

# FULL Committee - Texas AAM-20240327\_084931- Meeting Recording

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3h 43m 35s

- **Pantuso, Matt** started transcription

**Dan Dalton** 22:41

So we'll go ahead and try and do it like this, and if it really becomes undoable, just send a note in the chat and we'll pause and go from there so we can fix it.

So first of all, I want to thank everyone for their time this morning.

I realized that over the last few weeks, it's been quite the time commitment for folks who have such a few attended all of the subcommittee work.

So thank you very much for doing that.

Realizing using all volunteer positions and so your time is truly, truly appreciated.

So we got a full agenda today actually, which would be great to hear from a number of different speakers from around the ecosystem that's needed to make Advanced Air Mobility a reality.

And so I will not spend too much time up here, but I just did want to say thank you very much to everyone for volunteering your time on the last couple weeks as we really started to put forth good recommendations going forward, and also to thank Texas State for administering all of the many subcommittee meetings.

is there anything, Dan Harmon, you wanted me to go over?

**Dan Harmon**

I will give my time.

**Dan Dalton**

Alright, so I think first up, let's see.

We'll go through all-

Do we have the slides? Great.

So just really quick, we'll go to the agenda. I think everyone saw this, but like I said, it's pretty packed, so we'll just keep going. Next slide please.

So I'll start off this part.

So I think there's been a like a lot of good conversation and I think as it relates to a lot of the recommendations that have been sort of formulated, I think we've got really good themes and now we see to make them a lot more actionable.

You know, specifically adding specifics from scope specifics around what budget ideas and what we needed, and these types of things.

So as you can see on the screen there are a number of areas that I think are starting to formulate and to actually pull in some good ideas.

Then were also going to talk later today.

No, or later this morning about what's on the other states are doing.

So Texas State has done a good job of pulling together, kind of the the key points that other states are driving that relates to AM.

And I think it would be good for Texas to see where those opportunities lie and the kind of separating through maybe beyond just these individual ad hoc recommendations, what would it look like for the state to have a cohesive plan around Advanced Air Mobility? And then we'll talk about kind of how Texas inherent advantages actually tie into that kind of a theme.

So let's go to the next slide, please.

And we're going to hear from our own Dan Harmon around what Texas airports are thinking in this space and also things to be aware of when it comes to FAA preemption.

**Dan Harmon**

Nice. Okay so you guys already know me, I'm Dan Harmon. Alright next slide. Or am I doing the slides? Okay.

Excellent.

OK, So what I wanted to do is just, you know that we've had a lot of discussions about what the state system looks like as far as general aviation mostly that's what we do.

In the state for TxDOT Aviation, we deal primarily with the general aviation public use, public owned airports in the state of Texas, that's what we are funded to work with.

We are a block grant state in the FAA system.

So what that means is for those airports that are in the NPIAS is the national plan of integrated airport systems.

We act as the FAA's agent for dispersing capital improvement funding for those airports that are federally eligible for the block grant system.

We do not work with the commercial airports only the general aviation or the general aviation reliever airports.

So in the Texas airports system, we have about 290 airports.

Uh, of those, 25 commercial, 264 general aviation.

In the NPIAS it's 186, so those are the ones that are eligible for federal funding.

The other 85 or so, depending on what day it is, are publicly owned public use airports that are owned, they're eligible for state funding only within the state, so they're not in the federal system, but they are in the state system and so basically we have just shy of 300 airports that we service, that TxDOT Aviation is responsible for working with.

That's weird, but it's true.

Commercial airports work directly with the FAA.

And they're funded just a little bit differently.

Even though we share big pots of money it's about how those pots of money are carved out.

Uh, so next slide please.

So this is kind of just what we do.

Uh, and then we also maintain the States aircraft and we manage our own internal UAS program for the agency.

So we talk about funding for TxDOT aviation and how we are funded, it may say, gosh, you get a lot of money.

Well, it's true.

There's and it just depends on the year we're looking at.

Well, say.

But prior to the last budget cycle, we got about \$75 million a year for funding between state and federal funding that was broken down roughly \$55 million in federal funding, which again is in pots.

So it's not like Dan, here's a big check for \$55 million.

It's here is \$19 million in state apportionment which is discretionary for use at those airports that are plenty qualified.

The other 24 million in non-primary entitlement, which is basically a \$150,000 in each airport in the system (general aviation airport) gets and they can bank that for a few years.

And then we get about \$12 million, \$12-\$15 million a year in discretionary projects.

And then we get \$20 million of state funding. Historically, that money was used on State only airports because they weren't eligible for federal funding.

The first \$5 million we would apply to the routine airport maintenance program which was a grant that all airports around here have access to, which left about \$15

million a year for-we spread across those other 80 or so airports that don't apply, you know, don't get federal funding.

This past year has been- or this past budget cycle, the 24-25 budget cycles has been very unique that it the legislature infused 94 million dollars, \$47 million over each year dividing general revenue into our program, this is something that they've never done before, largely due to the – Senator Nichols is a big aviation fan and so he's wanted to do something for some time to address some of the shortfalls that we've had in funding, but also, you know, we've had a pretty sizable surplus of the budget that allowed some of these expenditures so they haven't made investments outside of the grant program.

So not only did aviation for the general aviation program get more money, but ports got more money as well, something that the state hadn't done before.

Uh, so I don't - I can't tell you cause I do not have a very good crystal ball of how much money, because it's general revenue that we will get for 27 or 26-27, I do not know. We are in the budget cycle right now, but we are starting to do our budget submissions for the next legislative session.

So you know, worst case, I presume worst case, is we would go back to that pre 24 funding levels that we saw.

Best case, they give us something between that and you know, up to what we're getting now, which would be great.

But that's all of those pots of money that, like so I'm saying, there's it's it is lots of money or there is money there, it just depends on which pot we're drawing from at any given time.

So federal airports aren't restricted from using state funding, or like I said, historically, we haven't had enough money statewide to put on them anyway so we just gave it to those.

Now we're able to do a lot more projects right now that we hadn't been able to do before to try to fill the legislative intent, which is to improve the aviation system in the state.

And then there's also been, and on top of that, there was IJJA or BIL, depends on who you are, what you want to call it, which had provided additional funding on the federal side to airports and so we've been working through that as well.

That's added over the life of the program, about \$45 million, but it is to airports, it's not something that we have any discretion on spending. It's a certain amount based on aircraft category that is for that airport only.

They can't transfer those funds except in some - that's beyond the scope.

So anyway, so next slide.

So just to kind of give you an idea of what our funding levels look like over the past few years you see that big spike that was the first year- fiscal year 24 of the biennium and the reason it's higher than the second years is because we had some rider specific projects that the legislature funded for specific airports and that we are funded to that we're - on top of our funding but for specific airports.

**Ernest Huffman**

Can you define riders for me?

**Dan Harmon**

So a rider is when we have a, when we get our base budget, you'll have, we'll get a certain amount in there that is for- I say discretion but we it's up to us how we allocate and program that money. The rider will say "TxDOT fund this airport". For instance, Abilene got a rider for \$20 million to build a ramp and facilities for firefighting.

So it's kind of in this case it's kind of passed through.

We issued them a grant for \$20 million for that purpose and that purpose only and so a rider is basically an addition to the budget, it's a one time, It doesn't perpetuate and it's for specific purpose, so it'll in most riders will say - so when we're talking about earlier or a couple of meetings ago about be very specific about what it is you're asking for, who you want to do it and what kind of funding, because that's what the rider will do. They'll say "TxDOT, here's \$20 million general revenue for you to spend on this project at this place."

So more specific helps them. Riders are great because they tell us exactly what - there's no there's no mistaking what the intent is, it's do this here with this money.

**Ernest Huffman**

OK.

**Dan Harmon**

We like riders, we don't like riders, depends on how they're done.

But it but it does give us the exact legislative intent which I think is important as we go through this, if you want the legislature to be very specific about what they want, a rider is a good way to do that because it very directly says "this agency do this with this money for this purpose".

## **Ernest Huffman**

Thank you.

## **Dan Harmon**

And it also is because it's in the budget, it's funded, it doesn't - It's not a bill that says, hey, just do this, It says here's the money to do it too.

Next slide.

OK, so this is just a brief side, this is, you know, all these slides will be available for folks who want it, this is probably most interesting to Jeff, but probably not everybody else. But this just shows, basically, if what kind of funding that I get based on the type of airport is eligible for what funding. And so where there's yellow, it's in the 'it depends' category, it can be yes it can be no depending on the situation.

So in this particular case, like where it says 'state airport facilities funding' that would be 'state funding', yes, all those airports are eligible for it but then again, up to now, we haven't had the money to spend on the other end.

So that's kind of a, you know, it depends case. Next slide.

So we do two, well I talked about the kind of the two funding - there are two programs that we do. One is the capital improvement program. So that is a three-year rolling program of projects that we work with the FAA, and this is where we work with the local sponsor airports to look at their needs and try to program out funding for the next three years. And to portion out those different pots of money to create projects and then and pay for.

So for us projects that are in the CID, that's how we do our long-term plan. This is how the airports know when they need to look for their local matches and where they can expect to have projects be planned, started, or if there's some sort of, you know, unique environmental requirement that we have to meet we know that when we need to back that up to do this, or if there's a land acquisition that needs to be done or something like that, it adds, it adds a degree of scheduling.

It shows when we're going to do it, what the money we have programmed and that's what we try to do on a yearly basis.

We do as CIP every year, it's approved by - It's actually required - It's approved by the by the Commission every year and either August - it was September this year, but it's normally August and then that's kind of our road map.

Being on the CIP doesn't guarantee your projects going to happen then or at all, but that's what's programmed. And not being on the CIP doesn't mean it's not going to be there either, because we do have pop up projects, because everything still has to

go to Commission -when we do a grant anyway, so if it's not on the CIP, doesn't mean it's not going to happen and it's no guarantee that it will, but that's the plan. The second is when talk about RAMP, the maintenance program, that's when we do grants to the airports to do routine maintenance.

So we've been trying to set aside- the legislative intent was to make the airport system better so we expanded that program get more money at less cost to the airports to do the type of maintenance that they need to do, whether it's place lights, crack, seal, minor capital projects but we're trying to get that money out there at as low cost for use in the program. Next slide.

So a little bit about preemption.

So the folks at Texas State came up with this list from a couple of the FAA meetings and some of the stuff that they're putting out right now as far as, you know, we had this conversation about airspace, what we can do, what we can't do as the state.

And so these are the things that FAA is been saying, we could preempt if we feel like it. doesn't say they will, but it says that that these are the areas they're looking at.

I'm going to say that in their mind if the state goes too far or, you know, we try to do something unilaterally, they may step in and say no, you cannot, for we will preempt this. So, you know not to go through a whole list of these, but I mean, you know, we talked about a lot of these things before as far as whether it's revenue or things with the state can do, we just need to be careful.

What I don't want to do is put this up for - and be cognizant of what it's - it's hard to guess at the FAA thinking on a daily basis as it is.

I work with them all the time and it's really hard to try to guess what they're thinking. But the more the more we keep that in mind about as we as y'all make recommendations. You know it's how that's messaged and how that's done.

We don't want to do is go down a path that we get into conflict and then all the work you wanted to do is for naught because they say oh, sorry no, we're going to say no that on that.

So that's just, you know, this isn't the all-inclusive.

This is just some of the things that we pulled together that that have been mentioned or put on, you know, out of various conferences.

And thanks to the Texas State team for kind of pulling that together.

Like I said, it's not a shall it's not a will, it's a could, may.

But these are things they have looked at as far as whether or not they'll let the States, now , there are places where the states worked out agreements with the FAA for, you

know, Part 108 operations, things like that.

And they have agreements in place.

So you know, again this doesn't is it impacting that this is just one of those throwing that out there for the for the good of the folks.

Anyway, I think that's my last slide. Are questions for me? And this is just about our existing program.

And so the one thing I will say is for us right now, by statute, TxDOT can only pay for projects that are for the public use, publicly owned, public use aviation facilities. On the federal side, it has to be an airport that is eligible for federal funding right now unless they change the rules to make, how they're going to define the entrance into the space. That is something I've not been able to get them to tell me.

### **Jason Day**

But you're saying in the current regulatory framework there is no mechanism for vertiport funding on the state level?

### **Dan Harmon**

Right now there is no mention of Vertiports anywhere in state statute. I would say that a vertiport by definition is an aviation facility which does appear in state statute, so I don't think there's a reason we cannot put funds on a public use publicly owned vertiport facility.

I'm not a lawyer. I did not go to law school, and I know that my government relations folks are listening. So I'm going to caveat.

So I don't want to say yes I can, I don't see any reason why I couldn't under the existing rules, but It's competing with other - right now I'm already programmed out for three years with my funding. So if you're adding something in right now, it's going to come at the expense of something else.

And the other thing I would say is if you want to build something new - like right now if you came to me, Jeff came to me and said, "Dan, I want to build a vertiport facility using state funds.", I would look to see what I have available, what it what priority it is for him. Does he have any needs that aren't being met right now? Are his runways in order? Are his taxiways in order? It's all the safety stuff first.

Because I don't know how to store a vertiport against all those other needs except for It's an additional capacity increase is how we would view it.

I can't tell you how the FAA is viewing it.

Now that's not my highest priority, but if it's a priority for him because he is in demand or has a perceived demand, we would figure out how to do it.



We would build it based on the draft AC for vertiport construction, because that's the only thing I have to go off of right now. But it would also depend on his ability to have a local share be able to provide a local share importance for the statute, which is a 10% share up front. So I it's not that I can't do it, we would just have to figure out where it fits in a relative priorities. Now the way you go around that is, that next session legislature says Dan, you are building a vertiport facility at Jeffs Airport and here's \$10 million to do this. My federal or my state folks both close your ears. He didn't hear anything.

So anyway, so then I will go to Jeff and say, hey Jeff, tell me when you got you got your 10%, yeah, I got it. We're gonna build this facility, where do you want it on your airport?

So it's not that I can't, I think I can. Just a question of getting it programmed into the existing - Does it have an aeronautical use? Is it at a publicly owned public use air field? It cannot be for the use of a single vendor.

**Dan Dalton**

Can I follow up on that?

**Dan Harmon**

Sure.

**Dan Dalton**

So are all grant dollars allocated every year or is there ever an excess?

**Dan Harmon**

Like this will be the first time that I've ever come up with that situation maybe. So, we try to program - so on a normal budget cycle, I will always have more projects.

I have uh this year, I think, I think we will be - I don't see us going around looking for new projects.

I haven't run into that situation yet.

Just because we've got such a backlog right now of safety issues that we need to address at the airports. But the driving factor, the biggest single driving factor that I have is local sponsors share of the projects and their project readiness that they can have the money available and make the airport available to do projects.

That's our biggest issue right now.

**Dan Dalton**

Is private industry allowed to help that airport in their share?

**Dan Harmon**

May have to take the rain check, but if I remember the way that it's statued.

I think that, you know, we'll have to look at the specific border, but I believe that gifts or donations are eligible as long as it's not state for - state money, as long as it's not state funded, how the local share is filled is pretty broad, but it has to be open for - you can't be like anonymous donor it has to be upfront.

I will take a homework assignment to make sure that that might be the case.

**Ernest Huffman**

Can we go back to the slide? It's Slide 8 on here, but...

**Dan Harmon**

What's on it?

**Ernest Huffman**

It's highlighting the various years of funding, not the chart.

**Dan Harmon**

This one?

**Ernest Huffman**

Yes.

**Dan Harmon**

OK.

**Ernest Huffman**

So 24-25 is \$58 million rider funded projects, so that's not that \$47 Million in general revenue?

**Dan Harmon**

No, there were all a lot of writer projects and stuff, so there was RAM in Abilene, there was a hanger for first responders, law enforcement at McKinney, and Edinburg, uh runway work at Weslaco and Wood County and a rider for runway work and Sugarland. So, all in all, that was \$58 million.

**Ernest Huffman**

So, what would be the funding mechanism?

**Dan Harmon**

That was the general revenue.

**Ernest Huffman**

So that's an additional general revenue?

**Dan Harmon**

Yes, so that was general revenue almost - I'm not going to say always. That's not true. Many times, we like as an agency if there's a rider for it to use general revenue because it does not affect our base budget. It's outside of our base budget.

**Ernest Huffman**

So that forty others 47 million is within the base budget.

**Dan Harmon**

That was a general revenue plus our base budget, normally we use what's called non dedicated fund six which uh, getting into state funding. So fun six is basically what we use for roads it and it's constitutionally dedicated. So, it's dedicated fund six to road construction road projects, non-dedicated fund six is a very small slice of fun six that is not dedicated constitutionally to roads and that is second generation. So, it could be interest on the fund, it could be loans that we've made coming back to us or to various payments coming that aren't directly gas tax arrived first generation, and that funds a whole bunch of stuff and TxDOT that doesn't qualify. So, the civil rights program, maritime, aviation, rail, all the modes other than roads, we all compete for that funding and so that general revenue 47 was on top of our normal little slicing. So that's why we got this big plus up that's allowing us to clear out that backlog of a lot of the projects, either projects that were waiting that weren't, it got delayed for some reason for projects that he wanted to do or the local sponsors wanted do that we've just never had the money to get done for capacity reasons or efficiency reasons.

**Ernest Huffman**

Thank you.

**Dan Dalton**

Another question for you. So how should this group view be wealth of budgetary information you just imparted on us? How should we think through as we look at the - through the lens of AAM and where the state could go with this, what are some opportunities and some pitfalls that we should be aware of?

**Dan Harmon**

So what I would, I guess the reason that I brought this up and the reason why I wanted to kind of show you what how we're funded and who is drawing from that funds and kind of where we've gone is, one is like, if the intent - and I'm not saying right or wrong - you know AAM is aviation it's part of its name and so how that aviation facility is funded, as long as we are statutorily - we will do whatever that that the legislation ever tell us to do.

If it's like an aviation facility now on the federal side, it's a little bit more strict as far as the flexibility to do federal funding, I just can't use it unless they're eligible.

But on the state side, it's broad enough to say that, you know, aviation facilities or

aviation.

In my mind, aviation facilities are aviation facilities.

The issue is that there's already a lot of them, so if we're talking about new facilities or new entrants, you're already competing against a lot of other needs.

So if the intent would be TxDOT, do this out of your normal budget, then I would say text that needs sustain a budget that can absorb these new industries. If the intent is for this to become a normal part of our business which – not to say whether that's good or bad or right or wrong, but there is going to have to be a proportionate amount of funding to either specifically for this or adding to that pot.

Just saying do this out of this and accept the fact that you're a new entrance and here's more money to deal with this. Because the current money that we have in there, unless the general revenue is, is perpetuated, there's just no way we could support new entrance.

But if this is become a part of our normal program, then having that ass part of the part of the - you know we when we do as CIP now AAM projects are part of part of what we're looking at because that is happening at the airports or we are adding new entrants, new airports, so to speak, that are eligible, then that would allow us to print, just make up system.

Or, you know, and the other thing I would say is that if there are specific things that you want done. then instead of having a, you know there are very specific items that you want done for very specific purposes of very specific places that I would look at having, you know, the legislators, they're riders on the budget with general revenue. So that again, it's going to be, you know, I want this at here done by this first for this group. You know the answer may be, I want a strategic plan done by TxDOT and here's the money.

Or I want workforce development, done by Joe McGruder, the governor's office, here's the money

It tells him, or you know it tells them what they, you know, tells the entities in the state. Here's exactly what you want me to do. This is just a view. And so, what I'm trying to do, what I want to do is just kind of show these are the different - This is how we're funded. This is what we do. This is how we enter right now. This is how we see our space. Adding to that space is going to require resources.

But there's other ways to do it than just adding to that, unless that's the long-term intent. But for specific things, there's also other avenues to give a little bit more control, bit more direction that works.

**Dan Dalton**

Yeah.

Well, I think so.

So I think that's actually really helpful context.

So while in the beginning maybe we consider individual riders for some specific projects, those make the recommendations a longer term, sustained funding.

Maybe it's the right choice to add AAM to, you know, your existing budgetary portfolio. I think that all of this kind of suggests that we maybe do want to think about a long term strategic plan so it doesn't look like a bunch of ad hoc projects and then all of a sudden it's a big dump into the budgetary effort.

So it's actually a streamlined, hey, we're going to launch some of these projects and we would recommend launching some of these projects in Texas.

And then if they are successful or in the longer term, there's a, there's an actual budget allocation for this, if it's that that's the right decision.

So that's super helpful. So I I didn't realize that the nuances of the state budgeting for aviation.

So thank you.

I appreciate that.

I think Jim actually has a really good point.

Yes, yes.

OK, good.

Jim has a good point about how you know, while there's increasing there are increasing costs associated with building out of the airport and there was decreasing amounts of funds, it does make things challenging.

I don't know.

Jim, did you want to say any more about that or?

**Jim Perschbach** 57:37

Uh, not a whole lot to add beyond what I put in the chat.

We're in the process of this now and the grant folks have been absolutely fantastic, but consistently these costs are going up, that the grants tend to be trending below the expectations that we had. And so, from our perspective as both an airport sponsor and real estate developer and we've got aeronautical facilities and non-aeronautical facilities developed, it becomes very difficult to justify our capital investment on that hatch, and it is the question that I would have from the airport

sponsor perspective is where the monetization is going to come in to justify the amount of relatively high capital. I think our estimate for the vertiport and consolidated facilities that we are building and full disclosure, it's going to have wide body heavy taxi lanes to it. But we're north of \$100 million right now.

**Dan Dalton** 58:40

Yeah. No, that's it's always the chicken or the egg, or I guess if you build it, they will come, right? That's the idea. So how do we make sure that they actually do show up? And so that's not just a, it's not just a revenue of item either, right? So that's part of the community engagement, making sure that it's a friendly environment for industry to come in. And so I think that's much of what this group is charged with doing is making sure that that that environment exists to be able to entice industry, drive that demand. I think we have a lot of the demands, It's just how do we make sure the ecosystem exists to support it. Any other questions for Dan?

**Jason Day**

I just have one quick question. So what I heard you say was in your mind aviation is aviation, which makes me believe that maybe somebody else they see it differently. So for the purposes of this committee, would it be, do you think there be value in maybe coming up with some language to codify the fact that AAM infrastructure and technologies need to be included in languages for airport funding mechanisms by the state just to make sure that it's completely clear, so there's no misinterpretation, you know, down the road when somebody else is trying to get a project funded and somebody says that's not, you know, an actual airport that's an vertiport, there is no language support that.

**Dan Harmon**

Oh well I would say that it wouldn't hurt. I'm not going to say it's not necessary.

Uh, I would say that.

So Texas is very unique when it comes to statutes.

And so if the legislature does not grant you the authority to do something, then you don't have the authority to do it.

And so the interpretation of what legislative intent or what that is, is right now the way that it's the statutes that I operate under 2122 of the Transportation code.

And it doesn't - It doesn't discern what an aviation facility-

I mean, it generally talks that you know what an aviation facility is, aircraft taking off like you know, does it define aircraft as UAS? No, but it does not define one specifically excluded.

Umm, so I think that I mean the case could be made that the way that it is interpreted right now, AAM or UAS will be covered because it's not specifically not covered and it meets the criteria of mediation operations. Does that mean that there's not a reason to codify it?

I can't answer that question. I would say that you know that's kind of up to the users. It's very important to codify if this is feeling sometime in the future that it might be excluded, then I think that yes, that would be something that would be worthwhile to codify that it is included in the definition of aviation. Or the definition of aviation facility includes, very specifically, vertiports or something to that affect.

But I think it will be - You know, it's again, it will have to be that unless the law changes it would still have to meet that public use public owned test as far as it's who owns it, who operates.

**Ernest Huffman**

One last rider question.

Are the riders allowed to be one big large omnibus type situation where you can propose different line items under 1 program?

**Dan Harmon**

Have not seen it done that way.

Yeah, they're using grouped together, but not like a.

Here's the rider to do XXXX.

That's usually.

Here's a writer.

It's it's generally uh uh.

OK.

That's that's kind of like what a rider would look like.

Yeah.

So it would be-

So what we would see in the budget is where it says statewide air mobility plan, that's what we'll show that the budget, it would say two, what the specific action is, where the funding is coming from, it's going into my seat 51.

And the terms of use that money.

**Ernest Huffman**

I need to see that information.

So could we have one statewide advanced air mobility program and underneath the program you have a plan, you have a budget, you carve a budget for a program

manager.

Could you do and write it?

**Dan Harmon**

You can well, so you could if, as long as it's kind of lumps together.

Generally, what you're probably do is put it in there.

It's like AAM program, it would say something like sat with the minimum of this, this, this even.

There's different ways to do it, but usually you don't see like the whole-It's kind of like if there's specific right this specific fund is supposed to cover, it will usually be in the verbiage in the description.

It won't be like a list of things.

It'll be specific to that specific point, so if you were to say, do a, do a program study, it would say Dan do the program study money goes here, it says this and then if you said Dan staff up with the AAM program, it would say Dan you're funding for X number of bodies to include a manager to do these things.

And then the next one would be, here's another rider, Dan, you know, buy a drone flight, here's whatever and so it would usually be a good- it would take out the specific parts if you wanted a different study for workforce development that wouldn't say Dan, that would say, you know, Rebecca.

Maybe.

**Dan Dalton**

Maybe we can scroll up.

Was there a question earlier in the?

Chatting for some other one.

There was something about the statewide plan being updated.

**Matt Pantuso**

"Is there any timeline to updating Texas airport system?"

**Dan Harmon**

So the airports system plan is actually uh, we are updating the airport system plan right now, unfortunately we started that kind of before. This particular plan doesn't really address AAM other than kind of on the periphery because we started the plan a while ago and already contracted it out.

So I think, but you know, one of the things that I think that Dan mentioned is it, it might be worth you know doing a very specific plan that is the not necessarily



independent to, but certainly to complement that with -that can address some of these issues more specifically to AAM.

You know eventually AAM and just aviation are going to be one in the same.

It's not going to be in a day anymore.

It's all going to be just aviation.

And so that's you know how to get to that point that maybe you know right now certainly it's not segregate any of it.

You know, it's certainly the part, but eventually it won't be a Texas airport system plan it'll be one plan, it's just we didn't go about doing that this different this time because we had already started contract. So that before we got into this.

### **Jason Day**

Yeah.

I just want to add one thing to that and I don't think a lot of people understand how nuanced this gets right.

The definition of an aircraft is in state statute and there are state statutes on aircraft for extrusion.

Well, the FAA defines UAS as aircraft, but once if you - so a law enforcement agency just reads this offline stuff and they can think well Bob didn't register his drone.

FAA says that they're aircraft, state statute says that they're aircraft, now that's a whole fine or whatever.

But once you start digging into what the state says is an aircraft, It clearly states by definition that the UAS does not actually fit into that.

So that's why I think it's really important and, we have this opportunity to clear off the lot of these misconceptions because all of us - so much of this was written in the 80s and 90s and it does not include any of these technologies.

### **Dan Dalton**

See, maybe that's an action for our Texas State to be able to take that and turn people review on how the state does define an aircraft and see if maybe that is a recommendation to make.

To change or to modernize it.

Speaking of Texas State.

I know that Andres is here to speak with us about the electrical grid in Texas, which we all have, you know, intimate relationships with.

So please tell us more about Texas and infrastructure.

## **Andres Carvallo**

Sure.

Andres Carvallo, professor at Texas State happy to be here.

I just wanted to go to the next slide real quick.

I don't want to talk a lot.

The slides are really self-explanatory with what I what I wanted to make sure is that we are aware of the fact, you know, my background on powers and I was at Austin Energy from 2003-2010 and the lights are on, it's working.

If the ability is needed to do something to make this real, we need to get them involved, and so real quick ERCOT is really doesn't cover all of Texas, but it's the electron reliability entity that manages most of Texas.

Part of Texas is on SPP and areas in the north and the East, but ERCOT roughly covers 26 million Texans, and it's a pretty complicated system.

ERCOT is also separate from the eastern interconnect and the Western interconnects, we're our own little country when it comes to power, which would make it easier to secede if we ever wanted to.

That was actually designed by LBJ believe it or not.

So you know, ERCOT is responsible for maintaining system reliability, facilitating a competitive wholesale market.

So the energy at the wholesale level is completely competitive.

There are 1200 plus power generation units powering the whole state and at peak Texas delivers roughly 80 gigawatts or 80,000 megawatts of power to run the whole place.

And ERCOT also facilitates in competitive retail market, which is - I'll explain that in a minute kind of what that looks like depending on where you live and then ERCOT also ensures Open Access to transmission.

That means if you decided to be build your own power plant, this state is required to connect you. So, if you ever wanted to look into that, yeah, you know, Texas is an open market. Anybody can build whatever if you get in interconnected to the grid.

And the next slide gives you a breakdown of both on kind of like what the grid looks like, so you saw great map from Dan about the 289 airports and you can look at, you know, or you can imagine the relationship between those airports and their utilities and those maps, and I have similar maps that show you the regulated side of Texas, which is really serviced on the wider side of the delivery by 4 operators which are Center Point, Encore and American Electric Power in Texas and New Mexico power.

And I'll show you that in detail.

There are also - so they cover roughly what I would call the largest bulk of the geography and their final billing of that to you and any customer, commercial, industrial, residential - is done through a retail energy provider, there are 130 of them.

And just to give you a point of the conversation level of this.

Many companies have been around doing this forever TXU or Reliant, but Tesla has a division or Tesla Energy, and they are a retail energy provider. And then on the next bullet there are 72 municipal owned utilities.

So San Antonio Central CPS Energy, which is owned by the city of San Antonio and Austin, is controlled by Austin Energy, which is owned by the city of Austin.

And like that, there are many cities and we'll see them from College Station to Bryan to many others where a city owns a the grid and the delivery of that energy. In the rural areas you have 76 electric coops, PEC, Pedernales Electric Cooperative, and Bluebonnet being the largest ones.

The next slide gives you again some of the listing of the deregulated market, who are the players, pretty self-explanatory.

The next slide gives you the map of their physical location.

So if you live in Dallas or you're living in Houston or you live in Corpus, those are competitive areas that you can have like a billion providers, and you can switch every 30 days or every 90 days, or however often you like from one to the other.

The infrastructure it would enable anything on the vertiport or airport comes from only those four providers, right?

So the relationship on those geographies would be with Encore, CenterPoint, American Electric Power, Texas, New Mexico power.

So on the next slide is, see the breakdown from the coops, so that you got their names and you got the location so you would need to do an overlap to see who you need to take to deal with.

And then the last thing I have is on the municipal side.

So you can see that the current situation, so what happens is long story short, you know the division of the country started happening in the after the 1930s.

It accelerated during World War Two, and that's where the coops were kind of birth. PEC was founded by LBJ of all, another plug for the former president, and you can see that you know in some places you have cities which are monopolies controlling the grid, you have coops which are monopolies controlling the grid and then the

vast majority of the geography is really deregulated.

The grid providers, Enore, CenterPoint American Electric Power and Texas, New Mexico power are monopolies on the delivery of the electron, but there is competition on the pricing and the age of the grid.

Anyway, I just wanted to make sure that you guys had this information.

Dan do you have a comment? A couple comments.

Go to the last slide, it gives you the list of all the cities.

So to give you some context, you know I had been on Austin Energy from 2003 to 2010 and I deployed \$4 billion worth of technology in improving the grid in Austin.

So 1 vertiport according to many studies done primarily from NREL, the national renewable energy laboratory, and others, 1 vertiport on average would need to consume from one MW to two megawatts on 24/7 operations.

That is equivalent to 800 homes to 1600 homes, so that is an incredible amount of concentration in tiny little geography, which means that the utility we need to upgrade all the infrastructure to deliver that kind of juice to that location and the delivery of that juice on the utility side is anywhere from 50,000 to 100,000 for vertiport.

So if you wanted to do 100 vertiports in Texas, the legislature would need to do something about helping out with 10 million bucks, right?

Roughly, right? Give or take.

You know, I'm not going to, you know, go on the record saying those are the exact numbers, because my brethren in the utility side will say they need more money or whatever, right?

So, but it's roughly around with that and then the challenge is, you've got a supply chain on the infrastructure. So, a transformer, you know, they're not sitting around Best Buy or anybody, right? You have got to have them made and they get delivered. And it takes 6 months to a year to get them delivered, and so my only comment through all this is, we need to engage with the ESC or ERCOT in the utility industry, they need to be heads up because they take a long time to make changes and they need to be part of whatever we're going to be asking if we're going to be asking for more funds.

Any questions?

**Dan Dalton**

So I have any questions.

So let's say, you know, maybe there's an analog to a MW project that's happened in the past. How long do those normally take?

**Andres Carvallo**

It depends.

It depends because it depends on the location.

So when you have the grid, you have the generation units.

You have the distribution feeders in lines.

Usually the grid, where there is urban areas the grid is redundant and it looks like a network.

There's a lot of, you know, redundant points delivering from multiple substations into the grid. As you move away from that and you're going to rural now it looks more like the fingers of your hand, and so if you're at the end of the line and the line is 13 years old and you're trying to build a, you know, \$10-20 billion, \$20 million vertiport that needs two megawatts, that's going to take five years.

If you want to build it closer to where the grid is distributed and networked, then that'll take six months.

**Dan Dalton**

Roughly, what, six months to five years?

Good.

That's we can work with that.

OK.

And for what it's worth, \$10 million is a steal for 10 vertiports you said 10 vertiports? 100, that's even better.

So OK, so that's good to know the kind of context sounds fine.

What you see are the biggest challenges to those types of projects, in the past, where have you seen challenges, whether it's regulatory and technical, operational?

**Andres Carvallo**

Budget, it's budget. Budget is an important thing to remember.

So we are on a perfect storm in Texas on what's happening.

You got electrification of transportation so the EV's are coming like crazy.

You got manufacturing coming back to Texas right?

Now you got vertically economy being built and developed, right?

And so when you look at the priorities and what the utilities are trying to do, it's, you know it's significantly challenging to deliver you know on time quickly what's going on.

So again, my advice is to the big heads up at the legislature level is to basically have ERCOT and the PEC and of Texas to control the grid, to give the utilities the mechanism to, you know, be part of this in a practical way more than a reactive. Ultimately, they'll connect you.

The question is when?

**Dan Dalton**

I can keep going to list other questions from here in the room or online.

OK.

So, recognizing that you know, budget, oh, there is one.

Sorry, fever Jim, please.

**Jim Perschbach** 1:20:45

Yeah, I was just going to say I agree with Andres's comment about the other power demands.

I know that in San Antonio and other areas of the country, 100 megawatts doesn't seem like a whole lot for 100 vertiports, our campus alone, we're projecting 300 to 400 megawatts of demand.

I know there's a project just up the street from us, it's looking at 400 megawatts of demand.

The last time we had a grid emergency in the state, I think the cushion was about 2000 megawatts.

So there's going to need to be real focus on statewide power generation and potentially using some alternative generation structures, small nuclear reactors.

What do they call these things? Fuel cell technologies, but my concern is not just bringing that power to the location and bearing the utility lines.

I'm not sure there's enough power generation in the state to meet the vertiport requirements.

The generative AI requirements, the data centers, the electric cars, and everything else.

**Andres Carvallo** 1:21:52

Yeah. I concur with what you're saying that thinking that there could be a colocation strategy and having that vertiport also function like a microgrid having its own source of energy.

But I'll give you a data point for that in a minute, I built the first smart grid in the world that Austin Energy I've written, published 48 books on this stuff.

If you take all the electric, all the vehicles in Texas, so 2,000,000 registered vehicles

gone.

So electric 100 kWh battery each.

That is 2200 gigawatts.

That's 2200 gigawatts needed to deliver energy to them at the same time, now you're not going to charge cars at the same time.

They don't need to charge every day, but the whole grid in Texas today is at peak, and only delivers 85 gigawatts. 85 vs 2200.

And that's just the EVs.

How many vertical Wisk planes are we going to have to have 100 years from now?

A million, 2,000,000 right?

So the challenge is that we need to make sure that we're planning correctly for this sooner rather than later.

**Ernest Huffman**

With that being said, are there any plans to upgrade the capacity of the grid from that 85 gigawatts to some other number?

**Andres Carvallo**

Texas is the epitome of a marketplace, of capitalism.

So you're welcome to invest, create your own company yet again, but the private sector drives it, right? You got you know - even the monopolies and their co-ops and munis owned by the local government agencies they function, you know, in a free market, they could be for also generation, energy that they put in, they have one applied in the setting on because I watched the somebody better integration size free market for everybody so you know build it and they will come if you want to.

**Dan Dalton**

So to that extent, to what extent does the state actually allocate funding to any sort of electric provider or in any way then you know, that's good for us to know from a recommendation perspective we can, you know at our voice and support, but there's probably nothing that financially we could recommend for the state to do and S-support.

**Andres Carvallo**

I mean, the legislature recently has done a lot to make sure that the grid is fortified, more resilient.

We had this storm and you know several storms back and so there are new rules.

This state did financing for many of these utilities that needed, you know, investments and got upside down in many ways, right.

So one of them kind of went belly up.

JP

So the state stepped in and provided 40-50 year financing for a lot of things.

But what I'm saying here is and I don't know where you all's vision is on this, but I think that there will be 10000 vertiports in Texas.

So how's that going-

How's that gonna impact grid?

Who's planning on that?

**Jim Perschbach** 1:25:22

Andres uh, this is Jim.

What do you think about the idea of some of these fuel cell technology concepts or even some small nuclear reactors being located directly adjacent to the vertiport and powering it for lack of a better word off grid?

**Andres Carvallo** 1:25:24

Yeah.

Absolutely.

Absolutely that I think I think that you know there are several started.

They have a small nuclear reactor; Terra Power is 1 that has been founded by Bill Gates or another 20 companies for the fuel cell technology and the answer is all of the above. You know, if you can do some panels and the energy storage and you know nuclear and fuel cells, all of the above.

Again, I just gave you an example of why we will need 10 times or 20 times more generation just involve the vehicles go electric, let alone vertiports.

**Jim Perschbach** 1:26:16

So and forgive me because this is something that we've been struggling with.

It may be a way to monetize it.

You know, to looking at folks like Bloom with some of the fuel cell technology certainly not advocating for them, but if the vertiports are allowed to build their own generation, and I think bloom can do theirs 10 megawatts or 30 megawatts on a single acre and there is a way to sell directly. I know it's trickier in coop and municipally owned markets, but is there a potentially you see a funding stream where we're not trying to solve a statewide power generation problem, which triggers an intersection with a whole lot of other industries, but doing this where there's an opportunity just to sell directly to the users at the vertiport and again operators actually offering.



**Andres Carvallo** 1:27:07

Absolutely. Absolutely.

You know, again, there are some 1200 generation companies or generation sites owned by, I don't know how many companies altogether Luminant being the largest one in Texas.

And clearly it's not the market.

So at partnership between and vertiport and you know generation provider of storage and making that a package that you know the excess capacity goes into the ERCOT grid to monetize vertiport to great idea.

**Dan Harmon**

So one of the one of the things that I you know kind of point out this is when we're having a discussion with the FAA with this vertiport design of how – because the FAA is struggling with power itself that you know they look at fuel as a source of revenue for the airports, gasoline and gas, jet fuel and so they want to monetize that as a repulsion source for the airports to generate revenue.

And so we're trying to get a sense of when you pay for the development of a fuel facility that essentially the next generation of fuel for aircraft, not just for AAM, but it like you said you know, in five years, six years, you know that's no money.

This is not just about eVTOLs it's about changing aviation in general too.

But what I will say that you know as much as you see increase in price of construction 28% / 2 years, getting concrete on the ground or the bar on the ground is phenomenally cheap compared to getting buried - is this going to be around airports? Take into account height, Research things like that.

Carrying high voltage table coming to an airport and particularly if there's right of way or easement or property acquisition involved. On top of that, through an urban area, will astronomically increase price of a project. The concrete is cheap.

**Andres Carvallo**

I'll give you the numbers. Burying high transmission capacity lines varies between 5 million to 10 million.

**Dan Harmon**

That's going to be the expense of these projects.

**Andres Carvallo**

So to the comment made a couple times for locating generation at the vertiport level is great idea and maybe I don't know.

It could make it an industry thing and it's a private sector thing, but in many cases for munis and coops, it may be that it's just a state agency doing it from behalf of those local government agencies.

**Dan Dalton**

Or so and just for context, what is the, you know?

And maybe Jeff or Jimmie, us, tell us, what is the kind of average airport usage of power today.

**Jeff Bilyeu**

Depends on your-

What you got on your if you have a business, it's manufacturing.

**Dan Dalton**

Like less.

Less than a megawatt.

What I'm hearing.

Yeah.

**Andres Carvallo**

If you look at a mall, like the barton creek mall, something like that, they're roughly 500 kW

It's a big facility, right?

500 kW.

So.

So the challenge in all this is not the amount of megawatts, it's the concentration in the location of that megawatt based on where the grid is and how that juice goes from the generation unit.

That destination, all that needs to be upgraded.

**Dan Harmon**

We've we've actively been trying to drive demand down by using like turn stuff like that.

**Andres Carvallo**

Absolutely right.

Yeah.

**Dan Dalton**

Excellent.

Alright.

Well, thank you.

## **Joe Magruder**

Well, thank you for having me.

I really appreciate the opportunity to come and talk to you all.

I don't have any slides today.

My excuse for that is over the last 12 business days I have been in the office of one of those days traveling through the state.

Today, it was one of those days where you're extremely busy and get absolutely nothing done, so I apologize for that.

But I was asked to come to talking this morning about economic development in Texas.

Give you a little bit of background on what I do is I'm the industry specialist.

I've been assigned a number of different industries in the state to kind of keep up with what's going on. Within the Governor's office, of course, is the economic Development, Tourism Office and within EDT, as we call it, there's an office of Aerospace and Aviation and currently I'm an office of 1.

That's one of my industries for y'all's information I do have my A&P license.

I was a general aviation aircraft mechanic for a number of years, and in the early part of my career – I was doing the a math while ago, and given my age, I haven't touched the ranch on there probably in about 30 years but I did do that previously. Did a lot of working on beechcraft and bearings and king airs and disc time doing practically 65 sections of our section and power sections.

But that's one of the industries that I keep up with.

One of the things that we're doing in Economic Development, but that was we talked to companies that are interested in moving to say the Texas.

I also talked with companies that have an existing presence in the state of Texas to try to get into expand and not go someplace else.

But the economic development in Texas is very decentralized and one that means that each local community and what I mean by Community is, you know, city or county or region, they have their own responsibility for their own economic development and well being, there's about 1300 because communities in the state of Texas, about 900 of those have an economic development organization about four hundred, 450 of the 900 actively go out and seek companies in their community I went into a bit of trade shows talking to people and had communities come up and say just to say hi.

So they're responsible for that.

Their own self-interest.

Because of that, we have a saying in our office.

We love all of our communities the same.

We also love all of our industries the same

We do not - we do have some target industries, but we will talk to a company in any industry that's interested in the state of Texas, big, small, it doesn't matter the Teslas, the Samsung's of the world make the news.

But however, somewhere 80 to 90% of all businesses in Texas are small and they hire about 50% of the workers in the state.

So it doesn't matter the size we talk to anybody.

One of my favorite conversations that I had with the lady that was looking to establish a facility over the East Texas because her biggest customer was Walmart and they made brooms.

I got two or three hanging in my garage I don't know about yell, so that's just as important to us as the the Tesla's, the Samsungs, the Boeings and those types of companies.

And because of the decentralization of economic development in Texas, we work very, very closely with that local organization.

I live at Cedar Park.

I have no earthly idea what land or buildings are available at Cedar Park.

So when we get contacted by a company, then we find out what that company is looking for, be it land, buildings, what size utilities, all of those types of things.

And then if that company and because we love everybody the same, we don't tell the company where to go in the state of Texas, we find out what their needs are and then if they want and it's all driven by that company.

If they want to talk to Austin, you will introduce him to the Austin economic development.

If they want to talk to the Round Rock, we'll leave Austin out of it and introduce them to Round Rock.

It's all driven by them.

If they want to look in the Austin area, we start with a regional partner, which is up here in Austin its Opportunity Austin and then they'll reach out to Leander, Round Rock, Pflugerville, Bastrop, you know, San Marcos to say, hey, this company is looking for this what do you have or we can do a region in the state or we can do a whole statewide search.

We get projects differently.

We get projects directly from the company.

We get projects that come from the community and then some projects that little bit in the State of Texas we never touched.

But because of that decentralization, and we work very closely with them because most of the conversations that we have with the companies that are first interested in Texas and what kind of incentives do you have

For us, that's the last part of the conversation.

Our goal is to find that site that fits the needs of the company so that they can come and be successful in the state of Texas and hire Texans.

And because of that I keep using the same word decentralization, but because of that, each community has the ability to incentivize the project however they see fit, and some of the state level incentives require local involvement, but the ones that people talk about the most is what's called the Texas Enterprise Fund.

This is a deal closing fund and what that means is that the company has to pick one final site in Texas before the Enterprise Fund application can be processed because one of the requirements for the enterprise fund is to have the average wage of the new jobs created have to be asked for above the county average wage.

As you all know, two counties that are adjacent to each other can have two separate average wages.

Now in that particular program dependent upon the capital investment that's made and the number of jobs that it's made-

In a rural area, they don't have to create about 25 new jobs in a larger metropolitan area like Austin, they're going to have to create at least 75 jobs.

And then of course, you have to have competition.

So they have to be decided if they're going to do that in state we consider anywhere in state or out of state and out of state is another state, another country.

As long as there's that competition.

This particular program has to have the Governor, the Lieutenant Governor, and the Speaker of the House all unanimously agree to use that fund.

It's a grant program the company can do with it whatever they want because due to the capital investment, the number of jobs that are created, and the average wage of those jobs, the company to get anywhere from 1 to \$10,000 a job where averaging probably about \$6065 a job.

Is a performance based program just to let you all know that means they have to

meet certain milestones before any money is granted to them and given to them. They have to then hold those jobs for a certain amount of time and that certain amount of time is Dans big IF.

Like Dan said that because pending upon the ramp up of those jobs, depends on when the state gets returned on its investment.

So it can go probably somewhere between 8 to 10 years after that.

We have a couple of other programs that like I said that are state level, the enterprise zone program is a program that requires the community to nominate a company and then go through that approval process.

One of the ones that we like to talk about from a manufacturing standpoint is the program called the manufacturing sales and use tax.

Basically, if a company is buying new manufacturing new equipment or the electricity that's used in manufacturing or national gas, they can get a sales tax rebate on a sales tax exemption for that.

They can get to at least the 6th of quarter state sales tax, but they could also get the 2% that the local community gets if they choose to put that in.

Another example from that state level and Community level programs is that I explained to a lot of companies that just don't understand our process.

The state cannot give the property tax abatement because we don't collect property taxes at the state level.

That's down at the local level and they can do it if they choose to or not do it.

But that's basically a nutshell of how you economic development works in Texas.

We are very proactive and also reactive.

We're very proud of some of the things that we've accomplished like this year.

We won for the 12th year in a row what's called the governor's cut from Site Selection magazine.

That means that we had more company relocation or Extension projects than any other State we had over 1200, which is about twice as much as the 2nd place with about 59 billion with a B capital investment creating about 35,000 new jobs.

Over the last year, from February to February, I think the State has created over 200,000 new jobs.

The qualify for the governor's cup, there are certain criteria and before you ask, I don't know what that is, but I know it has to do with capital investment.

The number of jobs are created so you know somebody that that you know small

company that creates 5 jobs obviously won't make that criteria.

Its usually more larger projects that are done.

But basically that's kind of how economic development works in the state of Texas we're quite unique.

We do it differently than a lot of other states.

Our executive director Ariana Cruz says we do it that way because we're Texans, we do things differently here. But it seems to work.

One of my more favorite statistics and I know I'm not much of a statistics person, didn't do very well with that in College, but, we're stickiest state in the country and what that means is about 80% of the people that are born in this in the state of Texas stay in the state of Texas, I must admit I'm not a native Texan, I got here as fast as I could.

I'm an army brat.

So soon as I graduated from high school, I came to Texas.

And I've been here ever since.

I'm going to say in the long, but if you don't have any questions or by the way, all of this that I said is on our website which is [gov.texas.gov/business](http://gov.texas.gov/business).

We have a lot more as we call them touts.

I don't remember who came up with the saying, but the saying that we say in our office is "it ain't bragging if its true".

So we have a lot of accolades from different site selection magazines, the governor's cup, we're in the top 20 states for 18 or 20 years.

Uh CEO Magazine recognizes us as the #1 state to do to do business.

I think we're leading the way from an energy standpoint.

We're leading the way in wind generation

I think we're very strong if maybe not closely approaching #1 for solar generation.

So we're doing some good things.

Of course it's.

I'm not doing it all.

We have a group of in our office that's actually pretty small.

In the group there's two of us that our industry specialists.

There's five folks that do the site selection process with the companies so we're I think this statistic was the other day our project teams working probably about 350 active projects, which is twice as many as what we were doing before, before Covid hit but companies are moving to Texas all the time.

That's basically about it, if you have any more questions or want to talk I'll be more than obliged to sit down with you.

**Dan Dalton** 1:57:20

I'll go ahead and kick off.

First of all, thanks for that great overview.

I myself didn't even realize you had known about how it works here in Texas

Where did you see aviation companies do well in their transition to Texas?

Where have you seen them kind of fall through?

**Joe Magruder** 1:57:40

I don't really know actually how to answer that question.

I know that from an aviation standpoint when we get asked by those aviation companies where should I put this and where should we go.

Of course, we can't tell them where to go, but we do tell them that San Antonio is known for tomorrow and Dallas is known for its manufacturing.

And of course we just tell Houston is Houston, they have the space and the bids. Massively huge.

As a matter of fact I was in Houston yesterday for the governors announcement about the space commission in TARSEC as well call it

I can't remember.

For the space economy folks I had the opportunity to go down for that one yesterday, but it was more of what we talked about this with the generation where the one of the gathering.

I can't think of the word for it, but we tell people like Austin, Austin, this is high tech and semiconductor because that's where the companies all gravitated to each other Of course Dallas and Fort Worth having you know, Lockheed, Norton and Bell and Airbus helicopters and several of them.

And not, you know, there's something that's probably more aerial manufacturers will be but aviation touches every county I believe in the state of Texas.

One of the things that I forgot to mention is that another program we talk a lot about is the skills development fund through the Texas Workforce Commission working with that company to have a either local Community College or a local trade school to create a curriculum to train their employees

Bell uses that a lot

The 22 Osprey program.

We've had companies that have come to Texas and that have great success that have



not really asked us for anything and we love to hear that because I will have to admit this.

I am in the governor's office now for 18 years and I was feeling very skeptical of the government's use of money.

But after being in the governor's office and watching the due diligence that we do for companies that are coming for things in the programs, I was pleased to see how diligent we are trying to protect the taxpayer dollars.

And I'm sure Dan and this group can say the same thing that you know that's my money. You know, I pay taxes.

So I want the government to use that money and I want the economy to grow.

I want the economy to be able to-

You know to create jobs for Texas.

I got.

I got boys that are going to be working in the workforce.

Umm, I'm trying to influence them for aviation because I'm an aviation guy.

I must admit I failed miserably with my older son.

He is a musical theatre fanatic.

Yeah, that's what he wants to do for his career, I'm still working on the other one but he's on the football team so, but actually well, you know, I mean just to answer your question from the standpoint of you know business and some - I mean over the 18 years I've talked to people who don't have it literally have the idea on the neck and go "write me a check" and I just have to say I don't have the checkbook this week, I gave it to somebody else.

But I think we look at a company from that aspect, we want them to come here and be successful, we want them to come here.

I think with what - over the years with what our governors - I started with governor Perry but with what governor Perry and governor Abbott have done, just set it up that low regulatory environment, in the workforce that we have in Texas.

And the tax policies are - I was talking to, Rebecca Huerter and one of the things that popped in my head is that some states can do what we cannot do.

There are some states that give income tax rebates to the companies that move there on the income tax that their employees pay, we can't do that, we don't collect income tax, and that shocks some people, some companies to realize that we don't have a personal income tax or a corporate income tax.

We do have franchise taxes, really pretty small, but compared to what some other

states you know, but from the, from the industry standpoint, maybe I could reiterate that or iterate to talk about - we really don't have industry specific incentives in the state

Now States Commission which just created.

So they're going to have more of the specific industry.

There's a thing called the Spaceport Trust Fund.

That is available.

It doesn't have any money either.

The legislation didn't appropriate money for it, but the enterprise fund, the enterprise zone, skills development programs, those types of programs, they're industry agnostic, you know it doesn't matter what industry as long as they're company meets certain criteria.

### **Ernest Huffman**

Quick question Joe, so I've seen a lot of other states, in particular ones who were very active in the advanced air mobility space,

They're using their economic development offices to run their advanced air mobility programs.

Like for example, they're doing the Studies, they're doing the planning Studies, they're doing the economic development around the vertiport selection that kind of deal.

Is that something your office is set up to?

### **Joe Magruder**

We don't do that.

I have to admit.

Because we kind of look at it from the standpoint that we just kind of get out of the industries way and let industry do what they need to do.

From the standpoint of aircraft manufacturers or vertiport, I think we've talked to the aircraft manufacturers and we've talked to people who were coming in looking to set up vertiports, you know, but they have a business that they're trying to create to create products and sell.

So you know to do what they do, but we kind of just let - because of that economic development approach that's decentralized a lot of that stuff is done by that local community.

Space being set up is going to be, you know, a little bit different where they made.

They're going to be doing strategic planning but that's strictly for space.

But from that perspective like I said, you just coming is out of the way and let businesses do what businesses do.

**Jason Day**

So I know I'm jumping ahead a little bit and we we've got a slide on here because this conversation that we had during one of the subcommittee meetings.

There's been a lot of discussion about how there needs to be more education on advanced air mobility and providing resources across the state.

As far as you know, outreach and community engagement and working with all the manufacturers and public safety and all the different aspects that touch AAM and we kind of went back and forth on what different entity in the state might be the right place to put that ambassador for AAM.

And by recommendation that I thought through over the past couple of weeks would be OOG.

Do you see that being, you know, just a small team inside economic development or being a Commission like the Space Commission or what do you - how do you how would you foresee a mechanism like that if we were to make that recommendation?

**Joe Magruder**

Well, I know from the workforce development side we have and this is not specifically for airspace and aviation.

However, some of them are doing-

Some of them were trying to develop, that workforce on their own, they're going into schools themselves to work on getting kids excited about their particular industry.

One of the examples I know of is what Bombardier as a will facility in Brenham, which is just south of Dallas, they worked with Texas State Technical College to set up an apprenticeship program.

To get people into their schools, into their, into their programs as employees.

I've read the Tesla is going into the-

I just lost where they're located.

I want to say Dripping Springs but that might not be right.

Yeah, Del Valle School District to get interested kids to come maybe on internships or something, the same thing with Taylor.

There's an organization in our office apart of, the economic development office that we call the Texas workforce investment council.

And what they do is they're looking at the particular programs either at school at the high school level, at the Community College level and the four year universities level

to see how they're all working together to track those kids, to get them involved.

But from a STAAR type thing I mean I don't really have an opinion on that.

That would be like, you know, Dan said we can do what we can do by statute.

I mean, we did talk to companies.

We do talk to people that are interested in that, but its more driven just by the by the industry itself because of the decentralization approach.

Alright thank y'all for having me I appreciate it.

You can get my contact information from the folks at Texas State, so if you guys want to get in contact with me, please feel free.

Thank you.

**Dan Dalton**

Thank you very much, Joe.

Appreciate it.

Alright, Next up is Dr. Kerry Ballast to speak about workforce development from the Texas Workforce Commission perspective.

Thanks so much.

**Kerry Ballast**

Good morning. Thomas, Joe and I agreed we were going to tag team these slides here.

So let's see if I can connect some dots.

So glad to be here and I love the observation about outreach and building awareness, because to come to the community allows me to do some research, this is new and exciting and as a child of early after like some dreams are coming true right now.

So I'm it's very optimistic about where this is headed.

I'm looking for the advanced - there it is OK, so I'm going to touch on quite a few items with the promise that if anything strikes or interests you, I am happy to connect you to or send more information or make sure that the next person you talk to you from Texas Workforce Commission is a specialist in this area and has the answer, you are probably looking for this point, but I know that something that's near and dear to you, especially when we talk about throughout the industry is – do we have workers, and if we don't, how do we get these workers?

So I wanted to check the aircraft shipping routes because I wish to think from our perspective and especially because we work so closely with Texas Education Agency and the Texas Ed Coordinating Board and what we call the Tri Agency initiative, we

think about every student and every staff member.

Whether that is a child in pre K or that is someone who has been on in a career for too many years and wants to do a reinvention of themselves or restart wants to just yeah, you are skills to rise above in the company that he or she is currently in.

I want us to kind of think about it like that, there are many different ways that we have workers and how we think about them.

So from the top we did think about the education side of it and from Texas workforce Commission, we focus on the adult education and literacy programs that are across Texas.

As you probably know we have many Texans who still need a high school diploma. For whatever reason, I think we're not successful in high school and many of the jobs that you're talking about will require a high school diploma at least. AEL programs across Texas helps students get those diplomas, and if they're still the age to be eligible for it.

And if not they work with them to get a GED.

Which we often call the high school equivalency.

They also work closely with internationally trying professionals who come to Texas with degrees with quite a bit of experience in some of the very fields that you're talking about and need to do research here in Texas, they need to be licensed in Texas or recertified or any certifications that our industries are looking for.

We often work with them to help them get settled in Texas and find the jobs that they're looking for.

Umm, we all share operate the apprenticeship programs that come through #1 through the Department of Labor, they could have automated sending eShare to support the development progress of registered apprenticeship programs, or to encourage industries that are encouraged to expand into new areas.

So we have quite a bit of DOL funding that we behind this growth we also have quite a bit of state funding for our apprenticeships.

And this last session, the legislature put an extraordinary amount of funding behind Texas apprenticeship models and we're here to support the growth of those.

So if you think about industry, will these employers be hiring and training same time following that apprenticeship model that's like - and this is money that can be helped with, that can be used to help with the instructional partner.

Another approach that we take this to think about high school students, and while there in this high school classrooms, can we start getting them to thinking about and

working towards careers to dual credit programs, meaning that they're earning their high school credit but at the same time working with the college or starting to work on their associate degrees and get hours that they can use to transition into universities. We also have out there, especially due to the Texas Education Agency, school models that they have.

We have what we call early college high schools and it's just the same idea behind dual credit.

But in this, students are being trained for careers.

So imagine CTE classrooms sitting within a high school setting, earning dual credit, being trained in careers so that upon graduation, many of them already have their associate degrees.

And already have training under their belts.

And ready to move into jobs.

Now if communities decide to adopt an early college high school model, they're able to think about industry in their area and what they need and focus on that.

So if we have anyone coming into Texas and looking at a great area to locate in, they can also work with the state.

To let them know we're coming here.

We see great opportunity to start pipelines with you.

We're happy to work with you in the establishment and development of early college high school, because they're the ones who are going to want to talk about this curriculum and the job training that goes on within these schools.

And also across Texas, if you think about the many community colleges that we have out there and private universities that are also out there, we have many training providers too for adults who aren't of age to go back into high school settings or do not have the desire at that time maybe to enroll in college and university programs and more specifically right now, just looking for training, looking for the next job, looking for the better job.

Looking to get started with a career, there are workforce solutions offices and they're located across the state, that can make referrals for these individuals into training programs.

And we, using federal dollars – I'm sure you've heard of The Workforce Innovation and Opportunity Act that WIOA does.

These are all built in, to help pay for training and individuals who may sound of

interest - would say I'm very interested in this space, aviation, so we can send people to colleges, apprenticeships, and private schools to start with training.

And then going back to the idea about the outreach and just starting to make students aware of these new opportunities, we send representatives and labor market experts into our high schools to talk to students about the jobs that are coming to Texas or about the jobs that they could be thinking about.

So also an opportunity here for us to start creating awareness of new fields and new industries coming to Texas.

Now, as I talked about the education side of it, I also talked about funding because so many times the question is how can we assist in the education of these individuals?

So I wanted to touch on funding opportunities for you through grants, that I really focused on those that are pretty dependable because as Mr. Harmon pointed out, our goals kind of rise and fall with the economy and sometimes grants and riders are exceptionally, umm large and then there are times that we are - and some of us in this meeting, we do know that there's some pieces to funding just given the history of our legislature and programs that we support.

So we're about the break into the side of the apprenticeship model.

Umm so far - and I've watched through my career, I have watched many administrations and go but regardless of who is there, they have put quite a bit of money and time into apprenticeships.

Now depending on who is there they will either really encourage the growth of DOL registered apprenticeships such as the Biden Administration right now is very much behind DOL registration, but there where we only have a blood state or Republicans in administration then they're all about building apprenticeships in the industries themselves.

So they are willing to put money behind it.

And definitely want to support the model.

But they believe that industry is the one that should be creating these programs, establishing the standards, and really working with each other to build out models.

So I can confidently say that for right now and for the near future and for the foreseeable future, we're able to put dollars behind the education, the instructional part of apprenticeships.

We also have what we call The Jobs and Education for Texas grant, we also call it the JET grant.

This one is funded by our Texas legislature, with general revenue.

This is where any of our education institutions, whether they are high schools or colleges that have CTE programs, if they need to purchase equipment to train students, the jet grant allows him to do so, and as you can imagine these are often very large equipment purchases, equipment that school districts can't find their way to purchase within their own edges.

And then there's also that concern about how today the equipment is, how quickly it will become obsolete.

So by making investments into equipment in school districts and in colleges we're putting out there for students to learn as they get ready for their first job.

As I said this is very consistently funded for colleges, especially with GR. And the idea behind this is that for industries that are currently established and currently have employees, that you see the change coming, you see the shift and you know that you're employees are going to need new skills or they need more skills and what we can often refer to this as a upskilling and reskilling.

Umm, TWC is able to award grants for the upskilling and reskilling kind, so it's a very popular program.

And then we always, each year, because of funding from the legislature and from the federal government, it ensures that you TWC is able to put funding behind what we call our statewide initiatives, and this is discretionary.

So for example, during the pandemic we all saw and heard the great need for healthcare workers, our commissioners through commission actions were able to approve dollars to be put behind the development of healthcare careers, especially registered nurses, especially those who can begin careers at lower level skills that want to make their way to those higher levels skills and become registered nurses. When we see a need when the when our labor market information begins to project and see that these are the industries coming and we need to be prepared or commissioners look at this and talk about putting dollars behind development for specific industries, or even just for the development of many industries just in reaction to where they see the economy going and where they see the nature of industry across the state.

If I go to the upper right hand corner, wanted to just let you know that I've been talking quite a bit about what happens at the state level that I mentioned a moment ago about throughout Texas we're divided into 28 economic development areas or workforce development areas I should say. Each of those are represented by a local



workforce Development Board and each of those boards meets with industry, school districts, with colleges, with employees, with employers, to project and make plans for jobs in that area where they're current jobs, which we typically call our 'in-demand' jobs or those that we see coming and growing.

And we typically call those our target occupations and that's planning ahead.

So each of our boards is well poised to work with any industry coming to Texas to hear their needs and she begin to make connections across school districts, the colleges, other trainers in the area to help support the growth of their pipeline of workers.

And then finally, I started with this just a moment there but I also want to remind you that through actions taken by government and our legislature, TWC, TEA our K-12 section, and our Coordinating Board, which is our colleges and universities, we all work together on these issues.

And I did you hear me pause on issue.

We don't see this as an issue.

We work together on these what do we see coming and how we make sure that we're all aligned so I'll give you a great example.

I was here, started in high school classrooms and high school CTE classrooms.

And TEA as you probably know tries to identify the credentials that these high school students need that the employers are looking for.

They're often industry certifications or certificates or licenses, and so TEA and TWC work closely together.

What are the credentials these students need and how do we work to get them for them while they're in those classrooms?

We also work with court board.

Because now, as you know, now their funding that colleges funding is based on outcome of the students.

So we want to see them go into this colleges.

We want to see them get the associates degree and for many of them move on to that bachelor's degree or that master so that PhD so we work closely with them to make sure what's happening in K-12 is transferring nicely to the colleges and our universities.

And then anything in between, as you probably know, a lot of people have to pause their careers and work a little bit.

If there's a certification they can get to increase their income, that could make it

possible to go back to college, or to go to a university and finish that degree. This is where we all work together to fit in those tests along the way. And to make sure that we're all running with each other and what we promote and what we say to our students that asked about their careers in the future. And we work very much in alignment with them on that. I can't tell you how exciting this is to think about this coming. I hope I'm here to see the fruit of all this spark and I'm happy to answer any questions if you have any.

**Dan Dalton**

This is really good for a question.

**Ernest Huffman**

So the workforce development aspect of the advanced air mobility industry is heavily in flux and no one, there's no central gravity in the country or the world or folks that have taken advantage of the opportunity of that workforce development.

Does the TWC have the opportunity to be more strategic and preemptive on these things.

So for example, can we -can you guys devise a program or project where we can capitalize on the vacuum of that industry not having that workforce development center of gravity in the world, is that something TWC can do?

**Kerry Ballast**

Absolutely.

I'll tell you how you get there.

How TWC reacts is we need to see the need begin to take shape.

Now it doesn't have to be there.

I mean, the seeds can be planted because what we're watching for is what industries are coming to Texas, and where, and are they ready?

And if we don't see that, then we begin to encourage and send information and funding to those areas to help with the development of this pipelines.

So we can kind of go back to and it's - isn't it refreshing that within our state we're all still pretty consistent with how we operate and that's so nice because I think I can say with great confidence is that we watch what's happening at the local level, we make projections we watch those who are moving into these areas.

We listen to the employer saying we need this many workers, as you can imagine, there's a huge conversation in Texas about the - number one, for instance, cybersecurity, which causes a big concern, but also us beginning to think about the

other industries of the future that are coming and as you actually probably know, we're looking very much at the semiconductor industry, similar conversations. What should we do to start building, creating workers – number one to start building the factories that they'll need.

Number two, to maintain the work in this factories, #3 to bring in the talent to run the factories.

And so it is a very organic thing in which yes we do.

We put the money where the industries go and based on what the needs are for that company.

### **Dan Dalton**

So I'm going to second that question, or at least add something to it.

If there were recommendations that you would give to an industry that was coming into Texas, what would be some of those recommendations to that industry?

And are there things that that industry should recommend to the legislature?

### **Kerry Ballast**

OK, I'll try my best here.

When I normally see and what seems to be one of the very best models is, as industry comes in, it should begin to think #1 about the existing pipeline, who started there? And maybe they don't have the specific skills needed at that point.

But that's the opportunity to do group training and to get existing employees upskilled or reskilled, great place to start that's a good starting point.

But then it's to begin to think about your pipeline when these move up within our company or when they retire or when they move on to education, wherever they are in their pathways, do we have a good steady flow of workers getting ready to come into our industry?

That happens a lot in our high school CTE classrooms and as you know that sometimes - and I'm sure you all remember.

I'm a small town girl and I can remember rule number one was out of that small town.

But our communities are getting so much better about talking to their students about what the opportunities for them and what they can do.

And so it's wonderful when the employer engages quickly with school districts with their workforce development boards, with their colleges, and begins to show we're here, we're here to work together to build our pipeline of workers.

The employer also figures into the fold because he's going to be the one that says

these are the credentials we need, this is the curriculum, the skills that we need and they work very closely in the development.

**Dan Dalton**

What could you recommend to the legislature?

**Kerry Ballast**

What I, Rebecca, in all fairness, Damian had said something about this.

As a bystander, I'm going to tell you what I'm seeing the legislature do.

When a new industry is coming, I've never seen them specifically focus on a certain industry, but if growth is eminent, that's where we start seeing funding being given approval.

And there's another - there a good model, a good strong model for how to train and retain workers.

They will put money behind that too.

So for example, I referenced apprenticeships. In this last session, our legislature put \$20 million behind the development of Texas apprenticeships.

Now, big for us, very big for us. In fact, up until that point we rely more heavily on federal funding.

But the state clearly stood up and said this is a good model.

This is something that we want to support our employers with and then they put dollars behind it. So they look at, they look at training models that work and sustain themselves well and show good retention rates.

And they were willing to put money behind that.

Skills development is a great example of that, they see their returns of upskilling and reskilling current employees.

They also, in my experience, if we know that we're seeing amazing things happening in the future - for instance, in that last session they created the Lone Star Workforce for the Future.

It's an advisory council and the whole point they hold it – the reason for the existence of this Council is to watch for industries such as what we're talking about today and just start putting training dollars behind those.

So not only did they create the Council, they put training dollars behind it and the Council works to identify areas and jobs and make recommendations for where the funding should go.

So I think the answer to that is when the case is made that there's great opportunity for growth and it's for the future, I never seen this specifically callout a certain

industry, but I have seen them put the dollars behind the training and the development towards bigger industry companies.

**Dan Dalton**

Thank you very much.

Anyone got a question before we move on this one.

Alright-

**Rebecca Davio**

I actually do have a question.

Is the Advisory Council - the Lone Star workforce for the Future Advisory Council?

Is that advising workforce Commission?

**Kerry Ballast**

Yes, yes.

And then what they do is they are a council that meets - their charge is to look at current and future workforce needs and make recommendations for training and certain areas, and that they are just a brand-new group – in fact I think they're meeting in Abilene today.

So they're already out there, and talking about some of the very things that I think could likely come up is she would that she would want to talk to you about too.

**Dan Dalton**

Great.

Well, thank you very much.

Appreciate it.

Excellent.

Alright, so in the remaining balance of time that we have, we're going to skip my section, which was me talking to you about the industry perspective.

I only had about 75 slides to offer, so yeah, so unfortunately we'll save that for maybe the next session, which the next full committee is meeting here, it's going to be in April.

So you will actually get the chance to hear me speak more.

We'll skip that we'll actually just straight to the actual business side of today's meeting.

I think Texas Tech is going to review some of the findings that they had on other States-

**Andres Carvallo**

Texas State.

**Dan Dalton**

Wow, no wonder I got some looks-

**Rebecca Davio**

Nobody from Texas Tech here.

**Dan Dalton**

No, there is not.

Texas State.

My apologies, I know.

**Andres Carvallo**

No worries, no worries.

**Dan Dalton**

This is also going to be recorded so it'll then even more if people watch it later.

But Texas State if you wouldn't mind- Rebecca were you going to start?

Sounds great.

On some of the things that were found in other states that have been attracted advanced air mobility throughout States and how we might think about through the lens of Texas.

**Andres Carvallo**

For the record, Bobcats love Red Raiders.

**Rebecca Davio**

And, LBJ, who created all these programs, is Texas State alum and we are the only university in the state of Texas to have a president that has graduated from the university.

Sorry I'm shameless.

OK, we have pulled together some information.

We were asked by Dan to pull together - like there's these leader states in the subcommittee meetings we've heard Florida, Virginia, Ohio mentioned repeatedly as states that are deemed leaders or viewed as leaders.

And so we wanted to be able to look and see what their states were doing and compare that to what Texas State leadership is doing.

And so we started first off with a with a sort of state plan or a report of some type.

And every state has that.

However, the state plan in Texas - we gave us credit for the previous UAM report and

so the other states plans were specific they were more detailed, they looked at what the - like Virginia, for example, said this is where we see vertiports and this is the economic impact of this industry.

And that wasn't as much in the Texas plan.

So the economic impact study, Ohio had a plan and they actually funded that, got notes brought to me.

But workforce development, again, Ohio had a very specific plan for that.

State investment, Ohio and Virginia had actually put money into it.

Now this was not legislatively appropriated money.

This was like the workforce kind of money or the economic development money, and it was difficult to quantify exactly, particularly in Ohio what that amount was.

Virginia and Florida both had – there has been lots of talk about the need to increase awareness of this industry and Florida and Virginia had something, Florida's was much more comprehensive in their communication.

Virginia had a one page fact sheet.

Still, they had consistent information that could be shared.

And then Florida was the only state that had any criteria for what the minimum standards for vertiports were so that there could be some consistency across the state, and I know that that's been brought up as well.

So we just wanted to give that perspective about what these other AAM leader states were doing for your consideration.

**Ernest Huffman**

Do we have a library of their plans?

**Rebecca Davio**

We do have those, yes.

And we're working to pull - there's been a lot of documents that have been shared also in the meetings, so we're working to try and get that into a centralized site that everyone could access.

**Dan Dalton**

So in reviewing these were there, did you see whether there was a trend in industry driving it or was it state driving?

Was it collaboration between the two?

**Rebecca Davio**

It seemed like that there was collaboration.

These represent state activities because this committee is charged with, you know,

making recommendations that the legislature could enact.

However, what seemed successful was where there was a collaborative and coordinated effort, because if you think like when you're you ask your parents or your kids ask you and they want those fancy tennis shoes, and it's like if they're willing to put something into it and demonstrate that, then you're much more likely to say yes.

And so that's the same sort of idea and that the recommendations, if they aren't, if they're in a bigger context, that also seems like it could be more effective.

**Dan Dalton**

And just to be clear this focused heavily on electric vertical takeoff and landing versus UAS.

I believe that they were both.

**Matt Pantuso**

Like the workforce development program is UAS.

**Dan Dalton**

OK, good.

**Rebecca Davio**

Yeah.

Sorry.

And Ohio actually offered free training for UAS for their workforce.

I didn't give that detail.

**Dan Dalton**

Are there questions from the room or online?

Well, this is super helpful.

I know.

I think there's another slide as well

**Rebecca Davio**

And we can skip that one.

OK, Texas already has lots of inherent advantages you've heard that.

**Dan Dalton**

Yeah.

So I think it's question of how do we OK, maybe this would be some, some more homework for Texas State.

So how do we kind of tap into?

Like if we take the next layer down inside an onion, what are some of the big



successful activities happening in those States and is there a way that we pull those in?

And I take your point.

You know, there's things that we can recommend, that this group will recommend to the legislature, but then there's a whole way of two sets of activities outside of what the actual state legislation will do.

So we actually need to think about how do we as an industry or as an ecosystem, how do we drive those.

So, and I think that kind of again leads itself to a bit of a strategic plan for the state.

There's because there are those things that the legislation will do and hopefully will do, but there's a lot of stuff, especially in Texas, it's the industry will do or other parts of the ecosystem like the Community will do.

So I think there's it would be great if you were able to, you and the Team kind of take that second look and see what are those key things.

IF=f we were really going to make Texas attractive, what are the things that we see other states be successful at?

Obviously we don't want to-

We would like to learn from their mistakes, so if there's things that are not successful then we should also make sure go into those, but what are the things we can pull into Texas to really drive that forward, especially if there are recommendations for the legislature and there may be a whole bunch of things that it's not the legislature action, but it would be good to know those as well.

So thank you very much for that from Texas State.

All right.

So I think Next up we'll go to the AAM needs.

So this one, I think Texas – I mean I'm happy to have - like if you wanted to use this one as well.

**Rebecca Dabio**

Sure. Thanks.

OK, so we have listened.

We've been at all the subcommittee meetings and we have listened to what's been said, and we've also - what we've done is compiled them.

There are currently 21 recommendations that we heard.

I'll tell you right now if we if we miss something that you said and you wanted that to be a recommendation, we can add it.

But right now, there's a list of 21, and so what we're trying to do, that's a little overwhelming to look at, but we group them by areas.

So Matt, if you'll go to the first.

So first we said sort of, there needs to be some basic legislative framework created. You brought up this morning the need potentially for official definition of AAM in state statute.

We - in some of the subcommittee meetings it's like "Is UAS included" what is you know, what's included even among this group.

And so there might be the need for that to clarify.

The second thing was a flexible regulatory scheme for AAM efforts and this is sort of like - how do you support it and give it a little bit without writing in the stone tablets. So that's a delicate balancing act.

The next thing is a list of ways that AAM will not be used and the encouragement of liberal use when applicable, and that that last part was if you're flying over state land, go, you know, particularly in an emergency or something like that go. That's fine. Umm, but that list of what can be used seemed really important towards gaining support.

And the 4th legislative framework standard was having some state standards for infrastructure consistency.

That's what we saw in Florida.

You shared that with us that you know they have standards.

And so as we go through, I'm going to run through the entire list of needs and what we would be asking for the committee members to do is to be thinking and saying Texas wants to be a leader in this.

AAM industry.

What's not on this list that needs to be and what's on here that maybe isn't, either not appropriate for the legislature to do or it's not as key.

OK, so if you'll just be thinking and then we can go through and go to the next one.

And we sort of grouped these next 5 and said AAM understanding and influence.

So the first one is potentially have AAM representation on the 9 member TxDOT Aviation Advisory Committee.

It's already established Dan has - Dan Harmon, has said it's part of aviation.

Get it on there.

#6 a position at TxDOT or the office of Attorney General to serve as a central point of

contact and AAM ambassador to increase adoption and awareness.

**Dan Dalton**

So that's the governor's office?

**Rebecca Davio**

Yes, I'm sorry.

I've worked in government a long time and I'm just learned that OOG was the office of the governor.

**Jason Day**

See everything I do is acronyms, so it doesn't have an acronym, it doesn't exist in my book.

**Rebecca Davio**

The next thing is - we've talked about this, particularly in the Community Integration Committee, public awareness about the benefits and potential of AAM. That was mentioned in other subcommittees too.

A number of these things came up in multiple subcommittees.

The idea of AAM research and development in Texas at the universities you're creating workforce and you're also learning and getting help from the universities.

#9 economic impact study for Texas.

And in the other states, sometimes they're done at the state level.

Many times they're done at - by private sector and those private sector ones can sometimes help out more quickly.

OK, safe operations.

So legislation governing information sharing among agencies using AAM during disasters and this one seems a little obtuse.

And Jason can explain it right now, we're just trying to go through the needs, but basically this is in disaster, this equipment is going to be used.

State agencies already have this how do they get the agreement in place beforehand?

Who's going to help?

Who's going to do what?

That kind of thing, they've already done a great deal of that work, should be a simple, easy legislative thing potentially.

Next one is funding for safety training for First responder personnel.

Next one is mitigation of cybersecurity risk, air traffic management, and airspace deconfliction.

That one has an asterisk behind it because that's one of those that Dan Harmon told us about, might be something that the FAA would preempt.

So it's a very delicate thing.

That recommendation would have to be crafted carefully so that the Texas Legislature was not appearing to take actions not approved by FAA.

Workforce development here as Kerry was telling us.

Look at the near term.

Develop that diverse, highly skilled workforce and then also look longer term to create a pipeline.

And then we have infrastructure.

This is the last set.

There's lots of different pieces in here.

There's lots of different needs for infrastructure, and so we tried to sort of tease these all out because it might be different pots of money or different people responsible.

But the first thing is looking at how can AAM infrastructure at existing airports be added?

There was discussion - is a vertiport in an airport, that kind of thing.

How do we clarify that, get more money potentially. Then there's new vertiports that then definitely both of those bring along the need for electrical capacity at airports to be able to handle this equipment. Then funding to support ancillary infrastructure.

So micro wind sensors.

You know that's a different pot of money and different ways to do that and approach that that need different guidance from the legislature to make that happen.

So that's why it's separated out.

And then there was also discussion of a need for sort of a gap analysis for the existing airport infrastructure to say what's missing.

Where is the best place going to be for these vertiports?

And then finally, there was some mention of creating new designated revenue streams to pay for and maintain this AAM infrastructure.

So those are the 21 recommendations with the - I'm sorry, they are not recommendations.

Those are what we heard from the subcommittees that were needs that need to be addressed, and so then there are also recommendations, but we may not have the

time to get into that.

**Dan Dalton**

Yeah.

So to that extent, are there any themes and this is now looking into the room and then also online for committee members.

Are there any themes that you think are missing from that list?

**Ernest Huffman**

From the infrastructure list I didn't see a UTM infrastructure, so unmanned traffic management infrastructure.

I think it's separate from the advanced air mobility vertiport stuff.

**Rebecca Davio**

Should we put that under safe operations? That number 13 air traffic management and airspace deconfliction.

Does that cover it?

**Ernest Huffman**

Yep.

**Dan Dalton**

OK, so maybe another we could add on, for example an EG UTM.

Well, it's all that versus to your point and to Dan Harmons point, something that might be preempt the FAA effort.

So yeah, cause, when I look at 13 now through the lens of UTM It makes a lot more sense.

**Rebecca Davio**

I like that change.

**Dan Dalton**

Anyone else in the room?

Online?

Any other things that were missing from this theme of recommendations?

Excellent.

Alright, so maybe we'll do now is talk a little bit about kind of that recommendation slide, which I think is 47.

Excellent.

So you know, to Rebeccas point earlier, as we look at these themes, we now need to kind of take them from the kind of yes, we know roughly what swim lane we want to go after and kind of make it much more actionable. Right.

And again, there are going to be those things where we may start turning the gears on these and realizing, this actually may not be up to the state legislature.

This actually may be up to industry or to the individual communities or whatnot, and we should have absolutely flag those and put those in its own bucket because that doesn't mean they're not valuable.

It just means they may need to be a different activity set so, but for the things that are actually actionable, we need to kind of think through, OK, what is the scope of that recommendation? In order to make you know, to make Texas more attractive for everything from small UAS to large scale and eVTOLs, how do you make a very defined scope for these various recommendations?

And then drive that to the legislature.

So if so, for example, one of the needs was electrical capacity at Texas airports, how do we how do we flip that around to be a kind of actual scope of?

We would like this by this time and we think that it might cost us money.

Luckily, we know a guy who has worked at a lot of airports, so he might have one idea of what this might cost.

So I think that's going to be kind of the next turn of the crank for the various subcommittees now is take these various groupings of needs and something about OK, how do I make this actionable?

How can we give this to the legislature actually have them probably have a conversation.

I mean, hopefully, I don't know how that works.

Is there natural opportunity for us when legislation actually gets some of the language that they can actually ask for clarification or not?

Was it too late?

Are we already absolved?

**Dan Harmon**

So normally what they would do -

Oops, normally what they would do is the court will go to the legislation.

The committee will be sunset in January 2025.

Uh, so yes, it will be before the legislature, but they will get the report.

It is not on the ground the possibilities for them to do, like an interim hearing in the fall that would be a possibility, since Tuition committee or.

Or.

But if when the bill is for like so, so.

Keep shooting down pretty much.

When the budget is prepared.

When we prepare that budget, what we do is we put that, here's what we see our needs are, here are items that where we're requesting, and then if we have an advisory committee and we get those in time, there's sometimes opportunities for us to say, hey, this advisory committee has asked for these things. And we can put that in the budget proposal as they call such rider and rider requests.

It's in my experience that it is more successful for these kinds of requests to get it from November.

So if for instance Representative Cook or another member wants to put in the legislation when they're doing so, when they go to the budget process, if there are budget riders, there's opportunity for the members to say, hey, we would like to put this rider on, this rider on, very early on.

It is a consideration of each part of the budget.

And then it goes dormant for a while, and then there's a whole flurry of activity in this session to get this budget out.

But between that time, it's on another slide, trading that's going on and so.

But if there's specific legislation that will, in fact, hold public hearings and that's an opportunity for folks to come up or we ask them to come up to talk about this approach sometimes.

So there's a couple of different opportunities that may not as all that they may be asked you just thought.

**Dan Dalton**

All right.

So clearly that in itself is some strategy.

So we'll save that for later.

Yeah, Jason.

**Jason Day**

All in slide 42, I just you asked if we should add anything.

Under legislative framework.

I think a recommendation should be for you to recommend that this committee continues because of this emerging technology.

Once it sunsets, you know this isn't ending anytime soon.

So we'll need to continue to make recommendations.

## **Dan Dalton**

Yes.

And hopefully next time we'll find a better chairman.

But you're stuck with this one for the next couple of months.

So.

But yeah, I agree.

I think that's a that's a great recommendation.

So if we go back to kind of the formulation of recommendations, I think – what is that slide 47? I think it's up to you now - the leads for the various subcommittees to start thinking through, OK, as we run into the, the, we're now going to have a April 30th full committee meeting.

This next time we're going to meet so just 4 short weeks away.

If you include spring break it's going to be about 3 weeks.

So when you go back to your subcommittees, take the themes that have been captured in the slide deck.

If you don't have the slide deck let us know, it should be available for you, but certainly get through OK - if you were to make this actual, who are the individual organizations within the state government that we would expect to actually perform these activities?

Roughly what we think that might look like in terms of cost, where that cost might come from.

And if you don't know, that's entirely acceptable.

We will we have people we know people that can help inform that.

But getting it - just sense, a rough order of magnitude of what that might cost will be extremely helpful and there might be actually other ideas that we can then bring back to the larger full committee that where there are individuals who know creative solutions to finding some of that money, so we'll get more into the tactical, tactical, simulation, strategic and others of how we actually drive these forward.

But I would ask that each of the subcommittee members or leaders come back to the full committee by the end of at the end of April, with some draft recommendations that are actionable.

If I see it kind of more still theme like I will ask you to continue to crank on it because what we want to make sure is that this is something the legislature can use.

So are there any questions on that set of activities?



## **Jason Day**

I don't have a question about what we're getting short on time.

We're not going to do the recommendations right, OK.

So I just wanted to bring up recommendation one and I have a suggestion here.

The recommendation one is definition of AAM.

For our purposes, I think this is the fundamental thing that we have to define because it's going to affect the rest of our recommendations, whether we include UAS or not.

Rebecca and I and the safety subcommittee.

We've looked through all these definitions.

There are so many different definitions of AAM there's no consensus, but we need to do that.

And so my recommendation is that each subcommittee come up with what they think the definition should be, and then they sell committee chairs come together before our next meeting come up with a consensus and then present it at the beginning of our full committee meeting for adoption so that we can move the process forward from there.

## **Dan Dalton**

So I agree.

So I love your idea.

I might tweak it a little bit.

I would like everyone's - so let's see who does this actual recommendation #1 fall into was there?

I guess that was a general.

There was no subcommittee that, OK.

So yes, I'm actually recommend that all the committee members who have a feeling or a preference on what the definition should be, reach out to Rebecca.

She will capture what all of the kind of ideas are, and then we can then ask Rebecca and team to please formulate kind of a draft of what that definition looks like that would be extremely helpful, that way we can keep it streamlined one PSC and then also the leads don't have to find another time to meet, which I know is hard to do.

So is that alright with you?

Just to do that, is that alright with you?

I just kind of told you.

**Rebecca Davio**

You're in that role.

Umm we can also send out like the FAA definition and some of the others that were pulled together so that you see.

**Dan Dalton**

Thank you.

That's great.

For those listening here online.

Rebecca going to also help send out the FAA definition, folks have a better sense of where the current state of the art of thinking is on that.

Umm, OK are recommendations too short or long term?

Yes, I agree.

Time frames is a really good point.

So in the scoping of your recommendations, I would highly recommend that you kind of put a time frame in there. To Kimberly's point, if it's if it's, you know, in the farthest in the future, that's one thing, I would also recommend we should probably have something for more in the near term to make sure that there is traction and change in the legislature.

So please do ,please do add a time frame to your recommendations.

So in addition to kind of the funding source and type of stuff.

**Dan Harmon**

Just on the on that note though, just remember that it is going into the legislature, if it's in the budget, that law does not take effect until the beginning of the fiscal year. So it would be September, unless it's a standalone bill which could take place earlier, depending on when the governor signs it and the – anyway, but it could be as late as the beginning of this fiscal year.

**Dan Dalton**

Yeah.

And that's a really good point for those that are not aware of the Texas fiscal year starts September.

So there's that. All right.

Anything else on kind of recommendations next steps?

Right.

So let's see here, we will advance to you on the agenda the what I would like to do next time is you're going to hear.

Well, I'd love to tell you more about the eVTOL industry, especially autonomy. So that would be one thing, but I think we'll also need to hear from some airports in Texas that are interested and hopefully we'll get that figured out. And some other guest speakers, but we will spend the bulk of the time next time focusing on really concerned like string the ground on with recommendations to make sure that they are actionable and then the other, any other specific information requests that anyone in the room or those online that ask of the Texas State to perform before the next full committee, which is sent again April 30th.

Excellent.

Well, if you think of things that we end up here, feel free to reach out to address Rebecca and team.

They're happy to, see what they can do with supporting the each of the subcommittees, or the committee would large.

With that are there any other items for the community members in the room you wanted to raise?

### **Judy Oskam**

Yeah, I'm Judy Oskam, the director of the school of journalism.

Mass Comm.

And I'm leading the communication arm of our Texas State project.

And thank you to those of you who we've done stakeholder interviews with and I would encourage you and you might have gotten an email this week.

We're still doing some interviews, 8 so far and we are scheduling still in the future.

This all gives us a good grounding for our I think we're developing, we'll do a statewide survey because as we've heard all morning communication is a real key with this right.

So again, it's vital that we really communicate the AAM as we get what Texas wants to be doing in this area.

So we have a team of researchers in in my program where we we've had experts in social media strategy, advertising, public relations.

So we're really interested in getting some of the terminology down in the language and to really find out from Texans, what do they think about all this?

Because you've got to bring them with us along this journey.

So again, if anyone is interested in doing a stakeholder interview, those can be recorded, but it would have to be recorded.

Not for public reasons, but it's for our own education and research on the back end.

So we will have someone reach out and interview.

So if you're still waiting and you haven't decided it's very short.

Simple and we ask you a set of seven or eight questions and then you have a chance to really share your expertise.

And they've been super valuable.

We are keeping those in a canvas site which is our party manager.

You can go back and listen to the, if you have any questions, let me know or Rebecca.

**Dan Dalton**

Yeah.

Thank you very much, Judy, especially for committee members.

If you have not yet done any interviews, please do one.

They are actually quite painless, and they're a little bit fun, so I would say it's worth the time.

I think mine was like less than an hour, so please do take the time to do that.

Any other committee comments online?

Yeah, if Texas State could provide the link for the interviews, that would be great or however you'd like to communicate.

**Judy Oskam**

We'll resend the email to them so they can book it.

**Dan Dalton**

Texas State will resend the email so that folks can do the interviews.

Any other comments from the public?

Good, great.

Mr. Harmon?

Anything else?

**Dan Harmon**

Happy to be here supporting the team.

**Dan Dalton**

Yes, thank you.

I hope everyone survives the eclipse.

For those of us in Texas, and especially in Austin, apparently the population is supposed to double, so by batteries by extra dog food, and try not to follow your local EMS.

Otherwise, this meeting is adjourned.  
Thank you all very much for your time.

● **Pantuso, Matt** stopped transcription