NCCC/MEMA Webinar - Fleet Management Software & Data Driven Decisions

Thu, May 21, 2026

Webinar Transcript

15:22 - Tim Taylor

Okay folks, we're going to get started in a minute or two, let folks like giving folks time to check in. So one or two minutes and we'll get started. As you're just joining, we're going to give folks one more minute to get going and then we'll get online and then we'll get going. Okay, folks, we're going to get started now. I'm Tim Taylor. I'm with the NorCal Clean Cities Coalition, and we're just helping to run this on behalf of MEMA. And I'd like to introduce David Worthington, who will be doing the formal introduction.

17:19 - David Worthington - County of Santa Clara

Morning, everyone. Glad that you're here with us today. I'm David Worthington. I'm the chair of the MEMA NorCal Chapter Board of Directors. Is a national organization. We're based in, started in Southern California, expanded to Ohio, and we have a chapter here in Northern California. We partnered with the NorCal Clean Cities and Communities Coalition, previously known as Sacramento Clean Cities Coalition, the East Bay Clean Cities Coalition, the Silicon Valley Clean Cities Coalition, San Francisco Clean Cities Coalition, NAFA. Public Fleet Supervisors Association, APWA, and the California General Services Association to produce monthly webinars focused on topics that we surveyed our NorCal MEMA members, and they stated would be the most beneficial for their organization. Today we have Camilla Taufic, the Fleet Business Manager for the Central Shops from the city and county of San Francisco, who will be presenting on how to use fleet management information software to make data-driven decisions about your fleet. I hope you're looking forward to this. She's very knowledgeable. It's got some great information to share today. And perhaps there'll be something that you will learn or be able to apply to your own organization to better it. At this time, I'll introduce you to Camilla and have her take over with her presentation. Thank you for joining us today. I very much appreciate it.

18:49 - Camilla

Thank you so much. Hi everyone, my name is Camilla Taufic and I'm just going to share my screen here for you all. As David said, I am the fleet business manager for the city and county of San Francisco. That title means a lot of different things to a lot of different

people. In my role, it means doing the finance, data, policy, and operations for our fleet. A little bit of a background on our fleet. We've got about 9,000 assets city and county-wide, everything ranging from your typical automobile up to a fire truck to a street sweeper. We even have a few boats and drones. So we do a lot of different stuff, and that makes data very critical because we can't see everything at once. So we need to be able to combine things in different ways that allow us to make. Make executive decisions across an enormous variety of assets and uses for them. So, I'm excited to share this with you all today. And with that, I also want to share that everyone works in data in different ways. So, please stop me at any points if you have questions. And please know that what works for us in San Francisco from a data perspective might not work for you. And I'm also always happy to chat offline one-on-one with others in the future if you have a data problem you're trying to solve and would like to figure out where to take it. So kicking us off is just a quick overview of what FMIS is. So it's your fleet management screen.

20:34 - Tim Taylor

Camilla, excuse me for interrupting. Right now, we're not seeing your screen.

20:37 - Camilla

Oh, I'm sorry about that. Thank you for letting me know. It said I was sharing. One second. Are you seeing it now? No. Yeah.

20:54 - Tim Taylor

There we go. There we go.

20:56 - Camilla

Sorry about that. My Wi-Fi is all or. My internet is also slow, so please let me know if there are any further issues. So kicking us off here, the prior slide was not important, is what is FMIS? It's Fleet Management Information Systems. That is a whole bunch of different things. There's no one standard FMIS. There's no one standard thing it looks at or how it does its work.

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21:26 - Camilla

What it generally does is it collates a lot of data to help fleet managers make decisions. So this is data that we just in no realistic way in today's world could we collect it by hand or even in an Excel sheet and keep track of it. It's all of our work orders and you know you all know that includes what parts are put on a vehicle, which technician is working on it, what time they clock in and out on that vehicle, the history of that vehicle over time. So, FMIS helps us to bring all of that data together and keep it in a centralized place so that we don't need to manually track it and also so that we can take looks at it in big picture ways that help us make decisions. So, a lot of different types of data it collects: work orders, fuel, storeroom inventory, fleet inventory, fleet telematics, GPS data. Some of the companies include, and again, this is a very tiny list of them.

I just Googled what are the top 10 FMIS that fleets use as to not be biased towards any of them. And what came up was FleetIO, Asset Works, Samsara, Geotab, Verizon Connect, and Motive. So there are a lot of different ones. Some of these names might sound familiar to you. You all might not even be using one at this point. So it'd be really great is if you could in the chat type in any names of FMIS that you use. This is helpful for us, I think, in creating a community of fleet managers to understand who might be working with something we're also working with, if you have issues, and then maybe someone's using something that you're really curious about and you'd love to learn. So if you're using something and you don't mind sharing, please put in the chat. What FMIS you use. I'll start off by San Francisco, we predominantly use AssetWorks Geotab from this list. We also use PowerFlex to record EV charging data. We use fleet data systems to manage our fuel data. We use Appointment Plus to manage our appointments. So there are a lot of different FMIS that we use to make sense of things. And this is just a very basic snapshot of what one of these might look like for you.

And so, moving on, the big question is: how can it help? So, you know, data is whatever you, everyone has different opinions about data, and in some ways, it's kind of a bother. It's a lot of information. A lot of our technicians, a lot of our drivers, they know their vehicles really well. They've been with them for years. They've maintained them. They know the

make, the model. But at the end of the day, data is a big part of how we communicate things to other people who we need to get on board with us for making decisions that benefit fleet. So there are a lot of different ways it can help us. Operational efficiency, life cycle and replacement planning, maintenance and asset health decisions, budgeting and finance, inventory and procurement. Driver and workforce management. There's a lot. It's kind of limitless. It just depends on how creative you're wanting to get with the data you have at hand. And with that, another thing to know about FMIS is that it's in a big growth place right now. So we're seeing a lot of software that kind of gets you halfway to where you want to go. It gives you, it collates all of that data for you. It does its bread and butter job, but maybe it doesn't make it easy for you to explain that to someone else. Maybe it doesn't give you the right graphic or it doesn't allow you to filter on the right type of vehicles you're looking for. And so I think this field is shifting in a big way right now where we will start to see more and more development and more and more ability to personalize things for our fleet as well.

Well. So it can help us in a lot of ways. There are also a lot of limitations. Starting us off on how we might use it, so we know how it's beneficial. But in any data situation, whether it's fleet or national nutrition or population, you don't just look at data to look at. You're trying to solve a problem usually. And so, what's important when you first start this is to figure out what problem you're trying to solve. And then, once you have an understanding of that, what are you going to do with the data? Is it just going to sit there and you're going to have a problem statement? Or are you going to try to find ways to change your operations or your policies to help solve that problem? And then, a big piece is how you communicate it to stakeholders. You can't just say, 50% of our fleet is too old, period. There's a lot of communication that goes into it to get people on your side. And so we'll go through some of the communication needs as well in this. And then also, is there data you're leaving on the table? Like you might be surprised as you're working through a problem statement that something pops up and you didn't even realize it was an issue or an opportunity that you'd had. So this might be something that you all have issues with as well, but in San Francisco, we're facing a huge budget deficit and really big budget cuts, bigger than we've seen in decades. And so we're getting a lot of pressure for us on cost, cutting costs. So that's our problem here. How do we make things cheaper? How do we keep our fleet running, but at a

much lower cost? Lower budget value. A lot of you might be in the same boat, so I figured this was a helpful exercise for us to walk through.

So when we think about cost and data, one of the first things that we think about here in San Francisco is rightsizing. Over the years, it's really easy to get a bloated fleet and then maintain vehicles that aren't in regular use. For us in San Francisco, using our FMIS data, we've calculated that it's about $1,500 a year per light duty vehicle that's underutilized. So before you consider replacing assets or transitioning them to EVs or putting a lot of money into them, you really need to figure out what is the right size of your fleet. And FMIS data can be hugely helpful for that. Before we can look at the data, though, every organization needs its standards. We are currently working on that. So, full disclosure, we don't yet have our underutilization rate narrowed in, but most organizations look at 75% to 90% of trips on working days. The state of California, the Office of Fleet and Asset Management, they use 125 days. If you're using a vehicle 124 days or less a year, it's underutilized, which in my mind is actually really, really high. But it's where they're at. So, that goes to show that other organizations might be a lot stricter with their right size than you are, at least than we are here in San Francisco. So, once you have your level set on rightsizing, that's when. FMIS comes in to be super helpful. This here is a very simple snapshot of San Francisco's, one of our softwares that helps us track utilization. And you can see here, yeah, this is kind of helpful, but it's not the most detailed description of what's going on. We can see here that we have a lot of vehicles that aren't driven at all. All for no time and for zero distance. What we don't have is an understanding of different reasons that might occur. So when you're looking at the data and imagining you're going to be challenged by people who are unhappy with the decisions it produces, you need to think about all of the elements that go into it. For utilization, some of the big ones for us are whether the vehicle, the device, the telematics device that we used to determine utilization was working. And whether the vehicle was in the shop for an extended period of time. So you need to pull all of your data for utilization and then filter those out. And just to give you a snapshot of, you know, we've discussed some of the limitations that we experience with FMIS as it is now. It's really helpful in collecting and collating our data. It's not necessarily the tool that we want to use for working through that data. So, this is one example of how San Francisco takes that data and turns it into a different, more usable, in our opinion, resource. So, we've pulled into Power BI all of our utilization data and then also the months communicated. And that's

really important because this vehicle here, 7450625, it was only used for four days. But the device only communicated for one month out of 12. So, if I go to a department and say this vehicle is clearly underutilized, you need to turn it in, and they come back to me and say that vehicle, there's no way it's underutilized, we're you know, we're using it all the time. One, you lose a lot of trust with your stakeholders, and two, you wasted a lot of time trying to figure out what is best. In data, it's always important to not just take what is at the highest level, which is usually what FMIS just kind of shows us, is that that plain number is days utilized is four. And then you need to think through all of the other elements. So, in this case, it only communicated for one month versus up here. My conversation with this department is be really easy. This device is communicated every month out of the year. And they still only used it for one day that year. So, this vehicle needs to be turned in. But as I said, the third element of this data that's necessary to bring in is how many days that vehicle was in the shop. Once you add that layer in as well, and if you can determine it was no more than your underutilization rate, you're good to go. So, going back to here. That again is an example of how FMIS helps us pull together the high-level data in a really useful way so that we don't have to go out and manually count which vehicles are being used on what days and the distances they travel. But it helps us to then pull it into something else, either Excel or Power BI or whatever you're comfortable using, to add in layers from other FMIS databases as well.

A big picture for utilization and the communication strategy around this data is knowing who your stakeholders are. So here it's two people in my mind, one, the budget people who give us the money. So that's our cost saver and the problem we're trying to solve. But we also potentially create another problem, and that's for the department that used this vehicle. And so the communication strategy about the data for both of them is going to be very different. For the cost savers, it's easy. You calculate how many vehicles are determined underutilized, what their average maintenance cost over the last several years was, and then multiply it out into future years to determine what the maintenance savings are on that vehicle by turning it in. In. The drivers, on the other hand, like it's kind of like no news is, on this one, no news is good news. So what you need to go to them with is really defensible data. It's the same data, it's just a different message in how you communicate it. It's that, you know, we hear you, you need a vehicle, but also this isn't the right vehicle. There might be reasons you're not using it. Are you not using it because it hasn't been

working great? Are you not using it because your work style has changed and maybe you can use a pool vehicle? But having more of an operations conversation with them as a different party in the play. Lastly, on rightsizing, this data can help us determine whether we want to reassign or dispose a vehicle. Maybe the vehicle is being underutilized at your library, but your police department really needs more vehicles. You can then see: is this vehicle viable to maintain, to keep in the fleet? Is it just that they're not using it? And for that, you can use FMIS data to look at its year, mileage, etc., to say, hey, it's actually a great asset. Let's keep it in the fleet. Let's just put it somewhere else. Or no, we want to dispose it, let's get some auction proceeds and call it a day.

Another excellent use of FMIS is life cycle and replacement planning. And so, this is again something that no human could pull together the data in their brain and produce patterns. What FMIS does is it keeps all of that for us together so that we can make good decisions. Once you have the right size of the fleet, after you've done your rightsizing, you need to plan for how long we intend to keep the assets and what our plan for replacement will be. So, admittedly, San Francisco is behind many fleets ways, and we don't yet have a replacement plan. So, this is something we're actively using FMIS data for right now to pitch to our mayor. So that we can hopefully get an ongoing annual fleet replacement budget that allows us to have real life cycle and replacement planning. So, we've been actively doing this and it's been really effective so far. The data has helped the budget team understand how important replacement is. To get there, we had to look at a lot of different things and found a lot of failures or created a lot of failures along the way. And we haven't succeeded quite yet, but we're in a much better position in this argument than we have ever been, at least in the last 10 years as a city.

So, to get there and thinking about the data, the age of the asset has been really important to us. And that you can get from any of your FMIS. Most of them will have vehicle information that includes. The age. You're also going to want to pull the average annual maintenance and repair cost of a vehicle, excluding collisions. So, here's another data hole where someone might kind of have a gotcha in the future: is make sure you pull out collisions. You don't want to show that a vehicle costs $20,000 to purchase and you've spent $100,000 over the last 15 years to maintain it. Only to find out that it had two major collisions that had excessive repairs on them. Because if you start giving people numbers that aren't really grounded and honestly quite conservative, they're going to start finding

faults in them to try and make sure that they don't have to give you the money or they don't have to give you the car and rightsizing. So being conservative with this is really important. And pulling out all of the variables that create noise around what you're actually trying to say. So, what we're actually trying to say is there's an average annual cost to maintain a one-year-old car versus a two, three, four, 15-year-old car. So, we need to build out using all of our FMIS data what the average cost, the average maintenance cost and repair cost per year is. For a vehicle at each of those life stages, but not just that, by each of those makes and models. And this is again where FMIS is really critical. No human brain can retain all of that. As good as you are, you're not going to know what the average cost of maintenance is for a Prius that's four years old versus a Prius that is 15 years old. It's, you just can't keep it all. So, FMIS is where. We keep all of that information and then we pull it out to make decisions. So, we've looked at the age of each asset and we've looked at the average maintenance. Another great cost savings and part of total cost of ownership calculations is how much fuel consumption. Fuel is obviously really expensive, and we'll get to that in a minute as well. But older vehicles consume more fuel. Like a pretty well-known fact. Your budget people might even know it, but what they won't know and what you won't know is exactly how much. So, by calculating out the average fuel usage on a vehicle year over year by its age, sorry, by its year, not by its age, is really important. And this is where maintenance comes in at a different level of age versus year to fuel. So another data consideration. When we're looking at the maintenance, we know that it gets more expensive to maintain a vehicle as it gets older because parts get more expensive because they're harder to find, problems continue arising in bigger and worse ways that require more hours to maintain them, et cetera, versus fuel. You don't really consume more fuel just because it's an older car. You consume because the car has more ages on it. You consume more fuel because the technology was a lot older and the vehicle was heavier. So you didn't have the ability to have a higher miles per gallon. So here in the data world again, it's really important to think about what you're actually trying to answer. And then pulling out the data point that's helpful for that. That. So, one of the many things is the age is different than the year of the vehicle and means different things in different situations. Based on this analysis that we did of our entire light duty fleet, which is about 4,000 assets, we determined that we could save $500,000 fuel if we transitioned our entire fleet. Every 14 years. So, if our life cycle is 14 years for that light duty fleet, we would annually save $500,000. And that savings is above the cost to replace vehicles more

regularly than we're currently replacing them, which is not regular. To give you a glimpse at the city of San Francisco's fleet, in case it makes any of you feel better or worse. This is our age distribution. So we have about 50% of our vehicles are within that 10-year range. That's a nice sweet spot. More than 50% are much older. So part of our conversation right now with higher level decision makers is about the impacts of this age. If we were to just show them this, that's kind of embarrassing as a fleet in the city, but it doesn't really say much. What you need to show them is that fuller picture of calculating out what you'll actually save. And the only way to do that is with FMIS.

The next step in using this data is helping to prioritize your budget. So great, we need to replace a lot of vehicles. Let's do it. Let's save that $500,000 a year and develop a plan. You can't just throw money out there and expect that the right vehicles are going to be selected for replacement. So you need to use all of the data you have in FMIS to determine which vehicles to replace and when. For that, everyone's going to have a different look at it. It. We all come from different backgrounds. Our fleets are all different. We have different expertise. In San Francisco, we look at it in four ways. We look at the age of the asset, we look at the mileage of the asset, we look at the usage of the asset, and then we look at the cost to maintain above the cost to purchase the asset. Each of those variables is weighted in a certain way that we feel is relevant and important. And with that, we develop prioritization that we hand on to our budget folk and let those people decide what to replace and when. So here's just an example of how we take lots of data by assets. I have this filtered somehow. Lots of data by our assets, and we produce a prioritization for our budget team. You can see our departments here, the number of vehicles that need to be replaced, and the cost estimate. The city can definitely not spend $130 million this year to replace vehicles. It also probably can't spend $41 million. But it gets us a lot closer to a number that we can start having negotiations with them on. So while your data is important for that prioritization from, you know, this is our first choice vehicle, it's also important for you as fleet managers as a negotiating point. So they're not going to give you as much as you need and you know you need. So it's helpful to start a little bit higher and hope that you go down from there, not too much. So this is another example of how FMIS has been really helpful in helping us pull up these big numbers. But when it gets to the more data-driven, nuanced looks, we might need to pull that data out of the FMIS and look at it in our own way that makes sense to us. Like for us, applying those four criteria to prioritization, maybe

one day FMIS will allow you to include those. But for now, it's a nice relationship between Excel or Power BI and the FMIS itself.

So next big spending category is fuel. Obviously, fuel is really expensive right now. We are, quite frankly, struggling to figure out how we're going to pay for it all next year. All of the estimates are saying fuel costs are going to stay up for two to three years. So we're trying to find ways to save here. This is our next big area of cost savings. FMIS, again, this is something that no person can collect on its own. It's way too much information. And so we have these amazing software tools that help us collate everything and bring it together so that we can. See patterns that help us make decisions. The lowest hanging fruit is idling. Most telematics, whatever telematics you have, will have some sort of idling report for you. It's a really critical one to look at because it's the easiest behavior change we have to point to. It's also the easiest savings you have. You can look at the idling rate and calculate exactly the cost of fuel on the day that that vehicle was idling and find how much money was wasted by someone not turning off their car when they ran into the office or maybe sitting outside their lunch spot for 30 minutes rather than turning the vehicle off and standing outside and in the fresh air. So, how FMIS helps you do this is. By pulling together all the data. But again, and this is going to be a beaten horse at the end of the day, but is you have to also pull out information that will skew your data. So it's not just, wow, all of our vehicles or these 100 vehicles are idling every day. You need to think about why those vehicles might be idling. We can't just let the numbers guide us. We need to think about the reason for those numbers. For example, in San Francisco, we have a lot of parking meter attendants. Their car or their go-for is their office. They have to have lunch in there. They have to take their 15-minute breaks vehicle. Sure, they could step outside, but it's not part of the agreement that we have with that group of employees. Similar is police vehicles or working trucks that need to be on site and on in order for other parts of the vehicle to function. So when you're pulling together your data, rather than overestimate the problem, it's really important to refine the data and the problem so that you get to what you actually. Are looking at. And so, just to give you an example of that from our data here, this is an idling data set that we pulled for the calendar year of 2025. And if we were to just look at the raw numbers, this is really embarrassing. It's $1.5 million. That's enormous. But then we also have to think about what we just mentioned: that there are. Vehicles that need to idle. So let's go ahead and pull out the interceptors because those are police vehicles.

Those vehicles are used as someone's office. So I'm going to go ahead and pull out all of our interceptors and take another look at the data there. And see that it brought us down to $1.27 million. So while sure those police officers may have been idling unnecessarily for a big part of it, we can't make that assumption and there's no data for us to actually make that assumption either or to know that. What we can do and what's better to do is not overstate the problem but be more realistic about the problem. And so, rather than saying to the mayor's office, we can save $1.5 million in idling next year, we can actually only save $1.27. And this is before I pull out all of our parking attendance and work trucks that need to be on as well. So, other easy ways beyond idling to reduce fuel spending, Which we all know, are harsh braking and accelerating, maintaining proper tire pressure, and driving at moderate speeds. Most telematics will also provide this information to you. We've seen issues with harsh braking or acceleration, some inaccuracy there, which makes it a little bit harder than idling to prove. Tire pressure, we've also seen some inaccuracy there. Where it'll say tire pressure is low and our technician goes out to look at the vehicle and it's accurate. And then the last of that is driving at moderate speeds. Speeding we've actually seen improve significantly in the data collection over the last year, but there's still some gaps to be had there. So these three are other ways we can reduce fuel and ways that might not be perfect information from FMIS. But is good enough that it helps us get to some behavioral change where we might start to see cost if we compare it cost changes if we compare it year over year one of the gaps here in my knowledge and I think we all have gaps but one that really stood out to me is I've been trying to calculate okay what if we maintained perfect tire pressure how much fuel could the city save But I don't know that answer, and it's not something that FMIS will tell me. So, another tool that we have, which is lots of opinions around it, but something that's been helpful to me is asking questions of Copilot or any other software that you might use to help us at least get a starting point. It might not be the perfect answer. But it can help us begin to understand what that data actually means and how it looks like, So we're seeing here that for most transportation energy agencies say that 0.2 to 0.6% better fuel economy for every one psi your tires were previously underinflated. That's pretty significant in today's world of at least in the Bay Area, $6 a gallon right now, that's pretty impressive. And so, when you multiply that across your entire fleet, you could produce real savings. Where the data becomes extra exciting for a nerd like me is that how much is the fuel savings relative to the maintenance cost that that increases of having us make sure that our tire pressures are always proper. Is that

something that our technicians are doing? Is that something that drivers do? Do they go to a gas station and get free gas or free air? Apologies. What's happening there? And so using our data to compare those savings and to help us make decisions. Because maybe it's not actually less expensive to have proper tire pressure. Oh, sorry, proper tire pressure day over day. It's better to have a little bit lower tire pressure and have your technicians or drivers back on the road. So, this again, big picture data, it allows us to compare many different things at many different times.

So, something else that's kind of fun about data is, and we said, I said at the start, what are you leaving on the table? Is that in looking at one thing, we might also be seeing another thing. And so, for example, by looking at fuel spending, which included speeding and harsh acceleration and braking, we're also looking at safety. And this is an area that is enormous and FMIS, and I think going to continue to become more and more important and looked at as time goes on. And as we get public complaints or public records requests, people are really concerned about safe driving. Which is important and very good, they're concerned. It is also a lot of data to collect and provide to others. I also want to add that this is an example of a great opportunity for the data not to be just in the sole hands of the fleet manager or whoever else on your team is doing it. It. For in San Francisco, we are often asked a lot to lead the safe driving reform. However, at the end of the day, our human resources teams are really the ones who have to either develop the trainings or provide corrective action or provide policy around either of those. And so rather than just kind of presenting data and saying, ah, this is a problem, sometimes what's most helpful is. Looping others into your data and sharing it with them directly so that they can own it and that they can start thinking about it. And rather than coming to them with lots of ideas and problems and solutions, instead you can come to them with a conversation. And you can say, look, you know, this John Anderson here, he's had two violations every day for the last 200 working days. He's clearly causing problems. What do we do about it? Or what do you do about it? Because I probably can't do anything about it in my capacity. So using it as a way to start a conversation and keep an open mind about one, data that might be relevant to others in our sets and in our FMIS, but aren't as relevant to us. They matter to us, but they're not something that we're going to be working on every day. So then, oopsies, sorry about that.

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So taking us to the next most important thing in San Francisco right now is efficiency. We are, again, like many, being asked to spend less and do more. And that is really, really hard. You can only ask employees to do so much before there's burnout. You can only, you know, run vehicles before they start to find their limit. So we need to be as efficient as we possibly can. And FMIS is, I think, one of the greatest tools for doing that. It's also really overwhelming. The cost is more of a numbers problem. Efficiency is more of a numbers and a people problem. So it brings in a lot of different skill sets that we need to communicate the data. So at the top of it is maintenance and asset health. Some of the FMIS dashboards make it really easy for us by showing different fault codes. So you could log into whatever FMIS portal you're using that day. And pull up the faul codes and help and have the system tell you what's the most important. I think this also kind of goes to show where we're seeing some delays with the benefit of the FMISs right now that will begin to improve. And so, just sharing with you our, this is Geotab. It's one of the, again, the many systems that we use, but wanting to show you progress that they've made, which is actually having a page on fault codes, but an area where we also see them and not just them, everyone improving, is helping fleet managers make decisions. So we can see the fault code and we can see the fault and which vehicle it applies to, but there's no severity set for it yet. And eventually they're going to get there. Other softwares might already have this, but they don't have it yet. So, what do you do in this situation where you can't search by the fault code? There's no filter for that, even when you look in your filters here. You're just given this big, long list that's really frustrating to work through. You pull a report and you kind of go back to your tried and true, and for that, I looked at the, I pulled the raw data and I just wanted to see if we had some of the most severe issues being engine overheating. So I filtered on the word engine really easy and figured out that we don't have any engine overheating issues. However, we do have a lot of engine oil level low. And this is where, again, that overwhelm can come in because you can say, Oh man, I was really just looking for what I had to do right now. Obviously, this is something we need to do, but I don't know if I have time to do it today. I don't know if my team has time to do it this week, but it needs to be done. So, by building out your own. Prioritization schedule of what has to happen first, second, third, fourth, what can't wait a day, what can wait a day. You can start integrating your assessment with the raw data. And for some of you, it might be we've got to get this vehicle in right now, call the driver of 431 and tell them, come on in. For some of

you, it might be different. So just remember that the data is. Flat, but what you do with it and what it means to you is not.

Another way to be more efficient with repair is with repair retirement of vehicles. This is, again, an area where your technicians know so much about these vehicles. They have the problems that keep coming up again and again and again. They also have the vehicles that are really easy and they might be 15 years old, but somehow that specific asset has been driven very well, or who knows what, but it's doing great. Rather than relying, though, on your technicians to make that assessment for thousands of assets for you, you can use maintenance and asset health data to do that. So, when you're looking at a vehicle that comes in, it's been in a collision and it needs $7,000 of body repair, it might be that that vehicle is 15 years old with 110,000 miles on it. And you might say, you know, let's retire it. It's too much. This is another one of those areas where we need to think about more data. It's not just the age, it's not just the mileage, it's not just what the cost to repair it is now, but what have we done to it recently? And if you use your FMIS, like for us, it would be Asset Works to look at what the maintenance history is of that vehicle, you might see that you just had a new transmission put in it last year. So, yeah, that vehicle is worth six thousand dollars of body repair to maintain. A truck for the next five, six, seven years rather than retiring it and having to pay for a new one now. So, here we see the repeated story of: don't just take whatever data is sitting in front of you, make sure you pull in other relevant data and begin merging it to create a full story.

Another consideration in the maintenance that's really important and really sensitive is how staff are working. Who is the fastest at certain things? Who is the slowest at other things? And in our fleets, because we have so many different makes and models and so many different drivers, it can often feel like we're comparing apples to oranges. But using FMIS to create buckets of vehicle type, make model. By department, by use, you're able to kind of start comparing like Macintosh to Gala or something. So it's not so wildly different. It's not exactly the same, and you'll never be able to or need to prove that to anyone. But it's close enough that you can start to say, you know, okay, why is Hank taking five hours on, you know, this brake pad change, whereas is taking two hours to do it. What's the difference here? Why is that occurring? And there are a lot of solutions there that we can apply, like training. Maybe this is a great opportunity to say, oh, wow, we have noticed a big issue within our technicians and their huge variability in being able to perform specific

tasks as opposed to others. Maybe Susan needs to start training Hank. And maybe Hank is excellent at something else. Let's go use our data to find that. And then Hank can train Susan as well. So it's an excellent way to develop training and professional development plans for your technicians, as well as hold them accountable. As amazing as all of our employees are, there are employees who are going to take a lot longer on jobs than is needed. And we need to make sure that they're held accountable so that the rest of the staff don't feel quite as you know, maybe taken advantage of or that things are unfair. So, using our FMIS data to look at work order history and develop baselines of what we expect work to the time we expect work to take, and then who is struggling where and what might be done to help them improve or to of make them, you know, hold them accountable.

The last area I wanted to touch on on efficiency is procurement and parts. We all really struggle with easy procurement. It's not something that has been seamless for anybody, especially with. post-COVID cost of parts inflations and supply chain issues, and then tariffs that we've been seeing. So, our parts costs are all over the place. Our parts needs are also all over the place as we have aging fleets, and parts go, you know, are completely out of stock, and we can't find them anywhere. What FAMUS can help us do is track those thousands of parts. Down to a windshield wiper and help us make sure that we have the right parts on the right contracts so that when we need to go make a purchase order, we can make that happen. So, by using different softwares here, you can compare your finance and contracting software to for fleet purposes to your work order software. Another really critical way to be efficient is to make sure that technicians aren't waiting for their parts for too long. So, what this, what FMIS allows us to do is to build stock reason, reasonable stock limits. So, if you are able to take your data to see how many windshield wipers did we use on average each week. For a street sweeper over the last two years, and then use that to set your stock rate at whatever it's kind of a nuanced art and science together, at whatever rate feels useful for you all. And then going from there, you can make sure that your FMIS is set to alert you when your stock falls below the limit that you've set, the minimum. And so this is a tool that will automatically alert our storekeepers that, hey, time to order these parts. Let's make it happen. It will also automatically alert technicians when a part is available. So, this is a way that we can also pull out the communication problem and have these tools communicate for us directly. And lastly, I'll say about the procurement and parts is that. As costs have increased due to inflation and supply chain,

it's really important for us to make sure that we're budgeting appropriately for those costs? There's not going to be savings here. We've just seen enormous spikes lately and they haven't begun to drop. So, what we can show the budget teams is that year over year, automobile and equipment parts. The inflation is much higher than that standard inflation set on other things. And so by pulling out all of your cost data for maybe your five most used parts over the last 10 years and showing that that inflation rate is higher, you can use that to advocate for your annual budget to make sure that you're getting a higher materials and supplies budget.

And that is it. I just one thank you, and some few reminders that are common in the data world is that don't just take what you first see. You need to think critically about the data. So sometimes those FMIS dashboards are amazing because they help us see things really quickly, but sometimes they can create problems because they don't actually link together all of the different data sources. That we need to use to see a picture in full. So, when you're looking at that, make sure you ask yourself: is anything missing from this picture? And then, how do I integrate it? What do I need to do to get there? But make sure you're not leaving things out. The other big thing is, you should be trying at most to solve problems. Data is fun, you can go in and play around, and it's cool to look at. But it's not just for data's sake, it's actually there to help us do something. And so figure out what that problem is you're trying to solve and then look at what data might help you understand the problem so that you can build a solution for it. And then lastly is communicating that. Everyone, data can be shared in a bunch of different ways. Everyone can interpret it differently. So it's up to you to make sure that you're communicating it in the way that you need to make sure you're getting the necessary resources or behavior change practices for your fleet. That's it from me. Thank you so much.

Our NorCal Clean Cities and our partnership with MEMA will continue. We have a workshop coming up on June the 2nd in Chico. If anybody's interested in that, you can go to our website and see the invitation. There's also going to be an invitation in the newsletter that comes out this Friday. And then we have. The rest of the seminars, the webinars, excuse me, that we have planned out in partnership with MEMA through the end of the year that are listed on the slide that's on the screen right now. So our partnership with MEMA has been very important to us, and we're very glad that we've been able to do that. So I don't see any more questions or hands up. So, what, somebody just said something. Oh,

somebody put the Chico event. Registration, somebody, Claire, who will put the Chico registration in the chat for anybody who may be interested in being up in that area. So that's it. Thank you all very much. We really appreciate your participation. This was a fantastic, absolutely fantastic presentation, and we really appreciate it.

1:27:31 - Camilla

Thank you so much. All. Have a great day. Thank you so much.