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*[Cape Cod National Seashore Advisory Commission Meeting]*

*[October 7, 2024]*

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Testing testing testing. [Captioner on standby.]

**RICH DELANEY**: Fellow committee members. I am Rich Delaney. I have missed the last few meetings and I'm happy to be back. I want to thank Heather for stepping up and backing me as the chair, you did a great job. I think she is here on the screen today. There you are, thank you, Heather.

**RICH DELANEY** >> As always, we will start with the adoption of the agenda. Which has been distributed to us in advance. Can I have a motion to adopt the agenda as printed?

**SUSAN ARESON** >> So moved.

**DAVE CRARY** >> Thank you Susan. David second, all those in favor start by saying I. Good, thanks.

**RICH DELANEY** >> Now we have the approval of the unit from the last meeting which was in September. You had a chance to review those, and without any corrections or comments to be made about the minutes?

 >> We submitted edits to Cheryl, and they have been incorporated.

 >> Okay.

 >> And you were copied.

 >> Okay, this is the amended agreement.

 >> Right here.

 >> Okay. Do you all have that? Do you need a second to review these or are you confident it's accurate and ready to adopt the minutes?

**LILLI ANN GREEN** >> I did.

**CHERYL JOHNSON** >> I just edited that first part.

>> I move that we accept the minutes for the September 9th advisory meeting. As amended.

**RICH DELANEY** >> Okay, there is a motion. Is there a second to that?

 >> Second, thank you.

 >> All those in favor?

 >> I.

 >> Those opposed?

**MARY JO AVELLAR** >> I have an abstention, wasn't at the meeting.

 >> Okay.

 >> Abstention from Mary Jo.

 **RICH DELANEY** >> Was moved Item 3. The reports presented, thank you.

**JENNIFER FLYNN:** >> Great, K. I have two sections today. If you could pull up my PowerPoint, please. The first part really is a designated federal officer report, as you all know I serve as the DFO, designated federal officer for this advisory commission. So, just wanted to run through a couple of my responsibilities as the DFO now that we are in our fifth meeting of the newly established advisory commission. Go ahead and advance the slide.

 I have just a few slides about the business, a little bit of reminders about my role, and then we will go into a presentation from the park, scientists, and technical staff about the kind of change of resilience specifically looking at monitoring and work we are doing here on the seashore to get us started for our conversation today.

 Go ahead, again. I have a reminder memo so I thought I would share; it was a good time to share with the team. One more.

 As the Designated Federal Officer, these are the things that I am responsible for versus what the chair is responsible for. As we work together, just thought it wouldn't hurt to just remind folks that my principal job is to make sure we are compliant with the Federal Advisory Commission Act. In doing that, I approve and call all meetings to order, but includes making sure we do our Federal Advisory notice that we provide the proper notice to the public. I approve the agenda, written by have been working closely on that, but this body determines what you want to advise on. What I need to approve the agenda, it's my role to attend all meetings, and we have officially gotten the secretary's concurrence that my deputy, Leslie Reynolds is my alternate. We are there, if there were an incident where I have a personal emergency or something the meeting could go on as long as Leslie could be present. It's my job to run the meeting in the event of the public interest. I hope that never comes to the path of this group but if it was truly hostile, where there was a reason that it needed to end, it's my job to step in and stop that.

 Unprofessional conduct, threatening conduct, that kind of business. In the absence of the chair or the cochair, I can share the meeting if needed. Then, I need to maintain information on the committee and make it public. To ensure appropriate training, which he recalled the very beginning of our relationship together, we all sat through that training that is required together.

 In the category of maintaining information, I'm making it public. We have submitted our fiscal year 2024 report, which we are required to do by the law.

 So, our fiscal year ensures, identifies that we had four meetings in the fiscal year with a fifth on plan, this October meeting is actually in fiscal 25. That those four meetings were held, were supported by 314 hours of staff time so the cost above most $24,000. In our salary time. Another about $5000 in expenses. Those expenses are things like getting the presentations made 508 compliance so when we post them to the website, on the e‑readers and other aids can access the documents. The Federal Register posing as a small price tag associated with it. Getting this real time, Cheryl, help me with the word….

**CHERYL JOHNSON** Closed captioning,

**JENNIFER FLYNN** thank you. A small expense. There's $5000 in miscellaneous expenses. For this fiscal year, the department spent about $30,000 on advisory commission business. Go ahead.

 As we look forward, it's shocking but most members are seated through September 2025. So, come January the organizations that you represent will get another round of letters from me asking for nominations for the commission. I am bringing that up merely to say that if you want to continue, I don't think it would hurt to let whoever nominated you to know that if you're interested in continuing, if you're not interested, I would also let them know that so people can be thinking. I know it seems like we just got started, but as you know, that process takes a bit of time and I want to make sure that we don't have a big lapse in membership.

 Again, your town, state, whoever you are representing sitting here will get the solicitation from us after the first of the year. I just want to call out, most of you expired in September 2025, but some of the nominations took a little longer to process so not everybody is on the exact same timeline.

 I wanted to propose as a place to get us started in my role in approving and calling meetings, thinking about what we want to do for fiscal year 25. When I'm done with this section, I will defer to you about how much of this want to pick up our cover later. The federal advisory notice takes about ten weeks to go from my office to the secretaries pen, to approve the notice to going to the Federal Register. We are now in October and between the election and the inauguration, he a lot of routine federal business tends to really slow down.

 My suggestion to you all is that we are really looking at a January meeting for our next meeting. I am proposing January 13th, April 7th, and September 10th. My observation from the last series of meetings is that as we got through the summer, we saw some attendance drop off of it both from members and the alternate study where it's hard for folks to carve out the time in the summer. This is a place to start, this is my proposal, I certainly think we could talk about if one– four makes sense, if we only do three, to do one– five. This is just a place to start the discussion. What I would suggest is, I think we need to leave the meeting today with our next meeting, even if we don't want to agree on the whole year, we need to get that January notice moving if we are going to get it approved and out to the public with the appropriate amount of time.

 As I have thought about the meetings, we have had this year the items that we had had, I think a pretty robust conversation on, and heard from the public on, to suggest to the advisory commission that these are three topics that I think the park could really use this think tank support on. They are helping us think about the Massachusetts affordable homes act, and the implication it has for the seashore district in your town. Just a very high-level summary. That is the act that the state of Massachusetts, statehouse has passed that gives us a pyrite to landowners to put a secondary home, secondary dwelling on our property. It's in direct conflict with the 1961 seashore legislation. That is a challenge I'm going to have to work through, and I think this group could be helpful in that space.

 I also think 36 CFR part 27, that is the secretarial standards, hasn't been looked at since 1962, it's probably been looked at but not updated since 1962. Thinking about our conversations around culture and what we want, what are we trying to protect and what do we want the seashore look like. In the next 50 years, I think this 36 CFR could be more robust and I think that could be a place where recommendations from this body could be really powerful and important. In light of both of those other things, suspensions of certificates of condemnation, and the termination of them, I think is going to become more frequent. If we can figure out how to address number one. Those are the three things that have occurred to me that I think this body could be really helpful in working through.

 The last thing a just wanted to offer, again, an idea we have is I do think after four meetings, we might want to think about and maybe this is on the agenda for the January meeting, some business practices. Many of you either sit on your select boards or are here before your select boards, and I think there is some business practices the select boards have it that might help us if we adopt them. Some of those things are consistent time limits for public comment. The ability to accept written comment. We have been doing that, but I don't think we have really codified these practices. I don't know if we want to think about time limits for member comments, I don't know that that's been an issue but potentially could be.

 Do we have any participation requirements if there's a member in the room and a member online, does everyone have the talking stick. I think maybe a little time on the January agenda, a few business practices might make our work together moving a little smoother moving forward. That's all I had in my ideal pocket. I don't know if you want to keep going or if you want to pause and reflect on any of that?

**RICH DELANEY** >> That's very helpful. Thank you, let's take a moment just to reflect on the presentation about the DFO comments. One thing that I will start the conversation with is, we have had several this year, potentially three meetings. The summer is a busy time. We have another discussion for the Federal register with four meetings. By the time we get to July, we will have one in July, the summer. It's not necessarily that people are busy, just because I know that from the legislature process, it might be time‑consuming. We could cancel some easier.

**JENNIFER FLYNN** >> Not necessarily because we still have to put it in the register if we cancel. So, if we decide early in the year we want to cancel. (audio static). I don't think we could provide the appropriate public, or public notice.

**SHEILA LYONS**>> I like your idea, and if we did go to a July meeting at say the next meeting is October. If we decide in April that July is not, that gives plenty of time to cancel. We could probably still give time to cancel October, that was decided. Am I right?

**JENNIFER FLYNN** >> Yes, it's about ten weeks.

**SHEILA LYONS** >> I agree moving forward is good. Make it October, then we give it each date enough time to cancel if it's been decided by the group that we have run over the course of what we have to for the next can wait.

 >> Okay, that would be nice for January. Then July, then it's exactly– then October.

 >> That is my suggestion.

 >> That's fine. Other comments on this? Make sense?

**LILLI ANN GREEN** >> Yes, might I suggest– in the past, we had almost every other month. With the last month being June before the summer season, and then skipping ahead to the fall. If we have February, April, June, September or, October next year, might that be a good solution.

**RICH DELANEY** >> We are putting in a July meeting now so we would have all that covered.

**LILLI ANN GREEN** >> But I mean, July is a very busy month for the seashore and in the past, we did skip over the summer. If we started in February, April, June, September, or we did October in the fall, that might be a nice, that's what I'm proposing.

 >> Any other thoughts on the proposed time, Superintendent?

 >> (Inaudible) July. June is better than July, I think.

 >> Okay.

 >> January, April, June, September.

 >> May, June, that still gives ten weeks if it was decided not to do June.

 >> Thank you. That is a nice compromise.

 >> I would like to have the flexibility of four meetings. I know it's a lot of work for the staff to get things organized but three doesn't seem like that many.

 >> I agree. I think we agreed that for makes sense, we are just trying to figure out what the timeline is. Now it seems likely evolved into January, February, June, and October.

 >> June, sorry.

 >> September or October.

 >> I have it written down correctly but somehow misspoke. January, April, June, October. Mondays one– three. We can do right now; you have the dates on here.

 >> I need to do some checking on October. The January date I propose is 13. Here, April 7th.

 >> You said September 8th?

**JENNIFER FLYNN** >> We are moving off to October. I just need to look at the calendar to make sure we don't have a standing conflict for October and June. I will ask Leslie to look at that while we have the rest of the meeting. Look at that at the end. I just want to make sure we don't have any conflicts.

 >> Good, I think we–.

 **LARRY SPAULDING** >> Not to put a wrinkle in it, but we were just talking about our terms expiring in September. If we pick a meeting in October and our terms are expired, we don't have members that can actually vote. Should we do September before they expire?

 >> I would agree with that.

 >> I think that should be motivation.

**JENNIFER FLYNN** >> I think the way our charter reads, is looking at Cheryl to double check me, but my understanding is your expired but you're not sudden‑death. Like you said until someone replaces you. If it gets tied up and carries over a couple of months, the current board can still sit until they replaced.

 >> That is my understanding too. From the past.

 >> We don't need a vote on that, that is our advice, September for next year.

 >> Before we leave today, we will propose two additional days and I think we do need to provide and not necessarily decide right this second, but we need to have an agenda for the Federal Register as well. We could pose that at the end of the meeting, but we do need to decipher what our topics are going to be for next year and provide that notice.

 **RICH DELANEY** >> Okay, while we are going through the presentation in the next couple of hours, please think about other topics that you want to see on next year's agenda, and we will do a quick survey of that at the end. When we come back to finalize the dates.

 >> Good, okay.

 **SHEILA LYONS** >> In regard to the Massachusetts right to home, if you could provide us where the seashore feels is in direct conflict with those points so we could review those and discuss that ahead, that would be great.

 **JENNIFER FLYNN** >> Yes, that's on the agenda and we will certainly provide background material.

 **RICH DELANEY** >> That is a great first topic.

 **RICH DELANEY** >> I apologize to anyone on the screen, I don't see hands. Please just speak out. Heather– comments– Leslie. Helen.

 >> We have public comment later.

 **RICH DELANEY** >> If you can hold it, we will come back to this topic and ask your comments then. I'm looking at the Ellicott's petition numbers at this point. Okay, so the Commissioner is satisfied, let's going to the second part of the superintendents presentation in the main topic today, climate change.

**JENNIFER FLYNN** >> If you could key was up to the beginning of that there. There we go. Today's conversation is climate change and coastal resilience. I have asked some of the park experts to come and talk to us of what the park has seen in terms of impacts in our environment and the park resources to talk to is a little bit about what we anticipate is coming, and then to talk to about how we are using this information and what we are trying to do about making the park as resilient as possible. In really timely, we have a very extreme example of the coastal erosion over a five‑day period. On this last unnamed storm. Friday, September 20th, we started– I think it started even Thursday night, we started to lose the stairs at Marconi.. The significant erosion at the bottom of the stairs. But the next type of cycle, we have lost the entire bottom portion of the stairs and the bottom landing. No ahead, Adam. Then within a couple of days we have lost the entire structure. This was a very significant staircase that was built into it. We lost a tremendous amount of bluff in at Marconi in one storm event. As I have thought about the topic today, and about what information to share with you all, and the public, this was just such a glaring example to me of why we have to have this discussion. As we talk about how the seashore is trying to manage in this time of extreme swings, this is a great example. We had just replaced those stairs all last winter. This section of the beach didn't get any erosion. The way that the sand had set up, it was in this little protective bubble.

 In one storm system, that can totally change. This afternoon, I'm going to ask Steve Smith to go ahead and stand up, Steve is one of our physical scientists is going to talk to us a little bit about what we think we know about climate change, and what we anticipate. What we will see here in the seashore by talking about what we are already seeing. Scott Rasmussen who is our GIS specialist is going to talk to you about the work he's doing around monitoring both the coastal erosion and sand migration and he will talk to you about it much more eloquently than adjusted. Geoff Sanders, Chief of Natural Resources Natural Resources and Science will talk with a little bit about our eelgrass work and how we are leveraging our partnerships to provide as much scientific data as we possibly can so that you and I as managers and leaders have the best information to make decisions moving forward. Steve, I will turn the microphone to you and please take it away, sir.

**STEVE SMITH** >> Thank you very much, Jen. I've been here the last 22 years and I have seen quite a bit. I see some, I understand what's happening and we see many of its effects are. Thank you.

 There is a lot of things that are changing, two of the big ones that are very prominent and that the coastal systems are once sea levels rise, knee‑high water, plotted on the left and then Nantucket harbor. On the right is a graph and a publication that we put out a couple of years ago on changes in coastal ocean environment showing water temperature increases over time.

 Interchanging, significantly over relatively short period of time in terms of– let's see, can you advance me please? This isn't working.

 We are kind of in this little special spot here, in the Gulf of Maine on the south end of it is the fastest warming body water on earth right now. They think this is because of the particular geomorphology and geography in addition to how the current circulate around there. Regardless of the reason, things are really happening very fast and quickly in this particular region.

**SCOTT RASMUSSEN** My name is Scott, GIS specialist here for the park paid that means I get to make a lot of nice fun maps that I enjoy very much. In addition to that, I also get to, closely followed coastal geomorphology monitoring comprised of three different total protocols that we've introduced to the park. They come from the Park service monitoring division, those folks are in charge of basically coming into the parks and monitoring our natural resources and report them out. For us, we get to implement these ourselves, this is what we are doing in house. Think of it as sort of spatial positions, one dimension, this is a simple line coastal topography is basically a cross‑section, you go perpendicular to the shoreline and two mentions and the coastal form elevation models in three dimension. Exactly what it sounds like. Looking at spatial representation of the bluff future or whatever it is that you’re monitoring.

 This is not working for me. Maybe it is.

 We will start with that. I get to ride on an ATV, I hate to say it's a little fun. What we are doing here is using GNNS devices, really fancy survey grade survey devices. You can see it mounted on the ATV right there. Basically, I'm looking at the last high tide squash line, which is a surrogate for the shoreline, and I take points basically every five meters. We do it from our Coast Guard beach in Eastham all the way up to Long Point, and also in the Bayside which this picture is from. All the from Payomet down to Jeremy Point.

 The quick explanation on what is this RTK GNSS is all about. Our two kids real‑time kinematic, that's real time where I get my position. The global navigation satellite system, essentially what is here is if you have heard of this before and you already know, basically, the United States has their own GNSS system, you've heard of it, GPS but we also use a lot of other satellites out there that aren't necessarily from the United States.

 What's happening is when I'm out there riding , I’m getting signals from these– I don't have his control. I'm getting signals from the satellites; I will back up. I will not use the laser anymore. That's too big. This little controller.

 A little help, Adam. advance please. Thank you.

 So, the satellites are tracking me, and we also have a reference station that is on the left‑hand side. That's on the same satellites as well. Essentially, that signal from the saucer‑shaped thing on the roof on the left is sending me the corrections and real‑time because that position is fixed. In those that the satellites are giving it their position, it's a little bit wrong, that's why often times when you use your phone or some sort of a positioning service, if it's just your phone, you'll be anywhere between two– five meters uncertainty. That is not good enough for us, we like to get them to like seven meters precision and that's what's happening here.

 So, this is actually interesting because the receiver that I was referring to is on top of our headquarters building is part of the National Park Service real‑time GNSS network that we are really pleased about that, we are one in about 115 parks that have this ability. The picture on the right, sorry, down below you see all the points that I was taking during this session. The little blue lines are the correction. In the business we call those baselines so that's what you want to see. Essentially, you take all of those little dots and do some voodoo and you're able to come up with some lines.

 So, we have actually been doing this, my predecessor began this roughly in 2005 so we are looking at a session on race point beach here trying to make it as big as possible. Basically, you're taking all of those lines like spaghetti and running it through the service, the USGS provides called a digital shoreline assessment service and running some statistics. If the end result the next slide, please. It very graphically explores where the places where we are gaining, other places we are losing. Again, this is a 25‑year snapshots of important to keep that in mind. You can see down on the lower section where we start off at Coast Guard beach, all the way around to Long Point. Once again, from Paymet to Jeremy Point. You can see some extreme losses and gains, typically around the ends of spits and tidal inlets. The best thing about this is that it's Park wide, we get the distribution, we have a good idea of where the sand is going and where it's coming from. We can sort of track it that way.

 Coastal topography, once again, creating these cross‑sections. The map you're looking at now is a geological map, so I decided to show this because in geology, we are always interested in processes and products. If we are going to be mapping these sort of areas, it's good to understand where these products came from, and what types of sediment we are likely to find and perhaps make some inferences about those. There are 14 that we have implemented, still using the same GNSS device, now it's not attached to my ATV, it’s attached to a nice little pole where I can walk around with it.

 Essentially, I'm starting off way either well behind the dune crest or the edge of the bluff and we are going all the way to the edge and then we can finish off on the beach itself. Right around where the waves are crashing. We are getting an entire beach dune system or sometimes beach bluff system.

 Anyone knows me knows I really like antiques. So, I was very excited to find out that there is an old survey done in the 1880’s by Henry L. Marindin who worked for the U.S. Coast and Geogenic and data survey who became part of Noah. He was charged with doing basically what I'm doing. Different methods, 229 profiles, you can see it there on the right-hand side and again, we sort of grabbed a subset of those.

 What it is important to learn here today or to take away from this is that he took really good notes and that is why we are able to reproduce these locations, his elevations, and we can actually continue that actual survey today. If you really wanted to, we could produce a graphic that goes from profile 1889 to 2024 and see what's happening over the last 120 years.

 Same concept, we see those blue impactor lines, at least I do, this is one of the profiles at Race Point parking lot. Nice straight line, and basically, I take a point, an inflection point.

 I'm able to make some cross‑section. I will briefly go over all 14, really quick, so we are going to start way down south on the Bartlett property, this is the Marine profile number 55. A couple of things to note on the Y axis is elevation. We are scientists and we work in the metric system. I have some Imperial numbers for you in parentheses to understand what's going on if that helps you out at all. On the X axis is distant from start, this was the exception. You can see where the 0 is on the X axis, when Marindin started this profile, that was well in the back to you had to make some adjustments to this particular one.

 Again, this is the first time we have initiated this particular protocol, I only had one data set to look at, that wouldn't have been very exciting. I went ahead and added in some LIDAR our data, and I will go over what light art is in a couple of slides. Long story short, you can see in the legend, we have LIDAR going back to 1998. Particularly what the span of the change of the bluff edge is basically from 98– 2004, 25 or so years. Here it is about 83 feet.

**JENNIFER FLYNN** >> Scott, to restate that as people are reading these because they have four teams, so we are like speed dating really quick. The purple is 1998, and then the gold is basically current, absent, the last probably set of storms. 83 feet of loss at the location since 1998. That's correct.

**SCOTT RASMUSSEN** >> That's correct, you can see by the locations on the little maps up above. To give you an idea. We will go from south, north, and down.

**JENNIFER FLYNN** >> Commission you heard me talk about this. It’s the Bartlett property is the house we are moving to demolish because it is in threat to being lost out to the sea.

 **RICH DELANEY** >> I guess, 83 feet divided by 25 years, we can about three a half feet–.

 **SCOTT RASMUSSEN** >> You could come up with a linear rate as such, it's just important to remember that these things are not linear, and that junk could really increase. But yes, to your point.

 Also, keep in mind I left the elevation the same on the Y axis, these are all relative in terms of the height of the bluff section. This is just North of Marconi site, pretty dramatic, 102 feet.

 Newcomb Hollow, it's hollow for a reason. Look at that. Not much change, but a little bit of retreat.

 Right at the Pamet area, there is some there. Next slide. Highland light, not much at all. This is really interesting for me. Dove a little bit deeper into this, I. Remember that geological map I showed you. This happens to be on what's known as the Highland plane deposit, predominantly sand and clay. There is a thin lens of almost pure clay and is called Highland Plain deposit, that could be what we are seeing and why it's a little bit more stable. It's granular size– I will be going to that. We are now off the bluff.

 We are traveling through the province, and in this particular one, something to note here is the distance. This thing was huge, at least took me 20 minutes to a half hour to get the profile done. Just to put it on a graph, I started at about 560 meters from the start. Obviously, we you may be well aware that these are parabolic dunes actively shifting on a yearly basis, so it is not surprising to see in the back area there, this, there are some areas that are completely gone. That is all windblown. Obviously, the most recent, we lost quite a bit of height and in the actual position as well.

 Continuing over to South Race Point South. Similar story, the dunes are little bit taller, the crest is taller rather. The position is not quite in the same spot, they're doing pretty well.

 Race Point, this is no surprise, if folks have been to the museum, the (name) Museum, they do a presentation and they talk about how the dunes are basically rising up all around them and that is one of the reasons why we can't see out of that location anymore.

 Race Points Light the dune itself, we lost width, but the height is still there, not a lot of change. Again, I'm writing on the actual crest. I put a couple of add‑ons there, at the light keeper's house, the lighthouse itself, just to have a general idea of where those are.

 Herring Cove Beach, I'm plotting this to be a most exactly in the same spot. Anything that you see was removed, that is from when the road was moved in the parking lot was moved a little bit. Things got shifted around there. The only real change you can see is probably the overall width of the dune.

 Wood End, very low– by the way, I forgot to mention that I changed the Y axis. So now anything off of bluff, basically, is on the same axis so you can idea of relative height.

 A little bit of decrease there, there is the dynamic, the sand comes in very gradually but also, can go away very quickly. It kind of depends on when.

 Long Point Light, it's still narrow, I decided to do from bay to harbor, and we are losing a little bit there. Again, I added in the lighthouse to give some context.

 The last two here are not random profiles, they are in the bay. This is Ryder Beach just North of Duck Harbor. A nice little transgressive dune there next to the retreat. Same thing down here across from Jeremy Point– sorry, The Gut.

 Finally, I will finish off the coastal landform elevation models. This is something we are still developing. The picture you're looking at right now, the tall section is the model itself of what you're seeing them below. Unfortunately, took that picture and was going to come up with this nice shot sequence there. Now, it's sitting on this– this device is sitting on this tripod and it's basically shooting LiDAR wherever it is you're going to stand.

 I told you I was going to go over that, ensure a lot of folks know what it is but I will go over briefly. Light detection and ranging, basically, a light is emitted from a rapid-fire laser pulse. That light travels to some sort of an object whether it's a house or a dune, or a tree. It's reflected back to the device. The system measures how long that took, they use that to calculate distance, that distance is to be converted to an elevation. In addition to that, we have GNSS receiver. I defined it earlier. Global Navigation Satellite System. Basically, every laser pulse that is fired will have a coordinate to it. It's pretty accurate actually in terms of the XY. Even in elevation which we call Z.

 So, this is the same concept that we are using on our scanner here. This is at Nauset Light Beach, and it is a series of four scans, and you can see a bit of overlap in each one is color‑coded by each scan set up. In addition to showing, shooting out LiDAR, it also shoots photos. Basically, it creates a photo mosaic. Every laser point is colored, so, next. That is what you end up with them below. You can definitely see that there is a difference in lighting depending on if the sun is behind the cloud or you could get some really dramatic colors there.

 This is going to really blow your socks off. A nice video, that is the entire bluff that I scanned, it's about a quarter‑mile altogether and took me about three hours. From this, the idea is to look at these places where it's dynamically eroding very quickly, and we want to have a better idea of what we are looking at. Can we devise some sort of a timeframe, loss, gain, etc.

JENNIFER FLYNN >> Thank you, Scott.

STEVE SMITH >> Thank you, Scott. I'm going to transition to some of the salt marsh ecosystems. Here, right at the land see interface. We are seeing a lot of change ourselves. Roughly, 7% of our Park area is a salt marsh ecosystem, but even though there are under 10% of the land area that are much more important than that.

 They are extremely productive systems. A lot of biomass is produced in the saltwater marsh every single year on par with tropical rain forest and freshwater wetlands. Because of that productivity, they are very important and settling around a lot of elements and energy. Very important in the biogeochemistry of our coastlands.

 As you guys, I'm sure are aware, the saltwater marsh is supporting a wide variety of organisms either that they're permanently in the marsh or they use it during some portion of their lives. A lot of what may end up on your dinner plate when you order seafood dinner, probably depended on salt marsh at some point.

 They provide is a number of ecosystem services in addition to providing all that habitat for an ecosystem inhabitants. Again, as I just said, very important for commercial and recreational shellfish fishing. Also, a significant recreational opportunity, lots of kayaking, lots of birdwatching. They are important for our overall aesthetic in the vista of our landscape in addition to being economically important.

 Really, I mean, right on the heels of what Scott just mentioned, they provide us an amazing amount of erosion control where they exist. Both for vegetation, dampens wave energy as well as the actual platform of peat as well. Particularly in the winter, you can see the waves are just hitting directly onto the beach, there's a lot of erosion going on. They’re really important in that regard.

 Perhaps one of the neatest most important things they do this through photosynthesis their capturing carbon dioxide in the air and turning edition is plant mastery material ending condition of the saltwater, which is very salty, it's really hard for bacteria to decompose in that organic matter. It tends to build up and over time. You get this formation of all this organic matter known as peat, which is carbon counted from the atmosphere and sit there and does not interact with the atmosphere anymore. There really important in terms of (inaudible) and to some extent.

 Sea level rise. The salt marsh vegetation is extremely sensitive to Hydro Period. At the start of the Industrial Revolution, there's a point where the sea level rise starts accelerating, coincidentally with the CO2 concentrations in the atmosphere and temperature as well. For the marshes, this obviously means a great deal considering they are in the intertidal environment.

 One of the most conspicuous stations of sea level rise that we see here is actually conversion of high marsh species which is primarily salt marsh hay. At the upper edges of the salt marsh, looks like really fine grass that looks like cowlick) that you are pretty familiar with how that was like and how it was used in the past. For livestock feeding etc. But when you look at the marsh comprised of basically two different sections. Below high tide is generally occupied by core grass or in alternate floor, which is taller to high degree. The upper reach of the salt marsh is the Highline. That is where saltmarsh sparrows nest, and it's its own little particular sub community of organisms there. But that is rapidly disappearing.

 If you look, sorry. Is that me? Sorry.

 Those photographs showed that the high marsh is a very light‑colored signature, low marsh is a dark‑colored signature. You can see in the two photos, that is middle marsh at Head of the Meadow, that the disappearance of the high marsh has been quite dramatic. It's completely disappeared from your number of areas as well.

 That process is illustrated here. In this part of the world, usually it's a fairly abrupt transition between the high and low marsh. That doesn't quite mean high tide. The sea level rise and high tide is pushed back up to the terrestrial environment and the low marsh replaces the high marsh. The upper edge, the high marsh is getting squeezed out of existence because it runs in various berries and migrates over.

 So, we wrote a paper based on saltmarsh vulnerability project that we undertook in 2013– 2016 where we collected a lot of data and built a very simple model looking at two projections of 50 cm versus 100 cm. How those marshes may change over time, how it may predict the vegetation to be altered. It's a little bit hard to see because it is not colored, but this is an example Hatches Harbor. For example, the white polygon is high marsh, the gray is low marsh. You can see it; the black area is where the low marsh has been converted to mud. With 50 cm of sea life, it'll get way more than that but even with just 50 cm of sea level rise, you basically lose all the high marsh completely. Within the existing, and at 100 we start to see significant areas of total marsh itself.

 The other big, huge more of a sea level rise issue in my mind is the sesarma reticulatum, purple marsh crab. These guys are native; their range is from here to North Florida. There is a paper written in 1991 that suggests the northern ranges was Woods Hole, Massachusetts but that proved to be incorrect. The been here for quite a long time but over the last few decades they have really increased. Such that the populations are about ten times more.

 This crab is nocturnal, you hardly ever seen them, and they are the one type of crab that eats the actual vegetation. Fiddler crabs you see those running around the marshes, they are eating the algae and microbes, not eating the plants themselves. They’re eating crabs, other critters as well. But these summer crabs actual munch the vegetation, and in normal circumstances they don’t do don't do much. They're part of a healthy functioning saltmarsh but here, there ten times the normal population and if they keep grazing on a section of the saltmarsh, after a while that plant can't grow back again and they die, then you're left with these.

 There's a number of possible reasons for their abundance here, not just here but a lot of places along the Atlantic coast now, but it probably has to do with the laws of pressure, and it has to do with the rapid rate of warming we are seeing here as well. The organisms do different things at the very edges of their geographic ranges, particularly in relation to their predators and prey. Whatever the reason, they are extremely abundant here and do a lot of damage. I will just mention, recent paper came out that also suggested the sea level rises is softening the sediments in the Northeast and as such it's easier for them to burrow into those sediments. So, it's creating more habitat.

 This is an example of the West End Marsh in Provincetown that we have been monitoring since 2003 and it was a fully vegetative healthy-looking marsh, all the way to about 2014 when we started to notice some open spots happening. Since then, it's been an absolute catastrophic demise from the sesarma crabs. They exploded in this marsh and have done, have engrazed the vegetation so intensely that just in this one spot, this one photo, it is eight acres gone in a few years. It had been 15 acres that had had been completely removed from that marsh in ten years.

 Sesarma impacted marshes are seeing here, basically, we have seashore from the west End Marsh up there near Provincetown, all the way down through every marsh around Cape Cod Bay. They peeter out around Nance Cape marsh and have made a not made it West to the Great Marsh in Barnstable yet. There is no sign that we can detect in Pleasant Bay. There may be a number of reasons for that, I won't get into it but there is no sesarma damage there. Actually, in those marshes on the Bayside. Those ones we are doing okay with respect to that. Hatches Harbor at the very tip don’t have any.

**JEN FLYNN** Clarity – the purple was all the marshes, not necessarily, not the ones impacted.

**STEVE SMITH** >> The purple defines the marsh areas of the seashore, the arrows defined were some of the impacts are. Essentially, all along Cape Cod Bay in the marshes are okay.

 You know, it's a no‑brainer that when you lose vegetation, you don't have anything to hold this down anymore. The crabs love creek banks, for whatever reason, it's a preferred habitat although they are kind of all over the place. When you do creek banks every day and storms, you're going to lose that creek bank piece and it just falls off into the channel. Also, it oxidizes away. When these guys have done their thing and the left the landscape looking like that. The title channels, we have seen the title channels with some impact on marshes increase quite dramatically.

 An example of one system from the March, 2010 shows a trace of the channel and you can see by 2021, it's broadened significantly. When you're doing that and changing the entire hydrology of the systems, it actually is making some of our marshes more dominant which itself, exacerbates the erosion process.

 We have been working on generating some ideas and working on things that we think, ways to essentially remedy the problem, or reduce the extent of impacts. A series of studies that we undertook in the last few years have suggested that, I will just say at first, elevation deficit is a problem for marshes worldwide. Marshes need more elevation to keep up with the rate of sea level rise that's occurring now. People up and down coastlines are adding sediments to marshes to give them some elevation. The photo of the big sandbar there in the right‑hand corner is a study in the Netherlands where they deposited a massive pile of sand in their letting Mother Nature’s longshore currents distribute that sand overtime for many, many years to basically passively re‑nourish all of those beaches over time without having to do anything, just letting Mother Nature take its course.

 In this photo on the left, what I simply did in the Gut where there was sesarma die back was added 27 m of sand one meter plot. It recovered quickly, so sesarma crabs can just continually walk into there and eat if they wanted to, they didn't, and those plots were unbroken. We got a substrate like sand to that guy back area, some crabs can't live in. They can't maintain the constructive burrows in sand, it's not cohesive enough.

 Even just a little meter square plot, basically prevented them from doing anything in the vegetation recovered really really well. This is a nice experiment that looks great, but it's only meters squared. To think about doing that kind of material to marshes across many acres is a little bit mind‑boggling. That said, there are things that if coastal engineers are doing things like adding was called a sand engine or sand motor where you can pile a bunch of sediment somewhere and let water currents distribute that for you, there may be a way to do this. That remains to be seen.

 So, a little bit of good news here. The top three slides just show you examples of where it’s very, very difficult for the marsh to migrate over land into the terrestrial environment, either we have steep slopes on the left, or it is an island system. The island portion of Nauset marsh can't migrate anywhere. There's some opportunities for migration up onto these various spits and beaches, but those shown are generally narrowing. And becoming less and less of a habitat for that to happen.

 Where the saltmarsh migration in response to sea level rises through the Province Land here, so the main (?) Hatches Harbor, we are seeing water come in and around and move through these dunes here.

 The water is getting way back there. This portion of Hatch's harbor is basically all new since 2000. The water is coming up through here and running down the sand roads and actually and all the way up to hear I found crab shells, claw marks, so the water is really penetrating. There are these flow marks here that actually have dune grasslands transects that runs through here are converting through here and being converted into saltmarsh, so we are getting a big penetration of sea water inland.

 The marsh is following that. Sorry, go back one more time, one more. The marsh is following this way. The one thing about this process, is that when you get solidity, seawater intrusion into the upland, they are infrequent, you're getting salt episodically, so the peripheral freshwater wetlands that exist all around the marsh and through here all these cranberry bogs, what we are starting to see next to the marsh is the freshwater wetlands, the typical freshwater species when I first got here, now they are receiving salt in storms, and really high tides. Some of these have now converted to this. All the freshwater vegetation, in particular, the trees get salt killed but it's perfect for phragmites. We are ending up with freshwater wetlands due to salt intrusion and becoming ghost forests with frag mite understory. This is common all along the Atlantic coast. We are seeing it here, but we have an opportunity here to figure out how to manage this migration process to reduce that interim phase of really low habitat value fragments.

 But we have an opportunity here. We are working and embarking on studies this year and in coming years on how to manage this migration process and assist this migration to convert it to saltmarsh water quicker and reduce that phase. If we don't, a lot of the freshwater in the wetlands could be occupied by the quality of those habitat. It was a great opportunity for us to learn about how to best manage this process, which is where every coastal land manager is facing worldwide.

 The water is going to keep going this way, so we are going to have to manage roads, infrastructure, and there may be things on the landscape that we want to do to better prepare the marshes, to help them colonize this this region, which they are doing anyway.

 Ideally, it's a place where we can gain a lot of saltwater marsh that we are otherwise losing in a lot of places, and a real significant opportunity to figure out how to effectively manage that process. That kind of knowledge can be explored with others who are experiencing the same issues.

 These are the last couple; did you want to?

**GEOFF SANDERS** >> I can jump in.

**RICH DELANEY** >> Question for you both with regard to the West End Marsh in Provincetown and the marsh, the potential for opening the breakwater. Any thoughts on that?

**STEVE**>> It might help, that water, both ends of the breakwater– go back a couple slides. Both ends of the breakwater; sand wants to move into that marsh. That is why you see big accumulations of sand on the seaward side of that breakwater. Along the Long Point and right up by the town. So, the breakwater is definitely preventing sand from moving into that system, with the elevation substrate. It also prevents fish predators from accessing sesarma crabs. There are marshes with no barriers in front of them, no breakwater that are falling apart from sesarma. So really quickly opening the breakwater, and while it would help a number of respects, it may not be enough to see impacts as strong there.

 It certainly, in the past, it's been an issue because every single tide, you are depriving that marsh from organic sediment, every single one. Having it opening up would be good, I just wouldn't count on it fixing this problem here.

**JEN FLYNN** >> Go back to the last slide. Sorry, go up to the close out slide. There you go.

**GEOFF SANDERS** >> My name is Geoff Sanders and I’m the Division Chief for Natural Resource Management. I couldn’t let Scott and Steve have all the glory today. I will take a couple minutes to wrap things up with the last few slides here. Steve talked about how we are seeing marshes naturally migrate into areas where the tides are taking them. We also have a number of projects going on that were actively trying to restore marsh, so the biggest one is the Herring River Restoration Project which we have not actually– the restoration has not begun yet even though those of you who are in the Wellfleet area will see there's a lot of action going on and construction. No actual restoration has taken place yet.

 Once the project, once the restoration is underway, we hope that at one point, we will be able to restore 900 acres of salt marsh in the Herring River system. Another area which we just showed in the last image was Hatch's Harbor where we restored roughly 80 acres of saltmarsh in the tidally restricted portion of that system. Then lastly, East Harbor in Truro, there's roughly ten acres of saltmarsh restoration. These are some of the areas in the park where we are actively doing work with the saltwater marsh habitat.

 We talked about dunes, beaches, bluffs, and salt marshes. One of the other important components of coastal resiliency is seagrass. These systems typically, as opposed to salt marshes which have the interface of the terrestrial marine, seagrass often live in the subtidal and, but they serve many, if not all, same ecological services as salt marshes do pay, they offer erosion, carbon, essential habitat, water quality, just like salt marshes serve as an incredible nursery for biodiversity. So does seagrass and as Steve mentioned with salt marshes, essentially seagrass is help nurture those species that we are often times economically dependent on.

 So, there's been a lot of work done on the seagrass habitat in and around, all throughout Cape Cod Bay but we will focus on the outer Cape for now. Mass DEP does regular mapping of eelgrass, and you can see the green areas represent historic eelgrass beds into pink represents current. You can see we have relative stability in Provincetown, a great deal of loss in the Wellfleet area around Duck Harbor, Jeremy Point, and then loss down through Eastham on the bayside.

 Nauset Marsh has been pretty much, completely immune to seagrass, and we do have recovery and shown positive results in Pleasant Bay in Chatham.

 So, the, there's a number of reasons why we are losing some seagrass beds, there's a lot of work going on. Climate change, warming, warming waters, physical disturbance, the fishing industries, and also water quality.

 So, the park and our cooperators are doing a lot of work on seagrass. The park monitors seagrass on an annual basis with collaboration with the inventory monitoring program which Scott mentioned. Our ecologists here are involved in some other projects. Working with our ecologist Sophia Fox and an ecologists from inventory monitoring network, Holly Plaistad are the running two separate projects right now. One is focused on Cape Cod Bay; another one is focused on seagrass up and down the East Coast. They are studying in the Chesapeake Bay, the New York/New Jersey area, and then up in the Boston Harbor and Cape Cod area to understand and see how the same species is thriving or surviving in various areas. Obviously, water temperatures warmer to the south and actually, have been thinking about through genetic work to determine if there is a genetic difference between these species and if you are to take a species from the Chesapeake Bay, take a sample from the same species in the Chesapeake Bay, move it up here, would that be more adaptable to warmer waters here as well.

 There's a lot of work being done to try to figure out what's going on with the seagrass issue here, and you can see the number of partners we are working on this with.

 Speaking partners, think it's important to recognize that all of the work that's being done, whether it's the work that Scott or Steve was discussing, or the seagrass just spoke about. None of this could be done without the help of our partners, there are just some listed here. On the Park service side, a number of internal partners with response and monitoring. The water resource division, they all provide funding and expertise. USGS is another federal partner. The Center for Coastal Studies has been valuable in supporting our work and also involved in the seagrass work. Too many university partners to mention, but we have a lot of them, and they all provide brilliant, important expertise. Then our friends groups specifically the Friends of Cape Cod National Seashore have been a huge support as well as the Friends of the Herring River Project. Lastly, the National Park Foundation has really provided us with valuable support for a lot of the work we are doing.

 Pretty sure that wraps up for our side of things, I will turn it back over to you.

 **JENNIFER FLYNN** >> We just have to last slides, and then we will turn it back to Rich to lead us through conversation. You've heard us say many times we don't have the luxury of doing science for science sake. We have to think about where we put our time and our resources, and the purpose of science for the National Park Service is to help us make good management decisions.

 So, as I listened and look at that, I'm always thinking okay, what we do with that. Now, what are we doing with this information. So, I wanted to highlight that some of the important things are doing, and the team has already talked about it but the one thing we haven't talked about yet is the park has adopted an adaptive management posture as it relates to coastal erosion and sea level rise. What that means is, we are not looking to harden our assets. We are not putting in rock abutment for that, or looking at how to hold the line, but what we are doing is, we are proactively adaptively retreating in the face of loss. So, the park has already done that work at Herring Cove. The project happened, we pulled back from the north parking lot where we had, we did have rock jetties and pavement right up against the high tide line, and that was really exacerbating the sand movement there. So, Herring Cove has been pulled back, Nauset Light the facilities have been pulled back, the bathhouse, the bathrooms have open pulled to the far side of the property there. At Coast Guard Beach through no decision, but the storm of 1978 the takeout the 350‑car parking lot required rethinking of what access to that beach look like and resulted in Little Creek being built in Eastham to allow the public to continue to use that place, but not have parking on the beach.

 As we digest the information that Scott is gathering, it really does help us think about what the next areas are we need to focus on.

 As we already said, we are moving towards removing the Bartlett house, because it is at risk. We lost the Marconi Stairs. It really makes us, again, rethink the assets that we have at Marconi. We have a plan to move those bathhouses back but does that need to move up in our timeline. So, that is how we are trying to apply the science to our decision‑making and making sure that we are making the best investment for the public as we think about how to manage recreation and access with the changing dynamic that is the outer Cape.

 I think that is our last slide, can you double check me? One more for Marconi Beach. As I already spoke to this, these photographs, the one on the left is from 2023. The one on the right is from 1960, and you can see Scott has transposed the current facilities on the map so you get a sense for how far back we would have been in 1960. Then, what the image on the left doesn't show is the staircase that is now totally gone. The purple pathway starts short of where that last juncture is there on the map.

 We have a dynamic world out here on the outer Cape. We are trying to make sure we make wise investments, but also continue to provide access to these beaches and places that are so well loved. I think that ends us. Go ahead. Thank you.

**RICH DELANEY** >> Great. Steve, Scott, Geoff, thank you for the presentations. Really fascinating, really important. And, again, really timely as Scott's first slide pointed out, we have front row seats of the fastest warming water in the world. So, that just intensifies the claimant related unit. For examples here with this presentation.

 The floors open for questions. The guys are still here, questions about the presentation.

**JEN FLYNN** >> I'm sorry, would you indulge me with a brass and break before we start the rest of the portion of the program.

 **RICH DELANEY** >> Yes, we will take a three‑minute break.

 >> Three outstanding presentations, we would like to think about during the break, we mentioned 11 inches of rain at one time. Climate change intensity. Mark just mentioned is now a Category 5 hurricane. As we said a minute ago, right off the body of water is the fastest through the climate change. Where we want to live. Intensifying in all kinds of things, but mainly challenges as that gets more intense. For all of Cape Cod.

 So, any other questions from any of the presentations or any of the topics?

**MARK ROBINSON** >> I would just like to point for the record that some of us remember that there was a voice was a crying the wilderness 30 and 40 years ago, staff colleges for the John Portnoy had a lot to do with Hatch's harbor in Herring River in terms of the eco restoration efforts there. I just hope we don't forget that.

 >> Good point.

**LILLI ANN GREEN** >> Thank you all for such an excellent presentation. I learned a lot and I think that is one of the big benefits on being on this advisory commission is not only to learn but to hear from the towns and the townspeople.

 So, I appreciate all the effort that you put into the presentation and the various work you are doing.

 I was curious, you are talking about the best investment for the public and you are proactively retreating. Are you also working with the town– towns on various areas like Oceanview Drive which is 62 feet from the blacktop to the cliff edge which borders is national Park property, are you working on those areas as well? I don't know in the other towns. Of course, we have the blackfish Creek area where I know it's town and mostly Commonwealth, but it does border, there are seashore areas nearby and we are talking about emergency management as well as access. What are you doing in those areas?

**RICH DELANEY** >> Managing index.

 **LILLI** **ANN GREEN** >> Retreats, and monitoring and managing, and working collaboratively.

 **JENNIFER FLYNN** >> I guess, what I would offer to the collective is that it varies by town, of course. The short answer is yes, we have been asked by the town of Wellfleet to start a conversation about Oceanview Drive, which is not in an immediate threat. We have other areas that are certainly like DCM, by Beech Grove, which is a much more dire circumstance but yes, we start that conversation with the town manager, Provincetown has asked to meet with us to start talking about climate change and resiliency around Moore's Road, Hatch's harbor, the south parking lot.

 So, yes, with all of our towns, we welcome that discussion. As in all things, we have to sort of set up a firing order, so what is the most, what is most likely to happen first. I asked respectfully that we finish the Wellfleet current land exchange before we start the next one but yes. I welcome that conversation and meet with all of the town managers at least one time for the four upper/lower Cape towns. We will continue to engage in those discussions that the as the Select Board or the Town Managers asked to. The timeline is what I will continually have to adjust and juggle to sort of make sure that we are prioritizing correctly did make sure that things that are greatest risk, we are addressing first.

**LILLI ANN GREEN** >> As a follow‑up question, is bringing that information to the towns and keeping the towns apprised of both, maybe at the Select Board level but the wealth format– forum. This presentation was highly educational. I know you recently went to the Select Board with the Fresh brook restoration project. Bringing that to the public, and in this information, I think is on a rotating basis to keep us all apprised of what's going on. I think it would be very helpful for the towns. Do you have plans to do anything?

**JENNIFER FLYNN**  >> I guess I would offer; think we already are. Every time we meet with the town managers, most of them on a bimonthly basis, and we have this meeting, which is public. I've asked the select boards to be invited annually so I can do the state of the park. I think we are leaning into that space, as you know there's hundreds of forums.

 Up to this point, I haven't had to say no to someone who has asked us to come talk. If it gets to be too much, we will have to weigh is by think we are doing that.

 >> Thank you very much.

**MARY JO AVELLAR** >> What about Long Nook?

**JENNIFER FLYNN** >> If that is a town that is managed.

**JENNIFER FLYNN** >> We don't manage that. The town owns that sliver, and it is a town managed speech within the seashore.

**SUSAN ARESON** >> I plan to speak to that.

 >> Sorry, Susan.

 >> No, later.

**RICH DELANEY** >> We will get the comments in a minute.

**SUSAN ARESON**, He spells just going to say does the former president and member still of the forum, it is a pretty amazing presentation and I do think that it would educate people and also, just show what is trying to be done if we just expedite some things at times of the essence. That is something we can think about from the beginning of next year. I will propose it and we can talk about it.

**RICH DELANEY** >> Okay, any other thoughts or questions of our scientists?

**SUSAN ARESON** >> Just going off of what Sheila said, I think if there is a forum in Wellfleet can Provincetown be included so doesn't have to be done multiple times, I also try once the slide presentations have been put on the website, I try to make an announcement in the board meetings to say hey, it's here. I was like, that's not as good as having some of the seashore going through and explain it because people aren't necessarily sure what they're looking at. It's there.

**STEVE SMITH** >> Once the Wellfleet Harbor conference is coming up in November. I will be presenting way more.

 >> Way to get that word out, okay, thank you.

 >> Thank you. Is there a date?

**STEVE SMITH** >> The first Saturday of November. The seventh?

**RICH DELANEY**  >> Excellent. Seeing no other hands or questions, let's move on to the next item on the agenda, which is our traditional member comments. We will start with the Commonwealth, to the county and go around the room. I guess Mark or Leslie, would you care to offer any comments from the Commonwealth?

**MARK ROBINSON**  >> Leslie, would you like to go first?

 >> Leslie, thank you.

**LESLIE ANN JONAS** >> Thank you, I can't unmute myself. Thank you very much for that and for the presentations. Good afternoon, everybody. There are many roads, I believe there are many roads we could go down in the fight impacts of climate whether it be mitigation, adaptation, restoring, rebuilding, but I want to focus on my little talk today on something everyone can act on, and that's the carbon emissions each town is putting out there. We measure by percentages in the water and sewage, waste, public lighting, vehicle fleets and buildings, but I think we must become more aggressive in our energy auditing and rebate programs. To elicit faster and greater change, and more efficient energy use in public buildings and even privately.

 Conservationist myself, so I believe in restoring the areas that are impacted but I think this is a human behavioral issue that we have to be talking about equally as importantly at the very same time where we are rebuilding and mitigating and adapting.

 Back in 2018, they were told, which is an international environment engineering research group did a vulnerability assessment and adaptation plan for Falmouth that showed very daunting details on the upper Cape Shores, and the rate of rising seas for coastal Massachusetts in general. Very scary.

 For 2000 years, our waters have been rising just normally. But each are because of climate there rising faster and faster and faster. What we are projecting to be seen at the end of the century is probably greater than eight feet of sea rise, which is going to be devastating to a lot of areas here in Falmouth and probably all along, all throughout Cape Cod. Bringing that larger climate lends into focus on areas where the everyday person can do more, it can something like reducing automobile emissions.

 In California there are bans on the sales as we know of gas-powered vehicles by 2035. Promoting more and more electric vehicles.

 One very important area, I think that all the towns are monitoring and acting on is automobile idling. This is a really big thing here in Falmouth, it's a serious problem because many of the massive trucks that are waiting to go to the islands sit in the woods parking lot and just email it exhaust heavily. The air quality is quite poor to the point where our board of health went to the select board and decided we needed to get a lot more aggressive around how we reinforce the laws. Many of the towns have laws in place about idling, but they're not, it's not enforced by the local police. For local police, this could be one of the areas where they don't put enough resources, they just don't have enough money for that level of enforcement. We need to start thinking about these changes with our select boards because these are the types of changes that could slow climate down if every resident, every private landowner, every automobile owner can start to make these lifestyle changes.

 Falmouth started ticketing for idling in the Woods Hole area by fining the truck drivers $100 for the first offense up to $500 for subsequent offenses. I think we need to be doing more of this in every counsel people start to think about this differently.

 So, on another note, a really good resource for all of you, for climate action and outreach is in the Woods Hole Oceanographic Institution Sea Grant program, which is every day putting signs to work for our coastal communities through education communications outreach extension and research and climate marine health water quality marine debris and other big topics. Aquaculture and fisheries, storm and erosion and flooding. But there are really, so many ways that we each can be building community resilience in our towns, and I recommend you visit the WHOI sea grant website where you can find numerous activities, and how to implement the Cape Cod Coastal Resilience Week where we can you all will using one of our coastal vulnerability your overeager, and promoting solutions that each of us can do on a daily basis. So that each and every resident is involved, each and every resident becomes more accountable.

 I'm going to close on a tribal note. The tribe, the Mashpee Wampanoag tribe management natural resources and tribal historic preservation departments understand, and we discussed what adaptive strategy might look like. Not only in mitigating the impacts of climate, sea level, and coastal erosion, while everybody knows it threatens our traditional lands, culture, food sovereignty and our livelihoods. But also, so that we can develop unique strategies that leverage our deep knowledge of the local ecosystems that would include traditional ecological knowledge that we have carried for thousands of years.

 So that we don't become climate refugees like the Biloxi Chitimacha**--Choctaw** down in coastal Louisiana who are the first tribe to be U.S. federally relocated due to climate change under the Obama administration. They were moved, they were moved three hours north of their homeland due to sea rise, which were basically followed up by the Gulf of Mexico.

 We will be facing this kind of sea rise in the next 20‑25‑30 years, our children, grandchildren, generations behind us will definitely be impacted in the Alaskan tribes have been dealing with the loss of their homeland for decades. Due to the glacial melts.

 In recognizing this, most, if not all coastal people will become climate refugees, and we must have action by each and every resident of all of these coastal areas.

 Here, on the Cape, in the tribe we are beginning to actively engage in the community driven resilience planning, and we work with government agencies whether it be NOAH, NSF, the EPA, and researchers develop adaptation strategies that would be best suited for our needs in the Mashpee area. Coastal tribes and coastal people are particularly vulnerable, so I think that our action plans are critically important. Something that might seem as petty to some as auto idling or truck idling is a very serious topic. Thank you.

**RICH DELANEY** >> Thank you. Wonderful comments, I couldn't agree more and to underscore your point about, we understand the problem and the problem is us and behavior change has to be a big part of responding and adapting to climate change. In focusing on the way we transport ourselves around, which the number one source of carbon dioxide on the Cape and way we live, how we heat and cool our houses are number two. Those are things that we think about to a certain extent. Good comments, thank you, Leslie.

 Mark, go ahead.

**MARK** **ROBINSON** >> Just briefly, it's a very dynamic regional group here or on the Cape. Called the Cape Cod Climate Change Collaborative, and Rich has been a leader of that for many years. Coming up on October 24th is their annual NetZero conference, which is in Hyannis from 8:00am – 3:00pm. It's free, and I really encourage people to go. I will send the link here to the Superintendent, but Senator Warren is going to be a speaker and there's a number of good panels about one of the workshops is planning for coastal resilience. Right up the alley here. But the collaborative is an opportunity for business leaders, environmental leaders, town leaders to speak with one another on a regional and regular basis and it would be nice to invite the Superintendent sometime to come to some of those meetings.

**RICH DELANEY** >> I encourage everyone to attend, and it’s all about action items. How can we collaborate as part of the title, collaborate in action since we are a region. Thank you. Good.

 Let's go to our representatives in Barnstable.

**SHEILA LYONS** The County actually does support the efforts of what we can do. The Commission does all of our studies and we will give them money for Fresh Pond fund if they're looking at water quality issues, water trends, worming, we are there to help fund them or sign on to what they're looking for. We don't have a direct role in it, whether it be cooperative extension does take advantage of the see grant that Leslie was speaking of to do education, and best practices and how can you help with hazards. There's other things we can do but I do agree with Leslie on the emissions. I have seen it more than I want to and when you see all this traffic backed up, we all know. It's just awful.

 I tend to roll down the windows and say ‘shut your car off’ but the bulk of it is really the support system and education system. I would say that the County does research support underwater collections and on some of your testing these. So, that is how we are a partner there and we are willing to be a partner in all kinds of ways if it fits what we can do and it's something that we can always collaborate on. Don't ever not think about that. What a can’t say we are doing specific projects.

 >> Thanks, has been off from that, and I will ask you a second but how about (name) commission

(Multiple speakers)

 >> The think tank over there.

**RICH DELANEY**  >> Heather, know you have a lot of things. The low‑lying roasted was mentioned, do you want to chime in on the Cape Cod commission activity going on right now?

**HEATHER MCELROY** >> Sure, thank you. Yeah, some great comments made already. Leslie noted that WHOI Sea Grant has a number of climate actions that individuals can take. I remind folks that the Cape Cod Commission completed a climate action plan in 2021, and there are new mobile actions there that can be taken at various levels including the individual level. That address the range of considerations for climates, both the adaptation needs, which has been the primary focus of this discussion, and as Leslie was getting at, the mitigation elements, how we begin to reduce our contribution to the climate change problem.

 So, then more specifically on the resiliency front. A lot of talk appropriately on the impacts of erosion. An area that the Cape Cod commission has been focusing on with a lot of assistance through state grants has been on impacts from flooding. I guess, I couldn't hear completely but it sounded like somebody mentioned the low-lying roads project. This is something that we finish just a year ago now, I is. But worked on in every Cape Cod town to identify roads vulnerable to flooding and to identify some potential solutions. There is a whole website on it on the Cape Cod Commission website and I encourage anyone who's interested to look. I was in Wellfleet just a couple of weeks back after the large rainstorm and couldn't get to the out Atwood Higgins house because of flooding across, I forget which road but it just, we couldn't get there.

 Due to flooding. It's definite– flooding is definitely an issue and it's not just coastal storm related flooding, it's also precipitation that just brings vast quantities of rain.

 Other areas that may be relevant to this discussion is our work on developing coastal bylaws and regulations. We recently completed a draft, not a draft, but of model wetlands by want to address managing development in the floodplain. This is an area that the state of Massachusetts, while we have a great wetlands protection act, the state of Massachusetts has not developed regulations pertaining to so‑called Williams subject coastal storm flowage.

 We have drafted a model, it wetlands by law and wetlands regulations that communities can adopt as well as a model zoning regulation that would also address development in the floodplains. These are all companion documents, they work together on so that if a town were to adopt these regulations together, they would work together, town boards would be regulating consistently for development of the floodplain. There are mapping tools and other resources. I will leave it there, there's a lot of other stuff on our website.

**RICH DELANEY** >> Thank you. Thanks for the climate action plan. That's a great reference for a lot of towns, a lot of us. Would you mind sending a link to us, or maybe people will do it anyway. Send it to Cheryl and we can make sure everybody has that so they can access that information.

 >> Absolutely, will do.

 >> Thank you. Let's keep going alphabetically, that brings us to Tom, to update us on chat activities.

 >> Sorry, Ted is right here. Sorry.

 >> No worries, thank you. Ted is going to lead for Chatham today, I appreciate it. Take away.

**TED KEON** >> No problem. So, yeah, coastal resiliency is a– a coastal community is at the forefront of everything we do almost. We are not unique; all the towns are facing basically the same issues. I tried to kind of summarize in the sort of resiliency component versus the climate kind of phase of what we are doing. Again, these are just highlights. Over the last few years, we have been doing a lot of learning from different infrastructure renovation improvement. This is a double‑edged sword because those facilities are sitting right on the water, in the water at times.

 Most of what we do always looks at resiliency, we are trying to raise the facility, that makes it very awkward when your pier out the bulkhead on the water. We don't want to make a facility not function, but we can do other things, we have been raising our utility systems at our Chatham Fish Pier, we elevated our gas pumps a few feet higher for the concrete pedestal. They actually had been more getting over washed during storm events and so forth. So, we have just been doing a lot of that kind of stuff, pier replacements, town landings had been renovated and are being renovated. Again, if they have to get wet through design, so they can get wet and when the water recedes, hopefully they are still there.

 We have been involved with several, over the past few years, fortunately coastal zone management has– Massachusetts coastal management has had a number of resiliency grants. We had a series of focusing on commercial systems in pleasant bake that and ultimately focused on a living shoreline, marsh restoration in Chatham, we are in the permitting stages of that and hopefully once that's done, we will go to construction next year. Similarly, we had an extensive look at our whole east facing shoreline in Chatham. I think you all know our barrier beaches and inlets are very dynamic, which puts a lot of stress on our mainland infrastructure, both public and private. So, we had an extensive, a CDM study looking at what could we do, we had a private firm looking at that effort and came up with a lot of suggestions and alternatives that we are looking at. Trying to look at some of that. We had sort of an organizational aspect, we said we had an energy committee for a number of years looking at town energy policies, and ways for efficiency. A couple of years or so ago, they were charge with expanding and now they are called the Energy and Climate Action Committee. So, they have expanded their role in looking at a number of climate related efforts. They have, they got funding from our CPA Community Preservation Act preservation act, right?

 Looking at marsh systems along Nantucket sound and trying to assess which ones are vulnerable to sea level rise, looking at opportunities for marsh migration, and they will probably be expanding that into more marsh systems throughout Chatham, so we have a really good baseline look at our existing marsh resources, and looking for opportunities for helping them.

 Sort of a subset, that is a sanction committee on the select board. So, the unsanctioned in a sense, we have a Chatham climate action network in addition, and it's a lot of the same members as well as other folks that are more in advocacy organization, in a sense. They have been looking at a number of things. In fact, I put in there in the ongoing spreadsheet of what they been looking at, what Chatham has been doing is a multipage thing with about 50 little topics, what we're doing relative to that action, kind of summarizing these. Helping prioritize, and probably one of the most important components, trying to advocate and educate about what these issues are and where they focus, where the resources need to be put.

 That is hopefully going to really help the town pursue a lot of these projects.

 Heather just mentioned, and we have participants in the low‑lying Road project. That was, I wasn't anticipating as detailed an effort as it actually became when they were looking at the entire town and identifying various roadways and the potential vulnerability for mobility and then you choose to, or whatever criteria you wanted to, to look at alternatives. We had selected, we have completed the acceptance of these two, and how we are going to move forward is still to be seen because some of these are extremely challenging. It's one thing to know that the road floods, but how you fix it?

 Some of these are in very sensitive resource areas, they are important because in our case, we selected roads that if that road were to flood, certain areas couldn't get access to or from. Fortunately, we didn't have roads that are accessing a hospital or a police station, or emergency resources. It's more community portions that you can't get access to.

 In one case, after Morris Island Rd. In Chatham, it's been flooding, we know we get flooded. But how do you fix it. It just isn't that simple.

 Obviously, again, well‑known extensive wastewater program underway with a number of pump stations that need to be built. In each case we have to cite those, so we are looking ahead for the rising sea levels. In fact, we have at least in one case, and I think there's 1 or 2 more where we have to redesign existing ones to get them up higher and provide additional resiliency.

 We also have a very extensive dredging program in Chatham. We have for many years, already been doing extensive beach nourishment with that material because fortunately, in our case is almost always clean beach quality sand. We try to put it back where is going to provide some benefit. One thing that I have worked with the seashore in the past a number of times, whether or not there's any opportunity to put it on your beaches. I know that's problematic; I been dealing with that for 28 something years. Nonetheless, with our dynamic shoreline, particularly now, we have an island opposite Chatham towards Marquis Island, and as it continues to deteriorate, it's just going to expose more and more of our mainland issues.

 Folks on climate carbon footprint energy, some other initiatives, we have, and again, many other towns are doing this where we have an extent

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 >> We try to put it back somewhere where it is going to

 provide some benefits. One thing that I've worked with the seashore

 in the past number of times whether or not there (inaudible)––

 nonetheless, with our dynamic shoreline.

 Typically, now we have an island opposite (inaudible)–– which is

 the two-year rating and as it continues to deteriorate it is just

 going to explode more and more of our mainline issues.

 >> (Inaudible)–– carbon footprint energy some other

 initiatives we have again of an extensive use of solar panels and on

 my gosh– done in our landfills.

 We had a few years ago a new one that required a town to switch

 over to EV vehicles or at least much more efficient hybrid style if

 feasible.

 Sometimes it is not appropriate but if you can use when you're

 supposed to change over to an EV vehicle.

 Actually, this includes tools and other equipment as well.

 Have an energy reduction plan which is to upgrade various HVAC

 facilities owner facilities (inaudible)–– a lot of our facilities are

 ready.

 Other town as well we have some, I do not know what the numbers

 now I think it is six may be more than that EV charging stations

 always looking at opportunities to expand those facilities as well.

 That is really a snippet of what we are doing. Hopefully, doing

 something that will have some help.

 **RICH DELANEY** >> It is more than a snippet and it is encouraging so much

 activity (inaudible)–– climate committees that's great thanks. How

 about hearing from Eastham.

 >> Eastham yeah.

 **DAVID CRARY** >> Let me put my glasses on. Eastham puts a necktie on every

 meeting. Please follow up because I just have a real brief

 three-page summary. Eastham does have a climate action committee

 that meets monthly.

 And discusses all things relative some of the things I have

 picked from that and also personally personal input a lot of this

 comes down to the transfer station.

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 You can tell a lot about the town and the climate by the

 transfer station when it rains it rains more transfer station floods.

 It is wet and, in the summer, it smells.

 Anyway, it smells. But the dump is electrified with the solar

 panels. We have action going on there. There is some new equipment

 and I believe it is diesel and gas.

 It is not electric. Those vehicles although they are new and not

 hybrids they do move food compost which is a new thing.

 I do not know how effective it is, the idea is to it still

 breaks down somewhere in the carbon of that waste food does give off

 carbon but we are not necessarily transporting it to be then burned.

 There's probably saving and carbon there. They did have a

 survey a couple of years ago I think it was the climate action

 committee there were two there is an ongoing one (inaudible)––.

 They did that at the transfer station because that is where

 fruity goes. More people go to the transfer station, I won't even say

 the dump, then do not unfortunately.

 Some other things they picked up, and I used as a guideline the

 2020 Eastham hazard mitigation plan because of all the things that we

 have to deal with this climate crisis.

 Are in the what is this called the introduction chapters.

 >> (Inaudible)––.

 >> Table of contents, thank you I should've written that

 Up here. So, we have the natural (inaudible)–– by things. Actions,

 fire, flooding, tornadoes, there is a vulnerability assessment.

 There is a mitigation strategy. And it's four years old as I

 read it I was thinking I think that I mean this can be redone of

 course but it is all listed now it is 165-page document.

 I could keep talking but I am going to shut down here. It is a

 good blueprint of anything that we need to discuss about climate

 action is listed in this large document.

 (Inaudible)––.

 >> Sure.

 **MARK ROBINSON** >> Will thanks. Again (inaudible)–– the question is that has a

 mitigation plan part of the MVP? Heather I'm going to throw you a

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 lifeline Heather but I think all the towns up this way have done

 municipal vulnerability preparedness plan.

 Can you comment?

 **HEATHER MCELROY** >> Yes. Everyone is up to date on their M VP planning which

 makes them eligible for municipal vulnerability fairness grants.

 Which address various resiliency actions. A wide range. Our coordinator

 regional coordinator within the MVP program Courtney is deftly on top of

 making sure that we do not fall behind.

 There is a schedule for getting those towns updated.

 **MARK ROBINSON** >> Most plans have priorities that the town set through public

 process mitigation, strategies, and the state will fund the action

 grants to implement those.

 I think a lot of the town DPWs that are awarded these grants

 repairs bridges whatever.

 We are also seeing them now as acquisition grants are

 conservation Truscott $1.8 million toward a property they were buying

 on the big acre property, they are buying on the Red River estuary.

 There is a very specific program very well-funded right now

 through the state.

 **RICH DELANEY** >> (Inaudible)–– finding a solution was one thing but funding

 it was always the big challenge.

 Really there is quite a bit of money available for climate

 there is a lot of money fortunately government agencies (inaudible)––

 they will put these things in motion. Good start. All right.

 **DAVID CRARY** >> In this hazard mitigation plan there is a great history of

 specific events for Eastham which I should've said but I did not is

 that Route 6 can flood.

 And that happen twice cutting off the north-south routes. They

 have to do bridge road which is a bridge over a salt marsh which has

 the crab now badly.

 That also floods two different systems that flood hazards

 usually a four-hour delay. So East storm versus West and then high

 tide.

 The history was there having pictures of many of these floods but

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 photographs do not have a date on them. So is the guy could go back

 and see that I had never seen that before.

  **RICH DELANEY** >> WE WILL SEE MORE OF IT (Inaudible)–– good think you're right move on to Orleans

 **LARRY SPAULDING** >> So Orleans, it is interesting that Orleans has its own

 hazard mitigation plan and the woods hold group did it, started in 2019 and I talked to

 a town planner and they feel it is starting to get outdated.

 They are going to redo it. And they opted. I also among those

 plans they applied for some of those grants and have not gotten one

 but they ended.

 Because they haven't got one that maybe they are going to be

 eligible. In their about to apply for a beach retreat grant which

 would not include Nauset but would include Skaket.

 I talked to the assistant town manager is very interested in

 climate issues. One of the grants that they would like to get a so a

 solar power accurate solar battery backup which would be for the DPW building.

 You lose all the power, and they can't pump the gas and you have no access to things they

 will need for power. Solar may be the way to go. The town is just

 part time municipal energy manager with Chatham and Brewster and is going to assist the assistant town

 manager and some of the solar projects.

 I do not know if every town has one but Orleans also, I have heard they

 have an energy and climate action committee and they meet monthly.

 Probably the big they have done several things, but they just approved

 developing a climate action plan.

 Actually, that has been approved by the Selectmen and is going to the town meeting

 in the fall along with maybe I think he told me it was $120,000 but part of

 it will be used to apply for grant request to assist in developing the action.

 That will assist in the developing the action plan. Those are

 the primary things that are going on in Orleans. Thank you.

 >> Thank you. Next (inaudible)–– Mary Jo?

 **MARY JO AVELLAR** >> Thank you. Provincetown 2024 started working on coastal resilient plan with a group called SCAPE, Wood Hole Group, and an engineering

 firm to assess the potential damage to the town.

 Which will be in the downtown historic area. They've also been

 working with Cape Cod commission because we are two sections of town

 that are very low lying.

 One is from the west end and parking lot I have seen it flood all

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 the way Provincetown. Then of course we need to deal with the moors? and wetlands

 on that end two.

 The other one is on the east end from Howland Street to Kendall

 Lane. The big motel that we all call the green monster near

 restaurant is like a lake.

 It is like a lake back that I've seen that a couple times and

 had to turn around to go in another direction to get to Route 6.

 The town has also been working with Truro, Wellfleet, and Eastham on a multi-phase project with the Center for Coastal Studies to pursue a regional approach to shoreline management to Eastern Cape Cod Bay. There I will

 leave this with you some details about low-lying areas.

 We also when it was mentioned by Leslie about the emissions

 Provincetown has a bylaw to say that no one can run their car or idle

 the car for more than five minutes.

 I do not think it has ever been enforced, when I think about

 these big refrigerator trucks coming into town to service all the

 restaurants they leave them running.

 Where I work at Bubulas, by the Bay Café, local, 193 and

 there is Café Heaven, and they are all in this area and like the Cisco

 truck will park there.

 And just deliver to all these restaurants in the truck is

 running. It is not being turned off because it is refrigeration. That

 is an issue.

 We do have in the municipal parking lots electric vehicle

 plug-in places. They can get their cars taking care of. We do have

 solar panels at the dump.

 One thing that bothers me the most is this big lithium battery

 thing we have out at the landfill. When power fails, we are supposed to get ten

 hours in the winter and three hours in the summer. What I've been told by the fire

 chief that if anything happened at that battery the town is not allowed to go near it. The fire department is not allowed to go near it. There is an evacuation route. This thing is at the dump located north of Route 6 my sister is south of Route 5 which is the evacuation

 In the cemetery she is what they call an evacuation zone that

 thing I'm scared to death of it. We used to have (inaudible)–– we

 never went without power. We endured how hurricanes when I was a

 child we always had power.

 I think the town has to be more proactive in that area myself.

 Anyway, that is the other one. We are also the town meeting has approved

 funding to support U.S. Corps of Engineers to study 6

 feasibility of creating openings in the West End breakwater

 to increase tidal flow to the West End Moors salt marsh within Cape Cod National Seashore.

 That is just beginning. I do not have any more information on

 that. Town is also working to implement a dune enhancement project at Ryder Street Beach in the downtown business district which would protect town hall and segments of Bradford Street and Commercial Street from coastal flooding.

 Which is of great interest to me since I live between Ryder Street and Bradford Street. (Inaudible)––@writer Street behind town

 hall and twice in 1978.

 And most recently a couple of years ago the tide has come across

 commercial Street right to my front door. That is of great interest

 to me of course.

 And then town has also discussed the National Seashore proposed

 critical infrastructure the adaptations (inaudible)–– coastal

 resiliency of the town especially the south parking lot and adjacent

 portions of the moor.

 There is also problems with flooding there to prevent people

 from being able to be evacuated. That is what the town is doing I

 will leave this with you.

 Before we go. Soon the town come across to Bradford Street is really

 pretty scary have to say. Seeing the tide. I just do not know how

 people just do not believe that these things are occurring.

 I saw something on Facebook yesterday something posted about a

 poor polar bear sitting on about this much ice. It is reality.

 I'm telling of ready go vote. I'm not going to tell you how to

 vote that's what I would do.

  **MARK ROBINSON** >> (Inaudible)–– the question for Mary Jo to preface it she

 and I served on the subcommittee of this commission with Rich an others (inaudible)––

 identify the feasibility of moving the Herring Cove parking lot back

 graceful retreat as we called it.

 I know that there were some potential upset by the townspeople

 of not being able to park right against the beach. Right over to the

 beach and bring their stuff up the beach.

 **JENNIFER FLYNN** >> I felt that way too. I like bringing my toddlers and dumping them out of the car.

 **MARK ROBINSON** >> But when we talk about adaptation that is ecological

 adaptation there is also citizen adaptation. Have the townspeople

 gotten over it?

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 >> They do get over it I think that was (inaudible)–– I think

 that it should be a national law for national parks and coastal

 towns.

 **RICH DELANEY** that should be a model the rest of the coast on an inbox elsewhere. Our

 being challenged in the same way. Thank you for bringing that up.

**MARK ROBINSON** Barnstable has spent as much as $1 million a year bring

 sacrificial sand in front of the Sandy neck parking lot which is

 right up against the edge.

 >> and then it gets washed away

 >> There goes my tax dollars.

 >> Get over it after certain point.

 **MARY JO AVELLAR** >> Pointed out how much is going to cost keep doing this every

 year and there's going to be a point when the park service was are

 going to do it anymore. And there would be no parking lot there at

 all.

 The only thing I don't like about it is there is not a lot of

 access to the beach. There's maybe only 4 or 5 areas. (Inaudible)––.

 >> (Inaudible)–– on the beach.

 >> That is the park.

 >> (Inaudible)––.

 >> It's not just Hatches Harbor

 >> They talk about ORV.

 >> Are you talking about driving on the beach or parking.

 >> Parking when people come with her motorhome since have a

 set up.

 >> They can still park.

 >> They do not like to do in a prior configuration was right

 on the sand. (Inaudible)– as they still need to, they are not on the

 beach. That has reduced but it is still (inaudible)––.

 >> Okay thank you Mary Jo. Let's move to (inaudible)––.

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 **SUSAN ARESON** >> Ballston Beach parking lot was another example of the retreat

 and that continues to lose parking spaces area. Truro has climate

 action and energy committees.

 They refuse to be merged (inaudible)–– kind of push and in that

 direction but both are very active so that is good news. I wanted to

 mention our Senator Julian's Cyr is on the new coastal resiliency task force it was reported

 appointed by the governor. He has been in touch with certainly are

 agents.

 One of the biggest issues that is been brought to my attention

 is permanent. Chapter 91 federal permitting, state permitting and

 frequently when you are working on projects it can take ten months to

 two years.

 So, for example we have got emergency permission it took months

 but there is a breach between the north jetty and the very tip of

 corn Hill beach in Truro.

 What the town did was put in (inaudible)–– it Is flooding over so

 the north jetty which is the north and south jetty the entrance to

 the harbor.

 We were able to put in Quar rolls that connect the north jetty

 back to the beach. Twice now since those of been installed we have

 brought in sand and implanted beach grass on top and they are just

 exposed now.

 Just keeps getting washed over. Sand is an issue apparently.

 There is not a lot of it is available. The north jetty that is

 supposed to be a stopgap measure while the town studies what they might do and permitting will be

 a real issue on that. As far as (inaudible)–– Long Neck was closed

 for much of last winter due to real serious erosion are wiped away

 the paths that go down the beach.

 The town brought in this big heavy equipment and tried to

 re-create the paths. They went partway down the hill people started

 using the beach again.

 It was open for maybe I don't know two months if it was two

 months I'd be surprised. Was closed again in July. Mark Borelli with the Cetner of Coastal Studies was hired to do an assessment of what solution might be available to

 reopen the beach.

 He will be reporting out within the next couple of weeks and

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 then the town is going to have to figure out what to do. I think that

 will probably be in collaboration with the seashore.

 As Jen mention the town owns the sliver of beach, but it

 impinges on seashore property. Here it disturbs in the last few weeks

 Long Neck.

 I will walk there this morning between Long Neck and Ballston in that

 section of beach on other areas that got harder hit. A few weeks

 back. There has been no change. It is just a question of timing and

 wind and waves and so on.

 We had two recent grant applications related to climate that

 were rejected. One was a coastal resiliency grant or private program

 working with Eastham focusing on sort of new technologies to deal

 with the erosion related your issues.

 Examples that were given to me were sand engines which was

 brought up in another presentation. Also wave attenuators. Our folks

 are going back to try to figure out what else they might apply for.

 The other grant that was rejected was an MVP grant and that was

 For Truro to put underground power lines –– but again we are working with the MVP folks

 to try to figure out what about the grant applications were

 deficient?

 And what we might do? MVP really favors grants that are

 regional. We work a lot with Eastham, Wellfleet, and Provincetown to try to do

 those grants.

 Hammett River restoration project that will involve the

 seashore quite a bit. That is a massive project. To reestablish tidal

 flow in the section of Paymet River, Route 6 out to Ballston beach and also feed into Long Nook. And evolves replacing multiple culverts two of them are under Route 6. So

 the state DOT I think I had asked for some help from the seashore one

 of our meetings state DOT was not coming to the table.

 Now they are saying that they can manage the project but the

 state will not provide any money they need to be federally funded and

 be current estimate is the project all told cost about 50 million.

 And it will be over many years. That is going on. East Harbor

 discussions continue and Geoffrey Sanders has been (inaudible)––

 larger culverts to increase tidal flow there. That will allow shell fishing and agriculture within East Harbor.

 That has been going on the town is talking with the Cape Cod

 Commission about updating our hazard mitigation plans. That I think

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 those need to be updated pretty regularly so Truro is working on

 that.

 We have the town meeting has approval actually came from the

 select board to have a part-time climate action coordinator.

 That person is going to be paid through revenue that Truro gets

 Truro bought into a solar array many years ago because we're trying to figure out

 where to put a solar array.

 We are now focused on the transfer station that should happen.

 That solar array revenue been sitting there we have been

 unable to use it may have excess capacity.

 So, we are selling it to Brewster and the money coming from

 Brewster is going to pay for the part time climate action person.

 >> (Inaudible)––.

 >> That is historical there. And I guess that is it. We do

 have food composting program and that food composting goes to

 someplace off Cape and word is bought by farmers I believe.

 For the compost is bought by farmers but I do not remember

 exactly where it goes. Anyway, lot going on.

 **RICH** **DELANEY** >> Great encouraging to hear about each town has so much going

 on. I just want to mention a couple things. Agriculture is one of the

 major culprits in climate change.

 The way we produce our food, transport our food, you know I think I told this group before; I opened up a packet of blueberries grown on Easter Island one time. In the

 Pacific Ocean that’s indicative of where we are getting food….. locally grown.

 Another interesting little tidbit is there is a worldwide shortage of sand. You’d think living in a sandy spot, That is indicative of how we are moving stuff around (inaudible)–– the other interesting tidbit is (inaudible)– there's a

 worldwide shortage of (inaudible)––.

 Worldwide (inaudible)–– shortage (inaudible)––.

  **SUSAN ARESON** >> We had on our town meeting which was rejected to buy there

 is a sand pit intro and one of the arguments was we could mind mine

 this for sand. It did not pass.

 **SHEILA LYONS** >> We have it sounds like a good solution but is probably

 going to open something else that.

 >> Yes.

 >> Eventually.

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 **RICH DELANEY** >> Another (inaudible)–– is the whole permit issue. Permits

 and regulations have their role, but I keep thinking about the IPP says we have to

 We have two as a global society we have to reduce the carbon dioxide by 50 percent.

 Worldwide by 2030. Six years. Climate reduction project helps out

 But I think it takes 2 years to develop, 2 years to permit and 2 years to build a and it's not working.

 It's just not working. We’re underwater I just keep reminding myself in about the

 urgency that those 3000 scientists who make up the IPCC. They have issued five or six (inaudible)–– setting standards each successfully

 (inaudible)–– it gets worse and worse. Speed versus, scale, urgency… enough of that.

 After Truro, we go to Wellfleet

 **LILLI ANN GREEN** >> Thank you, Mr. Chair. Wellfleet is doing a lot, and it has been doing a lot good number of years. In this realm I listen to the select board members, the

 select individuals in the townspeople as well.

 That is why I continue to come back to you and say we have

 written letters in the past on our own as an Advisory Commission

 or through the Superintendent of Cape Cod National Seashore.

 Either or we do have the power the authority and the duty to

 consult with the Secretary of the Interior especially as our letters

 of appointment specify the obligation to consult with her with

 respect to matters developing of CCNS.

 We can do so by writing her a letter. Therefore, I would like to

 make a motion that the seashore the Cape Cod National Seashore Advisory Commission votes to write a letter to the Secretary of the Interior.

 Supporting the two letters written to her by the Barnstable County Assembly of delegates dated 8/30/24 in the Cape and Islands Municipal Leaders Association dated 7/22/24. The letter could state that the statutes of both foundation documents of the Cape Cod National Seashore and the National Park Service Regarding protecting viewshed as well as the Biden

 initiative to protect 30 percent of the US land and oceans by 2030 that the

 secretary of the interior has endorsed by the National Park Service

 website.

 I would like to put that on the table on behalf of many in my

 town and several town leaders.

 **RICH DELANEY** >> Is there a second?

 **LILLI ANN GREEN** >> Just to reiterate that many are very concerned about the

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 lack of process in the five years that our elected officials were not

 involved as task force members in planning for a development of wind

 turbines, 1,000 wind turbines off of our Cape Cod National Seashore ocean beaches and their uplands from Provincetown to Chatham. This is the process according

 to the BOEM mission statement, they should have reached out to all of us.

 and Engaged the public and including the elected officials

 Throughout Barnstable County numerous times to inform them first of all that they

 were task force members, invite them to meetings have them advised during the

 planning stages. And also make comments. I like–– assembly of

 delegates and the Ca[pe and Islands Planning Board is asking for is to go back to the planning stages.

 To a full environmental assessment and full socioeconomic study

 before moving forward.

 **RICH DELANEY** >> Joe, we do not have a motion, so we do not have any more to

 officially discuss (inaudible)–– suggest the closing (inaudible)–– to

 oppose a windfarm.

 **LILLI ANN GREEN** >> I am not saying that at all and if there is no second that

 I will move forward with my report.

 >> Thank you.

 **LILLI ANN GREEN** >> Is there a second anywhere? To send a letter to the

 secretary of the interior?

 Of the documents I have sent out to you and handed out on the

 record for this meeting and I just want to go on the record in the

 meeting saying that.

 In Wellfleet there are a lot of things that are going well with the Seashore

 in the collaboration with the seashore. One of them of course is the

 Herrin River project.

 Which I learned there is a distinction between the Herring River Project and the Herring River Restoration project this year which the one little

 item that could be worked out a little bit better.

 Is something I mentioned before is the overwatch area and the

 Herring River project creating this mosquito issue. The park service

 And the town and the county in the state to get together (inaudible)––.

 Work on this prior to the start of the season I know the Cape

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 Cod national seashore has been doing great work in the past.

 It has the needle has really move but it be very helpful to

 move it a little bit further for the next few seasons until the

 restoration actually is in full swing.

 Other thing that has worked to the benefit of the overwatch is

 we now have nesting terns and piping plovers on the bayside.

 Over on the Bayside. I was noticing the summer that there was

 not so many on the ocean side. they have moved to the overwatch area which

 is really of great benefit.

 I still referred them as the terns interns that worked on

 this project have been very cooperative and working very

 collaboratively with the town about that.

 Cahoon’s Hollow situation we had several years ago last year and this

 year the collaboration between the seashore in the town has worked

 very well together.

 We are also and I mentioned other things the ocean (inaudible)–– the

 fresh brook and other projects. Including the Black Fish Creek

 earlier.

 We do have a very active energy and climate action committee

 which I have been on for numerous years and a Vice Chair of. We do

 like some of the other folks on this have mentioned.

 For the other towns course, we have our hazard mitigation plan.

 We are working on looking at that. We are also working on the climate

 action plan.

 We have been solar project at the town landfill and several

 municipal buildings. We had two rounds of a solar rice program for

 the citizens (inaudible)– are several hundred homes that have solar

 plants on them.

 We have had in education push for things like heat pump. And

 other energy savings transition to electrifying programs and EV

 education.

 We have had several green community grants (inaudible)–– on the Cape

 in any event we have had several energy fairs we have had vendors and

 educational miniseries.

 During this the topics we run into ranging from solar panels

 and geothermal to resiliency, and landscaping and heat pumps. We even had a contest

 with fifth graders about drawing solar panels.

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 To sort of pair with the solar fairs. We have also worked a lot with the Cape Cod commission on various aspects of

 our towns planning and grant funding.

 We do have two low lying roads in progress. also have other committees

 (inaudible)–– we have the various town department heads working on we

 do have EV's and plan to have more in fact the town meeting will very

 often talk about can that vehicle can be EV

 If there is a question at all about that. Broadband is an issue

 as far as the beaches involved, we just got a grant to do that which

 will help coastal resiliency.

 As well as well as emergency planning which could be very

 beneficial. In the future. We also have composting program along a

 very active and vibrant recycling committee that is very

 educationally focused well.

 We just had collaborations we had a meeting of the energy and

 climate action committee had a meeting with that other town committee

 just recently.

 We are doing a lot we are really moving forward a lot with

 education with action stops. We have look forward to collaborating with the seashore

 in the county as well as the state. Moving forward thank you.

 >> Thank you.

  **SHEILA LYONS** >> If I can just say as a member of that board there are a lot

 of hybrid people working on these issues (inaudible)–– really slows

 what slows it down is at the board level.

 We have to decide and there's always something

 that kind of kicks it off. Into another few weeks or a few months.

 And opportunities can be lost by trying to move those things along.

 Sometimes Wellfleet is its own detriment in spite of all the work that

 volunteers do urgency and best practices. Get them implemented. Get

 them altogether it is very frustrated for a lot of these Boards

 (inaudible)––.

 I've been meeting with some of them, and I think there is also a

 number an effort to do LED lighting throughout the town. Very low

 hanging fruit that can be done and even that (inaudible)––.

 **LILLI ANN GREEN** >> Actually, the LED lighting has been done we had a grant

 right at the beginning of the Green Communities Act.

 **RICH DELANEY** >> Thank you all. I know we have a few more minutes I think I

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 See Wayne, you had your hand up, the alternates can speak when necessary.

 **LILLI ANN GREEN** >> I apologize I did not see that Wayne was on here, but I would

 **WAYNE**  **CLOUGH** >> I was just going to second her motion. That's all. I'm

 sorry I'm late I had a medical emergency I could not call anybody

 about it.

 **RICH DELANEY** >> I'm sorry that your medical but that would not work as you are her Alternate. Anyway, thank you anyway for your comments.

 Okay let's move lesser discussions

 **MARK ROBINSON** >> I just want to give a little encouragement to Susan a lot

 of us did not know where the Herring River was going to find $50

 million dollars. All of a sudden it just rained down.

 >> Probably and I like– as I think the federal government was

 Coming forward

 **JENNIFER FLYNN** >> Didn't just rain down [AUDIENCE LAUGHTER] (inaudible)––.

 >> Timing was everything.

 **SUSAN ARESON** >> Eventually does if you keep at it but they don't like is

 when people say we arty tried that we tried that already

 (inaudible)––.

 That does not mean you cannot go back and eventually these

 things do come to be.

 >> I say really (inaudible)––.

 >> This is a project that is multi-phased. It will take years.

 **RICH DELANEY** >> Okay (inaudible)–– referring to public comment. I really

 encouraged to see so much activity in summary towns. Every town has

 an energy and that energy and climate committees

 Climate action networks that has come out––. I know Superintendent took a lot

 of notes (inaudible)–– common interest. I am just really encouraged

 to be honest.

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 **SHEILA LYONS** >> Listening to all of this I keep on looking at there is a lot of new people

 coming there's a lot of building going on in Wellfleet and locally around your towns.

 There's a lot of building and a lot of big building. Big, big

 houses. Have we told them that they're going to have to change their

 septic system did we enforce that? to the enforcement?

 We did not pass that in time for it to be mandatory

 And there is multi-bedroom houses… Are we educating people as they are buying these homes? I think there is an opportunity to partner with the Cape and Islands Realtors Association and make it mandatory that people are given best practices: phosphorus, and what it does to you ponds,

 Fertilizing lawns There’s a lot of things that come from the homeowner

 the people should know. Some towns don’t have bylaws on light pollution

 which I can say is going to be happening more and more.

 That takes away from the character and natural beauty of the

 night sky. Which we enjoy especially this time of year. I think there

 is things that we could look at as far as recommending as trying to reach out to new people to have an understanding the fragility of this beautiful place that

 they are buying into. And hopefully they will predict it and not just

 look at as something to have at their disposal.

 **RICH DELANEY** >> (Inaudible)–– shifting baseline a moving baseline. Baseline

 50 years ago, we measure ourselves against was much cleaner, much

 purer, different area.––.

 People moving to Cape Cod now it was always (inaudible)––

 there's always this kind of that is their baseline. It wasn't that

 bad.

 **SHEILA LYONS** >> I remember when the Herring River was still being discussed

 (inaudible)–– and we cannot move forward yet. I do not know what is

 wrong out there it looks beautiful to me.

 What is the big problem here? You didn't see it 100 years ago.

 There was a big difference.

 **RICH DELANEY** >> I am going to move the agenda to Item Number 5 which is

 public comment. And ask if any of the members of the public would

 have any comments here? Yes sir.

 **Mark Harsh, Orleans** I just I learned so much today a lot of stuff we are doing

 in the towns (inaudible)–– what I did not expect was the

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 Superintendent, scientist that spoke before I do not understand how

 much we knew and no we learn to know about climate change. Having said that the thing that scares the hell

 out of me is that for all we know (inaudible)–– right? Can we learn

 anything from that (inaudible)––.

 Certainly, the Marconi stairs. How long– six months I think (inaudible)–– is

 there anything in particular you will discuss and be looking at we made predictions?

 (inaudible)––.

 **JENNIFER FLYNN** >> That is a great question. The stairs are sort of the

 perfect example (inaudible)–– or the definition of insanity doing the

 same thing in getting the same result.

 That particular place is really challenging to apply different

 solutions. We are strategizing about what are the options there.

 Sometimes you are only left with the bad options. In the way

 that the bluff is there in the past use of that land as a military

 base. That does not give us as many options as we have at some of our

 other beaches.

 That is not lost on us. We know this was a huge investment that

 we did not get very much return on. The flipside is we also do not

 want to put off cut off public access to that area so I do not have a

 solution today.

 It is not lost on us. [Crosstalk].

 **LILLI ANN GREEN** >> From the person that is in my position (inaudible)–– they

 advocated the last time that happened do something that was modular that could be taken down in the wintertime.

 >> Or member those conversations.

 >> Let's begin with the public comment (inaudible)–– go ahead.

 You are on.

 >> Does she need to ask.

 >> Yeah, okay Helen Grandison hear from speaking as a member of

 the hearing River executive Council when you are contemplating

 scheduling your future meetings.

 Helen Miranda Grandison here from Wellfleet Please check with Carol Ridley who is the project manager for that project. About the age racks quarterly meeting because a lot

 that goes on in these meetings is valuable

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 To the people who are on the H track from the town there are

 three of us. I would also think to the staff members that show up

 these meetings who may want to attend this meeting so just check the

 schedule.

 That is all I needed to say. Thank you.

 >> Very helpful in thank you. (Inaudible)–– James go ahead.

 >> I think Ms. Cohen was in front of me.

 >> Okay (inaudible)––.

  **JAMES** >> I am from Eastham and I'm a member of the Eastham Part Time Resident Taxpayers Association

 outreach committee but actually had a question not related to that.

 I know Nauset Light Beach obviously years and years this stairs would

 go every year and now we have the have the ramp.

 Which is a marvelous solution I think it is any possibility of

 a similar ramp being done at Marconi?

 **JENNIFER FLYNN** >> It is one that is in it is something that is being

 discussed with the geology… there is net there are different

 challenges at Marconi. we had a very logical place to put it at

 Nauset.

 And there is not an equally logical person at place at Marconi.

 It is one of the options we are exploring.

 >> I know one of the benefits in addition to the stairs

 Not washing away every year is that it made Nauset Light Beach more accessible for wheelchair-bound people. And other people who otherwise had a very tough time with the

 stairs. I would really encourage the Park service to do whatever could

 be done to do something similar at Marconi.

 **RICH DELANEY** >> Good point very creative solution there, just like the Herring Cove North. . We can see your hand now go Cohen's next please.

 **GAIL COHEN** >> Can you hear me? Okay I am waiting for a class V hurricane

 to hit directly here. I'm having a lot of fun.

 I was supposed to be up there actually know but I had the

 hurricane last week. We've got towns totally destroyed right on the

 street.

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 And all over. It is going to be bad. Anyway, Helen Wilson you

 make your father proud. I just want you to know that. The great

 literary critic Edmund Wilson.

 Superintendent Flynn, Mary Jo tried to tell you the truth when

 you talk about the Herring Cove parking lot which we call New Beach .

 The name was changed by the Park service. Anyway, obviously you

 do not know the whole story. Because Mary Jo was right.

 The Cape Cod National Seashore stopped maintaining it and they

 were mandated to maintain it. Now, the mandate of the Park service

 was to bust people in. And they were going to do that.

 But they could not get away with it in Provincetown. Meanwhile

 you did not pay for the parking lot. The new parking lot. The

 congressman had to get the money. Just so, you know.

 Also, the grounds you took out the grounds. Josephine Del Deo

 was furious. You keep saying about erosion. No. The Park service the

 Cape Cod National seashore did not maintain it.

 On purpose peer then you left rubble there. You left the debris

 there. And because you wanted one time to pick it up. And it was

 dangerous.

 Anyway, that is just the truth of the matter. Besides giving up

 the transfer station site. How dare you let that happen when it was

 guaranteed in the legislation and in the deed to the Province Lands

 in the covenants.

 So is the airport. None of you are talking about the airport

 probably because Rich and Mark he gave away the rights to talk about

 permits and leases or who knows. I do not know what is going on but

 not if you seem to care.

 That is the most important issue right now. That lease has to

 be signed if it has not been signed already meanwhile superintendent

 Flynn has been signed.

 And when is it supposed to be signed. It has to be signed by

 January. Okay no answer. Anyway, I am not done.

 You people are going to be accountable. First of all, you deafly

 should have seconded that motion because and please I get Congressman

 Markey Senator Markey to send that letter to the Secretary of

 Interior.

 Immediately. Because of course the public has a right to

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 comment. Enter right. Now, all of you are betraying everything that

 was done in the hearings from 58 to 61 and what was promised by the

 NPS.

 And all of it has not been followed. Mary Jo knows it best. I

 am tired of telling you, either deal with the lease for the airport

 it is guaranteed in the legislation in 1961.

 It is guaranteed in the deed and the covenants by the state of

 Massachusetts and Massachusetts represented us you have the power.

 You can take back the Provincetown it is all in black-and-white right

 there.

 They have it be used the people. Numerous times particularly

 Provincetown. I am not going to say it again. You deal, you do not

 have to sign the FAA insisting that you sign a lease.

 It is guaranteed by special use permit, and they already use

 permits still. That for the time that they took away in Provincetown

 and no place to put the trash.

 And ended up giving exchanging town land for the site that was

 guaranteed when you could have sued them. And should have. Meanwhile,

 Superintendent Flynn I like all of you better than the rest of them.

 Except for Mary Jo whose grandmother I am loyal to. (Laughing).

 Anyway, so I am telling you all of you and all the boards.

 All of the select boards and all of the advisory commission

 members over the years you will be held accountable for letting them

 get away.

 The federal government, the advisory commission was put into

 place specially so there would be no abuse. It was insurance.

 Insurance for Cape Cod to let them in.

 And you are abandoning it and terrible things have happened.

 Particularly to the do dwellers dune dwellers. Even right now in

 Arkansas there saying they will not use eminent domain they are

 lying.

 They said the same thing I have the notes from Josephine DelDeo

 of the meeting he said the exact same thing. Before they came in in

 1961.

 Be more vigilant. Stand up for the people of Cape Cod and

 Provincetown. The one thing I want to say about the salt marshes is

 that in my time they dried up. I have seen them dry out.

 The other thing is asking the locals asked the dune dwellers they

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 know all about the salt marshes asked them as well. That is all I

 have to say.

 **RICH DELANEY** >> Okay thank you Gail, you have given us (inaudible)–– we do

 have a number of agenda to develop over the next several meetings we

 will try to incorporate as much of your comments and others as

 possible.

 Good all right. Second time around (inaudible)–– from the

 bubble? No. Okay. Is there any other business to be brought.

 >> For the next agenda do we have to put on the agenda the

 topic matters? It is up to three that the superintendent suggested I

 thought the three the superintendent suggests were very good others

 may have additional topics to discuss.

 >> We do think you we should (inaudible)––.

 >> We chose in April to put some of the rest of the year all

 on one federal advisory notice. Which we can do again. Or we can do

 them meeting by meeting which of course gives us a lot of

 opportunities to pivot.

 It is less work, but I do not know that they should drive

 (inaudible)––.

 **JENNIFER FLYNN** What I would offer is we cross reference calendars and I think

 I would again propose for calendar 25 that we look at January 13th

 April 7th June 9th and October 6th based on the conversation from the

 beginning of the meeting today.

 I would offer either today or very close to this (inaudible)––

 what is the topic for January going to be? And that we could find in

 the agenda before you publish it. We certainly could look at all four

 meetings.

 (Inaudible)–– I do not know if we will be ready to have an

 agenda (inaudible)–– would offer I think we need to at least get

 January in the agenda for January moving in the Federal Register E

 process.

 **JENNIFER FLYNN** Very soon. If you're going to have a January meeting.

 >> (Inaudible)–– might propose (inaudible)–– a little bit a

 year ago (inaudible)–– fire suppression, climate change,

 (inaudible)–– those are good topics.

 (Inaudible)–– the housing (inaudible)–– I think that is on the

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 potential (inaudible)––.

 >> (Inaudible)––.

 >> So other topics (inaudible)––.

 >> I like the fee that she suggested. (Inaudible)––.

 >> I was wondering if we could have a little information

 session on various aspects related to the seashore's geography. In

 terms of land acquisition, trade lands, trades that are going on,

 trades are in the pipeline.

 Expansion or modification to the boundary. Anything like that

 that are on the horizon perhaps (inaudible)––.

 I think it would be I know there are various things that are

 bubbled up over the years. Something on (inaudible)–– that we should

 know about.

 Okay. (Inaudible)––.

 >> Expand on that a little bit Chatham is a little different

 than the rest of the communities in the seashore's first

 jurisdiction.

 (Inaudible)–– you still seashore is that now is that nobody who

 is it? It is definitely awkward.

 >> That sounds like a good old (inaudible)––.

 >> Just to expand upon that justice development in the future

 planning and the seashore (inaudible)–– other plans (inaudible)––.

 >> Okay.

 >> It is federal government so pro in the Air Force Base the

 land that is up there were all of the buildings have been knocked

 down.

 And whether they might be an opportunity try to talk about

 acquire in some way or use that property in some way for housing.

 Or whatever and I know there were many obstacles involved

 there. But some discussion of that property which is a jewel and is

 now sitting there vacant.

 >> I think that needs to come back on the table in some form

 (inaudible)––.

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 >> I am not sure on this their committees I am on there is new

 business an old business is there the potential of putting in the

 open topic into the agenda so that items could be brought up more so

 at the last minute.

 I could think of things that are appropriate and things that

 are not appropriate.

 >> Time sensitive.

 >> Right but that would also be the appropriate thing thinking

 groundwater (inaudible)–– we could sub those significant national

 seashore wetlands dry and that can happen at the base also.

 That would be something that we may be able to I mean if there

 is a clause in the (inaudible)–– new business. I do not know what the

 correct verbiage is but I would be supportive of having

 (inaudible)––.

 >> We probably could do that. (Inaudible)–– bring up new

 business. We could codify the agenda as well. How does that work

 (inaudible)––?

 >> I would (inaudible)–– that is what we advertise were going

 to do and I think is probably okay. I just want to week to think

 about it.

 I think it is about how what we tell the public we are going to

 do is just what we need to do. We want to create space on the agenda.

 >> The call it matters not anticipated.

 >> Or time critical items yeah again I would want too just

 think about for more than 15 seconds. I think we could probably

 (inaudible)––.

 >> (Inaudible)–– some that yeah also said in January we want

 to think about all procedures and processes this is one of them. And

 how much time we allow (inaudible)–– we should set the ground rules.

 (Inaudible)––.

 >> I just want to challenge you all to think about is probably

 getting tired of this broken record but the secretary charted the

 group to provide advice.

 Some of this some of these new topics are information exchange.

 It is not providing advice. One of things I ever heard very clearly

 from the department as we have worked through this first year

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 together is if the secretary is looking and granted, we may have a

 different secretary but we may not.

 Is looking at what is the advice being generated? There is an

 expense to convening and what is the benefit back to the government

 of convening. For example, the Chatham question (inaudible)––.

 Town manager that would be a great conversation for us all to

 happen we could certainly have it. I do not know that we need to have

 it in this forum I think there some of these things brought up that I

 could be in my superintendents update.

 (Inaudible)–– I do not know that have to be a full meeting. We

 talk a lot about really meaty staff this year so I tried to sort of

 pull out all the stuff we talked about.

 One of those things this think tank can provide advice back to

 us that would be actionable. I am not trying to pooh-pooh the

 brainstorming but as I been listening to, I've been sort of sorting

 like yes, we could totally do that.

 **JENNIFER FLYNN** I am not sure this is the right forum that would be in my

 superintendents update but that is like a commercial and it update

 that is not something we would be getting advice on.

 I just put that back on the table to put think about the best

 use of this collective time. And sort of resolving problems as

 opposed to just sharing information. Not that sharing information is

 not important.

 We there are lots of venues where we can share information.

 >> I agree with all of that. And what I would say this came up

 during the water meeting saying this with my Charo hat on but

 (inaudible)––.

 We need a new source of water. We would like to advise the

 federal government that the program (inaudible)–– we cannot use the

 Air Force wells except on an emergency basis.

 That's one little piece of a larger issue that we discussed

 several meetings ago. The housing issue. As you pointed out

 discrepancies with what the state is issuing in terms of the law.

 But the seashore allows I think that is really important. I just

 wanted to say one other thing which is not related to this. I wanted

 to thank you and the staff five meetings, month after month after

 month (inaudible)––.

 Huge effort. It is not unappreciated (inaudible)––.

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 >> Small housing additions (inaudible)–– that will really turn

 to a legal question what the federal charter is and how does it

 conflict with the state law?

 I would hope that we would have an opportunity an opportunity to

 ask the solicitor that question before meeting. Or we will be talking

 about something we do not know how the law is going to work.

 >> Yeah absolutely. For example, if we decide that is

 the January topic again now we will have three months to correct out

 17 days between meetings (laughing) which is what it feels like

 sometimes.

 Absolutely we will get (inaudible)–– fundamentally you have a

 conflict in the advice what is the land manager how do we slice and

 dice this in a way that continues to protect the seashore.

 Recognizing this conflict.

 We will definitely provide (inaudible)––.

 >> Going on that topic I think that would be a very good topic

 but in the beginning because it also brings in zoning as well. And

 the importance of towns making sure that they are your zoning bylaws

 are there to protect the seashore.

 I can just see the arguments being made under this act

 (inaudible)–– conversations going to come so we need to make sure

 that have all of the right protections in place is I do not know

 about everybody here but it is the last we have left. (Inaudible)––

 Dinner all the time. My advice would be (inaudible)––

 (laughing) I'm jumping ahead. Of what I think what I do feel strongly

 about that.

 >> I think I'm sorry I will stop talking because this is your

 time I do think to for me we have the series of really meaty topics.

 I do not feel like we had really had time to fully vet them and

 digest them.

 Leslie suggested and I agree. We also this could be the topic.

 We could provide space in the meeting for sort of an emergency

 emerging thing.

 But we could say (inaudible)–– calendar year 25 this

 Massachusetts state law and the conflict it presents for the seashore

 district in the town.

 Is the topic. That we will tackle will for these meetings which

 would allow work to be done in between (inaudible)–– we could really

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 dive in.

 Where I have felt like these have been good topics we talked

 about the summer but they were all kind of superficial. We really did

 not get into the meat of them.

 The zoning conversation I thought was really important and meaty

 but then we moved onto the next thing. I do not know if we also do

 not want to just address January.

 So have time to think about the rest of the year. Or say this is

 going to be a couple meetings that we will come back to the same

 topic because in between (inaudible)–– sorry.

 >> I think I'm seeing some hands agreeing (inaudible)–– that we

 could do several variations of it over two or three meetings

 (inaudible)–– that would satisfy (inaudible)–– and would give us the

 agenda to talk about (inaudible)––.

 I totally agree with you about to dive deeper into these topics

 it is great we (inaudible)–– I also think that Susan and I think we

 all shook our heads.

 This is not the only meeting you have you have hundreds

 (inaudible)–– I think this is the only form where we really have all

 six towns at the same table to talk to each other. (Inaudible)––.

 >> Thank you I would reiterate that as well thank you and I

 did jot down some things that other town mentioned that we are not

 addressing enough.

 I did want to say that the reason I said overall planning is

 for several reasons. One I'm sure that the park has five-year plan or

 tenure plan or whatever.

 Just to be able to not just have an update about it but also

 gives you the flexibility to bring other issues into the meeting

 which I think would be maybe that is a topic that is on every agenda

 (inaudible)––.

 There are not topics that come up just that we understand what

 (inaudible)–– I think every business has that (inaudible)–– I do not

 think we had that conversation here which would be helpful.

 >> I am going to start to wrap things up last time around.

 >> I think it is helpful to hear what Ginger said and maybe

 reminder when the agenda goes out to be thinking about this and

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 making our own reports about what advice we have to bring to not just

 what we are doing.

 But how we would like to advise the seashore on the topics. I

 tend to forget that when I'm preparing. So, it is good that you

 reminded us.

 >> Good point about (inaudible)––.

 >> To do not get back to old business we could say to your

 leadership are advice now is because it was all about fire last time.

 I now (inaudible)–– yeah it is not in the agenda to go back to come

 up with this actionable advice.

 Maybe there should be a section of actionable advice from the

 previous (inaudible)–– [AUDIENCE LAUGHTER] X1 of the things in the

 agenda (inaudible)–– [AUDIENCE LAUGHTER].

 >> That was the same thing. I think we are all (inaudible)––

 and work through at least January (inaudible)–– the housing the

 planning whatever. (Inaudible)––.

 >> One more thought is climate change is such an important

 topic to so many of us and we often working on it maybe that is

 another topic that is added to this for next year.

 >> That is a nice (inaudible)–– I agree. I will put that on

 the table. Okay will (inaudible)––.

 >> I make a motion that we adjourn.

 >> (Inaudible)––

 [Crosstalk].

 >> I second.

 >> (Inaudible)–– thank you very much (inaudible)––

 [Recording stopped].