

Texas Advanced Air Mobility Advisory Committee Meeting

Daniel Bagwell

0:35

Good morning, everyone. And for those who are you who are online, this is the Texas Department of Transportation Advanced Air Mobility Committee meeting. So hopefully you're in the right place. We'll be starting up here in just a few moments here. We'll give a few more folks a chance to log in, so we'll be starting momentarily. Thank you.

Daniel Bagwell

2:51

All right, well, all right, good morning, everybody. I'm Daniel. Think we got maybe a hot mic there if somebody wants to help me out. All right, thank you guys. Folks, this is the TXDoT Advanced Air Mobility meeting for August 1st. We'll be starting off with a roll call of the committee members. Quite a few of you are online, so just bear with us as we check our online folks as well to see how many folks we have here and then we'll move on to the next part of our agenda.

Daniel Bagwell

3:37

All right, Dan Dalton is present. I'm sorry. It sounds like we have another hot mic, if you could help me out, folks. Thank you. All right. Grant Guillot, George Kivork, Brent Klavon, Angel Newhart, I believe I saw your name. Jim Perschbach. I don't think he's in here. Kendall Prosack

Kendall Prosack

4:43

Here.

Daniel Bagwell

4:45

Michael Sanders

Michael Sanders

Here.

Daniel Bagwell

4:53

Thank you.

Daniel Bagwell

4:54

Thomas Swoyer

Thomas Swoyer

here.

Daniel Bagwell

4:58

Nathan Trail, Sergio Saenz.

Daniel Bagwell

5:13

Jeff Bilyeu

Jeff Bilyeu

5:15

I am here.

Daniel Bagwell

5:15

Good morning.

Daniel Bagwell

5:19

David Fields, Ernest Huffman.

Ernest Huffman

5:30

I'm here.

Daniel Bagwell

5:35

Gus Khankarli, Cameron Walker, Kimberly Williams, Jason Day.

Jason Day

Jason Day is here.

Daniel Bagwell

6:08

Maruthi Akella Ahsan Choudhuri Brent Skorup, Andrew Chang.

Jonathan Appleby

6:39

This is Jonathan Appleby representing Andrew Chang.

Daniel Bagwell

6:46

Cade Clark.

Katia Veraza

6:49

Cade Clark won't be able to make it today, but I'm representing him today.

Daniel Bagwell

6:55

Thank you.

Daniel Bagwell

6:56

Amanda Nelson.

Amanda Nelson

6:59

Good morning. I'm here.

Daniel Bagwell

7:01

Morning, Mark Ozenick.

Mark Ozenick

7:06

Good morning. I'm on the call.

Daniel Bagwell

7:08

Great. And Ben Ivers. All right. Roll call is complete.

Dan Dalton

7:24

Excellent. And do we have a quorum? Not yet. OK. All right. Sounds good. So thank you all for being here. Those that are in person, which could potentially be our last meeting? Maybe if we're lucky. So, and thanks all for being here online, whether you're in the comfort of your own home or if you're in your comfort of your own office and you're ready to dig deep into this report. I know that it's been a quick turnaround in terms of getting the report in your hands. So hopefully everyone's gotten a chance to at least skim it. We'll go through the report in detail today. And I would ask that, you know, we focus on substantive concerns. If there's editorial, editorial or clerical things that we're worried about, commas, the, you know, sentences, these types of things, that's fine. But if we can really kind of focus on, hey, I think this needs to have a different theme to it or a different trend in this or a different section. Let's talk about those items versus, you know, kind of digging too far down in the weeds. And so, Texas State will go ahead and review, they'll kind of be leading the review of this document today. And many thanks to them for pulling this together. As everyone can see, it's no small amount of work pulling this together. So many thanks to you folks for doing that. But I don't want to take too much time. Just want to say, if you do have, you know, areas of concern or you want to raise an issue, if you're online, please go ahead and use the hand raise function. Otherwise, if you're in the room, please go ahead and just raise your hand. But with that, I think we'll go ahead and get started. Did I miss anything else? Any other? OK, great. And just again for kind of an overview. So, we'll go through the report today and then if there are additional substantive comments that or even editorial comments that folks want to provide, there will be a short time for you to be able to collect those and submit those and we'll find out the exact date. I'm looking at Rebecca now, she's saying something. Oh, and the other thing is yes, that's what she was saying. So, when I say that, you know, we're looking for comments, to be clear, that's comments from the committee members themselves. There will be a whole other public comment period, which is part of this. So, so, yeah. So, we will only be taking comments from the committee members at this time. And if you are part of the public and would like to have a comment, you'll be welcome to do that when the report comes out before it is, I think, finally issued. I'm still getting more details on that, but I there will be a public comment period at some point, but this is not that because we are trying to get this over the line. So again, comments from committee members are appreciated. And then so anyway, going back to it, those comments will need to be collected by, we'll get a lot of them today. But the ones that were submitted, we'll, we'll learn from Texas State kind of how they want to receive those probably via Microsoft Word comments or just individual emails. But we'll collect those probably in about seven days from today. So if you didn't get to dig deep into the document over the last couple of days, this will be your chance. And then at that point, we will stop having comments. We're not going to do yet another version of this. We'll be able to integrate those comments and then the final, our report will go out to the committee members one last time before it then goes on to text dot and the committee or sorry, the Commission. So that's kind of the run of show for the next three weeks. So do keep an eye on your inbox because things are going to be moving fast. All right. And one other thing. Oh, I have a hand raised. Excellent online, Kendall?

Kendall Prosack

11:19

Yeah. Hi. Thanks, Dan, for that overview. I did not receive a copy in advance of this meeting. Is it possible for the committee members to get it now so we can also see it as we're going through today?

Dan Dalton

11:35

Yep. Committee members. Yeah. We'll put it in the chat if that's easiest, if that is OK for you, Kendall.

Rebecca Davio

11:40

My apologies, Kendall.

Kendall Prosack

11:43

Thank you.

Dan Dalton

11:45

Yeah. In case you didn't hear, Texas State apologizes. So excellent. OK, so with that, we can go ahead and get started with the review itself.

Rebecca Davio

12:04

Hey everyone, my name is Rebecca Davio. I am with Texas State University. We are happy to present this report to you and get your comments. Just to reiterate the dates, the deadlines that Dan was talking about, we would like all committee comments no later than Friday, August 9th. We will incorporate those comments and send back out a draft for your review no later than Monday, August 26th. And then we will finalize everything and send it to text dot and wanted to let you know just sort of as we start on this that how we're going to proceed. We're going to go through the report. You can see here; this is the cover and we're going to go through the table of contents. So, you can see the structure. It has morphed just a tiny bit from the outline that we showed you last time. And then we're going to start going through the report, skipping the executive summary because what we want to do is, is get your comments and your thoughts on the report itself and then we'll go back to the executive summary. And just some things to keep in mind. We were advised to keep this report short, non-academic, very easy to understand in layman's terms and focus on the recommendations. Why those recommendations are there sort of the benefits, the challenges and then why these recommendations. And so, you'll see the recommendations in the executive summary. They are exactly as they are in the report. We did not want to strip out and condense that where it's just like go, go create a, a TXDoT office for AAM. We didn't want to just say that. We wanted to give a little bit more of the flavor. So that is the thing in the report that is repeated in its entirety in the executive summary. So just so you have that in mind, because that is the focus of this report, is to make the recommendations for the legislature. Something that you should also know, we were asked to prepare a very brief summary that could be used when you're communicating with legislators or other policy makers. So, we'll show you assuming that we have time at the end. We're still formatting a little bit, but it'll be a four page handout that has the executive summary contents summarized again to one page and then the three pages of recommendation details. And so that can be formatted so that you can print that out and take that when you're visiting, as I said, with legislators or other policy makers.

Rebecca Davio

15:21

OK, I think that's it. Now we'll get started everybody. You should have a copy of the report in the chat. And Kendall, again, my apologies for not getting that out to you. I'm not sure that was user error. Oh, OK. Well, we're working-We're still getting.

Kendall Prosack

15:43

Yeah, we're still getting an error saying if we type in our emails that we can't download this because I guess it's not directly shared with some folks.

Rebecca Davio

15:55

Yeah, we. So, we can't do just a link, we have to download it and then share that? OK, we're working

on that. Apologies. As sophisticated as Microsoft Teams is, sometimes it knows better. That's right. It wasn't about advanced computer sharing. OK, so the cover is here. Let's go on to the table of contents. OK, so thank you, Molly. So, we tried to keep this simple and sort of conversational. And so, the primary sections, there's the executive summary and introduction. How is this report developed to be able to give some background on how this committee was created, how the report was created, that's where you're thanked and recognized. And there then we go into a very basic question, what is AAM? You know, we understand that the majority audience for this is not technical. So we wanted to make it very easy and approachable. We started off with sort of definitions and context. We included the Texas definition as was in the previous legislation and the federal definition since the committee in your last meeting elected to not try and craft a new Texas specific definition. So, the Texas definition that's represented is the one that was in the legislation that created this committee, just to give a frame of reference. Then we go on and there's the AAM system, which-do we have a comment or a hot mic? The AAM system includes aircraft infrastructure and a little bit of information about the regulatory landscape mostly to make it clear here that the FAA has governing authority. So, to not-to make it clear on that. Then we go into AAM uses, including drone related uses and veto related uses, and here we try and come in and include examples that we heard from committee members, from members of the public, and from our invited guest at our meetings where they told us about things that were happening in Texas. We wanted to include that to make it something that legislators could connect to and would resonate with them. So that's happening in my area or that's not happening in my area, but that could be useful to my constituents. Then we go on to what are the benefits to Texas? And those were sort of categorized into economic benefits, societal benefits and environmental benefits. And so, we cover those. And then we get into what are the challenges, what are the barriers that are going to stop this from being implemented? And those barriers included communication, like people not understanding what this is. And then electricity is another barrier, concerns about safety, a need for a trade workforce, some standards and consistencies. And those are not standards like telling you what to do. They're just adding some structure and consistency. And then there's also a need for research and development to continue learning and expanding the knowledge and the capabilities here. So, then we have a section on how are other states addressing these challenges? And we picked those key states that y'all acknowledged were leader states, including Florida, Georgia, Ohio and Virginia and talk a little bit about what they're doing. And that's really a setup for how can the state help? This is the recommendation sections. We wanted to make it clear that the state needed to-the state legislators, state leaders needed to take action and they needed to take action in three very broad areas, leadership, planning and innovation. And then we have a very brief conclusion. By that time, nobody's everybody stopped reading, but it's there. We also include some appendices that I just want to make you aware of-your biographies are there. We still have some committee members that have not submitted them. It's not too late. You have until August 9th. We also included a brief summary of Texas regulations regarding this, so if legislators wanted some perspective on that. And thank you to the previous team. They did a lot of work. We did not repeat their work. We simply reference their work and added new information about what was going on since their report. Then we included a copy of the survey questionnaire that was we. For those of you that may not have been aware, Texas State conducted a survey of 1000 members of the Texas travelling public that represent the population of the state. Asked them questions, a series of questions that those questions are included here in this appendices and this appendix. And they, those questions were formulated and developed based upon input from the interviews that they did with committee members previous to that. And so, we felt it was important to give the information about those, what those-what the people were asked. And then there is one final appendix and that is some potential AAM communication strategies. We learned in the meetings that it was not necessarily something that TXDoT could do was take on all these things. But those strategies are there. They were developed by the communication team at Texas State and give you some idea for this committee and for other people in the industry to be able to look and say what kind of things might we need to do as we advance in this industry and to take advantage of those benefits. So that's the table of contents. I

wanted to spend some time taking you through it and trying to give you a little bit of rationale for what's included and why. Are there any comments at this point in time? OK, Molly, let's move on.

Rebecca Davio

23:13

Now what we're going to do is we're going to go pretty much page by page not and don't worry, we only have two minutes or so per page, but we wanted to give you an opportunity to sort of see the wording and tell us your comments. And this is actually a PDF version of the report. What we're going to do is we're not-because our time is short, we are not going to go through and do specific wordsmithing today. We want to hear your comments. We'll put a sticky note on here and make sure that if it's your comment that it's, it reflects you and that if we need to come back to you, we can for clarification, we can. Our goal in this is to get your comments and to be able to note them. And then hopefully at the end of this meeting, we will be able to sort of agree, the committee members will be able to agree in principle that the basic report is fine with the changes that you've noted. And then committee members will have the opportunity, as our chair mentioned, to look at the report one last time after we have incorporated the comments. What I will tell you is we received a couple of comments from some committee members after we sent it out. We have already incorporated those if you looked at the report before or they're highlighted on here so that you will know where the changes have made from the copy that you are able to review.

Rebecca Davio

24:59

OK, so Molly, if you could sort of do a slow scroll, we start out here just giving a very high-level introduction. This is primarily meant to for the reader to foretell what's going to be included in the report and what the key points are. So, there's nothing in this introduction that isn't, you know, expanded on in the report.

Rebecca Davio

25:35

Oh, I'm sorry, we did get a comment already this morning, thank you. That says we need to add this, some statement of this purpose back to the executive summary to make sure we, we were fighting space constraints and, but we will, we will make some mention so that anyone who reads the executive summary and I should, I can also tell you that we did that on the little summary. We'll get something on there as well. So, when you're going out and visiting with legislators and you have, if you leave this with them, they will know why you're there. OK, so thank you for that comment. Then again, this is just foretelling what's coming in the report. If people want to scan this introduction and cherry pick, they'll know which sections of the report they need to go to. I won't stop at every section and say if you have comments, if you have comments, please raise your hand or speak up or something.

Rebecca Davio

26:49

So this is the section of the report where we were trying to give some context to why this report was created, who the people were that contributed to this. So, we've got the committee members listed there and we explained that we met hybrid and in person and that kind of thing. And then also reflected the committee chairs and vice chairs and acknowledged that there was lots of input from the public as well. This was a very open process and we talked about the survey and how that was developed in the interviews. So-and acknowledged that we had some presentations that also are reflected in this report.

Rebecca Davio

27:39

Yes, Cameron?

Cameron Walker

Is there a copy of this survey in the appendix?

Rebecca Davio

27:58

Yes, the survey questions are in there and we got the survey results the day before we had to send this out for review. So, we have some preliminary like they're not preliminary results. We have some results that are shared in the report. There will be some additional materials that will come out and be shared later.

Rebecca Davio

28:13

OK, now we get into more of we're start getting into the substance, what is AAM? And we tried to again, keep this simple and give some definition. Again, we went primarily with the federal definition, but also mentioned like UAM and RAM, even those they weren't specifically part of it. We felt like that would help different legislators say, oh, it's, it could be for me that if I live in a rural area or I live in an urban area, this could help me and my constituents. So that's why that's included. Then we also say, OK, this for the purposes of this report, AAM also will include drones. So that's where we say that. And we're, we're threading that needle carefully and we try and make the distinction. You notice, if you remember, the uses had here are drone uses and here are VTOL uses. So, we get the Texas definition, the federal definition, and then we start talking about the system because it seems like that concept of the system is really important to understand. It's not just these things that are flying around, it's all the pieces that go together. And so that concept was there for that reason. And then we get into aircraft and, you know, try and step back just a little bit for those legislators that might be confused like is AAM, is that aviation, is that aircraft, is that you know? And so, we try and address some of that here and let the committee, you know, reflect some of those discussions about our drones in are they not that kind of thing. We also got guidance on that, that it was OK to include that in this report because this report will serve as the steppingstone for the next people that come afterwards. If none of us are here, then there will be some knowledge that carries forth towards other, you know, towards the people that come after us for what the discussions were in this group. And so they can build on that and then sort of try to give people some understanding of what might be some of the differences between drones and the larger VTOL aircraft. And you know what the similarities were and the differences and that they shared some commonalities as well. So then got into air taxi developments and here let people know that there are two aircraft that have already been approved by the FAA. And so we felt like we didn't include a lot of images of, of aircraft, but we did want to include these because it starts to give legislators and other folks who will be reading this the concept of, oh, OK, I could see that that.

Dan Dalton

31:52

Yeah. I think this was one area where I want to make sure we're super clear because technically the FAA has not approved any aircraft for eVTOL. Yeah, no, no eVTOL has been type certificated yet. So a number have been issued experimental or worthiness certificates, but not even Joby's been type certificated. So, we'll just need to capture what type of approval was issued. So yeah, because what I don't want to be as disingenuous and not factual. So, we'll go back and make sure that it how we capture the approval that was issued. All of these are experimental. The some of them are not even allowed to have people on board.

Rebecca Davio

32:31

So OK, we'll count on the technical input from you to make sure we capture that correctly. If we were trying to say progress had been made, but we absolutely want to be factual.

Dan Dalton

32:43

Yep. And so I think, I think there's a way we can thread that for sure.

Rebecca Davio

32:47

Thank you, we appreciate that. Michael, you had a-Mike, you had a question. Is it in the chat? Oh, Mike, did you have a question?

Mike Sanders

33:11

Can you hear me?

Rebecca Davio

33:13

Yes, sorry.

Mike Sanders

33:17

Can you hear me now?

Rebecca Davio

33:18

Yes.

Mike Sanders

33:20

OK. No, I'm out here at the drone and AAM symposium in Baltimore and the FAA announced day before yesterday that both zip line goodness and I'm drawing a blank that we have two-part 135 certified aircraft. They're smalls, right? But I don't know if that's something you'd want to include in the report or not.

Dan Dalton

33:47

Yeah, the other one was Wing, our good friend Kendall.

Mike Sanders

33:50

Yeah, yeah, Zip Lion and wing. Sorry. Yeah, that's just an example of two-part 135 certified aircraft, but the only two at this point.

Rebecca Davio

34:04

Yeah, that that feels like something we would, you know, as current as we can make this. At some point in time, we have to have a cut off. But if that's happened and we're already making comments, that feels like something absolutely to reflect. We want to help the legislators understand that this is happening and it's coming and things are being approved. And so, yes, thank you very much for that, Mike. And if you have any other details or Kendall or Dan or other committee members, we would love to be able to capture that accurately. And we'll do our own research but y'all are the experts. Thank you for that, Mike.

Kendall Prosack

34:42

Yeah, Ernest just dropped a really good link into the chat, but happy to give more context if needed after that Rebecca.

Rebecca Davio

34:53

Perfect. Thank you very much, Kendall. Appreciate that and thank you Ernest for the links. OK.

Rebecca Davio

35:07

Next, we get into infrastructure, and we covered physical infrastructure and digital infrastructure felt like it was important that legislators understand that it takes both and we're more advanced in the physical infrastructure and that there's places then we are perhaps in the and it's more broad, broadly available, geographically available then the digital landscape or digital infrastructure then we get into the regulatory landscape. Again, this is sort of to give that sense of perspective about the FAA's role and their significance, and so just to help legislators understand where they can go and where they can't go. So, trying to give some more detail here to help with the understanding in case when you're talking or someone else is talking and you talk about Part 135 certification, there's some place to go. And we didn't want to put this kind of information in a glossary because people frequently don't look at a glossary. So, we tried to make it simple and approachable and include it in the body of the report to help with the understanding. And then there's some reference to existing state law. We also mentioned local ordinances and sort of what they can do that that's where zoning is so important. And so that should give a context then to all policy makers about where they can play and where they're where it's somebody else's area.

Dan Dalton

37:03

And I had just a quick ad here from our side, just making sure that we'll also tie, that we should tie in the fact that that municipalities, specifically local entities, have the ability to find ways to tie this into their other modes of transportation. That this is not just a mode of transportation in and of itself, but this is actually something that can tie into multimodal and that there's an opportunity to kind of build infrastructure and the integration of those services into a community. So, yeah, I have a note there, but I'll send that to you.

Rebecca Davio

37:34

Yeah, that's great. That's a wonderful point. Thank you for that.

Rebecca Davio

37:39

Yes, Mark.

Mark Ozenick

37:43

Just come off of mute here, good morning, everyone. I wanted just to make a suggestion. I, I don't think we captured in this something I think the legislature could really get their arms around, and that's to have Texas become a leader in the development of more efficient battery technology, right, not only for advanced air mobility, but for the automotive sector as well. And then an alternate fuel source infrastructure, right? So, if we go hydrogen, you know, what does the state of Texas have to do to prepare for that? So just a kind of a side note, but I think this would get a lot of the people in the infrastructure thinking about what could Texas do along the lines of kind of energy optimization and energy development. Thank you.

Rebecca Davio

38:30

Right and thank you for bringing that up. Mark, we, we do have a section in here about electricity and the need for research and development and battery optimization and fuel optimization are specifically mentioned in there. So just wanted to let you know that, but we will look for other opportunities. And if you see some things that we left out please in those sections, please let us know.

Mark Ozenick

39:03

OK, now we get worthy of highlighting up in the in the front of the document. Thanks.

Rebecca Davio

39:08

OK, thank you. Now we get into AAM uses. This is where we really tried to bring it home and give legislators an opportunity to hear about the industry that's important in their district, the companies that are doing things in their district or something similar. And so, we really wanted to bring home examples here and we thank you for those of you that have made presentations or sent us materials to be able to include those. And so again, we tried to like-healthcare here. If this is something that could be useful, then here's an example, an emergency response. And these are places to me that it was, it's very interesting, it's engaging. It's great to learn about these specific things and details if you have information, a factoid or something new that's just developing that we haven't reflected then please let us know that. Yeah. So, we're just sort of, we all said there were other different kinds of services that were drone capable. Now we're getting into research and testing. So, we wanted to reflect the full capabilities of what was going on in the state. And so, Mike did send us some additional clarifying verbiage. And Mike, please check that and make sure that we captured it correctly. And we also have a question for you. You have a 12 nautical mile beyond visual line of sight corridor. Is the RELLIS campus also 12 nautical miles or is it 12 mile? We couldn't find clarification on that. And it seemed like 12 nautical miles was actually further than 12 miles. And we don't want to misrepresent.

Patrick Yee

41:27

So this is.

Mike Sanders

41:29

Yeah, Rebecca, I'm going to have to defer to RELLIS on that. I know that my corridor from Corpus Christi to Robstown is 12 nautical miles.

Rebecca Davio

41:40

It's 12 nautical miles, OK, for Corpus. Got it. And so is that Patrick?

Patrick Yee

41:47

Yeah, Patrick from RELLIS. Ours is 12 miles. I can get you a nautical mile reference if you need that.

Rebecca Davio

41:55

You know, y'all are the technical experts. We had to go look up what nautical miles meant and how to translate that, but it seems particularly confusing to a non-technical reader to have 12 nautical mile and in the next paragraph have 12 miles. So committee members, what would you recommend?

Dan Dalton

42:15

We should stick with 12. This is Texas, it'll be bigger. We should stick with 12 because if you go with nautical miles, it'll be a smaller number.

Rebecca Davio

42:21

So oh, I thought it was a bigger number.

Dan Dalton

42:24

I don't think so. Right, right. So, if we got 12, if we got 12 statute miles, we're going to have 9 nautical miles, right. So, the nautical number will be smaller. So, we should go with the bigger number.

Rebecca Davio

42:44

So like 18 or whatever it is. Oh, OK. That, that might be helpful.

Dan Dalton

42:48

I would still leave with the bigger number.

Rebecca Davio

42:49

OK, whatever it is, we'll make a note. That's technically more correct, so we'll do that. Thank you for the clarification. It takes a village to produce this report. And so, if the committee members and others where your information is referenced, please help us with that Fact Check and make sure that we accurately represented the information. And we learned some stuff that we got that we weren't aware of that it happened since we had last communicated with the committee members when they submitted revised comments. So that's very helpful to us. Then we get into VTOL related uses and if the timing is off also, you know, we put the time that we found online or that you had said in presentations or something like that. But if you have clarifications, please don't hesitate. And Port San Antonio and Mike's Lone Star UAS were two of the areas that the report that you're looking at now is slightly different because of comments that they submitted. So, I just wanted to look at you, those of you who just are looking at the draft now, you're looking at the draft that we're looking at. We just are looking at a draft that doesn't have draft on it so that it's easier to read for this meeting.

Rebecca Davio

44:52

OK, so next we get into the benefits. We wanted to help legislators and others to understand, but also sort of give those in in some sort of broad terms that you could easily rattle off in summary when you're talking to folks and remember, but also then go into some of those details. And so, this is the area of the report where we started presenting the survey results. Molly, if you could go back real quick. So again, the survey results just came in. We got the final results the day before we were trying to send this out, but we did get some and we're able to include specifically what Texans are saying and thinking about these things to reinforce. So, we thought that was a nice add to be able to do because we say, you know, in the economic area, we don't have any Texas specific information. That's why we're asking for, you know, doing an economic impact report for Texas. But this where we had some Texas specific information, we wanted to be able to share that. So, these are primarily this economic information is primarily summaries of national studies. Then we do share the California study because it looked at benefits directly from the construction of vertiports. And we also get into a study that we found by Virginia Tech where they were trying to estimate the benefits of both drones and AAM delivery. And so, Austin fortunately was one of the cities that they used as their example, but for the medium density cities and the benefits that could come. But we tried to suggest some Texas cities that had similar qualities. So again, legislators and other policy makers could have something sort of localized to grab on to. So again, we've got some perceptions from Texas survey that, you know, wanted to let legislators know that there was receptivity particularly for humanitarian and disaster relief. That's what y'all have been saying throughout, that that's the area of first easiest acceptance. And so having the survey results that said that was found across all rural, urban and suburban populations, that that was a really nice thing to have there. And again, we pull up some more results here about potential benefits of drone deliveries and that kind of thing from the Virginia Tech study. We were trying to give some meat here where we could to be able to give some quantification. Yes, Cameron.

Cameron Walker

48:20

This, this is Cameron Walker. Would, would you go back to the, the, the top of that slide, the top of that table, right. You've got Big Spring, Kingsville and Stephenville in there as examples of lower density communities. And I'm just going to comment on that column, but you've got, you know, the, the, the bulk of the state covered the western with Big Spring, northern with Stephenville and down in the valley or they're nearby with Kingsville. I think that's great because these people we're reporting this to all have different levels of interest. And I, I think that's a great choice on all three of those.

Rebecca Davio

49:03

Good, thank you very much. We, we worked hard to-I was like, we have to find places all over the state to be able to represent as broad as possible. And fortunately, my team pushed back and said, but we have to find places that accurately reflect those same characteristics. So, thank you for acknowledging that. We tried to cover as broad a geography. That was our thinking as we were writing this, that we want to give every single legislator an opportunity to find something in here that they can key in and relate to. Didn't we get into-Yes, Dan.

Dan Dalton

49:57

All right, Dan Dalton, I just had one on that last right before environmental item. Let's see, peak times 3, the reference. So reduced traffic could ultimately save city residents time and money. There's also a Texas A&M report, which I've got a link here and I'll send to you folks that we should probably include. Just add more data, Local data.

Rebecca Davio

50:17

Great. Good. Thank you.

Rebecca Davio

50:34

So environmental benefits again, Texas, I'm sorry, Virginia Tech had some nice quantification again with a Texas example, so we included that.

Rebecca Davio

50:47

Now we get into the challenges. This really was meant as a setup for the recommendations. What are the challenges? What kind of things need to be overcome, so we would begin with communication. Y'all have said consistently that that's a challenge that people don't understand. They don't know you know, and so we address that here are or discuss that a little bit. If you have specific examples-yes?

Matt Pantuso

Jason days put in the chat that he'd like to see more language and the benefits of public safety use of drones, especially in disaster response.

Rebecca Davio

51:32

Yay Jason. Can you help us with that? We welcome that, you know specific examples again that can resonate to me are very powerful like oh I can see that I can understand that I can relate to that. So if you can send us more information that would be and that's we're asking Jason because he brought it up, but if there's anyone else, please share. Great, thank you, Jason. OK, so the challenge is communication was the first challenge. And again, we brought in survey results because they were specifically related to the people's confusion, and they didn't know, and they didn't hear. That felt like helpful information for policy makers and for industry representatives to understand particularly which members of the community might need extra help in understanding and reaching out. Next, we go to electricity, a big concern here. We didn't want this to be too technical, but again, it's a setup for the recommendation to do some more study and analysis and projections about potential electrical demand so that that can be communicated in advance something, and we get to safety. There's,

there's several elements here of safety. But the committee, I mean, I'm sorry, the survey respondents did sort of echo concerns that we had heard about cybersecurity being a potential concern for them. And I thought it was sort of interesting the worsening of air traffic. But now you have that, and you know that and can address it. Then we get into workforce. We found a really nice article. Does somebody have a comment? Anyway, we found a really nice article that at least helped us understand why, how this was so different than traditional helicopter or aircraft piloting.

Dan Dalton

54:19

Yeah, and from this one, this is Dan. So, for this one, I think we should also add, you know, beyond pilots, we're going to need a lot of maintenance folks, a lot of line staff, a lot of host staff. There's, there's so many people. It's one of my favorite talking points that for ours, which is an autonomous aircraft, we're still going to need a lot of people to help make sure that these operations. It's less so about the aircraft side, it's more about the operational side. So especially maintainers, the ability to have folks who can understand high voltage safety be able to take off, you know, line replaceable units, put them back on. If there really is going to be the great scale of this industry, that means there will be multiple 10X multiples at each airport of where people are going to need to do maintenance on multiple aircraft. So, I think that's a big part of this, which is also, by the way, you don't need a college degree to get an AMP. So, there's a lot of opportunity there. So, I think between maintainers, line staff and host staff, this industry has a lot of opportunity for growth, but it's also a challenge right now because we don't have those the way we need them and the capacity, the volume that we need today.

Rebecca Davio

55:25

So and the training.

Dan Dalton

55:29

It's huge yeah, absolutely.

Rebecca Davio

55:31

We captured that thought as you spoke. But if you have more details and again, Angel and others that are involved in workforce development, if you have some more specifics that we can add here, We couldn't find, you know, projections, but something that that really helps build out that flavor because that what you just described gives a full spectrum then of career opportunities for the population. Our next-thank you for that, Dan. Our next section, we called it standards. It was really about consistency, consistency and trying to not create a patchwork at the local level and also in the physical infrastructure to not like, oh, I can't charge here because it's inconsistent or something. Yes, Ahsan.

Gus Khankarli

56:34

Yeah. Good morning.

Rebecca Davio

56:36

Good morning.

Gus Khankarli

56:38

Gus Khankarli, the city of Dallas. So in the document when I was reading it, whether it be in, in the executive summary or this piece here, while the document somehow eluded to the physical infrastructure, in my opinion, I think we need to highlight this as a one of the key challenges because of the fact that if you are retrofitting existing physical infrastructure, whether being on the air side component of it or on the land side of it, it is something that could be a constraint or a challenge,

major challenge that we can have. So, I mean, we have that here in Dallas is how do you account for the retrofit and the servicing of these of these vertiports say that we have in in at the Convention Center in downtown Dallas. So, I believe that has to be highlighted somehow or clearly alluded to, whether you want to put it as part of the standards and or a standalone item. So just my two cents on this.

Rebecca Davio

57:44

Great, Gus. Thank you for bringing that up. If you can send us something more in your comments and be as specific as you can to really help us understand so that we can represent that and find the appropriate home for that. Because I think that again, it's, it sounds like that is an important thing that will need to be considered and factored in to make this all work.

Gus Khankarli

58:13

Yes, ma'am. Thank you.

Rebecca Davio

58:15

Thank you, Gus.

Rebecca Davio

58:19

Then we get into research and development, you know, the needs for continuing to learn. And really what we're trying to do is set up a coordinated effort of research in the state in the recommendations. But I jump ahead. We briefly, we didn't want to go into lots and lots of detail to lose our readers, but we wanted to set up very clearly, these other states already have the kinds of things that we're going to be asking for. They already have plans, they have roadmaps, they have economic impact studies. They have very clear, cohesive documents that help give everyone in the state the ability to start, to coordinate, to be on the same page. And it's important that we do that as well here in Texas. And so it's the setup for leadership planning and innovation that are the core of the recommendations.

Rebecca Davio

59:25

So now we get into how can the state help? We want to make the-we want to make sure that, you know, legislators understand this is happening, but if you really want to maximize the benefits and, and bring that throughout the state, you need to take these actions. And so, the first thing that we set up is leadership. So, trying to give people and this is where we incorporated the specific recommendations of continue the advisory committee and we didn't want to you know, again, we're aware that everybody has a short attention span, particularly these days. So, we gave a brief rationale of why that, why that's important, why having a committee like this really gives a focal point, an opportunity for discussion across lines, across industry sectors. And that was so important. So, we go through and use that same model for every single recommendation in here to set those up. And then we go to planning and it's the same thing. Planning is the most complex recommendation because there's so many different facets, and I think the next committee is going to be challenged to figure out how to get all of those to work in harmony and be delivered, you know, in a cohesive fashion. So, it's very exciting to look ahead and see all of these pieces could come together and we really could take the place in a leadership position. So again, these are sort of setting up reports and more additional detailed level work, work where people get together and look at workforce development. And to your point and say, what are all the different positions that we need? How do we train for those? Where are they going to be needed so that a plan can come out of that action steps. And the last recommendation, we did change the name from research and development to innovation. It felt like it was more parallel with leadership planning and innovation. It was also more inspirational. And so here we left the recommendation. I do want to let you know that because we had like we're a research university that we worked with one of our technical experts and he proposed this idea and because it's

a new idea, I want to point it out to you basically what he suggested that sounded brilliant to me. Y'all committee get to decide, agree or disagree, but basically, he told us that the National Science Foundation has a model for AI research where they designate hubs, hub universities and those hub universities have a particular focus area. And so there would be one in this case in batteries and fuels, and there would be another one maybe looking at physical infrastructure or something like that. And then it's not meant to be exclusive, "nobody else can play", but it gives an opportunity for that university to really develop some expertise and collaborate with other universities and not be redundant. So, if I need to know something about infrastructure and I'm on the fuels, then I go to the collaborate, you know, project with the infrastructure universities and use their expertise and their forward thinking so that I'm not repeating that, but can use that to advance my fuel. And so, I thought that was brilliant and so we included it, but I wanted to make sure and point that out that that was not something that had been discussed at the committee level, but it felt like a really nice model to advance. Are there any objections to that?

Rebecca Davio

1:04:12

Not seeing any objections in the room, if there are otherwise, please include those in your comments on the report. And again, I just want to reiterate those, the leadership, innovation and planning recommendations are repeated in their entirety word for word in the introduction and also in the handout. So there won't be any opportunity for confusion or, you know, variance on those very key important points.

Dan Dalton

1:04:54

You may hate me, but would it be possible to have just the appendix with a set of the recommendations only? Because my concern is that if someone's perusing very quickly that they might miss the section. Like when I look at the table of contents, it doesn't pop out like recommendation, like committee recommendations. So maybe if we can just have either, you know, an annex, the last appendix, maybe even ahead of the biographies of us is committee recommendations and just have them all this straight list there. So, the people can very quickly just flip to that and say, OK, let's go through these and talk about them.

Rebecca Davio

1:05:31

Could we also go up to the table of contents and where we say what the state can do, say something committee recommendations so that it's very clear.

Dan Dalton

1:05:44

Yeah, cause I want to, I want people to be able to say, especially folks in the legislature. OK, I understand there's recommendations in here. Where are they Flip and go versus like I got to find them.

Rebecca Davio

1:05:56

I have to decipher what that clever heading means exactly. We can clarify that there. They're in here twice already and they will be in the talking page if we fix that label and make that clear in all the places. Would that be sufficient for you?

Dan Dalton

1:06:22

That's sufficient. Three times as long as it's labeled recommendations is fine by me.

Rebecca Davio

1:06:26

OK, OK, that's good. Because we really, we debated internally like, how can we? Because I'm like, let's

shorten these and put them in the executive summary because that's normally what you do in the executive summary. But the team wisely fought back and said no, without that rationale, just saying person at, you know, the office of the governor, like what, what is that? What does that mean? What? And so that's why we felt it was so important to not condense those anymore. So if you'll be OK with that, we can clearly label that so that it's clear. And it's like that'll be flagged. And that will be when you see the, the sort of talking handout, then that is 3/4 of what's in there. The rest is just sort of like, OK, you can get the basic concept.

Rebecca Davio

1:07:26

OK. And then we had the conclusion, as I mentioned brief and then I, I don't, I don't think there's a real need to go through the appendices unless anybody wanted to. So, Molly, let's go back up to the executive summary and you can just see how we trans, how we sort of condense this information. There's, you know, what is AAM trying to give that basic understanding? And again, you know, executive summaries are short, so this doesn't cover all the detail, but we tried to hit the high points there and give legislators things that they could understand and relate to and that we felt like you or other members of the industry would be potentially talking about when you went to see them. Thank you, Molly. And so we've, we got the what is AAM and, and again, tried to pull out some of those things that they could relate to the delivery of medications and medical supplies that just felt like, if that's all you're going to read that it's important that you understand this could help me and my constituents.

Dan Dalton

1:08:55

Yeah, and this is Dan again. It's a little drone heavy in that section. So we might, I have some ideas on how we might add some more AAM. I'm happy to provide those to you.

Rebecca Davio

1:09:04

So that that would be helpful. We were hard pressed to like-we, we don't know all the ways that it's intended to be used and couldn't find examples that we could point to, understandably since it's still developing. So again, we tried to give information, a little very brief information, just highlighting some things that are, that are already happening and planned. We get to the what are the benefits again, the economic, societal and environmental economic and then summarize the challenges again just so they can quickly understand and that's a setup.

Cameron Walker

1:10:00

This is Cameron Walker. Could you go back to the environmental section? Yeah. So we're saying here can lower energy consumption by 94% up to and emissions by 84%. It's some, is it in the appendices or somewhere else where that comes from?

Rebecca Davio

1:10:19

Yes

Cameron Walker

1:10:20

Thank you.

Rebecca Davio

1:10:22

That's covered. It's summarized from the Virginia Tech report that that's where those estimates came from. And so it shows the tables and we didn't we debate. We also debated. I'm telling you all the things that we went through just so because you couldn't all be there with us as we were crafting this,

but we debated like, do we put citations and the executive summary to add those details and that credibility and we decided that it would just bog it down.

Dan Dalton

1:10:59

OK, so maybe it's worth just a footnote at the beginning of the executive summary saying citations for these are embedded deeper in the document, blah, blah, blah, blah. So, people don't think we're just making it up in the exec summary.

Rebecca Davio

1:11:08

Oh, come on, there's the fun in that. Yes, we can do that. Thank you. So, we're like these are just very brief. Again, it's the executive summary. And so we're trying to just give the idea of the high level topics and a little something to grab onto or a specific fact or something. And then we get into-Oh, Patrick.

Patrick Yee

1:12:03

Yeah, when you guys highlight the RELLIS BVLOS corridor, and I know that's a good thing to highlight, but also on the campus we have 8 state agencies, you know, TTI does it research out here, TEKS, law enforcement and public safety there. There may be other things to highlight on RELLIS other than just the corridor. There's just a large presence of state assets out here.

Rebecca Davio

1:12:40

So that's great information. If you can get us something more specific on that.

Patrick Yee

1:12:45

Yes, ma'am.

Rebecca Davio

1:12:46

We were really limited on what we could include by what was on the website or what was in the presentations that you sent previously, and we welcome that kind of information. So, thank you for letting us know about that.

Patrick Yee

1:12:59

Got it.

Rebecca Davio

1:13:10

Again, there's just very brief mention of other states sort of to you know, create a little bit of competition perhaps if there is any among the legislators that were competitive. And then we get into how the state can help. And again, as I've said, these recommendations are verbatim from the report. We did not want to strip anything out because this is the main piece and it felt like the recommendations themselves wouldn't stand up, so you needed that rationale and the understanding.

Dan Dalton

1:13:45

Going back to Patrick's point, I and maybe I just missed it, but I think there might be a way we could also really emphasize the amazing work that's being done in Dallas around especially to Mike's earlier point, drone deliveries. And, you know, even at the FAA noted that it's one of the, the most progressive regions in the entire US when it comes to delivery of, of goods via the small UAS. So I, I think there might be some opportunities to highlight how much investment NASA has made there, how much of an investment FAA has done there, things that have happened with the Alliance airport

and community. I think we could find a way to tie that together. Just again, trying to emphasize a lot of the infrastructure that's an example of air-based infrastructure that's already being used for delivery of, of goods to people and that kind of stuff. So yeah, I'll, I'll help provide some words on that.

Rebecca Davio

1:14:49

Yay.

Dan Dalton

1:14:49

I'm sure Kendall will too.

Rebecca Davio

1:14:51

Thank you very much. We really appreciate that you have the in-depth knowledge that we don't have access to. And so, it's very important and that provides the richness and to me that the interest that legislators are likely to glom onto. OK. So that's the report. We thank you very much for your comments. If you want to take the time to review the report and share more detailed comments, we would love that, really appreciate it. And we would ask that you get your comments to us by a week from tomorrow, August 9th, and we will incorporate them and send that revised draft back out to the committee members before we send it on to TXDoT for them to start their process of internal review and preparing it for a. And I'm not certain if it's adoption or approval, but their Commission has to take steps and then it is presented to the legislature. So, since we have a little time, is it OK if we just show the hand- the, we'll call it the policy maker handout. So, Molly, if you could go to that. And I will tell you that we're still doing a little bit of formatting. We're trying to make this a very user-friendly document. We'll prepare it so that it can be printed 2 pages, 28 and a half by 11 double sided. We'll also prepare it, format it so that you could print it on an 11 by 17 document, 11 by 17 piece of paper, and just fold it and that way you have a really clean document. But that meant that we had to combine collapse 12 pages of executive summary onto a four-page document. So, I will warn you, we're doing just a little bit of formatting on it, but you can get the gist and the idea.

Rebecca Davio

1:17:09

So this if we could go to the first page. So, this first page, what is the AAM, what are the benefits? What are the challenges? You can see those are the sort of the key points of the report. So that's a further condensation of the executive summary. We don't have room in here to give details, but that's where you can tell your stories and the specific examples. This is meant to be a leave behind tool that gives very high-level information. So, we've got that. And then this quick summary, very high-level summary of the key recommendations. And Dan will fix that. So, it's how can the state help adopt these recommendations kind of thing, but it's leadership, planning and innovation. Those are very high level. And then the next page is here's leadership and these, this again is the exact same content that was in the executive summary and in the report because we didn't want to create any potential for confusion or discrepancy. But it's just formatted a little different in the fonts smaller and that kind of thing to be able to accomplish this. And again, we are still doing some formatting work on this, but we wanted to make sure that we could create this document that would be useful for you and your communication with legislators and with policy makers and other people and start to have something to coalesce around. Any comments, thoughts?

Dan Dalton

1:18:56

Only that it's super helpful and we really appreciate it. So thank you.

Rebecca Davio

1:18:59

Our pleasure.

Dan Dalton

1:19:03

All right, fantastic. Well, thank you obviously, again, a tremendous amount of work and we truly appreciate it everyone who helped on the Texas State team for doing that. So, I think, you know, appreciate everyone who provided comments. I think that was a pretty thorough review. But again, please do review the document yourselves offline and then committee members, please provide that feedback before next week. And then if you're in the public and you would like to provide comments, just hold that until the final draft comes out because we may have actually addressed your comments. So, we'll receive committee comments by August 9th. I think that is about it for the next step. And then Dan Bagwell, did you want to check it all or are we good? OK. Yeah, yeah. So it's a good point looking for agreement in principle from the committee members or I guess said differently, does do any of the committee members disagree with kind of the layout of the existing report, the content as it stands today before your comments are added, does anyone disagree from the committee?

Dan Dalton

1:20:24

OK, great. Wonderful Then with that, I think. Maybe a procedural thing. Yeah, excellent. All right, well, then, you know, in the interest of being efficient, we will give you an hour and a half back. But hey, that actually gives you an hour and a half to review the report. If you have not yet done that, here's an hour and a half for you. But before we close out any public comments. OK, great. Well, in that case, we will go ahead and adjourn, and everyone have a great rest of your day. Thank you again so much for your comments and your input. And we're looking forward to more of that and we will, we'll talk to you all real soon, I'm sure. Thanks so much.

Gus Khankarli

1:21:14

Thank you.