point.

MEMBER BERG: But, that's not the only one, but that's something that people can wrap their arms around.

MR. SMITH: Right, and I think I mentioned this yesterday, but it's key to make sure you kind of define that sort of information, especially when you're sending it to an audience that is not familiar with that.

MEMBER BERG: Yes, that's not in the middle --

MR. SMITH: Yes.

MEMBER BERG: Another example could be eco approach and departure from a traffic signal. So it doesn't necessarily have to be inter-vehicle connectivity, but it could be infrastructure to a vehicle.

MR. SMITH: So it's more or less the automation being allowed to respond to the information that it's getting due to connectivity.

MEMBER BERG: In part.

MR. SMITH: Yes.

MEMBER BERG: So for platooning, for example, you operate off a blend or a fusion of onboard sensing and communication awareness or connected awareness.

MEMBER DENARO: Sweden just implemented something they've been working on for about 15 years, which is slippery road project, where vehicles will report ABS events in cars that indicate slippery road then it goes to a server and then it goes back to all the other cars in the vicinity of that, which works now, but also would be important for automated vehicles too so that they know the

road conditions ahead.

MEMBER BERG: Yes. We don't talk too much about that in terms of a lot of stuff like that, but the idea of independently operating automated vehicles is actually, to the people who think about it, kind of scary.

There is so much stuff that you don't even know about, and it's okay maybe if one vehicle, you know, bumps into another one, but if you have a train of automated vehicles or a cluster of automated vehicles all operating independently and only serving their own needs, it may actually be counterproductive for the transportation system as a whole --

MEMBER DENARO: Well, you have these --

MEMBER BERG: -- it's probably counter-productive.

MEMBER DENARO: Even today, you have these, you know, hundred car pileups on the Pennsylvania Turnpike or something, and the problem is that the human can't see that in time because it's over a hill or whatever, that same problem might exist for independent cars because they're line-of-sight limited as well.

MEMBER BERG: Exactly.

MEMBER DENARO: Unless it's radar looking through fog. So some of these events might not be mitigated by automation and get the idea. And to your point, it

could be worse, because they're all together.

MEMBER BERG: Yes.

CHAIR WILKERSON: Does any of the prioritization that's going on when they had those example where the cars were in the city, where the cars were actually allowing each other in based on priority or --

MEMBER BERG: Yes.

CHAIR WILKERSON: Does that weigh into this topic or --

MEMBER BERG: Sure.

CHAIR WILKERSON: Because I've seen successful stories about that, but you raise another perspective.

MEMBER SCHROMSKY: I've got a question. I don't know if Joe -- and this may be unrelated also. You talked about connected vehicles and one of the points I thought was very interesting, you mentioned transit.

MEMBER BERG: Yes.

MEMBER SCHROMSKY: And you would think that there would be more automation in transit because it's a fixed, defined route every day. But they're really, none of it is in airports, right, that actually there's no conductor here; as a matter of fact, I've seen that Disney doesn't even have it. I know the University of West Virginia has it today in their people mover.

There's not a huge automation. If you look at

unfortunately the last two major crashes, the Amtrak in Philadelphia and the Long Island Railroad, that was all due to the conductor, he or she, one blacked out and the other one was going at too high a rate of speed out there.

You would wonder, you know, that hasn't changed in 60 years in some of these cases. You're still seeing low adoption. I don't know.

MEMBER CALABRESE: That rail system went into effect probably 20 years ago, as a driverless rail system and everyone thought that would be the first wave because, again, the route is fixed, the tracks are set.

I was in Copenhagen a few weeks ago. Maybe the only other driverless train system is in Copenhagen, except for the ones you see in almost every major airport. And one of the major issues is unionization.

MEMBER JOHNSON: Exactly. ATU would never --

MEMBER CALABRESE: The unions obviously are very much --

MEMBER JOHNSON: ATU would never allow that.

MEMBER CALABRESE: -- very much against that, because it costs them shop. But, the truth is I think in most of our cities even if there isn't an operator in the cab, you still need customer service people on the train.

MEMBER JOHNSON: That's right. Security.

MEMBER CALABRESE: And in a rail situation, the

risk of something happening is low, but if it does happen, the situation is a mess.

MEMBER JOHNSON: Right.

MEMBER CALABRESE: So you really need to have at least a representative there to handle that emergency and why not it be the operator. But, the union opposition has really been I think the main pusher.

I think with the whole discussion of autonomous vehicles, discussions are arising again on that. One of the big issues in the industry, you know, has been because of the accidents you've mentioned, adding additional safety precautions, much easier on a controlled, independent system like ours where you sense the train in front of you.

PARTICIPANT: What about the train controllers?

MEMBER CALABRESE: But, when you're talking about sharing track with Amtrak and Conrail, that's where it becomes much more difficult. But, yes, you would think we would see more of that, but we just haven't. The main reason is the reluctance by the unions to accept it. But, the risk --

MEMBER JOHNSON: Oh, I'm sorry. I was going to say that's paramount with any type of technology, as we move away from traditional diesel vehicles and look at different propulsion systems.

At my agency, we've invested a lot in battery/electric propulsion systems for new buses and so forth, and the unionized environment relative to somebody who's been in the industry for 35 years who's been working at the agency, they're losing his or her job. They're using automatic passenger counters, APCs, as opposed to people going out to a time point actually checking how many people are boarding.

You'd be surprised. We are still so antiquated in a sense because so many people looking at the model from back in the '50s where this a "middle-American" job, a middle-class job rather, and you can leverage that to have this life that everybody believes they're entitled to.

MEMBER CALABRESE: So I think a lot of it is perceptual as well. When I talk to people about the train without an operator, they say, oh, my God.

But then, I say, well, haven't you been to the Sanford Orlando Airport. Oh yeah, it's the same thing. It really is. I mean, it's smaller, it's shorter, plus you can't -- but it's the same technology.

MEMBER SCHROMSKY: Because I mean most of the accidents you see are actually the driver, he or she cannot see, right, because somebody's getting, what just happened today, get dragged along, but you could have a kill button

when they found out.

I know you saw that incident, they hit the emergency stop and it didn't work. Well, there's a reason why which I thought was very interesting, and you would think, you know, as I was just walking to the Metro going here right now.

MEMBER KISSINGER: Well, the local Metro was designed originally to have no operators. They did a big risk assessment, and they said what happens in an emergency. So they decided they needed to add an operator, and then they wanted to keep him awake, so they decided to let him open the doors.

And they ran with an automated system for years until we had a crash, and they haven't been able to fix the technology since. So it's run manually now.

MEMBER JOHNSON: And that's a safety measure for the BART system in the Bay area, because BART and here in DC in the WMATA system, they all came up in the same time in the mid-'70s with the Army Corps of Engineers, and that was the whole aspect, that perception that no one is in control.

CHAIR WILKERSON: Interesting.

MEMBER SHAHEEN: And that's why we can't replace those jobs.

MEMBER JOHNSON: Exactly.

MEMBER SHAHEEN: You have to create a whole brand new system for it to be jobless or operator --

MEMBER BERG: Social structure may change if you start to see regular every day vehicles driving without pilots.

MEMBER SHAHEEN: I agree.

MEMBER CALABRESE: I stood there in Copenhagen for a long time, because I mean, none of the customers getting on and off seemed concerned there was no operator. I mean it works, so it's somewhat perceptual.

MEMBER SHAHEEN: You guys -- sorry.

MEMBER CALABRESE: Different safety, but again, I don't know if it's that --- it's still a lot safer than that out there, and that is the big key. The big key is if we want to enhance traffic, vehicular safety, get more people on public transit.

MEMBER DENARO: One of the most exciting conferences I've been to was something called Transpo '72. It was 1972 and it was all about automated transit and a lot of what we're talking about here, you know, there's a lot of things and so forth like that that never materialized.

But a lot of it was automatic control and driverless and operator-less and so forth, and it's kind of considered one of the jokes around that, dude, we took

a look at it back then and then we did nothing.

MEMBER KISSINGER: I just have a question for Roger. I'm not sure if anybody is, which is I mean, connected vehicles sort of grew as a silo.

MEMBER BERG: Yes.

MEMBER KISSINGER: And then sort of automated vehicles seemed to develop a sort of, another silo. What's the state of Practical today, I mean, have they effectively been merged?

MEMBER BERG: No. The context that I mentioned the two examples of platooning and like eco approach and departure from a signalized traffic intersection, there's a little bit of maturity, not in avoidance systems, but a little bit of maturity there in terms of the capability and the usefulness. We'll talk about it in a second about platooning.

MEMBER DENARO: My opinion is that we're still in the infancy of that merging. And one of the problems was Google, you know, GM and Ford saying, you cannot have automation without connectivity and that's going to happen, and they're committed to that. Not sure exactly what that means.

Google and some others have said, no way. We'll use it when it's available, but we can't depend on it. We can't have automation dependent on communication,

because we don't have communication everywhere. And if we can't have it anywhere then we can't depend on the need to be autonomous with no communication.

So there's a little bit of a debate going on, and I think that will all mature over the next couple of years when we figure out what the benefits are and where you need it and when you need it.

MEMBER BERG: That's one of the reasons why the second line item is high, whatever benefit.

PARTICIPANT: What are the benefits?

MEMBER SCHROMSKY: I mean, one of the benefits as we know, I mean every new manufactured car out here is connected one way or the other, enough to ease in there. Right?

So if you're a Tesla or anybody else, and to your point, anytime we want to push a software update, they're doing it on their dime and through their connection, but it's sending that data in real time. Right? So it's a temporary issue when you're in the garage or something, but if it's real time then maybe that doesn't always work.

MEMBER BERG: We know it doesn't work all the time.

MEMBER SCHROMSKY: And we're not going to have connectivity as big as we are, but you're not going to

have connectivity, where I think it's just like anything else, just like on your phone. Right?

You're going to get that software update when you want it, wherever it may be, and it could be over Wi-Fi, it could be over cellular, it could be over different things out there.

MEMBER BERG: So this was kind of the teleconference output and not all the subcommittee members were able to attend, so what I did was follow up with a kind of a request from the other membership, and we had some feedback independent of the teleconference that I'd like to also present. So if we could over there next.

So Susan took the same set of research questions and provided her own kind of prioritization. So there's some similarities, that's, you know, kind of a collective together, and some differences, which I think we as a committee at large should look at and discuss. If you can go to the next one.

In a similar case, Bob put together some of the same kind of rating system and justification for that. Some weren't changed and some are, you know, very similar, but one thing Bob talked about and you mentioned this already is the idea of connected automation being a commercial vehicle platoon.

So we added an area that we might want to

recommend inclusion or emphasis on in the JPO research plan and technically may already be there with some of the maybe not correct JPO, but some of NHTSA or FHWA research projects are already underway.

But, I think it wasn't mentioned as explicit in the strategic plan, and it may get tricky and maybe as Bryan and Joe talked about, transit as well.

How could, not just what are the benefits from establishing connected automation, but are there different benefits in different multimodal sectors, which I think is a role for JPO to decide.

MEMBER DENARO: Yes. Let me just go on about that. The strategic plan was surprisingly quiet about commercial vehicle applications, and I don't know if there's a political reason for that or not organizational reason.

And maybe that's all the visibility there was at the time the plan was written, but in the last 18 months, the interest in commercial vehicle automation is just skyrocketing.

I think one of the reasons is at the end of this year, we're going to have automated vehicles or connected vehicles on the road in this country and also in Europe.

So it's getting an increased interest. One

metric of that was in last year's automatic vehicle symposium, there was a breakout session on trucking automation and 50 people attended. This year, we had another breakout on trucking automation, 120 people participated.

So our progress has been increasing 20 percent, you know, it was well over 100 percent interest in trucking, because it's getting closer to deployment.

And one of the concepts there, which I happen to know was a recurrent amount of time, is if you look at why the owner's companies who's doing an add-on solution for that, which is Peloton, and they say they're going to be on the road later this year with two-truck platoons, their solution must have communication.

And I don't just mean between the vehicles, they're going to a server and so forth. They have basically what they call a network operating center, and it's going to be managing those trucks as they're platooning.

And part of this is coming because they've been in discussions and negotiations with various state authorities and so forth to be able to operate and be licensed for their customers to operate in a platoon in those states.

And part of the concern is that when you think

about a platoon of 18-wheelers and okay it's only two at this time, but sometimes it's going to be longer, that's going to be rather daunting to people driving along in their little, you know, BMW mini or something.

CHAIR WILKERSON: No, they're going to want to get behind it.

MEMBER DENARO: That's probably the truth of it, but even the bigger problem is --

PARTICIPANT: -- look like a snowman.

MEMBER DENARDO: -- how are you going to get on the highway and off the highway if there's this huge platoon come along. So what the server's going to do is manage these guys. It's almost like air traffic control.

And first of all, they will not allow the platooning when you're in an area with a lot of entrances and exits. You just got to break it apart and so forth.

And then secondly, when you are on a long stretch of highway and there's always a highway where this happens, and you come to an exit, the vehicles will automatically separate and allow for a path between them, either cars entering or cars exiting the road.

And this all has to be coordinated by this network operating center, so like I said, it literally almost is like air traffic control on trucks. You probably can't do that, at least in this country, with consumer

vehicles, but you certainly can implement this for commercial vehicles if you want to.

And that, through traffic safety culture, if we've got this kind of monitoring of commercial vehicles like that when they're platooning and all, that's going to hopefully immensely increase the safety of that operation too.

So it's kind of interesting to me that when it comes to commercial vehicles, we may find that communication along with automation is going to be mandated and essential. And that is very interesting in what that might lead to eventually with passenger cars as well.

CHAIR WILKERSON: You might want to look at the SARTRE project, the SARTRE Volvo, you've seen that video where they actually -- it came out about seven years ago, but they actually talk about that issue.

So some of those issues may be resolved at the consumer level, not at the commercial level, but the regular vehicle level.

MEMBER ALBERT: We have a pool fund like study that's being kicked off with a whole bunch of car and truck manufacturers, and it's all focused on the driver, not the vehicle as much, but how the driver and when you look at from a workforce development perspective, if the industry is 50 percent down in terms of the number of drivers that

you have.

So can automation help or can it hurt, you know, vehicle operations, driver performance, as well as in moving from facility to facility. And I'd love to share that with the rest of the group. I'll send out a flyer when the next one is --

MEMBER BERG: I think that's why commercial vehicle connected automation is thought to be so provident is because of the economic impact it could have. Part of it is fuel savings, the other part is driver load, so a lot of times the freight movement has to do with how long a driver can drive.

So there's a little bit of research. And we talked about this, if you're in the second or third or if you're in a platoon, is your cognitive load enough?

Could you reduce the number of hours by a factor? Maybe it's not 100 percent because, you know maybe you're steering or you have to pay attention, but could you actually allow that driver to be on the road for more than eight hours?

And that significantly improves freight movement efficiency as opposed to having them sit on the wayside, you know, because he has eight hours or whatever, however many hours it takes.

MEMBER ALBERT: It's interesting --

MEMBER BERG: So it's ripe for a lot of research.

MEMBER ALBERT: Roger, when we've been talking to all these different trucking firms, including Walmart, who's very interested in this, because they could see that, you know, that 10 percent of them can get is going to help them.

But, the biggest issue quite frankly is the unions, that they are beginning to understand that this may take away jobs.

MEMBER BERG: Same as our issue with public transit.

MEMBER ALBERT: Yes, and it's the same story, just a different stage.

MEMBER BERG: So maybe there needs to be some education and that could be part of the research, because it might actually be beneficial for the union.

There was some discussion last week about there being -- the train industry now has 200,000 drivers short, and they predict in another ten years it's going to be 400,000 drivers.

MEMBER ALBERT: Yes, 50 percent.

MEMBER BERG: So how do you expect an efficient movement of freight when you're half the number of people that you need? What are you going to do? You can't just

say, we're not going to move the freight.

MEMBER SCHROMSKY: You know, one of the things that's to your point previous, which I thought was a pretty good on your list there, you reference, for instance drones, UAVs, but also you mention a reference to SmartGrid. Right?

So this has been going on more on the grid, right. If it's Pacific Gas & Electric or Dominion Power, this has been done. And I think, which is interesting you bring this up and it's in my background is that difference between automation and connection. Right?

Because, you know, there was a time when somebody came out with an engineer. Right? They needed a connected meter, meaning somebody drove and actually drove through your neighborhood. The person's not there anymore, which it was a union job or it may be the vehicle is not there anymore.

Now they've actually in most cases put cellular on there and actually they can get the real-time data. What does that mean? Better response times. It's a more economic driver. There is security credentialing because it's infrastructure.

And then when your power goes out, you know, your phone goes out to some extent because there's no copper anymore, so you don't draw power off the line. So

now you can't dispatch resources and everything else out there.

So I think it's interesting that you mention that with certain industries, because I think what people don't realize is it's connected and then leverage the connection. I think people don't --

MEMBER BERG: Right and that's part of the reason why, you know, this is a really high priority, the research question. And everyone has to --

CHAIR WILKERSON: So just for a time check, we'll have our break at 10:30, and then Nat will be here shortly afterward.

MEMBER BERG: So let me just raise one more point, Sheryl and maybe then we can take our break.

CHAIR WILKERSON: Go ahead, Roger.

MEMBER BERG: So what I have done here is summarized the WebEx results. Susan's input and Bob's input. So two points I want to make. One is that everyone agrees that there's consensus on this research question as being a high priority.

Maybe Susan can explain this, but there's kind of consensus on, well, consensus up to vote, of these being low and then the addition of commercial vehicle that maybe Joe can talk about the --

CHAIR WILKERSON: That's great.

MEMBER BERG: -- independent of the cross-modal impact like transit.

CHAIR WILKERSON: That's awesome. Can we start back with this after we have --

MEMBER BERG: Yes, we can.

MR. SMITH: This clearly shows the need for us to be updating our strategic plan on an annual basis. As you indicated --

CHAIR WILKERSON: We should maybe put this chart in our recommendations, maybe do a Committee version of it. You know what I mean, maybe get the others --

MEMBER BERG: Next time we can see this, but this is a stakeholder prioritization.

CHAIR WILKERSON: Yes.

MEMBER BERG: So this is connected vehicles. This is automation with emerging capabilities, enterprise data, and interoperability.

CHAIR WILKERSON: Yes.

MEMBER BERG: So in 2014, everyone was about connected vehicles and interoperability. Two-and-a-half years later, this is probably, if you took the same survey, this would be way up here. People would be like, eh, connected vehicles. Everybody's data would probably be way out here.

CHAIR WILKERSON: We might want to use our

chart, but also referring back to this chart, you know, do some sort of comparison. It doesn't have to be perfect, but we can say based on our assumptions, we think the matrix would look a little bit different if you did a mid-term review of the strategic plan.

And I think it helps suggest what the JPO might need additional resources for. At this juncture, it might be evaluation of the resources and needs to address the change again. And also is it justification for going maybe to a one-year strategic plan.

MEMBER BERG: I wouldn't call it a strategic plan, a one-year plan, because it's not really strategic if you do it that frequently.

CHAIR WILKERSON: Yes, no I agree. I agree. Good point.

MR. SMITH: It needs to be more agile, so that we can actually operate research questions

CHAIR WILKERSON: So do we need to add another subcommittee to this, no? Are you sure? Do we need to add to that? I mean, you did three of the subcommittees, right?

MEMBER SHAHEEN: Yes, yes.

CHAIR WILKERSON: So I was wondering if we needed to add -- maybe not. So it's been -- what did your chart include? Did it include rural?

MEMBER BERG: No. This is connected automation.

CHAIR WILKERSON: Okay, I just wanted to see. Okay, thank you.

PARTICIPANT: Where is transit? Is transit --

PARTICIPANT: No, I think he said --

(SIMULTANEOUS SPEAKING)

CHAIR WILKERSON: Why don't we take a break, because they're going to take everything away around 10:30? Okay, thank you. So we'll come back for your chart either before or after Mr. Beuse.

(Whereupon the above-entitled matter went off the record at 10:16 a.m. and resumed at 10:34 a.m.)

CHAIR WILKERSON: So we're going to go ahead and get started. Nat, you have the floor.

MR. BEUSE: Sure.

CHAIR WILKERSON: We've been anxious. I just have to tell you that your name has come up maybe four or five times in the last day, and as recently as earlier this morning.

MR. BEUSE: I heard that. I heard that.

CHAIR WILKERSON: So I would like to say that's more important.

MR. BEUSE: Good morning, everybody. So what I thought I would do is maybe just briefly talk about maybe

some activities and then maybe leave more time for Q&A.

And then unfortunately, I can't stay, I have to go. We have lots of stuff going on with House and Senate bills and my expertise is needed back at the ranch.

Maybe, I'll start out with the research program, because to me that's what's sometimes more interesting and what I'm able to talk more freely about.

So the '17 omnibus budget bill that came was actually quite generous to NHTSA, specifically the research program. So our original request was on the order of \$3.9 million. That's about what we've been spending on automated vehicles/cybersecurity, and the Hill was gracious enough to give us \$6.9 million, almost a tripling there.

And what we've done with that is really targeted what I would call barriers to vehicles that contemplate alternative designs that sort of challenge current FMVSSs [Federal Motor Vehicle Safety Standards]. So what does that mean?

That means the Volpe report that we published two years ago basically said there are no impediments for automated driving system at the federal level. You can put one of those systems on today. Someone could put one on in the next five minutes. There is no federal barrier to that.

Where it gets interesting is where designers want to take advantage of that automation and start maybe removing pedals or removing interfaces that would normally be used by a driver, things like that.

And so what we need to do is easy/hard work to figure out how do we allow those vehicle designs to comply with current standards, meaning right now, we have electronic stability control as a mandate for light vehicles.

And that test is typically run with a steering-controlled robot that sits in the driver's seat and you program that robot to do a maneuver to get the vehicle in an unstable state to see if ESC activates, and there's performance criteria around that.

In theory, if you were having a vehicle that had an automated driving system that was going to be on highway, you would still want that vehicle to have stability control. But, now we have a problem if that vehicle doesn't have a steering wheel, a brake pedal and brakes in order to run that basic test.

And so the money that we receive, we sort of gear towards those kind of projects, really just about allowing those kind of future concepts to comply with current FMVSSs.

The other kind of areas of work that we're

focused on, but a little bit limited because of resources, is one at the component level, so meaning if you have braking, throttle, steering and they're automated, those subsystems, what sort of test procedures and performance requirements and what might we imagine around that.

So like right now, there is a standard on the books for throttle systems, it's FMVSS 124. That standard hasn't been updated in about 35 years or something like that, so nowhere in that standard does it contemplate automation. It's really all about pulling wires and seeing if the throttle plate closes and things of that nature.

And so we want to look at it from that basic level, and we've already done some work in this, but we want to expand it to look at other types of systems. So like a lane-keeping system with an automated steering system, we'd want to look at what sort of tests would you run just for that subsystem.

The other category is about when you take let's say an automated steering system and you combine that with an automated braking system or an automatic throttle system to give you what people imagine as sort of autopilot or some sort of self-parking system, et cetera, the kind of test, you can imagine, would be different for that kind of system than it would be for the individual component.

So we're looking at how do we do that in a smart and methodical way to look at kind of system levels when we take kind of now two functions or three functions and combine them to make a system, what is the research and the test procedure necessary to look at that.

Then kind of the last category is really more about if you really let your mind kind of open up and expand the aperture, you can imagine vehicle designs that look nothing like what we have today. Maybe vehicles with no windshields. Maybe vehicles where people are sitting sideways and rearward and all this kind of stuff.

For the better part of 45 or 50 years, our whole knowledge base everywhere, in the industry and in the government, assumed one seating position, one standard configuration, one direction. All of our crash test tools, all of our tools that we use for crash avoidance all assume that.

We now need to do the work to say, okay, how much of that is still valid and how much of it needs to change. Just to start at the basic standpoint of how do we, NHTSA, support this innovation through tools, maybe new tools. Right?

So this is where simulation comes in, this is where modeling comes in. We may very well find ourselves having to develop an entire new family of crash test

dummies to kind of help designers design rearward facing seats safer. Right? It's not like this is new. Right?

Someone probably asked, well, we have rear-facing seats on trains and other things, but you know, a train on a guided rail isn't the same as a car out there on the streets that can interact with all sorts of other types of vehicles, run off the road, all sorts of things.

And so we need to do our homework to see what is in that box once we open it. Because, you know, what I challenge my team is, if you look at just biomechanically speaking, it's why you don't take a frontal crash dummy and put it in a side crash and say this is good results. You actually have a different dummy for side, because you're measuring different things. And so that's some of the things that we want to look at.

Outside of that -- so that whole program that I just described to you is really focused on what I would call Level 3 and above systems. So those systems where the driver is not engaged or can be disengaged as you go up the scale.

The other part of my portfolio still has to do with the lower levels. Right? You know, we still have, you know, 34,000+ people dying on the roadways. We can't lose sight of that, and we can't lose sight of the fact that there are current technologies that could probably

help address that.

So we have another part of my office that's roughly about \$10 million or so that is focused just on those technologies. So things like pedestrian crash avoidance systems, AEB [Automatic Emergency Braking] systems for heavy vehicles, forward crash warning systems for heavy vehicles, etc. Sort of that sweep of Level 1, Level 2 systems for those kinds of vehicles.

Level 2 is also more complicated because the human factors issues are pretty pronounced with certain types of Level 2 systems. Right? Because the driver is supposed to be engaged, but the system can sometimes lead you to believe that you can be disengaged, and there's a high potential for misuse as we've already seen it. So part of what we're doing with those lower levels is really looking at the human factors issues associated with that.

So in a nutshell that's sort of how the '17 budget that we have in NHTSA with respect to automated vehicles is being spent. I suppose you guys all want to know about the policy and if you thought I was going to come here and give you the date, I'm not doing that.

I can tell you that the Secretary and her team are very supportive. This isn't an idea of like they're doing their thing and we're doing our thing. We're very much talking about what public comment said. First of

all, how do we even get there? Why do we have guidance? What was the purpose of it?

And so we've been spending a lot of time doing that, and generally speaking, the comments were largely supportive of the policy put out in September. I would say overwhelmingly, people said both in their comments in person and in private that it was one of the better documents to come out of the Obama Administration with respect to certain new tech.

It was well thought through, covered a lot of issues, wasn't prescriptive, seemed to strike a nice balance, and it was helpful. At the end, it was helpful. We heard from a number of companies, big and small, that having NHTSA articulate kind of key safety areas helped them internally develop better processes for how they were going about testing and deploying these systems.

And we also heard from some of the states about how it was helpful to understand kind of NHTSA's authority, how it works and the areas that they could regulate and legislate in if they so choose.

But, as with any document, there was also parts of it that people found confusing, wanted some clarity, thought maybe things went too far, and so those are some of the areas that we're focused on and discussing with the Secretary and her team about how do we move past these.

And so, you know, she has tasked us with, you know, giving her a revised document, you know, in the next couple of months for publication and that's what, you know, myself and some other folks at NHTSA are very much focused on. And she keeps reiterating that.

I think, you know, this first got announced in June, and she's giving more speeches now, but at least three or four speeches since then have mentioned either fall or September, some variation around there, so I think that's what she wants to articulate to everyone.

At the same time, because it's just worth noting, the Hill is very active as I pointed out how it started and oddly enough what's happened is they've taken pieces of the guidance and started to sort of legislate on them.

So we're in the process now of deciding what we're going to say back to the Hill on that, because I think as most people know if you read it, that was never the intention of anything in there being mandated, but here we find ourselves a couple months later with this big debate about preemption and all this kind of stuff. You know, mandating certain parts of the policy seemed to have grabbed some footing.

Maybe a little bit about what's going on V2V, so V2V went out. It is, you know, comments are still

coming in, a healthy dose of comments I would say. You know, the good news is I would say that, you know, there wasn't any sort of let's terminate the rule making kind of thing, so I think that there's some hope there.

I think that we have a lot of work to do, because the comments, and I haven't even spent that much time in depth in them, but the ones that I have read are very much involved. There's lots of questions being raised about security and about protocols, about how this gets deployed in reality, what about the infrastructure side, on and on and on and on.

So I think there won't be new issues to this crowd. I mean, you guys knew all those issues before we talked about them a lot. They were spelled out in the interim, but now as the comments come in, and the agency will have to address those to determine next steps.

We also continue to do the same work we've been doing on commercial vehicles. I mean, we're still challenged with the trailer cab issue. There have been a couple of ideas about how to solve that. Right? This is so that the commercial vehicle isn't sending out false signals let's say to a passenger car and then the passenger car gets a warning and there's nothing to warn about, especially in curves.

And so that's still not solved. Unfortunately,

that's still something that there's active research in to try to figure out how to solve that naughty problem.

And so that's sort of a very, very, very fast run-through of what's going on at NHTSA with respect to automated vehicle research and connected vehicles. So I think I'd just like to hear from you guys and I'll answer what I can and of course if I can't, I can't. Yes, Scott, go ahead.

MEMBER BELCHER: So I've got a bunch of questions.

MR. BEUSE: Sure, sure.

MEMBER BELCHER: You know me. So on the legislation --

MR. BEUSE: Yes?

MEMBER BELCHER: -- which I mean they're marking it up today.

MR. BEUSE: Supposedly. At least the House version.

MEMBER BELCHER: Right. And so I guess I was struck by two different components. One is the preemption issue, which you guys consciously did not do in the guidance.

MR. BEUSE: Right.

MEMBER BELCHER: And I'm sure you've gotten a lot of talk on both sides of that issue I know. You know,

I've heard that. And then the second thing I was interested in is the testing and the desire for, you know, defined performance standards.

MR. BEUSE: Yes.

MEMBER BELCHER: Do you have any --

MR. BEUSE: I won't touch the preemption issue, but on the testing side, I think that what we've been focused on is a couple of different pieces of that.

So one is kind of like the individual component levels I talked about, I think we've been looking at that more as maybe that's more of a functional performance test. You can imagine maybe something like an ISO standard kind of type of program for something like that.

But, when you start combining those automation functions to get a broader system, then I think we've been thinking that one, you could always kind of develop scenarios and then use those scenarios.

You know, develop them from the crash database or whatever naturalistic study you can find to maybe develop edge cases or, you know, this one is really hard and then develop a kind of test track version of that scenario and then you go on and, you know, measure the good, bad and indifferent.

But, my guys are also looking very much at how simulations will play into that, because it is foreseeable

that while you might be able to come up with broad buckets, I think everybody knows you won't be able to test, you know, as much as you would like and so simulation comes into that.

I think everybody who is going to be honest about simulation also knows that, you know, crap simulation in is crap simulation out, and there are lots of tricks that you can play with simulation to get the results that you want.

And so I think what we wanted to do first is just figure out, could you even do it. But, we think there's a parallel conversation to be had about, are there metrics that you could develop around, let's say, someone's simulation model to say, yes, that at least passes the lab test or that's good enough.

I mean, not that anybody would do that on purpose, but having been in this business for a while, there are pressures that could lead people to take certain actions that they otherwise might not take to sort of prove that they're safe and they probably really aren't.

MEMBER BELCHER: Are you contemplating self-certification?

MR. BEUSE: Yes, in all that I think we've contemplated no change in the kind of basic structure of the U.S. regulatory system, that it's still self-

certification, performance-based not type approval or not design-specific yet.

MEMBER BELCHER: Okay. One more question, then I'll be quiet. On 5.9, I haven't heard anything from the administration on their support of or their opposition to. There's kind of been radio silence.

MR. BEUSE: Yes.

MEMBER BELCHER: Is that accurate?

MR. BEUSE: That's accurate. I think they are still soaking it all in. They are actively meeting with people on both sides of that issue and also talking to their counterparts over at the FCC.

So I think they are kind of developing where they want to go with the policy and asking us technical questions as appropriate and things like that. So I don't see it as a situation where they're ignoring it. I see it as they're actively trying to figure out where they want to go.

MEMBER BELCHER: Do you have any guidance for companies or organizations that are interested in the issue one way or another? I mean, hopefully, you still are on the side of connected vehicles, but regardless, what guidance would you give to folks who care about that issue?

MR. BEUSE: I think people should continue to stay engaged and like I said, they are meeting with people

on both sides of that issue. But I also think, and probably Egan would say the same thing, is all the deployments that were happening, I don't see there's a reason to kind of stop.

I think that life goes on at some point, even if you, you know, have a rule or don't have a rule. I think that there is still a need and a rationale for people to continue to test and deploy.

Because I think as we all saw with Safety Pilot, we found all sorts of interesting things even after all the testing that we did over a decade.

And like I said, the comments are full of questions, and some of those questions need to be answered by more testing. And so I think that everybody sort of going into freeze mode is not helpful.

We should just kind of continue the conversation, keep talking to people, keep doing what you were doing, testing and deploying and get on with life.

MEMBER BELCHER: It's hard to make investment decisions based on that.

MEMBER BERG: Yes, I think that's --

MR. BEUSE: Yes.

MEMBER BERG: -- difficult to advocate.

MR BERG: There's other things we can spend money on.

MR. BEUSE: Yes, I guess the question is what's the value? Is the value proposition that there was going to be a mandate and that's why people are spending money or was the value proposition that people actually saw benefit in the technology and that the mandate just helps get it going a little faster?

You don't have to answer that. I'm just saying I think that's what I think folks have to articulate, because I think with respect to the question that Scott asked me, I think the decision makers, including the Secretary, are going to be very cognizant of kind of well, what's the environment doing, what are people doing on their own, you know, how do we make sure we're locking in technology.

All those questions that were around the last time are still around now. But you know, it's not a cheap rule, it's a very expensive rule. It's a unique rule in the sense that you need two vehicles to talk to each other and all this kind of stuff.

It takes a long time or presumably. We got asked lots of questions about, you know, what about after-market and how that fits in. So all those things still matter and are still relevant for this broader conversation, but you know, your point's well taken.

I mean, I wouldn't be sitting here telling you,

go spend \$2 billion, but you know, you asked me the question.

MEMBER SCHROMSKY: So, question.

MR. BEUSE: Yes.

MEMBER SCHROMSKY: So we talked about traffic safety culture before you came in today.

MR. BEUSE: Yes.

MEMBER SCHROMSKY: You know, one of the things you mentioned, or I mentioned, as we inject more technology into a vehicle, we're causing more harm than good as some would say. Right?

MR. BEUSE: In what way? Explain the way.

MEMBER SCHROMSKY: So one of the thoughts would be that the end user is not hands-on as much anymore and they're relying more on the machine or vice-versa.

If you look at automobiles say 15 to 20 years ago compared to now, you know, I have a speedometer and a radio. Now, I have a high-end, digital radio, entertainment I have a lot more things to look at. Right? A lot more things I have to pay attention.

So we're trying, well, I'm trying to figure out, we see this uptick, right, as things get smarter, we're seeing this uptick, and so is it more distracted driving?

Is it, you know, the sampling, meaning that we

have more elderly people that are driving or do we have more newcomers on the road that don't have veteran years that we have driving, you know, right?

So, you know, because at the end of the day, right, it's all about safety. So we've seen this gradual come down, now we're seeing the pendulum go the other way. Right?

So it's a good timing. Right? Is technology is going to solve this and drop that, or we're actually going to see an uptick until things work out?

MR. BEUSE: Yes. So I think a couple of things on that, because I think some of that is related to safety culture. The big three are still there, not wearing belts, alcohol and speeding. That has nothing to do with technology that's been going into cars.

Alcohol is a third of fatalities. Right? And these are interrelated. Sometimes the people that are drinking, I've seen folks that are speeding, I've seen folks that are unbuckled.

I think what we've been trying to do is focus on both pieces of the problem, meaning that we still should protect everybody that's doing everything right. Right?

So I'm wearing my seatbelt. I'm not drinking and driving. I'm not speeding. We still have work to do there. That's where what I would call the crash avoidance

features come in, like AEB, forward collision warning, lane departure warning, etc.

Is there still more improvement needed there? For sure, but the data is pretty clear that those technologies actually are working in reducing crashes.

I think with respect to the other side what we've been looking at is are there new ways to look at those very thorny problems, meaning that we have a long history in this country of trying to change driver behavior and we've made some upticks. Right?

Belt use was very low and now, it's very high. We didn't have 0.08 and now, we have 0.08. People used to drink in their car in Texas, and I think they might still do that, but not as much.

And so I think that we've made progress on some of those, but I think that there is some feeling in the traffic safety community, especially when you're talking about traffic culture, that maybe we might have reached a plateau there and are there new ways to be looking at that.

So that's why we embarked on this, you know, Vision Zero coalition to try to get a bunch of different stakeholders to think through, are there new ways we should be looking at some of these things. Right?

It used to be high-visibility enforcement. We know that works. We know education works. Is there

something more we should be doing?

On my side of the ledger what we've been looking at is, are there opportunities for technology to help. So we've been spending some research dollars with the industry looking at, for example, passive alcohol detection, you know.

Not the thing you blow in the tube, but very passive, you know. Not trying to penalize people who have, you know, two glasses of wine or something, but help them make better choices if they're in that category.

And so, you know, there is plenty of opportunity. I would say the uptick, there is no single data point to describe what's going on with the uptick. I can tell you what we've been seeing in the data.

In the data, we've been seeing that there's a lot more elderly folks driving. Elderly folks get injured more and die more often.

There are a number of vehicles that are staying on the road longer. So despite all this progress we're making on new technologies, it's taking longer for those same technologies to penetrate the fleet.

We still see the effect of the economy. When the numbers were going down, the economy was doing terrible. Our most risky drivers, though, were off the roads. Right? They didn't have the job, because nobody

was hiring them, etc.

Now, the economy is doing better. Guess what? Our risky driver is now getting back into the driving pool. And so I think you're seeing some of these effects that are not tied to one particular thing, but are kind of interrelated. You know, we continue to watch whether there is some technology dis-benefit, let's say, you know, people driving faster or whatever, because they have AEB.

I mean, if you've been in a car with AEB, the last thing you want to do is actually have that thing activate because you are like in a near-crash situation. It's a pretty scary event, and you know, if you look at - - we got some cases that have come in with kind of false activations on their systems. People are pretty jarred when it goes off.

So the data doesn't seem to support so far that happening, but it's something that we definitely have to keep our eye on, because there is a big difference between a technology like AEB and something like Tesla autopilot. Right?

I think we just need to be honest about that. One is a convenience feature, might have some tangential safety benefits, but it's purely that, but the other one is clearly a safety feature.

The last thing I'll leave you with is there is

a growing chorus of data, we'll call it research data, that is starting to suggest that maybe a little bit of distraction is good as you get into these higher automated systems.

I think we've all experienced, you know, right, some of us you get on a plane, it doesn't take long and you're like, you know, drool's coming out of your mouth and if you're like watching a movie or something you kind of stay awake.

So I think folks are starting to look at that to say, okay, well maybe, yes for sure a Level 2, maybe a Level 3 system, current rules apply. But maybe once you start getting into those higher systems, maybe we need to relook at kind of what we've all been saying about distraction, for example.

MEMBER KISSINGER: Hey, Nat?

MR. BEUSE: Yes. I knew you were going to have something to say on that one.

MEMBER KISSINGER: I mean, you didn't mentioned that all, you know, the DAS program, about it. What is the latest on that? I mean --

MR. BEUSE: We are making significant progress. We, through the '17 budget now have kind of accelerated that program in two ways. One is where we've been able to restructure the agreement such that we're now going to have

kind of a stakeholder group that's going to be helping that program be more strategic looking down the road, you know, sort of what are the barriers to get this technology deployed.

But the other way is, through using grant money from the other side of the shop, we were able to open up the opportunity for states who want to see this technology deployed within their boundaries first to be able to provide funding in order to have demonstration programs and things of that nature.

And that started kicking off actually right here in Virginia. Virginia is one of the first ones to step up and do that. So, you know, later this year and into next year there will actually be DAS vehicles in the state of Virginia at certain spots trying to expose consumers to the technology and things like that.

So I think, yes, what started out as, you know, an idea on a piece of paper is now, you know part of deployment programs. It's really great. I think most of us involved with that program would want to see it, you know, ready to go in the next four to five.

MEMBER ALBERT: We are starting a kind of pooled fund effort actually sitting in front of you there relating to human factors and operations of drivers of platooning trucks.

MR. BEUSE: Yes.

MEMBER ALBERT: And I'm wondering, is it your job or is it someone else's job to start looking at, how does platooning and especially the person who's maybe not even driving, does that have an impact on the number of hours driving or any of those related issues?

MR. BEUSE: No, not us.

MEMBER ALBERT: Not you guys?

MR. BEUSE: What we would be looking at would be any sort of safety degradation for the head platoon, let's say, as he's sitting there driving or whatever he's doing. Presumably yes, there's going to have to be some conversation presumably with FMCSA about how this works and how that factors into all that.

I would say to this group in particular that there is a lot of data already out there on this sort of issue. FAA comes to mind. Train operators come to mind. Metro operators come to mind.

So I think that it's not like nobody knows anything about this space, but I think that folks are going to be chomping at the bit to say, well, because I have this, you know --

MEMBER ALBERT: And it's all about context.

MR. BEUSE: Yes, I have the platooning system so now I can go 15 hours instead of 12 or something.

Right? You know, I think there's data out there that people need to be looking at before they start making those good arguments.

MEMBER ALBERT: Thank you.

CHAIR WILKERSON: Ginger?

MEMBER GOODIN: On your update to the September 2016 AV guidance, can you share anything about model state policies and all that?

MR. BEUSE: No.

MEMBER GOODIN: If it's part of the preemption issue, I figured you might stay away from that.

MR. BEUSE: Yes, yes.

MEMBER GOODIN: Okay.

MR. BEUSE: Only because it's, you know, the Secretary hasn't made any final decisions so I don't know.

CHAIR WILKERSON: I have one question --

MR. BEUSE: Sure.

CHAIR WILKERSON: -- which

MR. BEUSE: Yes.

CHAIR WILKERSON: is not necessarily related to intelligent transportation, but the FAST Act.

MR. BEUSE: Yes? We just started hearing about it the other day.

CHAIR WILKINSON: Yes, and I'm sure you've heard about this, but there are a number of statutory

deadlines that require end-of-the-year review on some of the vacancies.

MR. BEUSE: Yes.

CHAIR WILKERSON: In the agency, what do you foresee is, you know, NHTSA being able to address the fact that they may not be able to meet some of those statutory deadlines?

MR. BEUSE: I think we're working really hard. All of them are active, meaning that folks are actively working on them.

CHAIR WILKERSON: Okay.

MR. BEUSE: You're right. It's --

CHAIR WILKERSON: I picked a couple of them, and I looked at the regulatory proceeding process and --

MR. BEUSE: There were so many --

CHAIR WILKERSON: It's clear that some are not going to be able to be --

(Simultaneous speaking)

CHAIR WILKERSON: -- others didn't have statutory guidelines, but there are some that will not be able to be met. So we're wondering what the process will be for engagement on that.

MR. BEUSE: Yes, we'll have a plan for that. You know, there was, you know, I should know this, but I don't remember, 50-some, I mean there was -- FAST Act had

a lot reporting requirements and a lot of mandates in there. So I think even without a transition, that was already a tall order.

CHAIR WILKERSON: And speaking of the vacancies, I know with the current administration, at this -- the previous administration had I think three times more appointments as of this time frame, the last two presidents.

Do you foresee that the Administration will be able to see some of those vacancies before the New Year?

MR. BEUSE: Good question. A lot of it is the kind of dance that happens between the Administration and the Hill and time on the docket, as they say, to get the nominees through.

I mean, you know, Derek Kan, for example, their nominee for S3, I think has already been voted out of committee for quite some time, but I think still not "confirmed." So I think it's --

CHAIR WILKERSON: You have a lot of deck chairs, so when your agency --

MR. BEUSE: I guess we're operating with no political will or right now. We have an acting deputy administrator, but I think it hasn't hindered our decision-making.

CHAIR WILKERSON: Okay. That's good to know.

MR. BEUSE: I mean, I think even if you look at what we're, you know, we just expanded the Takata recall and, you know, we're doing what we need to do to keep the business going.

CHAIR WILKERSON: And then my last question has to do -- so I have the FMVSS as it relates to autonomous vehicles. There are lots of other new safety technologies that are coming to the marketplace that, from what I understand, don't necessarily fit the old FMVSS rules, that they just clearly don't apply?

MR. BEUSE: Yes.

CHAIR WILKERSON: In light of what you said, are you all amenable to people moving forward towards some of the, I can't remember some of the examples you used, but you said experimental studies and metrics and other things that might provide for an exemption to meeting the FMVSS rules?

MR. BEUSE: Yes, I think we would want to engage with companies to sort of have companies do some of the legwork that they should be doing to help the agency make an informed decision. I mean, Section 3 of the policy was all about that, that section that talked about how to do a better interpretation of the exemption request or a petition of rulemaking.

I didn't talk about it, but a piece of my budget

is actually geared towards what I would call those techs, so things like taking the mirrors off of vehicles has nothing to do with automation. It has to do more with fuel efficiency, quite frankly. But, it also has to do with taking advantage of maybe camera technology and other things.

So we had already looked at it last year. What we found is, the technology is not ready yet. It still suffering with the same problems that it did a decade ago.

But, those are some of that category of new technologies that might be inhibited by some of the current FMVSSs is something that we have started looking at within resource constraints.

CHAIR WILKERSON: Okay.

MR. BEUSE: But, if companies already have ideas, I think that's one way to accelerate that process, to get going a little faster.

CHAIR WILKERSON: Okay. And you're welcome to come back.

MR. BEUSE: Oh, yes. Absolutely.

CHAIR WILKERSON: Okay.

MR. BEUSE: Absolutely. No use doing the research twice.

CHAIR WILKERSON: Sounds good.

MEMBER DENARO: And you mentioned, when you were

talking about the possible commercial vehicle, NPRM, something about warnings from commercial vehicles to passenger cars, what -- can you elaborate on that point?

MR. BEUSE: Yeah, so, like, the --- it has to do with the way, the articulation and the curve. Right, now the way it's sort of done is a dumb way, which is it just assumes it's a big, long, solid, length or whatever, and doesn't move. And so, a passenger car coming, maybe in the, in the lane adjacent to it would, would get a warning, even though there's no trailer there. The trailer is in the other lane.

And so what we had to figure out is how to, basically, make that basic safety message a little bit smarter, so that when it's transmitted, then the car knows that, oh, there is no trailer in my lane, it's actually over there.

MEMBER DENARO: Yeah, okay.

MR. BEUSE: Yeah. It, it's a problem that's unique just to that, that articulation, so it doesn't really factor into the --- we'll call it the medium duty class, but it's really that other class.

MEMBER DENARO: And last year, you, in one of your visits, you mentioned some concern about vulnerability of GPS or GNSS. Have you done any, made any progress on that, or what?

MR. BEUSE: Yeah, it, and that's actually, we have, and there's actually comments to the, to the docket about that too, so yeah, that's still, still there.

MEMBER DENARO: Okay. Great. Still there meaning still an issue?

MR. BEUSE: No, still there, meaning that we, we're thinking about it, and how to solve it. There, there are techniques that have been developed. Since then.

MEMBER BELCHER: And has there been any, any research or thinking yet about - and this is probably not, not your space, so it's just a, maybe a general question, if you've thought about it - about the back end of data movement? You know, we talk a lot about vehicle to vehicle, but we're going to be moving a lot of, a lot of data.

MR. BEUSE: Yeah.

MEMBER BELCHER: And has there been, have we thought, started thinking about that side of the equation yet?

MR. BEUSE: I would say from a different lens, though. What we've, what we've been thinking about it -- or the way we've been thinking about it, is with respect to crash reconstruction.

MEMBER BELCHER: Mhmm.

MR. BEUSE: So the idea of, you know, a vehicle

gets into a crash, with the issue to record it. And right now, we have the data recorders, but those are mostly based off of the air bag module. You know, when you look at a camera radar system, maybe a LIDAR. You know, we've got to figure something new out. So I think we've been talking with SAE about starting the committee to, to look at that, because we think it's really important.

At the same time, we've been talking about this concept of data sharing, and data sharing means a whole lot to a whole bunch of different people. The way we've been talking about it is specifically on the safety side. Probably Ariel talked about this yesterday, about her data sharing idea.

But what we've been thinking about is more like the FAA model, where companies could put in safety data, and it gets anonymized, and then people in that community who are in there could then spot trends a lot quicker, because we have more data from a bunch of different players.

The devil's always in the details about how you could do that, how you protect ID, etc., so we've started kind of, early conversations with some of the OEMS about doing that. There's another meeting coming up at the end of -- the beginning of next month, to continue to kind of just talk about it, nothing put down on paper yet.

Because if we go this route, it would be --
it's not a cheap model, it would cost ---

MEMBER BELCHER: Are the communications
providers part of that conversation ---

MR. BEUSE: Not yet. It, it sort of like
learning to change a diaper. Like, we're starting out so
small, like ---

MEMBER BELCHER: Okay.

MR. BEUSE: -- the people think we're crazy,
kind of conversation. And then, I think if we -- if it
starts looking like it might be something that could hold
water, though, I think we'll start talking to more people,
and figure out okay, how do we really get this started.

I think what I've also talked about, in that
same context, though, is the privacy piece of this. So
privacy isn't NHTSA's world, but it's FCC's world, and I
think the FCC is watching that space closely to see what
-- how companies are communicating to consumers, what's
actually happening in practice, and whether or not more
education and movement is needed there. So I think,
certainly, it's relevant on the safety side, but I think
there's a growing course on the privacy side that people
are talking -- as they talk about data sharing, they need
to recognize that, that that's out there.

CHAIR WILKERSON: Is there any concern with

respect to fleet management data that's being ---

MR. BEUSE: They haven't really mentioned that in the traditional sense. I think when you start talking about, let's say, fleets of service providers providing AV functionality, and you're plugging your phone, and all that, I think the conversation is different, right? It's one thing when you're talking about a shipping company trying to keep track of where their trucks are, and giving their drivers safety alerts. It's another thing to be talking about people getting in vehicles, and their data being used without their knowledge.

CHAIR WILKERSON: But you're more focused on the latter.

MR. BEUSE: We're focused just on the safety aspect of both of those.

CHAIR WILKERSON: Okay, great. Great. Any more questions? Well, we appreciate that, can't believe that you got here late, and we got you out on time.

MR. BEUSE: Okay. Sounds good. Good luck, have a good rest of your meeting, and always good to see you folks, and we'll catch up later.

CHAIR WILKERSON: Yep.

MR. BEUSE: Yeah. All right.

CHAIR WILKERSON: Thank you.

CHAIR WILKERSON: All right. Thank you for

being here.

MR. BEUSE: You are welcome.

CHAIR WILKERSON: Okay. The schedule, let's see.

MEMBER ALBERT: Sheryl, I'm, I, if you want to get lunch, I'm trying, talking during lunch about the, these two things.

CHAIR WILKERSON: Well, I think that we're going to back to Roger's chart first.

MEMBER ALBERT: Oh, okay. Fine.

CHAIR WILKERSON: Right? So I think we should go there. Lunch is not here yet.

MEMBER ALBERT: Yeah. Awesome.

CHAIR WILKERSON: So I think if we go back to focus on that, then we'll move into that. And we can either work through lunch, or ---

MEMBER ALBERT: Okay.

CHAIR WILKERSON: Which, we'll -- I'm all for getting people out to their flights faster, so -- because I think there's a storm that's supposed to come around. I think it's supposed to start raining around here around 2:00, they said, but it doesn't look like it here.

Okay. So we have Roger's other chart up.

MEMBER BERG: So this is the one, I think we were, wanted to talk about it. Our idea was to reach some,

or -- and they have that column there for the Policy Advancement Committee to reach some consensus on, at least the prioritization. Or maybe, maybe first, we should talk about consensus on this new benefits, and imperatives of connected automation with commercial vehicles.

CHAIR WILKERSON: Mm-hmm.

MEMBER BERG: Do we agree that that's something that's missing, that should be included? Anyone opposed to that? Anyone on the committee at large?

MEMBER KISSINGER: No, I think it deserves emphasis.

MEMBER BERG: Okay, what about transit. Do you see connected automation being a big issue for transit, something that should be included, or emphasized, or ---

(Simultaneous speaking.)

CHAIR WILKERSON: I think it should be included, yes.

MEMBER CALABRESE: I think it's something that's unnatural, so if we can give it more visibility, I think that's something that's going to help.

MEMBER BERG: So maybe in the last line item, we can say commercial vehicle and transit. Is that good?

CHAIR WILKERSON: Yep.

MEMBER BERG: Everyone okay with that?

CHAIR WILKERSON: Yep.

MEMBER QUIGLEY: Yeah, I, I think connected vehicles are going to, it's going to --

MEMBER BERG: For transit ---

MEMBER QUIGLEY: -- completely change the transit industry.

MEMBER BERG: Mm-hmm. Okay. So how about the prioritization of the other elements? So as I mentioned before the second line item was pretty much high, high, high, so unless anyone else has any dissension or discussion ---

MEMBER QUIGLEY: I thought it was great.

MEMBER BERG: All right.

MEMBER BELCHER: Roger, can you read them? I can't read them.

MEMBER BERG: I can't either.

MEMBER BELCHER: Oh.

(Laughter.)

MEMBER BERG: So I'm sorry, the first one is -- the second line item, it says what are the benefits from establishing connected automation?

CHAIR WILKERSON: Right.

MEMBER BERG: So everyone kind of agrees on that being a high?

CHAIR WILKERSON: Mm-hmm.

MEMBER BERG: No one, no one, doesn't have some

final dissension for that?

The other ones that are the low-hanging fruit are the -- that one, two, three, four, sixth line under table seven, about the National Architecture. So Susan, maybe, if you could explain why you considered that relatively being a medium, as opposed to low?

MEMBER SHAHEEN: Yes, I think my comments have to do with, you know, the spaces that I'm involved in more actively, so, you know, things like mobility as a service, or mobility on demand, the linkages, and convergence with electrification.

MEMBER BERG: Mm-hmm.

MEMBER SHAHEEN: And so I just thought, in terms of this particular area, making sure that we were taking a look at the national architecture, so that we're not overlooking changes that are happening. And I also raise the issue of goods delivery, because we're tracking, we're tracking dual-purpose, so actual vehicles that are going out for delivery with drones on top of them. So our -- is the architecture capturing all of these things, was my question.

CHAIR WILKERSON: It's a good question.

MEMBER BERG: So, yeah, so how do I want to address that?

MEMBER SHAHEEN: That's why it's just suggested,

you know, we should at least look at it.

MEMBER BERG: Yeah. So don't, don't forget about it, but it's not a higher priority. So, the -- again, maybe this isn't apparent with the high, medium, and low. Low doesn't mean ignore it, it just means due to the limited resource and budget, is it really necessary to do this right now? And it shouldn't be ignored, but it shouldn't be a major thrust of the budget carrying resource allocation.

MEMBER SHAHEEN: But my concern, right ---

MEMBER BERG: Is that it will be ignored.

MEMBER SHAHEEN: -- is that there's the potential for it to ignore and just in the time I've been on this Committee the elevation of shared mobility and the convergence of it with electrification has started to, to rise dramatically.

MEMBER BERG: Okay, so in the context of connected automation, how was, how does that --

MEMBER SHAHEEN: Well, if you're talking a convergence with shared electric, connected and automated vehicles ---

MEMBER BERG: Mm-hmm.

MEMBER SHAHEEN: I don't know how you'd do that really effectively with purely autonomous vehicles, because you've got an interface with the grid, you've got

vehicles that are presumably almost in constant operation, and there needs to be more than just an autonomous fleet. I would argue that it has to be connected to the grid, what are we charging, where are the staging facilities for these things, operational components, you know, when does the vehicle need to be brought in for maintenance, that type.

MEMBER BERG: So maybe, let me kind of couch that under a set of assumptions. Is -- could --- should we get the humanly-piloted vehicles in that context fixed before we start to add this connected automation? Do you know what I mean by that? I mean, that I see the issues, and there were -- I don't know, maybe I, maybe I'm incorrectly using this principle. But in manufacturing, we do things manually first before we automate. So we get the, you get the, kind of the things down ---

MEMBER SHAHEEN: Understood, but are you tracking the industry the way I am? Or are you aware of what's going on? General Motors, their acquisition of --

MEMBER BERG: Yes, I know about that ---

MEMBER SHAHEEN: -- their partnership with Lyft. Their, their priority on using the Volt, and their focus on getting cars into real-world deployment testing situations as early as, you know, 2018.

MEMBER BERG: Okay. So, then I ---

MEMBER SHAHEEN: So, I'm just, I'm just arguing back that that's -- is this so off the radar screen?

MEMBER BELCHER: Okay, so, are you suggesting, Susan, is what you're trying to do, trying to get it on the radar screen? Is that what you're trying to do?

MEMBER SHAHEEN: Just so that people are prepared for discussions around it.

MEMBER BELCHER: -- so we want to elevate this priority for this committee, for the work that we do, is that --

MEMBER SHAHEEN: No, all, all I was doing is, if you see the ranking there, Scott?

MEMBER BELCHER: Mm-hmm.

MEMBER SHAHEEN: It was previously low, so when Roger asked me to comment on it, I thought my job was to bring my expertise in.

MEMBER BELCHER: Yes.

MEMBER SHAHEEN: To say, you guys may not be aware of all of these developments. I can't tell you if all of these things are going to activate, but if what is being stated in press releases, partnership agreements --

MEMBER BELCHER: Right.

MEMBER SHAHEEN: -- it strikes me as something that the architecture should be aware of.

MEMBER BELCHER: Absolutely. I mean, if you

think about the things that are, I mean, the things we should be focused on, and not the things that are the future ---

MEMBER BERG: Not we.

MEMBER BELCHER: Oh, not we ---

MEMBER BERG: Not we, but ---

(Simultaneous speaking.)

MEMBER BELCHER: Not we, but I mean as we give advice.

MEMBER BERG: Mmhm.

MEMBER BELCHER: Or give feedback, that, that should be up there, and my ---

(Simultaneous speaking.)

MEMBER BERG: Yes, so my question then, is, in the, in that context, as we talked about, is that, will that be solved by JPO, or will that be solved commercially?

MEMBER SHAHEEN: Well, isn't that architecture a document that's, sort of a, a guiding principle document?

MEMBER BERG: Yes, but I would, I feel that that, GM and Ford, and whoever else is engaged in those kinds of things, would they even look the connected vehicle architects? Honestly speaking?

MEMBER SHAHEEN: Mm-hmm.

MEMBER BERG: Because, because that connected vehicle architecture, if you understand it, was just built,

as I mentioned, on use cases for V2X, essentially. And it has to do mainly with the improvement of safety, but there's some mobility concerns -- or not concerns, but mobility use cases or scenarios. And it's, it's not focused on shared mobility and electrification. So that's part of the point you're bringing up, is that's not part of it.

MEMBER SHAHEEN: I, -- it's, you know, not my judgment call. My role on this committee, I think is to raise issues within my expertise.

MEMBER BERG: Absolutely.

MEMBER SHAHEEN: And if there's a normative discussion here that says that that doesn't belong on the radar screen, then I can accept that. I'm just trying to elevate what I have daily conversations about.

MEMBER BERG: I'm, I'm not trying to dissuade you, I just want to know the context, so if we do put it in the --

CHAIR WILKERSON: I think that's great.

MEMBER BERG: -- in the recommendation, these are our reasons for ---

MEMBER SHAHEEN: Yeah, and I'm just stating what I know.

MEMBER BERG: Okay.

CHAIR WILKERSON: Does anyone else have any

comments on that, or think it should be included, or modified, or --

MEMBER KISSINGER: I guess I wasn't sure, so I'm kind of, I mean, should we be focused on, sort of doing something manually first, and then automated second?

MEMBER BERG: Mm-hmm.

MEMBER KISSINGER: I mean, in the connected vehicle context, it strikes me that we may not know enough about the benefits of going to connected automation, and it may, in fact, justify jumping right over the warning system, and go to --- so is that ---

MEMBER BERG: That, that's correct. That, --

(Simultaneous speaking.)

MEMBER BERG: -- to be aware of benefits for establishing connected automation that we think is a high priority. So, although maybe, maybe the context of the connected, electrified mobility, will come out of the idea of what are the benefits of the connected automation. So maybe that's kind of, two, maybe -- well, I didn't write the research question, the, the JPO did. Maybe that's a little bit broad, and maybe whatever recommendation is, you ought to, you ought to think of, in the context of the benefits, in terms of mobility on demand, in terms of transit, in terms of commercial vehicles.

MEMBER SHAHEEN: Sure.

MEMBER BELCHER: I think that, that's a good, that's a good approach. I think, I think it -- we just don't want to lose it.

MEMBER BERG: all right, I, I agree. I ---

MEMBER BELCHER: Yeah, no, I know it's a big opportunity here.

MEMBER SHAHEEN: A lot has changed since 2015, and ---

MEMBER BERG: So ---

(Simultaneous.)

MEMBER SHAHEEN: -- in this particular ---

MEMBER BERG: -- so, over the next year, are we talking about this?

MEMBER KISSINGER: Yes.

MEMBER SHAHEEN: If, if the level of investments that keep get ---

MEMBER BERG: I know.

MEMBER SHAHEEN: -- keep getting made every ---

MEMBER BERG: I know.

MEMBER SHAHEEN: -- month continue, yeah ---

MEMBER KISSINGER: Thank you very much.

MEMBER GOODIN: Can I just ask a question, maybe, to help me, does the national architecture guide regional architectures, from a public agency standpoint, and how they're implementing connectivity, is that what --- so it

does trickle down to that level of ---

MEMBER BERG: I think, Ginger, to some degree it does. So the national architecture is kind of a set of recommendations. I guess I don't understand. So, how do I say this? So, you -- it tries to get the incompatibility out of the national, you know, things, so, so states and municipalities can talk to each other. But it's not a requirement.

MEMBER KISSINGER: Right. Yeah.

MEMBER BERG: It's a guideline, or best practices, or, you know, if you want to facilitate the use of a, what do they call it, stop, stoplight warning. This is the way you should do it, and this is the way your system should be architected. But if you don't do it that way, then, okay, you're incompatible, it doesn't mean you can't deploy it.

MEMBER GOODIN: So in your ---

MEMBER BERG: My understanding is that the ---

(Simultaneous speaking.)

MEMBER GOODIN: -- example ---

MR. LEONARD: States are required to have an ITS architecture, and so what you're suggesting is that a state would knowingly create an incompatible architecture, which, I'm not sure what, if you would have to prevent that.

MR. SMITH: Well, the FCC's exclusively developing regional architecture, and the idea behind that is that you can use this to sort of plan out the way you roll out your communication system within the state. So it's supposed -- it was originally intended to be part of that whole planning process, of providing these MPOs, these regions, that opportunity to plan for the communication architecture the same way they do for a long-range plan.

MEMBER GOODIN: So, so in your example, eco-driving that's where the vehicle would be communicating with the signal, with the traffic signal, right?

MEMBER BERG: Or vice versa.

MEMBER GOODIN: Or vice versa. But, but you were talking about, from the perspective of an automated vehicle, and that connectivity.

MEMBER GOODIN: So to make that happen in an interoperable way, you would need to have an architecture. So I guess the question is, how does the architecture evolve, and maybe the question needs to be worded differently, so that it guides the, the, at the implementation model from an infrastructure perspective, it guides that in a coherent and interoperable way. I, I guess what I mean is, I'm supporting what she's saying, is that maybe it's a little bit higher priority than ---

MEMBER BERG: Okay.

MEMBER GOODIN: -- than low, but that's kind of the way that I would ---

MEMBER SHAHEEN: And how cities are, are ---

MEMBER GOODIN: Sure.

MEMBER SHAHEEN: -- grappling with this issue all the time. It's, it's how do we plan for Uber and Lyft, that's in an, in an automated form, and in an electrified form, and what kind of communications network, and staging facilities, parking, curb space access, all of this kind of stuff, are we going to need in order to facilitate an AV/CV environment.

MR. SMITH: Yeah, and I think to add to that, it's the requirement that's sort of come of age, I think. Now, folks are required to do, where they didn't necessarily put these technology systems in place, these communication systems in place because they were not thinking that far ahead. But now, with the ---

MEMBER SHAHEEN: They are.

MR. SMITH: -- I mean, the, the way ---

MEMBER BERG: So ---

MR. SMITH: -- the technology is pushing back, that, basically that opportunity for them to really put some ---

(Simultaneous speaking.)

MEMBER SHAHEEN: They want to get out of ---

(Simultaneous speaking.)

MEMBER BERG: Does, is New York compliant? Is Tampa compliant? Is Wyoming compliant?

MR. SMITH: Right. I don't disagree with that, but I'm talking about the need for us to get ahead of technology, because technology is sort of like, accelerated right now. And without some sort of vision towards making sure that you develop an interoperable long-term system, you're probably going to be behind the eight ball. I ---

MR. LEONARD: -- so one, even having a national architecture, and having national and even international standards, does not guarantee automatically interoperability.

MEMBER SHAHEEN: Right.

MR. LEONARD: And this is one of the reasons, with three pilots going on simultaneously, Kate said yesterday, we joke about, we're going to take a vehicle from one location. We're not joking. I, at some point, I'm going to say, you know, put it on a flatbed, drive it from Tampa to New York. We've got to make sure that at the nitty-gritty level of implementation, somebody hasn't got a switch set the wrong way, or a piece of the algorithm coded differently, because that national inter-operability is key, and this is one of the reasons why we've got

multiple iterations. So, so there's that piece of ---

Architectures and standards don't guarantee, but they set you up to reduce the conflicts. Just, the point Susan was just making about identifying curb, you know, curb space for transportation network companies, and what that's going to do to land use and city design, I don't think that the connected vehicle reference implementation architecture has gotten to that level.

MEMBER SHAHEEN: No. But if it's going to be electrified, right, when it gets to that curb, am I going to be able to charge, are we going to do wireless charging, are we -- there's a lot coming up in the whole electrification space that -- I'm part of these discussions. And what I can tell you for sure, is that cities feel that they were taken by surprise by mobility on demand. And now they want to get ahead of it. And so all I'm raising is, is that it, should we look at that, and is it such a low priority, or because this evolution is happening pretty quickly, and there is a sense of urgency, that at least I feel every day from all of the people that I'm talking to, should we look at that. That's, that's all.

CHAIR WILKERSON: Well, there might be a way to, when we're -- if we use this chart, or some form of it in our document, to say here are things on the horizon, you

know, or highlight why, you know, have a few footnotes or something on here that talks about the difference in the -- I'm just not sure. I know how other people feel ---

MEMBER BERG: But that, I want, two things I want to say, appreciate it. One is, at the risk of -- there is an argument for the international thing, too, that that would be, you know, medium priority. And then we get everything at the same priority ---

CHAIR WILKERSON: It's true.

MEMBER BERG: -- if there's, really, what are we doing? We're, we're not, we're not advising anything.

MEMBER SHAHEEN: Okay.

CHAIR WILKERSON: I agree.

MR. LEONARD: To the points that we were making earlier, we -- Steve Sill works on our architecture and standards program, just briefed our SPG and the other associate administrators inside the building group that we bounce a lot of ideas off, coordinate with. He just briefed them on revisions to the connected vehicle reference implementation architecture, and two new tools that we've rolled out this summer to support that.

MEMBER KISSINGER: That's good to know.

MR. LEONARD: It's one more thing where, in another briefing that we did, 15 minutes in the building, that would have been great for this audience, and we'd have

to make this a three day meeting. But one of the things we can do is make that briefing available to the group.

CHAIR WILKERSON: Oh, perfect.

MR. LEONARD: And then we can handle follow up questions, or, or have some kind of, you know, we may just have to start setting some meetings that we say, you're going to have to join for a webinar, we're going to schedule 45 minutes, we're going to ---

CHAIR WILKERSON: That would be very helpful.

MR. LEONARD: -- go over two topics, and ---

(Simultaneous speaking.)

CHAIR WILKERSON: To know what you guys are doing.

MR. LEONARD: -- people can check in. And we do a lot of webinars through our professional capacity building, and I know not everybody has time to sign up for them, but we can, you know, it's one way ---

CHAIR WILKERSON: Okay.

MR. LEONARD: -- you can make information available to the committee, so you can know more about what we're doing in the background, and then be able to advise better.

CHAIR WILKERSON: Sounds good.

MEMBER SHAHEEN: Okay.

MEMBER BERG: With a single-page summary?

(Laughter.)

MR. LEONARD: You know ---

(Simultaneous speaking.)

MEMBER BERG: You know ---

MR. LEONARD: You know Steve's -- you know Steve Sill, so a single-page summary is not possible. But I think we've got him down to 15 minutes, and maybe five slides. So ---

MEMBER BERG: Well ---

MR. LEONARD: -- I think we can share that.

MR. SMITH: No, yeah, and, yeah, we've actually got another 15 minutes, that he spoke about more than just the architecture, it was also the harmonization piece ---

MR. LEONARD: Right.

MR. SMITH: -- which was the international piece too, as well. And standards.

MEMBER BERG: Okay. So how do we move forward?

MEMBER SHAHEEN: Just change it to low, because the -- it sounds like we want some things to be low.

MEMBER BERG: Mm-hmm.

MEMBER SHAHEEN: So change it to low.

MR. LEONARD: We're going to revisit that again anyway, right?

MEMBER SHAHEEN: Right.

MEMBER BERG: Yeah.

MEMBER SHAHEEN: Right. And on the, on the international collaboration side, the reason I changed it from low to medium is that I didn't see any emphasis on platoons --

MEMBER BERG: Mm-hmm.

MEMBER SHAHEEN: And there is a tremendous amount of activity in Europe occurring on that, you know, Volvo is doing a drive-me testing of their driving program in Sweden ---

MR. LEONARD: Yes, in the AV space.

MEMBER SHAHEEN: NuTonomy, you want to talk about how this stuff isn't happening on the ground? NuTonomy is doing this with GrabTaxi in Singapore right now, as we speak. And Delphi and TransDev are going to start commercial AV service in 2019.

So the reason I said low/medium is that some areas probably should be tracked. Not everything, but some things probably should be tracked. But I was delighted to see that Bob raised the issue of platoons not being there in a different way. But that was why I rated it the way I did.

CHAIR WILKERSON: Sounds good.

MEMBER SHAHEEN: All right.

MR. LEONARD: I do know with Volvo -- Kevin Dopart on our automation team is part of that; they're

sharing data with him. So I, not necessarily in all of the demonstrations, but at least with the driving one.

MEMBER SHAHEEN: That's wonderful.

MR. LEONARD: We're plugged into that.

MEMBER BERG: Another, another thing I want to emphasize is, low doesn't mean zero.

CHAIR WILKERSON: Yeah, that's a good, maybe that's a footnote we put on there. You know? That's fair.

MEMBER BERG: It might be, that's kind of a ---
(Simultaneous speaking.)

CHAIR WILKERSON: In an effort to be ---

MEMBER BERG: -- advice for like ---

CHAIR WILKERSON: Yes.

MEMBER BERG: -- allocation of resource, the limited resource you have.

MEMBER KISSINGER: Can I ask a more general question? That exercise we went through last meeting, where we tried to prioritize old recommendations that are still pending ---

MEMBER BERG: Mmhmm.

MEMBER KISSINGER: -- are there any big research questions on that list that should be added to this, like a nine or a ten? Or are they all covered adequately by what you've got on there?

MEMBER BERG: So again, the context of these research question is, are specifically addressing, connected automation through the lens of the strategic plan.

CHAIR WILKERSON: Yes.

MEMBER BERG: That was written in 2014.

MEMBER KISSINGER: I know, but you've added a ninth there, which was sort of, I'm just saying is there a tenth among, you know, was there a ---

Simultaneous speaking.)

MEMBER BERG: That's what our ---

MEMBER KISSINGER: Was that your intention?

MEMBER BERG: The subcommittee didn't, --

CHAIR WILKERSON: Yeah, I don't think that --

MEMBER BERG: -- conclude that there was --

CHAIR WILKERSON: Yeah.

MEMBER BERG: -- we're not all-knowing, all-seeing. We just have, maybe on the list, of that subcommittee.

MEMBER KISSINGER: You know, on the one, I, I'm personally satisfied that you actually looked at it and made that decision. I don't ---

MEMBER BERG: Mmhmm. Does anything else have anything they'd like me to add to this?

CHAIR WILKERSON: I think you've done a great

job.

MEMBER SHAHEEN: Yeah.

MEMBER BERG: I hope I've captured any, I was talking, so I didn't take many notes. So.

CHAIR WILKERSON: I'm trying to see if I had anything else that I added on mine.

MEMBER BERG: I want to kind of, draw this whole thing to a conclusion, and a consensus.

MEMBER GOODIN: Could, can I just add one thing about our highest priority up there, which I think we got consensus on ---

MEMBER BERG: Mmhmm.

MEMBER GOODIN: --- is evaluating the benefits.

MEMBER BERG: Mmhmm.

MEMBER GOODIN: One of the questions that I had brought up was about research. From the perspective that I know TRB has a lot of research going on and there's just a lot of research in this space in general, and how, who is the person that kind of, knows the landscape of all the research activity that's happening, who's kind of curating that? I mean, we're, we're all, we're learning from all, and this is, this has come up quite a bit, just in TRB discussions.

How do we make sure we're taking advantage of all of the work that's going on? UTCs, for example, is

another area of, what, what's going on with the UTCs that could also feed into the discussion?

MR. LEONARD: So who is the person who does all the automated vehicle research going on?

MEMBER GOODIN: I mean, should it be TRB?

MR. LEONARD: Well, I --

MEMBER GOODIN: Maybe TRB should be the place? Or should it be you?

MEMBER BERG: The, but I think we should review the research questions about emphasis in JPO, with respect to what we're hearing from TRB, and SAE, and ---

MEMBER GOODIN: Yes.

MR. LEONARD: I mean I can tell you, inside JPO, Kevin Dopart is our automation lead. So he knows everything that we're doing inside the JPO. He knows what is happening around our motile partners, at least to the extent that they are sharing information ---

CHAIR WILKERSON: Right.

MR. LEONARD: -- and sometimes we find out things a little, it's a little more cooked inside the organizations. But we do a weekly 30-minute call with all of the modes, specifically on automation. Just to, to bubble up things that, that people, oh, and yeah, by the way, I'm doing this platooning thing. By the way, I did that demonstration. Oh, I've got this little project I'm

working on. And sometimes they've been working on it for a while, sometimes it's brand new.

We have a list of all the UTC projects in the current UTC suite that involve automation, some 15 or so, and so there are people in the UTC program that are tracking that, but we're aware of that.

So from our DOT perspective, you know, Kevin's the focal point. But there are, you know, people in FMCSA who know far greater detail about what FMCSA is doing with highly automated vehicles.

People at Turner-Fairbank, who have been working truck platooning, and know more of the detail. So, and they would be familiar with, say, things that are happening in Europe on truck platoons --

CHAIR WILKERSON: Mmhmm.

MR. LEONARD: I wouldn't want to suggest that there's any one person in the DOT who has complete grasp of everything that's going on in the truck platooning, particularly when you start talking about things going outside of DOT, private sector, TRB, you know, other universities that are not a part of the UTC program ---

MEMBER GOODIN: State research programs.

MR. LEONARD: Yes, and then international programs, I mean, we had a, we had a trilateral group on automation. Kevin is our representative, and I, I meet

with that group on a, on at least, once or twice a year as the steering, overarching steering group that that is a sub-committee of. But again, the, the, there's a lot going on, many of them, much of which goes on behind closed doors in, in the private sector, that we are not privy to.

MEMBER GOODIN: Right.

MEMBER BERG: And we want to be.

MR. LEONARD: And so that's an unsatisfying answer, that there's a, there's a lot going on in the world we don't know about, and won't know about, and there have been successes and failures. And the really big successes, we hope to learn about, because, you know, they'll become more obvious.

MR. SMITH: But I think part of this discussion that we had earlier on, when you looked at a strategic plan, and actually diving into the research questions to figure out, you know, more on an annual basis, are we headed in the right direction, and we, you know, what's being done in these research areas, and how does that need to guide our, our direction?

MEMBER BERG: But there are new questions that -- that we've formulated because of the test research I wouldn't expect that there would be.

MEMBER BERG: It's sort of the unknown.

MR. LEONARD: I can tell you there's an area

related to automation in other aspects, in the whole machine learning and artificial intelligence that, you know, I, I feel like we're at that point now that we were five years ago on automation, when we were not spending any - any - money on automation, and we had a proposal, and spent \$25,000 on it. That's where I think we are on machine learning and artificial intelligence, which is core to automated vehicle driving, and core to a number of other features that are part of ITS and smart city activities, and we're not making an, a significant investment, and we're, we're bring some talent into the agency in that area, and we're looking at ways to work with other parts of the Federal government that are working in that area, and the private sector. But I think we, you know, we're at the very beginning of that.

And again, in a world of finite resources, everything can't be high priority.

MEMBER BERG: Right.

MR. LEONARD: And, but this is also an area that I have heard the Secretary mention, artificial intelligence and machine learning is an area that she sees as relevant to the Department's portfolio. So we'll have to see what priority it gets placed on.

CHAIR WILKERSON: Sounds good.

MR. SMITH: Yes. But I think that the, the key

point that's being raised today is identifying what's actually occurring, and then coming up with some sort of a plan around it, you know, using those data points to make some decisions, and you had shared the graph from the strategic plan. I don't know if you could back up a couple slides. Right there.

So you've got the graph that indicated connected vehicles, it had this ---

CHAIR WILKERSON: We talked about how that would be different, if they looked at it now.

MR. SMITH: -- so it we looked at it, at this date, there was some suggestion that you were going to give us a more updated version that can help us start thinking around ---

MEMBER BERG: At least our, our collective wisdom of -- and with that point, how that might be different now. And that was very, making the point that we think there should be ---

(Simultaneous speaking.)

CHAIR WILKERSON: Recalibration was going to be used.

MEMBER BERG: -- more rapid recalibration ---

MR. SMITH: Recalibration of the ---

(Simultaneous speaking.)

CHAIR WILKERSON: Because I can also justify

additional resources being allocated to the JPO, despite what might have been authorized, or, does that make sense?

MEMBER BERG: Yeah.

CHAIR WILKERSON: Mmhmm.

MR. SMITH: And you made the point that back in 2015, there, our productivity was, with this, that may not happen. But now, something is said ---

CHAIR WILKERSON: There's a lot of momentum.

MR. SMITH: It's a huge amount of momentum.

MEMBER BERG: And the private sector is trying to bring product to market.

CHAIR WILKERSON: Mmhmm.

MR. SMITH: Even around the Department, it's a lot of momentum as well. A lot of the folks who haven't been that, that focused on these things, like FMCSA do --

CHAIR WILKERSON: Mmhmm.

MR. SMITH: -- they're in the mix now.

CHAIR WILKERSON: That was the other comment I had on my niche, was the recalibration, maybe adding that to your talking points.

MEMBER BERG: Yep.

CHAIR WILKERSON: And maybe including a graphic of, or some assessment of how this chart might look different as of, you know, mid-year of 2017, that, and that it might justify the annual plan model.

MEMBER BERG: Right.

CHAIR WILKERSON: Going forward, so that ITS JPO can, can stay up to speed, versus maybe four years of trying to implement something in 2014 that is irrelevant in 2018. And it may be that you take things off the plate. Maybe they should have a review, and say, sorry, maybe we shouldn't be working on these two things anymore, to save time and money because of other priorities and innovative technologies --

MR. LEONARD: Absolutely, it's one of the reasons, in the six elements we've identified, immersion technologies was one, so as Smart Cities emerge, and we mentioned Smart Cities in this strategic plan.

CHAIR WILKERSON: Mmhmm.

MR. LEONARD: But the references are tangential. It's work we had anticipated starting in 2018, and it got moved forward. But emerging technologies gives us a lot of-- it's rare we can put in the things we didn't know about when we started to formulate this, like ---

MEMBER SHAHEEN: Right.

MR. LEONARD: -- a hyper-loop was one of the things we did a little exploration on. And this is where we're doing some of the things like what we're doing in artificial intelligence, what we're looking at. And I don't know what, in 2018 or 2019, will be the new thing

that we're looking at. I, you know, 5G, for example, is something ---

MEMBER BERG: Flying ---

MR. LEONARD: -- for --- What's that?

MEMBER BERG: Flying cars.

MR. LEONARD: You, you think you're joking.

MEMBER BERG: No, I've worked with ---

MR. LEONARD: But it is actually a good approach, and I know a bit about this area.

CHAIR WILKERSON: -- tubes, you know? Passenger tubes?

CHAIR WILKERSON: Hyper-loops? Hyper-loops.

MEMBER DENARO: And I, I don't know if you who said it, or somebody else, that there was not really a plan to do a new five-year plan, that instead, every year, it would be looked at and upgraded. That, is that accurate?

MR. LEONARD: That, that, that is accurate. The five year strategic plan had been a Congressional requirement. And the FAST Act established a requirement for an annual modal research plan.

CHAIR WILKERSON: I see.

MR. LEONARD: The nice thing about the annual modal research plan is, the language specifically says from each mode and the Joint Program Office. If the, well guess

what? There's only one Joint Program Office. So it's the reputation on the FAR folks, the ITS JPO has kind of a unique space.

CHAIR WILKERSON: Do you know what section it is? Maybe we should ---

MR. LEONARD: I think it's in section 6000 in the -- of the FAST Act. But it really requires separate -- the Assistant Secretary for Research and Technology to -- we all have to submit these plans in May, and the Assistant Secretary of OST-R has to review all these, it has to report for duplication, it has to look for connection. By September, it has to issue a lot of the secretaries saying okay, here's what we've done to make sure that there's no duplication, and where there is the appearance of overlap, is really collaboration, you know, NHTSA, Highways, FMCSA are all working together. You heard Nat just say, you know, hours of service with regard to truck platoons is not really his issue.

Jack Van Steenburg, or, or Larry Minor from FMCSA would say no, that's our issue, we've got to address it. Highways would say they're very interested in truck platooning. NHTSA's very concerned about the on-board equipment that's going to enable truck platooning. So it takes multiple modes to implement a new technology like that. And so, sometimes we will have everybody the

Department of working in automation, and you will see that they're not duplicating efforts. They're, we're really working to coordinate. And that's what that annual modal plan review is designed to promote.

So we may actually create the five year plan, but if we do it, it won't be in response to a Congressional requirement. It will be because we are trying to look forward, trying to anticipate how would we have to recalibrate this? Because I think it's a good idea, my, my personal view as a program manager, it's a good idea to have a plan that is more than, what am I going to do next year? We really have to think for the long haul, and it has to be adaptive.

MEMBER BERG: So is that FAST Act part of, is that really intended to be a one-year plan, or --?

MR. LEONARD: It, well yes, it has to be recreated every year, but we're trying to make sure that we're not just planning from year to year.

MR. SMITH: And it's also available to the public, so we have last year's out, it's out there. There's a lot of collaboration along the modes, so we have to share our plan with Federal Highway. We try to facilitate that discussion across the modes, and ensure that we coordinate with NHTSA, FMCSA, FTA, and all these folks to ensure that the plan that we pull up - that there's not all of the

overlap, we're not double counting things. I think, I could see a lot of the conversation we're having here today, in terms of identifying what's happened over the years. But to Ken's point, I think we, we need a strategic plan, I mean, so in five, ten years, even, maybe to the higher level. But at least something that gives us an opportunity to look back on an annual basis, and look from a more agile perspective that, you know, this is what we plan to do, this is where we want to get to, and this is what actually happened, so this is what we want to do next year, to ensure that we still get to that North Star.

MR. LEONARD: It seems to me that it would be a challenge, if you're doing an annual update, to not end up focusing 90 percent on the next year, and kind of, we've still got that four- and five-year thing out there, let's just leave that alone. And, as opposed to, if you sit down and say, okay, time to do the five, the new five year plan, and everybody gets engaged on, let's say equal treatment of all those years, and really looking out. So I think it takes some discipline, if you're doing an annual update, to make sure that you're, you're updating that future view too, because I agree with you, there's a lot of value in that five year.

Now, there are those who, the reason I hesitated, there are those who would argue not in today's

world, because things are changing so fast, all that matters is in the next year. Well, I, I think the value in looking at five years is to look at, year to year, how much your five year view is changing. If that keeps moving a lot, then that's really important information about what's going on now.

We don't know what it's going to be like in five years. Until that stabilizes out, and you say gee, it, it looks like it's more stable, then you know you're, you know, at a more level applied to another part of the development. We're in such a rapid transition right now, as you've said, you know, three years ago, and there's just a whole bunch of things happening today that we didn't anticipate.

And private industry is, part of that research is part of that. It's coming from a lot of different directions. You know, and internationally, it's coming from a lot of directions.

You were talking about what's happening in Singapore, for crying out loud. That's not insignificant. We may not care about Singapore, but if it happens in Singapore, then Memphis is going to want to know what they can do. And that's why it's important.

MEMBER BERG: I think the idea that we, we can't do a strategic plan because everything's changing so fast

is a misrepresentation of the way Silicon Valley works. So that would be, if that lasts more than one year, they, they look forward, and say what's the world going to be like in 20 years?

MEMBER DENARO: Yes, I agree.

MEMBER BERG: And I don't know exactly, but at least I have a, you know, a, a way-point, or a guiding light. If they don't do that, they only last two years, because they're only worried about the ---

CHAIR WILKERSON: They also pick, to jump over paradigm shifts, too. They also decide, well, we're not going to fight this. We're not going to invest, or join this. We're going to the top of the regulatory agency to do that, because everything you're doing, that they choose to too, you've got to regulate. So --

MR. LEONARD: They also recognize JPO is not a regulatory agency, we're a program office that has to deal with regulatory aspects, and research aspects, and employment aspects. And so, I absolutely agree with long term planning, in fact, I don't know if I specifically mentioned it, but the ATTRI program that was briefed yesterday by Bob. Mike Pina, Vince Valdes, and myself sat down, and had that team develop a ten year plan, in part because some problems are not going to be solved in five years. Some problems, you know, I'm not sure we're going

to solve in ten years. But if we don't have that long-term vision, what we use the phrase North Star. What are we guiding on? What do we want to achieve?

And so, so for a connected vehicle, it's things like ubiquitous deployment of collision avoidance connectivity that reduces collisions, injuries, property damage, and fatalities.

Now, however long it's going to take, then, by whatever means we're going to achieve that, on automated vehicles it's something like, we want to see the introduction of automated technologies in a way that increases safety, increases mobility, reduces fuel burn.

You know, so it's a, it's something that's not going to happen with a deployment from any single firm. But it's going to happen from the adoption of the technology in society, and all the things that have to happen to achieve those pieces.

And on something like ATTRI, it's really providing universal transportation, regardless, regardless of your physical or, or mental ability, to people who don't have it, so that seniors and people who don't have the ability to drive, have access to transportation in a way that doesn't require you planning your trip one to three days in advance at a, at a tremendous cost.

And so we try and lay out the technologies that

it's going to take to get there, and I don't think the plan that was briefed to you is going to get us to that point in five years. And I don't think it stands alone in that has to connect other things.

So we will have to continually adopt that plan, and we're going to have to react to the fact that, I mean, it's great that we have our partners working on robotics parts of this. We want to bring in more partners that are helping to solve that problem, and thread it together.

So absolutely agree with you that the long term planning is important, whether Congress requires it of us or not. I also agree with you that we have to be agile and adaptive, and sometimes we have to say, and, go with me, and we're working through the budget, and I've got to cut \$30 million out of what people are asking.

It's like, yes, that was a great idea three years ago, and it's not a great idea anymore. So we can't afford to do it, and we've got to make decisions, and we drop those things out of our portfolio. And believe me, those are not happy discussions with people. But, it's, you know, we try and reach a consensus around the notes. And industry has to do the same thing.

CHAIR WILKERSON: Yes, we do.

MEMBER DENARO: To kind of follow up on what we were talking about, I think you might have been out of the

room.

But when we were talking about apparent lack of attention on the commercial vehicles, and this ATTRI plan, especially here in the, or in passing, but not a whole lot.

And the point I made when I was making comments to Roger's initial thing here is the, the interest in commercial vehicles is just skyrocketing right now. It's really a hockey stick of interest.

And part of the reason, of course, is that we're going to put platooning solutions on the road here at the end of this year, and I did a lot of bundled up stuff, bundling stuff that's not been exposed by, say, OEMs, who are really, really ready to do this. I mean, this is just going to pop. So there's a lot more interest.

But with respect to your responsibilities, now FMCSA is really about safety, but do you feel you have as strong a role in addressing research in connectivity around the nation for commercial vehicles, as much as you do for passenger vehicles? Or is that kind of a handoff to FMCSA, or somebody else?

MR. LEONARD: So, so I think the ITS portfolio is very broad, and I've spent some time reviewing the whole legislative district for the last 25 years. And it, it covers everything, and every year, Congress adds a few

issues. So our, our, you know, our, our purview includes any form of transportation. So heavy vehicles. Not just trucks and buses.

MEMBER DENARO: Yes, you're right.

MR. LEONARD: You know, the only thing I really can't find in our legislation is aviation. But I don't want to --

MEMBER DENARO: Or marine, right?

MR. LEONARD: No, marine is not excluded. You know, we actually have, for the first time ever, an ongoing project with MARAD. Tried to get one going with St. Lawrence Seaway and we just couldn't find the critical mass on a project. But we're working with MARAD on ship, port, rail, truck automation ---

MEMBER DENARO: I see.

MR. LEONARD: -- because you've heard me talk about this before. There's money, and then there is, and you know, it's a trillion dollar industry, that a couple percent will make all the difference in terms of lowering the cost to consumers, reducing congestion in port, which are urban areas, you know, and then the, the highways out, out of places like Long Beach and Newark. So I think that's an important area.

So we work with FMCSA, and I would say in the last three or so years, FMCSA as an entity is embracing

more of the, the overlap with the ITS portfolio. And they, they have a grant program called CVISN, which, if you read the language, actually refers to intelligent transportation systems. And they, for, for a number of years, were focused on some very specific aspects.

CHAIR WILKERSON: Right, yes.

MR. LEONARD: They're realizing there are new technologies they need to get involved in. They are hip deep in highly automated trucks, and I think I mentioned that yesterday. They are coming to the table. We have meetings on, it used to be Federal Highways people and somebody from NHTSA. FMCSA is there. And that's causing a lot of discussion, because we're recognizing as, as modes, highways, and motor carriages have some very different perspectives, and some issues in conflict that they have to reconcile.

Around truck size and weight, and infrastructure capacity, and then truck platooning. So getting that dialogue across modalities is one of the things we try and encourage.

And, you know, so I, I wouldn't say I own it, because FMCSA are the truck people. We're talking about, if we've got truck issues, we go to them. We go to the Federal Highways Freight Office. If it's heavy, because we go to FTA, and talk about the implications for motor

coaches, and transit vehicles.

So we, we kind of work across the spectrum of vehicle modalities. But they're, they have research budgets.

And we try and find out where there's overlapping interest. Like I said, I can't get every mode to participate in a project, because it may not be where their intention, where their attention is focused at this particular time.

When we can find that overlap, I can leverage it, and I can bring resources to bear on it.

MEMBER DENARO: Do you have any specific projects, research projects right now that, dealing uniquely with commercial vehicles?

MR. LEONARD: I think Nat just talked a little bit about the connected vehicle piece and heavy vehicles, and you know, we made a decision a couple years ago to focus on, and there was a lot of debate in the community. Scott McCormick, who's not here today, kept saying, commercial vehicles should be the first out of the box, and there were reasons that didn't happen, and so there's light vehicles, commercial vehicles, still may adopt that. And again, it, we'll have to see what fleets decide they want to, how they want to approach.

MEMBER DENARO: Yes, I remember that. But, you

don't have any dedicated research project at this point addressing something with commercial vehicles?

MR. LEONARD: Well, platooning, if you consider truck platooning we're doing some work in that area, and we do have some other heavy vehicle. You know, it's not a terrible large portion of our budget, but a lot of things that we work on apply across all modes, and so our, our, when we work on SCMS for cybersecurity protection of communication between vehicles, that applies to all vehicles. When we, you know. So when we do cybersecurity research, this is not just for light vehicles, it's applicable.

MR. SMITH: And some of those human factors will increase support too, as well.

MR. LEONARD: Absolutely, and we, you know, we also fund work, we, we've sent some resources to FMCSA to leverage the resources of their own that they're investing.

CHAIR WILKERSON: So I think we should take a break for lunch. We didn't really take a real break for people to make calls or anything, so maybe we can do that during lunch instead of work through the lunch, and then we'll start back with the next --

MEMBER ALBERT: Yeah, I, I think it's --

CHAIR WILKERSON: Is that, you wanted to talk about that? Maybe you could do a, talk about that in the

next session, or do you want to raise it during lunch ---

(Simultaneous speaking.)

MEMBER ALBERT: -- next session ---

CHAIR WILKERSON: -- people here? Okay, and then we'll jump into the, the last subcommittee. Can you put the schedule back up?

So right now, we're at the 12:00 to 12:30 point for lunch. Let's really do 12:00 to 12:30, and then come back. If people come back earlier, we'll get started on rural and then we can, we'll be pretty much done. I think the wrap-up won't take an hour, we can wrap up in about 15 minutes. Get out earlier.

(Whereupon, the above-entitled matter went off the record at 12:05 p.m. and resumed at 12:50 p.m.)

MEMBER ALBERT: Now for the funnest part of our meeting. On the rural guidelines - the rural procedures - there's a few things I wanted to go over.

The reason I ran downstairs when we were talking about CV platooning was that's just the effort that we're trying to get off the ground. And not from building a truck, but understanding what the drivers' needs are and what are the issues associated with human factors. Or whether they're associated with the operations and also workforce development; recognizing that 50 percent of the drivers are down. Fifty percent of the drivers have been

currently and it's only getting worse.

So, will automation help, will it hurt, will it help the bottom line in terms of profit margins? Being able to have people that are resting in the car -- in the cab.

The other part of this is not only understanding human factors in operations but also to use -- we have a very large test bed of an old World War II airport test bed facility. As well as still making equipment and a bunch of other stuff.

And I think we still have the largest number of driver simulators in the country. So I think the things that we have identified on here in terms of test bed, human factors, operations, I think that fits very well with some of the stuff that was talked about this morning and also building on some of Bob's notations about CV.

So, there is a contact name at the bottom of the second page, Craig Shankwitz. You may recognize Craig's name. He used to be at the University of Minnesota. Doing a lot of the advanced snowplow projects and autonomous motorcycles and much further deep things.

So, the other thing that I was tasked to do was to look at what was the needs for rural America and what might be that be in looking at that for our paper. I put this together to help educate you, committee, as well as

to then boil it down to something that we put into the Joint Program Office.

A number of times I've been asked to put -- Sheryl has asked me to put together something on well, what are the issues in rural? So instead of doing that, I put it in here and you can see, you know, if we're going to talk about safety and over 50 percent of the fatalities are in rural America, we need to have some real stuff in here.

So I've kind of, again, highlighted things that you can see like rural is three fourths of the nation's surface roads. It's very high disproportion in the amount of between volume and roads in terms of safety. Fifty-seven percent of the roadway fatalities; alcohol is 57 percent of the problem, etc.

The other thing -- and Egan and Ken may recognize, this document talks about not that this money would come to WTI but actually it would go through NACO and I worked with John Horsley on developing this. But then he had given to the Secretary of Transportation; not the current one, but the previous one in trying to get the money going through rural America.

So the -- maybe I'm going too fast. If you've read this or seen that, you can kind of see where I'm going. But I tried to put together some ideas in terms of

well, what would we want in terms of language. And now I'm on Page 2 in terms of Employment Assistance Program.

I think it'd be very nice if there was a way to have regular funds for rural America versus just oh, let's throw another million dollars at this problem. Oh, let's make a -- let's make something that is urban, look like it's rural, etc.

So, the idea was try to build a program that is sustainable and have some pilot projects, but not everything being a pilot project. So you can see the first one is about a Federally-funded grant program and advanced technology pilot projects. The second bullet is about looking at how we might use autonomous vehicles or connected to vehicles across the world spectrum.

In fact, one of the things that I had written up for an earmark, which I'm not sure if it will ever go, was to look at how connected vehicles could assist national parks like Yellowstone where we know the environment is a very important factor and the longevity of the national parks.

They're overcrowded so that the people get in autonomous vehicles and drive around, or be driven around, national parks so that we can stop all the accidents. Because people are looking at the scenery and then they run off the road and flip their car, which happens all the

time.

Also, I think, an element that I would recommend would be to establish a technical assistance center. There used to be a technical assistance center for national parks and public lands that we managed. And also, one for rural, which rural is a safety problem.

WTI is currently a National World Traffic Safety Center at that stage. So, I think some of those things might be a little fitting for our selfish reasons.

So, are there comments on kind of what this is, what this is all about and does it make any sense?

I am having a hard time talking. It must be the food going to my head. But, is it --

CHAIR WILKERSON: Joe had a question.

MEMBER MCKINNEY: I just -- I wanted to hear from Ken earlier if you -- and this came up and you said there's something that we may not know, including things that work with NACo and I'm, I guess, his side-kick when it comes to rural America. Certainly, we're heavily engaged with the rural traffic facing climate re-organizations across the country.

I mean, there are things that we could do on a local and regional level to start including language for planning purposes. And certainly any resources that they mentioned that's available whether it be pilot projects or

some sustained funding. We're definitely interested in your support. So, love to hear maybe your take on the rural side of it and --

MR. LEONARD: Well, I want to let Egan talk in a minute about what he's doing with NACo. But just on the, generally, on the opportunities and resources available for rural America, I keep coming back to almost all of the work we do, we award competitively. And that includes these ATCMTD grants.

Again, that's \$60 million a year and the statute is very specific in that those awards need to represent not only technological diversity, but also geographic. And so, you know, one of the things that we look at is you know, is this all going into cities? Is this -- where are these resources going?

So I, you know, I can tell you that we have a Smart Cities Columbus Program going on. There's also a Marysville Route 33 Corridor ATCMTD Grant going on and so we're working to make sure those two are connected because they're neighbors. But that Corridor, you know, there's cows on that Corridor. And so like, when you're the rural superhero - I'm waiting to see the cape with Crusader Steve, superhero --

MEMBER ALBERT: Sounds like something I don't really want to --

MR. LEONARD: Crusader, right. You've got a cape involved and it's got a pattern on it somehow.

But, you know so, these are corridors that run through rural America. So, you know, that -- a lot of the things we are working on are equally applicable.

And even things like our Smart Cities Program, I know I mentioned this before, a multi-departmental level. I'm working across federal agencies and there, the branding is smart cities and communities; recognizing that the needs that exist in more urbanized communities also exist in lesser urbanized communities and the rural spaces. Sometimes the opportunities and the economics are different so that has to be examined.

MEMBER ALBERT: You know, one of the things that in the last 604 Solicitation, I think it existed in many places. I may not say this right, Ken and Egan, but if when you're doing, splitting up the money and you have some funding to go across all these different spectrum of things like a 604, but the match requirement is the same for rural areas who didn't get much money to begin with. Do you know where I'm going with this?

It just seems like in rural areas, you ask us for the same match as you do in big urban areas where it's very difficult to get money for match whether it be cash or soft money. And it's the same requirement you have in

big urban centers like Columbus who brought in tens of millions of dollars, you know, for match. You couldn't do that for the rural funding. It should be a less match level.

MR. LEONARD: So just to be clear, now Congress asks of you for the same match, I mean, because while they may be -- the legislation may call for geographic diversity, it didn't say, here's the match for rural areas and here's the match for urban areas.

MEMBER ALBERT: It should've.

MR. LEONARD: -- execute the legislation that we get and so, you know, I can't really --

MEMBER ALBERT: There's no wiggle room there.

MR. LEONARD: Well, the Secretary has authorities that I don't have in terms of, you know, on the -- I mentioned yesterday on the Smart City Columbus Award, the Secretary waived the match.

Now that was kind of a unique, a really outside-the-box. We did a lot of things on that we had not done; we don't -- they're not standard practice. They're all allowable in the acquisition process. Things like, we publish the proposals and things.

Again, something like that benefits rural communities that doesn't have the resource to create a proposal, but now has the benefit of 78 proposals to look

at and cherry-pick ideas out and say, hey that would work in our community this year.

So, we did a lot of things that were innovative to try and help people. But I don't have the authority to waive matches or to alter matches that are established by the law.

MEMBER ALBERT: I was being tongue-in-cheek.

MR. LEONARD: Okay, but I wanted to give you a serious answer about, you know, I don't control that aspect of it.

MEMBER ALBERT: So let me ask of the group, you can see what we proposed and I apologize this was done at the fairly last minute and Bryan hadn't seen it before or other committee members. So, if I'm saying anything out of line, let me know.

But the Committee members, but you see whether this has merit, not have merit, any changes you think to the document? Do we need to scrap it, start over or is it general enough that you would support it?

MEMBER KISSINGER: Okay. Can I ask the question that would surely develop to that? I mean, you have some statistics that year. You don't really have, it seems, the key one which may be the one that Ken just mentioned, which is -- what's the percentage? Do we know in fact what's the percentage of the JPO grants that have gone to

rural versus non-rural?

I mean, you've got Highways. That's a big category and I don't know if it's representative of ITS, for example.

MEMBER ALBERT: Well, you know one of the things that could be recommended because, I think, as a percentage if you compare urban funding from the JPO office to rural funding it's pretty small. I mean, that's why I thought having a dedicated funding program would make sense. Otherwise, you end up with dribs and drabs. I'm not trying to put you guys on the spot.

MR. SMITH: Well, I want to jump into this quickly. I think one of the things you raised here with the opportunity to work with folks like NACo, I think that you're hiring -- it's not just a question of them not having a match; it's also a question of them not being aware about -- more about utilizing the target to begin with.

So, I think NACo could play a significant role in bringing folks up to speed in terms of technology and what could be other further solutions. And I think NACo, they're actively trying to engage their folks and crew in the rural areas, and particularly the rural areas.

And we've actually met with John Horsley back

in, I guess it was, early January and the folks at NACo they came to the office for us to establish some conversations about the opportunity to start working with them to help --

MEMBER ALBERT: And John and I worked with them to put this thing together.

MR. SMITH: -- get to that neutral aspect. But -- right, exactly.

So, part of what we've been doing so far what Ken has mentioned to is we've been trying to work closely with NACo, supporting some of their efforts that they're working two ways, Federal Highways.

They had a chair change, I believe it was two months ago. I was there to help foster that sort of discussion. But much of the discussion was CV/AV; broader discussion about how do you get to the funding that's available. If that money is available, for example, the discussion of the Federally-programmed dollars and the fact that that could be in device now.

So, I worked with the Office of Planning and part of the discussion was really around the big picture from federally programs and solutions that are out there. What's real, what's not real? Connected vehicle pilots, what they're doing there that could be --

Utah is my other focus now to start thinking

about the planning process and how we're going to start planning for getting something in place that you can actually run through the steps and tips to actually get funding. It's not really a disappointment.

So, that's part of the conversation that we're having with NACo. I'm also supporting some of their efforts there and they have their conference this weekend and I'm going to be down there Sunday coordinating with them on Smart Cities and Smart Committees with the folks from Columbus that's where the folks who want the Smart City rural work.

So, it's, I'm excited about that broader conversation, I think. It's more than just providing funding. Because like, for example, the ATCMTD grants set, it's a 50 percent match. So that's even more significant than a 30 percent match.

So, it's about providing this further knowledge base and the technical support; not just from the JPO but from the other players who are out there knee-deep in these bigger parts of money to Federally-programmed dollars to start having them to be able to communicate that to their folks that that funding opportunity is also available to be utilized to go out to some of these technology solutions.

MEMBER ALBERT: Susan, do you have any comments?

You look like you wanted to speak.

MEMBER SHAHEEN: Well, I think what you've done is really nice and you brought in all of these facts which, you know, is nicely done and I appreciate and I like. What -- this is what I'm struggling with, right, is: is this the right ask of JPO? And, I think, a focus on rural is very important, but what I'm trying to figure out is what's the ask that fits in with what they're doing and what Egan is doing. And I don't know what else to say other than that's what I'm thinking right now.

And I was looking at you because I was trying to give you support without articulating any specific recommendation.

MEMBER ALBERT: Non-verbal communication?

MEMBER SHAHEEN: Yes, I was trying to verbally communicate.

MEMBER ALBERT: I think the ask, at least in my mind, is really what's on page 3, which is kind of listed as benefits.

MEMBER SHAHEEN: Versus the program itself? The technical assistance program?

MEMBER ALBERT: Yes. In order to establish a world program might be as broad as -- and easily implementable. I don't think you can turn around and ask a legal -- that rural would like 25 percent of all funding

that the other 75 percent of that goes to urban. That probably wouldn't be fair to joint programming. Maybe you could ask like that. That's why I'm thinking those things that are more service-oriented.

MEMBER MCKINNEY: So what do you guys think, it's the same framework that we're doing, you know --

MEMBER SHAHEEN: Yes. See, that's the idea. How do we --

MEMBER MCKINNEY: I mean, I think what we have to ask ourselves is whether the warrant to recommendations or needs and implications for rural as it relates to this. And I think the things you mentioned on the third page could be that.

I also think, and it could be hard to articulate, that the novelty act of rural America is much greater. I think your larger metro areas get the issues in their face and it's more easily, identifiable of the need. And things like, for example the wiring project, how are we going to get the word out for rural America?

I think once they see that project and what it can do, I think the light bulb will come on. But I think without sharing those match practices, it -- I don't think they're at the same level to compete with a larger majority.

So I think that knowledge gap, somehow --

attacking that and how we spread those practices to rural America is a huge need in addition to what has been in past year. Would you agree with that?

MEMBER SHAHEEN: I was just going to say it's within our purview right to recommend workshops, forums; things like that. Is that a direct actionable recommendation that we can take?

MEMBER MCKINNEY: I guess you could.

MEMBER SHAHEEN: Because the last bullet resonates a lot to -- with me and the JPO Program.

MR. LEONARD: I guess I have a couple of different reactions. You know, when I look at the overview paragraph and I think of -- if I look at the first paragraph and say that's what you're asking, I feel really good because I feel like we're doing it.

MEMBER SHAHEEN: Yes.

MR. LEONARD: We're working with NACo. We have a program of technical assistance through our PCB program where we make things available to -- not even just to people in the U.S., but it's because it's public knowledge; it's available worldwide.

And we support things like the World Road Federation and I look at the overview and go, oh okay, well we're there! Then you get to some of the more specifics on Page 2 and Page 3 and that becomes a little

bit more problematic. Because I look at the JPO budget of \$100 million and I'm thinking for this \$40 billion in Federal Highway funding that's distributed, again, through a congressionally established formula for the states. And if the rural communities within the states are not getting their share of that \$40 billion, that's not really an issue that I can address.

MEMBER ALBERT: And that's Federal aid money, Ken?

MR. LEONARD: Forty billion dollars in Federal Highways. Yes, Federal aid money.

MR. SMITH: It's all the programming forty billion.

MR. LEONARD: And so, you know, I don't know, I couldn't give you the breakdown on last year's ATCMTD grants although I'm sure they would have some way that you probably could. And I couldn't tell you how the JPO funds breakdown because we don't craft it that way.

I would imagine some of the funds it goes through are more urban areas, you know, Fairfax County or something like that, but the knowledge and the projects that it could generate in that, I think, you know -- yes, we're probably spending -- I know we're spending more in New York City on the map than we are in Wyoming, but we're also equipping 400 trucks in Wyoming and we're -- that's

what Wyoming proposed.

I think those are both equally important problems to solve. They cost different amounts of money, but then they're doing national implementation of that. It's not something the JPO would take on. That must be something that would have to happen through the \$40 billion in resources. That's just at the state and local level. Or, through applicants applying for ATCMTD grants.

So when, again, the knowledge transfer -- I don't know how to overcome the hurdle of how we make the knowledge available and maybe in a more urban area has a cadre of transportation planners and a more rural area as someone who has transportation planning as a collateral duty as part of a larger public works function and is thinking, you know, I got a busted water main and that is both my public works and my transportation problem this week. And I don't have time to write a proposal to think about how to get new technology into my town of 10,000 people.

MEMBER ALBERT: You're a hundred percent accurate.

MR. SMITH: But that's where the conversation with NACo comes in.

MR. SMITH: They help, you know, to --

MEMBER SHAHEEN: Facilitate.

MR. SMITH: -- support those guys to facilitate that conversation. And that's where the conversation is on the others modes and Federal Highways, for example. I work with these folks and they go through the planning process and the state planning process leads to a state which is a state's Transportation Improvement Program. Which is a way that they itemize the projects that are important and goes to what -- well, their section of that portion goes to what --

So you have to be part of that conversation to get out of that funding source.

MEMBER ALBERT: I'd like to be.

MR. SMITH: So that looks -- so that's why that suggestion is a good suggestion to work with NACo and then they will start having those kind of conversations.

I don't suggest the -- and that puts the gist of the conversation and a couple of months ago they had a care exchange to talk about CV/AV and that was my role there to present on the CV pilots and Smart Cities. And that opportunity I coordinated with James Garland, the Office of Planning and we talked about the big picture and all of the opportunities as well.

MR. LEONARD: Okay. And the only other suggestion I would have in terms of federal highways, most direct experience with Federal lands, which in many cases

are the most rural of rural spaces because they're working with the National Park Service and Bureau of Land Management and others. But we don't have a strong ITS presence in those environments in part because of they are in some places truly in wilderness areas. And I'm trying to minimize the impact and, you know, the guardrails are different, and the lighting is different, and the speed limits are very different because it's a different transportation experience.

MEMBER ALBERT: Well, there has been groups like the National Centers of Excellence that I manage where the national parks are related to push forward development working toward traffic safety does reach out to those organizations.

MR. LEONARD: And particularly, those areas border the rural communities that are part of the state NACo systems. There may be collaborations that are happening at the local level that I'm not aware of.

MEMBER ALBERT: There is some and I think it can be accelerated. So, anyone else have any comments on what's been written?

MEMBER KISSINGER: I'll try to think of -- I mean, as you know, you and I've talked on federal safety rules. We're talking ideas that I think it's consistently monitoring in rural areas. I'm supportive of doing

whatever we can do to change that. If in this conversation I was sort of wondering whether we ought to be having a little more bold recommendation other than more money --

MEMBER KISSINGER: -- and I don't know what that is.

MEMBER SHAHEEN: Yes.

MEMBER ALBERT: Well, I'll work on something and for those interested in being involved, maybe could you guys just give me a business cards for a number?

MEMBER MCKINNEY: I think we could take the five bullet points from the last page to talk about visual presentations and modify that to specific to rural America, rural agencies and for the report limit purposes. Which, I think it would be real and then the concept of this working with NACo and others, I think we can continue to do that as well.

MR. LEONARD: In addition to NACo and the other the group, I would mention as I understand they are kind of doing a bit of a re-organization this year as the chair changes.

MEMBER ALBERT: I've been chair of that for fifteen years, I know.

So, I've talked to Paniati. We've moved forward and the rationale, just so you know rural folks, was every year we have a National or World ITS Conference.

So, this year, I thought it would be best to maybe try to integrate what we do with ITE because ITE is going through some changes but they only look at urban issues. They don't do rural, so the National World ITS Conference comes in and does local and rural on its handling of the group.

And that group has hit, traditionally every year we have had one or two sessions on connected or autonomous vehicles. And what are the issues relating to that? And ITS America came in and used the sense of sounding board as well a couple of years ago.

MEMBER ALBERT: Okay, well I'll work on this and run it by --

MEMBER SHAHEEN: Yes, I'm happy to --

MEMBER ALBERT: -- a couple of people. If I can get Susan, I can get a card, I'd appreciate it.

MEMBER SHAHEEN: Okay.

MEMBER ALBERT: Back to you.

CHAIR WILKERSON: He doesn't have the chart, the itinerary is up there; so it is 1:20. We're a little ahead of time. Rather than take a break, I thought maybe we could go ahead and start talking about any other thoughts you have about the topics we've covered this afternoon.

Okay. Can you put the -- there we go. Thank

you! So, to back up, there were a number of things we talked about. One was structure and template for the process. Which, I think we've come to -- we've gained some ground on and we'll work with that. Anyone who has ideas or thoughts of, or examples, please feel free to send them.

Everyone will go back and revamp their documents in light of the comments that we've had. I think on the first one we talk about, let's see, adding the urgency component to deployment assistance, the annual recalibration and prioritization chart. The last one was, let's see what else we had on the last one. Trying to think what we had on the -- if there was any other additions on the last, you raised a couple of points. And then just the rural.

Did we have any other ones for you, Peter? Was there any other feedback that we had? I was just trying to summarize all of the --

MEMBER GOODIN: We wanted to make it a little more bold and stress urgency.

CHAIR WILKERSON: Yes, stress urgency. That's right. We were going to express the urgency. Exactly. And then what would you say of the follow-ups for rural? Was there any other action items that you need other than you --

MEMBER SHAHEEN: I think we're going to work on those bullets; just those.

MEMBER ALBERT: Work on those bullets --

CHAIR WILKERSON: Okay.

MEMBER ALBERT: -- we still -- maybe get a little cleaner. That's it.

CHAIR WILKERSON: Okay. Sounds good. So why don't we go ahead and talk about the timeline. That was another topic we had talked about.

MEMBER SHAHEEN: Are we scheduling in October?

CHAIR WILKERSON: Ken, when we were outside, we talked; no, while you were here we talked about getting something to you before sometime in October; a final document.

We also talked about possibly having coming up with a timeline for having a meeting whereby we can actually go over the final or close to finals so we can get that all done.

So did anyone want to throw out some timeframes for October -- September, October? Otherwise, we'll work from hardcopy which is what we did the last time. And everyone was pretty -- I think we were only a couple of weeks off, but we had everyone send their comments -- send their documents and then I kind of compiled them and we took them back out again.

MEMBER KISSINGER: Ken, what would -- I mean, I'm very much in favor of a session that can allow a face-to-face session where we can discuss recommendations. So, I guess, what background do we want going forward? I mean, I think we would be good at changing out if they need a month or they need six weeks or --

CHAIR WILKERSON: Well, he said it depended on the complexity of what we presented. But I think they were minimal to having an opportunity to be able to work with us without independence as an advisory committee to weigh-in and give some feedback on our draft.

So, is there a time period in October that you recommend? Or we can wait till Ken -- we can do a survey once Stephen gets back rather than do it here. But I think the goal would be for us to have some idea if there were some timeframes by which it might not be feasible for members of your team to participate.

But we did -- we'd like to get a draft that we can have that kind of, you know, conversation with you about where we're headed to make sure that it would be beneficial.

MR. LEONARD: I do know in October there is the ITS World Congress so that would be a bad time to try --

CHAIR WILKERSON: Okay.

MR. LEONARD: -- do this. And I don't have --

I know it's the end of October --

CHAIR WILKERSON: It's at the very end of October.

MR. LEONARD: Oh, okay. So that would be a bad time to try and schedule this. And I am going to be out the first week of October, so --

CHAIR WILKERSON: Okay. First and last are no good. Okay.

MR. LEONARD: But --

CHAIR WILKERSON: Any other conferences that anyone wants to reference?

MEMBER BELCHER: There -- in the September, October timeframe is the AASHTO meeting as well as the new CTIA GSM Conference. I don't know if that impacts anybody. Those are the two other big ones in that space.

CHAIR WILKERSON: When is that?

MEMBER BELCHER: Huh?

CHAIR WILKERSON: When is that one? I know ITS starts on the 29th. I believe that Sunday, the 29th and goes until November the 2nd or something like that.

MEMBER BELCHER: I'll check.

MEMBER KISSINGER: I know the annual press conference is like the 6th through the --

PARTICIPANT: -- the 11th.

CHAIR WILKERSON: AFTA?

PARTICIPANT: APTA.

CHAIR WILKERSON: APTA. Oh, okay.

MEMBER KISSINGER: I have something that's the beginning of September. Like the --

CHAIR WILKERSON: Yes, the first week of September is just bad with Labor Day.

Okay. So we'll give a look at some of those.

MEMBER SHAHEEN: Were we looking at September seriously or -- just September is really full.

CHAIR WILKERSON: We had talked about it, I think in the last meeting we had different dates, but we'll do a survey. I'll ask Stephen or I'll do one. Do a Survey Monkey in coordination with the -- for when he returns.

MEMBER SHAHEEN: Okay.

CHAIR WILKERSON: In October -- let's see what else there is.

MEMBER SHAHEEN: There's an IEEE thing in Japan that I'm debating going to. It will be the 16th --

MR. LEONARD: Of?

MEMBER SHAHEEN: -- of October.

MR. LEONARD: Okay. Because there's a set day in Japan in November.

CHAIR WILKERSON: Okay. And, you know, we have until January. So, I mean, we have a little leeway but that was just a target.

So, we'll go back and try to come up with some windows. What did you say Roger?

MEMBER BERG: You'll never get a day with everyone.

CHAIR WILKERSON: Oh, no! But we have good feedback. Just this time it was really great, so --

MEMBER KISSINGER: I don't know if it's true, but it seems like if we actually had that face-to-face, that way it should be pretty simple for you to refine the document. It would seem like you guys would give you less time than you did last year because one, we had a fewer number of recommendations probably. I mean, and we had cleared some stuff up by a face-to-face.

MEMBER SHAHEEN: That's what I'm thinking.

CHAIR WILKERSON: Yes.

MR. LEONARD: I also think, you know, as soon as we can get a clearer picture from the Committee; the topic areas that you want to make recommendations in, we can target some speaker that's either through telephone updates. You know, if we mention Steve Sill and Standards and Architecture. And for a 30 minute or 45 minute phone call with him doing a webinar and spin everybody up, I'm sure there are a dozen other topics PCB came up yesterday.

So, again, if you're thinking about making recommendations, doing a little bit more of a deep dive

for the Committee so that we know what's going on. And there we could do it via phone or via webinar --

CHAIR WILKERSON: Yes.

MR. LEONARD: -- and so, it would give you time to incorporate into your recommendations and understand, have a deeper understanding of what we're doing.

CHAIR WILKERSON: So I'll recommend that two things for Stephen. One, to come up with a date where we can have that face-to-face where we can get some closure and get that brief done.

And then I recommend that committees between July and September inform Stephen if they are top secret about any topics or people they might want to have participate on your conference call -- the next conference call that you might have as a subcommittee. And then that might be a way to do it.

And then you can still invite other people from the committee to sit in on, but it'd be specifically targeted for the subcommittee.

Okay. All right, so those are two action items. Any other comments? Thoughts?

MEMBER SHAHEEN: I really liked this meeting a lot.

CHAIR WILKERSON: Good!

MEMBER SHAHEEN: Of all the meetings that I've

been to, I felt like we had more dialogue. We learned a lot more about JPO and, I think, I hadn't learned previously. So, I'd love to see us, I don't know, figure out if we can replicate this more.

CHAIR WILKERSON: I think it helps when we do a lot of the heavy-lifting before we get here. Is that what you mean? That was a big part of it and I think we spent a great deal of time working with Stephen on speakers. You know, people were -- gave a lot of feedback as to what they'd like to --

MEMBER SHAHEEN: Yes. I think if we could do this once a year, it's like you give us a little buffet of JPO.

MR. LEONARD: Well and we always try and --

MEMBER SHAHEEN: But not that --

MR. LEONARD: Last one or two meetings we haven't had the same request for speakers, but --

MEMBER SHAHEEN: Oh.

MR. LEONARD: It really is up -- I mean, we in-part work for the Committee. Tell us what you want to hear and if it's really somebody from JPO --

CHAIR WILKERSON: We have to get involved with more people --

MEMBER SHAHEEN: We have to get the judges --

(Simultaneous speaking.)

MR. LEONARD: And, you know, it could also be as an example it could be if the Committee really wanted to know about hyper-loop, we would have gone and find a speaker from hyper-loop to come in. It's not an area that we're actually working with the research on but --

So, I'd like to keep it focused on the topics we're working, but if they're topics you think you should be working like a machine-learning, artificial intelligence we have a couple people we can tap inside the Department.

We might all learn something if we catch somebody outside the Department instead of working to get a better sense of what we should be doing. And so, we're happy to try and --

But again, it takes a while to particularly on something that we don't know. But something we're working, I can get a speaker here on a week's notice and give you a really good --

CHAIR WILKERSON: Yes.

MR. LEONARD: -- presentation if you tell me six weeks in advance. Somebody can really present a solid presentation to you. I tell you we're not working, we want a real feedback on Artificial Intelligence. We have to do some homework to get the right person in here and get some meaningful dialogue going on. So, it does --

take that up front.

CHAIR WILKERSON: Okay. So we'll move forward on those two items and if there are no other comments on how we can make improvements for the next meeting, then we'll do everything by Survey Monkey and we'll put Stephen working on the draft.

Okay. Meeting's adjourned.

MEMBER SHAHEEN: Thanks for sharing.

CHAIR WILKERSON: Thank you.

(Whereupon, the above-entitled matter went off the record at 1:31 p.m.)

