

# Transcript

May 16, 2024, 5:38PM

**Pantuso, Matt** started transcription

**KG** **Khankarli, Ghassan** 0:03  
Present.

**DB** **Daniel Bagwell** 0:04  
There we go.  
Right.  
Cameron Walker.

**C** **Cameron** 0:12  
Present.

**DB** **Daniel Bagwell** 0:17  
Kimberly Williams, I think I see you there and I see Jason Day, president.

**KW** **Kimberly Williams** 0:19  
Present.

**DJ** **Day, Jason** 0:27  
Present.

**DB** **Daniel Bagwell** 0:31  
Maruthi Akella.  
Ahsan Choudhuri.  
I see Earnest there.  
Uh, Brett Skorup.  
I think I see you there.  
Andrew Chang.  
Right.  
Cade Clark.

**CC** **Cade Clark** 1:06  
Present.

**DB** **Daniel Bagwell** 1:07  
But.  
Amanda Nelson.

**AN** **Amanda Nelson** 1:14  
Hello, I'm here.

**AR** **Amy Rister\_HC** 1:15  
No. OK.

**AN** **Amanda Nelson** 1:15  
Hey everybody.

**DB** **Daniel Bagwell** 1:17  
And Mark Osnick.  
OK.

**DD** **Dan Dalton** 1:29  
Great.

**DB** **Daniel Bagwell** 1:29  
All done.

**DD** **Dan Dalton** 1:29  
Thank you for doing that.  
Appreciate you. Awesome.

**DB** **Daniel Bagwell** 1:31  
Yes Sir.

**DD** Dan Dalton 1:33

Alright, so let's see.

Can we go back to the slides really quick, Molly?

Thank you.

Alright so.

Or do quick opening comments.

Uh, you already heard most of them from me, at least.

**DD** Dan Dalton 1:51

And then we'll go kind of into the presentations.

So do we have the ERCOT guest speaker on now then or do we need to go to recommendations for few?

Yeah, OK.

**DL** Davio, Rebecca L 2:04

They said they were going to be here one.

**SA** Springer, Agee 2:04

This is Agee Springer, I am on.

**DD** Dan Dalton 2:10

Oh great, that's fantastic.

**DL** Davio, Rebecca L 2:10

Yay.

**DD** Dan Dalton 2:12

Alright, so we'll get, we'll get through that first part real fast.

Thank you all for being here.

Really appreciate your time as it says we have some great speakers lined up for today.

As always, much thanks to Texas State for helping us with this.

And then after we get through the guest speakers, we'll dive into some of the legislative recommendations that you all have helped pulled together, and we'll talk

through kind of what the - there's actually been such great progress. Honestly, like you all have contributed to this in a way that probably exceeded expectations, so I'll be sure to reach out to each of your managers and let them know.

But the great thing is that we're actually doing really well on the schedule and there is some optionality of kind of where we go after this.

We actually may be at a place where we actually have created draft final recommendations.

So that being said, if you have thoughts for like passionate thoughts or even minor thoughts on where we take the recommendations as they stand right now, please do contribute to that part of the conversation later.

But in the meantime, would love to hand over the microphone to our friends at ERCOT, then followed by the FAA. So.

**SA** **Springer, Agee** 3:32

Thanks, Dan.

So yeah, thank you.

I do have some slides.

I'm happy to share if y'all don't mind me sharing my screen.

And can you all hear me?

**DD** **Dan Dalton** 3:45

Yep.

And they've just dropped the slides and looks like you should have control.

**AN** **Amanda Nelson** 3:46

Yep.

**SA** **Springer, Agee** 3:46

OK.

**DD** **Dan Dalton** 3:50

So see if you can see if you have the ability to share your slides.

**SA Springer, Agee** 3:53

After I just have to make it appear on the right monitor and no one second.

**DD Dan Dalton** 4:02

Alright, we see your slides and they are not and now they are presenter mode perfect.

They are now in presentation mode.

**SA Springer, Agee** 4:07

Yeah.

Okay perfect.

Yeah.

So thank you and thanks for inviting us to speak and my name is Agee Springer,. I am the senior manager of grid interconnections at ERCOT, so my teams oversee our generation interconnection processes.

We have separate processes for small interconnections, so things like distribution, connected resources, or small batteries, things like that, and then the more traditional larger generation interconnections.

And then I also CR our large load and our connection team, which is a brand new team that was established last fall to handle kind of wave of large data center and crypto mining type.

So we've been receiving.

So I'm going to provide a brief overview of what ERCOT is, what we do, and then I will also just provide an overview of the interconnection processes for you know, generation on large loads and talk briefly about how smaller interconnection requests are handled.

And then I'll be happy to take questions.

Uh, so ERCOT is the system operator for the Texas electric grid, as you know, has been in the news quite a bit in the last few years.

Texas has its own grid that is isolated from the eastern and western interconnections of the United States.

Most of Texas's geographic areas certify ERCOT.

We cover about 90% of the customers and about 75% of the land mass.

And so you can see on the map you know the areas of Texas that are within ERCOT's

footprint.

Uh, in terms of, you know, some of the quick facts that you know really the, the main one that I like to highlight when I talk about umm our grid relative to the others is the peak demand size.

So it's about 85 gigawatts, 85 1/2 gigawatts was the record we sat set last summer. You know that is a very small fraction of either the eastern or Western interconnections and so.

It, it leads to our grid seeing new - being on the frontier of a lot of new challenges as new technologies enter, more renewables enter, more batteries enter, and then you know lots of new load technologies that we've seen in the last five years or so wanting to connect to the grid because ours is smaller, it leads to us, you know, really having to grapple with those challenges before other areas of the country in terms of the you know the makeup of our generation mix.

You know, we're a little bit less than half natural gas, about a third has now shifted to renewables and then the rest is coal and nuclear with some other small generation technologies mixed in there.

Uh, so you know it's a very dynamic system.

I've got some more slides on that in a moment, but I, you know, yeah it is.

It is smaller than either the other grades in the United States.

In terms of what ERCOT does, ERCOT was created when the legislature restructured the Texas Electric Market in 1999 and we perform 4 main functions.

The first and foremost is to maintain system reliability, and especially to ensure that the system as a whole remains operational.

**SA Springer, Agee** 7:54

We also ensure Open Access to the transmission system for any generator who wishes to connect and loads as well?

We also operate the competitive retail market and the competitive wholesale market. And so I – the analogy I like to use and it's I guess kind of appropriate for this group, especially as we are very similar to an air traffic controller.

We don't own any equipment, so we don't own generators or transmission lines or customers, nor you know in the same way that air traffic control doesn't own any planes you know or fuel equipment or things like that.

But our responsibility is to ensure a level playing field and to ensure that the system - we have that bird's eye view to ensure the system is operated reliably.

So that's really our function.

And so to kind of see why that's necessary, this is a little bit more detail about the restructuring of the energy market that took place.

So essentially you have kind of three components of, you know, generation, transmission to customers and then the retailers that serve the customers, uh, you know, generation resources are owned by private companies, unless, they're part of a municipal or electric coop.

And so they all are participants in the ERCOT market to serve the load.

I the transmission and distribution systems remain regulated but Open Access and so those are also operated by transmission and distribution companies that are regulated utilities.

And so they also are participants in this structure, and then retailers are either competitive to serve customers in some areas of the system or their municipal and cooperative utilities.

And when you have this many players, it's important to have a single entity with that bird's eye view to both, you know again, ensure reliability as well as Open Access to the system and to the marketplace and ensure that there's coordination among these parties.

So.

So that's what we do.

You know, day-to-day.

Really, what that means is keeping generation and demand in balance.

Umm, I like this graphic cause it's, it's very - as one gets more, you know, heavier or more out of balance with the other.

It tends to - we see it through shifting our frequency either high or low.

**SA** **Springer, Agee** 10:37

And so, you know, we talk a lot about maintaining the frequency at 60 Hertz and that's it seems like a very simple function of keeping a dial in one place.

But really, you know, all the electric equipment that connects to the system is designed for a stable frequency at 60 Hertz.

All the generators that produce the electricity are designed and will trip off to protect themselves that the frequency gets too far away from 60 Hertz to prevent actual equipment damage.

And so, you know, when we say we maintain the frequency of 60 Hertz, what we really mean is we keep the lights on, we keep the system operational and stable.

**SA** **Springer, Agee** 11:19

So I have a I have a slide about talking about ancillary services.

I'm not going to - It's a it's a lot of text, but you know, really we also have these extra products that are in the megawatts that were reserving for either keeping the frequency stable or responding quickly if a generator has to go out, you know is tripped or has to drop off for maintenance unexpectedly, and so you know.

**SA** **Springer, Agee** 11:44

We also - one of the other ways we maintain reliability is to buy and maintain these reserve products on behalf of all the customers in the state.

So before I talk about how we go about connecting new generation and new load, I wanted to just show a slide on how the makeup of the generation in the state has really changed over the last roughly 20 years.

You know, if you look at this chart, you can see obviously the biggest kind of change has been the growth in wind and solar, which you know again make now about 30% of our installed capacity.

And over time, there's been a kind of decline in full and older gas technologies.

And so what that really means is that we're transitioning to a more dynamic system where, you know, there's a portion of our generation mix that can change more quickly.

And you know, not always 100% predictably.

And so that creates the, you know, new challenges for maintaining reliability and that takes me, you know to one of the you know big areas of growth that we're seeing is in battery energy storage, which has really taken off over the last few years.

And we're seeing, you know, we already have about 5 gigawatts of installed capacity, but you know that is potentially going to, you know, quadruple over the next few years.

So this is an area of rapid growth and I think it's going to be a key point, you know, key a key development in ensuring that we can keep that frequency stable as we have more intermittent technologies also connecting to the system.

Umm, you know they I is.

The graph says the future outcomes here are uncertain.



You know, we have some of these projects have signed agreements and posted financial security for construction of their interconnection facilities.

You know others are earlier stage of development.

So it's not 100% clear what if all of this will ultimately become operational, but there's certainly a trajectory there that I think you know is pretty obvious.

**SA** **Springer, Agee** 14:13

So I'll close now by just talking about, umm, the ways in which we handle interconnections to the system, and I'll talk about the generation interconnection process because, you know, as we see this kind of explosive growth and new load coming to the state, I it's really important that we are able to bring on new generation to serve that load.

You know the projections that we put out over the last year or two really are only possible if more generation is built.

So get the interconnection process happens in three phases.

It involves both the developer of the generation resource as well as the transmission service provider, the that the point that that generator is going to be hurt hooking up, and then ERCOT as well, since we have the bird's eye view of the reliability of the system.

So you know the first phase is really the request to start the project studies to determine if that point of interconnection, you know can megawatts actually be delivered there reliably, you know, does the project meet all the requirements that are dictated by both NERC and the ERCOT protocols for interconnecting to the grid?

And then, you know, once the studies are done, if the developer wants to proceed, then it signs agreements with the transmission service provider to move forward.

You know, then there's a sort of a mid-phase where we are, you know this the developer is registering as a market participant cause that generator is going to become part of the ERCOT market.

And so along with that is the submission of data to add that that generator to the ERCOT models.

We have a very sophisticated computer model that's used to both maintain day-to-day reliability, but also to, uh, operate the markets.

And so in order to bring a new generation online, he really need to be in those models for everything to work, right. So.

That happens in sort of that middle phase and then once all that is done and the

equipment's put in the model the facilities been physically constructed, there's telemetry coming to us that shows you know what the what the site is doing in real time.

Then the new facility goes through a commissioning process where it starts drawing power to energize its equipment.

Then it begins generating power to the system.

It performs a series of tests to generate, you know, to demonstrate that it meets all reliability requirements and is also matched what was what was studied and what was modeled in the earlier stages.

And then it becomes a commercial resource.

So it's a, it sounds like a very involved process where you know we really have, there's been data now in the last year that shows that it's actually the fastest among the three interconnections in the United States.

It's, you know, something that we really understand the importance of these, you know, the development of new generation.

And so we try to, you know, we have obligations to ensure the reliability of the system.

And so we try not to put up any more roadblocks that are necessary to just ensure that that is going to continue to be the case with new generation that comes online, especially with some of these newer technologies, the impact on the stability of the grid, I can be, uh, you know, especially some of the newer ones more acute and sometimes in ways that we haven't really seen before.

So those the studies are quite important.

Uh, moving on to the large load interconnection process and this is a new process that has been established within the last two years.

To handle very large facilities that are wanting to connect to the system, especially if they're connecting quite quickly.

SA

**Springer, Agee** 18:26

So the phases are very similar.

There's a study phase and the set of studies is actually quite similar to what's done for a generator, and I should add that for both generation and large load, those studies are done by the interconnecting transmission service provider, ERCOT is mainly functioning as a reviewer, again because we have that bird's eye view. Uh.

**SA Springer, Agee** 18:55

But much like a generator, there's a suite of studies that are done to ensure that that load can be served without compromising the reliability of the system.

Once those studies are done, there's a period where the customer signs agreements with the transmission service provider and then that equipment is also added to the ERCOT's operations model.

If the load is located with a generation resource, then there's some additional steps that have to happen to make sure that the agreements for the generator also include this load, and then once all those steps are complete, there's not as extensive of a commissioning process.

But there is still validation of telemetry validation that what was added to the system as what was studied and then the load is given permission to begin consuming energy up to any limits that were identified in the reliability studies.

Umm, this process right now only applies to load 75 megawatts or greater or 20 if it's locating with a generation resource, umm, really, I think you know the background that that I got, you know ahead of this talk is really it seems like a lot of what's being discussed here is much smaller interconnection request.

So I did just want to touch on that briefly.

Umm.

In for smaller interconnection requests, those are our studied and processed by the interconnecting transmission and distribution service provider.

So sometimes that's the same as the transmission service provider.

Sometimes it's a different entity depending on where in the state the interconnections happening, the service provider still performs reliability studies to ensure the reliability of the interconnection, but ERCOT is not a reviewer.

**SA Springer, Agee** 20:44

It's not involved in that process.

The growth in new load as those studies are done and the TSP knows you know how they're load is changing into the future.

Those are submitted and aggregate to ERCOT as part of our regional and annual planning processes.

So you know new, for example, one MW connection ERCOT's not going to look at the reliability studies of those, but that information does get fed to us from the TSP's

to be included in our planning of the transmission system to determine you know where new transmission is needed in the future to serve the growing load.

So it's not lost, but it's there's not that direct relationship and connection with ERCOT as there is for a larger industrial facilities.

So I know I went a little bit over maybe a little bit over my time, but I hope you all found this helpful.

I'm happy to take any questions.

Dan I could see your hand raised, but I just have a little side window, so maybe if you could kind of run the questions.

**DD** **Dan Dalton** 21:56

Yeah.

Yeah, absolutely.

Happy to.

So, uh, you know, first and foremost, I'm glad to see us qualified as a smaller load.

That's great, but curious then so as OEM's and some of us will be operators of these aircraft as well as we look to engage with existing aviation infrastructure and then branch out to future bespoke infrastructure, whether it be vertiports or other things you know, would you advise that we kind of start working at the local level at the grassroots level so to speak and then they will then then we will be entrained into an existing process by which then those local markets will engage regionally and then regionally within ERCOT?

Is that what you would recommend or?

**SA** **Springer, Agee** 22:51

Well, I don't.

I don't know if I'm able to give a recommendation, but you know really much like you would at your, you know your house and a request for service for these smaller projects is made directly to the TSP and you know each company is going to have their own process and that's really not something that we're taught has visibility into or is involved in, but that that's really the way I think to initiate that request for service.

**DD** **Dan Dalton** 23:27

And then how does ERCOT?

So I'm just going to keep going because I don't see any other hands.

Where how does ERCOT kind of see between things like electric aircraft, whether vertical takeoff and landing or traditional takeoff and landing or data centers, how does their cut kind of plan out those strategic needs for the future?

Do you do market surveys to kind of assess kind of what that growth trend looks like on top of kind of the residential, the existing residential and commercial growth?

SA

**Springer, Agee** 23:59

Yeah.

So those are those are inputs into-

We have both a regional planning group that is responsible for kind of ongoing, umm, transmission upgrades.

So it is a process where a new projects are proposed.

There are evaluated and by projects I mean new transmission upgrades, so it could be the construction of a new line that's brand new.

It could be reconductoring an existing line to give it more capacity to handle a larger amount of electricity, and so upgrades to that kind of equipment that makes up the backbone of the of the grid.

That load growth is an input into that process is that was-

That was kind of what I was alluding to on my last slide is that the TSP will take all the interconnection requests it has received and it feeds that into that process, you know, looking out into the future.

We also have a much longer term annual regional transmission plan that looks you know roughly 30 years out into the future and that's looking at more of those kind of longer term trends that might impact the direction of how we how we improve the transmission system.

You know that that forward, that, that body is much more Advisory.

The Regional planning group is where new upgrades actually get proposed and approved, and then it has to go through a process with the Public Utility Commission before being built, and I will emphasize again, you know that ERCOT is not building those lines.

We are the planning coordinator.

So you know, we have that bird's eye view for the overall long term health of the grid, but the transmission companies of the regulated utilities are the ones that actually build the transmission upgrades and own and operate them.

The other area I'll just add, you know you asked a question about kind of the strategic needs and long term growth.

The rapid build out of growth and the new technologies that are entering, they're already starting to make it harder to forecast the load and that that is important for both long term, you know, load forecasts, how much do we think is going to grow and what's the peak demand going to be in the future because more and more of these loads are intermittent or flexible.

But it's also making it harder to have a daily or hourly load forecast as well.

And so that that potentially is a risk for long term reliability and you know understanding uh, the shape and the nature of new loads connecting to the system in terms of when they are consuming versus not and is it a smooth transition or are they jumping from you know no consumption to full consumption in a very short time you know these are these are things that I think are going to become of greater importance than they have been in the past.

**DD** **Dan Dalton** 27:06

Fascinating.

Not an easy job, I would imagine, to deal with the tactical near term as well as the strategic longer term with, with decreasing fidelity as it goes off into the future.

So yeah.

Truly, truly appreciate your time.

Are there other questions from the field, so to speak?

So, alright, well, you're welcome to stay, but thank you again for the time and yeah.

Really appreciate all that you folks do.

I'm sure I'm sure there's no shortage of complaints and concerns that you hear from folks, but we do appreciate what you do because you're helping even facilitate this conversation right now.

So thank you.

Appreciate that.

**SA** **Springer, Agee** 27:53

Not a problem.

Thank you for having me.

**DD** Dan Dalton 27:57

Excellent.

Alright, so moving on to our FAA representatives are Rob and Arjuna on the line?  
Are we too early?

**DL** Davio, Rebecca L 28:10

They were supposed to be here at 1:30.

**DD** Dan Dalton 28:12

1:30, OK, great.

Alright.

Well, then, let's go ahead and start kind of going through the let's start going through the recommendations and then when they join, we can go ahead and pause there and have them go through their bit so.

Awesome. Alright.

Yeah, Rebecca, if you want to take over it, that be great.

**DL** Davio, Rebecca L 28:37

OK, Molly, let's move on.

So First off, I want to thank everyone who's been on the subcommittee meetings.

Thank you for your help.

I think you've done an amazing job.

You whittling through these recommendations and prioritizing and refining, and we just, I think it's a great process that you have done.

So as Dan as you directed us at the last full committee meeting, you said go get with legislative experts and have them give us some feedback to share with the committee.

So these are some tips that we got from the meetings.

We met with text DOT and from bill sponsors, legislative experts, and so the first recommendation was consult their recommendations.

Their tips were consolidate the recommendations as much as possible so that they're easily conveyed and memorable, and we were at one point I think we were 23, 24 recommendations and the experts had said 10 to 15 less is better, you know, because they're easier to remember.

And umm, they also said ask for what you want, but understand that asking may not

make it happen.

There's lots of competing interest that legislators have to consider.

They also said desired outcomes need to be clearly specified.

So umm as an example, if you say well we want to continue the advanced Air

Mobility Advisory Committee, what's the intention of that continuation?

Because if you want to produce another report that's going to have a different fiscal note than just having quarterly meetings, so be specific and umm, they also there was discussion of King's coin.

If you take the King's money, then you risk being the King's man.

This was from a TXDOT just reminding everybody that when they give out money for air per airport improvements, then there are standards that need to be met that are imposed by either the state or the federal funding agencies that they're getting money from.

So it's just to be mindful of that.

Another caution was that no state agency can lobby.

State employees are specifically prohibited in law by lobbying umm, and that advocacy for the industry is really better handled by a trade association or some other group.

When, for example, you might think but TXDOT does these ad campaigns for you know, end the streak or don't drink and drive or don't mess with Texas.

Those are very much about Traffic Safety.

They're not advocating for a particular mode of transportation.

For example, there was also discussion around the economic impact study and our legislative experts said the legislative an economic impact study can really help legislators start to understand the return -the potential return on investment for the money that you're asking for and that that that economic impact study as the amount that you ask for increases, then the importance of that economic impact study, really also increases.

And regarding the timing, they said if there's going to be legislative recommendations that come out of this committee, we know there are, having that economic impact study, some sort of economic impact that you can visit with legislators about would be very helpful to have that middle of November when bills start getting filed.

And the last bit of sort of broad advice was be careful opening up the statute.

So if there's existing statute and you want to tweak something or make a



modification to it, just be mindful of that because your intentions.

Opening that up allows other people, perhaps with different agendas, to come in and that the outcome may not be predictable. Any questions or thoughts on those?

We do have several legislative experts online if you need to have clarification at that.

OK, Molly, let's go on.

Another thing, this happens to be from the Georgia DOT AAM plant, but it's just a nice graphic that we could grab to sort of help us all remember where we are in the industry, in the crawl, walk, run, soar phases and make try and align funding request and things with where we are in the industry.

So we can go on.

So many of you, and also I apologize to those of you who have heard this spiel a couple of other times before it'll have a little different flavor because as we've gone, every single one of the subcommittee has made modifications to the recommendations, and so it'll be a little different and it's been continuously evolving.

This is the latest version, so there that heavier line that you see in the middle of the page.

Those are the sort of recommendations that are up for discussion today.

The things that are below have - the subcommittees have said, you know, it's either not the time we're too early in our ask or for some other reason it's not appropriate. Now if you see your pet thing down there, don't worry, it doesn't mean that it's just going to be ignored.

Some of these topics, like workforce is a good example.

Since we are going to mention the importance of the need for a fully developed and trained workforce to support this industry, we're going to mention that in the report, it's just that that won't take the form.

This particular one was actually combined into another one, but so there was a lot of that where you know what we can do this in one recommendation because it's really trying-It's two separate and distinct efforts achieving the same goal.

So umm, the funding amount since that's the second column here, went from a number that was deemed astronomical to uh to \$2,000,000 and that's primarily for the statewide economic impact study and the AAM plan.

And you can see here the other columns were state, industry and federal funding.

And then the time frame.

So every recommendation I believe is now - that's above the line is for starting in 26 with the exception potentially of the statewide airspace infrastructure.

And we actually didn't get a revised light on that.

I don't think umm.

So anyway, they're all evolving.

Are there any questions or thoughts on this?

Just sort of high level.

This is the best bird's eye perspective.

After this, we're going to start diving in and looking at discussing each one of the individual recommendations.

**CK** **Chris Kucera** 36:41

I have a question of this - Chris from one sky - the statewide airspace infrastructure line item is above and below. It was crossed out.

So are you trying to do that again?

But maybe with a different amount, or what the intention for having it above as well.

**DL** **Davio, Rebecca L** 37:01

This particular recommendation is evolving.

It's evolving as we speak.

Speak umm and I believe that you may have caught a typo on our part that we changed the name above and so we'll catch that we can look again when we go to the details.

**CK** **Chris Kucera** 37:25

Thank you.

**DL** **Davio, Rebecca L** 37:26

Thanks for being a good proofer.

Dan.

**DD** **Dan Dalton** 37:31

I would say that you know, if so, I think a lot of the ones that are above the line are pretty noncontroversial.

The ones that are below the line if yours and we will go through each of these kind of 1 by 1.

But if you see yours below the line, to Rebecca's point, it's not that this is a done

deal, but it just means that that needs to be kind of captured or articulated more strongly, and we should spend time on that.

So that line just thick dark line in the middle can move up and down, but it's just kind of a I guess a warning that if yours is below the line and you think it should be above the line, we should have some more detailed conversations.

So, but we'll go into each of these so.

**DL Davio, Rebecca L** 38:22

Only.

Let's go ahead and look at the first one, please.

So this is actually not a legislative recommendation in the subcommittees.

There was discussion hearing the legislative experts advice and that timing, if you ask for money when you ask for money from the legislature.

So the bill filing starts the middle of November the he uh, and the lesson the session goes from January to May.

For those of you that aren't familiar with Texas legislative systems and the money the state agencies receive, the money September 1 and that they that money is for two years.

But if when you ask for money for the state from economic impact study, you will not get any information likely until.

November of 26, I believe it's sort of cause it's like a year and a half basically after that money is received as about the earliest that that most studies could be done.

So that was one of the committees said.

Well, let's not make this an economic legislative recommendation.

This is something that we as an industry really need to consider doing.

And so I think that's an action item.

Dan, you had wanted for the committee.

You can decide if you want to do this, how you want to approach it.

Molly, if you could flip to the next slide, please.

So this is statewide economic impact and AAM plan.

And so while these seem like this is sort of redundant of the previous recommendation, this is really the longer term one.

This is where you're asking money from the state to complete a comprehensive study estimating workforce development and economic impact potential and a statewide plan for Texas AAM.

So this is the bigger longer term impact and this would probably be the statewide. The previous short term economic impact could be smaller, it might be regional, something similar to what WISK did in California.

Where it just gives them something tangible that you are just waving your hands.

Mr. Chair would you like to have any discussion on the short term economic impact?

**DD** **Dan Dalton** 41:21

Yeah, I think, well, we'll save that.

I think for the end, but you know that's one of those things where I believe that if there is an opportunity for us as industry to be able to front load these recommendations with a smaller or shorter kind of kind of an - almost like a teaser of what the opportunity is for the state.

If we as an industry, could put that together for a November timeline that then flows into how these recommendations were received by the legislature in January, I think this in particular, this plan itself actually has a greater chance of being approved.

So, but yeah, we'll come back to the industry and we'll specifically one, but yeah, and 1 million to \$2,000,000.

That's a pretty good economic impact study, I'll tell you, having us just written one recently for a region that's a very robust one.

So that's great and I hope we get it.

**DL** **Davio, Rebecca L** 42:22

OK.

Any other comments or thoughts on this there?

There was a discussion about trying to put these pieces together.

And having one deliverable, the timing will need to be managed.

Yeah.

So that \$2,000,000 - if it was \$2,000,000 it would be the study and the plan and that number that number is absolutely subject to refinement and our legislative experts have said don't just pull a number out of the air, it's better to not have a specific number if you're pulling a number out of the air.

That number came in part from a discussion of using a trusted economic forecaster that, for a statewide effort, would likely have a much higher price tag.

The statewide plan also there was mention of really working with local EDC's and trying to get down to the local level.

So that potential for AAM in each of the areas of Texas could umm be estimated or measured, gauged.

And so that would be a very intensive process as well, but important to be able to bring in support from across the state.

**CK** **Chris Kucera** 44:00

I may have a question here Chris again for One Sky.

I guess I'm sticking on the word economic and wondering if that's the full impact of AAM.

If there's not a monetary impact, but it's a benefit to the state, is that captured within the study?

Because I imagine there's probably lots of different impacts that could benefit the state.

Is it good to widen that a little bit?

**DL** **Davio, Rebecca L** 44:27

Are you thinking like the environmental benefits that have been mentioned and safety?

**CK** **Chris Kucera** 44:32

Like health and safety and that kind of thing.

**DL** **Davio, Rebecca L** 44:39

Umm.

Mr.Chair do you have any thoughts on that?

**DD** **Dan Dalton** 44:48

No, I don't.

I don't see why.

I mean, I think the scope of this, we will probably get to a place where there's a scoping question, once we pull the recommendation together and we'll probably need to hash that scope out a bit more over the course of the summer with our support from legislative experts.

But I don't see why.

I mean, we should.

We should try and go for as much as we can and see if we get talked back to a different baseline.

But I'm fine with increasing or adding the scope that we think makes the most sense. I guess is what you say it.

**DL** **Davio, Rebecca L** 45:24

Yeah.

And I think this is probably one of those where the state agency that would end up implementing this sort of being the manager of this would appreciate what it is that you that you want this is that be specific when you're requesting your deliverables. So Chris, unless there I didn't hear any objections.

So we'll make those modifications to broaden it a little bit.

And Mr. Chair.

I did notice that Rob Lowe is just got on, so if you want to go to him now, then we can do that.

**DD** **Dan Dalton** 46:05

Yeah.

Rob, are you ready?

Do you need a few minutes or?

**LR** **Lowe, Rob (FAA)** 46:10

No, Sir.

I think we're ready and Arjuna Fields I believe is with me as well.

Just trying to sort through the, you know, the team screen here, but thank you for the opportunity to be here.

**DD** **Dan Dalton** 46:22

Yeah.

So let's go ahead, Rebecca.

Then we'll pause on the recommendations.

Molly, if you could pull that down.

Yeah.

Perfect.

You're ahead of me already.

And then I don't know.  
Rob, did you have slides?  
You wanted to present.

**LR** **Lowe, Rob (FAA)** 46:35

We do not have slides.  
No, Sir.  
We thought we were just going to talk through and mainly - hopefully a conversation and answer questions and whatever we can do for the, for the committee.

**DD** **Dan Dalton** 46:47

Great.  
Awesome.  
Alright, well you have the mic then.

**LR** **Lowe, Rob (FAA)** 46:50

All right.  
Well, awesome.  
Thank you.  
Again, for the opportunity.  
Good afternoon, ladies and gentlemen.  
My name is Rob Lowe, and the FAA's regional administrator for our FAA Southwest region.  
For us, that covers the states of Texas and then as well as Oklahoma, Arkansas, Louisiana and New Mexico.  
Joining me today is Arjuna Fields, who some are most of you may know.  
Call sign Tuna, he goes by Tuna  
I'll let you introduce yourself if you don't mind, Sir.  
I think I saw him on, am I missing him?

**DD** **Dan Dalton** 47:31

Just going through now to see it.  
Maybe he's under a different code name.

**LR** **Lowe, Rob (FAA)** 47:40

You know, let me ping him on the on his cell here real quick.  
I thought he had told me he was on and so I just didn't open up the whole, attendee list and.

**DD** **Dan Dalton** 47:53

Yeah, scrolling through too.  
Maybe he was having technical difficulties.

**LR** **Lowe, Rob (FAA)** 47:58

Yeah, maybe so he's.  
See if I get a response here Dan.  
So my apologies and I thought he was on so, but I'm happy to while he's dialing in.  
Kind of layout any other initial information for you.  
Just I think most may know because Yep, awesome.

**DD** **Dan Dalton** 48:25

He just signed on.  
Just so you know.

**LR** **Lowe, Rob (FAA)** 48:29

That's great.  
So Tuna are you there?  
Can you hear us?  
There he is.  
Awesome.  
Hey, tuna.  
Good afternoon.  
I just started introducing myself and if you don't mind, hand the mic to you and let you introduce yourself if you don't mind.

**FA** **Fields, Arjuna (FAA)** 48:44

Yeah.  
Good afternoon all.



If you are in Texas, you know it's raining a lot and I just had to drive in from a meeting in Arlington and luckily survived.

So our Judy Fields, tuna currently working air traffic organization Strategy Directorate as a senior advisor for AAM and UAS integration.

Uh, a local resident of Texas and so obviously great to see many familiar faces and names on this group and look forward to the conversation.

**LR** **Lowe, Rob (FAA)** 49:18

Awesome.

Thanks.

Thanks tuna.

So umm, Dan and team?

What I thought we'd do is just kind of maybe give you a little bit of a picture of what our interaction is today and then I know you had some specific questions for us, thought we'd just kind of fall into that, if that's OK.

So my role as a regional administrator, my background is just under 40 years of mostly air traffic control with the FAA and all various aspects of that.

I've been in the regional administrator role for about three years and in this role as it relates to advanced their mobility, or AAM we do a lot of the initial outreach and what we call horizontal integration.

So if there's a new operator or a new proponent, maybe it's an airport or any other entity.

A lot of the initial contact for us is our group reaching out to meet with them and understand what their business model is, what their intent for operations is, gauge at their, what they're looking for in terms of timeline.

Is it in the next couple years, is it 20 years away?

Is it all those kind of things?

And then we feed that back uphill.

There's a couple of different segments of the FAA as you might imagine, being government and a federal agency.

We have a lot of various subsections or business units.

Uh, lines of business, depending whatever you want to call that.

So the activity related to AAM falls into a number of those, quite a few of those and we have one specific office in the FAA that is our next Gen Office, our Office of Next Gen and they are leading a lot of the agencies path forward as it relates to new

entrance of which advanced air mobility and uncrewed aerial systems, UAS is all those fall into that.

But along with that is the I28 team that the FAA is part of, and so a lot of you are familiar with that Dan especially.

I know you are that we work hand in glove with that.

So a lot of the information we get gather in that initial outreach gets fed back up to those two entities and then they are deciding at this point on well, how do those two groups combined separately begin to engage back with that proponent so that we get them connected to all the right parts of the FAA as they move forward.

So that's a lot of what my initial interaction is and we've been doing that with a number of entrants in Texas, specifically Texas is quickly becoming my words, not the FAA's words, but my words are the vortex of AAM as we move into the future, at least in the short term, there's an awful lot happening with that.

And tuna is intimately involved in virtually all of it, and I know he's crossed paths with a lot of you and a lot of those different organizations and meetings and planning sites and those sort of things.

So that there there's a whole lot of it that we're touching.

I wouldn't say that we're The Walking experts on any of it, but we're more really, I think between the two of us poised in a really good place to maybe answer the questions as you all are beginning to put together, what can Texas do to move towards the future?

We can certainly give you what we've been involved with so far and what we've seen and those sort of things.

So tuna.

Is there anything you'd like to add to that before we kind of kick it back?

**FA** **Fields, Arjuna (FAA)** 52:41

I think it was an amazing intro and kind of the relationship from a regional office to some of the headquarters elements, although local tie to that headquarters element and part of the Interagency Work Group from DOT perspective, that many of you are aware of and then also specifically that I-28 structure that is all the lines of business of the FAA under the umbrella of our AAM Integrator Office of Next Gen.

So I think really like Rob said, we do have a wide perspective to kind of talk some of the more regional or Texas and stuff, but then relate it to the bigger picture overall as well. So yeah, it's probably best to kind of get in to some Q&A.

**LR** **Lowe, Rob (FAA)** 53:31

Yeah.

And Dan, as we hand it back to you, let me just throw out there I will probably do it more than tuna will, but we will both probably fall into a lot of acronyms that are nouns in our heads.

So please, please stop us and say, what does that mean?

Because we don't want somebody to feel like, well, I should know what that means.

Please don't just stop us.

We inadvertently talk in acronyms as nouns just because that's where we live so.

**DD** **Dan Dalton** 53:55

Great.

Well, you know, I have a few questions for you folks.

So first of all, appreciate truly appreciate you being here, especially tuna for braving the storms to get on this zoom call.

So while I'm going through my questions, others in the field should absolutely feel free to ask any questions.

These guys know how to keep within the left and right bounds of the FAA, but they're also they're here to help.

And they're here.

And I do mean that and so feel free to ask questions of any variety because and just so you folks know so that rob and tuna know we have a variety of kind of organizations on the line ranging from private sector OEMs and operators such as Wisk and Jovi and Supernal as well as airports.

We have both large airports hubs as well as small G airports.

We have community interest groups, we have public safety, so we have a whole bunch of folks on here.

So you'll get the full grab bag.

It'll be like defending your FAA dissertation, but let's start off by certain with kind of you, you know, did rob on Texas being in the vortex.

And I love that, especially as it starts to rain here in Austin, but being the vortex of where hopefully am will get a lot of traction.

Curious what are you seeing in other states in the sense of-

How are other states kind of driving their desires to be the vortex of AAM?

And how do we keep Texas kind of in in a leading position if you think we are or if we're not, then how do we get to a leading position?

**LR** **Lowe, Rob (FAA)** 55:34

Well, so great question, Dan and I have I have a couple thoughts related to that. One is, let me give you the perspective of my region.

The five states I've described earlier, but also what I see from my peers across the country, right, so I think especially here in the Southwest and our FAA Southwest region, Texas is by far out front in terms of either airport operators and or OEM or equipment manufacturers or operators, whatever you want to have, how you want to sort that, those the groupings are marching out in front.

I think in a lot of cases over the other five states, I would say Oklahoma's probably the closest second of our five states, lot of interest for sure in New Mexico, Arkansas and Louisiana, don't misunderstand that.

But as far as actually having an operator or an airport working to put infrastructure in the ground, those kind of things, Texas is out front, Oklahoma being #2, Oklahoma really has a very effective state aviation office that is working with a number of places but kind of where they're AAM piece comes in is in my mind the conversation is connected in a couple places.

One is in the Oklahoma City area.

A lot of that's driven by Tinker and DoD as well as our FAA, Mike Monroney aeronautical center.

There's a lot of research there.

They just got a big grant to do some infrastructure research on the campus for the FAA, so that's not really necessarily the FAA's future for that.

But they are going to be putting some infrastructure in the ground and a lot of that's taking advantage of - they already have one of every kind of radar we own one of every other kind of everything else we own on site so they can expose things to some of that in person testing.

We hear a lot about that from Oklahoma, but also there's a couple of airports that are space ports in Oklahoma that want to be kind of everything they want.

They want DoD to fly uncrewed stuff.

They want to launch rockets they wanted, so we hear a lot of that.

But none of that really is as far as several locations in Texas are where they're talking to an operator or an operator's actually actively thinking, hey, and this year, 2 year,

three years out, we think we're going to fly that, that it feels very much that way. Now take that same question nationally, Dan, I think there are places around the country where either operators are farther down that conversation or localities are, but one of the interesting shifts that I'm seeing, and I don't mean to advocate for anyone in particular at the moment, but Umm Archer is one that comes to mind in that they started working heavily in Northern California as an initial operating location and are beginning to have Houston rise to the top of their list as the first place they want to operate.

That is really driven in large part from their words about the environment in Texas, both from an air traffic FAA standpoint, from an economic standpoint, from an acceptance in the state and the localities, all of those things that we all love about living in Texas is driving that.

So I think that is not that everything's going to move here, but I think that's very positive environment that we have here in this end of the country.

So tuna, I don't know where you want to add or fill in what I might have not completed.

**FA** **Fields, Arjuna (FAA)** 58:57

Yeah.

No, those are great.

You know great points and I think just to kind of round out of some of it is you know the research institutions not only within the Southwest region like Rob mentioned with some of the major universities and the research consortiums.

Uh, but also the beyond program up in Oklahoma with Choctaw, the test site down in in corpus and the relationship with Texas A&M, things we've seen kind of set the stage for where we are from a regional perspective.

**FA** **Fields, Arjuna (FAA)** 59:30

And then specifically within the state of Texas and that progressiveness both on a business side, right, because none of this works without a market to serve regardless of the integration effort, but the, the, the kind of Nexus of the research, the business, the local and state support not only within Texas, but the other states that you're seeing a lot of progress in where it becomes a collective that's marching towards a common goal to enable these technologies and the specific use cases, right, whether it's a AAM, regional air mobility stuff, public good or public services and Public

safety.

You know the use cases are endless as the technology evolves.

So and then within a lot of these arenas too, you have large DoD components who are also organically using a lot of these technologies and partnering with NASA and the FAA and some of the research.

And so that's incredibly important as well, not only within Robs region within the state of Texas, but also in other locations throughout the United States, so.

Where you have the combination of all of that is where you see early adoption of technologies and momentum across all these different areas.

**LR** **Lowe, Rob (FAA)** 1:01:00

Yeah.

So Dan, if I can one more thing two and it.

Thanks for reminding me.

I meant to include Choctaw in southeast Oklahoma in in my comments and Dan, one of the things that I think when you asked about what are we seeing in other states, that's a unique entity that happens to be located in Oklahoma, right?

They own the dirt underneath them, which gives them a unique advantage for test and development and some of that.

But the partnership that I've seen driven from Oklahoma across the state is beginning to expand into not just OSU, which was a lot of their original connectivity to research and aviation program.

But now OU is beginning to I've seen some connectivity there.

There's some research grants that were recently there.

The nice thing about Choctaws proximity to Texas, though, is it's right next to us.

And there is a fair amount of conversation that I've also been aware of where

Choctaw is working with entities that are working in North Texas to develop the

potential for research development, prototyping across from the DFW Metroplex, for example, up into their test area and back.

And none of that is definitely firm or got, you know, agreement signed, but there's a lot of conversation around that.

So I wanted to kind of circle back to that after tuna mentioned the research part,

because I think there's a lot of uniqueness there that really is an advantage for Texas as well for y'all.

**DD** **Dan Dalton** 1:02:26

No, those are those are really good points.

I want to open it up to the floor.

Are there others that have questions?

Cause I certainly, I mean, I could talk to these guys all day.

So I want to make sure I open it up if there's any questions from the audience at this point.

OK, seeing none, I'll keep going with another one.

So I actually have two, but for we'll start with this one from a state perspective.

So as you as you both know very well the state of Texas is quite competitive with other States and we've certainly seen how Florida, for example and Ohio are charging ahead on this, no pun intended.

How do - is there anything from a state perspective that you think that there are things that we could recommend to the state as this industry and nonprofit body are the things we could recommend to the state legislature to say, hey, these types of things are what we're seeing in other states that are actually making from a state perspective, the integration of these activities easier for industry or more attractive in any way?

**LR** **Lowe, Rob (FAA)** 1:03:35

I know I have a thought on that too.

And you want to start?

You want me to?

**FA** **Fields, Arjuna (FAA)** 1:03:39

I mean, I could start with it and I think it touched a little bit on how on kind of our first answer, right.

We're especially from like a state legislature and the successes you're seeing in Texas and those states you mentioned, that's where you get that combination of what I just spoke about right, where the education for the state of the benefits and the investments and the gaps are so critical.

And you know, if you look at some of those states, uh, you know, we didn't really talk about it from the kind of their emergency response things, but, you know, Florida, Texas have had a lot in Oklahoma and even Ohio to some extent in some arenas

have had early adoption of these technologies to then cause the conversation to occur at a more rapid rate and then you educate the entire room, if you will, for the state and then you start seeing kind of as the regulatory environment from a federal level and then the state and local level cause I've you know been part of those conversations in the background over the years you start seeing the marrying up and where they join together and then dovetail into each other right.

And I think that's if you know you're providing advice to other states or learning from other states.

Uh, you know, I often say that is, you know, even if it's not a the exact same scenario in a in one state as it is for Texas.

Umm, we can always learn from another location where the nuances are a bit different and they may be, you know, approaching it in a way that's a little bit asymmetrical than kind of another location or another state or body, right.

So I think that's really important as we look at certain states kind of gel and move forward in these larger conversations.

**LR** **Lowe, Rob (FAA)** 1:05:40

Yeah, I agree.

Dan the thing I think I would add to that is to compliment it is a couple of thoughts that that I think I see maybe more conversation about the need than I've seen from action yet.

But things like infrastructure, what can the state do to support the electrical grid need right as these hubs develop, how are we going to get the power needed to these charging locations?

Is that going to be purely up to the operator to figure it out on their own and pay for it?

Or is the state going to kind of help build some of that right? Kind of the same conversation that happens around do we put charging stations at rest areas, you know, it down the highways kind of thing, right?

That's one piece that I hear a lot of conversation about.

You know, it's like, well, it's great and good, but can we actually sustain these primarily electric AAM aircraft and how do they get operate, etcetera.

The other part is a holistic view towards workforce and in my mind, you know, STEM type outreach, college partnership targeted at this industry.

And I think one of the one of the things that I've seen and I hate to keep touting



Oklahoma or not, I just want you to see you any example there that I think is a phenomenal thing that they're legislature did is they funded back through their aviation department, the AOPA High School Aviation curriculum for virtually their entire state school district.

There's a very positive connection to AAM and future entrance through that program.

It's really a phenomenal for your program that kind of pushes kids towards either amp mechanic for pilot license, but there's an incredible exposure to to civilian commercial space UAS AM all that stuff in there.

And so while it's not a targeted legislative money towards AAM only it's one of those things that feeds.

And I think that's something then, that I've seen a state do that is helping to build that future workforce.

And then now I see them building.

I mentioned OSU and OU a minute ago.

Some of that vertical partnership is beginning to happen coming out of that investment from the state into those high schools now into growing future technology, things that are happening in those two universities.

So seems to me that might be something that state might do with state schools.

To answer your question.

**DD** Dan Dalton 1:08:05

No, that's a really good point, I think.

And for those, so aircraft operators and pilots' association is the OPA.

**LR** Lowe, Rob (FAA) 1:08:13

I'm sorry.

**DD** Dan Dalton 1:08:13

So.

**LR** Lowe, Rob (FAA) 1:08:13

See I did it.

**DD** **Dan Dalton** 1:08:15  
So that's alright.

**FA** **Fields, Arjuna (FAA)** 1:08:16  
He broke your own rule, right?

**DD** **Dan Dalton** 1:08:16  
I fell right into it too.

No, it's a really good point of you know, effectively what you're describing is the creation of this workforce pipeline.

And while some states are approaching a kind of to your point, kind of a bottoms up and or middle down, there's an opportunity for the state of Texas to actually create on the theoretical strategy on, hey, what does it look like to not necessarily put money directly into the creation of said pipeline but develop a framework that says, OK, this is what this is, where we think we could grow pipeline of workforce that actually strengthens Texas as a state of opportunity for aviation.

**LR** **Lowe, Rob (FAA)** 1:08:28  
Right.

**DD** **Dan Dalton** 1:08:55

So I think that's a really good point.

You know, I want to go back to yours.

Oops.

Wait, I see you in the chat.

There's just something.

Let's see here.

Uh.

About Texas model based on the program would be great to include in the report.

Yeah, that's good.

Uh, I want to go back to Tunas point about, you know, kind of the integration between federal and state and where that can kind of dovetail, the next big part of that is for especially for air taxis and AAM is around state to community, right, that kind of what's that they end user or the people who live under or around these

aircraft?

What does that look like?

And so curious if you have seen either in the five states that you oversee or across the country.

What are those examples of?

What good Community integration looks like from your perspective, or conversely, where you've seen it go sideways or the wrong way and things you would revise this body to make sure we avoid?

**FA** **Fields, Arjuna (FAA)** 1:09:57

I mean, I can probably store it and then give a little bit of a framework and then maybe have you Rob if you have some specific ones you want to speak to within your region.

Umm, I think that dovetails nicely to kind of that inner agency work group that DOT level and that subgroup around community roles and responsibilities.

Uh, that many of us have been a part of and are part of those conversations because, like uh, Rob touched on earlier about that local or state investment in the infrastructure, the education, I mean, many of those we, the FAA has a part of that to a certain extent, but then some of it is completely out of the hands of the FAA other than maybe like an educational piece and being part of the tie in to an airport or to the STEM app set or to the safety and process of some of those as they start.

Touching the ground architecture and airports and then the airspace architecture, right.

So I think that is really where that interagency whole the government approach and that community roles and responsibility - and what we have found out.

I think within that group and even before that group was formed in some of these more localized or state vignettes is early and often transparency and education by all the involved stakeholders, whether it's Government, industry, educational institutions, uh, to really educate the end user or the community that would be served by these technologies or possibly impacted.

Right, because that can be a very sensitive conversation depending on where you are on that spectrum, right.

And the early successes I've seen through multiple integration efforts or that transparent early and frequent communication, so that people and groups and communities are part of the solution.

**LR** **Lowe, Rob (FAA)** 1:12:01

Yeah.

**FA** **Fields, Arjuna (FAA)** 1:12:10

Uh, so uh, that's where you've seen successes, but also seen failures or more challenges than needed by lack of doing that.

Right, because even if, uh, you know, if you get brought, it's human nature.

If you get brought into a conversation after you feel like it's already complete and it's being done to you or your community, umm, you have a lot of different reaction, even if it might benefit you in in the long run, right?

So I'll leave my statements at that for now and see if Rob has anything to add or specific locations that he may have dealt with.

**LR** **Lowe, Rob (FAA)** 1:12:50

Yeah.

So thanks tuna.

I think I really want to foot stomp what tuna said there about the states encouragement enable it.

However, you want to do that for that early conversation is really, really key.

I think there's a lot that's up to the operator to begin a lot of that depending on what kind of vehicle or what they're going to do, right.

But I think an expectation, you know, it's whether it's a community or a state level of how that happens is really there.

One of the roles that lands in my office is partnering with things.

Typically we've traditionally been around noise with that kind of community engagement, but we're beginning to be in a lot broader conversations.

And one of the things I think it's really important to recognize as we talk about AAM and new types of operations flying in places that maybe traditional aircraft haven't at those altitudes over Susie or Billy's house.

Umm, it's something that we see with traditional aviation and we call it visual noise.

Umm.

That really is the noise isn't necessarily rattling your windows, but for whatever reason, you now became aware that the aircraft fly there and in some cases they flown there for 30 years.

But now you're aware of it and it really irritates you, right?

That doesn't make it less irritating for the person that it's irritated, right?

So there's an engagement there and that's where it really circles back to me.

Foot stomping what Tina said.

If they feel like they're part of the conversation early on versus it being done to them, it makes a big difference in that what we've seen as far as a specific example I can think of one small UAS operator that is bringing small things to your houses from some very popular retail sites.

One of the things that they did early on when they began to prototype some of that flying in North Texas, they found a partner in in Hillwood, Ross Perot Junior's community development, real estate folks, because Hillwood has some amazing relationships throughout Government throughout local electeds throughout all sorts of localities.

They were able to do the handshake introductions, allowing this company to then begin to talk to all the right people in those locations.

Have those early conversations.

Then they part of what they chose to do as a company, but because of their relationship and encouragement they got from Hillwood and others, they did a lot of community engagement that I was out and went and was an attendee at.

I went to days where we were out in a City Park and they were just flying their flying their vehicle and invited everybody to come had signs out on the street and they were just saying, hey, this is what it looks like.

Let me answer questions you want to touch it.

You want to hold it, you know?

And they tried to do a lot of that before they ever started flying.

And I think that kind of really matches what tuna was saying about the earlier, the better.

And I think from a state perspective, I don't know exactly what that looks like, Dan, but the encouragement of operators are going to do that in our state or whatever the state could do to facilitate.

If you're going to operate in our state, we expect you to interact with our citizens.

You know, in kind of this manner, I don't know how that really works, but I just know that's a successful formula.

**FA** **Fields, Arjuna (FAA)** 1:16:11

Yeah.

And if I could add maybe just real quick from a state and just from a Texas, you know we've seen that from TXDOT and some of the public safety entities and down into the local departments as well where they found success in that education and kind of allowing people to, you know touch here, feel and understand, because obviously from a government perspective, you know you got to address some of the privacy, the visual noise, the audible noise.

And there's been a lot of successes with that and really everybody on this call is part of that educational, you know about the technology and you know when you say these abbreviations that we don't always spell out for everybody that like, what's AAM, you know, what does that mean that like, you get 9 different definitions and also many people, all of us are very familiar or more familiar than most about some of these technologies. Right.

There's vast parts of the state in the country that really have no idea about it in and just see it maybe once or twice or in passing and something.

And that's something that I think that's incumbent upon all of us to help educate uh and get the word out and help people understand and feel comfortable.

**DD** **Dan Dalton** 1:17:39

Yeah.

No, totally.

I was, uh, I was hoping that the one of the people who worked at that company that Rob was referring to would actually be on the line, but unfortunately, she's not here today.

So because I would.

Yeah, it would be great to hear.

I mean, she's provided a lot of feedback.

So but yes, you're both absolutely right in terms of what we need to do as an industry.

And I use that term with a lower case I in terms of the organizations that are adjacent to as well as those that are in this industry, what we need to do to really show the end users that there's value here and from there the state, right, so great.

So let's see.

I see.

Jason, please take the mic.

**DJ** **Day, Jason** 1:18:22

Yeah, sorry for the background noise.

Full transparency here in Arlington was there in the room with tuna earlier today.

As for some of the other people on the call.

So my question is kind of preloaded, but what are you all seeing?

What are the challenges that public safety is expressing to the FAA regarding the adoption of AAM technologies and UTM?

**FA** **Fields, Arjuna (FAA)** 1:18:54

Umm, we start with that since. Yeah.

**LR** **Lowe, Rob (FAA)** 1:18:54

You will start.

**FA** **Fields, Arjuna (FAA)** 1:18:55

Yeah.

Uh, yeah, so sorry we didn't have this opportunity to check because I was in a meeting this morning.

**LR** **Lowe, Rob (FAA)** 1:18:57

I mean, I know what I would say, but yeah.

**FA** **Fields, Arjuna (FAA)** 1:19:03

Zip to Arlington and now over here so.

I think the challenge is from public safety, right is in and I set it today and I've said it in other forms.

Umm, the FAA has long supported public safety and you know, I could rattle off the SGI, the special governmental interest that have continued to progress and become more flexible.

The response and large disaster and localized response efforts and in our forums where we specifically listen to from a national but also locally and at state levels, some of the challenges of public safety to understand the tactical needs and

requirements of those communities.

And I think the biggest thing I see and we kind of touched on it today and it comes up frequently is this idea of prioritization because obviously the public safety much like to industry, that's the most important thing, right?

Whatever their mission is and our current regulatory environment and our current information systems ability to allow seamless interoperability of those different type of operations and at times give prioritization based on current regulatory and policy uh environment to support in this case public safety right.

And I think we're, I think we're collectively very conscious and well informed and specifically tied to the North Texas key site activities.

That's why we had the engagement today with NASA and will continue to have that public safety engagement as well as the group, the Industry consortium that has chosen to do this in North Texas so.

You know the challenges of it came up today from a resourcing perspective, especially as we get into more advanced and beyond visual and interoperable operations.

You know, that's challenging both at a state and a local, a city level and the ability or willingness to invest in some of this supporting architecture or supporting or utilizing a third party services.

I mean, we're in the middle of that conversation, right?

And we just look forward to continuing to hear the voice both out and then national level and at these local levels to make sure we capture public safety as a stakeholder and as one of the big users of the Nas that we have to serve, but also integrate into the broader national airspace, right.

So Rob, do you have any additions?

**LR** **Lowe, Rob (FAA)** 1:22:00

Don't no.

The only the only thing I would add to that is, is twofold.

We consistently hear from public safety among other entities, but consistently from them that the regulatory function is not moving fast enough, right, because they're like, tuna said, they got a mission.

They need to do that mission yesterday and they need -they need basically our us to get out of the way so they can go do it, but they obviously are ready.

They want to participate safely and all that stuff so they get it.



It's just there's a pressure there continually.

The other piece that I would just add on public safety is there's always a Nexus into the law enforcement piece of that where it's not just public safety, there's a law enforcement entity that usually is either the same operator or closely related that begins to cross governmental boundary lines from the FAA.

When you start talking about counter UAS and some of those other technologies that don't fall within the authorities of the FAA, they fall into Homeland Security and other places.

So that conversation gets muddy really fast and involves a lot of stakeholders.

They expand exponentially really quick, so the only thing I just wanted to kind of just put the rest of that picture in there on public safety because enabling the ability for public safety to do what they need to do sometimes has some tentacles, kind of like tuna described.

And that's just the other one I wanted to add.

**FA** **Fields, Arjuna (FAA)** 1:23:18

Yeah, that was perfect.

I'm glad.

Glad you brought that up because we spoke about that with a group on Tuesday.

So yeah, all these conversations start merging.

**LR** **Lowe, Rob (FAA)** 1:23:24

OK.

**DD** **Dan Dalton** 1:23:29

Excellent.

Well, we have uh put you through the ringer. Enough here.

Thank you both so much for taking the time.

Appreciate you and you're welcome to stay.

We're going to go through some of the recommendations that we're going to – that are draft recommendations right now as we start to refine those for the legislature, which we'll drop off in well sooner than November.

They will be dropped off at around August but yeah.

Thank you both so much.

Appreciate it.  
And yeah, stay dry out there.

**LR** **Lowe, Rob (FAA)** 1:23:58  
Awesome Tuna.

**FA** **Fields, Arjuna (FAA)** 1:23:58  
You as well and good to see you, Dan, on this side of the pond, if you will.

**DD** **Dan Dalton** 1:24:03  
Same time. Excellent.

**LR** **Lowe, Rob (FAA)** 1:24:04  
Yeah, and Dan.  
Thank you.  
Thank you very much.  
I just wanted to say thank you for the opportunity and just please know that we're available, don't feel like oh man I forgot to ask or if something comes up down the road, please reach out.  
I think to either one of us, I think I speak for tuna there and we'll be happy to chase down answers or get whatever info we can to help support channel.  
So thank you very much.

**DD** **Dan Dalton** 1:24:26  
Thank you guys.  
Thank you for advancing aviation in United States and in Texas in particular.

**LR** **Lowe, Rob (FAA)** 1:24:31  
Yeah, right.

**DD** **Dan Dalton** 1:24:32  
Excellent.

**LR** **Lowe, Rob (FAA)** 1:24:33  
Thank you all.

**DD** **Dan Dalton** 1:24:34

Thank you.

Alright, Rebecca, I think you can now resume back into recommendations.

You I think are still muted.

**DL** **Davio, Rebecca L** 1:24:46

Thank you that was a great conversation.

We were trying to incorporate Chris's suggestions here and I felt like it needed some more wordsmithing.

We were.

We were trying to do a little bit about of that that we would offer.

Certainly we're happy to edit this or you can edit this alternate Molly if you could show that please.

So direct TXDOT to complete in consultation with industry a 2 part statewide study, including an economic impact study which includes an estimation of the potential workforce development, economic impact, health, safety, environmental and other benefits of AAM and #2 a plan for Texas AAM leadership.

So we are happy to hear input from committee members and others on this committee on this meeting. We were just trying to make it a little clearer what we were understanding.

So please edit away and we're happy to go back to the prior version if you'd like.

Cameron gave us a thumbs up.

Patrick.

**PG** **Patrick Egan GUS (Guest)** 1:26:29

I just kind of wanted to go back to what Dan was saying earlier about the industry, maybe putting together something to go with this.

And I think I discussed that yesterday with either in the executive summary or possibly a 1 page fact sheet that hits on some of the numbers in benefits to the Texas State taxpayer.

Just wanted to make that point.

**DL** **Davio, Rebecca L** 1:26:56

Right.

And we talked about yesterday, Patrick, that we will, we are planning on putting that kind of information in the executive summary.

We've heard from our legislative experts that that's very important.

The challenge is we currently have sort of economic impact information from a national study and we have some information that Jim worked - from Port San Antonio has shared with us about some of the benefits that he is experiencing. But we don't have very much else.

So I think, Patrick, you may have missed it, there was a short term economic impact proposal that industry would do to try and get some more of that information by November to be able to use in discussion with legislators.

**PG** **Patrick Egan GUS (Guest)** 1:28:05

Yeah sounds good.

**DL** **Davio, Rebecca L** 1:28:09

So Mr. Chairman.

Do you?

**DD** **Dan Dalton** 1:28:16

Yeah.

No, I like this text.

**DL** **Davio, Rebecca L** 1:28:20

Ah.

**DD** **Dan Dalton** 1:28:20

So yeah, I think I think we leave that. Sorry?

**DL** **Davio, Rebecca L** 1:28:22

Which would you get it from?

Here would you edit anything from here?

Or this is the starting place?

OK.

We will.

We will do that.

That did have the price tag with it, but we're ready to go on if you are.

**DD** **Dan Dalton** 1:28:39

Yeah, I think I think the number 2 will probably get catch some arrows just because you know in some ways, I think the state expects the industry to drive the state to be a leader.

But I think there's a conversation around that I like it as a placeholder for said conversation. So.

**DL** **Davio, Rebecca L** 1:28:58

OK.

And I really think that plan is a point where there needs to be more discussion because there's the very, very detailed level trying to get at exactly where things and the dates and you know and it's like we may not be at that level yet.

So that's really deserves more discussion.

But I understand you might want to go on so.

**DD** **Dan Dalton** 1:29:26

Wait.

Before we do, Cameron's got something.

**C** **Cameron** 1:29:29

Yeah.

Love it the last word to me might be implementation rather than leadership.

**DL** **Davio, Rebecca L** 1:29:48

Yes.

**DD** **Dan Dalton** 1:29:50

Yeah, that's more that is more action oriented, I guess, yes.

**DL** **Davio, Rebecca L** 1:29:57

There, there seem to be a little confusion.

I I like it, but I think even that has to be, umm, fleshed out a little bit more because

when we said implementation it was like it felt like it was too specific.  
People were like, wait, wait, we're not ready to pick.  
So I think there's some more thinking.

**C** **Cameron** 1:30:17  
Umm.

**DL** **Davio, Rebecca L** 1:30:22  
OK, with your permission, we will go on.

**KG** **Khankarli, Ghassan** 1:30:27  
The can I mention one comment on that one.  
Can we consider AAM leadership in implementation?  
So we lead in the implementation and then that gives you a little bit more flexibility on that.  
Just a thought, maybe, I don't know.

**C** **Cameron** 1:30:49  
Yeah, I struggled with leadership because to me that's got zero very little to do with a plan.  
We're already asking them in another one of these slides to continue allowing this group or a variation of this group to continue to work with the state and an advisory capacity.  
That to me is AAM leadership.  
This this deal were specifically talking about the preparation of a plan and that's why that's yeah.

**KG** **Khankarli, Ghassan** 1:31:20  
Yes, Sir.  
I agree.  
And I did not mean to say leadership and implementation, I'm saying leadership in implementation.

**C** **Cameron** 1:31:26  
Ohh.

Oh.

Ohh, that's right. Right.

Yeah, that's a game changer, yeah.

**DL Davio, Rebecca L** 1:31:37

Yeah.

Thank you.

**KG Khankarli, Ghassan** 1:31:41

Thank you.

**DL Davio, Rebecca L** 1:31:42

Any more wordsmithing, this is great.

OK, let's go on please.

Electrical infrastructure.

This was tweaked a little bit from making it very specific about Texas airports to ensuring that there was the state provides sufficient electrical generation and transmission capacity to accommodate AAM and provide support for other fuel service sources.

Umm my question would be, was there anything that we heard from ERCOT that would cause us to?

Modify this.

**DD Dan Dalton** 1:32:32

Yeah.

So the alternate.

So the short answer is yes.

Actually, I learned a lot personally about kind of how the state manages or how ERCOT manages.

It's a the distribution system and transmission lines and these types of things.

Umm, so there's a kind of a chicken or egg, right?

Because if we say provide sufficient electrical generation transmission capability capacity, so it sounded like ERCOT was saying that the demand figures actually come from the local level and it may not be a state thing.

So.



**Carvallo, Andres** 1:33:18

That that, the, the Dan there's Carvallo Texas State.

That is correct.

ERCOT is just coordinating and depending on what kind of load requirements are needed and what new generation is needed, there's a whole process of interconnection.

What you can take away from what he said was the following.

Talking to your local utility and making everybody aware of what's coming is a good idea because their process is slow.

So for example, if you want to connect a new data center that is very big, 10 megawatts, 100 megawatts, 1 GW, 2 gigawatts, that approval could take 6 to 12 months to two years.

And so preempting beings and helping them understand.

So for example, if TXDOT is going to open the door to vertiports and all the airports that they support today, what does that mean?

How long is that going to take?

You know, it does it.

They kind of made it sound also like, well, it's one MW, no big deal, but one MW times 1 thousand, 10 thousand, it adds up right and so you have to get in a queue and the more they understand the requirements and how this industry works, the better for that queue journey to be faster than you know.

Otherwise, what are these guys trying to do?

Who are they?

You know, are they important?

Are they know important, you know?

So that's part of that whole, preempting the communication, reaching out, talking to the PUC eventually and you know, everybody being aware of what's coming, the hard part will be the planning on the non-airport sites.

Where are they?

You know, where are they located?

Who is driving them?

That could be an another effort that you know, if we had a trade association that could coordinate that on behalf of all the third party private sector players could move a little smoother.



**DD** **Dan Dalton** 1:35:33

Yeah.

So, Andres, uh, curious, do you think that there is a modification of this recommendation for the legislature since you're one of our ringers?

 **Carvalho, Andres** 1:35:46

Yeah, I think they, again, we're not asking for funding.

I think what we're asking is that we should have, you know, a seat at the table at the power grid as a, as a, an aggregate as a in a trade association would be.

The better thing TXDOT couldn't do it as a as a customer that has a unique demands and so for the legislature to basically be aware of AAM as an industry and telling ERCOT and PUC to pay attention to us would be highly desirable.

Not as I don't know exactly from the senator and the congressman inside they'd probably be the ones asked to sort of create an office or be liaison of some sort, as they already are.

And for them to, you know, to be the ambassadors of this journey, as they should, as elected officials.

So I think on our on our side, I continue to think that we need somehow for a lot of reasons, a trade association or some kind of group that represents the AAM banner.

**DD** **Dan Dalton** 1:36:57

OK.

Other comments on this particular recommendation.

OK, I think I can't think of any better language right now.

So I think this for me this is just a placeholder, one that I want to make sure we come back to you to give a bit more crisp request whether it's you know to Andres's point like directing ERCOT and the PUC's to either listening to or have you know, seeking representation from a community like this one Advanced or mobility or if it's something else.

**DD** **Dan Dalton** 1:37:46

Yeah, we'll just have to think of what that looks like ohm.

Cause I can imagine that if someone brought me this recommendation and I was

legislature, I would say, well, what's the word like what's sufficient to you?  
Ohh and so.

**SS** **Scott Shtofman** 1:37:58

I yeah.

I think part of the ASK would need to be to direct them to look at what's sufficient electrical generation would be like asking for them to study it or convene a group to discuss it, or something along those lines.

Like they need an action beyond - just like we're skipping a step because we don't know what to sufficient electrical generation is.

**DD** **Dan Dalton** 1:38:20

Yeah.

Well, I like that one, Scott.

**DL** **Davio, Rebecca L** 1:38:25

So this becomes.

 **Carvallo, Andres** 1:38:30

So I'll give you, I'll give you a quick I'll give you a quick background and yeah, this thing's kind of happened.

But Governor Perry, his second year of Mandate, 2002 or three or something, he got they.

He was advised by many others to convene and create a Trade Organization called the Center for Commercialization of Electric Technologies, and so he chose, you know, he appointed somebody.

Give him a token funding and basically said go and become a trade association.

Get all the utilities to join.

Give you a membership and you need to call as all these guys to work on grid modernization.

And so that's how it happened.

The governor at the time said look, we're going to create a new Trade Organization to make this guy's collaborate so they can grow faster.

Similar to what they did with the wine industry, same thing.

The governor's office said.

We want to get into the wine business.

Let's go and make it happen, right?

So this would be the same.

You know, we want to be in the AAM business.

Let's go make it happen.

We need to create a trade organization.

Here's some seed funding.

Put somebody as an executive director.

Make everybody be members.

Write a check and run with it.

So maybe he's exploring that or I don't know what the right language would be, other than suggesting exactly that.

But you know how polite you need to put that in language to, you know, they should think about it.

I mean, I think that leading everybody wants to lead your all talk about wanting to be the leader.

I keep thinking that he's not leading against Oklahoma or New Mexico is leading against China, so.

You're.

You're muted Dan.

**DD** **Dan Dalton** 1:40:29

Yeah.

No, I was.

I was just shaking my head.

Yes, or nodding my head.

Cameron, please.

**C** **Cameron** 1:40:34

Umm I I'm looking at that second sentence.

Provide support for other fuel sources.

Number one, it's a little bit vague, but it also you might think I'm overly sensitive to it.

But you know, if that means we spend our money trying to in in improve the availability of wind and solar energy by using public dollars to do it.

That that'll go against anybody who's tied to the fossil fuels that that gets you your Houston representatives, and senator, you're anybody out here we can say, you know, OK, that's a permit.

And then we have three or four representatives at the at the legislature.

Anyway, no offense to anybody present.

We don't have to worry about four votes, but you sure as heck do if you impact Houston and Galveston and places that are that also have a lot of representatives that may think this is some this is an undermining of the of the fossil fuel industry.



**Carvalho, Andres** 1:41:47

So I'm trying to.

I'm trying to understand that why?



**Carvalho, Andres** 1:41:50

Why?

What?

Why would that be the case?

So, so again, to get everybody on the same page, text us produces more wind energy than any other state takes us, produces more solar energy than it any other state.

There's a transition going on on the power sector and the reason we don't build more Co plans is not because of CO2 issues, because Texas doesn't have any requirements.

It's because it's not cost effective.

They only cost effective fuel that it remains is natural gas and the power sector because it provides load of base load capability to deal with the in the intermittence that the ERCOT gentleman was talking about.



**Carvalho, Andres** 1:42:33

And then you need battery storage, so the Genies out of the bottle on the fact that more than 60% of the production of the grid is renewable energy.



**Cameron** 1:42:47

I get it and I mean I see the turbines out here.



**Carvallo, Andres** 1:42:51

Or other fuel.

Other fuel sources may refer to like things like hydrogen or you know, whatever else is coming.



**Cameron** 1:42:59

That's not.

That's not.

Yeah, that's not the word bothers me.



**Davio, Rebecca L** 1:43:02

Yeah.



**Cameron** 1:43:03

It's the support word support you're asking the legislature to do something to pay for.

Brant, I don't care what type of energy source it is to pay for it.

That's what support means.

Ultimately, a little resolution here and there, signed by the legislature, isn't what this means.

So if I'm sensitive to whatever it is, and maybe I'm sensitive to wind energy, I don't care but provide support for other fuel sources.

What does that really mean?

That's why I my comment is that it's too vague.



**Dan Dalton** 1:43:39

Yeah.

No, I agree.

I see what you're saying and yeah, to Andres point like it's funny because when I saw fuel sources and you said Houston, I immediately thought of hydrogen, which I think Houston is now set to become the largest producer of hydrogen in the United States. But yes, I hear you.

I think it's this is a bit of a political grenade to just throw out there that we should provide support for other fuel sources.

So I think maybe it's more along the lines of like encourage the use of other fuel sources, but you know or of all fuel sources or something like along those lines.

**DD** **Dan Dalton** 1:44:15

I mean, I don't want to see us go back to coal if we can avoid it.  
But.

**C** **Cameron** 1:44:19

Right, right.

**DL** **Davio, Rebecca L** 1:44:20

Uh.

**DD** **Dan Dalton** 1:44:21

Yeah, I think there's maybe that's maybe yeah.

**DL** **Davio, Rebecca L** 1:44:25

I think this came from the Infrastructure Subcommittee, and if I'm remembering correctly and I invite anyone that heard the discussion to offer their remembrances, but I believe that this was really well, what about the?

Umm is it safe?

You know hydrogen safe fuel, these other things that they didn't want those to be precluded and that to produce hydrogen you needed electricity.

So that was sort of.

You know how?

**DD** **Dan Dalton** 1:44:59

Yeah.

**DL** **Davio, Rebecca L** 1:45:00

Where are those fuels in becoming available and is the first priority electricity?

**DD** **Dan Dalton** 1:45:10

Yeah, yeah, I that's good.

It's a good point, you know, and from the other side of it, many of the operators talk

about.

An environmental impact?

Am I still there?

OK, good.

And so when it comes to then you know, if you charge your batteries using something like coal, it kind of impacts your sustainability and your carbon offset.

So I think the encouragement of kind of an all of the above fuel source is a good is a good medium to kind of walk down so.

And then I think the first line, I think we need to just kind of figure out a wording that is around assessing, to Scott's point, assessing what is a, what is a growth plan look like for generation that supports things like AAM.

And so that's kind of the investigation of what is what forecast look like of the industry, what is the demand look like outside of AAM?

How do we make sure that the line the line of growth of generation for ERCOT is not just commercial and residential as it stands today, but also may include significant AAM and where that point is and that kind of stuff?

So it would be good to have some sort of not just providing sufficient, but assessing what is sufficient.

So and we can continue to wordsmith that one, I do think we should move on to maybe some of the next ones as I realized we only have an hour left scheduled and I see that we have about 20 some odd more slides too. Yeah.

**DL Davio, Rebecca L** 1:46:49

OK.

Yeah, some of will be real quick and easy hopefully, but yes, OK.

The next one is the continue and expand and that is a new recommendation that came from one of the subcommittees.

Continue and expand the AAM Advisory Committee in part to support the statewide economic impact and AAM plan so they sort of wanted that to the AAM Advisory Committee to be the industry input for those plans and make it clear that even if those plans did not for some reason get supported, that still the continuation of the advisory committee would be helpful.

Not sure we hit on that with that language, but that was what we heard was the intent.

**DD** Dan Dalton 1:47:53

Yeah.

So just for the statewide economic impact and AAM plan, so are we saying that the cause previously we said the economic impact was one part one and then the AAM plan was Part 2.

So is this plans plural or is it are the two plans or one plan?

**DL** Davio, Rebecca L 1:48:10

I think this might have gotten umm, the plan might have gotten combined after we did this.

I'm not sure, but I think it's really, I mean and that's up for the committee to.

**DD** Dan Dalton 1:48:20

OK.

**DL** Davio, Rebecca L 1:48:25

Decide and think about, you know, when I think through it logically sort of like what you need to know what the locals want to do before you can and what the plans are from the manufacturers and OEMs and operators.

So that then that economic impact can be accurately estimated, but the challenge is the timing, if you're going for a two year window to do both of those, they almost have to be operating and simultaneously.

**DD** Dan Dalton 1:49:00

Yeah.

So maybe it's maybe it's just putting in parentheses after the word plan and s ( s just to give maintain optionality.

**DL** Davio, Rebecca L 1:49:16

I put a comma after committee to continue expanding.

**DD** Dan Dalton 1:49:19

Hmm.

Umm.



**DL Davio, Rebecca L** 1:49:24

And.

**DD Dan Dalton** 1:49:24

Yeah.

And we'll use, sorry.

**DL Davio, Rebecca L** 1:49:27

No, I'm sorry.

Please go ahead.

**DD Dan Dalton** 1:49:30

No, and I like the idea of using TXDOT funding.

**DL Davio, Rebecca L** 1:49:33

Well, so the idea here is that the funding that there would be no cost if all you're going to do is meet quarterly as the other advisory committees do.

If the plans are approved by the legislature, then the funding for that would come from this.

I mean, I'm sorry.

The funding for this second part would come from that recommendation, and again, our legislative experts will offer additional refinements, but that was the thinking.

**DD Dan Dalton** 1:50:12

Yeah, makes sense to me.

**DL Davio, Rebecca L** 1:50:15

OK.

Next we have AAM definition and umm the recommendation that came forth from one of the subcommittees was include drones, specifically include drones and UAS in the Texas AAM definition, when you look at the states definition you can see that they are not excluded in any way because this is this language is very broadly crafted, and there was lots of discussion back and forth on should we define, should we get ahead of the feds, all those kinds of things and our legislative experts suggested that

it wasn't that these were bad definitions but that there needed to-  
To be more detail underneath them that something like what was the drone, what  
was a vital, all those kinds of things.

And please, I invite you, Sarah and Nick.

To offer clarification here.

**NE** **Nick Eastwood** 1:51:24

Yeah.

So I think in terms of the definitions, I think it's really important for you all to specify what is the scope of advanced air mobility and drone air taxi aircraft, because any bill that we file will have a definition section, and if you all don't help us come up with a definition, that sort of is more informed than the definition Sarah and I were to come up with, then it's just up to Sarah and I to come up with a definition for the scope of the recommendations.

Umm that you all are making and you know, obviously we'll have other folks in the industry come out of the woodwork upset with that definition because they don't want to be regulated, they don't want to fall into the bucket.

And so the goal is to have you all the industry experts, put your heads together to come up with a pretty cohesive definition of what advanced air mobility encompasses, so that in any legislative recommendations, there's a scope and sort of guardrails around what it is we're regulating, what it is we're talking about.

**DL** **Davio, Rebecca L** 1:52:25

And may I ask a clarifying question.

Nick, thank you for that.

Umm, does that mean modify these definitions to start like the AAM definition or provide more detail underneath?

**NE** **Nick Eastwood** 1:52:29

Yeah.

Umm, I think in the conversation we had the other day.

I think right now the division of TXDOT that you Dan's Division regulates aircraft, which is very broad definition under the code.

So as much definitional input that you so if you're talking about the industry as a whole, you know, for the purposes of this of these recommendations, advanced air

mobility means XY and Z.

Umm drones mean XY and Z, air taxis mean XY and Z.

Because I think in the conversations you all have talked about trying to create a more cohesive space for all of these operators to talk to one another.

And so it's important to define who those operators are.

If that makes sense.

Hopefully that is helpful.

**DL** **Davio, Rebecca L** 1:53:37

And Nick, with those definitions also potentially later on, be used to like maybe, sort of come up with these three things are eligible for funding in this particular initiative and.

**NE** **Nick Eastwood** 1:53:52

Yeah.

And so, I mean, that's the other thing is if like those definitions are then also tied to funding and appropriation components.

So if you know the funding, if you don't want to include like drone infrastructure, then it's important that definition not encompass drones and things like that.

**DD** **Dan Dalton** 1:54:13

So, Scott, I was just going to say, uh, would love for you to talk through what AUVSI has done, cause I know you folks have been working on these definitions for years across multiple states.

**SS** **Scott Shtofman** 1:54:23

Yeah.

**SS** **Scott Shtofman** 1:54:23

Yeah.

**DD** **Dan Dalton** 1:54:24

Your thoughts.

**SS** **Scott Shtofman** 1:54:24

So I know I am.

I am biased, but I take this from the amount of time that we've worked on this, the amount of industry players that we've worked on with this I dropped in the chat a link to a set of definitions from am prepared which is our state advocacy campaign around advanced mobility.

This takes from a lot of work that's already happened across multiple states as well as vetted definitions that we've worked with our industry partners on that are OEMs that our infrastructure providers, these are not end all be all's, but in general we try not to modify significantly definitions that exist in federal code or that would be confusing.

And so I put those there for reference.

I think at a minimum there are a good starting place and we're happy to talk through.

Like if you have concerns about wanting to change things, or if you don't like what is or is not included into those definitions, but I think it's a good start.

**NE** **Nick Eastwood** 1:55:19

Well, and then I think if then it's I think at this point it's up to the committee should look at those definitions and the committee in its report itself should adopt a definitional framework saying this is what the committee recommends these things be defined and state code because those recommendations in and of themselves are important because you will have other industry stakeholders come in to lobby the legislature to modify definitions that may not be best for the public may not be best for industry.

Definitions are really important and so it seems like you guys have done a lot of work already on this and I think if the committee can get together and decide like yes, we like these definitions, we should adopt them as is.

Then great.

If there's changes, great, but I think having a section of the report, you know, initially being like, you know, terms will be used throughout the report.

Here's the definition of what the committee feels these things should be defined as.

**DD** **Dan Dalton** 1:56:14

Yeah, Sarah.

**ST** **Sara Trott (Guest)** 1:56:17

I just wanted to echo what Scott said.

He kind of jump the gun on me.

So you know, we're a business friendly low regulatory state.

So if these types of error taxis and vehicles and sky already are federally regulated, you can allude to that in the definition instead of I guess so that you make it less burdensome for, you know, future regulatory environments like for example, when we went and visited Amazon, they were reluctant to the potential to be regulated because they said, hey, we already have to comply with part 107 and 135 of FAA federal guidelines and that's something that you could allude to in the definition of drones is like they already have to get approval from the FAA under.

XYZ and that's helpful for us because then we know that hey, somebody at the federal level is already, you know, doing their due diligence to make sure that this operator is doing everything they can to be safe for everybody.

I don't know if that makes sense.

**DD** **Dan Dalton** 1:57:18

Yeah, absolutely.

I think it also, uh, if there already is, you know, federal definitions for these, then not having so now I'm putting my Wisk hat on not having a patchwork of definitions across the US by which we have to figure out how to make sure we qualify as a company for that definition would be great.

We know we have to meet federal regulations to operate anywhere in the US and so keeping it uniform as much as possible across the States would be great. But.

**ST** **Sara Trott (Guest)** 1:57:47

Also prevents us having to create some sort of Texas version of a regulatory framework.

If y'all are already being regulated at the federal level, then that's fine.

We just would like to know that in the definition.

**DD** **Dan Dalton** 1:58:02

That's a great point, Patrick.

**PG** **Patrick Egan GUS (Guest)** 1:58:07

Yeah, I'm just going to and, you know, reinforce your point right there.

And then also these other definitions that are coming up are arbitrary, and I think you know myself from 20 something years of experience speaking here.

Dividing these groups up, I think it's bad, especially since both will need some sort of new traffic management system.

If you want to call it UTM or whatever and all of that infrastructure and everything else are going to work together, you have a positive public relations thing going on up there in Frisco.

People like it.

Umm.

Or a lot of people like it.

A lot of people are talking about it all over the country to get that out of the AAM conversation.

I think it's shooting yourself in the foot and a lot of the other thing that's going on here is I think it shows the need for, you know, talked about somebody maybe like you know the AAM's are or representation on.

But the Texas Aviation Advisory Committee is somebody that's really an expert in this new technology regulation and policy.

It just keeps reinforcing that that expert person is needed.

**DL** **Davio, Rebecca L** 1:59:27

So.

**DD** **Dan Dalton** 1:59:29

So, alright, well, OK.

So maybe what we do is?

I think yeah.

OK, so I might put this one in Texas State to help make it kind of somewhat unbiased if you folks could take a look at kind of the existing federal definitions and if there's a way for us to link then Texas, Texas definitions to existing federal definitions that I

think is probably the easiest way to do this.

And then if you could bring that back to the to the full committee at the next round, that would be great.

Obviously, take a look at AUVSI's work that they've done, which is, you know, a lot of industry players have contributed to and I think we can get a right size on this one because I, I, I agree, I don't want to make, I don't want this group to create its own definition if we can avoid it.

**DL** **Davio, Rebecca L** 2:00:28

We can do that.

**DD** **Dan Dalton** 2:00:30

Thank you.

**DL** **Davio, Rebecca L** 2:00:33

OK, let's go on please.

So this was the recommendation.

This one's evolved a lot, and it's actually now a two part recommendation.

The one of the committee said we need an office at TX DOT or Office of Attorney General.

I mean, I'm sorry.

Office of the governor to increase adoption awareness of AAM and we understood that TXDOT was contemplating requesting funding for that.

We subsequently were reminded that state employees can't lobby and that the people that TXDOT were, umm, planning on hiring.

We're really to acquire technical expertise to help support AAM planning at existing airports.

When requests started coming in for AAM infrastructure that they would have the technical expertise to be ready to say yes.

And so that's what this recommendation reflects, and TXDOT will be responsible for estimating the amount if they in fact carry through with that contemplation and the next request was to request a position, perhaps at the governor's office to do that more promotion and awareness we've heard from Jason that when he goes to -

Jason Day, when he goes to conferences around that he, he has to look at the Oklahoma Booth advocating for complete AAM or the North Carolina booth or some

other states booth.

And so he was looking for that leadership.

Umm there.

And we did actually find a couple of components of the governor's office that it seems like the might do something more like this.

I think there's still some question and we invite legislative experts to weigh in on this.

The Texas Economic Development and Tourism Office is within the governor's office.

And they're tasked with marketing and promoting the state of Texas and also the

Texas Economic Development Corporation is a nonprofit responsible for promoting and marketing Texas and doing the kinds of things.

And it's the question I think that I would have that I would ask for guidance on is this maybe two questions, one is, do they promote for specific industries?

And the second one was, how should this be handled?

It seems a little awkward for the this group to make a recommendation to the legislature to tell the governor to do this, but that's just me.

So I think that the initial question is, is there any objection to have the TXDOT position that the TXDOT to support a creation of a group there.

To gain understanding of the technical, to be able to provide Technical Support for AAM infrastructure.

Any objections?

**KG** **Khankarli, Ghassan** 2:04:17

Alright, so just a question.

So are we saying that we just want them to handle the understanding?

Is that the function?

So to have a permanent position to handle the understanding?

Or is this something to coordinate the, umm, development of this industry?

**DL** **Davio, Rebecca L** 2:04:37

Yes.

And Laura, I invite you, if you would like to jump on.

Dan had to step away.

Or Daniel, but my understanding is that TXDOT - that the aviation division already has planners that routinely review and process and help coordinate the grants that they give to airports, the contemplation, the discussion was around.



OK.

Well, what if somebody requests a vertiport in a future grant funding cycle, will we have the expertise in House in our planning staff to be able to a process that appropriately and understand the nuances? And so that's what I believe was intended here and I'm happy to be corrected by anybody at TXDOT.

**LK** **Laura Kolstad** 2:05:38

Umm, we do have people in the aviation division that make grants to airports. It's. I don't.

I think Dan is knowledgeable as knowledgeable as an emerging you know for an emerging field that you could be I don't know if he has staff to provide that support at this time to be the experts because they thinking this.

**DH** **Dan Harmon** 2:06:06

So this is Dan.

I'm.

I'm back on the call.

**DL** **Davio, Rebecca L** 2:06:08

OK, yay good.

Perfect timing.

**DH** **Dan Harmon** 2:06:11

So the intent I think would be that if you're asking me to create a TXDOT office, what I'm going to be doing is taking a cadre of planners to help with the planning efforts at airports and whatever other facilities we have to build.

And the project manager is to help or to help the project managers develop these projects so that we can turn whatever funding is provided by the legislature into a physical project that is executed in accordance with the legislative intent.

Just like we do at the airports, we would take the money, do the planning, execute the grant, help the local sponsor, either through engineering support or help them go out and do the project with bidding and construction oversight.

And then turn that over to them.

It would, It's just to, I would say that this would be, you know this, this comp.

So from our perspective this is you know this is adding to the workload we already

have.

It's not taking away from anything, so it would be increasing staff to address this additional workload by getting some specialist to focus on this particular nuances of this kind of construction on these requirements to make sure that we can execute them properly.

**KG** **Khankarli, Ghassan** 2:07:41

I think from my perspective I mean and how that would be my last comment on it, I understand the need and it and it's justifiable.

I think what my recommendation would be and could be, is to articulate what the outcome is or make it clear of what that function is going to be.

That's all what I'm saying.

I mean, I I'm going off of my years of experience with TXDOT when I was at TXDOT so I'm.

I'm just saying is that anytime that we're trying to go into a new programmer or to have to request FTE, we have to justify what the outcome is going to be.

Just maybe a clarification point.

**DL** **Davio, Rebecca L** 2:08:27

We can work with them.

**DD** **Dan Dalton** 2:08:28

OK.

Jeff, I see you have your hand up.

**JJ** **Jeff - Autonomy Institute** 2:08:33

Yeah.

I just wanted to make sure.

Did I miss?

I we still suggesting some leadership within the governor's office?

OK, great.

**DL** **Davio, Rebecca L** 2:08:42

It's good.

**JJ** **Jeff - Autonomy Institute** 2:08:42

And this I think we can we can add definition of requirements cause I think supporting the airports is probably I think the people are going to come to Dan are more industry and I don't think it's even really going to be related to Texas airports for this just first incarnation of use cases.

But I think if we define some details, it would be critical.

I mean, otherwise I think legislators aren't really going to know.

Why would they go down this path?

Because this this is like Dan said, additional headcount, additional responsibilities additional you know revenue being spent on something.

And I also want to point out that I think this might be one of those things that we just say is coming and recommend because I know from industry there's nobody knock on the door saying we need to do the XYZ right now and it might be premature umm, to make this request.

**DD** **Dan Dalton** 2:09:53

So on that one and you know, I guess Dan Harmon for you as companies like Archer and in Houston and Wisk and Sugarland as those airports, IH might be a bit different. But as other airports of north come to you, I mean, is there a need to add a body to support this growth of things?

**DH** **Dan Harmon** 2:10:20

Well, I would say that the answer is probably yes, because you know this is you're talking about a new set that there's a lot to get.

That there's a lot here.

That's not.

I mean, there's a lot of crossover, traditional aviation, there's a lot that's not.

And so it's and this is also a very big tent of things that, you know, you're potentially asking the state to do everything from, you know, horizontal construction, that traditional airports to building green fielding new facilities for potential local sponsors and places to airport electrification, which is not something we've traditionally done to, you know, getting into the UTM and management world of understanding what that means and what the state role is.

So there's a lot of things to capture here.

The problem is, and this is, you know, I'm not.

I'm not trying to make a case one way or the other.

This is what I'm saying.

The reality is, is if you say Dan and in two years if you say Dan, OK, execute this.

I'm going to say that's great, but we had an opportunity to get bodies two years ago at the budget.

Now we're going to have to wait another two years for the next cycle to start on this project because I won't be able to just turn that on so that that's the reality.

And so if you want to lay the groundwork now, the budget, you know, if there's an expectation for us to get smart, you know, to ramp up folks, we have to get the folks and ramp them up.

It's like any other.

The thing of it as a workforce development, OK, if you're going to expect to have engineers and project managers and planners and airport, you know, people that are smart in two years, you're going to start training, acquiring and training them now. Because I can't turn that on from a pool and two years, particularly if we didn't ask for those bodies and get them appropriate or, you know, get them authorized for the state to bring on board for that purpose, you know, then they come out of somebody else's pot, so to speak, and that's a 0 sum game.

So what I would, I guess, say that if this is something you want, then you know the lead time for that is going to be a budget cycle.

I mean, Sarah, Sarah, and they can correct can, can smack me down.

**DD** **Dan Dalton** 2:12:44  
I yeah.

**DH** **Dan Harmon** 2:12:48  
But I mean that, I mean I will say that if you're going to ask for bodies, you know, for something that's going to happen two years from now, you need to ask for him now.

**DD** **Dan Dalton** 2:12:58  
Yeah, I go.

**ST** **Sara Trott (Guest)** 2:12:59  
I agree.

**DD** **Dan Dalton** 2:13:00  
Sorry, go ahead there.

**ST** **Sara Trott (Guest)** 2:13:02  
I just echo Dan.

**DD** **Dan Dalton** 2:13:05  
OK.

**DH** **Dan Harmon** 2:13:06  
Yes, and I'm not fired today.

**DD** **Dan Dalton** 2:13:08  
So yeah, I think if this if this recommendation came forward from the committee. Uh, and I think I personally I am seeing especially having it corroborated by the regional director for the FAA saying that Texas is the leader in this area right now and companies are actively bringing it forward. I think if we this is one of the rare opportunities we have to get ahead of this, I feel like we are always playing catch up and so I yeah, I think this one I think we should go forward as the alternate language or modified recommendation unless there's additional. I appreciate the point about scoping it maybe more deeply. I wouldn't want. Yeah. I guess one of the questions I would have for our friends who are deeper into the legislative process, if we do scope it more deeply or add more justification, does that then harm its chances of surviving?

**ST** **Sara Trott (Guest)** 2:14:13  
I don't think so.  
I think that gives you the.  
Like a reasoning as to why you need it.  
If you just generally say there should be an office, then the governor's staff is gonna be like for what?

**DD** Dan Dalton 2:14:28

Mm-hmm.

OK, Jeff.

**JJ** Jeff - Autonomy Institute 2:14:32

Yeah, I'll.

I'll basically reflects what was just said.

Umm, being in front of many senators and representatives in state of Texas, the first thing they're going to say is what's being spent by private sector.

They're going to say who's spending who's building, who's doing something, and why do we care?

And the answer right now.

Does not justify action.

I'm sorry to say, I mean I I'm.

I'm a gigantic proponent for the industry, so remember, I mean the Autonomy Institute is 100% behind getting advanced air mobility going.

But there's a valid, you know, there's a valid reason why Texas isn't aggressive.

State the state that embraces all these new industries is because we are open for business, for business, to lean in, and I will tell you that there even early, even before we built Interstate highways, even before we built electrification across the United States.

That was a private sector LED initiative that then cultivated and leadership that was then, you know, brought into city and state organizations.

So I think we need to get private sector to lean in more aggressively.

We need to start building, so there's a clear justification for state government to spend money and invest time.

**DD** Dan Dalton 2:15:56

OK, noted.

Alright, so maybe-

Maybe what we do with this and then is let's go ahead.

And Rebecca, if you'll, if you and the Texas State team will take a look at how we could potentially scope this in a way that might help address some of the concerns and happy to work on that with you so.

**DL Davio, Rebecca L** 2:16:21  
And we'll get with TXDOT.

**DD Dan Dalton** 2:16:24  
Yeah, yeah, absolutely.  
Alright, let's keep going.

**DL Davio, Rebecca L** 2:16:29  
So this was the shot at trying to get some leadership and advocacy at from the state for this industry and the recommendation was a creative position in the office of the Governor's Office to do that.

**DD Dan Dalton** 2:17:01  
Yeah, does anyone have any concerns with this one?  
Right.

**DL Davio, Rebecca L** 2:17:15  
Yeah.  
This is a recommendation that came from infrastructure.  
It's got lots of details.  
It's already been modified slightly that support word was looking at the stage of the industry previously had a very large, large funding ask and the sort of discussion was around are we ready for that?  
Is that fair to ask the state to make such a significant investment when the industry is just barely?  
You know, it's just getting started.  
And so a subcommittee of that Infrastructure Committee was going to - subgroup was going to look at this and tweak.  
Jeff, did y'all have a chance to do that at all or Cade?

**JJ Jeff - Autonomy Institute** 2:18:07  
Umm, yes, yes we have and we'll kind of this word smithing something to get back to you.  
So there is going to be a funding ask, but it's mainly going to be it's going to be

small you know primarily to allow the staff for TXDOT to help handhold and manage the process for engaging with infrastructure.

So that goes back to the prior one.

I think this one can.

It will provide clear justification for engineers and designers to be kind of hand holding or working jointly with the private industry.

**DL Davio, Rebecca L** 2:18:51

We'll drop that slide into the next deck.

The next iteration of the deck, when we get it.

Any thoughts or comments on this to provide to that group working on wordsmithing?

OK, let's go ahead and go on then.

So this one we had this came from umm infrastructure and we said when we looked at it, the state of Texas should not establish independent vertiport standards and we took that as not a recommendation.

So apologies, this didn't get as much discussion from the infrastructure group, but it was requested to be able to discuss that today.

**DD Dan Dalton** 2:19:43

So is it is a recommendation, or it's been struck from the list?

**DL Davio, Rebecca L** 2:19:48

Umm.

Cade, can you help out with this please?

**CC Cade Clark** 2:19:54

Sure.

Thanks, Rebecca.

I realized that this is framed as a negative working on some language to make it sound more positive in a, so it's not a negative, shall not establish.

We wanted to change some language, but really the concept there is that that the state uh that we want the uniformity throughout the state and not have each locale have a separate vertiport standard because that that would cause major problems for the industry.



So it's really just an eye toward uniformity.  
And I realized with the language there is being a negative.  
Probably not the best way to write it, so we'll have some wordsmithing that will fix that into a positive statement.

**DD** **Dan Dalton** 2:20:45

Yeah, that'd be good.  
Maybe something along the lines of, you know as much as possible.  
State should encourage the use of consensus-based standards or something like that.

**CC** **Cade Clark** 2:20:54

Yeah, absolutely.  
That's exactly the long along lines we're thinking, Dan.

**DL** **Davio, Rebecca L** 2:21:03

OK.  
And next?  
So this is the idea of research and development using universities to really help Texas based universities to really help and.  
There was a notion of trying to create a strong, uh, coordinated effort among those universities to increase the strength and the influence.  
That's probably not the best word, but of Texas universities in the AAM research space.  
Yeah.  
Would you like to add anything more about that your thoughts?  
And I apologize for putting everybody on the on the spot.  
I just don't want to pretend that I can speak.  
To the details.

**DD** **Dan Dalton** 2:22:14

I think it's a fair request.

**DL** **Davio, Rebecca L** 2:22:18

Nick may have had to drop off, but as the other subcommittees looked at this, they

said, well, it would be great if instead of just asking for a pot of money without any rhyme or reason, that potentially to ask the state for matching funds for federal grants that were available.

And we did have a speaker.

I mean, I'm sorry.

A guest yesterday.

Jonathan, are you on here?

Uh, that said that there were some universities 1 in Georgia, Maryland and forget the 3rd place, but that had strong dominance.

Oh yeah, Jonathan's here, Jonathan.

Perfect timing.

Can you tell this group what you were saying about the three universities that had established presence in that AAM space please?

**AJ** **Appleby, Jonathan** 2:23:23

Absolutely, Rebecca.

So the three universities that are kind of considered the Rotary wing centers of excellence or University of Maryland, Penn State, and Georgia Tech, so they have been leading the way with a lot of the research both for the vehicles and then on the actual integration of the vehicles and the airspace.

And then infrastructure required.

So they may be good, good schools to consider providing them with funding if we're trying to do a very specific research efforts, they would have less to learn in the process.

**DL** **Davio, Rebecca L** 2:24:06

If I may be so bold, I thought just occurred to me a lot of the recommendations have sort of morphed into asking the experts to provide very specific input.

Would it work at all to have the legislature direct the universities, you know, the university systems in the state to get together in with?

Umm to look and say, how do we leverage?

What?

What areas we already have, because there are multiple research facilities in the state to sort of have some more coordinated plan about how we can maximize all those, not necessarily compete against each other, these different universities, but

collaborate to strengthen the research results.

In collaboration again with industry that that partnership is really what does industry need?

How can these university programs meet that need or what additional capabilities do they require?

**DD** Dan Dalton 2:25:25

Yeah.

No, that's actually so something like convening, you know direct the unit, the state universities to convene or the output being some sort of consolidated either recommendation or yeah, I don't even know how to describe it, but something that kind of shows that the A. the universities are coordinated in the state in terms of research and development as relates to AAM and then B. how they are leveraging and that's where the I think that's where you could actually see a funding match come in where it's uh where they individually or as a unit go after federal funds and the state that matches that to support them in their efforts.

And we can put a not to exceed and stuff like that if we need to on the federal on the matching side, but.

Sarah.

**ST** Sara Trott (Guest) 2:26:21

Yes, echoing what you said, Dan, also just putting in my 2 cents that maybe you should consider including Texas State Technical College because they have that advanced manufacturing brand new facility in the valley and that might be something you could tap into as well.

And from an R&D perspective, is the manufacturing side.

**DD** Dan Dalton 2:26:46

Sounds good.

Uh, I saw you a furiously writing notes that Rebecca, so I figured you got all that.

**DL** Davio, Rebecca L 2:26:52

I know I'm.

I'm trying to capture it.

These ideas we all are and we will have the recordings to go back to in the interest of

time instead of where it smithing them, since we're not going to get to final approval, should we move on, I think we captured the idea.

**DD** **Dan Dalton** 2:27:05  
Yeah.

**DL** **Davio, Rebecca L** 2:27:08

You'll have a chance to check us if we did.

OK, this is one that the economic Impact Committee sort of reworked in this idea of direct state universities, community colleges, vocational schools and TEA to get that whole spectrum to create an AAM workforce pipeline.

That was the word I heard.

Words I heard earlier in from FAA that I really liked.

That's not in here, but you know to really say what's what do you already have, what's missing and do that in a coordinated fashion.

**DD** **Dan Dalton** 2:27:59  
Yep.

**DL** **Davio, Rebecca L** 2:27:59

And that then becomes a coordination.

We're asking state agencies to do a lot of coordination with the industry to move forward on these individual pieces because it feels like it really does take that mixture of the experts and the industry people sitting down together and saying, OK.

Here's what we need.

Here's how we can meet that need.

I see. I see.

I see nods from the chair.

So I mean, we should go on.

I believe the next one.

**DD** **Dan Dalton** 2:28:47

As much as my old boss would say if you don't get any comments, get to the next slide as fast as you can.

**DL Davio, Rebecca L** 2:28:51

Shoot.

Yeah.

Yep, yeah.

Don't give him to any more time to look, OK?

**DD Dan Dalton** 2:28:57

Right.

**DL Davio, Rebecca L** 2:28:58

Umm, this was a request from the Safety subcommittee about it's really important to provide first responder training and this also underwent a modification.

Jason, are you on here?

If you want to-

**DJ Day, Jason** 2:29:16

OK.

Yeah, I'll talk about this real quick.

So we had a law enforcement fire on the call on our last call and everybody's in agreement that this kind of training is needed.

So instead of trying to come up with a number and what all that would look like if we agreed that the recommendation should be that TDEM actually put together a working group to develop that curriculum, and then this is kind of that crawl, walk, run thing, right.

So this is the first part is they come up with an idea what that curriculum would look like, what it would cost all of those things.

And then maybe the next legislative session, we ask for money to actually be able to provide this this training.

If money is actually needed, maybe it's not.

Maybe there's already a funding mechanism through the state or federal training grant programs.

**DL Davio, Rebecca L** 2:30:16

And Jason, I know that some of the questions that legislative staff the experts had

was, was this general training to encourage safety first responders to use this equipment?

And you had clarified that this was more about responding to.

Accidents with umm.

Electric vehicles, autonomous vehicles, things.

**DJ** **Day, Jason** 2:30:41

You know, accidents, accidents or incidents involving AAM technologies, whether it be an air taxi landing on the highway, some type of aircraft crash, something like that.

How to deal with fires at a vertiport?

All of those things, as well as TDEM putting together document repository to collect all this data from the manufacturers on how to respond to incidents with their aircraft.

Not necessarily to create those documents, but TDEMM to be the governing body over this repository, so that when the Austin Fire Department decides to put on their annual training on how to deal with air taxi fire, they can go to this repository, pull all those resources and use them to build out their own internal training.

**DL** **Davio, Rebecca L** 2:31:35

And so.

**DJ** **Day, Jason** 2:31:35

And TDEM does this with other things as well. So.

**DL** **Davio, Rebecca L** 2:31:40

And in Jason, the that implies that the manufacturers are going to give this, umm, you know, regularly provide this updated information about how to use their equipment.

Does there need to be an element of this that says and uh, encourage or ask or whatever the language is to ask the manufacturers to provide this information to teach them on a regular basis.

**DJ** **Day, Jason** 2:32:15

No, I don't.

I don't think so, because I think when we heard from the manufacturers that this kind of documentation already exists, it would just be up to TDEM to get a mechanism to put it all together, right, like a an MSDS for example.

They're just going to go out.

**DL Davio, Rebecca L** 2:32:32

Right.

**DJ Day, Jason** 2:32:34

They're going to say these are all the technologies that that we know about, and we'll pull all these documents down.

So we're trying not to burden the private sector with the stuff, since it's already being developed, and we don't want to overregulate.

**DL Davio, Rebecca L** 2:32:53

Comments input has gone.

Molly, please.

**DD Dan Dalton** 2:32:57

Yeah.

No, this is a good one.

In fact, there are a lot of.

This is actually also being worked by the what's the National Fire sociation that like, for example, the one that like defines what's in PFAS foam?

So those folks are all very tied into AAM right now too, which is great.

**DL Davio, Rebecca L** 2:33:18

It's gone.

**SS Scott Shtofman** 2:33:20

Yeah, I think we found the NFPA standards on how to respond to electric vehicle issues and that's where I think I submitted that towards Jason's direction saying that's a good place to start because they show some of the like the critical parts inside of a vehicle.

So that, that's helpful.

So that they know how to respond based off of different materials that are inside the view vehicles, whether that's batteries or gas struts or things of that nature.

**DL Davio, Rebecca L** 2:33:48

The next one is - also came from the safety committee.

This is and the legislation that was filed in 2019 that just wants to include the specifics, the AAM in community in the group.

Molly, if you want to flip to that.

And Jason, if you want to add anything else?

**DJ Day, Jason** 2:34:13

Yep.

So this section of 2340 directed TDEM to create this working group to develop standards for the use of UAS during disaster response.

As AAM technologies proliferate, they will be another component that first responders can leverage for disaster response.

So to be able to do that safely and incorporate those technologies, we recommend reopening this working group and include members of the AM Community to be part of the conversation.

So we can come up with one standard for information sharing and all of that, just specifically for disaster response.

**DL Davio, Rebecca L** 2:35:04

OK, got the nod.

Molly, let's go on.

This also came from the Safety Subcommittee and it evolved so it is now looking much more broadly at the whole autonomous vehicles looking at it to establish a working group, to look at cybersecurity and data risk by autonomous vehicles in general, specifically including AAM bringing in state, local, national, uh, in an industry leaders, the suggestion was that potentially be at Texas A&M specifically.

Umm.

**DD Dan Dalton** 2:35:56

Right.



So are we going to get into university funds by calling out or does this make sense to everyone?

**DL Davio, Rebecca L** 2:36:08

Umm, I would defer to legislative staffers.  
Is that typically, is it called out?  
I know A&M would love this.

**ST Sara Trott (Guest)** 2:36:24

Sorry, I'm multitasking.  
What was the question?

**DL Davio, Rebecca L** 2:36:27

Umm.

**DD Dan Dalton** 2:36:27

But whether calling out A&M as the university for this, or should we allow the legislature to decide which university?

**ST Sara Trott (Guest)** 2:36:34

Yeah, I would leave off which specific one.  
Because you know, there's going to be legislators who went to UT or Texas Tech, they're going to have a problem with that.

**DL Davio, Rebecca L** 2:36:44

Got that?  
Or Texas State.

**DD Dan Dalton** 2:36:49

Or Texas State.

**DL Davio, Rebecca L** 2:36:49

Umm hey, we have we're the only Texas university, have a president graduated from a graduate from here.  
And we were almost the only Texas University to have ever hosted a presidential

debate, you know?  
OK, let's go, I think.

**DH** **Dan Harmon** 2:37:06

Would you stop engaging my contractor with the stuff and get on?

**DL** **Davio, Rebecca L** 2:37:11

Thank you, Dan.

OK, so now we're at the portion of the recommendations that were below the line. So as your chair said, if there's anything on here that you want to move up this K through 12 recommendation was folded in to create that longer pipeline to look from elementary school kids all the way through PhD's and technical training. So this really didn't go away. It was just included.

**DD** **Dan Dalton** 2:37:41

So if we could add a bumper sticker to each of these slides, the captures the rationale behind the deletion just for largely my own memory, but posterity. But large of so that we know.  
OK.  
Ohh, it wasn't actually deleted.  
It was folded into so that when they pull out the digital archives of this group in 10 years and they said, why did that happen?  
It's because you know it was captured.  
So, because I'm sure that this will be the thing to look at in 10 years, so.

**DL** **Davio, Rebecca L** 2:38:05

Will be happy.  
We'll be happy to do that.

**DD** **Dan Dalton** 2:38:10

To see where it all started.  
Really. Yeah.

**DL Davio, Rebecca L** 2:38:13

Right.

So this one was folded into the other one.

Let's go on.

Please Molly. Into the broader, data capture and analysis came from the Safety Subcommittee and they within there said, you know maybe not right, Jason if you want to add more details.

So you know they pulled it down internally.

We wanted to reflect that to the larger group in case anyone else had seen it, but they pulled it down.

So Molly.

Oh Jason, I'm sorry.

Did you want to add something?

**DJ Day, Jason** 2:38:58

No, I was.

I was just going to reiterate what you are already saying.

So we're good on that.

**DL Davio, Rebecca L** 2:39:03

OK.

Let's go on.

Umm, so now we're getting into a bunch of things about funding for infrastructure at existing airports or off airports or vertiports or those kinds of things.

And the Infrastructure subcommittee.

Sort of.

Just had a lot of discussions and yes, you want money and that kind of thing, but it felt like maybe these were a little premature the for where the industry work was to start asking for infrastructure.

Money at this moment seemed like a big ask before you could demonstrate economic impact and have the plan about where they should go.

So this one and let's sort of flip through these Molly.

Vertiports at existing airports was one of these and let's ancillary off- hmm.

**DD** **Dan Dalton** 2:40:01

But so sorry, couldn't go back really quick on the existing airports.

So this was specifically around modifying Chapter 21.

It was the rationale that we don't need to modify 21 in order to increase available funding.

**DL** **Davio, Rebecca L** 2:40:20

The definition of airport.

Dan do you want to take that?

**DD** **Dan Dalton** 2:40:25

Harmon, yeah.

**DL** **Davio, Rebecca L** 2:40:27

Yeah, sorry, Harmon.

**DH** **Dan Harmon** 2:40:28

I'm trying to I think that it was.

I think it was just.

I don't think there's any reason why we can't under the current definition.

**DL** **Davio, Rebecca L** 2:40:42

Yeah, that's what we.

**DH** **Dan Harmon** 2:40:42

Use it for, I mean, but the definition of aircraft under 21 I think would meet the current for what we currently do on airports.

**DD** **Dan Dalton** 2:40:57

OK, so if a if a smaller airport were to come with you were to come to you in the next two years with the intention of developing a vertiport, you feel like the existing language would allow you to assuming it goes through the proper process of vetting and what not the current language in at least in 21 allows you to issue funds to that airport?

**DL Davio, Rebecca L** 2:40:58

Yeah.

**DH Dan Harmon** 2:41:21

I can't see as all I mean I can't see why I wouldn't.

It's just a question of funds availability and you know what other needs they have that are, you know, safety related.

**DD Dan Dalton** 2:41:28

OK.

**DH Dan Harmon** 2:41:35

But I mean I can't see that it would not be available for funding.

It has aeronautical purpose and it's, you know, meets the public's public ownership, public use standard.

**DD Dan Dalton** 2:41:50

OK.

**DH Dan Harmon** 2:41:52

I'm not a lawyer, but I mean it falls within the criteria that we would use to fund a project.

**DD Dan Dalton** 2:41:59

OK, great.

**DL Davio, Rebecca L** 2:42:04

And let's go on.

This was ancillary off airport infrastructure, so sort of the same kind of thing.

Same rationale.

Know where you want and more specifically what you want and then in future biennium's potentially request that funding.

With the economic impact and a plan to support that and then potentially ask to enlarge the size of that pot of airport aviation funding.

But it seemed premature to the committee.  
Getting the nod.

**DD** **Dan Dalton** 2:42:51  
And.

**DL** **Davio, Rebecca L** 2:42:51  
Umm similarly this, this one and the other one about Vertiport was very similar.  
They were similar concepts and instead of asking for money now.

**DD** **Dan Dalton** 2:43:16  
Good.

**DL** **Davio, Rebecca L** 2:43:18  
Go ahead.

**DD** **Dan Dalton** 2:43:20  
No, sorry.  
I'll.  
I'll shut up.  
I'm just talking myself.

**DL** **Davio, Rebecca L** 2:43:25  
This the idea was proposed about potentially having revenue streams looking for new revenue streams to potentially provide dedicated funds to support the AAM industry and the feedback that we got seemed to be it's too early to start looking for fines or fees or taxes or something like that to create a dedicated revenue stream on industry that's just trying to develop and this was one of the iterations, this language that was here and it was sort of like the legislative experts, I mean, you know, the legislators are familiar with the existing revenue streams and there wasn't a need to educate them about that.  
If it's developing a new revenue stream, that's a different issue, but that felt premature.  
Might that be there be the end.  
So there was recommend there was a suggestion to have an AAM representative on

the TXDOT Aviation Committee.

This is one of those places where the idea is good to make sure that that broader an aviation advisory committee includes this perspective, but it if you go in and you look at the language, Molly, if you could flip to that please.

This is very generic Dan, I believe that you could qualify to be on the Aviation Committee right now if you have five years of commercial air as an aircraft pilot and so there's no need to modify this language to specifically require AAM.

There would be no reason why you couldn't self-nominate or nominate somebody else in the industry to be on this committee and be considered fully without changing this language.

And I know Patrick has wants to share feedback.

**PG** **patrick egan GUS** 2:45:34

I disagree with that notion, and I look at the criteria and as I brought up yesterday, there are no certificates for this AAM yet, the aircraft facilities manager thing questionable or fixed based operator for AAM is also questionable.

**DD** **Dan Dalton** 2:45:34

You're.

**PG** **patrick egan GUS** 2:45:54

I looked at the BIOs of the people on the current TXDOT Aviation Committee and I didn't see any expertise there that was listed that I would feel would adequately represent the AAM community.

So I think and from my experience again 20 something plus years of experience of space integration for new technology, including drones and lightboard aircraft and everything else.

If you do not have specific representation for what you are doing on this committee, you're just shooting yourself in the foot or you're indulging yourself and wishful thinking.

That's my two cents.

**DD** **Dan Dalton** 2:46:36

Yeah. Yep.

Yeah.

And I think a key I missed the first time that I was reading closer.

Umm.

And I love that Rebecca thinks that I want to be on another Committee.

But if the majority of the members of the committee is what I was, what I was the majority part.

So I hear you, Dan.

Patrick.

Sorry, Patrick.

I hear you.

I think it's actually a broader question around kind of and I you know, not to weigh in on that committee, but like, what, what disciplines do we think that Committee needs to have, and it, it seems it seems interesting.

Yeah, this one's a sticky one.

Not trying to not trying to get into Shelly.

We'll current chairs business.

Umm.

But I think cause you could almost say.

That the like the helicopter community.

Well, they're represented by aircraft.

Yeah, I think we should have a think on this one because I kind of actually do see it.

I see a #4 in there.

I guess is my point.

Uh.

From at least from my perspective. So.

**DL** Davio, Rebecca L 2:47:54

And what would that be?

**DD** Dan Dalton 2:47:58

Something along the lines of an air advanced air mobility representative for lack of a better term, because so as an example to Patrick's point, you could imagine that there is someone who is a UTM or a PSU which is not represented in this list, and they there's a certain element of greater technology and capability that exists today that would probably be good.

So another example would be and I know we're talking about the majority of the



members, but like any sort of data provider for aviation.

So I think if there's plenty of companies here in Texas that provide data to support safer aircraft and airspace integration activities.

They would not be they would-

They would not be counted as the as part of the majority of this team.

So I think this is the one we should.

Maybe I'm going to say defer on as the chair, cause I want to think a little more on that one.

**DL Davio, Rebecca L** 2:49:08

Would it be helpful to hear from Dan Harmon about the types of things that this committee, umm, discusses and works on in there?

I believe they have quarterly meetings.

**DD Dan Dalton** 2:49:22

Yeah, that would be great.

Although I do not expect him to do that in the next two minutes, but next time.

**DH Dan Harmon** 2:49:28

Yeah.

I was going to say let's you got other things other fish to fry, and we could probably talk on this one a little bit more.

**DL Davio, Rebecca L** 2:49:35

Yeah.

**DD Dan Dalton** 2:49:37

Yeah.

**DL Davio, Rebecca L** 2:49:37

OK, Molly, let's move on, please.

OK, so AAM public awareness we heard from our FAA friends earlier, this was very important.

The insights that we got from the legislative experts on this was that this was a great thing.

It was important that it was unlikely to receive support from the state to do this in in like running campaigns that something like TXDOT having a web page to provide some basic information that people could be referred to for information or something about AM or that that would be something that the state could do, but they didn't feel like it would likely be fundable by the state and I'm happy to be corrected if I misreported that.

That's why this one was crossed out.

**DD** **Dan Dalton** 2:50:42

Yeah.

While I don't think the state necessarily needs to create a funding pool for this, uh, especially having the FAA say that one of the biggest ways of ensuring the success of this industry and other states is through public education, I think we do need to find a way to do this.

It just may not be through state funding.

So yeah, another one that to think harder on I think.

**DL** **Davio, Rebecca L** 2:51:09

There was also some discussion in the committee meetings about really the need to localize that communication and time it correctly so that you weren't telling people that weren't going to see drones or air taxis in their area anytime soon about that.

OK.

And this was economic study.

This was rolled into the other one, so we just deleted it as a separate recommendation.

Same with the statewide plan.

We made a totally new recommendation that combined those two.

Umm.

Disallowed AAM uses.

In previous meetings we've shown some years that other states had done and recommendation from Safety subcommittee, including law enforcement, was that that was perhaps not advisable that.

If it's illegal, it's illegal activity no matter what.

Doesn't matter if you're doing it with a drone or an EVTOL.

OK, it's gone.

OK.

The next meeting date is scheduled for July 24th.

As we've got a lot to discuss, I would respectfully request that the committee consider a meeting.

Before that, we had, we need to understand what the recommendations are really before we can make progress on that report, make significant progress on it.

So it would be wonderful if you would consider that we don't have to decide it now, but just.

**DD** **Dan Dalton** 2:52:47

Yeah, I'm leaning that way too, especially because I believe the July one was going to be our last before we went to writing.

So I think where the recommendations are today, I think we're going to need some more time and I know we're now over time and we're respect everyone's time.

But I would say expect everyone on the committee should expect that there will be a June time, whether that's in person or hybrid.

We'll see, but I would then ask.

Yeah, Rebecca, if you wouldn't mind having the Texas State team go back, especially on the ones, the recommendations, we nixed the, if you could put those kind of rationales as to why, just to make sure we capture that and then send that out to the to the committee.

And then again, I encourage committee members to definitely take a look and really evaluate whether or not this captures your needs because we are heading into the final stretch on this, which is surprising and scary at the same time, but we are getting there.

So again, thank you all so much for your time.

Sorry, we're two minutes over.

I think today was actually super helpful on a number of fronts.

So thank you.

And of course, as always, thank you to Texas State for all your great support of us.

Anything else from any of the committee members?

And anything from the public.

Dan Harmon.

Anything else for you?

**DH** **Dan Harmon** 2:54:06  
No Sir.

**DD** **Dan Dalton** 2:54:08  
Fantastic.  
Alright, thank you all.  
Try and stay dry.  
Stay safe and we will talk to you soon.

**SS** **Scott Shtofman** 2:54:15  
Thank you.

**DL** **Davio, Rebecca L** 2:54:16  
Thank you.