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Transit Asset Management
TAM Plans for Small and Medium Providers Webinar Transcript

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Introduction

Mshadoni Smith: I want to go over briefly the results of our polls.

Most of you appear to be in the assembling the TAM page -- TAM plan phase for your agency. Which is great.

There seem to be -- most of you did not do any contract support for your TAM plan. So I guess you did them in-house which is great.

And then it looks like. And since it's for small and medium providers that is great because it means that you will be coordinating with your peers.

So with that, I'm going to turn it over to Andrew Choi. It seems like our system is moving slow today so give me just a moment while our system decides to shift over to the next presentation.

There we go. Okay. So Andrew is from LCTA, Lucerne County, transportation authority, and he is going to talk to us a little bit about TAM in his agency.

Thank you, Andrew.

Andrew Choi

Andrew Choi: Thank you. I'm actually from Long Beach Transit. Frank is from LCTA. But for everyone that doesn't know me I'm Andrew Choi, I'm the maintenance, you have the --

Mshadoni Smith: All right. Now I have your correct presentation up, Andrew. I apologize for that. Thank you so much.

Andrew Choi: No problem. Again, my name is Andrew Choi. I'm the maintenance operations planner.

I was going to go through how we developed our condition assessment and prioritization for revenue vehicles and how it ties back to our TAM plan and TAM requirement. And before I go into those details I'll provide a brief overview of Long Beach Transit, the definitions we use as our guide, and our method for conducting condition assessments and share with you some FTA resources that we used that helped us a lot when developing our TAM plan.

So at a glance, Long Beach Transit services over 100 square miles of 13 cities with approximately 250 buses, which includes ten recently added battery-electric buses. You can see a picture of that in the far left corner with the flowers.

These are the two definitions that we used, focused on when developing our transit asset management plan. When developing it you want to look at what was strategic and systemic and then for a state of good repair we wanted to develop objective ways to measure our assets.

When we go into further detail of state of good repair, there are criterias. 49CFR part 625 provides. Those criterias are can asset perform designed function, does the asset pose a known unacceptable safety risk, and has the asset reached its lifecycle investment. So the question is where do we start?

What we decided to do was look at what tools we have and what we currently do. And at Long Beach Transit we have enterprise management system called Ellipse. This is an example of one of our work order screens. This screen allows us to see the type of work order request.

This example is a roadcall. We can see the maintenance type. This is corrective work, and the component which this one shows is a front axle and suspension. Ellipse also records miles, costs, and other data points that we can use to analyze the performance of our assets.

So then we looked at what we currently do at Long Beach Transit. I don't think we do a lot of things that are different from other agencies. We have a preventive maintenance program; our system allows us to track vehicle statistics like miles and fuel. We have work orders that we can analyze for roadcall, repeat failure, planned and unplanned work, and other types of data points.

And then we also have a California Highway Patrol audit that all the agencies in California go through. This allows -- this is an audit from the CHP that determines whether the agency is dedicated to safety, compliant with regulations, and committed to best practices.

So then after we looked at what we do, our initial thoughts of our measures are listed here. Age was the easiest step one that we thought we could work with. Then we looked at miles.

This one is a little bit more complicated. There are questions -- oops. Story about that. Miles -- going back to mile, there are some questions about whether or not we use target miles. This example would be like 500 miles -- 500,000 miles. And then once we set those targets, whether or not we use a scale of this example, one through five, or a percentage, compared to target miles.

Then we have work order and costs. This became a very complicated scenario. There are a lot of questions about the type of work orders we should include or exclude. When it came to cost there are questions about whether we look at total costs or costs per mile, do we include cost for accidents.

And then we moved on to how we incorporate the California Highway Patrol audit and the preventive maintenance program. Some concerns with that is that CHP audit is an audit of sample of our fleet and not the entire fleet. And then the preventive maintenance program is more related to how we execute the program and less about the condition of our vehicles.

Some additional measures that we also looked at were sustainability, independent audits and visual inspections. We asked the same questions about how would we score these. What resources are required? Do we have the resources to do these? And how do they contribute to the state of good repair in our TAM plan as a whole.

After talking about this we finally ended up with these three metrics. Again, we took into account the resources required to put these to the on a regular basis. In addition to that we believe these fit the definition of state of good repair. So age, we can use this to identify if the asset has reached its life cycle investment.

The mean distance between failures can identify if the asset can perform its designed function. And then unplanned work on critical systems can identify if the asset poses a known safety risk.

I will now go into details about how we developed these measures. So when it came to age, it was very -- some is a lot easier than we imagined. We just used the age of the bus to determine a score. And since we also used this to set our performance targets we thought we could get multiple uses out of this specific measure.

We did talk to other agencies about this and particularly about setting performance targets, and there are some agencies that felt more comfortable using miles instead of years. Unfortunately you have to use years when setting your performance targets.

What I suggested is that they identify the life miles that they expect to get out of the bus as an example, it would be 500,000 miles, and then determine what their average annual mileage would be per bus. To make the math simple, if the average miles per year were 50,000 miles your performance target could be ten years.

Next, this is a matrix of our mean distance between failures. The left side is the buses or the bus series. The top portion is the scale that we used. We used a scale of one to five. One being the best, five being the worst.

And then you can see the number of buses that fell within each series and each scale. So what we decided to use was our organizational goal of 6,000 miles between failures as our top score.

And then wrote each score down by a thousand miles. There wasn't much analysis that went into this. It was just something that we decided to tie to our -- what we already do.

In addition to that we actually tracked this on a monthly basis so it's not any additional work for us when we compile all this information. The next is what I found to be our most difficult metric to determine, was unplanned work orders on critical systems. For Long Beach Transit when it comes to identifying unplanned work we do have multiple factors that determines what's planned and unplanned, however in its most basic definition unplanned work is work that originated outside of the maintenance department.

We then discussed what systems to include and there are a lot of discussions about this, what to include, whatnot to. For instance, some individuals thought that lights and wheelchairs should be included in here. However, when we looked at what we wanted to define as critical systems, we came up with a definition that -- where a driver would lose control of the vehicle if the system were to fail while in motion.

So then we came up with these systems related to that -- to those components, like brake, steering, and tires. And this is something that we have to evaluate on a regular basis to make sure that it seems reasonable. And how we determined this was we gathered three years' worth of data to look at this. In total, that's about 82,000 records. Then we filtered it down to unplanned work, which came to about 35,000 records. And then when we further filtered it down to critical components, it was about 3,400 records.

We did look at various statistical numbers like average, standard deviations, and tried to come up with a scale that looked appropriate. And even though we do track unplanned work orders on a monthly basis, this is a new way to look at our data. And took a great deal of time and energy. And depending on your available personnel and how large your data is, this process could take anywhere between one to two weeks to put together and properly evaluate. So when we finally brought all the analysis together we had an average of five records per bus over the three years and decided to use that as the middle score. You can see here the score ranges from one to five where one is the best and five is the worst. And the scale is in the upper left corner. To make it a little bit easier there does seem to be a correlation between older buses and a higher number of unplanned work orders on our critical systems.

And in the future it could be possible that we use just the age and mileage to determine whether or not, you know, a vehicle would be safe. So then we found a way to also bring all the scores together. And we determined that certain scores or measures were a little bit more critical than others. For instance, the critical system score had a score of -- a weight of three. Our mean distance between failures had a weight of two. And our age had a weight of one. When we add up all of these scores together we have a scale from six to 45.

This is an example of how that scoring system would look like. On the left-hand side there's a list of buses and then there are scores for each criteria. And then on the right-hand table, those -- the scores are then multiplied by their weight. You see the final score on the far right in the colorful scale. So in this case the best bus had a score of 16 and worst bus had a score of 36. We then used the score as part of our decision support tool and investment priority. By uses a weighted total we decided that if a bus scored a 35 or above that it should be replaced within the year. If it scored within 30 to 34, it should be replaced within the next three years. And

anything below that doesn't require any immediate attention. This is just used to provide suggestions on which bus should be replaced first.

Finally, these are some of the challenges and lessons learned over the process. The challenges were just defining and agreeing on the criteria. There's a lot of different ways that we could do this. A lot of different ways to look at it. And it can be very difficult sometimes to come up with -- and put everyone on the same page. And then understanding what was actually practical and what wasn't. And then in some instances we were trying to look for either the perfect measurement or the perfect process. And that made things sometimes difficult for us to come to agreement.

And some lessons learned here, we was to keep the measure simple. And more is not always better. And being open minded to each other's ideas and being flexible. And then understanding that the decisions that we made today can be changed in the future. And then when coming up with the process to truly think through the process to see how does it fit with your TAM plan, what resources do you need to complete that task. And if you have those available resources.

Finally, these are some of the resources that we used at Long Beach Transit. Fortunately for us we do -- we are part of a California Transit Association. And within there there is a subcommittee related to TAM. In there we do meet on a quarterly basis and we talk about our progress and the direction that we are going in and how we developed our TAM plan as a whole and we talked -- communicate with each other and assist each other in any way that we can.

And then below that are some FTA resources that I found truly helpful in developing our TAM plan. These are hyper linked to those specific areas.

Finally, thank you for coming here and listening to us talk about how we developed our TAM plan.

Mshadoni Smith: Andrew, thank you so much. And that is a beautiful bus. I love all of the Daisies on there. And I appreciate you sharing with us your experiences at Long Beach Transit.

Next we're going to change gears and we're going to shift it over to Frank Knorek at Lucerne county -- sorry, guys, at Lucerne County Transportation Authority.

And here we go.

And he's going the talk to us a little bit about his experiences. And please remember, you can put your questions in the chat pod on the left-hand side of the screen at any time during the presentation.

Thanks. Frank, it's all yours.

Frank Knorek

Frank Knorek: All right. Thank you very much. I'd like to thank the FTA for the opportunity to present today and the fellow transportation colleagues in their pursuit to get their TAM regulatory requirements.

Today I'm going to talk about Transit Asset Management plan implementation and call lessoned learned along the way. A little bit of information about our agency. We were founded in October of 1972. We were one of 37 public transit agencies in the commonwealth of. We operate 38 fixed route buses, 49 paratransit vans and a fleet of six support vehicles via 19 routes that operate Monday through Saturday. We have around one million passenger trips annually and on fixed route system. And nearly 170,000 on our paratransit system. And our vehicle revenue miles a little over two million. Also we were the first two tier agency to complete the TAM requirements in the Commonwealth of Pennsylvania.

Moving on, talk about the TAM implementation timeline which puts everything in perspective from start to finish. Prior to 2016 the issuance of the FTA final TAM ruling the agency completed many of the TAM activities now cited in our plan, however we just needed to consolidate and place these actions into a formal document which became the TAM plan release at the found dogs for our capital planning and asset management.

Timeline shows how our agency went from learning the regulation to developing the final written plan. And the Transit Asset Management plan is both a document and a program that gave us the solid foundation to give us coordination between the internal departments between it comes to capital planning and maintenance activities.

On the pendant side you can see the individual activities that were taking place within finance, within the maintenance department, operations department. July 2016 is when the final rule came out. And then from there we reviewed the out regulation developed staff assignments, we held monthly meetings, and then out of those meetings grew an implementation plan.

In January 2017 before we wrote the TAM plan we wanted to update our fleet and facility maintenance programs. From February pretty much through much of 2017 we wrote and developed TAM plan, gathered data. September of last year is when we wrapped things up and submitted to the FTA and PennDOT planning partners and did the optional reports with the data.

Challenges and lessons learned along the way, really endemic to a small and medium size agency like us, first understanding the TAM regulations and next is staff and talent resource allocation and what department and individuals were going to be responsible for what reactions in making this reality. The inspection process, these are the capital management tools in the TAM plan. And placing again practice into words.

Again, we were doing most of the actions that are now in the document. But we just really -- we had a document but we didn't have it formalized. Just this TAM document brings it together and for everybody to follow.

And last is the TAM implementation. So one of the challenges in understanding the TAM regulations is a new policy for us. There were no prior examples. We could then conduct research on the regulation and what other agencies have done up to that point. Many larger

agencies had TAM plans but in our situation we had to scale the plan while meeting the regulations to fit a smaller agency structure.

We found that before we could even write the TAM plan we had to visit and update our fleet and facility maintenance manuals we mentioned earlier and revamp our inspection procedures.

We used the FTA term schedule. And only then were we able to actively write the TAM plan. When it came to staff assignments, as I mentioned, what department managers are going to be part of the project and then get the buy-in from everybody. That was held monthly meetings. And in a learning and applying the regulation, it took four months to draft the outline and project plan created.

Some of the lessons learned that came out of understanding the regulation, this is going to be common theme throughout the presentation that we contacted the FTA regional office for guidance multiple times. Once we had a rough outline we reached out to them and held a meeting, maybe once every two months or so, just a quick 15-minute conference call to ensure we were on the right track.

I recommend starting early, completing the TAM requirements a year ahead of schedule is not our goal. We just wanted to ensure that we were compliant and didn't want to be behind the eight ball and have a plan substandard because we knew how important it was to safety and efficiency and investment justifications for the agency.

The sooner we got done, the better. We already had completed the actions; we just went through the exercise of placing those actions into words and forming the final document. And also like today, we attended FTA webinar, every single TAM webinar introduced, gaining more understanding of the regulation. Hopefully in today's webinar we can answer your questions about the development of your TAM program.

With the staff and talent resource allocations, some common themes is the accountable executive is the executive director in most cases. As the compliance analyst, I work with our director of administrator services on the project management side and authoring the plan and trying to ensure that everybody is on the right track and we coordinate among the multiple departments in bringing TAM to reality.

The maintenance manager, maintenance director, again, they're going to conduct the inspections and develop the maintenance schedule and tracking of that data and life cycle and that's going to get reported to our finance department. Has the finance director and grant coordinator. They do a lot of the reporting and the development of grant packages or capital planning purposes and recording to PennDOT and FTA financial liaison.

The operations director, he's the boot on the ground basically where if a bus breaks down he's going to report it. Track mileage, any kind of accidents, NTD as well. Safety training manager, basically acts as operations manager backup but training drivers if it becomes a theme that accidents are more prevalent in certain area or vehicles are breaking down in certain areas. He will coordinate with maintenance and come up with a plan to mitigate that.

And procurement manager, asset life cycle management. Looking at data coming out of operations and maintenance and finance, the really track and try to plan when assets are going to be replaced and disposed of and purchased.

We ran into a little problem. It says my computer lost connectivity.

Mshadoni Smith: I'll progress the slides for you. Go ahead.

Frank Knorek: Okay. It came back.

So the inspection process, getting into that, we had to update our fleet and facility maintenance manual and also the inspection procedures. We never used the FTA term scale before. We had some internal guidance from PennDOT about their ULB selection and how -- it's pretty similar from PennDOT to FTA but the development of the TAM plan we obviously wanted to use the FTA. I'll talk about that later about how we developed a custom ULB for our asset categories.

Again, we had contacted the FTA for guidance and we used our available resources in the creation of our fleet so the maintenance manual inspection procedure. Namely, the Capital Planning Tool and the dossier maintenance system.

Talk about now is the Capital Planning Tool in our Transit Asset Management planning procedures. CPT is a critical tool to monitor transit asset conditions. The CPT is an open source asset management software program called Trans AM developed by Cambridge Systems. Software is used by most state DOTs we found. If an agency is not currently using the software they may want to check to see if it's available to them.

CPT came about because each public transit agency in Pennsylvania receiving PennDOT funding is required to use the software to document asset conditions. We adapted that to the FTA TAM process as well and use of the CPT came around 2015. Pretty much a year before TAM went into effect from the FTA side.

It's used to monitor asset life cycles and report amongst the departments in their individual activities. So the CPT manages all of our assetting, rolling stock, stores information about the asset type, inventories, in-service or of service, mileage, changes in condition, usage, value and depreciation, and much more. And also generates the series of reports for asset condition, have, and replacement needs.

The CPT has three modules. There's the inventory module, capital planning module, useful life of the asset, predicting what time periods they need to be replaced. Develop capital planning from that. The funding module, manages the funding sources, and develop funding plans and grant management projects and restrict funds for certain usages.

Next couple of slides are going to show what the act toll capital planning tool looks like.

This is the log-in screen.

Here is an example of a state of good repair report. Again, you can see the asset categories for our buses and our paratransit vans and our support vehicles. Book value and replacement cost. You can drill down the reports for different categories depending on what criteria you want to measure.

And here is an example of the dashboard. Gives our agency an overall view of our agency and different funding mechanisms or book value, average. You can see on the top part of the screen the different modules and reporting screens.

So how do we use the CPT in our TAM planning? We talked about custom ULB. PennDOT we place paratransit vans five years or 150,000 miles. It was every eight years.

We spoke with PennDOT about creating the custom yield and learning the methodology of why the replacement cycle is what it is and went back to the contacting region three at PennDOT and we were able to create that custom ULB based on the fact that funding sources for the paratransit vans is namely under PennDOT and that was their cycle that they wanted to replace the vehicles with. That's documented in our TAM plan. That's the limitations. We also have staff assignment. Namely CPT resigns at our finance grant departments. And that is where the reporting is done to both NTD and PennDOT. So for the lessons learned from that, always contacted the FTA and PennDOT for guidance.

I feel like a broken record saying that but that's what really got us through the planning process and writing the TAM document. We wanted to make sure we were doing everything right along the way. We have an internal backup spread sheets for all data. There are some limitations within the CPT where it's good to see the Excel sheet to do some of the reporting and tracking.

And the next section here. Placing practice into words. The first after reading the TAM regulations and developing internal action plan for the TAM implementation project. We used a master compliance calendar to get a timeline due dates for all projects and programs, be it PennDOT or FTA.

Standard operating procedure five years ago. We needed to first review and fleet plans before creating the TAM document because a lot of data you get out of the plans, it's in a filter out and trickle down to ultimately creating your state of good repair goals. That's where we found it to be critical before writing the plan. In many cases most internal department are completing the asset management actions but we just wanted to put those actions and associated policies in a singular document, thus being the TAM plan.

Next we determined which TAM data sources we needed to utilize from the internal departments and centralize it by developing internal data and storage management protocol.

Talked about the CPT but there's future about the data sources we draw from. So here are some examples of individually what each department was responsible for and simple processes such as the capital planning process. Each one of these actions went into developing the TAM plan.

This is a good example because you can see that effect again between these and really coordination among maintenance, finance, operations, and my department with the compliance aspect of it being all to the.

So this is the slide I talked about our data sources come from and decision support tools. Really there's fleet and -- the procurement management policy, the TAM plan itself which is everything together, our dossier system which track maintenance, scheduling of maintenance completion, work order usage, vendor management activities. The CPT where we draw from data that's -- that's in reporting fed into it from maintenance. And we have our capital list of prioritization of projects and programs where we can say, okay, we need to replace five buses this year. What resources need to go to make that happen? And how does that affect other resources, both financially and operationally. And we also coordinate with our MPO for funding resources and different projects, different transportation projects on a larger scale for future planning purposes.

And this is an example of our maintenance strategy that was developed when we updated our maintenance plan. Shows the frequency and type of maintenance activities performed on a trolley bus. When certain components are to be inspected, how often they're inspected. That data is fed into our dossier system and once you start seeing how your maintenance plan, you know, operates in real life and after all components of vehicles are breaking down fairly consistency and you see trends developing, that's another aspect of this software system and the whole trays is it asset management plan is to mitigate the downtime ultimately and breakdowns.

So some of the implementation factors, challenges, getting the buy-in from all aspects of the agency, from mechanics all of the way up to our director and the director really understood the criticalness of having a safe and efficient system. Also staff assignments. Again, who is going to do what, why and how. Monitoring for updated compliance requirements. Again, reviewing the TAM website on the FTA's website. Going to webinars. Knowing what's expected and, again, contacting the FTA if there's any question. And that's how we developed the final written project and plan, TAM plan.

And really is rethinking asset management. If you go back to first slide where everything was broken down separately, TAM really says how I think so this can be simple versus something breaks down, it's not being tracked. Well, maybe we spent too much money trying to get a bus back in service where it could have been a lot more efficient if we had tracked it and preventive maintenance.

And some of the resources here, our asset management plan is on the TAM peer website. For more information about the CPT software that I spoke about there are links for the PennDOT system and the developer.

And there's my e-mail information if anybody has any further questions about TAM. But I highly suggest you contact your regional office, the FTA, or state DOT.

Again, I would be happy to answer any questions when the Q & A section comes up.

Questions & Answers

Mshadoni Smith: Thank you, Frank. That was really great. I really appreciate how you discussed your lessons learned regarding each of those steps.

So now I'm going to go through the chat pod and folks that are participating, please know that you can continue to add questions to the chat pod while we go through them.

But I didn't see a great deal of questions, so this might be a fairly short Q & A, which I'm sure is fine.

Everyone already has a copy of your presentation. If you look in this orientation, that copy is now in the lower left-hand corner. And you can download those. So I'm sure, you know, that will be a question from most folks because you guys have such good information in your presentations, where to get them. So that's where they can get them. And I think we also will have this recording posted to our TAM web page in the next couple of weeks.

So you can also download them there in the future. So with that in mind, there was, I believe, one comment here from Brian. He mentioned and this was during Andrew's presentation. That he was not aware of contact support to develop any part of your TAM plan but would be very interested in this, including examples. Andrew, do you think you can respond to that?

Andrew Choi: Could you clarify like the contact support, who we contacted?

Mshadoni Smith: You know what, as I'm looking at this I believe he is responding to our poll question about contract supposed support. So either we had an issue in our poll and we misspelled or there might be a typo in his question. But I'm still am going to go ahead and open it up to you guys about any contractor support you may have had in developing your TAM plans. Andrew, why don't you go first?

Andrew Choi: For us, we didn't have any contract support. We felt that we could do most all of the -- fulfill all the requirements internally, for us at least.

Mshadoni Smith: Frank, what about you?

Frank Knorek: We didn't use any contract or anything like that. Everything was done in-house, as well.

Mshadoni Smith: So from what I remember of the poll questions that we did at the beginning of the presentation, it seems like the majority of the folks on the webinar also are using in-house services. So it seems like everybody is trying to figure this out on their own, whether they're using FTA tools that are available or developing things in-house that work for them. So I think you guys are all in the same boat in that sense.

Maybe later on in the Q & A we'll see some more specific questions related to how you developed or combined your information. So Maggie's question was answered as far as where

to get a copy of your PowerPoint. But there is another question that came up that talks about are there examples particular to 5310 fleets which are usually widely distributed total under one agency roof. Kirsten, I'm not sure who that was for but I'm going to make an assumption that was for LBT's presentation.

Frank Knorek: I don't know how to answer that question. We don't -- we don't have those kind of vehicles. Sorry, I can't help with that.

Mshadoni Smith: Okay. Maybe Kirsten's question is more general. I'm assuming this is a female, but maybe she's just asking about questions -- sorry?

It's in general. Okay. She added that it is in general.

So she's generally asking for examples particular to 5310 fleets. I'm still not sure what the question is.

Okay.

Frank Knorek: We're an MPO that has distributed 5310 funds to local agencies to buy vehicles.

Mshadoni Smith: And the question is, are there MPOs that have distributed 53 -- Kirsten, please, type in the entire question that you want to get answered and we'll get back to it at the end.

I'm going to go on to the next question, which Debra suggest, although not required, does either agency include bus shelters and amenities in their TAM plans? Frank, why don't you take this one first.

Frank Knorek: No, because it really the regulation wasn't set up for it as an asset category they're not $50,000 or more and they're not considered equipment for us. But if you have a facility that's -- some bus shelters are almost a facility, some of them, then you could probably include it in that category.

Mshadoni Smith: Andrew, did Long Beach take a different approach?

Andrew Choi: We didn't include bus stop shelters. We do have some very expensive shelters that would, I guess, fall under lease to asset inventory aspect but when it comes to like condition assessments or measuring their performance we didn't do anything extra for those.

Mshadoni Smith: Okay. I'm going to just chime in as well. I am not aware of any agencies that have elected to add bus shelters to their TAM plan. Partially for the implication that if you add it to your inventory, then, like Andrew mentioned, you would need to do a condition assessment, as it as part of your targets and so forth and so on. Similar to what Frank mentioned, if it's under 50K and it is explicitly excluded from requirement in the rule, however, I will say the rule is flexible enough that if that is something you or your agency wants to do, it is completely acceptable.

I'm currently not familiar with anyone who has but maybe we can become acquainted and then I'll know someone who has. All right. I'm going to move on to the next question from Dave. He asks, how are full turnkey services addressed in a TAM plan? Our agency contracts all services and the providers have no federally funded assets.

So, Dave, I'm assuming this question is for me at FTA. And are you talking about purchase transportation where you are purchasing the services?

Those services are still applicable in your TAM plan if they are your dedicated assets, whether or not they are operated through a purchase contract or a direct services contract.

There are some frequently asked questions which address this specifically on our TAM web page. And I don't know if you have that -- I'm going to go ahead and type that in here for you in case you want to take a look at those FAQs.

Typing and talking at the same time is hard but I just went ahead and did it. Hopefully that worked. You can look at our frequently asked questions.

I'm sure that will point you in the right direction.

All righty. So what is the next question?

Just give me a second, guys. The computer skipped down a little bit. Okay. Volume.

All right. So John asked, is there any documentation that provides a flow on what to do to create the plan, IE, do this first, do this second, et cetera?

Andrew and Frank, do you guys have any recommendations for John on resources that you used in identifying how to order your TAM plan development?

Frank Knorek: I'll go first. Basically we looked at the FTA's TAM website and there are documents on there like guide documents. That is one of the challenges actually, that's why we developed our action plan, what steps needed to be completed first. We kind of drew our own conclusions from that. I'd recommend possibly looking at our document on the peer review site to maybe get a better idea of the answer to that question to show the individual components of our TAM plan.

We had actually created our own -- do this first, do that second, to answer that question. But that grew out of meetings and reviewing the documents that were on the FTA's website. If you wanted to see what a finished plan looks like go to the peer website and pull up our plans and other agencies have submitted them.

Andrew Choi: I just started with what the elements for the different tiers were. So I just used the fact sheet that had the different elements and I just went from one through, I believe, nine. And I just went step by step.

Mshadoni Smith: Okay. Great. Those are great suggestions. And it looks like some of your fellow participants in the webinar have also identified some low locations where you can get information.

James saved your link to a PDF. And Brian Schmidt referred to the third-party asset collection that I just referenced and the appendix in the rule, talking about direct capital responsibility. So you guys, thank you for sharing your knowledge with your peers in the chat pod. That's very useful.

And also I would recommend if you guys are getting responses from individuals, maybe write their name down as potential person to contact if they are a like-minded or like-sized transit agency. They might have some resources in addition to what FTA has that could be useful.

Okay. So another question from Allan. He asks, is there any advice for small tier two providers which don't have any state or local agency sponsoring group plans? Is there a template? So in this case -- I'm sorry. Go ahead, please.

Andrew Choi: Some of our other agencies that have contacted with or communicated with here, at least in southern California, I just shared -- a lot of us share our TAM plan with each other and we used that as a template and modified it to how it fit our agency.

Frank Knorek: I would echo that, as well. We were the first tier two agency in Pennsylvania to have it done. We shared it with PennDOT. We also have an organization called the Pennsylvania public transportation association. They had a meeting and they shared it among their members, their agency members, as well. It just comes down to fitting your individual fleet and facility and asset makeup of your agency.

Mshadoni Smith: All right. Thanks, guys. I do want to point out we have about three minutes left in our session. I want to try and get to all of the questions here. But I also want to echo several of your peers. These were some really excellent presentations. Folks appreciate the slides, the staff assignments. I personally appreciated the lessons learned. I think that you guys are going to be getting a lot of calls from your peers on some information. So I apologize in advance about that. But there's a question for Andrew asking if you would be willing to share your investment prioritization tool.

Andrew Choi: I don't mind. I would be more than happy to share it.

Mshadoni Smith: All right. So you can either contact Andrew directly or I can try and get a copy and share it with those of you that are participating that want to know. But Andrew and I will be in contact and I will let you know. I have your name here on the page. So I will contact you. I can't say your name but I see it.

All right. The next question, did you have an option to use a state TAM plan, was it available at the time you made a decision to develop your own? Frank, I'm thinking that's for you.

Frank Knorek: Yes, we did have the option. It came object later, almost nine months later after we completed the process. We're still mulling the fact to see what the comparison will be

between the state plan and our own plan and that's still being worked out at PennDOT at the moment. It could change though. We might end up using their plan in the future. It's not decided yet. But, yeah, we did have the option.

Mshadoni Smith: Okay. Great. Chase wants to know, we have hit the end of our time, but if you guys want to stay in another five minutes we might be able to get through the questions. Otherwise, thank you so much for participating. We will have a recording of this posted on our TAM web page.

The next question was about the agency PCRT tool. They wanted to know if there was guidance for replacement model for this. I do not know for any add-ons for that tool, however, I will say that the group plan sponsor and tier two agency template, TAM plan template, does have a vehicle replacement tab in it. So you might want to take a look at that and see if you can adapt that to work with your TCRP model.

One of your peers wanted to know how expensive the CPT software was. I'm going to let him contact you directly rather than put that in a forum such as this. Also, finding examples of others' work -- sorry, that's not a question.

Are there any other questions? Have you seen any questions?

I think Paul's question. That's more of a statement.

Oh, from Susan, how does everyone determine the replacement cost/value for all asset classes? Any standards or formulas, et cetera?

Frank Knorek: Well, we do two things. Look at the book value due to appreciation that comes out of our financial department with audits every year. Also for book -- or for total equipment cost, we try to find the most recent contract or contact the manufacturer to find out what their replacement cost is on a vehicle. Or asset, say it's a facility item. Normally facility items are grouped together. For individual vehicles we will contact the manufacturer, contact PennDOT or depending on where the funding source where it's being purchased or look at the last vehicle history purchase information.

Mshadoni Smith: Okay. There was a clarification from Kirsten. Are there TAM plan examples for group vehicles held at different agencies?

So this confuses me just a little bit, Kirsten. I am wondering if you're saying they're owned by one agency but they are being held at different facilities or if you're saying they're multiple separate agencies and they are sharing a TAM plan, so a group plan, in which case there are examples of group TAM plans where their vehicles are at different locations. But if that's not what you mean, then I'm not sure how to answer that question.

All right. So one from Chase that other folks are wanting to see response, it's a repost. Regarding including bus shelters in the TAM plan, did you say that if an agency decides to include shelters, and standalone benches, in the inventory we are required to perform condition assessments? We wanted to consider these simply to keep our assess inventory

comprehensive but have not completed condition assessment on shelters or standalone benches.

So standalone benches and shelters I feel like are slightly different level of detail. If you want to keep an inventory of your standalone benches in your TAM plan, they're not reportable to the NTD nor are your bus shelters. What I did suggest is that if you are including it in your inventory that you would also want to do the condition assessment and the target setting for those assets. Just having them in your inventory isn't the same thing as having asset management for them. So if you wanted to be in your investment prioritization, then you would need to do the condition assessment and target setting, as well. You can contact me directly if you want to talk about the pros and cons of including that information in your inventory.

Okay. I think that we kind of jumped over a couple of questions here. Susan wanted to know how does everybody determine -- and this is going to be our last question -- how does everybody determine the replacement cost or value for all asset classes? Are there any standards or formula, et cetera?

I'm going to turn that over. Frank, did you want -- or Andrew, did you want to mention anything about how you came up with those?

Frank Knorek: I would say contact your accounting department. There might be a state DOT report or some type of accounting report that would show what the current book value is and then compare that to a replacement cost. We actually in developing the plan last year, assigned what a forklift would cost. Contact the manufacturer, contact a dealer, depending on what the asset category is. In terms of today's money, that's what it would cost, that's how we determined the replacement value.

Mshadoni Smith: All right, everybody. I think I got everyone's question. Some of them seem to be answered by several links within the Q&A, but also remember that this webinar is going to be posted on our TAM page so if you missed anything or you want to go back over and get some of this information, you will be able to do so.

And I want to thank, again, our presenters, Andrew and Frank, and all of you for participating and sticking it out a little bit past our regular end time in order to get all of the questions answered.

Frank Knorek: Thank you for having us. I appreciate the opportunity.

Mshadoni Smith: Thank you. So with that, I'm going to conclude this webinar.

And thank you all very much. Have a good afternoon.