Speaker 1 - **00:12**

All right, we're good. All right, we're going to call to order the workshop meeting of February 10, 2025. If you would please call the roll.

Speaker 2 - **00:19**

Chair Ryan.

Speaker 1 - **00:20**

Present. Chair. Vice Chair Fir. Here. Member Shoeham.

Speaker 2 - **00:24**

Here.

Speaker 1 - **00:24**

Member Horlit. Here.

Speaker 3 - **00:25**

Remember Mateo Boeing. Member Dunn.

Speaker 4 - **00:28**

Here.

Speaker 2 - **00:28**

Member Rydell.

Speaker 1 - **00:30**

Here.

Speaker 5 - **00:30**

Remember me?

Speaker 1 - **00:31**

Here. Member Cagano. Member A.J. Ryan. Remember?

Speaker 4 - **00:36**

New.

Speaker 1 - **00:36**

Here.

Speaker 4 - **00:38**

See.

Speaker 2 - **00:39**

Member Israel.

Speaker 1 - **00:43**

All right. If you would please stand for the Pledge of Allegiance.

Speaker 2 - **00:51**

To the plan of the United States.

Speaker 1 - **01:04**

All right. We're here this morning for the first in a series of workshops. I'm going to offer some comments and then

hand it over to my colleague, the vice Chair, to put in some context. The upcoming workshops will be scheduled and are scheduled on March 14 and April 10. And I think we can and should schedule additional workshops until this process is finalized. We'll work on that together in this Executive Committee. The workshop is an opportunity for the executive Committee to take information and to discuss issues in a forum that is open and conversational. There will be no votes today, and there won't really be an opportunity for us to come to final conclusions because it wouldn't be appropriate in a workshop. But there may be consensus that comes from this. Because we're not voting on any matters today, we won't have public comment.

Speaker 1 - **01:53**

But as we move forward, it is clear that we need to set aside workshop time both for public comment in general and also for the industry. Who needs to have input on these issues, from our haulers to Those who operate MRFs, the disposal companies who are our partners and entrepreneurs, as well as the environmental community. Input from these interested stakeholders on this developing master plan is crucial and critical to our next step. I want you to know from the Executive Committee that the fact that we do not have public comment today does not mean that we're not prepared to do that. And in the upcoming workshop, we will set a side time. In the meantime, those who have comments are encouraged to submit written comments which will be circulated to the Executive Committee and can be considered in advance.

Speaker 1 - **02:41**

Today's an opportunity for us, and it's historic in many ways. It's an opportunity for us to see the context of what's available and areas of decisions that we need to begin making. You know, from the outset, we have a basic principle that was focused on, or maybe our guiding light was to control our own destiny. And I think it's important to refine and to understand what that means. It doesn't mean necessarily that we as municipal and county government own all of the assets horizontally and vertically in Fact that makes no sense and it's unlikely. Instead, we have to measure and focus on controlling our destiny in a way that is centered around, I think, these three principles. One, controlling and gathering our flow of solid waste, commodities and residual and working together as municipalities in the county.

Speaker 1 - **03:32**

Two, utilizing existing public assets and consider those which can be added to the inventory. And three, and most important, I think for Broward county is building partnerships with the existing solid waste entities, managing the aspects of our current waste stream and those that are planning to manage it in the future while hedging as best we can against the financial uncertainty of market vagaries. As long as we're aimed on those three principles, the missions and goals of this SWA can be achieved and we will open up later for discussion. And I think I would posit this view of what we should try to accomplish in this workshop and these series of workshops. We can and should begin funneling down the decision making process.

Speaker 1 - **04:20**

As we said from the outset, when we began the process of bringing on a consultant, we all agreed that the one goal was to eliminate that which is not possible, that which is not fiscally, environmentally, socially or politically palatable. We should also begin funneling decisions on that which can begin now and utilizing the current assets and the partnerships that exist to initiate education and strategies and policy that lay the groundwork for future decisions. Because there are things that we can do now and should initiate now, sooner than later or in the near term. In a moment, I'll talk to you about how we'll proceed through this workshop, but I'd like to turn it over to my colleague, the Vice Chair.

Speaker 2 - **05:01**

Thank you. And I concur with a lot of what you're saying there, particularly with regard to the first assumption that I think we're going to be seeing today that talks about determining our own destiny. But before I go into that, I do want to say one thing in particular. I think we have a lot of work in front of us. It's a ton of work, a lot of workshops, and I appreciate the speed with which we're going. I think it's a distraction and I think it's counterproductive to be interfering with the County Commission at this time because I think there is so much going on and there's no accountability. I don't think the SWA right now has standing. And when we, when the swa puts forward what they want, demand, et cetera, and the count and it's.

Speaker 2 - **05:59**

And the SWA right now does not have a staff that's going to be informing before you take a vote all of the things that would be going on in a vote at the county Commission. There's no accountability here at this point. And when I look at what's happened, like, imagine demanding something. Imagine. Imagine demanding a delay and then an incinerator catches fire, or you have a hurricane like in Hillsborough and you lose five months of. Five years of capacity. This authority could just go like, that's not what. Not us. We didn't do calls on the county Commission. And they're the ones who are accountable on this. And I think for us to be getting in the middle, we will have our turn. Our turn will come, but it's not yet. And what was. What was.

Speaker 2 - **06:55**

What came from this group last time, what was being demanded had already been done. There was the request to make sure that we had the 24 acres set aside that had already been negotiated or discussed. So it became a. From the county commission sense, it became a sense that the county commission wasn't being trusted. That's not where we want to be. We have gone. We have been working 10 years to. To make sure that there's a trust. Don't. I don't think we should be doing something that says we don't trust you. I don't think that's good. I don't think it's helpful. I don't think it's productive. And I think what the county commission has been trying to do, they've been here at every meeting for every time. They have listened. Our county administrator has been listening, our staff has been listening.

Speaker 2 - **07:54**

And you're seeing in the terms of where we're going with things, all of the things that have been discussed, from making sure that we have composting to make sure recycling, to starting recycling cells, all those things, they're all included. It's all part of it. But right now, it is not the time to be interfering individually. Cities, that's fine. Understood that there's going to be that. But as a authority, that is going to be at some point taking over this. Hopefully it's not there yet. And it's got a long ways to go. It's got a lot of hurdles. Until that happens, I don't think we should be. We should be doing that. NIMBYism is effective. I know that if you're. If you're in the middle of an election, works great. Doesn't work great here because that does not get us.

Speaker 2 - **08:46**

It does not get us anywhere. And I think if it gets. If this SWB gets captured by NIMBYism, then we're going to. We're going to have a hard time getting out of it. We're bigger than that and we should act like we're bigger than that. So that's just my thoughts.

Speaker 1 - **09:06**

All right, thank you for the opening comments. Now we'll move to the agenda item regarding existing landfill WT and other infrastructure and capacity. We'll begin with the Monarch Hill Landfill update. This is added to the workshop because of the timing that has been set for the Executive Committee to weigh on these issues. As we begin this, let me give some background. On January 23, 2025, as directed by this body, I sent correspondence to the county requesting a pause on the pending application to horizontally and vertically expand Monarch Hill or to bifurcate that decision process. We did not weigh in on the legalities or the issues surrounding compliance with various policies, but simply wanted a pause to examine particularly the 24 acres that are presently zoned for the purposes of electrical generation.

Speaker 1 - **09:50**

The County Commission graciously took our comments and I'm grateful for the County Commission taking the time to listen to us and did so on January 28, 2025. They declined the requested pause for six to nine months and gave us 30 days. And so our time is to either weigh in or decline. Has been invited by the Vice Chair. At that meeting, we learned for the first time, and we have been here many times talking about Monarch Hill, but we learned for the first time that there was some clause or provision that would allow the SWA or the county to buy the 24 acres within 18 months. Terms of that were not understood or had not been presented to us and in fact hadn't even been discussed in any meaningful way at the County Commission meeting.

Speaker 1 - **10:29**

I'm grateful to the county for providing the agreement that highlights that while it can be repurchased, it can only be repurchased for any lawful purpose except residential sites, resource recovery facility, construction and demolition, recycling facility, or a transfer station, and limits significantly what it can be used for if it was to be repurchased. That'll be a matter of discussion amongst the Executive Committee at some point either to purchase or to weigh in on what can be done on that particular part of the agreement. Today we will not make decisions on it. Instead, what I've asked for is for the county to have the opportunity to present this agreement so that it's understood what is being offered and the work that has gone in with our partner from Waste Management and the County Commission.

Speaker 1 - **11:10**

I do not see this as a trusion onto the County Commission, but rather central to what the SWA is focused on doing. And that is working together and a commitment to work together to see all existing and potential sites that can be utilized in the future. We will discuss it in greater detail at the February 21st meeting. But I want to begin by giving the opportunity for the county to make a presentation on the agreement. I thank Mr. Haber and working with Mr. Cole to be able to outline at least so that this committee understands what and the public understands the work that has gone in to develop this agreement. I also offered Waste Management the opportunity, spoke to them individually to be able to make a presentation today on this agreement and the work that's gone into it.

Speaker 1 - **11:54**

They've declined to do so in light of the last meeting. I was told they declined to be. To actually make a comment. But they are here today and I welcome their comments and their partnership. And so after the county's done, if Waste Management wishes to clarify or add to or put in context anything in this agreement, I welcome that and I know this committee will as well. We understand the need for a partnership and need to work together. This is not a political issue. This is an issue that's dealing with solid waste assets and the opportunity to fully understand, as we begin to define our own future, that which needs to be done, what can be done and what should be done with that. I'll offer it to Mr. Haber.

Speaker 1 - **12:32**

I think is here to make a presentation or to at least outline the agreement.

Speaker 2 - **12:37**

Chair?

Speaker 1 - **12:38**

Yes, sir.

Speaker 2 - **12:40**

I'm gonna, I'm gonna respectfully disagree on this because I do think we have a hundred and something pages in front of us of looking over at the needs assessment to go into the terms of Monarch Hill and where we're heading with that. What are you wanting out of that? Right now we're trying to figure out what, you know, we're trying to look at all of the, you know, different possibilities of where we're going to be looking in terms of thermal conversion, all those different things. What, what are you wanting to come out of discussion? I mean, I think it's. Hopefully everybody understand, has had a chance to see the terms on that. I think most people have and I'm not sure what you're wanting out of that. The. For us to put ourselves or place ourselves into the middle of those discussions is that.

Speaker 2 - **13:37**

Is. Is it makes it very difficult. Those discussions between County Waste Management are on all of our behalfs and has been working and has been going on for months and months and months. Are you hoping that they change the terms or that something is going to happen from that? But I don't know. But when I saw what were doing, I thought were going to be discussing task four, and I'm looking forward to that because there's a lot of work here to do. We could be sitting here for hours and hours talking about the terms of Monarch Hill. That's not what this was about. That's just me.

Speaker 1 - **14:21**

Thank you for that clarification, Vice Chair. It's not about what I view or what should be done. I think this was an opportunity simply to educate, not to vote on or to direct or to even suggest that things should change with respect to the agreement. Part of the reason this is on the workshop is because this executive committee was only given 30 days. We did not get the agreement ahead of time. We requested to have the opportunity to participate in those discussions, to have our executive director present for the discussions and to understand it. As I stood there at the commission meeting was the first time that I learned that we would have the opportunity to buy back the property that would constitute the 24 acres. That's central to what we ultimately have to decide with respect to the master plan.

Speaker 1 - **15:00**

Is this an existing asset or will we have that opportunity going forward? Doesn't mean there'll be a decision today, but it is an existing asset that is going to be taken off the table with limitations on the buyback. That would not allow us to conduct construction and demolition, recycling, other types of recycling or transportation. That. That may very well be the right decision. And I'm not here to weigh in one way or the other. However, I think it was important for the

executive committee to at least know what the terms of the agreement were. I've given the opportunity to the county. If you decline that or the county declines to do that's fine. It's really up to the will of the Executive committee as to which how they wish to proceed.

Speaker 1 - **15:36**

I would note that landfilling the use of that property and the use of the 24 acres is central to what the SWA needs to build going forward in terms of partnerships or availability of assets. Member Rydell. I think it's really important that other members of the Executive Committee understand what happened two weeks ago. I respect the mayor. I respect his comments. It's not entirely what was asked at the County Commission meeting. And I understand the mayor wants us. The vice chair wants us not to be involved in this. I just want to clarify for all the members here what happened at that County Commission, because I think only two of us were there. Mayor Ryan was there, and obviously Mayor Furze convening the meeting. Big Mayor Little. Mayor. What? What? I know you. I know everyone watched.

Speaker 1 - **16:22**

But it's very imperative that the County Commission, not the mayor. The County Commission wants this board to weigh in. There's nine of them. They want us to weigh in. I'm not going to go into a political diatribe of what that is, but it was crystal clear from Commissioner Geller, Commissioner Bogan, Commissioner Rich, Commissioner Mackenzie, they all. Commissioner Yudin, they all wanted to know what this board was doing. So I disagree with Mayor first comments, but they want us to chime in, and that's why it's on the agenda. I'm excited about task four. I'm excited about the work at hand. I'm excited to be involved. But at the end of the day, I think our chair's comments are astute and correct, that this is an asset and an opportunity, that we've never been involved in that. That process.

Speaker 1 - **17:11**

And that is what is the most compelling thing to me. So, Mayor Ryan, I appreciate the comments, and I think you're absolutely correct that I'm not obviously, trying to have jaded comments here this morning. But the County Commission wants this executive committee to chime in formally. That's why were given 30 days, not to sit on our hands and do nothing. Thank you. So I will interpret the vice chair's motion, though, out of respect and comedy. That is a motion to table this until the 21st meeting. Any presentation on the agenda item, which is the presentation of the agreement. That is certainly a decision that this executive committee can make and we can move right to task for which will include comments, undoubtedly, and questions about Monarch Hill, its availability, use of the 24 acres. What. What are potential uses under this agreement?

Speaker 1 - **18:00**

That has not been discussed. Many of you, I hope, have seen it, but it was only provided to us after the meeting. But it's really up to the will of this executive committee. If you wish to defer this until the 21st, I'm happy to do that. That there is a motion. I will interpret it in fairness as to table this. Is there a second? All right, there's a motion. A second. Any discussion? Yes, go ahead.

Speaker 2 - **18:20**

To Commissioner Rydell's point, I don't think the commission was asking for the executive committee to weigh in. I think what they were wanting to see was what the consultants report on the master plan. They did want to see that, but they weren't asking for the executive committee to weigh in one way or the other. Big difference.

Speaker 1 - **18:44**

Right. And going forward, if we. Yes. One moment. If we. Either way, whatever happens, if this agreement passes and it's entered by the county, it'll be an important part of the master plan to point out that we have 18 months to potentially purchase a piece of property that can be utilized for certain uses, but not for other uses. And that's been taken off the table. But that's an important part of the discussion in developing the master plan. Remember, breakfast?

Speaker 3 - **19:08**

Thank you.

Speaker 1 - **19:09**

I believe that the county commission did ask for this group to weigh in. And. And no disrespect, but I believe it was your motion that said, we don't need the SWA to weigh in. Let's have the consultants go there directly. That was very disappointing to me. Incredibly disappointing to me. So I just need to correct the record that they did ask for us, and it was your recommendation that the SWA not weigh in and that the consultants be there directly. Okay. Is there any further discussion on that? Go ahead and call the question. On the motion to take. No.

Speaker 3 - **19:47**

Vice chair Fur?

Speaker 2 - **19:48**

Yes.

Speaker 4 - **19:49**

Member Shoeham?

Speaker 1 - **19:50**

Member Horlit.

Speaker 3 - **19:52**

Member Mateo Bowen.

Speaker 4 - **19:53**

Yes. Member Dunn.

Speaker 3 - **19:55**

Remember Rydell?

Speaker 1 - **19:56**

No. Member Meade.

Speaker 3 - **19:58**

Member Cagano.

Speaker 2 - **20:00**

Member A.J.

Speaker 1 - **20:01**

Ryan. Remember Newton?

Speaker 3 - **20:03**

Yes.

Speaker 2 - **20:05**

Member Israel.

Speaker 1 - **20:06**

Member Brighter. All right, the item passes. This will be tabled to the 21st. We'll have a presentation at that time. I appreciate Mr. Haber being here to be prepared to do it. The second issue is the win waste wte. The agreement. There a status of that it's not contained in. Just like the Monarch Hill agreement is not contained in the task for white paper. There is not much discussion on the winways wte. I requested that there be at least some discussion and outline as to what the status of that is, because I know we've heard varying summaries of what may exist there. That is what is? The ownership of the property. How long is the lease? What are the current technical. I assume that the vice chair has no problems with us proceeding forward with the wind waste WT outline discussion. Okay.

Speaker 1 - **20:49**

Is there someone here from the county that can outline that for us?

Speaker 2 - **20:55**

I think. I think our assistant county administrator can help on that.

Speaker 1 - **20:58**

Perfect. Thank you, Kevin.

Speaker 2 - **21:04**

And. Or Matt? Either one. Yeah. Tag. Tag team.

Speaker 1 - **21:18**

Morning. Good morning.

Speaker 3 - **21:19**

Kevin Keller, Assistant County Administrator, Broward county, with esteemed council over here, Matt Haber. So, what'd you want to know?

Speaker 1 - **21:29**

Sorry? What do you want to know? Well, I think I just outlined the questions. We don't know anything about the property, who owns it, what is the lease terms, what happens? Is there a first right refusal? I'm not. I don't. I'm not being coy about it. I thought we had this discussion beforehand as to what we wanted to talk about. The waste energy. Yeah. On the wind. Waste property. Yes. Thank you. Good morning. Matt Haber, Senior citizen, County Attorney. So we have a series of three documents that comprise the site lease with Wheelabrader South Broward. Just cutting to the chase, Broward county owns the land. In terms of the facilities, those are owned by willowbrighter South Broward. The Ash Monofil, however, is also owned by Broward County.

Speaker 1 - **22:16**

The closure costs of that, depending on when the ash was deposited, are split between the county and willowbrighter South Broward. The purchase option that the county had on the WTE lapsed. It was a limited time period, and it was only if there was a change in law and in this timeframe that the deadlines were passed, and there hasn't been a change in law that would render the operation of the WTE uneconomical. So at this point, if the site lease runs out, which right now, the Expiration date is 2038, Wheelabrader has about 6 months to demolish and remove the facilities. That's the way it's set up. And the county would then be able to take possession of the property again. That said, there's no reason why the parties couldn't agree mutually to some other set of circumstances to

either extend the site lease or.

Speaker 1 - **23:14**

Or to modify what happens upon the expiration of it. All right, thank you. That's very helpful. I think that's the first time we've had a distinct summary. I appreciate that, Mr. Haber. Any questions from the executive committee member, Horland?

Speaker 4 - **23:25**

Thank you, Mr.

Speaker 1 - **23:26**

Chair.

Speaker 4 - **23:26**

Mr. Haber, I just want to be very clear because this is one of my questions about Winways. So what you're telling me is the deadline is passed for the opportunity for the county to purchase that facility.

Speaker 1 - **23:37**

To be clear, it was a very limited right to begin with. So, yes, the answer to your question is yes. However, it had to be triggered by a change in law that would have rendered a private company's operation of that facility uneconomical. And again, it had to happen. I forget the exact date. I can look it up on my computer, but that deadline has passed. Okay.

Speaker 4 - **24:00**

Thank you, Mr. Haber. Thank you, Mr.

Speaker 1 - **24:02**

Chair. Thank you. What was the thinking, if you know, as to why to allow that to pass. Was there any discussion about take me back? You said it's a very limited right. What do you mean by that? Meaning it had to be triggered by two. It had to be triggered by two conditions. Right. So first there had to be a change in law such that it would be no longer economical to operate that plant. I think that can mean a number of things. And then we liberator would have to give notice that it considered something to be uneconomical. It's not subjective, right. That there's a verifiable way of determining that. But the other part of it was it had to happen before. And I can double check this, but my memory is that it had to happen prior to the current renewal term.

Speaker 1 - **24:55**

And so we're in a five year renewal term that began in 2023, it's going to close out in 2028. And so because there has been no such change in law prior to then, there was nothing that would have allowed wheelabrator to trigger that right. And therefore we didn't have that right of first refusal to purchase it. Okay, I only raise it because we had been or was said that there had been some letter directed that was triggering the right. That is different. So that's not a right of first refusal, that's a right to negotiate the purchase. So the idea, and so the unfortunate thing is because this has been a long course of dealing that goes back to the 90s or prior to the construction of the WTE, there are a lot of documents that you have to suss through.

Speaker 1 - **25:45**

And that's part of why I'm here, because I've spent a lot of time reading them and it's to make it easier on anyone else. And so in 2015, Drew Myers, who is now our county attorney, was part of a team that negotiated a large set of amendments to simplify all these documents. And so we refer to this as the global amendment in 2015. And one of the concerns was that we liberator South Broward, which already has gone through a few entity names by now, has had, you know, at least two different parents might get sold off or it might seek to sell off the waste energy asset and that we would not have notice of that. And that was a large concern because this is one of our primary disposal facilities.

Speaker 1 - **26:42**

So what he was able to negotiate was that if either a stock sale of the subsidiary was to occur, in essence a sell off of it, or the physical facility was going to be sold off, that we needed to have. I forget the exact time Frame. But a fairly long period where were the exclusive entity, we, the county, with which Wheeler Brighter South Broward could negotiate that sale. Now, obviously, governments are not in the business of buying private stock, so really it would be for the facility itself. But we did get notice that Wheeler Brighter South Broward, the entity, is for sale. What that means is we did go through a long notice period. Kevin can speak to the particulars of that if you have questions. But that notice period is over. The entity is still for sale.

Speaker 1 - **27:45**

But my understanding, at least, of the way that this would shake out legally is that if a new parent company buys the subsidiary, again, that's Wheeler Brighter South Broward, all of our contracts are still in force. So whoever buys it, if they want to cease performing, that is a breach of contract. And not only do we have those, we have several contractual rights with that subsidiary. They also require parental guarantees of performance. And so right now we have a guarantee of performance from the current parental company. That's Win Waste Innovations. If someone buys the subsidiary from Win Waste Innovations, they have to provide us their own parental guarantee, and they cannot consummate that sale until they provide us the parental guarantee.

Speaker 1 - **28:36**

So it's, in essence, it should not change anything because they are taking ownership of the subsidiary subject to its contractual obligations to us. Right. Those contractual obligations run through 2038. Currently, the renewal terms are exercised in five year increments. As you are well aware, Broward county does not have flow control over all of the tonnage in the within. Within our region. That's usually a municipal thing. And so what we try to do is in five year increments, we come to the cities and say, who wants to, through our disposal agreement with Wheelabrator, receive disposal services. And so then the cities want an interlocal agreement with us. We have the agreement with Wheelabrator for disposal, and that's how those get triggered. But the county doesn't have the ability to promise the necessary flow of tonnage to Wheelabrader without the city's consent.

Speaker 1 - **29:40**

And so right now we only have the City's consent through 2028. So that's, you know, there's nothing that would stop us from 2028 through 2033. Unless the cities don't want to do it. Right, but that's, you know, that's in this wheelhouse right here. Right. So just to clarify then, the guarantees of operation back up, has it been sold? Has there been a stock transfer? I am not aware of any. Okay. My understanding is it's still pending. Okay, but you have to be notified if such was to occur. You've been notified that they're thinking about it. The notice period expired. The opportunity that the county decided to buy the facility has expired, at least at this point. They have to seek our consent. So it can't be unreasonably withhold, which in essence, it is a notice. Right, but so the next renewal term is when?

Speaker 1 - **30:34**

Right. July 2028. This term will end. Okay. The guarantees to operation do not extend beyond 2028. Correct. Okay. Well, they could if enough cities sign up with the county and the county triggers a renewal notice. Of course, I understand that. But. But in terms of just so everybody understands what those. What it takes to do that. Right. That's what. It's in our wheelhouse right now. Right. Okay. Any questions on that? I think that's very helpful for us to understand. I think it was important, as we do the master planning, to understand what those potential assets are. So I appreciate that. Any further questions? Vice Chair, I think.

Speaker 2 - **31:10**

No, I understand.

Speaker 1 - **31:12**

Okay, thank you, sir. All right, Any other items on infrastructure that the committee wants to discuss before we get to task for master planning? All right, let's move forward. The consultant team is here to begin their outline. I'll turn it over to you with any introductory comments and get us going.

Speaker 3 - **31:36**

Good morning. Morning, Chair, Vice Chair, members of the executive committee, executive director, council, members of the public. I am Daniel Deitch, the project manager that's been before you many times. I would like to introduce my colleagues, many of which many of whom you have not met before, but have been working diligently, not just on this task for white paper, but many of the assignments for us. To my right is J.D. Lindeberg. To his right is Travis Barnes. And to his right is Helen Lee. And I would like to invite them just to introduce themselves to you so that you know who's sitting around the table and you'll. Who you'll be engaging with today.

Speaker 5 - **32:19**

Thanks, Daniel.

Speaker 3 - **32:21**

J.D.

Speaker 5 - **32:21**

Lindenberg. Greetings, executive committee members of the public.

Speaker 2 - **32:26**

J.D.

Speaker 5 - **32:27**

Lindenberg. I'm happen to be IRS's president. I'm here, though, specifically.

Speaker 4 - **32:36**

Not.

Speaker 5 - **32:37**

Not hearing me.

Speaker 1 - **32:42**

Well here.

Speaker 5 - **32:47**

No worries, no worries. But I'm here sort of from a technical perspective because I'm one of the people that's been working for many years, approximately 40, on the innovative sorting technologies. So I'm here as a deep technical expert from both an engineering and economic perspective. Travis Barnes, from our team.

Speaker 6 - **33:12**

Hey, good morning, everyone. So my name is Travis Barnes, recently joined rrs, but I've been working for local governments prior to that since 2007, specifically focused on waste related issues since about 2012. Most recently I worked over in Hillsborough county right across the state assistant director over their sustainability disposal operations. So over top of the landfill, waste energy, all recycling, all education outreach is kind of in my wheelhouse with that. And obviously Hillsboro faces many of the same challenges that you all face here today.

Speaker 4 - **33:44**

Good morning. My name is Helen Lee. I am a senior consultant with rs. Really excited to be here today. Prior to

working for rs, I have implemented and managed and oversaw collections facilities for waste diversion policies and programs. And so really excited to kind of have this conversation with you all about ways we can reduce and divert materials from Broward.

Speaker 3 - **34:10**

Okay, thank you. So what we're going to talk about today, now that we've gone through the introductions, we'll get into the project timeline which will also be presented to you at your in advance of your executive committee meeting with an updated project management plan. We're going to review the guiding principles which really help us define the options that are being presented to you in terms of how to move them forward. Are they consistent with the guiding principles? We'll give a quick overview of the approaches and technologies that we've considered that have been informed by some of the other white papers that have been presented to you and presented to the public. At our last executive committee meeting, we had an agenda item to review thermal conversion technologies. We've incorporated that into the presentation today.

Speaker 3 - **34:53**

I would like to move through that quickly because you have all seen, and I think we can all agree that the substance of this workshop really is to talk about the task for white paper and the elements within that. And then we're going to wrap up and sort of decide what comes next. In part informed by the Chair's comments at the beginning of this workshop, I want to also set the context for the substance of this workshop. We're here to discuss the task for white paper, the needs assessment that has been shared with you. And I do want to thank all of you that have provided us with feedback timely because we've had a chance to digest that information for the benefit of you and the public. This feedback helps us as we move from the draft into a final document.

Speaker 3 - **35:42**

And I will also share that this information serves as the context for the ultimate master plan. So there is. We're seeking input as we go along, but it's through the workshops and your direction at your regular meetings that we actually carry that feedback forward. It's also important that we all understand, because I think we feel a sense of urgency and we feel your sense of urgency to move this project along. But this white paper, the intention was to address the what, right? So the task, two white paper sort of set the stage. We've had other documents come before you that have other elements. They are all informing the development of the master plan. There will be a time to address the how with your input and the when.

Speaker 3 - **36:35**

We're trying to be careful and not getting ahead of ourselves, so I just ask that you keep that in mind. We will receive your feedback as it is provided. But our intention in providing this white paper and facilitating this workshop really is to focus on the what right. Solid waste is generated every day in Broward county, and we know that there are opportunities to manage it differently and better. And that's what the content of the task for white paper is. Our contract asked us to develop a series of scenarios that will help get us to your collective goals, primarily the 75% recycling goal. And we looked at a number of elements and we'll get into that in a few moments. Next slide, please. So we do update the schedule on a monthly basis.

Speaker 3 - **37:28**

You will remember, or if you remember the last time that were before you, we had presented to you what we believed was a reasonable end date of April. Excuse me, of August 3rd, based on. I don't know how well anybody can see this, but based on our look at the schedule last week, we think that we can do better than that schedule. Having said that, what we all heard at the beginning of this workshop is that we're going to have more workshops. But we. And I think that's a valuable activity to engage in terms of building consensus, learning together, hearing from the public, hearing from the industry that is integral into ultimately implementing a better solid waste management system. So this again is the high level schedule.

Speaker 3 - **38:18**

A detailed schedule will be provided in the project management plan, which will be updated and presented to you in advance of your next executive committee meeting. Next slide, please. Is it working?

Speaker 4 - **38:34**

Awesome.

Speaker 3 - **38:35**

Okay, thank you. Okay, so these are not new to you. And Chair, I appreciate you setting the context. I'm going to try to govern myself and not say this too often, but you're exactly right. These were the same questions that were before the Resource Recovery Board of old, right? How do we control the waste flow? How do we utilize the public assets? And how do we build partnerships that is controlling your solid waste management destiny? Or stated differently, and as I shared with the chair prior to this, the proper planning and public policy is necessary to steer away from a crisis. And reference was made to that by some comments earlier. And that's what we're really looking at in terms of controlling your solid waste management destiny. There are lots of ways to get there.

Speaker 2 - **39:25**

I think one of the, on the very first guiding principle, I think we need to kind of refine that a little bit because I think part of the task, part of the white paper acted as or seemed to imply that we had to own all of those. And I don't, and I don't think that's possible in some of them. I mean, I mean, and in particular, we just heard from, with our waste energy plant, we're not going to be owning that and have no possibility of owning that until 2038. And you know, even if we solicit, you know, put in offers and whatever, we might be able to get it that way. But for like a landfill, as was mentioned in there hadn't been a publicly owned landfill bought in what, 25, 30 years.

Speaker 2 - **40:08**

So those kind of things, some we're going to have to be looking at that as partnerships as well. So. And I think to your point, you know, maintaining if we could get flow control, that's a big part of it, but owning each asset, I don't know if we have to be thinking that way.

Speaker 1 - **40:24**

Yeah.

Speaker 3 - **40:25**

So we do have a slide on that coming up generally. But my view, our view is you're absolutely correct. And that's why I wanted to set the context that we're talking about. The what you will need in order to achieve your ultimate goals. You will need infrastructure, how you actually develop that, really, it's public policy. The purpose of this white paper

was to look at what do you need to achieve a much higher recycling rate. Building upon the best practices in terms of public education and outreach. I'm very sensitive to the comment that was made earlier in this meeting about how do you reduce the amount of waste that's generated in the first place.

Speaker 3 - **41:11**

That is part of ultimately the implementation of the education and outreach program that will be informed by the best practices in a white paper that was previously submitted to you. Long winded response. The short answer is yes.

Speaker 1 - **41:25**

Yeah. As it was indicated at the outset. Right. The three principles are flow control, which we've heard already, again to the existing public assets that are there and available. For instance, Alpha 250 still hasn't been put in the mix and those which could be purchased and then the partnerships that can be structured while protecting against the market vagaries as we get there. I think there's an interesting point that in task two paper you spend in the appendix, you have a very detailed outline of the sites that could be available. And so as we. I would invite the executive committee, as we either get through the workshop or after this workshop, make sure you synchronize that appendix with what is being discussed here, because I think that is critical to that infrastructure discussion.

Speaker 3 - **42:11**

Yeah. And to that point, I know that a white paper, task 10, was shared that is linked with another white paper that has not yet been shared with you, which is the where. So we've tried to economize and synchronize our activities, but in terms of presenting the white papers, we really want them to stand on their. On their own. But we appreciate the linkages that you're making, and that ultimately is what will be presented to you in the draft master plan.

Speaker 1 - **42:43**

You're right. Thank you.

Speaker 2 - **42:45**

Just if you're about to do the where, I would ask that you consider what we're trying to do with U.S. 27 and where north of here, we might be able to either buy a landfill or do it together regionally or something like that. But taking into consideration what F&Septech is looking at with regard to US27, because I know Miami Dade is dealing right now with trains for trash going up, and they're going to be looking at that as well. And there's regional opportunities there.

Speaker 1 - **43:18**

Okay.

Speaker 3 - **43:18**

And that's something that I do ask of the executive committee. You have insight and access to information that we might not.

Speaker 4 - **43:27**

Right.

Speaker 3 - **43:27**

If we don't know the right questions to ask, we may not know. So I appreciate that, and please don't be shy. And I should also say it's intentional that we're sitting here. We're all sitting at the same level. We do want this to be a conversation with you. So as you have done, I encourage you, when you have questions, please just ask and we will address it. Okay. To the point about governance structure. And really, we share this just as a reference point. You have different paths that you can go as an authority. And we're not asking for guidance at this point what kind of authority you want to be. But you basically have two options. You can be a strong authority where you own and operate the facilities, much like Palm beach county has.

Speaker 3 - **44:21**

I will share with you that is a very mature, solid waste authority. They did not get there in a year or two years or three years or 10 years. It takes a long time. And the other is you could be a contract administrator for the services, and it May be somewhere in between, but those are the two basic options that you have. In terms of flow control, which was raised a few times, there's essentially two flavors of that. There's economic and regulatory. Regulatory is much easier in terms of burden. And economic flow control is the other option. It's a little bit more challenging. But again, the options are available to you and we will be getting into that in either subsequent workshops or in other elements of the master plan.

Speaker 3 - **45:15**

This slide is simply to share with you that we have looked at best practices and all options across the country and really across the world. Again, as was stated by a member of the public earlier, waste reduction and prevention policies upfront, how do we reduce the amount of waste that's generated in the first place that ever hits the waste stream that needs to be managed to reduce the size of that bucket?

Speaker 1 - **45:44**

Right.

Speaker 3 - **45:44**

All of the waste that you need to manage. And I know at prior meetings and prior white papers, you have excruciating detail about how much waste and what are the components within the waste. And then really you've got four pathways to consider. One is the reuse policies and programs, the diversion programs, the conversion processes, which there are three main buckets of those. And then ultimately a landfill. I've said it before and I'm going to say it again, and I promise you I will say it again in the future. You will always need a landfill, whether that landfill is in Broward county or someplace else. As you've seen from the findings in the task force white paper, there is still going to be some material today and in the foreseeable future that does not have market value and is going to need to go somewhere.

Speaker 3 - **46:37**

And right now that approach is a landfill in terms of the three buckets of conversion processes. Try to keep up with this. You have biological. And so all of these are presented in the task for white paper. But biological is composting and mulching and anaerobic digestion recycling. There's single stream. There's a lot of discussion about going back to dual stream, but essentially the material will still be processed in a material recovery facility. C and D recycling is a big opportunity to better manage that waste stream or to maximize the beneficial use of that waste stream. We also looked at mixed waste processing, which is not common in Florida, but is quite common outside side of this region and their advantages and disadvantages that we'll get into later.

Speaker 3 - **47:33**

And lastly, thermal conversion, which is waste energy, which is either mass burned like the wind waste facility, or RDF, like one of the solid Waste authority at Palm beach county facilities, what was one of the Miami Dade county facilities are basically you're processing the material prior to combusting and extracting energy from it. Pyrolysis, which you will note, we are saying is not ready for prime time for dealing with mixed solid waste, the kind of garbage that we all place on the curb every day. But it does have application for what we in the industry refer to as select waste. So specific material that it is well suited for in gasification and plasma, arc to emerging technologies that work in other industries.

Speaker 3 - **48:19**

They're being adapted to solid waste industry, but again, they're not ready at scale at all currently commercial level to operate, to manage municipal solid waste. Okay, I do want to move through this quickly. We can move to the next slide. So we just want to define thermal conversion technologies. We want to talk about the maturity, the different types, the end uses and then what is the industry status? So just so we're speaking in the same terms, thermal conversion technology transform waste into a type of usable energy, gas, heat, steam or electricity, or eventually vehicle fuel. So many times, starting early in this project and at various touch points, we've talked about the maturity of the different technologies. And I'll just bottom line it for you.

Speaker 3 - **49:10**

In terms of managing solid waste as we set it out, you have two options at scale, commercially viable mass burn and refuse derived fuel. You will see that pyrolysis, gasification, plasma, arc, they're all on the curve, but they are not ready. We in good conscience can't recommend those approaches to manage your solid waste.

Speaker 2 - **49:37**

Where do you draw the line exactly on that? That you don't?

Speaker 3 - **49:40**

That you will not recommend at this time.

Speaker 2 - **49:43**

I mean. Okay, but on that curve.

Speaker 3 - **49:46**

Oh, all the way to the right. In, in the mature technology.

Speaker 2 - **49:51**

Everything in the blue.

Speaker 3 - **49:54**

Everything in the blue, all the way to the right.

Speaker 2 - **49:56**

Okay, just. That's what. Be clear. Thanks.

Speaker 1 - **50:01**

Microphone.

Speaker 4 - **50:05**

Thank you. And for those of us who are not environmentalists, could you just give me what the acronym means?

Speaker 3 - **50:11**

Ft. Oh, I'm sorry. And I will say in the final master plan, we will define all the acronyms. We do it within each document, but we're going to try to make it a little bit simpler. RDF is refuse derived fuel, meaning that the solid waste is processed before it is combusted so that it is more uniform in size and consistency. Municipal solid waste.

Speaker 2 - **50:38**

So you're okay with the green but not the blue?

Speaker 3 - **50:42**

I'm okay with the blue.

Speaker 2 - **50:45**

Only blue?

Speaker 1 - **50:46**

Yeah.

Speaker 3 - **50:46**

So the way that I think of it, and we think of it is it's important that we're always looking out over the horizon for where the technologies are and when they will be ready. And I think it's worth stating that even when the master plan is delivered to you, it is not. Flip the switch, go. Each element has lead time and we've been asked to think about the implementation and that's what gets into the when. How do you phase in quote unquote, low hanging fruit so that you can start gaining the benefit of the recommendations today?

Speaker 4 - **51:25**

Member Shuham so this is just such a 10,000 foot question, but you said a minute ago you will always need a landfill. And if you have a waste to energy facility like okay, does West Palm beach use landfills?

Speaker 3 - **51:42**

Yes.

Speaker 1 - **51:43**

What.

Speaker 4 - **51:44**

What is not going into their waste to energy plant and is being diverted to a landfill in West Palm Beach.

Speaker 3 - **51:53**

So they have two landfills. One is for class one waste, municipal solid waste, and one that is for Class 3 waste, which is more like Monarch. More like not exactly, but it's yard trash and bulk waste.

Speaker 4 - **52:08**

And so what's going to the waste to energy plant?

Speaker 3 - **52:15**

Yeah, the majority what's going there is municipal solid waste.

Speaker 4 - **52:19**

My question is in West Palm beach, just as an example, why are they using a landfill if they have a waste to energy facility?

Speaker 3 - **52:31**

I don't want to speak out of turn. I will answer, I will provide response to that so that I don't misrepresent how they're managing their waste. Some of their, the residual material is going to a landfill. So the cash. And there's also, and I don't know this for sure, which is why I want to confirm residue coming from the material recovery facility. But again, I want to get to a correct answer.

Speaker 5 - **52:58**

Okay, so as a, just a clarification, as a round number, you can expect about 20% of what goes into a mass burn facility to come out in the form of ash. So it's, you know, you still have to be taken.

Speaker 4 - **53:15**

Absolutely. My question, there's no waste going directly to landfills in West Palm beach, only the residual.

Speaker 3 - **53:21**

I don't know that for sure, which is why I want to confirm with the.

Speaker 4 - **53:25**

I'm not going to hold you to it. Okay, but that's the concept is mainly the residual from the waste to energy plant because I think so many, I mean me, I don't know about everybody else here, but we're confronted I think daily with a question, landfill versus waste to energy. And you've made one point clear. It's not either or. It's going to have to be both in some capacity or maybe not waste to energy, but always a landfill. So that was the point I wanted to clear up.

Speaker 6 - **53:59**

If I could add a little context from Hillsborough county where we rely on waste energy as well, there are certain things deemed to be non processable. So whether it's bulk batteries, bulky types of waste and other things as well that can't fit into the hoppers and you know, operational challenges, there's certain things that you're always going to have to still landfill if you can't, you know, get rid of that and some other type of recovery system.

Speaker 4 - **54:22**

Got it. Thanks so much.

Speaker 1 - **54:24**

So the question I think that needs to be clarified with Palm beach is what's going to the landfill? I understand you put the context of CND as we will see after 2027 with Monarch Hill under the agreement and then clarification that they're not putting organics into the landfill. Right. That they're either burning those compost and doing something else as part of that MSW stream. So you'll be able to get that clarification.

Speaker 3 - **54:49**

That's correct.

Speaker 6 - **54:50**

Okay.

Speaker 1 - **54:50**

Remember. Right. Just a quick presentation issue is what I think is effective is just also presenting how some of the other worldwide zero waste type countries will call them kind of ratio out the different facilities. It's been presented to me in other capacities. I think it's effective. It'll be effective for this board, especially when we're looking at some of these other countries around the world that are doing things very effectively and how they're. I don't, I don't want to say proportionally or in a ratio. I think it'll be effective for this board to see that how people that are well ahead of us are handling this and just how their percentages weather landfilling. Because if you look at some of these really modern societies, waste energy is a much bigger portion of that, with landfilling a little less.

Speaker 1 - **55:37**

So just for the purpose of future presentations, I think that could be effective for the board.

Speaker 3 - **55:42**

Appreciate the suggestion.

Speaker 1 - **55:43**

Member?

Speaker 3 - **55:44**

Yes.

Speaker 5 - **55:45**

Has anyone ever come up with or.

Speaker 3 - **55:48**

In the process of something they can make of or use with the ash? I mean it's continually going to be burned. You're going to have to do something with it besides put it in the ground. I'm just curious.

Speaker 6 - **56:01**

In Europe and other places they use the ash as an aggregate and have done so with great success. In the US not as much, but there are companies looking to do that. You've also got advanced metal recovery that's recovering more of the metals, including some of the non ferrous precious metals from the ash stream. And so there's different ways to approach managing the ash. But trying to find a beneficial use for it is a growing concept in the US and one that's been done elsewhere.

Speaker 3 - **56:34**

We lost power Clay. If we could move to the next slide, and I will say at the University of Florida, the Hinckley center, they're doing a lot of research. So Professor Tim Townsend has done an incredible amount of research on how to beneficially use ash. Part of the challenge is there's two different sources of the ash. Bottom ash and fly ash. Different consumpt constituents in Florida. Typically it is commingled when it is landfilled. But the research is going on of beneficial use opportunities. And again, that's why we look over the horizon to see where is the work being done and what may we consider in the future. Because and I should say a master plan is not a static document. I think we all get frustrated when we get to work on them and they sit on a shelf.

Speaker 3 - **57:25**

It really should be dynamic and serve as a reference point and should be updated regularly.

Speaker 1 - **57:33**

The name of the UF center, one more time Trio.

Speaker 3 - **57:38**

It's the Hinckley Center.

Speaker 1 - **57:40**

Okay, thank you.

Speaker 3 - **57:41**

At the University of Florida, if I.

Speaker 4 - **57:45**

Wanted just wanted to add one more thing that you know, we talk about. There's always a reality of residue and leftover materials that will have to go somewhere. But I don't want that to be discounting how much. We are looking to find ways to divert and reduce materials because that's why we're here today for task four. We are looking to divert and reduce. So just wanted to kind of clarify that.

Speaker 1 - **58:09**

Thank you, Daniel. Okay, thank you.

Speaker 3 - **58:15**

I often think of, you know, the tensions between, you know, what we're considering and what we're aspiring to. So I appreciate the clarification. Okay, so there's basically five categories within thermal conversion. I mentioned them earlier. Mass burn, refuge, dry fuel, gasification, pyrolysis, plasma, arc. And they all are a little bit different. Clay, if we can move to the next slide, please. The traditional mass burn. Well, this is a picture of, it's a dated picture, but it's a picture of what is the wind waste facility in Broward County. And essentially it's a volume reduction technology.

Speaker 3 - **58:53**

Municipal solid waste goes in, it is sent in, it is pushed into a hopper and then a crane sort of mixes it up a bit and then it drops it into a chute where the material is combusted and it's converted into carbon dioxide water and heat produces steam that turns a turbine generator and then, thank you, electricity is generated and again, we have controlled mass burn and refuse derived fuel. So I don't want to belabor the point, but this is an interesting graphic that basically says exactly what I just shared with you. But it identifies the essential elements of these kinds of facilities. Here are some just stats for you. Again, it is commercially viable. They are located around the world. There are advantages and disadvantages that have been spoken about quite a bit over the many months that we've been before you.

Speaker 3 - **59:55**

And rather than take time going through each of those now, I'm just simply going to advance the slide.

Speaker 2 - **01:00:01**

One quick question on this because I know PFAS is becoming a pretty big concern and I've heard that if it's hot enough, it'll actually break up the bonds of those chemicals.

Speaker 5 - **01:00:17**

So.

Speaker 2 - **01:00:18**

But, but it also has a, an effect of having fluorines escaping. So.

Speaker 5 - **01:00:23**

Yeah, so there's emerging research on the subject because you're not the only one asking those questions. It appears that one of the ways to handle it is that way. One of the reasons biochar got added is that's another approach potentially. And this is one of the things that Daniel referenced in terms of we have to watch the trajectory of these technologies and literally this particular thing. Every month we're learning new things, one of which is through this Hinckley Center. I sit on the board of eref, which is the national solid waste group that funds research every year. And I'd say a third of our proposals for research are PFAS mitigation related.

Speaker 2 - **01:01:14**

From the county's perspective, this is becoming a very big issue, not only in the wastewater, but in land application, but escaping from landfills. And if there's a way of handling it, this is one of the ways. I think we need to know that.

Speaker 5 - **01:01:32**

It is very much on our mind as we're looking forward and thinking about the what's as Daniel references.

Speaker 2 - **01:01:38**

Okay, thank you very much.

Speaker 4 - **01:01:42**

Quick question. So looking at the pros and cons here, in the cons, there's nothing about environmental concerns, just widespread popular opposition. Is that because in your determination there is no environmental concern?

Speaker 3 - **01:01:59**

No, these are broad statements and it is one of the lenses that we are looking through. This is simply for illustrative purposes and it is not meant to diminish what any concerns are right now to produce energy. Largely, it's a dirty business. Whether it's in the production of itself or managing whatever the products are. I'm sure we've all read about the challenges of recycling blades from wind turbines, recycling solar panels at end of life. We tried to look at it, you know, in the broad range. There is no perfect solution. And that comment is not meant to minimize any concerns related to. Because we know that there are challenges in dealing with the ash as well as dealing with air emissions.

Speaker 4 - **01:02:55**

Thank you.

Speaker 2 - **01:02:56**

One other, one last thing. I know the EPA standards that they were looking at were looked like they were about to go into effect for, you know, raising standards for waste energy plants. Any idea if that's about to get withdrawn? Does anybody know? Probably nobody knows on that one, but.

Speaker 6 - **01:03:18**

Referred to the Mac rules. So maximum attainable technology. My understanding is that's up in the air. I've not seen anything recently saying one way or the other, but they were looking at potentially raising the standards on the emissions. So that would lower the emissions threshold, would make these facilities more expensive to build a new one and potentially trigger retrofits at existing facilities. If it were.

Speaker 2 - **01:03:41**

I get. That's my point. Because even ours would have to require a retrofit. Even palm beaches in 2020, 15 would require a retrofit. Correct.

Speaker 6 - **01:03:51**

Potentially that's one of the newer facilities in the country. So that might be one of the reference facilities. But theoretically the existing facilities would have to retrofit to better control their emissions.

Speaker 2 - **01:04:01**

But I think that's part of their calculation for why they're going to build a new one as opposed to retrofitting the old one.

Speaker 3 - **01:04:08**

If I'm not mistaken, it's the RDF plant that has already gone through.

Speaker 2 - **01:04:14**

A.

Speaker 3 - **01:04:15**

Complete rebuild and they're looking at what is in, what works best for them.

Speaker 4 - **01:04:26**

Yes. A point of clarity on the mass burn combustion facility. First, are there any public health concerns? And then second, if you could clarify what types of material would not meet market requirements and what's the potential added.

Speaker 1 - **01:04:39**

Cost.

Speaker 4 - **01:04:46**

That'S noted on your slide and the cons. Yeah, yeah. I just want clarity on both.

Speaker 5 - **01:04:51**

So to answer the second question first, and we're going to talk about this in mixed waste processing discussions later, because effectively this is a mixed waste processing implementation ahead of the mass burn. Unless you're pulling metal out of the ash. But what we're really talking about is the pulling things out of the garbage. Thermodynamics is not your friend. By which I mean the greater the disorder, the harder it is to pull things out in an orderly fashion and make them marketable as A consequence, things like paper are almost not recyclable at all. Metals are quite recyclable for obvious reasons because they are easily cleaned. But when you then pull out other materials like plastics or other things, you can almost always expect a diminishment in their commodity value because they have not been separated from the trash initially.

Speaker 5 - **01:05:57**

And as a result, especially in times of marketplace oversupply, where you would have lower prices to begin with, the acceptability of those dirtier materials become problematic. So on balance, they tend to be a little bit less valuable, somewhere between 15 and 50% less valuable, depending on the circumstance of the marketplace. Personally, to answer your first question, I believe there are always public health consequences of living downwind from a stack that you have to take into account the regulatory environment and the operational attention to the cleanup, especially with the emission controls, are imperative to minimize those things. So, yes, there's always that. There has been at times a history in certain plants, one in my home state of Michigan, in Detroit, that they did not do a very good job of controlling the emissions.

Speaker 4 - **01:07:08**

So for me, I would submit to my colleagues that it's important for us to know what those implications are up front for each of the streams or each of the processes that we consider. I think that's critical for the protection of our community, for us to know what they are up front.

Speaker 5 - **01:07:28**

The good news for this discussion is later in the presentation, we have a slide that compares them with our version of the color coding, which we will then seek your input for that will have us give us an opportunity to compare each of the different technologies in each of the different scenarios that we're approaching. So it's very much on our mind, because as Daniel said earlier, there's no perfect solutions here. There's better and worse solutions. And that better and worse definition is fundamentally yours to make, not ours.

Speaker 4 - **01:08:05**

Okay, so you are going to give us that information, Is what I'm hearing you say perfect. And then in regards to your answer for the first question, what I'm hearing you say is that separation on the front end becomes critical, a critical success factor for us. Right. And so as we're kind of creating operational guidance for cities and as we're creating educational outreach, that we have to make sure that we prepare the community to do that in a way so that on the back end we'll be more successful. Is that a correct statement?

Speaker 3 - **01:08:36**

Yes. And it's a theme that we've been talking about for many months now. As much as it is about the back end technology, the greatest benefit will be the behavior changes so that we're collecting the right material in the right way without over complicating. Because again, there are tensions if we have a vehicle that is collecting each component of the waste stream. Now we have traffic considerations, we have air emissions from the vehicles. So

again, as JD mentioned, there are trade offs with each of these approaches and ultimately we will be presenting our view to you, but then looking for your policy guidance in terms of what is acceptable or what is appropriate or what should be evaluated further.

Speaker 4 - **01:09:21**

Okay, thank you.

Speaker 1 - **01:09:22**

Member Bean thank you Chair.

Speaker 3 - **01:09:25**

My comment kind of ties in with.

Speaker 2 - **01:09:27**

That and it may be a little.

Speaker 3 - **01:09:28**

Ahead of the game here, but it's evident that there's a lot of technology coming online, discussion about the ash things that were being discussed there as far.

Speaker 2 - **01:09:39**

As making it a viable product for one thing or another.

Speaker 3 - **01:09:43**

Some of the papers mention some of the AI technology that's coming online for separation. In the scenarios that you presented, how much flexibility is there for some of this oncoming technology that's not ready to be put in service yet, but that may be on the cusp or future technology that we're not even aware of at this point, but is going to happen in the next four or.

Speaker 2 - **01:10:10**

Five years or so?

Speaker 3 - **01:10:11**

What's the flexibility of your recommendations so that we don't get hung up and trapped in one scenario and unable to take care of or take advantage of future technology that would be very viable for us? Okay, so it's a great question. Part of it has to, so we're mindful of it, but part of it is what facilities for what waste stream and when. So part in part it can be performance specifications where you may not necessarily be concerned with how they achieve it. You want the result of so the industry is moving along independent of you and you're able to leverage that transformation at the time that you secure those service, the facilities or the services.

Speaker 1 - **01:11:01**

I think this will be a more robust discussion later in the presentation. Right now we're just trying to get through thermal conversion introduction, right, to make sure we understand the predicate to that. But that is a key question, right? What what do we do about existing those that are on the cusp of being acceptable and those that are pure research. Member Rydell, just a quick clarification really, on Member Dunn's comments. We're predicating a lot of the scenarios in what you've presented today on current regulatory standards for this country. Is that a fair statement? Yeah. So I guess my question is when we look at public health concerns and I guess there's other places again that have higher regulatory standards, significantly higher regulatory standards.

Speaker 1 - **01:11:50**

And I think it's something for this board to consider just for consideration of do we want to be at the benchmark of what is required or do we want to be somewhere higher? Just really food for thought. Thank you.

Speaker 3 - **01:12:01**

Again. It sort of underscores the value of having a conversation with potential service providers to understand what is acceptable and what is not. Just as an aside then we'll get back onto this. My recollection with the new mass burn waste, relatively new facility in Palm beach county, the state had identified air emission standards and then changed, made them more stringent, which required reprocuring that project. But they were still met.

Speaker 1 - **01:12:34**

When we're talking about really opportunities and assets moving forward, we have the ability kind of directing you to say hey we any service provider, we want to be at a higher standard than what is for lack of a better term, the bare minimum. It's just really the point I'm making.

Speaker 3 - **01:12:47**

Okay. Okay, thank you. So as I mentioned, refuse dry fuels essentially.

Speaker 1 - **01:12:54**

Sorry, member Bright Cruise and then member Mateo. Thank you. Yeah, so you had mentioned that Palm beach county is very mature and I agree with you. They've been working on this and have a good process up there. I'm wondering how are we going to. In this, in this process as we put this together. I'm sure we're going to come together with a plan, a master plan for what we need to do immediately. Is there going to be elements for understanding this emerging technology? I think it's going to be a journey. This is not going to be, you know, one and done. This can be a living document. It's going to be a journey. It's going to be moving forward over time. And so that's one thought. I just

want to make sure that's included. There's not necessarily thermal.

Speaker 1 - **01:13:42**

I get your point, but I just want to more make that point and make sure that I see nodding heads which is very good that we're moving that direction. The other thing is I wanted to getting back to thermal piece of it. I understand you're going to. We're going to be talking about better or worse things like that. Are we going to. I am concerned that it was not even mentioned up there. Is that an error or was that. Was that done purposely that for thermal can, for thermal solutions that there was no environmental concern listed up there as a con. That worries me.

Speaker 3 - **01:14:21**

Again it was just a high level relative advantages and Disadvantages. I think it's implied that there are emissions.

Speaker 1 - **01:14:28**

In my mind, that's the highest con, and it wasn't listed there.

Speaker 3 - **01:14:31**

Okay, fair enough.

Speaker 1 - **01:14:33**

Is it fair? Is that a fair statement?

Speaker 3 - **01:14:35**

It's fair statement.

Speaker 1 - **01:14:36**

Oh, thank you. So when we get to. When we get to getting further down, which I appreciate the better or worse, I mean, how I hope we go into that detail enough to understand what the risks are that I'll leave it with that. I mean, just to clarify that I think with each of thermal conversion or landfill MRFs, everything has an environmental concern, including farm. There is nothing that's zero environmental concern. The question of balancing and choosing will be the wrestling that we all have to do in our own minds as to where that fits. So I think it's fair to assume that each of these options, and even the emerging options, there's environmental concerns correct at every level.

Speaker 1 - **01:15:19**

So I guess the question of trying to ultimately figure out where those fit in the balance will be the work of getting greater detail as we funnel down those decisions. I know there's some emerging technologies that promote higher compliance with elevated standards, but they're untested as to whether that's true. So it still remains an environmental concern. Okay, thank you.

Speaker 4 - **01:15:41**

Mr. Chair, my question for you goes along. You mentioned behavior and the tension between change behavior is throughout the presentation. Are you going to discuss any incentives to help mitigate and help push folks to change their behavior? I'm interested to see what your proposals would be. And then two, you talked about the materials on the front end. Is there any opportunities will we see in this presentation or as we are going to continue to discuss creating new industries to help offset materials on the front end.

Speaker 3 - **01:16:18**

Great questions. In a different white paper, we address best practices for education and outreach. And now that's moving forward on a separate track outside of the master planning process, in terms of how do you engage with the public and how do you develop those programs? It's fits and starts. You don't have anything to message yet. So we've been gathering information from the marketplace and I believe at the next executive committee meeting, you'll be receiving a report, a more detailed report on the residential survey. There's a commercial survey. I believe that those questions were sent to you. So that is another track. And your second question was?

Speaker 4 - **01:17:04**

Yes, creating opportunities to create new industries to help offset materials on the front end.

Speaker 3 - **01:17:12**

So I'll answer and I'll ask my colleagues to share their thoughts as well. But the purpose of this white paper, again, when there's doubt, we Certainly have questions with the executive director. But we go back to the agreement that we accepted and the purpose of this task was to look at technologies to address the waste stream that's produced today as it's informed by our technology assessment. That was another white paper. So we're trying to tie it together, but that's not the explicit purpose of the, of our needs assessment that we're discussing today. Which doesn't mean that it's not a consideration. But it wasn't squarely within bounds of what our engagement was.

Speaker 4 - **01:18:00**

The reason why I posed that question is because when we go back to thermal, if you can go back one slide, I have seen technologies in regards to using, if you scan this particular material, you can send it to a particular facility so they can upcycle to contribute to circular economy. So I'm interested in hearing more about those technologies.

Speaker 1 - **01:18:25**

So let me do this. I know we're going to get to some of that. We got to get through thermal just so we have a predicate and get to task force. I would say that there's been a universal principle from the beginning, both with the consultants and with this body, that we're not just looking at the disposal we need to change behavior from the producers at the marketplace. I mean it's been a consistent theme that if we really want to address diversion, we have to begin with what's on our shelves and how we buy. So there's a lot of behavioral issues. That's not the subject of task four obviously, but that is a universal principle that we're going to have to deal with in policymaking, education. And whether that becomes economic or regulatory is again a common theme we're going to have to address.

Speaker 1 - **01:19:09**

I would like to make sure that we get through thermal conversion so we can get the task because there's a lot of wrestling, a lot of questions that are come up on these individual issues and then we should make sure that we're setting aside some time in the, in this workshop and other workshops to talk about these not only emerging issues, but really truly policy issues, policy statements that will drive the success of the mission.

Speaker 3 - **01:19:32**

Thank you. So refuse derived fuel, essentially it's pre processing up front, largely the same process as Vasbarin on the back end. Next slide. So again, similar summary. It's in the agenda package. So I'm not going to belabor that point and I do want to move quickly through the pyrolysis, gasification and plasma because we will talk about it within the context of task four. So you Know, the key takeaway is that these are conversion technologies that essentially extract or work with the carbon embedded in the waste stream, either with in the absence of oxygen or by controlling the amount of oxygen and then plasma. Imagine a bolt of lightning, high energy, and it does break apart the constituents within the waste.

Speaker 1 - **01:20:25**

You're selling off a little bit. Just make sure you stay into the mic.

Speaker 3 - **01:20:28**

You got it? Yeah. So within the presentation there are a number of cutaways of example facilities. We can move through those. So gasification, the next one is similar summary and it follows suit with plasma and pyrolysis. So again, we are not recommending these with the exception of the limited use for biochar. And we'll get into that later on in the presentation. We can slide through and slide through. So in terms of end use, real.

Speaker 2 - **01:21:08**

Quick, which one does it? Which one creates the biochar, the pyrolysis harness.

Speaker 3 - **01:21:14**

So either biogas, gas or syngas is produced a liquid that can be used for direct use for power generation. You can upgrade it to pipeline much in the same way that landfill gas is being upgraded to pipeline quality gas. Or it can be upgraded to vehicle fuel. There are many facilities not from these processes, but are utilizing syngas as a fuel source. And this simply provides an overview for the United States. Number of facilities that are currently operating or at least as of a few years ago. Mass burn, there's more than 50. There's fewer than 10 RDF facilities. TRL, another acronym is technology Readiness level. It corresponds to the chart early on in this presentation. High is a positive, meaning that it is operating on a commercial scale. Gasification, we identify that as processing select waste.

Speaker 3 - **01:22:11**

I think many may know that gasification is a well proven technology. It comes out of the coal industry. But the fundamental difference between coal and municipal solid waste is a homogeneous product uniform in moisture,

particle size and like. Whereas municipal solid waste is heterogeneous, which is why there are RDF refuse to drive fuel facilities because there was a belief that you could extract greater energy value from a more uniform waste stream. And then pyrolysis is also being used for plastics. So but in terms of using it for municipal solid waste, we rank that as low in terms of technology readiness. But for the select waste, it is moving up and is worthy of consideration. Okay, thank you for indulging us with that. We're going touch on some of the other concerns.

Speaker 3 - **01:23:06**

Conversion technologies, if you would like standalone workshops that go through the different organic or biological systems or mechanical systems, we can certainly do that. We Love talking about it. Probably not sandwiched in between a more substantial discussion.

Speaker 1 - **01:23:25**

I think that's going to be a necessary discussion with the executive committee as a freestanding. So let's try to plan, assuming there's consensus, to have that on the next workshop. So they can do that. Yep. Okay. Everybody in agreement? Thank you, Danny, for offering that.

Speaker 3 - **01:23:38**

Okay, now you get to hear from some of my colleagues on the actual guts of the task for white paper. And again, welcome your input as we go along.

Speaker 1 - **01:23:48**

Thank you.

Speaker 6 - **01:23:50**

All right, we're going to switch topics a little bit and start thinking about non thermal processing technologies that can divert material from the waste stream. Curbside recycling is obviously one of the ones that comes to the front of the mind. You all have single stream recycling that's pretty active here. I think 26 of the 31 communities in Broward currently rely on single stream. And we're recommending, after our review of looking at your neighboring jurisdiction in Palm beach, that you still retain the single stream program. We think that's going to be most cost effective for a variety of reasons. One thing I always want to point out, coming from within the industry as well, is that single stream recycling is much safer for your staff. And that's often something that gets overlooked. But it's very important to just keep them in those vehicles.

Speaker 6 - **01:24:34**

They use the automated side loader trucks for collection. Not having to get out as much less stops. All of that contributes to a safer workplace for those drivers with single stream.

Speaker 1 - **01:24:47**

Member breakfast. Thank you, Chair. Yeah, I think I just. Quick comment. I believe this fits into that journey comment that I made earlier. I agree. Single stream is where we need to start, where a lot of us aren't. Some communities aren't even recycling at all. So single stream, it makes sense, but that should not be where we end. You know, you look at the truly successful areas of the world that do this, they're all multi stream. So this is one of those things that I would like to see in the plan that yes, we start out single stream, but we need to do better. The plan should reflect that. We need to do better over time. Thank you. Thank you.

Speaker 6 - **01:25:26**

Yep, noted. Yeah. So one of the advantages of single stream, to your point, is the convenience for residents so you can help attract higher participation early. They put more stuff in the cart and then let the material recovery facilities recover more of that. You do see some higher contamination rates with single stream programs versus dual stream when they're not policing it at the curb as much. However, there's some.

Speaker 4 - **01:25:49**

Thank you, Mr.

Speaker 1 - **01:25:50**

Chair.

Speaker 4 - **01:25:51**

I do agree with the single stream, but how are we going to address contamination?

Speaker 1 - **01:25:56**

All right, so that's going to be discussed here in the. In the presentation. Obviously, it's a key component because of the difference in contamination rates and how to deal with that. It doesn't. We're not tasked with just finding the most cost effective way of dealing with our solid waste commodities. It's achieving the goals. Right. Ultimately, Recycling center. Right.

Speaker 6 - **01:26:16**

So to those points on there are single stream programs that are very effective and have low contamination rates, especially over time. They get there by engaging with their public and creating that behavior change that you want. So having uniform messaging across all of your jurisdictions would really help so that you can recycle the same types of items, you know, wherever you're living, working and playing across Broward County. And that's definitely where you need to have.

Speaker 1 - **01:26:40**

Just to hold you there. We have a comment that's part of the recommendations is harmonizing as quickly as possible. We can begin that now.

Speaker 6 - **01:26:46**

Correct.

Speaker 1 - **01:26:46**

This is one of those moments where we don't have to have all the puzzle pieces of the master plan put together to begin from a policy standpoint, harmonizing. And I know that the recyclers are begging for that. So just as a. This is just a really good point. I don't want to spend much time on it because we have a lot to cover here. But along the way, we need to be looking at what can we do right now either to effect weight a goal or to lay the necessary predicate. And I think this achieves both of those. And so we really do need to, at some point, as an executive committee, start talking about how do we harmonize and who is the body to start doing that. Because it is unacceptable from the material source recovery people.

Speaker 1 - **01:27:29**

They would like us to do it and we're seeing it economically on our recycling. Recycling is more costly for us as individual cities where there's high contamination. Member Dunn and then member FER Yes.

Speaker 4 - **01:27:41**

I just wanted to amplify again what member Bright Cruise was saying to make sure that at some point in this plan, yes, we're starting with single stream. But at some point in this plan, whether it's a phased approach, we are ultimately looking to get to a goal so we don't stay there. I just want to make sure that you guys heard that recommendation. Thank you.

Speaker 1 - **01:28:04**

Member firm.

Speaker 2 - **01:28:04**

Thanks. Yeah, I like the idea of trying to. I thought we. I didn't. I was a little surprised you went to single stream, to be honest. Only Because I'm, you know, you see in Europe and you see multiple streams, but I also understand why you did it. And I think if given where waste management is going to be with their routers and all that's going to be single stream. To your point of trying to do harmonizing right now, I'd love to. I think it'd be great to be able to do that right now. But we still have a bunch of cities that aren't recycling at all.

Speaker 1 - **01:28:38**

Well, that's a separate issue. I mean, but for those that are the 26 to 31, the standards are all different and you're seeing different contamination rates. I mean, I've seen it personally when we've worked with waste management to try to understand our own recycling is that when you look at other cities, it's just different performance. And it's in large part they will tell you because we're not consistent in our own messaging and we're not doing it together. Others will join at some point, but right now we could begin doing that.

Speaker 2 - **01:29:03**

But the hard part is if like with yard waste, with bulk, we're all doing it so differently that it's hard to have a harmonic harmonization.

Speaker 1 - **01:29:11**

Well, there's two different issues there. We're talking about straight up recycling that goes into the recycling bins right now. Single stream. We're not. Yard waste can be added and all the other issues. But if we're just talking about glass bottles, paper that are going in our typical recycling, we all have different educational standards right now.

Speaker 2 - **01:29:26**

I'm just saying it's because we're all having different ways of picking up and all that. It's hard to have that. I definitely want to get there as quick as possible.

Speaker 1 - **01:29:35**

Yeah. And for the folks that are dealing with it, post collection, they don't care who's in it or who's out of it. They know there's a consistent message and they want lower contamination rates as well.

Speaker 6 - **01:29:47**

But I think to chair Ryan's point, a lot of your material was flowing to the same material recovery facility, but you're messaging it in different ways on the websites and with your outreach materials and whatnot. So getting to that uniform messaging really can cut through that kind of noise and confusion on that and just to keep it moving. But enhanced enforcement is also very important. So you're starting to see the communities that have lower contamination invest in that enforcement, whether it be tagging carts at the curb or using new technology that's actually looking at the materials as it goes. Into the truck to notify residents when they are contaminating member Horlan.

Speaker 3 - **01:30:20**

Mr.

Speaker 4 - **01:30:20**

Chair, very quickly because I just want to correct when the white paper was initially sent to us, there was missing information for the city of Plantation which I believe we sent back to the director. It showed that we had zero tons when in fact the city of Plantation has the longest and most successful pay as you throw program and we have the lowest contamination rate of recycling in the county. So I think that's important to note as we go forward and look at how, and you know we're getting ahead of ourselves is how we are going to look at collection. But I think that's something that we can incorporate. The pay as you throw has been very successful for us. Thank you Mr.

Speaker 1 - **01:30:53**

Chair. Yes, I've asked as part of task for one of my comments was to spend a little more time on that. Not only what Plantation is doing, but generally what other programs are doing. And then there'll be value judgments as to whether there can be duplicated in every. Not every municipality may have the simplicity to be able to do that for a variety of reasons, but we need more information on that which is about changing behaviors.

Speaker 3 - **01:31:16**

Next slide.

Speaker 6 - **01:31:18**

So now we'll kind of go into the different overviews of some of these technologies that we're recommending and we'll move in pretty quickly. But by all means, welcome this conversation. So if you've got any comments. Single sharing material recovery facility, often called a MRF. These are your typical facilities widely used across the U.S. Most of your material was currently flowing to the waste management owned facility over in Pembroke Pines. And as you all know, they're investing in a new facility there on that same campus. Our scenarios look at similar facilities in regards to how you would manage your single stream recycling. And there's a lot more detail within the white paper getting into the specific aspects of that. But essentially we're saying you need a single stream recycling facilities.

Speaker 6 - **01:32:02**

And again right now you've got Waste management investing in a new facility that is going to handle a lot of the tonnage in the region. Next slide please. So organics facilities. I think it's important here to acknowledge that there is that not in my backyard element within the county or in any jurisdiction. All garbage is local and we're envisioning that you would need two campuses to manage organic waste within the scenarios. There's different facilities that would be located on those campuses based on which direction you want to go with the scenarios that we'll talk about later.

Speaker 6 - **01:32:34**

But in general the thought is that you would have these campuses where you could be nimble and flexible, roll with the markets, roll with new emerging technology that comes out, and be able to better manage your organic waste

stream, including yard waste and food waste, because it's such a significant portion of your waste stream.

Speaker 1 - **01:32:53**

Hang one second. Member Horlands, your card's still up. Do you have a comment? Member Horland, are you done? Okay. Member fir I don't know if you.

Speaker 2 - **01:32:59**

Were able to take into consideration the terms of the agreement with waste Management that are being considered to do the composting at Okeechobee that their entire. I don't know if that was taken into consideration here.

Speaker 1 - **01:33:16**

That's a great point. The agreement that we didn't get a chance to discuss earlier, did you have a chance to look at that?

Speaker 3 - **01:33:20**

We have, but we received at the same time that you all did. And the draft white paper was substantially complete if not submitted by that point. And that's why it's helpful to have this conversation now and to receive feedback so that when we move that from a draft to a final, we're incorporating what the marketplace is so that it informs the how which will come next.

Speaker 2 - **01:33:45**

Okay. And I think the distinction needs to be made with this with regard to yard waste and food waste. I think the county can probably handle the food waste. I mean the yard waste locally, I think food waste, I don't think there's anywhere in the county that would put up with it. So doing it at Okeechobee is probably going to make sense.

Speaker 1 - **01:34:07**

All right. So the issue of the siting and scale we'll have a discussion about this is right now you're talking about the general scenarios of what would be recommended. Whether it's in county or needs to be exported, so to speak, certainly can be discussed. But siting, you're not quite there yet, correct?

Speaker 4 - **01:34:23**

Yeah.

Speaker 6 - **01:34:23**

We're just thinking what would you need to manage the tons that are being generated within your community? Not looking at where it would go or how we would get there just yet.

Speaker 1 - **01:34:30**

All right. And I noticed in task 10 in the appendix there was some discussion of siting and based on certain criteria about how close and you can co locate, et cetera.

Speaker 3 - **01:34:39**

Yeah. We discussed at an earlier executive committee meeting how far away from a single family home. So we're now that everything is in a GIS environment. We have a lot more flexibility with that and any variation. Again, we're looking for guidance in any variation from that. General guidance we will bring to you and get direction and finally, we kind.

Speaker 2 - **01:35:01**

Of glossed over the need for another single stream recycling. Like what Waste Management is doing. What. When we had the conference with Townsend in Florida, they were, they made it sound like that one was going to have enough capacity for all this whole area for both counties. I don't know if that's true or not. I don't know if that's Waste Management saying that's that or if we actually need another one. And if the other one is just to keep prices competitive, I think that's a, that's the biggest consideration. And you know, at some point, if you can go into that.

Speaker 4 - **01:35:39**

Thank you. Vice Chair. We are, we have scenarios that are going to talk about the number of each of these facilities. What we're trying to do in this first part of this presentation is to go through what these technologies are. So we're going to talk about kind of how many, how we're going to collect. So we'll get there.

Speaker 1 - **01:35:58**

I think to member first point. This is a lot of the genesis of why we're back together was dealing with the issue of what could we do or do we need to do in terms of capacity. So that has to be central and it's obviously a central decision making point for the executive committee before you move on. Member Yes, I know we're sitting here.

Speaker 3 - **01:36:16**

Talking about, you know, can export it, go to Okeechobee, whatever.

Speaker 5 - **01:36:19**

But you know, we have seen in the past, in the last few years, people are starting to say no anymore to other

counties. And just like you said, I forget.

Speaker 3 - **01:36:27**

The one that said they had 15.

Speaker 5 - **01:36:29**

Years, whatever, 20 years left in their thing.

Speaker 3 - **01:36:31**

But because of the storm last year, now they have six years taken off. So they might say yes today, they.

Speaker 5 - **01:36:36**

Might say yes this next month.

Speaker 3 - **01:36:37**

But what happens when they cut us off?

Speaker 5 - **01:36:40**

You know, you can't just say, well, okay, where are we going to put it? So it's nice to say we're going.

Speaker 3 - **01:36:45**

To send it somewhere else for the next 10 years, 20 years, but end up be eight years, then what do we do? So, so our plan should be what are we gonna do with our own.

Speaker 5 - **01:36:52**

Waste in Broward County?

Speaker 3 - **01:36:55**

I know it'd be more expensive. At the same time, we are gonna be in real trouble if we don't do that.

Speaker 5 - **01:36:59**

Cause you know, at one point somebody.

Speaker 3 - **01:37:02**

Is going to cut us off somewhere. So we really have to make sure.

Speaker 5 - **01:37:04**

We think about that in our future here.

Speaker 1 - **01:37:09**

Member breakfast very quickly. I'm just gonna go back to my this is a journey comment again. And so I do think that there's a legitimacy of trying to find a solution now, knowing that newer and better technologies are coming all along. But I agree with member Newton that eventually people are going to say no, it's going to have to come back home. But I'm hoping that by then we will have better solutions that will be more appropriate. Okay.

Speaker 6 - **01:37:39**

Okay. Next slide. JD please. So looking at your yard waste, a significant portion of your waste stream, as you know, about 4, 14% on the residential side and cost effective way to manage that is to do typical mulching. With this, we are looking at providing a colorization facility that would make it easier to market that material. In Florida. Sometimes, particularly after hurricanes, the market can be flooded with a lot of the yard waste that's out there. There's, there's so much volume. Having the ability to do colorization can help you better market that material, get a better value and to return on that. But this is a pretty standard way to do yard waste and is done throughout the country and throughout the state as well. Next slide please.

Speaker 6 - **01:38:27**

Paralysis is an existing technology that's been around for a long time, but there's an emerging interest in creating biochar, particularly in Florida. There's a few companies that have been around touting they can do this. I think Leon county started a pilot with a company called Recap and it's been having some success. And so the idea with this is again to not have all your eggs in one basket, but to have another outlet to manage that yard waste. There are some potential emerging benefits in handling PFAs as we discussed earlier. And it gives you another tool in your toolbox to manage a portion of that yard waste stream. Again, these facilities would be envisioned to be co located on those campuses that we described. Next slide please. So for composting we're recommending the covered aerated static pile method.

Speaker 6 - **01:39:11**

There's multiple weights to produce compost in this method. It's helpful to minimize odors. We know that's a major concern in any community. And this process can help really speed up the process of converting compost as well as minimizing those odors. And that's why we're recommending that within the scenarios we can get into the number of these types of operations that would be recommended. But again, proven technology and used in many applications throughout the country.

Speaker 3 - **01:39:43**

Next slide.

Speaker 6 - **01:39:44**

Anaerobic digestion would be focused on managing a food waste solution as well as some of your other organics within this. Basically you're taking all of that source separated organics, diverting it to anaerobic digestion facility where it can be converted into making energy. And within that there's some additional upside benefits from revenue from renewable energy identification credits and things like that. It's also important to notice there might be some existing capacity at existing wastewater treatment facilities. I don't think we dove as deep in that with task four. That's something to keep in mind to look about. Also, there could be interest in the region to better manage biosolids or have some of your wastewater synergies with this. So you're looking at it as a solid waste solution, but there could be some synergies with your other utilities in the county.

Speaker 5 - **01:40:39**

JD Yeah, I wanted to add something to this which is the end result of anaerobic digestion yields a liquid digestate and a solid digestate. In general, you want to remove the water. Typical destination for that is a local wastewater treatment plant or an on site wastewater treatment plant, which leaves us with the bulk of the material which is a solid digestate. Increasingly, the PFAS issue, and to a lesser extent, but still probably serious, the microplastics issue is becoming a problem. I'm working and pursuing a couple of other projects elsewhere where the end state, one of the end states that we're pursuing is biochar of that solid digestate. Let's remember this is like you pick it up and you squeeze it and water still comes out. So you can't pump it is the point. You have to scoop it, but it's still pretty wet.

Speaker 5 - **01:41:39**

Even before we had to deal with the PFAS and microplastics issue, the you still had to stabilize this digestate material because you know you don't want to just put on.

Speaker 1 - **01:41:57**

You can't put it.

Speaker 5 - **01:41:58**

On farmer's property even if there is no pfas because you've got all sorts of weird nitrogen and even odor issues that you have to deal with. So the piece that I want people to understand is anaerobic digestion needs to have another stop at the end and maybe two stops before you get to a diversion or disposal end state.

Speaker 2 - **01:42:24**

And just for this part that you didn't get a chance to see before, one of those terms also allows for the methane to come from the landfill. To actually look at doing a thermal working with the solid with a solid waste from the wastewater treatment plan. I think that's a big part of this that needs to somehow it needs to be in this draft. But I know that was only recently discussed, but that's a. That is a big part. So that it will not be going into the landfill, the

wastewater, the biosolids.

Speaker 1 - **01:43:03**

Okay, that's part of the agreement.

Speaker 2 - **01:43:04**

Yeah.

Speaker 1 - **01:43:04**

That's good. That's the second point in the agreement. Would have been helpful to talk about today.

Speaker 2 - **01:43:08**

Exactly.

Speaker 1 - **01:43:09**

Thank you for raising that. Thank you. Quick clarification. So in this plan, when we see AD in there, is that including those other two steps or do we. Is that not as part of the solution? Or how can. Can you just.

Speaker 5 - **01:43:22**

So it incorporates those other two steps in that there are costs integrated into it to do it. We have not made specific choice. For instance, this is a directional analysis where we're sort of eventually trying to put a series of scenarios in front of you that say, here's a set of tools, here's a rough set of an approximate set of costs and approximate diversion levels, all of which have implications for your future disposal choices around waste to energy and landfill. And we had to sort of. We couldn't do final. From an engineer's perspective, we couldn't do a detailed design on the end state of everything. So what we did do is instead chose to use a cost associated with the disposal of the digestate.

Speaker 5 - **01:44:19**

What I'm saying is, in the next round, if you were to choose to do anaerobic digestion because it made sense to you, the next level of analysis would no doubt evaluate the ability to use thermal, the gas coming from the landfill versus biochar versus other approaches. That would be a logical next step. But you kind of got to get to a directional choice first. And then you start to boil the ocean a little bit more.

Speaker 1 - **01:44:50**

Remember right now. And then we'll take a short break. Just better fingers than me. Just to clarify, you stated

essentially, JD that there's two steps. Let's talk about this. There's two steps after that. Just highlight those two steps after.

Speaker 5 - **01:45:07**

Well, actually there's two streams and each stream has to have a step and they tend to be different.

Speaker 1 - **01:45:13**

That's all.

Speaker 5 - **01:45:13**

I just want clarity. One is liquid management. The most frequent destination is wastewater treatment in a. In the kind of way that you are all familiar with. And the second one is a little bit more difficult because there's different issues. Which is the solid material, what do you do with it? Traditionally, it has mostly been land applied in the quantities that you're dealing with here and the potential contamination issues. I would say it would be naive to suggest that it would be that easy. So other strategies have to be employed. Biochar, for instance, further drying, like he was suggesting all of those things.

Speaker 1 - **01:45:57**

I just wanted to clear. I was following the logic. I just wanted to be clear what the other steps were. Thank you. All right, let's take a five minute break just to give everybody a chance.

Speaker 2 - **01:47:29**

Hard.

Speaker 1 - **01:47:54**

Delight.

Speaker 2 - **01:48:45**

Sa.

Speaker 3 - **01:49:36**

She.

Speaker 1 - **01:50:54**

But I've been. But if you. I'm gonna be.

Speaker 4 - **01:51:43**

I'm gonna be their spokesperson.

Speaker 1 - **01:51:46**

What's the goal?

Speaker 4 - **01:56:02**

It's.

Speaker 3 - **01:56:57**

It.

Speaker 1 - **01:57:19**

Yes. There's.

Speaker 4 - **01:58:13**

Yeah. Actually.

Speaker 1 - **02:01:38**

Yeah.

Speaker 2 - **02:01:49**

Okay, we're gonna go ahead and get started. Everybody grab a seat.

Speaker 5 - **02:02:02**

Can you please take your seat, please?

Speaker 2 - **02:02:11**

Hey, Bill.

Speaker 1 - **02:02:33**

Okay, when you're ready, you can get started.

Speaker 2 - **02:02:43**

Can we do the next slide?

Speaker 6 - **02:02:47**

All right, we'll go ahead and get back started after the break.

Speaker 4 - **02:02:51**

Oops.

Speaker 2 - **02:02:54**

Great.

Speaker 6 - **02:02:54**

Let's reload the slide deck for us. All right, so after anaerobic digestion, we're going to discuss mixed waste processing. If you could go to the next slide, JD So a mixed waste processing facility, you're taking the combined municipal solid waste stream and then running it through these facilities to try to recover all of the readily available recyclables that you could get. So a lot of the same technology that you'll see in a single stream recycling facility will be in these mixed waste processing facilities. But obviously you have to deal with all of the diversity of the waste

stream coming in from municipal solid waste.

Speaker 6 - **02:03:35**

So that typically means that you're going to have lower quality outbound recovered materials and a lower price point for those in terms of your revenue because they were often, you know, mixed in with the garbage first before they recover covered. A keynote on this one is that you're starting to see some of these facilities partner with either anaerobic digestion or in this case, we're going to recommend fiber extraction. And that's just a way to capture and divert more of that waste stream from going to the landfill. And J.D. I don't know if you want to add a little bit specifically on that.

Speaker 5 - **02:04:12**

Yeah. A quick comment we've been following, I personally been following several of my colleagues have been following the mixed waste processing process through the last 40 plus years. And I would characterize my interest in this as sort of skeptical inquiry. And to sort of put a finer point on this. Up until about five years ago, my only engagement was as a expert witness for the plaintiffs, who were almost always public entities who had purchased what is almost always a fraudulent equipment. I can run down the list. There's numerous ones of them. Frankly, it was abusive. Okay, so where do we come to and why is it here? Because in the last five years, maybe 10 years. The trajectory and the speed of change in the industry has been remarkable. You know, Director Sardi was sitting at ground zero in your previous work at Oklahoma.

Speaker 5 - **02:05:23**

And since then things have changed dramatically with artificial intelligence, image processing, machine learning, new technologies. So this gets to, I forget who brought it up. This gets to, what are we looking at out over the horizon? And that horizon isn't even five years. That horizon might be six months. Because how quickly this is moving. What we can't solve is for instance, the motor oil or baby diaper problem with paper in the waste stream. AI ain't going to solve that. It's still going to be bad paper. You're not probably going to be able to get after it unless you do something like Travis was referencing, which is a fiber extraction process.

Speaker 5 - **02:06:24**

And in this case the fiber extraction process that we're referencing technically, even though their name doesn't show up here, is GP Georgia Pacific, who 15 years ago came to us thinking about doing this work. We helped them with the front end. We didn't do any of the technology work. And they came with a technology that essentially wets down all of the fiber that remains in the waste stream with the aim of extracting the cellulose fibers at the very end which you make paper from. And their view is that was an essential component to maintaining a raw material stream into the future. And we're talking a century now. We're not talking 10 years, we're talking a century. And that's sort of where they're coming from on this.

Speaker 5 - **02:07:17**

But message I wanted to leave you with is the skeptical inquiry has now for me turned into a little bit of skeptical optimism where it wasn't there at all before 10 years ago.

Speaker 2 - **02:07:33**

I just got one comment with regard to the mixed waste processing. Just so as a caveat, it is not meant those systems to do the.

Speaker 3 - **02:07:39**

Entire waste stream without source separated programs.

Speaker 1 - **02:07:43**

Right.

Speaker 2 - **02:07:43**

This is in combination as another tool to those programs.

Speaker 3 - **02:07:48**

So residential curbside recycling, commercial recycling, those programs have to be in place for these type of facilities to be successful and to be somewhat cost effective.

Speaker 2 - **02:07:58**

Because if you went after the entire.

Speaker 3 - **02:07:59**

Waste stream, they'd have to be sized.

Speaker 2 - **02:08:01**

Four times what they would need to be.

Speaker 5 - **02:08:05**

That's a really good point. And along those lines, the data suggests that the recovery from mixed waste processing is no different whether it has source separated recycling in front of it or not.

Speaker 1 - **02:08:18**

Not.

Speaker 5 - **02:08:19**

Which is not really intuitive. But, but it's true.

Speaker 6 - **02:08:24**

To your point, yeah, these facilities can complement those existing Recycling and waste reduction and not be a replacement. Definitely. Good point. Next slide, please. So this one is discussing a dry material recovery facility. This comes into play when later we discuss scenario D, which is a. A wet dry collection system. And within this you're taking that dry fraction of the waste. So if you envision residents have two carts, one where they're going to be placing their wet waste, the other where they're placing all of the dry materials, it would go to a dry facility like this to recover as much as you can with that. There's still limitations with the technology that we've got in terms of what they can actually capture. That works fairly similar to the other material recovery facilities in the mixed waste processing facility.

Speaker 6 - **02:09:14**

JD I don't know if you got anything in particular you want to talk about. The drymar?

Speaker 1 - **02:09:17**

Yeah.

Speaker 5 - **02:09:18**

All I would say is it's sort of in between single stream recycling, material recovery facility and mixed waste processing. And I'll also make the observation that as single stream recycling gets more contaminated, it begins to converge on what a dry waste facility would look like. So it is potentially one of the end states that you might actually want to look at in terms of where you're going because of that, you know, if you can't deal with the contamination. But it, the dry MRF does deal with the motor oil and baby diaper problem in theory.

Speaker 2 - **02:09:59**

Quick question. I'm sorry, go ahead.

Speaker 4 - **02:10:01**

Oh, I was just curious if you'd heard of any technologies that basically use.

Speaker 3 - **02:10:06**

I don't know if it's.

Speaker 4 - **02:10:08**

I don't know the system, but basically it just removes moisture from the stream so that the weight of the waste is reduced by approximately 25%. Or a third simple process of just removing moisture from the waste stream. Are you familiar with anything like that?

Speaker 5 - **02:10:30**

Well, there's, there are examples in California where organics processing is essentially making use of the deserts to the east and they lay it out there and they let the sun do its trick. The reason I bring that up is in that case, that's free energy. I'd argue that here it would probably be a pretty expensive process.

Speaker 4 - **02:10:52**

Okay. But no mechanical technologies that you're.

Speaker 5 - **02:10:56**

There have been over the years, some they have tended not to stand the test of time because people really wanted to, you know, derive more value from the stream than you can get simply from dehydrating it.

Speaker 4 - **02:11:16**

Thank you.

Speaker 2 - **02:11:18**

Real quick, are there dry mirf examples that we can see?

Speaker 5 - **02:11:21**

So there were some dry mrf. So it's been done in Europe. There was a Series of them that were implemented in

Canada in my professional lifetime, which means the mid-90s. And they have all converged back onto single stream recycling. What happened is the technology wasn't really up to it then. And so the question that we have to ask ourselves, and you have to ask yourself, is the technological advance that has happened since then create an opportune moment to come back to it. So it is not anywhere near as proven as single stream recycling, certainly. And it is less proven than mixed waste. I think it goes back to education on this one. Like me at my house, I have two garbage cans.

Speaker 3 - **02:12:19**

One's for dry and one's for wet.

Speaker 5 - **02:12:21**

But most people don't.

Speaker 3 - **02:12:24**

And to make that really work, well, I think the educational part would be.

Speaker 5 - **02:12:28**

To make sure it has two garbage cans, one for wet and one for dry.

Speaker 3 - **02:12:31**

Just the I'm gonna put out there.

Speaker 6 - **02:12:37**

Okay, next slide, please. Construction and demolition, often called C and D within the industry, recycling facilities. C and D is a huge portion of your waste stream here in the county. And I believe looking at your most recent report to Department Environmental Protection at the state level, I think only not like 39% of it was successfully recycled. So this is really one of those kind of low hanging fruit type facilities. A lot of C and D is generated within the community.

Speaker 1 - **02:13:04**

Why, why is it only at 39%? Excuse me, why is it only at 39% in the county where this is often seen as low hanging fruit for achieving some higher recycling rates?

Speaker 3 - **02:13:15**

Yeah.

Speaker 6 - **02:13:15**

I would think you need to get back to looking at some of the policy and regulatory options that we can do to try to start maybe mandating C and D. There's also policies for deconstruction of buildings that are starting to gain some traction. So I think utilizing these facilities is something that you can do, but you got to couple it with the enforcement to make the commercial sector really participate.

Speaker 1 - **02:13:38**

And you have templates for that you can provide the executive committee of successful enforcement, whether it's mandatory C and D prior to disposal or that it has to go to a licensed MER first or whatever, something to that effect?

Speaker 6 - **02:13:51**

We can certainly find some examples of this.

Speaker 1 - **02:13:52**

Member Bright? Yeah. Is there going to be, as part of this master plan, is there going to be a recommendation of potential regulatory requests that would beneficial. Everything from, you know, creation right from the very start, manufactured, how things are manufactured, to what we just talked about, C and D, to a million other things in between, is that going to be something that we're going to see?

Speaker 3 - **02:14:18**

Yes. So. And it Happens in a couple different ways. I know that we spoke previously about legislative priorities, things that you can't currently do, whether it's because of preemption or collective action that you can all take and with other units of government within the state of Florida. Because some things are best managed at the state level. Extended producer responsibility, for example. But absolutely. Recommendations for what action can be taken is part of the master plan because again, we're working on this in pieces. Some of that regulatory framework was provided to the executive committee in the form of a white paper. And by the time that we get to the point of preparing the master plan, it is telling the story of who, what, where, when, why and how.

Speaker 1 - **02:15:05**

Member Rydell and then member Horlan. Thank you, Mr. Chair. This is a little out of turn. I just want to ask because I was really surprised when we got the waste stream study, obviously that some. Something that shocked me in terms of what is a huge part of our waste room was textiles. I think were all kind of a little taken aback by that. That's something I didn't see addressed here. I'm not sure if your presentation is going to address it. I see you grabbing the microphone, so I'm excited you got excited for the question. So a little clarity on that because that to me, I know you just mentioned a low hanging fruit with C and D, which I completely agree with.

Speaker 1 - **02:15:38**

I'm just curious because I can only see, just based on our world that textile waste is probably going to tick up. So I just. If you could speak to that, please. Thank you.

Speaker 4 - **02:15:46**

Absolutely. Thank you. Member Ridell I feel like there's been a lot of comments today where we're just excited to tell you about the waste reduction and diversion strategies. And that's a huge part of our task for memo. Chapter seven just outlines different policies. Whether it's deconstruction pay as you throw, extended producer responsibility, enacting universal recycling ordinances or mandatory food waste composting. There's a lot of different strategies that we go into the memo today. We wanted to focus on what are the facilities, what are the collection methods, how does that bundle into the scenarios that we're talking about today? So I encourage kind of looking at that section and I think the next slide is going to address textiles. So if I can help. Next slide please.

Speaker 6 - **02:16:39**

And I'll just add like she said, chapter seven within the task for white paper gets into a lot of the policies and regulatory frameworks that we're talking about within our modeling what we need.

Speaker 1 - **02:16:49**

I know you talk about them generally, but we need examples. We need to see the templates to see what can be replicated or integrated with what already exists. We're also going to need industry input on this. Right. Before we pop off some regulatory issue. Right. That we don't have the capacity. But we need to see those templates, those ordinances, those plans, the pays you throw not only from plantation, but others so that we can begin what when could we start getting that kind of template information? I appreciate chapter seven and the explanations that were great. They energized the conversation. How do we start seeing examples? Hang one second. I'm going to get.

Speaker 3 - **02:17:26**

Let me get with the team and get back to you with a clear answer. Whether it is something that we can provide in the short term or if it's part of the overarching appendices to the full master.

Speaker 1 - **02:17:37**

Yeah. If we have to do the research ourselves somehow through. I know this is a organization of one right now, but we can certainly put members on this. So I just want to make sure you answer that question so we know what we're doing.

Speaker 4 - **02:17:48**

Thank you. Two brief comments about the C and D city of Austin, Texas was doing something interesting where they were really trying to take a lot of those recoverables and sell them back into the building community and also offer incentives to be used for affordable housing. So I think that, you know, that's an example of something we look at and I'm so glad you brought up textiles. I know we're going to get to that. I'm actually working with a environmental student, high school student on a art project, art installation about fast fashion and the textiles. And there's only one company and perhaps you can speak to this that I know of in Virginia that is actually taking that maybe it's expanded by now, but taking those textiles and recycling them. So I'll be interested to hear but I think that's a tremendous.

Speaker 4 - **02:18:29**

With the advent of fast fashion, it's a tremendous impact on our landfills.

Speaker 3 - **02:18:34**

Thank you.

Speaker 1 - **02:18:34**

We've got a response. And then member Dunn.

Speaker 5 - **02:18:37**

Yeah. So as you are clearly aware, textile waste is growing extraordinarily quickly. The industry is trying to grapple with it. We've had the good fortune of being one of the being engaged. I happen to be working with a peer of Helen and Travis who's right now we're pulling together some work with the Industrial Commons project in North Carolina. And that effort in conjunction with Goodwill, who is also one of the sponsors is we're looking at the cost of collection Recovery and potential markets for the diversion of all types of textiles and trying not to rely on baling them up and selling them overseas, which has some problems with it. So it's ongoing, it's moving really quickly. Literally when we started this project, we knew far less than we know today.

Speaker 5 - **02:19:49**

And what we know today is still 5% of what we need to know to be able to make recommendations that are similar to what we have here. But I would expect that six months we'll know more and happy to bring that information here as it's appropriate and possible.

Speaker 1 - **02:20:06**

Member Dunn.

Speaker 4 - **02:20:10**

Yes. Following up on our chair's request in regards to the public policy, the pieces that would be also important for us to know and my colleagues can kind of chime in, at least this is what I need to see in order to know. We can recommend the policy. It's not only copies of the actual ordinances, but some sort of information about the impact of those ordinances had. And then in terms of implementation, the pros, the cons, similar to what you did with each of the strategies here. And the cost in terms of not just implement dollars and cents, but also staff time, that's what a city manager is going to care about. And then also if there's any communications put out by the city to roll that out to the community, we could have those if that would be super helpful.

Speaker 4 - **02:21:02**

At least that's what we would be doing on our end to move it forward. So if you guys can do that research up front, that would be super helpful. Thank you.

Speaker 1 - **02:21:12**

Okay, Drop off centers.

Speaker 4 - **02:21:14**

All right, thank you. And just to kind of follow that conversation with textiles, you know, we talk about centers and infrastructure for recovery, but there is low hanging fruit for reuse and reduce. Whether it's having a reuse directory, you know, working with thrift stores, working with consignment shops, working with the Goodwills and Salvation Armies to try to get that material out of the waste stream so that we're not dealing with it at the very end. Right. So drop off centers. One of the things I wanted to talk about is there are hard to recycle material outside of the organics recyclables that we just talked about.

Speaker 4 - **02:21:52**

And with the prevalent with Internet of things, with the prevalence of batteries and everything that we have, the safe disposal of household hazardous waste, electronics and batteries are paramount, especially given facility and truck fires in the United States. The current number of facilities locations in Broward county, which there are five or the quarterly monthly events are not sufficient. Residents we've seen look at you Know, visiting some of the centers that are in county and saying, well, I'm not part of the participating, you know, member of going to these facilities. And so we need to figure out a way to make sure that there are safe disposal options, whether it's HHW electronics and there's flexibility in adding new materials, whether it's single stream glass, scrap metals, yard waste, textiles, tires and more.

Speaker 4 - **02:22:52**

And this is an opportunity, you know, as budget and site size is allowed, we can add optional add ons such as having free mulch pickup or finished compost so that there is a home and providing that to the community. So we looked at having drop off centers established per 150,000 residents in the county to start. I think having more accessible options are going to be really important for residents moving forward.

Speaker 1 - **02:23:26**

Are you on that? Are you on that topic still?

Speaker 6 - **02:23:28**

Yep.

Speaker 1 - **02:23:29**

No, I want you to finish on dropout centers.

Speaker 6 - **02:23:31**

Well, I was just gonna say in over in Hillsborough county, one of the programs that I started has been very successful, winning some awards with it and it's looking to hopefully be replicated across the state was to have a basically free service to the county. Where Goodwill had staff located at our drop off centers and so residents could come in and donate things. Housewares, textiles is a big piece of what they do. It's their staff on site. It helped them eliminate a lot of the illegal dumping they had at their other locations where people would go there to donate after hours and no one was there and they leave it at the gate and then it gets wet and ruined. That type of thing been very successful, replicated it at multiple sites over there. Again, doesn't cost the county anything.

Speaker 6 - **02:24:11**

Benefits Goodwill because they get a cleaner donation. Stream makes it very convenient for the residents. So there's ways that we can focus on that waste reduction before it ever really hits your system. That's cost effective and really can benefit everyone.

Speaker 1 - **02:24:25**

Just as a comment to that though, we have to be careful that we aren't just subject to the vagaries of a single provider who all of a sudden can no longer. We saw that with the Chinese and recycling, all of a sudden we had nowhere to go with it. It's more complicated now. But as a simple explanation with respect to drop off centers, I think this is very exciting. I know we partner with Plantation where it's every other month in one city or the other, but. And it's very effective. There's long lines, but it's one day out of the month and that means a lot of folks are just dumping we need to have more permanent. I thought this was a.

Speaker 1 - **02:24:56**

Another one of those areas where we could begin that process collectively, trying to understand what that works and has to be a partnership, obviously, with the county on this.

Speaker 2 - **02:25:04**

Yeah, I think this is one of the most important things that we're doing here. Because what I've seen at the Broward county centers is if you're not a participating city, they turn right around and they say, well, this is going right in my trash.

Speaker 1 - **02:25:14**

Yep, absolutely.

Speaker 2 - **02:25:15**

And then, you know, it's going. You're doing some real bad environmental, you know, dropping off in the landfills, etc. So one of the most important things, that's why one of the reasons we're.

Speaker 6 - **02:25:26**

Here, another point to really drive home and Helen touched on it, is that the threat of facility fires and truck fires due to the waste stream, in particular the lithium ion batteries, is growing exponentially. And so having more convenient ways for residents to properly dispose of those items will help safeguard your system from potentially catastrophic fires as well. When we look at those other facilities we talked about. So these types of things, again, have to be convenient. And it's a great touch point to help really engage with the community on other initiatives that you want to do regarding waste reduction. Next slide, please. Dan, you want to take this one?

Speaker 3 - **02:26:04**

Great points. So transfer stations, it's really about optimizing the management of waste from. From the point of collection through a consolidation point and ultimately to where it's going to be processed. It provides operational flexibility. When we envisioned the. The network, again, it was agnostic of what existing infrastructure is there. As you all read in the package that was submitted or provided by the county, there. There are opportunities. Again, what we looked at is what is the need. So geographically, we looked at it in terms of sections of the county, north, central and south. Coincidentally, the facilities that waste management operates essentially a diagonal across the county. So there are many ways that you can get there. We looked at, we tried to tie it to each scenario.

Speaker 3 - **02:27:01**

So while we're assuming that there are three transfer stations, depending on what scenario is ultimately selected, will dictate what the throughput or what the size of the facility, the land requirements are. But we also, you got to think about the impact in the community, where it is, and proximity to thoroughfares. So fortunately, you have i75 and i95 that are conveniently located in the county. And when we go through the siting exercise, that's absolutely what we're thinking of in terms of flexibility. Next slide, please.

Speaker 2 - **02:27:37**

I would just add us 27 to that as well.

Speaker 3 - **02:27:39**

Thank you. Okay, so Alan, for. We have to assume worst case scenario, right. We can't wish away. We can't expect

that we're going to go from where we are today in the 30s, 30% recycling to where we want to go north of 75% in an instant. We know that we're going to need a landfill as we get there and we know that we're going to need a landfill once we arrive there. It really is an end of life solution. Our focus, as has been discussed, shared with you members of the community and by our team, we're looking at maximizing the beneficial use of the materials upstream so that we're minimizing what the needs are. But today there are still waste stream components that just have no market value.

Speaker 3 - **02:28:41**

For the purposes of this white paper, we're assuming a square, one square mile, 640 acres and allowing for adequate buffers, we looked at about 410 acres for disposal and we applied it to each of the scenarios that we'll be talking about in a moment. Which changes the amount of capacity, which changes the site life. We can't shy away from the time that it takes if you can ever site a landfill. Right. So as referenced early on, Sarasota county was the last new landfill. It was 1998. There are lots of expansions. There are some unique advantages that the private sector has. And we can see the transition over the years from municipal landfills, not municipal solid waste, but municipally owned landfills, to larger regional landfills. They go hand in hand with transfer stations and other modes of transporting the waste.

Speaker 3 - **02:29:38**

But it is a long process. And for anybody in the solid waste industry or perhaps that have knowledge of communities that have tried to decide a landfill, it's often described as the fight of a lifetime. Because while there is absolutely a public benefit and a public need, who wants to have a landfill sited next to them or in close proximity or to be impacted by the traffic that's going to go there. It is absolutely part of an essential service. I think Broward county even defines it as such. So it is a necessary backstop. And now what I will say is where that landfill is a matter of public policy. What we're talking about is the need.

Speaker 1 - **02:30:26**

Okay, Member, right now just some clarity on the assumes. Sure, that's what I just want some clarity on that. Because it assumes a 640 acre site with four. I'm just curious where that get me there.

Speaker 3 - **02:30:39**

Yeah, we have. So this is a modeling exercise. Right. So it's financial modeling. So we had to assume something. If you're going to site a landfill, go as big as you can. Usually for rule of thumb, we use a thousand eight. I use a thousand acres in my professional life. A thousand acres. Broward county is largely built out. There is not a lot of land left. But we had to assume something. So we narrowed it down to one square mile. Could be less, could be more. As JD suggested, what were going for was to be directionally accurate, appropriate, we have to hit the target. It doesn't have to be a bullseye at this point, but with your help, we're going to be able to refer, define, you know, where we are on that target.

Speaker 1 - **02:31:24**

Thank you. Good. Larry. Okay.

Speaker 3 - **02:31:29**

Okay. Waste energy. This is here because there is existing infrastructure and you once had another facility. I know it's part of the collective conversation. We assume, and we've shared this with you in the past, we can't write checks for private industry. So I commend. The chair would like to support the notion, have a conversation with industry to know where the appetite is to create partnerships with the authority. We assume that the nameplate capacity of the

wind waste facility would continue to be filled. We know that it is not utilized completely by Broward County. There's waste from other municipalities that's going there. But. But we had to assume something. And in addition, there would be a new facility that would be, excuse me, a million tons per year mass burn.

Speaker 3 - **02:32:26**

It is only used in two of the scenarios which we'll get into in a bit. We recommend advanced metal recovery because that will capture more waste through the process. And before the ash requires disposal, it does move the needle in terms of maximizing the beneficial use of the waste stream. You can make an argument whether it is the right beneficial use or not. But I would challenge you to think of a waste energy as a volume reduction approach. There are a lot of people in the county that live here, that work here, that visit here. There's a lot of waste that needs to be managed. And this is a tool we are not advocating for or against. We are simply presenting it as an option or an opportunity. And on this in particular, we look forward to your policy direction with respect.

Speaker 1 - **02:33:24**

To siting and acreage. I know in task 10 or some discussion about 40 acres, there's also examples in task 4 of 30 acre sites and co located with other aspects of it. What. What is. Because I know there's no discussion right now about sighting of that, although we do have one section of land that has potential still Zone for electrical generation. What. What have you guys done to evaluate whether that's a parcel, even if it's not at a million tons per year? What is that viability of something like that?

Speaker 3 - **02:34:00**

Just a broad brushstroke that there once was a waste energy facility on that site. And just to answer that specific question, in terms of the discrepancy between 30 and 40 acres, one is an ideal. There are constrained sites for solid waste facilities all over Florida, all over the country, all over the world. Again, we are looking, we're trying to identify what is reasonable and appropriate, but at this point we're recommending what we think is a reasonable size for each kind of facility. And we're going to continue to refine it as we get policy direction in terms of what to consider and what not to and as we get down the road and ultimately to make a recommendation for the authority.

Speaker 1 - **02:34:49**

All right, member FER and then member breakers.

Speaker 2 - **02:34:52**

Thanks. Two questions. One, how important is redundancy with regard to ours? Then two, is there an economy of scale with having. If were siting one right next to each other?

Speaker 3 - **02:35:06**

I mean, really, it's a matter of logistics. Redundancy is absolutely important. Not being an engineer, but sitting next to an engineer, what I've learned from engineers is that's what engineering is, factors of safety. And redundancy is part and parcel of that. With transfer stations, you can gain the operational flexibility. I mean, I think that under the old system it worked well with the network of transfer stations and having a resource recovery facility in the north and in the south. But again, there's lots of flexibility. And as we start to narrow down locations, we can actually run analysis that looks at what are the impacts, the actual impacts or predicted impacts.

Speaker 2 - **02:35:50**

Yeah, because we actually have three sites that are possible.

Speaker 5 - **02:35:53**

So to answer the second question, anytime you pick up waste and put it down, it costs you money. And you know, whether it's a transfer station where it's relatively efficient, but if you can co locate, then you don't necessarily have to put a truck, you put on a conveyor and all of a sudden things get a lot che member breakers.

Speaker 1 - **02:36:14**

Thank you, Chair. Quick question. So I or recommendation? I think it would be helpful to know not only like kind of the optimal site, that size that you're putting in there, but a minimum, because that may, you know, allow for other options that maybe we're not looking at. I guess that's a capacity issue as well.

Speaker 3 - **02:36:36**

Yes, and it's not. It's not just a singular consideration. I remember working on a project, and I think it was in Singapore, a waste energy siting project. It was about the size of this square, or at least it felt that way. They were asking for the impossible. And the solution was they were able to use sort of vertical circulation in a very unique way. So engineers and designers are infinitely clever and creative.

Speaker 1 - **02:37:07**

Thank you.

Speaker 3 - **02:37:07**

But to your point, you're absolutely right. We should. We should be providing minimums. We're just not at that level of clarity to know what that number should be.

Speaker 1 - **02:37:17**

Great. Yeah, perfect. And I wasn't just referring to waste energy. I meant pretty much any of these options that we're looking at, remember? Yeah.

Speaker 2 - **02:37:26**

I think one of the. One of the big questions we're going to have to face is does it make sense to add another burner to the existing one or does it make sense to build a new one? And which one, you know, would just. The whole. The whole analysis of that is because that's a pretty old burner now. And does it make sense to just. I, I think that's something all of us are going to have to figure out, but we need your help on it.

Speaker 1 - **02:37:53**

Member Moreland, and number me quickly.

Speaker 4 - **02:37:56**

And that was. I was disappointed to learn this morning that the county did not have the option to purchase the Willowbrator site. But that was my question. Is factoring in the possibility, would we need a wte, or could we. The addition of another burner fit our needs when we're looking at waste reduction and long term?

Speaker 3 - **02:38:19**

I'm going to give you a very unsatisfying response. It depends.

Speaker 1 - **02:38:24**

Member Mead. Thank you, Chair.

Speaker 3 - **02:38:27**

Let me broaden the conversation a little bit. I think where we're heading to is what can we get to look at a cost benefit or an expense revenue ratio for the different scenarios. And I'm not talking about something that has to do with social. I think we each have to wrestle with that in our own aspects. But we're all going to be paying a dollar for this and what are we going to get for that dollar that we're spending?

Speaker 1 - **02:38:52**

And some of the.

Speaker 3 - **02:38:53**

Some of the scenarios, I realize, are going to be mutually exclusive, but I think we need to have something that.

Speaker 1 - **02:38:59**

We can look at to tell us.

Speaker 3 - **02:39:01**

That this may be one of the best options or the best option for us to look at. And that goes for all the different options, not just the waste of energy, not just the landfill, but all the.

Speaker 2 - **02:39:12**

Different scenarios that we have.

Speaker 3 - **02:39:14**

What can you give us that we can hang our head on as far as a dollars and cents scenario.

Speaker 5 - **02:39:23**

Slide slide 47.

Speaker 3 - **02:39:29**

It isn't.

Speaker 1 - **02:39:32**

Yeah, we got, we need to get going.

Speaker 3 - **02:39:36**

Yeah, it isn't as easy as that, but we hear what you're saying and we've got to get you with enough information. But where we started the conversation many months ago was focusing on best value, which cost is a component of ability to change behaviors. Right. All of that front end activity. So that's not facilities, that's public engagement, education and outreach. I guess my point is it's complex. We did not assume land acquisition cost in all of this. So as we move forward and we get clarity, we can do much better at narrowing that focus.

Speaker 3 - **02:40:19**

But I think for the chair coming out of this, if we could have clarity on what are the elements that are important for you, both in terms of facilities and as we move forward in our deliberations and our work, we're going to move from the planning phase and sort of down the line so we can gain greater precision. I mean, typically engineering estimates at this level, I hate to say it, but plus 100, minus 50. We try to use a conservative approach because part of this also is managing expectations. Yeah, I realize it's a broad question.

Speaker 1 - **02:40:58**

Would you base such a consideration on.

Speaker 3 - **02:41:01**

Tonnage or what would you use at the basis? Ultimately, it can be rolled down. Right. We can slice it up lots of different ways, but probably the most digestible would be what is a cost per ton under a given scenario?

Speaker 1 - **02:41:16**

All right, we're at slide 39. I know you have. Is it 61 that I see there? Yep. Yeah. So we need to. Yeah, no, these are good questions. If we have to come back and do it during the next workshop, that's perfect. I don't want to overly accelerate, but we need to get to some of the other issues.

Speaker 6 - **02:41:32**

Yeah, we definitely want your feedback on the scenarios. So this slide was basically just a reminder that, you know, we've looked at all the available technologies that are out there, the ones that are existing and are working well, as well as those that are on the horizon. And we've put forth in the scenarios the technologies that we think are the lower risk and have the best benefit for the community. Also want to pivot back though. We are a, that we're going to have strong regulations and source reduction and education outreach in all of these scenarios. That doesn't mean that we're only relying on these technologies. We're assuming we're going to have to do the soft side of stuff, the behavior change for any of these older ones to work as well, next slide.

Speaker 6 - **02:42:10**

JD so the next couple slides kind of paint a picture of the reality of recovery in the US Waste stream. The fact is that we've not been as great as some other places in the world with recovering materials. And that number we cite from 2013 has been fairly static from that. I think the most recent EPA data from 2018 actually showed the US recovery rate dropped a little bit. And so not to dwell on this, but really to paint the picture, if we really want to strive for 75% waste diversion, it's a heavy lift. It's going to require a lot of investment, not only in education, outreach, but also facilities or partnering with existing facilities or with private companies that are offering a solution. And that's the task before us. Next slide.

Speaker 6 - **02:42:58**

So specifically looking at kind of our waste stream here, only about 70% can readily be recycled. With recycling technology that we've got, there's things that we can't recover. We mentioned a few that the dirty diapers come to mind, skateboard wheels, cat litter. There's, there's things in the waste stream that you can't readily get at right now. There's other things that the facilities are working on. So you've got that 10% of things that could potentially be recoverable, but with existing technology, they're not necessarily recovering them yet. But with AI with optical sorters, there's a lot more potential for that. Best case scenario, with those from recycling, you're going to get 40 to 60% of that waste stream. If you were to pursue a waste to energy option, you could get additional recovery from what isn't readily recycled. Next slide.

Speaker 6 - **02:43:47**

In developing these scenarios, we used the best available data that we had. So the communities provided data. We also used your recent waste composition study that SES completed. We looked at the mass balance that was projecting out not only the population but also the type of waste and the waste tonnage that you'll see over the planning horizon. And then we trued that up with the annual data that the counties have to submit to the Department Environmental Protection to really inform our decision making process. Next slide.

Speaker 4 - **02:44:19**

All right, so I'm going to start off before we dive into the scenarios, the approach that we took to building these scenarios and first off, we assume the 2045 tons and population. So where are we headed? We're heading towards six and a half million tons of waste generated by 2045. And with that forecast, what will collections and number of facilities needed for recovery look like? Travis just mentioned utilizing the mass balance and dep recycling report for tons. And these scenarios, we built it on kind of the collections and facilities and tried to add flexibility and scalability where were able to. I want to point out that facilities here in the scenarios do not include the cost of land. I think something we talked about earlier is there's multiple ways to fund infrastructure, whether it's through public private partnerships, solicitations with private corporations and more.

Speaker 4 - **02:45:20**

And we also know the cost of land is going to change over that 20 year horizon. So our focus here is the operational line capital costs. We talked earlier about how our scenarios are built on the recommendation that we're retaining single stream recycling. And all scenarios, as Travis kind of emphasized, include education, outreach, policies and programs. And it's so important for us to not just talk about the what, but the why. We hear from residents all over the country that one of the largest barriers to recycling is the distrust that recycling is actually getting recycled. Is the material going to the places or what does that look like? And so education, outreach, awareness is absolutely critical for us to further our diversion and recovery. Next slide, please.

Speaker 4 - **02:46:17**

So with all scenarios, and actually I think member Ballon was talking a little bit about this technology, it is critical for us to look at production, not just recovery. And for Broward, you know, we talked about policies, education, but new technologies to transform the waste management system and to illustrate this technology system such as AI and apps to help residents figure out what can I recycle? What can I recycle in my zip code? Because as we mentioned earlier, it's not a harmonized list of what can I recycle from home to maybe where I work or a neighboring jurisdiction. And so one of the things that we did in task nine was looking at all the emerging technologies that are coming online and how we can incorporate this to all the scenario building. Next slide.

Speaker 4 - **02:47:11**

All right, that's us starting off with a quick summary and I'm going to ask you to hold off on your questions because we are going to go through each of these scenarios one by one. But one thing I want to kind of illustrate within all of these scenarios is the absolute critical point. We need to capture Organixx to get to some of our recovery goals. Yard waste is 14% of the residential stream. Food waste is 16%. There's more organics to also capture in the commercial industry. So there's organics that we really need to think about, whether it's policy, infrastructure, collections, how do we get that? And each of these scenarios, we scale up the intensity and the variety of collections, whether we have voluntary drop off centers or an opt in curbside organics program.

Speaker 4 - **02:48:03**

We looked at kind of transforming the system completely to a wet and a dry system, which I'll get more into. But again, some of that constant is that need to collect the green stuff, the yard waste out of the system. With all these scenarios, there's of course efforts to reduce waste at home or at work. Whether it's encouraging backyard composting or grass cycling or other efforts to kind of reduce it from the source. All right, moving to the high level scenario summary with projected diversion rates, we are looking anywhere between 51 to 83% recovery rate with these scenarios. And we propose for all of these scenarios ways to tackle organics, ways to tackle single stream or recyclables.

Speaker 4 - **02:48:52**

But we also talk about the need for hard to recycle recovery that we touched on the drop off centers as well as construction and demolition debris recovery facilities. So those are all kind of represented here. And as Dan mentioned earlier, you know, with all of these different facilities, there's going to be residue, there's going to be contamination, and of course we want to reduce through education and outreach, but there will be leftovers that will have to go into landfills after waste energy or whether or not that is employed. Next slide please. So let's start with the practical status quo. Where is Broward county now? And for the most part in Broward County, MSW and these communities are collected twice a week and goes to transfer station waste energy and landfills. Single stream is collected once a week.

Speaker 4 - **02:49:49**

There are five communities that have suspended recycling and are collecting as msw. And for yard waste it is typically collected once a week. Whether it's collected with your bulky waste or through your msw, it's not conventionally recycled in the sense that we're going to be talking about in the next slide please. All right, scenario A looks at one, shifting the MSW that is currently collected twice a week to once a week. And that will allow us to reallocate some of those collection costs to add a new diversion. I know this is going to be a challenge culturally. However, this is a really important way for us to add the materials that already part of the MSW collected it twice a week and shifting it to a Recovery can.

Speaker 4 - **02:50:44**

So MSW once a week, single stream restoring service to 20% of the county that is not receiving and adding that dedicated yard waste collection which will go to one of the two facility scalable organics processing facilities for mulching and biochar. We want to start the conversation about food waste recovery. And of course there's donation and reduction efforts. But for the food scraps are generated, we are looking at proposing some drop off centers that residents can bring voluntarily to these centers and have that material be composted. As I mentioned earlier, for all of these scenarios, textiles, hhw, electronics, other hard to recycle materials will need to be collected and CND as well. So let me pause there if there's any questions on scenario A. I don't have a question.

Speaker 1 - **02:51:43**

I know the assumption of one time a week MSW is not achievable. Currently in most communities there are at least two times a week post Covid the amount that has been generated, particularly because folks are at home, the haulers will tell you there's just no way we can go to 1. Is this aspirational or you're saying at the outset? Because I can see as we work everything from the shelving at the stores through behavior and diversion, maybe we could get that, you know, one time a week. But I think for a lot of communities, particularly in economically challenged communities where there can be multiple families or large families living in a single place, it's going to be really hard, if not impossible.

Speaker 2 - **02:52:27**

Yeah. Could it be achieved with two cans? In other words, if you had.

Speaker 1 - **02:52:33**

No.

Speaker 2 - **02:52:33**

In other words, you pick up once, but you have two. Two.

Speaker 1 - **02:52:38**

I think. I think the problem is a lot of folks don't have room for two bins. And the other issues, you're now keeping at least one bin for a full week full of garbage. So it's an idea. I'm not dismissing it. But the point is that whatever it is, if it's going to go to once a week, we're going to have to understand does that work for every community as an assumption?

Speaker 4 - **02:52:57**

Right. Whether that idea of is it aspirational once a week collection has been proven in many parts of the country. And I don't know if Travis, you want to illustrate for Florida specific.

Speaker 6 - **02:53:09**

Well, I'll just say in Hillsborough county when I was there, twice a week was the norm and that was what the public expected. But there's lots of jurisdictions that do once a week, so it can be done. I think offering a second cart can be a bridge to help get people there. And whether you charge for that, there's a variety of ways to get there. But so I think we need to try to move in that direction to be more efficient with your collection system, better use of your dollars. Better. But there's a way to kind of ease the Pain to get people there. And that would be part of the how discussion. That comes later.

Speaker 1 - **02:53:40**

And it's a fair point. We could talk to industry about if that's achievable too. Yeah. Although the trucks will get filled up more. Right. So they're gonna have to go transfer stations more often. Everything else. But the point's well taken. This is really a question. I don't know if anyone knows the answer to this. Is there any municipality currently in Broward county that is doing one time a week.

Speaker 4 - **02:54:01**

We can get back to you on that?

Speaker 1 - **02:54:02**

I don't think there's anybody. Anybody here. Not me. Okay. So, I mean, yeah, we realize that. But the point, I think what's happening. Right. Is they're telling us that what you want to try to achieve, I guess conceptually, if you can reduce, you know, you have separate drop offs and everything. But whether we get there or not is a separate question. I just want to lay the assumption that it's a challenge to get there. And we'll have to remember. Do we have any statistics on how much is used in that second pickup? I know in the ranches, you know, we have one pickup early in the week which is both regular and recycle, and then we have another one later on in the week which is just the.

Speaker 2 - **02:54:43**

The regular.

Speaker 1 - **02:54:44**

And my understanding from the.

Speaker 2 - **02:54:46**

The.

Speaker 1 - **02:54:46**

I don't have the reports in front of me at the moment, but that there's. There is a huge drop off for that second pickup. Like what comes to mind is 20 to 25% of what is in that first pickup. I think that would be helpful to know. Just investigating that option.

Speaker 4 - **02:55:03**

Yeah. And I think I want to point to our waste composition study that what is currently being thrown into our second car or our MSW bin is recyclables or materials that we can divert into another can. And, and I think as we try to also reduce and divert that material, that collection system can be transformed. And that's what we're talking about in kind of the next 20 year horizon. I also want to point out, you know, city of Plantation, they have a pay as you throw system. There are ways to look at how can we use policy to our benefit to try to get residents to recycle more and recycle better to reduce our contamination and have a reduction of that MSW stream. Yes.

Speaker 5 - **02:55:51**

So I'll also say that there are cultural shifts around collection norms that happen in every community through the country. And I'll give you an example of Chicago. Midwest has a thing about alley collection. Think For a minute about Chicago in snowstorms, in the alleys, and the transition they had to make was away from alley collection because it meant it enabled them to transition away from two and even three people on a truck, which has a significant impact on cost. And that was undertaken over the course of five or ten years because of those changes.

Speaker 4 - **02:56:37**

Member HORL Very quickly and I was thinking that I share the same concerns as you do, Mayor, but I was thinking about our pay as you throw system. It is incentivization, especially when people are paying. We have two sizes of blue bags where the solid waste goes into. And similarly, I think it will incentivize people. If you know you're only getting your trash pickup once a week. Then again, where the education component comes in is you're going to make sure that your putting things into recyclables and you're recycling your food waste. So it's going to be a process. It's going to be a very long educational process. But I do think that ultimately we can get there just based upon what we do in City Plantation. Absolutely. Thank you.

Speaker 1 - **02:57:14**

Thank you.

Speaker 4 - **02:57:15**

Moving on to the next slide, please. All right, looking at single stream options, there's a lot of different ways to get there in terms of facilities. We can obviously maintain the status quo and utilize the new facilities that are going to be coming online. There's also a way to issue a competitive RFP for private MRF development or looking at a regional public material recovery facility or MRF with a public private partnerships. And again. Oh, did you want to add. J.D. Okay, thank you. So moving to the next slide on food waste drop off options, I wanted to kind of illustrate some of the proven ways municipalities are tackling organics. That first picture there, that's actually my baby. I worked on that in the city of Alexandria.

Speaker 4 - **02:58:03**

We had that program for over 10 years and we started composting at the farmers markets and rec centers and libraries and we had staff there to educate residents what composting is, what materials can be composted. And there was high quality control materials. There is higher labor cost per ton. However, it is a way to get the conversation started about organics. Some of the municipalities that we're also seeing now is looking at these on street food scrap collection bins near multifamily complexes. And this is kind of, it's a bin where with your phone, you scan a QR code, it unlocks the bin and you can drop off the waste right there and kind of bringing that collection system closer to the residents to make it more convenient. Next slide please. So scenario B looks at taking kind of starting that conversation about food waste.

Speaker 4 - **02:59:00**

Everything else retains msw. Once a week, single stream is restored to residents, yard waste is added. But we're now looking at an opt in curbside program for food waste collections. And so these materials would go to that cover, aerated static pile zone, a compost facility. And there are, if you go to the next slide for me, there are companies now in Broward county that are doing this. Renewable is one example in Broward county that for service fee, I think it's $20 a month, they come and bring you a bucket, a five gallon bucket, you put your food waste in. It gets collected once a week. So you know, looking at how can we, whether it's subsidizing or encouraging residents to participate in the infrastructure and resources that are already available in the county. Next slide please. So scenario C looks at kind of.

Speaker 4 - **02:59:57**

Yes, thank you. So, so part of what's coming up for me now is if you can go back to the example in the city of Alexandria, Virginia. Yes. Yeah. So while I love those ideas when you talked about in that community that staff was out doing this is an additional cost to cities. So what would be super helpful and I think even necessary as we roll out this plan is for cities to see transportation transparently. Aside from the cost of what we're contributing to make the work happen, what's going to be the cost for the cities to implement some of these ideas? I mean, I could just hear in my, in a conversation with my city manager which staff is going to be responsible for executing this.

Speaker 4 - **03:00:47**

So I think what would be helpful for us and for member cities in general is to understand aside from the cost that we contribute to this authority, what additional human capital, what other budget consideration and staff time would we need? If we're choosing any one of these scenarios, that's a reality that is going to impact our ability to execute. Absolutely.

Speaker 1 - **03:01:15**

Job creation, member breakfast. Yeah, I agree 100% with that. There is some perhaps hidden costs there. I do think an element of this though should be part of actually the education budget. Because when you see a drop off like that that is an education piece that says we are recycling, it is going somewhere. This is something that is real and that we're going to be a part of. And so I think education, those two should be hand in hand.

Speaker 6 - **03:01:45**

To your point, you're strengthening your system when you have that engagement with the public and staff can talk about, you know, how to recycle Correctly how to use the HHW sites in addition to looking at the food waste. It's just a touch point to really engage with them, to get them to take ownership of their waste and to buy into that behavior chain.

Speaker 4 - **03:02:01**

I get the value and I agree 100%. I'm all about education and doing it in a way that is sustainable. But I'm just thinking

about, you know, I get to wear two hats here, right? I get to. So that's the piece I want to make sure that give us the tools so that we can go back and have meaningful conversations with staff. Absolutely, yeah. I mean with all of these scenarios it's an investment. So we will follow up on that back to crc. So moving from kind of, we talked about the drop off centers, the opt in, you know, voluntary current curbside programs where maybe residents born that cost if they are interested in participating to. Scenario C is looking at the collection of food and yard waste. And that material would go to the 10 CASP or cover area static pile composting facilities.

Speaker 4 - **03:02:57**

And this is truly one of the ways to if you can go to the next slide, efficiently collect materials. Collecting them together can reduce hauling costs, reduce vehicle greenhouse gas emissions as well as the wear and tear on the roads. Many cities that are progressively moving towards zero waste have implemented this. Austin, Seattle, Portland, et cetera. And so this is one example of how you can collect the organic streams at the curb. Scenario D is looking at really transforming the way we collect materials. And I think earlier we talked about the wet and dry cans and so this is looking at having a container for wet stream. So that's your food waste, your organics, maybe your dirty diapers and then a dry MSW which includes your recycling.

Speaker 4 - **03:03:53**

We would collect that wet MSW twice a week, dry MSW once a week and yard waste once a week. And that yard waste would go to that compost facility. As GD mentioned earlier when we talked about the mixed waste processing facilities, as we commingle more materials together, there is some loss in recovery efficiency because there's naturally contamination. So the recovery rate for this system is lower. However, it's a different way of collecting the materials in a wet dry system. Scenario E please. So scenario E is scenario C. We talked about food and yard waste being collected. But what do we do with the remaining trash? We've recycled it, sent it to a mrf. We took the organic, sent it to compost facilities. What about the remaining trash before it goes to a disposal facility?

Speaker 4 - **03:04:49**

Facility, Whether it's a landfill or Waste to energy, we would be sending it to a mixed waste processing facility to capture any materials that might not have been captured because some residents did not know something could be recycled or maybe the lack of trust or care. So how do we get, you know, every juice out of that system? And so were looking at a mixed waste processing facility with fiber extraction to get every material out of there. So we talked a lot about in earlier conversations about what did you use in terms of criteria to determine whether one scenario is more effective than another? This is the part I wanted to bring to your attention. So we looked at cost both from a capital and operational experience. Diversion, cultural barriers, political barriers, geographic constraints, environmental justice and likelihood of success.

Speaker 4 - **03:05:52**

What is the likelihood of the scenario or facility overcoming some of the potential risks and obstacles. And this is the criteria matrix that we have. So in scenario A, it is the lowest in terms of cost for both collections and facilities. Diversion will yield you in medium cultural. It's low again, you know, we're bringing back recycling, we're adding yard waste. And compared to some of the other scenarios, it might be a lower cultural barrier as well as the political and geographic environmental justice is a lower compared to the others. And the likelihood of success for scenario A we think is high. For scenario B, the costs get higher. This is when we introduce a waste to energy facility. We talked earlier about adding a new 1 million ton per year waste to energy facility on top of all the other facilities.

Speaker 4 - **03:06:52**

We talked about the compost facilities, the C and D drop off centers. So looking at some of those costs, it gets higher, the diversion rate gets higher because of some of the recovery efforts that we talked about for organic for reduction, but also what waste energy credits help in terms of diversion credit in Florida. We understand that a new waste energy facility is going to be a tough conversation, but that's kind of where we're going to go into the next slide of what the authority here thinks is going to be important consideration points of what we should consider in these scenarios. Going to scenario C, also that waste energy facility, it's very mirroring that. Scenario B, scenario D is the wet dry system. And finally scenario E is that mixed waste processing facility.

Speaker 4 - **03:07:53**

So after all the recovery efforts of recycling, composting and diverting, how can we get that last remaining material at the end? Next slide please. This is the point where we wanted to kind of have a conversation with the authority. There are many considerations in terms of how we get to some of the goals. But what are the priorities for the authority? Is it meeting that 75% diversion goals, is it cost resiliency? We talked about redundancy earlier. Behavior change. Is it the number of containers at the curb? Maybe we're okay with having three cans at the curb, but not four. And so we want to kind of gain from you some of the feedback of what is really important as we're kind of reaching that final master plan and refining these scenarios.

Speaker 4 - **03:08:51**

So the remaining factors, the type of processing facilities, the number of facilities, environmental justice, climate, NIMBY land and siting risk, public perception and support, and of course, equity as well.

Speaker 1 - **03:09:07**

Okay, thank you. Member Dunn and Shuham and member Breakfast.

Speaker 4 - **03:09:11**

Yes, I'm sorry, I didn't see us. Unless I missed it, I didn't see a slide. Speaking about the public health implications of each of those strategies that you recommended, I'm not really prepared to weigh in on all of that until, I mean, because I feel like I don't have a full picture on each of the.

Speaker 5 - **03:09:31**

I would suggest that the environmental justice column has a huge component to public health.

Speaker 4 - **03:09:39**

I get that. But for me, and I don't know if anyone else needs to see that, but for me, for each of the main. I think it was four different scenarios that you propose I need to see. So just generally saying environmental justice to me doesn't give me clarity so that I know what I saying. Yes, Joe, that's good feedback.

Speaker 5 - **03:10:04**

No, we can certainly do that.

Speaker 4 - **03:10:08**

My question, I hope, is a simple one. And that is when you talk about cost high, medium, low, are you basing that on the comparison amongst the five scenarios? Or does high costs mean high? Or can we safely assume that even when it says high, it's going to be cheaper than what all 31 cities are doing now independently, because we have savings based on quantity?

Speaker 5 - **03:10:37**

I think I have to jump in and say immediately, there is no solution out there for you that will be cheaper than what the cities are doing now.

Speaker 1 - **03:10:48**

That's just a reality.

Speaker 5 - **03:10:50**

The implications of siting a new landfill or taking it elsewhere are a really high bar.

Speaker 1 - **03:11:01**

Just.

Speaker 5 - **03:11:02**

I apologize for my bluntness, but. But I think we gotta. We gotta be really clear about that.

Speaker 4 - **03:11:10**

I also want to point out we're currently, I think in 2024, generating 5.2 million tons of waste in Broward County. We're gonna be moving to six and a half. And so over the next 20 years, there will be more people in Broward, there will be

more tons of waste generated. So naturally, we're going to have to come up with solutions to manage that material.

Speaker 1 - **03:11:32**

Member Vikras thank you chair couple questions. When I went over this, a lot of most of it made sense. When we got down to scenario E, there were a number of things that just didn't click with me. The first one is under cost. And I forward this on. I don't know if It made it to you all or not, but there was a table, I think it's table 18, where the math just did not make any sense at all to me. And I didn't know if that was an error or if you could walk us through that. But I think that is probably a key element of why in that summary there that one is high cost. Can you, can you walk through that?

Speaker 4 - **03:12:21**

Yeah, absolutely. Table 18, we did receive that feedback and we're going to be adjusting. It is an error. And I will say while collection costs are incorporated in all these scenarios, the big dollar amounts we're talking about is some of the capital and operational expense of these facilities. Now, there's a lot of different ways to tackle facility costs, as I mentioned before, whether it's public, private partnership or offsetting, you know, facility costs with processing fees, revenues generated from the sale of compost or mulch. There's a lot of different ways to make it cost efficient. But there is that kind of investment in the beginning that will be required.

Speaker 1 - **03:13:04**

Okay, and then can you walk through and once again, scenario E for diversion, political and environmental justice. Why are those three high?

Speaker 4 - **03:13:17**

Yes, for diversion. Yes, it is higher. So after we collect the food and yard waste, composting the organics, recycling the material, and at the very end, the mix the trash that's remaining instead of just sending it to a waste energy or just, you know, landfill first, we're trying to squeeze everything out. What are the single stream that was left behind that we can scrape? What are some of the organics that we can maybe screw press and get some of the liquid out and anaerobically digest, what are the fibers that we can extract and recycle that material? So that is why the diversion rate without the waste energy in that option is a higher diversion rate. So I think it's like 73%. And in terms of the political and environmental justice. Judy, can you touch on some of the fiber extraction and EJ's? Yeah.

Speaker 5 - **03:14:16**

So one of the, if you think about putting waste into a hydrolysis process that's going to separate out, it's basically we're wetting down waste and we're separating out the fiber. What's left behind in that water is contaminated to the point that, let's just say one of our clients we're doing a similar process for, which is King County, Washington, which is essentially Seattle.

Speaker 3 - **03:14:49**

Won'T.

Speaker 5 - **03:14:50**

Consider fiber extraction because they don't believe it will meet their emission requirement to go into their treatment works. Okay, so they have not worked that out. VP claims that it's a work in progress. They're doing it in a rural community in Oregon that has less scrutiny than King county has and probably less scrutiny than you have.

Speaker 1 - **03:15:16**

Right.

Speaker 5 - **03:15:17**

As a consequence, it shows up as a high risk.

Speaker 1 - **03:15:20**

Okay, that's. That's very helpful. Now, I thought that like that fiber extraction, I thought that was a future technology where weren't really looking at this point.

Speaker 5 - **03:15:29**

So for the reason that reason in particular, that's true. Their ability to actually extract the fiber has been proven commercially. This is a major. I mean, GP is privately owned Koch Ventures outfit that doesn't put technologies out there that are going to lose the money. So they've figured out how to do this, but the consequences of doing it have some byproducts that we're making aware to you on the matrix.

Speaker 1 - **03:16:01**

I appreciate that. That makes a ton of sense. My concern is that I think. I don't. I don't know if there's a lot of good things in E that I like, but it seems like we've mixed in some things that are not legit. And I'm just wondering if it's kind of like a strawman that we're just going to knock down because we've included technologies that we said weren't ready for prime time yet. So. And okay.

Speaker 5 - **03:16:25**

I would say that this is a place where we're getting the discussion started. It would be completely legitimate for you to say, what does scenario E look like? Like, if we don't do fiber extraction.

Speaker 2 - **03:16:38**

Exactly.

Speaker 5 - **03:16:40**

And we would say that's a fairly easy analysis to do. In fact, we considered having a scenario F, but we thought that was too many. So just, it's. It's not. That isn't a hard place to go.

Speaker 1 - **03:16:53**

I don't know how the rest of the committee feels, but I would feel much. I think then it becomes a legitimate scenario. We can look at if that was excluded.

Speaker 5 - **03:17:01**

That's exactly the feedback we're looking from you all.

Speaker 1 - **03:17:04**

Okay.

Speaker 6 - **03:17:05**

Some of the other concerns on E, I'll just point out that the water use and the wastewater issue, but also those three facilities you're siting versus one waste of energy that was handled the same tons. So the barriers to land and not in my backyard. Raised that because you'd have three different facilities throughout the county, you know, three times. A challenge to cite those.

Speaker 1 - **03:17:27**

I'll come to you. Second member. Done. One of the considerations, right. Is we are looking within Broward County. I know there's been an effort to say how can we control our destiny within the county geography. Reality is we're a region. Right. And we know there are assets at least in Palm beach county. One is burned down. Right. Just in waste energy. What work has been done to figure out what the capacity is for Palm beach county in a regional partnership that might have us building some assets, them locating some additional assets and us working together. I know that wasn't really within the scope, but I want to get a sense of are there other opportunities as well in the partnership?

Speaker 1 - **03:18:08**

I know you mentioned, you know, PPP and other things we can do within the county, but given the siting issues, that can be difficult on some of the strategies. But. But maybe not others. Has there been any consideration to that regional approach?

Speaker 3 - **03:18:23**

And I have a follow up after that consideration. Not deep analysis. We can identify those potential opportunities, but that's the heart of public policy. We can't.

Speaker 1 - **03:18:36**

I get that, but I don't even know right now how much capacity Palm Beach County Waste Energy has and how much

is coming from Broward or is prohibited from coming from Broward. These are issues that in trying to determine do we need a million tons per year or can we work with capacity less and use a site that isn't quite as robust or as was said, can we co locate another burner to try to make up some of the gap? These are. I want to be careful that we don't. We're not looking at it through straw. But if we get too tight, we also may be giving up opportunities for partnerships. And it may beyond your scope, but it may be incredibly complicated. Maybe something we have to at the county level bring folks together. But it.

Speaker 1 - **03:19:15**

But it is a consideration, I would think.

Speaker 3 - **03:19:17**

Yeah, and it's a great point. We should be looking again. We're looking for opportunities and if we don't turn over that stone, it would be okay.

Speaker 1 - **03:19:26**

I had a question on C and D. I'm not sure I understood. On page 18 you said that the Monarch Hill site for C and D is not being segregated for recycling and sale. What is that? Not being separated before it's put in. I mean they're here. They. I just didn't want to put. Take that out of context.

Speaker 3 - **03:19:48**

It's being segregated prior to going to.

Speaker 1 - **03:19:51**

The landfill, is it being recycled? It's being recycled aggressively. And it's just residual that's left.

Speaker 3 - **03:19:56**

Correct.

Speaker 1 - **03:19:57**

You may want to clarify that because as read, it looks like it's not being segregated at all. And I don't want to take that out of context of. Because it helps on the capacity issues to understand that. Member Dunlop, I'll turn to you while I look at my other notes.

Speaker 4 - **03:20:13**

Thank you, Mr. Chair. I have four points that I wrote down here. First, to our chair's point earlier about what most cities are doing around collection, in my city, we're collecting MSW twice a week, recycled once a week, and then bulk pick up once a month. So I think a part of this whole piece about the likelihood of success, at some point, you have to kind of help us to understand how we can transition from where we are to where aspirationally we want to

go. That would be super helpful to me to then be able to go back and sell this plan to my community. Secondly, I already spoke about the public health implication and the importance of understanding that.

Speaker 4 - **03:21:02**

And then thirdly, part of what's going to become important for us to be able to sell this to our community is to have an understanding of what the real costs are to cities, not just from a dollars and cents perspective, but also in terms of staff, time and opportunity cost. And then my final point, to get clarity on what it is you're requesting for from us so that you feel like this is giving you like your marching orders moving forward on slide number 60, are you asking us to rank the consideration or to choose the top couple? Like what are you asking from us today?

Speaker 3 - **03:21:41**

We've. So we've received a lot of great feedback.

Speaker 1 - **03:21:44**

Okay.

Speaker 3 - **03:21:44**

Guidance on collection approaches. Right. And I realize you can't keep give us anything more than general consensus, but what I heard and I'm asking for clarification is currently twice a week collection is where your level of comfort is with the possibility of transitioning over time to once a week collection. Can we work within those parameters?

Speaker 1 - **03:22:10**

I think and we can work with.

Speaker 3 - **03:22:12**

Head nods as long as this is.

Speaker 1 - **03:22:13**

Part of why we need industry day as well.

Speaker 3 - **03:22:15**

Right.

Speaker 1 - **03:22:15**

Because the haulers have their view on this. They know what the volumes are. To your point earlier about second day, but that's a drop off. Some have bulk once a week. We've gone to bulk once a week. So harmonizing that understanding, from the hauler's perspective, what is rational, I think we have a gestalt of twice is what where we're at how do we get to one?

Speaker 3 - **03:22:35**

That's hard.

Speaker 1 - **03:22:37**

Right. But that should be aspirationally if everything goes the way it should. Right. If were removing organics, we're removing the recycling. You know, you may get to once a week with that cart. So I don't want to jettison it at a 2045 assumption. But as a current assumption, I don't think that's achievable even near term.

Speaker 3 - **03:22:58**

Okay. And that helps us with contours.

Speaker 1 - **03:23:00**

Because I'm just speaking as one. I mean that's. Yeah. I would just say that just to reinforce that these kind of these elements go together and that the more we promote the recycling, the more we move out of our regular, you know, the green can to the blue can. We won't need so much of the green can and we might not need two pickups of the green can. It's all. This is all. And that's why I'm going to go back one more time for the journey. I totally get. We can't, we can't, you know, boil the ocean on day one. But I really want to see a plan that gets us from where we are today to where we need to be. And if frankly if 75.

Speaker 1 - **03:23:47**

Well, you know, if a good portion of our disposal is recycling, I think we can get to one can. Yeah.

Speaker 4 - **03:23:55**

And to that point we built those scenarios so that it can be phased. Scenario A was kind of compared to the rest maybe baby steps of we're adding yard waste. You can certainly, whether it's through contracts or policy or programming down the road of adding food waste to that yard waste. Right. The scenario C is the collection of food and yard waste. You can start with yard waste. Introduce food waste as a conversation point through events and markets and optimists in of existing services. You already have. And getting closer towards that ladder of maximum recovery.

Speaker 1 - **03:24:37**

It's a journey.

Speaker 4 - **03:24:38**

Exactly. It's a journey.

Speaker 1 - **03:24:40**

The one issue that's not raised in here, that's raised often by the county and others is the emergency debris management issue. And it's been utilized as a point that reduces the utilization of public assets. Notwithstanding the fact that I think on most debris management, from my experience, there are sites that are located immediately after the storm that are not traditionally used for essentially they are transfer station of debris management. Leaving aside a storm like we two storms like we've seen on the west coast that made that hard. But traditionally that's how we've managed in the county in this process of Trying to choose facilities, understanding what the current assets are, public and private. That which could be cited is critical to understanding some of these scenarios. Right. Because we'll just take the landfill. We.

Speaker 1 - **03:25:38**

There's no site for a landfill at 640 acres in Broward county, is there? Right. So and I'm leaving aside the fact that there's a 10 to 20 year issue, there's all the environmental concerns. I'm leaving that aside for a second. I'm just using it as an example that you know, if we, the corollary that is, if we know there are sites that could be utilized for certain issues, choosing which scenario has economic. It energizes the economic discussion. That is we already have an asset, public or otherwise. You know, we can perhaps co locate some of this. So I don't, I guess in trying to understand the considerations for the authority. So what I'm struggling with too is I think we all want to prevent having to haul everything out of Broward County. That's just not a tolerable situation for the world.

Speaker 1 - **03:26:30**

On the other hand, we do, I don't still yet don't have a really good sense of what we could locate here that could be cited easily. I mean we have a 24 acre site that could be used for waste energy. We know that going forward it won't be able to be used for certain things. So understanding that, I think when do we get to that point that we understand siting to help energize this discussion.

Speaker 3 - **03:26:53**

We'Re driving deliberately in that direction. So there was a white paper that was delivered that was the GIS analysis that really goes to sort of setting the stage for what a constraint is. But it's really the implementation plan where we're looking at where and when. So we've got some chickens and some eggs here that we're navigating through.

Speaker 1 - **03:27:21**

Yeah. But if one of the scenarios says we need three sites and we don't have three sites that we could choose that fit the criteria, then we're not in part. So you understand what it's absolutely in our locks.

Speaker 3 - **03:27:35**

And part of it is we're looking at available land.

Speaker 4 - **03:27:39**

Right.

Speaker 3 - **03:27:40**

Lots of municipalities identify that they have a need and they welcome the private market to identify a site. And we saw that play out just recently in Miami Dade County. They've been going through a siting exercise for or a replacement to their refuge drive fuel facility. And all of a sudden multiple interested parties said, well I have land here, right, it's for sale or I have land And I'm looking for a deal.

Speaker 1 - **03:28:10**

Okay, fair point. Member Horland.

Speaker 4 - **03:28:16**

The chair made excellent points. I think. Let's talk about some of the things in my opinion that I think should be off the table. The wet, dry separation. And the reason I say that is we know that the education is going to be heavy lift people bombarded with information. Again, I think that's something that's aspirational. But I think to start with, I think that'd be asking too much of our constituents to try to figure that out. And in talking about equity, how many bins would that be? And I think that's a consideration. One of the priorities for me as we're talking about the C and D is high resource recovery. So when we're asking you for examples, I think that would be helpful as well. Again, I referenced Austin, Texas.

Speaker 4 - **03:28:54**

Anyone that is really doing a great job at that and something, you know, how can we implement that? Because again, to the chair's point, we're limited on sites. So how can we pull out the highest rate of resources that we can. Food waste. I do like the commingling of the food and I really think more and more that's where we need to go is to get that in a landfill. So combining that with the yard waste, I think is a great start. But again, if we could get some of those, you know, cost is obviously in the back of our mind. You've heard that often here. But what's going to be the most practical for us to implement?

Speaker 1 - **03:29:34**

Member Shoeham and then member fir.

Speaker 4 - **03:29:38**

So I think, is it Helen? I think what Helen said just. I don't know, it just hit me in the sense of these are not alternatives to one another. So when I first read through the draft of the task four, I was like, oh, is it going to be A, B, C or D? But

then when you look at the chart that says likelihood of success and also the components that you need in each, it becomes more apparent that, no, you have to start. And I mean, to me it almost looks like you have to start at scenario A. And scenario A contains many building blocks that exist in all of the other scenarios, like a new landfill or two organic sites and things like that. So I think for all of us to look at it that way, you're basically building.

Speaker 4 - **03:30:35**

And then as you look at the different scenarios, that's like forks in the road. You're going to have to make a decision which way. So I guess my question. Well, first a couple comments that. And also I do think there's Opportunities for permanent solutions outside of Broward, specifically for. For major composting facilities that should be located near where our agricultural heart is in the state. You know, the closest ones obviously we can get to. So I think that we shouldn't rule out permanent resolutions outside of Broward if it makes sense for multiple counties and communities. And certainly Miami Dade has just, you know, basically did a 180. And I think that it is important for us to know whether we can collectively find landfills that we can utilize together and maybe even bring in Palm beach as well.

Speaker 4 - **03:31:36**

But certainly we know that Miami Dade right now is in need and we are in need. And it just makes sense that should be a collaboration. And I know Mayor Fur in the past has talked about rail. That's a huge expansion. The more parties that can participate, the better. But I think that what I would like to understand a little bit more about how the master plan is going to look. Let's just assume for the sake of argument that we start with scenario A and that we're then going to decide is the master plan going to lay out the steps to take to get to from this 62% diversion to say, hopefully the 83% diversion? Is that what the master plan is going to look like? Like here's where you're starting in the next 10 years and then five years after that.

Speaker 4 - **03:32:30**

I just want to envision what the end product.

Speaker 3 - **03:32:32**

It's a fair way to represent it. Our goal is to get you to 75% or greater by choosing scenario A or any scenario for that matter. There are a lot of assumptions that go into it, but it is not. That number is not the endpoint.

Speaker 4 - **03:32:52**

Right.

Speaker 3 - **03:32:52**

So I mentioned at the beginning of.

Speaker 4 - **03:32:54**

Our conversation, make that clear.

Speaker 3 - **03:32:56**

Yeah, yeah, but right. A master plan should be a living, breathing document. It's a guidance document that represents consensus of where in this case, where the authority wants to go in and of itself. It is not the end point. Think of it as a roadmap and it should be revisited and improved upon and always looking out over the horizon for what approach is more ripe then than it was at the time that it was written.

Speaker 4 - **03:33:26**

Right. But the fact that even siting a property can take a decade, I think that the importance is to lay the foundation as a starting point with the things that we can achieve in the shortest time frame. And then you have to start working on those long term things. Even though it's a living document, it's like anybody who participates in transportation planning, Those projects take 10 years as well. So you have to set a goal. And when those 10 years arrive, in hindsight, maybe it wouldn't have been the best, but it was the best when were here in 2025, looking forward. So I guess that's what I want to make sure the master plan is giving us, to use your words, that roadmap, like, we need to start here now and in these milestones, this is.

Speaker 3 - **03:34:18**

What you should be doing again, a fair representation.

Speaker 1 - **03:34:22**

All right, we'll finish with member fir. We're at 1157. We'll take as long as you want. No, no, we'll say no. No, we'll stay as long. I'm just saying that's where we're at. Okay. And don't any members of the audit committee leave. Lock the doors so they can't get out.

Speaker 2 - **03:34:37**

First of all, to your point with Miami Dade, they did pass a resolution, and they submitted it to the South Florida Regional Planning Council, wanting to do partnership, wanting to work, and through the South Florida Regional Planning Council and the Treasure Coast Regional Planning Council, that comprises seven counties, they have been working, looking together at this issue as a whole and looking regionally. So there are. There's definitely some opportunities. It's just hard to figure out where and how. That's kind of the hard part. Just that one of our main assumptions has to do with the 75%. And I know when this was enacted in 2008, I think it was based on weight. And there has been a lot of discussion, particularly in the last couple years, of changing that assumption. I don't know if that changes our calculations when they. When they. When.

Speaker 2 - **03:35:31**

If they go back to going to source separate and all that kind of stuff. Not to go at it now, but can you bring that up at the next time? Because there is a lot of discussion about that.

Speaker 6 - **03:35:44**

Maybe I can touch on that a little bit. So I think the intent of the goal was an aspirational goal at the time, but maybe it has led to some local governments chasing tons over things that might be more environmentally effective. So chasing your C and D, chasing your yard waste. I would argue, though, that from preserving the life of your landfill, it's still important to get that stuff out, even though it's heavyweight. So, Dr. Townsend, not a University of Florida's done some research on looking at the environmental merits of, you know, recycling glass versus recycling aluminum and all the other things, and shows that glass, even though it's beneficial, not as beneficial as aluminum.

Speaker 1 - **03:36:25**

Right.

Speaker 6 - **03:36:26**

So those are types of things that he's talking about within that study.

Speaker 2 - **03:36:28**

That's that's why I'd heard that discussion.

Speaker 1 - **03:36:30**

Right.

Speaker 2 - **03:36:30**

And I. And I think we've been going on the other assumption the whole time.

Speaker 6 - **03:36:34**

Right.

Speaker 2 - **03:36:34**

But there is another perspective on it.

Speaker 6 - **03:36:36**

But I think where they're moving is not just moving it from a weight based goal, but more from a landfill diversion goal, which would align with what we're doing here.

Speaker 2 - **03:36:43**

Okay. I think that would be worth bringing up to the whole group though, because I don't think it's been discussed.

Speaker 5 - **03:36:49**

The other implication in what he's saying is that actually it all really boils down to carbon emissions. So it becomes a life cycle analysis. So the measure of why is it more valuable to get rid of aluminum? In fact, why is your aluminum more valuable out in the world is because making new aluminum out of old aluminum is so much easier than making it out of bauxite ore, where you have to throw a lot of megawatts at it.

Speaker 2 - **03:37:14**

And it was talking about why. To get the organics out.

Speaker 5 - **03:37:17**

Yeah.

Speaker 2 - **03:37:17**

And there's big points that even though.

Speaker 5 - **03:37:19**

It didn't weigh as much because that eventually becomes methane and becomes a problem. So it's a relatively easy calculation to look at the material you're diverting and look at it in the context of carbon emissions. It's not hard. It's

right there with the tonnage. I was hoping you weren't going to go and say we should think about this in terms of cubic yards, because then my head starts to hurt. But it doesn't sound like that's where you're going.

Speaker 2 - **03:37:53**

No.

Speaker 1 - **03:37:53**

Okay, good.

Speaker 2 - **03:37:54**

Okay. The other thing is I appreciated all the scenarios. I do think, and I understand, I think the one time a week is primarily based on allowing for room for cost to do other things. That's really why you're doing that. And I appreciate that because one of the things I think that is a low hanging fruit is being able to have a separate pickup for yard waste. I think that's a very easy one to divert 14% off as quick as we can take it over the Broward landfill, mulch it up, put it out. I mean, hot one. Yeah. A lot of. And then put it back in a park and anybody wants to come get it. And that's an easy one. So I think, you know, those are the kind of things I'd like to see. The separation of yard waste.

Speaker 2 - **03:38:39**

I don't want to see it with the food waste. No. Because it gets really, it gets messy.

Speaker 4 - **03:38:44**

But that is the trade off of adding a new service and cost.

Speaker 2 - **03:38:50**

Right. That's why the one time a week.

Speaker 4 - **03:38:51**

Exactly. That was why we propose it that way.

Speaker 2 - **03:38:54**

So.

Speaker 4 - **03:38:54**

Yep.

Speaker 2 - **03:38:55**

Right. The. The fact that we can with the new terms, if we pass the thing with the landfill, of having a landfill ready to go and me being able to do all the organics up there is something that is. I don't think everybody understands the value of that. But there's a. There's a big value to that. As much food waste as we want to put up there, as much as we want to compost, that's part of that. And that's something to be said because there's no capital expense for the land or for all the capital that's built in. And I think that needs to be analyzed in terms of cost operations, all the above, because there's a lot to that.

Speaker 2 - **03:39:37**

Likewise with the biosolids of being able to use the methane and use land that we have to be able to take care of those. What wasn't brought up in terms of cost on like particular perhaps a waste energy plant are P3s that have been coming through where we own it at the end. Because that is now the required law on state law. And that's what happened. We didn't own the one at the end last time. We need to make sure we own it at the end this time. But P3s are. You know, I. I've heard different people, different companies wanting to think about that. I don't know the analysis in terms of what that means for us. But if there's a way for you all to bring that. And I'm sure each one's different, so it's not.

Speaker 2 - **03:40:23**

But it, but it hasn't come up in on this because in terms of scenario it goes. It gets kind of inverted if we're having to put the money up front or doing a bond as opposed to. If it's P3, maybe it changes the calculations. The food waste drop off, I think has no possibility of working. I'm sorry, I just don't see. I mean, I. I think that's a tough one. I don't see people taking their trash to one little place. I just don't see that happening. I could be wrong. I could see compost. I think you want to have it picked up. I don't know. I don't know if you all heard about this one place in Belgium. You know what they did in Belgium. There's a city there where they actually gave every city, every member in the every citizen, three chickens.

Speaker 2 - **03:41:12**

And they said you can't eat them. But you Got to give them all your food scraps. And it worked great. It actually worked great. They got rid of all their food waste with the chickens.

Speaker 4 - **03:41:21**

Yeah. Backyard chickens.

Speaker 2 - **03:41:22**

That's a whole nother volume. I don't think we're going chickens.

Speaker 1 - **03:41:24**

Is that a. Is that a county proposal?

Speaker 2 - **03:41:26**

That's a county proposal. I think that means you have to raise chickens.

Speaker 1 - **03:41:29**

Just want to make it clear it was a county proposal.

Speaker 4 - **03:41:32**

Respectfully, I do want to say please don't underestimate the residents who are willing to compost in the county already and who would be willing to drop off the food waste that markets and other countries.

Speaker 2 - **03:41:46**

I could be totally wrong. I mean, I think there are a lot of people want to compost.

Speaker 4 - **03:41:49**

Yeah.

Speaker 2 - **03:41:50**

And I think we should be giving workshops on that all over the place. I just don't see them take. I see if there's pickup. I see them doing that and they already are doing that. I just. Having a setup is tough.

Speaker 1 - **03:42:03**

Yeah. But I, I would just go back to. We have a shortage of drop off centers that was identified here. I don't know the number. That number might be too low. I don't. It's a balance that needs to start now. I mean there are so many. I appreciate the partnership with Plantation, but I know there are days where folks want to go to the county and they're like we can't participate. And so that once you identify those, it's easy enough to add because we know there's private providers who will take that food waste and you can experiment with it and see what the production is. It doesn't have to be anything else. But we need to get to HHW in a permanent way in this tough issue. Because otherwise we're just getting it poured down.

Speaker 1 - **03:42:39**

If it's motor oil and gasoline, it's getting poured down the drain. Totally agree. So at that point you can test to see whether or not it works.

Speaker 3 - **03:42:48**

Whether people do on those food waste.

Speaker 6 - **03:42:50**

Drop off as well. We in the model acknowledge that it's not a lot of tons. We don't anticipate that moving the needle much. But it's a way to get the foot in the door and start to kind of train the public take ownership of their waste and then over time that leads them to be more engaged in other aspects of the system. So it's kind of like a starting point. But we acknowledge that you don't get as much tonnage from that.

Speaker 2 - **03:43:11**

So my last point was in the scenarios, I think there's ones that you do first and you try and you do your best to get them going. I think with the organics, the food waste, yard waste, all those things, you do as many as you can and you see how successful you are before you go to a waste of energy plant. But we need to probably have those thresholds where you know what we may have to do. A waste energy, but you want to do the other ones. You want to do everything you can before. And I think we're. I think everybody is probably thinking like that. I could be wrong, but I think that's right. And that become. That becomes a scenario. A, if, then B, you know what I mean? And I don't.

Speaker 2 - **03:43:52**

And we're not looking at it quite that way, but I think it's. There's a. If you get here, you don't have to get here. There's something, there's something to that.

Speaker 1 - **03:44:01**

Okay. Member John, did you want to add anything?

Speaker 4 - **03:44:05**

I was just curious. Wasn't that something that we included in the survey? The communities. Yeah, from posting. And the communities willing to segregate? We did. Right. And so I don't remember what the indication was, but if memory serves me right, that's something the community was open to generally.

Speaker 3 - **03:44:26**

And a more detailed report is forthcoming.

Speaker 1 - **03:44:28**

Okay.

Speaker 3 - **03:44:29**

So.

Speaker 5 - **03:44:30**

Okay.

Speaker 1 - **03:44:31**

Don't go anywhere. Don't run off, because I don't know who's got to say, do we have a motion to adjourn?

Speaker 3 - **03:44:35**

Oh, before you do, let me just, If I could just clarify the ask. But before I do that, I want to thank all of you for dedicating an additional four hours to have this conversation. It is sincerely appreciated and very helpful for us. Here's my ask of you. Many of you have provided feedback. For those of you that have not, please do so. And you have the opportunity to combine your feedback both before the workshop and after the workshop. If there are feelings of approaches or technologies that you are simply not comfortable with, and whether it's not comfortable

yet or just not comfortable at all, please share them with the executive director, who has been very good at providing us with a feedback. You can compile it and send it to us.

Speaker 3 - **03:45:24**

If you have a warm feeling about any particular scenario or the approach that were just speaking about, which is let's set that first stage and then continue to build on that. If there are any items that we did not speak about in terms of programs or technologies, facilities, please share those with the executive director. And then again, written feedback on the white paper. If you have not already done so and the chair has spoken about potential future workshops. If you have ideas, please share them with him so that we can discuss them and bring those to fruition sooner than later. So we have a unique window now to digest this feedback as we prepare the final white paper for task four, which will then enable us to move forward. Forward with the when and.

Speaker 1 - **03:46:16**

And how. One.

Speaker 2 - **03:46:17**

One more point, real quick. Kevin just reminded me that every city has the option of opting into the drop. Drop off service now. So if any. If any city wants to be a part of that, they can be a part of that now. So when any citizen comes in, there.

Speaker 1 - **03:46:32**

Must be some impediment to understanding that, because otherwise we wouldn't be doing just a simple partnership. There's a. Something else.

Speaker 4 - **03:46:38**

What?

Speaker 2 - **03:46:39**

Was it possible?

Speaker 1 - **03:46:40**

Okay. Okay. So. Well, fortunately, you'll have a host fee. Fortunately, you'll have a host fee zone. So you can help doing that. We'll circulate that information so we can. Because we need to make sure we start that drop off and. Yeah. Member Dunn.

Speaker 4 - **03:46:59**

Yeah. Just to be clear, I'm not sure if I can give you guidance on what I'm comfortable with until I see the edits to that little graph that you have that show. So if you'll be able to get that back to us, and I'm happy through the executive director to share how I feel.

Speaker 3 - **03:47:17**

We heard you and it's on the list.

Speaker 1 - **03:47:22**

We can interpret that as a motion to have the county pay for it all. Is that what you said? All right. Is there a motion to adjourn a second? All in favor say aye. All right, don't go anywhere. 4 Audit. Don't go anywhere. So who has to say yeah.