3225 MAIN STREET • P.O. BOX 226
BARNSTABLE, MASSACHUSETTS 02630

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

CAPE COD
COMMISSION

Minutes

Meeting
Cape Cod Commission
East Wing Conference Room • 3195 Main Street, Barnstable, MA 02630

May 2, 2019

The meeting was convened at 3:00 p.m., and the Roll Call was recorded as follows:

Town	Member	Present
Barnstable	Fred Chirigotis	Present *(arrived at 3:10 p.m.)*
Bourne	Richard Conron	Present
Brewster	Elizabeth Taylor	Present
Chatham	Tom Wilson	Present
Dennis	Richard Roy	Absent
Eastham	Joy Brookshire	Absent
Falmouth	Charles McCaffrey	Present
Harwich	Jacqueline Etsten	Present
Mashpee	Ernest Virgilio	Present
Orleans	Len Short	Present
Provincetown	Cheryl Andrews	Present
Sandwich	Harold Mitchell	Present
Truro	Kevin Grunwald	Present
Wellfleet	Roger Putnam	Present
Yarmouth	John McCormack, Jr.	Present
County Commissioner	Ronald Bergstrom	Absent
Minority Representative	John Harris	Present
Native American Rep.	David Weeden	Present
Governor's Appointee	Michael Maxim	Absent

The Cape Cod Commission Meeting was called to order on Thursday, May 2, 2019 at 3:00 p.m. in the East Wing Conference Room, Barnstable County Complex, 3195 Main Street, Barnstable, MA. Roll was called, and a quorum was established.

Chair Harold Mitchell welcomed and introduced Stephen Mealy who was recently appointed as the Bourne Representative to the Cape Cod Commission.

Stephen Mealy said he has served on the Planning Board and Board of Selectmen in the Town of Bourne and his professional experience is in mechanical engineering.

SUMMARY OF ACTION TAKEN

• **Minutes**: The minutes of the April 4, 2019 Cape Cod Commission Meeting were approved with 13 votes in favor and one abstention (Stephen Mealy).
• **Public Hearing—Vineyard Wind Connector:** Following presentations, public testimony and discussion the Commission voted unanimously to close the public hearing. The Commission then voted to adopt the draft written Development of Regional Impact (DRI) decision as recommended by the Hearing Officer and grant DRI approval for the Vineyard Wind Connector project subject to the conditions set out in said decision.

■ TRANSCRIPT OF THE CAPE COD COMMISSION MEETING ATTACHED

Attached is the transcript of the May 2, 2019 Cape Cod Commission Meeting prepared by Linda L. Wesson, Professional Court Reporter/Stenographer. The transcript includes:

- Public Comment by Chris Powicki
- Approval of Minutes of the April 4, 2019 Cape Cod Commission Meeting
- Executive Director's Report
- Public Hearing: Vineyard Wind Connector Project

■ NEW BUSINESS: *Topics not reasonably anticipated by the Chair more than 48 hours before the meeting.*

No new business was taken up.

A motion was made to adjourn at 5:15 p.m. The motion was seconded and voted unanimously.

Respectfully submitted,

Elizabeth Taylor, Secretary

List of Documents Used/Presented at the May 2, 2019 Meeting

• May 2, 2019 Cape Cod Commission Meeting Agenda.
• Draft meeting minutes of the April 4, 2019 Cape Cod Commission Meeting.
• Draft Development of Regional Impact Decision on the Vineyard Wind Connector Project.
• PowerPoint presentation on the Vineyard Wind Connector Project prepared by Vineyard Wind LLC.

COMMONWEALTH OF MASSACHUSETTS

CAPE COD COMMISSION

PUBLIC HEARING:

VINEYARD WIND CONNECTOR

HELD ON THURSDAY, MAY 2, 2019

ORIGINAL

This transcript is prepared by Linda L. Wesson, Certified Verbatim Reporter and Notary Public in and for the Commonwealth of Massachusetts, held at the East Wing Conference Room, Barnstable County Complex, 3195 Main Street, Barnstable, Massachusetts, 02630, commencing at 3:00 p.m.

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CANAL COURT REPORTING
15 Lakewood Road
Sagamore Beach, MA 02562
(508) 888-4676

A P P E A R A N C E S

Cape Cod Commission Staff:

Ms. Kristy Senatori, Executive Director

Mr. Jonathan Idman, Chief Regulatory Officer

Barnstable, Fred Chirigotis

Bourne, Stephen Mealy

Brewster, Elizabeth Taylor, Secretary

Chatham, Tom Wilson

Falmouth, Charles McCaffrey

Harwich, Jacqueline Etsten

Mashpee, Ernie Virgilio

Orleans, Leonard Short

Provincetown, Cheryl Andres

Sandwich, Harold Mitchell, Chair

Truro, Kevin Grunwald

Wellfleet, Roger Putnam

Yarmouth, Jack McCormack, Jr., Vice Chair

Minorities, John Harris

Native Americans, David Weeden

P-A-R-T-I-E-S

Mr. Nathaniel Mayo, Vineyard Wind

Ms. Kate McEneaney, Vineyard Wind

Mr. Theodore Barten, Vineyard Wind

Mr. John Arruda, Vineyard Wind

Mr. Charles McGlaughlin, Esquire, Town of Barnstable

Mr. Chris Powicki, Brewster Resident

Ms. Marjorie Thearle, W. Hyannis Port resident

HEARING

CHAIR HAROLD MITCHELL: Ladies and gentlemen, I'd like to welcome you to the April 4 meeting of the Cape Cod --

MR. JACK MCCORMACK, JR.: May 2.

CHAIR HAROLD MITCHELL: I'm sorry; May 2 meeting -- I'm looking at minutes prior -- May 2 meeting of the Cape Cod Commission.

I'm going to take a moment and announce and speak to the members of the Commission. We are still working on the new system we have in front of you. We're going to be using the voting for two reasons today. One will be for the roll call. So when we do the roll call, what I need you to do is when Elizabeth calls your name, say you're present but also at that time push the green lit button on your machine and that will tell us -- that will register you as being present.

We'll use it for one more time that would be if there's a decision to be made on the Vineyard Wind and at that time I'll discuss that. But for right now, that's how we're going to be doing the system, and I'll be checking the

machine to make sure everybody's registered. Keep in mind, also, that if a member comes in late, I will be announcing that member. I will be taking a minute to announce that member as present so it goes into the public record and they don't have to vote into the machine. It's still a learning curve; we're still learning, you know, getting all this down, so please stay with us and we'll get through it, I promise you.

Roll Call

CHAIR HAROLD MITCHELL: So at this time, we'll start with roll call and, remember, when Elizabeth calls your name at that time you will hit the button, flashing button on your machine and that will register you as being present. Thank you.

MS. LIZ TAYLOR: Barnstable, Fred Chirigotis.

MR. FRED CHIRIGOTIS: (Arrived after roll call.)

MS. LIZ TAYLOR: Bourne, Stephen Mealy.

MR. STEPHEN MEALY: Present.

MS. LIZ TAYLOR: Welcome.

MR. STEPHEN MEALY: Thank you.

MS. LIZ TAYLOR: Brewster, Elizabeth Taylor. Present. Chatham, Tom Wilson.

MR. TOM WILSON: Present.

MS. LIZ TAYLOR: Dennis, Richard Roy.

MR. RICHARD ROY: (Not present.)

MS. LIZ TAYLOR: Eastham, Joy Brookshire.

MS. JOY BROOKSHIRE: (Not present.)

MS. LIZ TAYLOR: Falmouth, Charles McCaffrey.

MR. CHARLES MCCAFFREY: Present.

MS. LIZ TAYLOR: Harwich, Jacqueline Etsten.

MS. JACQUELINE ETSTEN: Present.

MS. LIZ TAYLOR: Mashpee, Ernest Virgilio.

MR. ERNIE VIRGILIO: Present.

MS. LIZ TAYLOR: Orleans, Len Short.

MR. LEONARD SHORT: Present.

MS. LIZ TAYLOR: Provincetown, Cheryl Andrews.

DR. CHERYL ANDREWS: Okay. I'll be difficult because I don't see green; I see yellow, so I hit that?

CHAIR HAROLD MITCHELL: Yes.

DR. CHERYL ANDREWS: No, it's the yellow one.

MS. LIZ TAYLOR: Sandwich, Harold Mitchell.

CHAIR HAROLD MITCHELL: Present.

MS. LIZ TAYLOR: Truro, Kevin Grunwald.

MR. KEVIN GRUNWALD: Here.

MS. LIZ TAYLOR: Wellfleet, Roger Putnam.

MR. ROGER PUTNAM: Here.

MS. LIZ TAYLOR: Yarmouth, John McCormack, Jr.

MR. JACK MCCORMACK, JR.: Here.

MS. LIZ TAYLOR: County Commissioner, Ron Bergstrom.

Commissioner BERGSTROM: (Not present.)

MS. LIZ TAYLOR: Minority Representative, John Harris.

MR. JOHN HARRIS: Here.

MS. LIZ TAYLOR: Native American Representative, David Weeden.

MR. DAVID WEEDEN: Here.

MS. LIZ TAYLOR: Governor's Appointee,

Michael Maxim.

MR. MICHAEL MAXIM: (Not present.)

MS. LIZ TAYLOR: We have a quorum.

CHAIR HAROLD MITCHELL: Thank you, very much. So everybody's button was steady, so that means that you voted. Thank you, very much.

At this time, I'll open the microphone for public comment. This will be for anyone that would like to make a comment. And while I'm opening that up, I'm going to take this opportunity to also welcome our new member of the Commission, Mr. Stephen Mealy from Bourne. Congratulations and welcome.

MR. STEPHEN MEALY: Thank you, very much.

CHAIR HAROLD MITCHELL: If you'd like to take a minute to introduce yourself to the Commissioners, you will hit the button down below. Your mic will go red and that means you're hot and ready and you can go with it.

MR. STEPHEN MEALY: I'd just like to say thank you for having me as a representative from Bourne. My background is technical; I'm an engineer by trade, and I served on both the

planning board and member and chairman in the Town of Bourne as well as the Board of Selectmen. So I've got some background and experience, and I hope to contribute to the decisions here, and thank you, all, very much.

CHAIR HAROLD MITCHELL: Thank you and welcome. And we already know that you've taken an appointment on the upcoming DRI Committee, so thank you for that.

Public Comment

CHAIR HAROLD MITCHELL: At this time, we'll start with any public comment.

MR. CHRIS POWICKI: Hi, sir. Thank you, Mr. Chair.

CHAIR HAROLD MITCHELL: Introduce yourself to the Commissioners, please.

MR. CHRIS POWICKI: Chris Powicki from the Town of Brewster. I'm here speaking today on behalf of representatives or on behalf of 350 Cape Cod. And a month ago on April 1, 350 Cape Cod submitted a petition to the Cape Cod Commission including signatures for more than 300 people calling for amendments to the Cape Cod Regional Policy Plan. The petition was entitled,

"Petition to Focus the Cape Cod Regional Policy Plan on Addressing Climate Change." It was submitted under a County ordinance that allows citizens to petition before or on April 1 each year. It was submitted with more than 300 signatures.

And the last we heard from the Commission, I believe, was a week after the petition was submitted was that we would get a date for when the required public hearing would be held. And so I'm here today asking if there's an update on that; when the public hearing will be held?

Thank you.

CHAIR HAROLD MITCHELL: I'm going to let our Director respond to you, sir.

MR. CHRIS POWICKI: Thank you.

EXEC. DIR. KRISTY SENATORI: Thank you. And we have been in touch. Certainly, we were in receipt of the petition. Unfortunately, it was not filed properly; however, we have been in touch. We've been certainly aware of and cognizant of the climate change efforts, and spent a significant amount of time amending the

Regional Policy Plan during your last update of that plan, which was just approved a few months ago.

So as Mr. Powicki did identify, we did -- we did offer to host a public session on climate change, and we will be doing so and we are organizing internally around that and will have a date soon.

MR. CHRIS POWICKI: If I might respond, Mr. Chair?

CHAIR HAROLD MITCHELL: Go ahead.

MR. CHRIS POWICKI: The petition was filed in a legitimate way consistent with the language in the ordinance. It was not incomplete. There are different ways to interpret the one sentence that's in the applicable ordinance.

Our position is that the petition was filed in a timely fashion. More than 300 citizens are asking for a public hearing on this, and we would like the Cape Cod Commission members to consider this petition, to respect the will of the citizens, and to call a public hearing as required. Thank you.

CHAIR HAROLD MITCHELL: Thank you. Anyone else? Seeing none. I'll close off the public comments at this time.

Approval of Minutes

CHAIR HAROLD MITCHELL: And now we'll go back to the approval of the minutes. These are potential approval of the Cape Cod Commission Minutes for April 4, 2019. You all received a copy. If there are no changes or amendments needed to be made, I'll take a motion to accept those as written.

MR. JACK MCCORMACK, JR.: Move they be approved as written.

MR. TOM WILSON: Second.

CHAIR HAROLD MITCHELL: I have a motion and a second as written. All in favor, say, "Aye."

COMMISSION MEMBERS: Aye.

CHAIR HAROLD MITCHELL: Any opposed? Any abstentions?

MR. STEPHEN MEALY: One.

CHAIR HAROLD MITCHELL: One abstention. Thank you. So the minutes carry.

(Minutes passed.)

Executive Director's Report

CHAIR HAROLD MITCHELL: Now we'll go to our Executive Director's report with Kristy.

EXEC. DIR. KRISTY SENATORI: Thank you, Mr. Chair. I, too, would like to welcome Stephen Mealy who is our new representative from the Town of Bourne, so we welcome you to the Commission.

MR. STEPHEN MEALY: Thank you.

EXEC. DIR. KRISTY SENATORI: It's not working. Is it on now? There we go. Thanks. And also while we're providing some updates, I just wanted to recognize and congratulate several of our staff members that will be retiring. As you recall, there's an Early Retirement Incentive Program being implemented at the County level and five of our staff members are going to be leaving us on May 15. And so I just wanted to recognize them, so if you don't mind standing. So Patty Daley, who is our Deputy Director; Sharon Rooney, our Chief Planner; Gail Hanley, our Commission Clerk; Lev Malakhoff, our Senior Transportation Engineer, and Scott Michaud our Hydrologist. So combined they have 127 years of experience with the Cape Cod Commission, and so we wanted to

thank them for their service.

(Applause.)

EXEC. DIR. KRISTY SENATORI: So I want to thank them for their service and commitment and dedication in all their years at the Commission.

The County did host a retirement party for all of the retirees across the County last week. We'll also be having a retirement lunch -- (microphone issues) -- we will also be having a retirement lunch at the Cape Cod Commission office for our staff on May 15 at noon, and I wanted to make sure that that invitation was extended to the members as well so that you're welcome to join us.

We are currently advertising for several positions; the Cape Cod Commission Clerk and the Chief Planner positions are open positions at the Commission at the moment.

This year's OneCape Summit will be held on July 29 and 30. For the second year, we'll be down at the Wequassett Resort in Harwich. We have issued a "Save the Date" for that and more information will be shared as an agenda is set.

We anticipate opening registration for that event towards the end of May.

We are anticipating our new website to be up and running by the end of this month as well, so stay tuned for some more information about that, but it should be a more user-friendly website and should have all the information available that you need to access for the Commission.

I also wanted to identify for you that the 2019 update to the Comprehensive Economic Development Strategy was issued for public comment on Friday. That is a 30-day public comment period that will close on May 26, and that is available on our website and open for comments from the general public and anyone interested in providing feedback on that draft document.

The Regional Transportation Plan is also in the process of being updated, and we anticipate that going out for public comment for a 21-day period around the May 20 timeframe.

And then, lastly, we have an update on the 208 Progress Report that was submitted to

both DEP and EPA at the last -- at the end of April. This report also included compliance reports for all 15 communities for the first time. We'll be issuing those compliance reports to the 15 communities for their review and feedback. They're in draft form. We anticipate doing that sometime within the next few weeks.

And, so, that's all I have today.

CHAIR HAROLD MITCHELL: Thank you. Let the record also show that we've been joined by Fred from -- the Barnstable representative.

MR. FRED CHIRIGOTIS: Thank you.

Public Hearing Vineyard Wind Connector

CHAIR HAROLD MITCHELL: Thank you. At this time, we're going to move forward with the Public Hearing on the Vineyard Wind Connector. This is a hearing continued by the hearing officer from an April 9, 2019, hearing on the following project for which the Cape Cod Commission is conducting Development of Regional Impact review.

The project is the Vineyard Wind Connector. The project applicant is Vineyard Wind LLC. The project location is the Town of

Barnstable with offshore export cable landing at Covell's Beach, Centerville, and onshore export cable terminus at substation in Independence Park in Hyannis. The project description is construction and operation of the portion of the Windyard, excuse me, Vineyard Wind Connector project located within Barnstable County, which project is intended to connect to and serve the proposed approximately 800 megawatt Vineyard Wind offshore wind project. The project includes without limitation offshore export cables located within Barnstable County waters, the onshore duct bank, and associated onshore export cables located within and under the existing rights-of-way and the proposed onshore substation.

Anyone wishing to testify orally will be welcome to do so and written comments may also be submitted at the hearing. At this time, I will start with the applicant's presentation to the Commission. Please.

(Getting PowerPoint to work.)

MR. NATHANIEL MAYO: Okay. Well, if this will suffice, I think we can work off the slightly suboptimal visual there. My name is

Nathaniel Mayo. I'm with Vineyard Wind, Manager of Development and Policy, also Provincetown resident, so the project hits close to home as one that Barnstable County's involved in. Joining me are a number of members of the staff here as well as Counsel from Foley Hoag and Kate McEneaney with Epsilon Associates will be giving the second half of the presentation. There are a number of other experts of various elements of the project that we brought in the event that you've got questions.

So, just to start, we're very -- this is a really exciting venue for us to be. We're permitting in a really broad range of agencies and venues at the state, federal, and local level, but this really feels to many of us like a very Cape and Islands centric project. So this is really one of the more appropriate venues for us to be discussing the project, its merits, the technical aspects of it and, of course, making landfall on the Mid-Cape is something, I think, we all as Cape Codders involved with the project are really -- we feel really happy about.

But the dialogue that's gone on with

regulators has been really well encompassed with the Commission staff over the past several months. We've gotten a strong image that the Commission's charge as well as the Cape Cod's charge really fits with the fundamentals of this project and the elements of the project.

The connecting of local interests with regional, with national, with global is always a struggle when we look at climate change and clean energy projects. This has project local impacts and local benefits, but we're also taking about a much broader global concern. And the Commission really does a great job in their charge of bridging that gap at least at the local to regional level. So that's our shared task. That's where Vineyard Wind is. That's where the stakeholders that we work with are, and that's where I think the regulators, including the Cape Cod Commission are.

You know, the hard work begins after the policies are written and Vineyard Wind comes here through a matrix of federal and state and local policies and regional policies that have allowed us to pursue more efficiently and with

more proper review clean energy projects and offshore wind, especially which we know has had a complicated history in the region.

So to the specifics, our proposal is an offshore wind facility that's going to reduce Massachusetts carbon load by 1.6 million tons per year. It's the equivalent of taking about a third of a million automobiles off the road with just this one project. It's important to the Cape, of course. We're at the nice edge of climate change issues, and this is our opportunity to do our part, and we recognize that we have to do it right, just as much as you recognize we have to do it right.

Environment is our economy here. We say that to everyone from off-Cape, and it's important that those interests are held in the greatest stead as we pursue these projects. And we think our work with the Commission and the permitting work that we've done exemplifies that.

And, most importantly, our contribution to clean energy, our contribution to new energy, offshore wind is our resource. The resource in our region, Southeastern Massachusetts, Southern

New England, its offshore wind, that's what we have as our unique contribution to this puzzle of solving climate change. So that all fits with the charge that we all share.

This DRI comes, as I'll show a little bit later, through two years of permitting and project refinements that have led us to a clear picture of what we're proposing and what we're going to be building. And we're excited to discuss the project as in follow-up with your questions after we give our presentation and we look forward to it. So I'll go through a brief overview of the project and we can certainly follow up with questions after the presentation.

So we're here because of a number of aspects of state and federal policy. The Commonwealth passed the Global Warming Solutions Act about 11 years ago mandating carbon emissions. In the context of that, the federal government was engaged in a multiyear stakeholder process bringing everyone to the table to determine where we can responsibly site offshore wind. And our lease area chosen by BOEM on the Outer Continental Shelf is one of the products of

that long process.

Lease areas were given up for auction by the federal government, and Vineyard Wind was one of two original authorities of a lease that they bid on through a competitive auction in 2015 when the project really began in earnest.

The Energy Diversity Act was passed about a year later mandating expansion of renewable resources into the grid including offshore wind. We submitted our project plans in 2017. We filed for state and federal permits. And in 2018, just under a year ago, Vineyard Wind was selected in order to bid to sell electricity from offshore wind to the Commonwealth. In 2019, what brings us here, is we received final certification from the state on our environmental review allowing us to seek regional and local permits.

So a brief overview of the company; we're New Bedford based, a lot of local and also global talent and there's a nice mix of that. We draw on the resources of some international partners who have experienced the bulk of offshore wind development in Europe. There's

4,000 turbines spinning off European shores. And from that technical side and also the financial side, there's a great deal of expertise and capacity there. And then we are really over the past several years cultivated by meaningful partnerships that I'll go into a little bit later.

The essence of the project at 30,000 feet where this is perhaps, you know, 30 miles is an 800-megawatt wind farm. That's roughly about enough power for 400,000 homes located 35 miles south of Cape Cod, about 15 miles south of the islands.

The export cable will run through Muskeget Channel and across Nantucket Sound and make landfall at Covell's Beach in Barnstable. The run from Covell's Beach to the substation in Independence Park where we will connect to the grid is about 5.3 miles, all underground from the turbines, essentially, to the substation. Again, it's located in Independence Park next to the existing Eversource substation.

So, talking about partnerships, this has been the result of a lot of collaborative

planning. We have a lot of meaningful endorsements and relationships that have crafted the project in a meaningful way. Local, regional, and national groups and some of them would highlight, in addition to our outreach that we've been undergoing for the past few years, numerous appearances before nonprofit boards in addition to community forums, widely publicized, office hours, open houses in Barnstable and other parts of the Cape. We also expanded into new media to try and reach beyond just traditional print media and word-of-mouth and postings to really try and capture the community and make sure that we were getting all the input we could.

And crucial to this was a Host Community Agreement that we were able to arrive at with Barnstable. Barnstable is sort of the main host of the infrastructure for Vineyard Wind onshore. We had extensive and broad ranging discussions with town staff over many months. Some of the highlights of that Agreement: protecting the town's interest, providing the town with benefits and also establishing a partnership with the company, seasonal

construction restrictions avoiding, obviously, the summer months working in Covell's Beach, especially. We call it the human migration is one of the many time of year restrictions we deal with, so limiting our work to outside the peak season to minimize disruption. Extensive discussion about design standards for containment. You know, we're on the sole-source aquifer. It's not lost on anyone. This is the most prized resource on land. So we've worked out standards within the HCA that we think will set a standard for other electrical infrastructure development beyond Vineyard Wind. Not a small measure, $16 million in supplemental payments and that's in addition to substantial property tax revenues that the town will receive over the life of the project. And that 16 million is a fully unrestricted amount of support that's going to be given to the town throughout the course of the project's operation and the town has -- in a while thereafter made the dedication towards the Water Stabilization Fund for that funding, but it's the town's prerogative as to where those funds go.

Repaving and rehabbing the Covell's area after construction. We're also going to be installing a bathhouse or funding the town to build a bathhouse which is on their capital plan to provide some community enhancements in the area where we'll be working.

I'll go quickly through project benefits. I know it's been in the filings that we've submitted to you, but local revenue as mentioned before. Infrastructure investments to try and anchor this industry in southeastern Mass., which will result in jobs not only on the South coast and South shore but also the Cape and Islands.

A commitment to marine animal protection both through our agreement with national eNGOs on construction to protect the North Atlantic Right Whale, and in addition to that as part of our bid, $3 million to support innovations in Right Whale and Marine Mammal Protection. The idea being to get some things integrated into the system so that monitoring and protections can be advanced.

Climate change benefits we've

discussed. Significant ratepayer benefits. The DOER came out with a study establishing that against a baseline. This will result in actually some savings for Massachusetts ratepayers.

Improved grid reliability. Massachusetts or, excuse me, Cape Cod, it's been a one-way street for electricity. It comes from the mainland and comes out to us. This utilizes that infrastructure and injects a significant amount of power at the edge of the grid. We've got a Resiliency and Affordability Fund that Barnstable, as a partner community, will be a beneficiary. Its $15 million, a million dollars a year for resiliency projects including battery and storage, the idea being some measure -- battery storage for emergency shelters and those kind of emergency events. And then, of course, in following with the many years of work that's been done at the state level to enhance our climate change and clean energy efforts.

So, quickly, about the project's development, excuse me, the project's sort of progress. It's really into three parts: an offshore component, an onshore component, and the

substation component, the transmission component.

So if we follow here, the installation will be done by a hydro-plow or jet plow, which is the upper left. That's a prescribed minimally invasive technique for fluidizing the sea bottom in a narrow trench and allowing the cable to settle there. Our routing has been the result of extensive, you know, years of survey of the sea bottom with an array of technology that I wouldn't bore you with but it's been pretty extensive.

You see in the center there the image of the cable-laying vessel, the vessel that trails and distributes the cable. Important to our efforts here, horizontal directional drilling will be used to transition from the ocean to the shore. That ultimately is going to the parking lot, setting ourselves back from the beach a bit, drilling down below an arc, and ultimately reaching about 30 feet of depth at the tide line. So Covell's Beach is an accreting shoreline generally, so fewer concerns about erosion. But that notwithstanding, putting the cable to sufficient depth virtually eliminates any

possibility of human impact in that shore side area. It arrives on the offshore, you know, after a thousand foot of HDD, so also outside the swimming environment.

You see a little picture of an example cable. Two of those will be installed and that is what can carry the electricity to the grid.

So onshore, it really begins to resemble a traditional public works or construction project. Roads are opened, trench is dug, conduit is laid, encased in cement, covered over and then cable is pulled through various duct banks, which is in the upper right there at various intervals. The expectation's about one to 200 feet of progress per day, and these parts of the project don't need to happen in a single succession. Different areas can be worked at different times and, again, obeying seasonal restrictions knowing that our traffic constraints are a lot higher in the summer. There's also additional traffic management procedures and plans that are worked out comprehensively.

You can see the route from Craigville

Beach Road, Strawberry Hill, Wequaquet, Phinneys, Attucks Lane and then into Independence Drive. This is ultimately what the project will look like throughout the communities. A couple of manhole covers to access some of those junction boxes in between runs of conduit. This is actually an existing cable, one of half a dozen that comes to the south side of the Cape, and this one is the more recent cable that feeds Nantucket with their power; there's three others from Falmouth to the Vineyard.

So the substation in Independence Park, we've talked about the containment elements associated with the Host Community Agreement. You can see to the north of that example schematic, the Barnstable Switching Station, so we are able to bring the power to shore, step it down and process it appropriately and then connect into the grid there. And then you can see the mockup of the substation as it will be viewed from the parking lot in Independence Park.

So, I wanted to go quickly into the permitting process. I don't have to belabor this too much, but we've got a major -- main federal

process which involves the consultations and approval of numerous federal agencies and then two threads of state review, both the MEPA process, the Mass. Environmental Policy Act process which leads down to the regional and then the local level and then the Energy Facilities Siting Board. We've received a tentative approval from the EFSB and expect final approval very shortly. We've worked through the MEPA process and received final Environmental Impact Report which, again, that was finalized in February and that allowed us to pursue regional and local permits. Host of agencies, I don't need to get into too much but you can imagine the typical players, those devoted to endangered species, DEP, DMF, Division of Marine Fisheries, and at the federal level everything from Coast Guard to FAA to National Marine Fisheries.

I would also want to note that sort of the project timeline, you know, it started a couple of years ago, and our goal is to begin construction this year. And it's an important goal because it means that the benefits of the project both locally, to the town, regionally,

and as well as statewide and nationally in terms of our climate goals can be achieved more quickly. So we've really enjoyed working with the staff to make sure that we were comprehensive and I think we've largely arrived there. We look forward to your questions.

I'm going to introduce Kate McEneaney to discuss some of the specifics as it relates to our DRI application.

MS. KATE MCENEANEY: Good afternoon. It's a pleasure to be here. My piece of the puzzle is to discuss the standards of approval for a Development of Regional Impact, a DRI, and to address how the project meets those standards, and you, all, are familiar with those standards, but it's consistency with Regional Policy Plan, that's the 2019 Regional Policy Plan, relatively new; consistency with municipal bylaws and planning documents, and a weighing of the benefits and the detriments.

We have a very substantial record on this case, and the Regional Policy Plan and the Local Comprehensive Plans and the Bylaws are quite extensive. I'm going to synthesize all of

this information for you in about five or six slides. So, here we go.

I want to just start by taking a step back and looking at the Barnstable County Growth Policy as stated in the Regional Policy Plan. The Growth Policy is sort of a mission statement for the plan and the entire planning effort undertaken in the Regional Policy Plan. And the Regional Policy Plan says of that Growth Policy that it aims to "Support the vision for the future of Cape Cod as a place of vibrant, sustainable, and healthy communities and a protected natural environment."

And we say, "Yes," yes to that idea. The project will fit perfectly with this vision for Cape Cod. It will bring -- it will be the first project to bring renewable wind energy online at a commercial scale, as Nate mentioned, that powers over 400,000 homes. It will do that and replace power and offset 1.6 million tons of carbon dioxide. And we propose to do that in a way that not only protects but enhances the resources of the Cape. How? That's next.

So the Regional Policy Plan addresses a

complex and interrelated and dynamic human and natural environment by breaking that down into three categories, and that's Natural Systems, Built Systems, and Community Systems.

So I'd like to start with Natural Systems and this covers water resources, ocean resources, wetland resources, wildlife and plant habitat, and open space. So how does the project address these resources? How does it protect these resources?

First of all, through the Host Community Agreement with Barnstable, as Nate mentioned, the Vineyard Wind project will provide a new funding source for this Water Stabilization Fund to the tune of $16 million. The site also will be constructed with a secondary containment system that's above industry standards. So that containment system is primarily for the dielectric fluid that is -- that will be used on the site that is necessary for the operation of the site. This dielectric fluid is a coolant and an insulator and it's much like mineral oil in terms of its characteristics. So there will be a secondary containment system that provides a

redundancy to make sure that there's no chance that this dielectric fluid will make its way into the environment.

There's no permanent impacts to wetland or our species habitat with this project. And the project is proposing a comprehensive suite of protective measures or Best Management Practices during construction to make sure that all impacts are avoided and minimized, and this includes a Benthic Habitat Monitoring Plan that's pertinent to the offshore piece, the marine piece, and erosion control plans, as may spill control plans, as well as many other protective measures, and those are detailed in our application.

Moving on to Built Systems, these relate to community design, coastal resiliency, capital facilities, transportation, energy, waste management. Again, this is a really significant source of renewable energy, 800 megawatts, and that will make the regional grid more reliable. It also addresses, importantly, the considerations of coastal resiliency.

So here we have a project that not only presents a design that is perfectly consistent

with the coastal resiliency design standards but also actually addresses the inherent problem behind global warming and climate change that, I think this is well stated in the Regional Policy Plan, touches every aspect of life on the Cape or will touch or has already touched.

The siting of the project is contact sensitive from a planning perspective and, again, we have a very robust suite of Best Management Practices to ensure that there will be no impacts to any of the other infrastructure systems, such as the transportation systems, and that includes Traffic Management Plans that will be developed with Barnstable, DPW, and the police.

Finally, Community Systems addresses cultural heritage, economy, and housing and this project will provide new substantial funding for education and training. It will be a new source of jobs, a new industry in the region. There's no impact to cultural resources. The Department of Energy Resources has assessed that there will be a significant savings to ratepayers from the project, and also the Host Community Agreement establishes a significant source of revenue for

Barnstable -- for the Town of Barnstable.

To address the substation specifically for a moment, it is proposed on a 6.3 acre parcel of land. This was -- the parcel is part of the former Cape Cod Times property off of Independence Drive; I'm not sure if you're familiar with that. It is within the Industrial Park. It is, from a siting perspective, we feel it's well sited. It's adjacent to the existing Eversource substation that's just south of the highway there and also adjacent to the existing overhead utility right-of-way. It is within a designated Industrial Activity Center, that's a Cape Cod Commission designation. And I'll just elaborate on that; the Industrial Activity Center is defined as lands containing industrial uses that are suitable for future industrial activity as well as emerging industries. So that's a good fit.

And there is containment to protect groundwater -- let me back up. The site is also located within a Wellhead Protection Area and to acknowledge that and make sure that the groundwater resources are absolutely protected.

I mentioned that there's an above-industry standard containment system planned. And Vineyard Wind has been working closely as well with the Town of Barnstable on that.

Just to address quickly the Regional Performance Measures; there are nine performance measures listed in the Regional Policy Plan. I won't go through them all. I will note that the project has either no impact or a positive impact to all of these measures. And the reasons that I think it's important to mention that is in most cases with development, we assume there's a trade-off between -- with development and some of these critical resources, these yardsticks to measure these critical resources. In our case, that trade-off is not there in some cases so we have a positive impact. So stuff like BioMap habitat and nitrogen loading, we have no impact there. Sorry, hold on. It's not done yet.

Finally, the final piece is consistency with local planning and, importantly, benefits versus detriments. The project is consistent with the Local Comprehensive Plan, DCPC, and Municipal Bylaws. The Zoning, in terms of the

Bylaws, zoning is addressed in part through the state siting process, which is the Energy Facilities Siting Board and Department of Public Utilities, and that is also addressed in the Host Community Agreement as well.

Finally, benefits versus detriments. Nate had an entire slide on benefits. We could talk for 45 minutes, I think, just on that slide. The benefits are significant and they are long lasting. There are environmental benefits. We mentioned 1.6 million tons of carbon dioxide annually, that's about 325,000 cars off the road -- the equivalent of. So environment, we can't say that enough.

Economic benefits in terms of bringing this new and emerging industry to this area, jobs, funding for job training, and scientific research as well with the Marine Mammals Innovation Fund and, also, some of these go towards Community and building community here on the Cape and in the region. And, specifically, some of these funding streams are going towards scientific organizations and higher education -- institutions of higher education.

In terms of the detriments and thinking about that weighing that happens at the Commission level, the detriments are temporary and minor. Some of the things that we think about are temporary potential for traffic congestion, for example, while the cables are being installed within the roadway, and those are things that we think can be managed and putting a lot of effort into making sure that we're coordinating with the town and abutters on that. So we feel that the benefits far outweigh the detriments on this project.

Finally, we are also really cognizant of, given the importance at all these different levels of this project, the project's schedule, and we're hoping to be under construction this fall and, hopefully, through the Barnstable Conservation Commission, maybe even this spring. So we're lining up all of our ducks and we've got the Siting Board coming in and MEPA, so we're on full throttle. So we appreciate the Commission's piece of that and also want to just say how much we appreciate working with the staff on this project which was, I think, maybe unique for them

and a lot -- this huge record, so we just really appreciate all the work that they've put into it.

And with that, I appreciate your time and I look forward to the discussion, and our project team is here if we have any questions that you would care to refer to us, we'd be more than happy to address those. So that is all. Thank you.

CHAIR HAROLD MITCHELL: Thank you, Kate. At this time, we'll have Commission staff hearing offering their presentation. Jon Idman.

MR. JONATHAN IDMAN: Thank you, Mr. Chair, members of the Commission. For the record, Jon Idman, your Chief Regulatory Officer. I just want to state that the applicant has prepared -- there are some unique regulatory provisions for projects like this, and the applicant has prepared a statement that those on the development team, the Vineyard Wind Development Team, have given their testimony today under oath.

A DRI hearing was held on the project on April 9. I served as a hearing officer for that hearing. This project is subject to the

State's Energy Facilities Siting Board jurisdiction and also DRI jurisdiction and, thus, is subject to certain special procedural provisions such as the one I mentioned under the Commission's regulations.

Of note, these regulations expressly allow for the use of hearing officers to hold hearings for these substantive hearings for these energy-related projects which are also subject to Energy Facilities Siting Board review.

Staff has prepared a draft decision. Those regulations call for a report and recommendation being made by the hearing officer to the Commission. And what I'm providing to you today is the report which is contemplated under the regulations, and my recommendations are contained in the draft DRI decision, which has been distributed to the board and also made available to the public online.

This was a complicated project. There was a lot of review with it, so I just want to recognize some of my colleagues who had a greater level of participation in it: Jessica Wielgus, Heather McElroy, Scott Michaud, Tim Pasakarnis,

Steve Tupper, and I want to give kind of an extra special call out to Kristen Clothier, who's my regulatory colleague in the Regulatory Department who put in a significant amount of work on this project.

When we had this hearing on April 9, it was pretty well attended. There were 20 or 30 public attendees at the hearing, approximately nine people provided testimony. Some of those provided written comment. All who spoke and gave direct testimony, oral testimony at that hearing spoke in favor of the project.

All these written comments, which we have received to date, are in your member materials as well as contained online. There have been a few letters we received over the past few days. They are contrary to those comments we received early in the process. There were in opposition to the project. I'll let you make your determination after you review those but, frankly, they were a little off-base with the project that's directly before the Commission. They're a little broader than that, and they actually came from letter-writers who are outside

of our jurisdiction. But without me giving any further color, I'll let you review those and you determine how much weight or credibility you want to give them relative to your review.

The applicant's PowerPoint presentation from the April 9 hearing is also contained in your materials. You'll notice a guest here today, a transcriptionist who's taking a verbatim transcript, that's another special provision within these regulations. We also have a transcript that was available to you and to the public in your materials from April 9 as well.

The draft decision which has been prepared is based on the application materials that have been submitted by the applicant, public testimony, and written comment letters that have been provided and staff's analysis as well as my own observation as a hearing officer of that April 9 hearing.

This decision also takes in large part from certain proposed findings and conditions that were referenced in a staff memorandum that was prepared for that April 9 hearing which, again, is in your materials and also contained on

the website.

Essentially, the recommendation that's contained in that draft DRI decision to the Commission is to grant DRI approval for the project subject to the conditions in that draft. The draft contains all the findings and conditions necessary to approve the project given the standards of DRI approval set out in the act and regulations without limitation findings concerning the consistency with the Regional Policy Plan, consistency with municipal development bylaws, and findings about the relative probable project benefits and detriments.

I want to make a point of emphasis here too because of the complexity of the project. As you've heard some reference to, the project overall actually represents some features outside of Barnstable County jurisdiction. There's an overall wind project with a connector that ultimately will terminate in Independence Park in Hyannis. However, the Commission does not have direct jurisdiction over those elements located outside Barnstable County.

So, essentially, what the Commission is looking at in terms of the project is the offshore export cable located in Barnstable County waters, and that cable as it arrives on land at Covell's Beach traverses north, northerly in Barnstable, and ends up in Independence Park and then connects to the grid. That entire land-base cable is in the Town of Barnstable. It kind of brings me to another thought the Commission staff has had in reviewing the project.

Commission staff's review really began with that Massachusetts Environmental Policy Act process for which Commission staff provided a number of comments. Commission staff was pleased to see that some of our recommendations especially concerning the land-based cable route were taken into account and, in fact, at first there was a proposal to have alternative routes, one which would go through Yarmouth, one which would go through Barnstable. Commission staff's positions is that the one through Barnstable had fewer impacts on various resources and, in fact, that is the project or part of the project you see before you, and Commission staff was happy to

see that change based on some of its comments through the MEPA process.

All those MEPA filings, by the way, including the Commission's comment letters are contained in your materials -- you'll hear this as a refrain today, as well as located on the website.

Getting to some of the other standards for DRI review in terms of municipal development regulations, there's kind of another unique feature of this project. In terms of local zoning matters as allowed under Massachusetts General Laws, the zoning matters have actually been deferred to the DPU and then to the EFSB to issue certain zoning exemptions and the town consented that.

So, essentially, there will be no zoning reviews over the project in the town. The zoning reviews have been consolidated in the EFSB docket consolidated with other matters, like the actual request to construct the project which the EFSB has a direct jurisdiction over.

In terms of the RPP itself, as you know, there were 14 goals in the 2019 RPP and

corresponding objectives with those goals as well as corresponding methods and the Technical Bulletins which clarify certain of those goals and objectives. Essentially, all but two of those goals apply to this project. The two that didn't apply were housing and waste management, but some of the things that you would think would apply wetlands, coastal resiliency, ocean resources, open space all applied in this given case. And you'll find finding relative to those in the decision in, I think, relative detail.

There's also an appendix to the decision which, basically, gives a checklist about which of the goals and objectives in the Policy Plan actually applied to the RPP Consistency Analysis in this given case.

I guess I also want to make a general point too that if we look at some of the reasons why there was a significant change in the way the Commission did the 2019 RPP versus predecessor versions of the RPP, I think this was a really good test case for that because in any given project there will be positive and negative effects or impacts with that project, and it's

incumbent on a review board like the Cape Cod Commission to have abilities to reconcile those potential positive and negative impacts, and that's exactly what this RPP allows the Commission to do, and I hope you see that reflected in the findings and conditions in the draft decision.

In order for -- I think it's been helpful for me to think about this project to separate it into kind of three parts, at least the project that the Commission is looking at. The offshore export cable and the landing at Covell's Beach in Barnstable, kind of the long stretch of cable which is located under paved roadways in Barnstable, and then that substation component which is located in Independence Park. And really throughout staff's emphasis, I don't know if this surprises you or not, has actually been on the substation up in Independence Park. I think you saw the matrix of how many federal and state project partners there are when you saw the earlier presentation, that actually, I think, assists Commission staff and assists the Commission because there's a great deal of

emphasis on reviewing the project out in the near shore and offshore areas. And some of these state, of course, state and federal agencies have a technical expertise that really helps the Commission in its review as the applicant worked with these state agencies to come up with ways to minimize, avoid, or mitigate impacts within those ocean resources: fisheries, marine mammals, etcetera.

Within the middle portion of the project, if you will, which is the cable underneath the road -- public rights-of-way in the Town of Barnstable, to be honest, there were a few concerns. It was very well sited. It's under paved right-of-way. As you see with some of the figures in the application, there were very few resources located in that area. There weren't historic resources, wetlands resources, etcetera, so that kind of long stretch of cable under roadways was well sited and, essentially, as being -- if there are any impacts, they are temporary transportation impacts and they'll largely be handled through individual Transportation Management Plans for certain

intersections or stretches of roadway that have been already worked on extensively with the town and that our staff has reviewed relatively extensively as well.

So in terms of a point of emphasis of what Commission staff spent I think most of its efforts on especially in terms of review of the RPP and consistency with the RPP is the substation. And this is a perfect example of having to reconcile certain positive and negative impacts or effects of a project. This area up in Independence Park is an Industrial Service and Trade Area with the Commission. It is also an industrial area with the Town of Barnstable, that said, it's also Wellhead Protection Area. So by me telling you that, you can already see some of the maybe inherent conflicts that need to be reconciled.

Along with substations also come up -- come with the need to use something called "dielectric fluid," which is essentially a coolant, and in the parlance of the Cape Cod Commission's Regional Policy Plan, it's a hazardous material. So, obviously, to reconcile

these ideas, there had to be some strong mitigation response. And the strong mitigation response that's been provided here is to provide a very risk-conservative approach towards containment. And the applicant is also providing $16 million through a Host Community Agreement they've entered into with the Town, and the Town has agreed to direct all those funds to a Water Stabilization Fund the town has provided, which will be used to study and, ultimately, develop a new water supply areas in the Town of Barnstable.

Some other kind of issues to reconcile in terms of the substation is an issue associated with Open Space. So, again, it's an Industrial Service and Trade Area. There is a switching station directly north of this new substation, so in that sense it's relatively well sited but, again, there's a Wellhead Protection Area, and the area proposed to be cleared is several acres. Naturally forested area helps to protect Wellhead Protection Areas. So, again, a conflict point in how do we reconcile that. It's being essentially reconciled through not only the payment through the Host Community Agreement but also through a

commitment that the applicant has made since that April 9 hearing to provide 5.9 acres of open space through a potential combination of methods, and that's the last condition you'll see in your decision. That Open Space commitment can be done through payments in lieu, an actual restriction of land, working with the Town to direct some of those Host Community Agreement payments to the restriction of open space. But, none the less, the applicant has committed to provide open space protection to mitigate for that loss of tree cover in the Industrial Service and Trade Area, which is also a Wellhead Protection Area.

The last kind of conflict point that staff spent some significant time with relative to the substation is community design. So the same refrain I've made here, this is a substation. It's in an Industrial Service and Trade Area, but also directly abutting to the east of the proposed substation site is a utility easement and abutting that is a residential community. So you see a conflict point there. You have a relatively industrial-type use within several hundred feet of a multi-family

residential use. The mitigation response to that is to keep a relatively substantial buffer, a commitment to keep a relatively substantial buffer along Independence Park, a 30 foot buffer along the easterly side of the new substation where it's available and doesn't interfere with the utility easements, and then provide landscaping in concert with the town to appropriately mitigate visual impacts associated with, especially the northeasterly side of that substation.

That northeasterly side of the substation also proposes to have a noise and visual barrier as well, primarily for noise but will also provide a direct visual barrier to looking into and see some of the substation equipment at that proposed substation.

Kind of moving on to the next significant sort of undertaking that staff had in terms of the DRI standards of approval is this concept which is probably the Commission's greatest level of jurisdiction is over the relative probable benefits of a project versus the probable detriments associated with a

project. The recommendation in this decision, again, it recognizes some particular probable benefits and some particular probable detriments, but the recommendation of the decision is ultimately that the probable benefit of the project is greater than its probable detriment.

I think you've already heard some of the suggested benefits and detriments and I'll kind of direct you to the section of the draft decision which speaks to those things but, roughly, the benefits are associated with furthering the Global Warming Solutions Act in the Commonwealth of Massachusetts, the facilitating the reduction in greenhouse gas emissions, the sort of economic impacts with not only this project but the economic prospects associated with the renewable energy sector. And then the payments to various funds and programs that you'll see referenced in the decision are running the gamut from this Host Community Agreement, we spoke about, all the way to providing infrastructure programs which would provide seed money for battery storage projects on Cape Cod, which is an emphasis of the states

and also definitely is an important component to the generation of renewable energy in order to store that energy and improve resiliency in the particular area to use that energy when other energy is -- energy sources are in greater demand, and then I think another great benefit is in this Host Community Agreement with this approach to containment and other matters.

In terms of -- there are some recognized detriments, and I think the applicant was pretty straightforward and honest suggesting some of these detriments themselves, and many of them I've gone over with you today already. They are detriments, potential detriments associated with the substation. I will note interestingly that they're also occasioned, all these identified detriments are also occasioned by strong mitigation actions, for instance, the clearing of land in the Wellhead Protection Area for the substation is occasioned by the commitment to provide 5.9 acres of open space protection through a combination of different available methods.

I want to go through a number of

conditions in the decision. Those are always sometimes kind of the most telling feature of a particular decision. You can imagine given the nature of this project, I can as I've seen it evolve through working through the MEPA phase and then to now, it's a constantly moving project and there's this incredible matrix of different permitting that's required at the local, regional, state, and federal level. So you can imagine that the plans we got in some cases were relatively conceptual because the project could only be planned to a certain level given some of the changes that will be made with a project of this scope. So it's important to recognize in this decision that there are approved project plans but there are instances with some of these approved project plans that they're recognized as conceptual in nature, and there are specific plans referenced and the conditions of the decision that we expect to receive in final or updated form with greater information. And many of those plans are related again to the substation. They are things like final design of containment, final landscaping plans for the

substation, final, if you will, architectural renderings or elevations for the substation itself.

Another very important condition deals with requiring the applicant to continue to pursue all its obligations under the Host Community Agreement with the Town of Barnstable. I'll take kind of a side note to say that Host Community Agreement is kind of an unusual feature in my experience in permitting, and it's a great feature to have because many of those things that you normally try to address and preserve and protect through your permitting had been accounted for and addressed with a contractual relationship with the town, the town of which probably is at a greater susceptibility to suffer some of these impacts most directly which the Commission is in charge of mitigating, minimizing, or avoiding.

There are a number of other conditions related to the applicant continuing to work with both the town and state agencies on those Traffic Management Plans or other transportation issues referenced in those conditions. Potential impact

on fisheries was an important consideration in the decision, and the applicant has worked with state agencies and made strong commitments towards a fisheries monitoring and monitoring of other ocean resources. I'll direct you to the last condition again which deals with the Open Space commitment.

And, finally, we've spoken about dielectric fluid as a hazardous material at the substation; the applicant is ultimately required to give an inventory of any other materials which constitute hazardous materials under the Cape Cod Commission's Policy Plan and Technical Bulletin, and to the extent that there are additional materials revealed have to develop a management plan including potentially some additional required containment to address the other hazardous materials that may be identified in that final inventory.

So I will -- I'll say in closing to you that I know after having conversations with the applicant that they believe that there are certain exigencies, I think, that they would like to obtain permits as soon as they can. This

decision would allow you to essentially approve the project subject to the conditions in the decision accounting for all the required findings that are required under the Commission's enabling regulations given the DRI Standards Review.

But I also want to let you know that there is no absolute requirement that the Commission has to do this day. You have plenty of time in your public hearing period if you see fit to have additional hearings or meetings on this project recognizing that this is a big complicated project and you may need time to digest that.

So with that, I would be happy to take any questions as they might arise today, and I'm sure my colleagues in attendance would as well. Thank you.

CHAIR HAROLD MITCHELL: Thank you, Jon. At this time, we'll start with -- if the Commissioners have any initial questions? Yes, Charles.

MR. CHARLES MCCAFFREY: Two areas in the decision that I would like a little more information on. One is the sea-level rise and

the fact that the applicant analyzed historic accretion. My concern is that future sea-level rise could substantially mitigate if we have under a rapid sea-level rise scenario, four feet of sea-level rise by 2050 say that can very much change what the situation is at Covell Beach.

MR. JONATHAN IDMAN: That's true. I mean I can answer your question. I think what I would like to do now is kind of defer that substantive question to the applicant and then maybe after discuss with you why we think the information that was provided is at least consistent with the Commission's Technical Bulletin and RPP objective relative to this.

MR. CHARLES MCCAFFREY: Okay. My second question is probably the same kind. The trenching offshore will disturb benthic habitat. What evidence is there that even though it's quite limited, what evidence is there that benthic habitat would restore itself in the area of the trenching?

MR. JONATHAN IDMAN: Yeah, I would like to defer that to the applicant first to get the substantive answer, and then maybe after that's

answered discuss why Commission staff thought that the mitigation actions referenced in the application were appropriate.

MR. THEODORE BARTON: Good afternoon. My name is Ted Barton. I'm an environmental engineer by training and principal at Epsilon Associates, and I've been working with the Vineyard Wind team for the last two and a half years on this project.

Let me start with the benthic question first. So, this is a subject that has come up at pretty much all levels of the project review, federal, state, as well as the regional. The first place we kind of look for an answer on this is to look at cables that have already been installed in Nantucket Sound and similar waters using similar installation techniques. So those include both of the Nantucket cables, which are each roughly 25 miles long and more recently a cable over to the Vineyard which is about five miles long. All of those were installed using a jet plow technology which leaves a very narrow trench in the seabed to do the installation. More recently, we looked at pretty extensive

monitoring that was done for the Block Island cable and this was done by both the proponent and by BOEM, the federal agency responsible for that.

In all of these cases, the post installation monitoring that was done and it was done extensively for both the Vineyard cable and the Block Island cable show that first the disturbance was, in fact, very minimal, a few feet of width. And, secondly, that the seabed restored to its natural topography very quickly with a matter of a few weeks. There will, as you pointed out, be some short-term disturbance to the benthic organisms themselves, so one of the things that we've committed to primarily via the state and federal permitting is a Benthic Habitat Monitoring Plan, and that is being finalized as part of our state permitting, the 401 Water Quality Certification and, basically, we're going to have to go, after installation, go back and do some pretty specific testing, grab samples and benthic analysis to basically show the state and the federal agencies that, indeed, the habitat has restored as we believe it will. And if for some reason that does not happen, there are some

measures in that to restore some of at least larger benthic organisms, shellfish and the like.

So we think there's a good track record out there that shows us in these waters that the cable can, in fact, be installed with very minimal habitat damage and that that situation restores itself quite quickly.

So let me go to your first question which was sea-level rise, certainly something that I think is top of mind for pretty much everybody that's been involved in the project. So we did look -- we looked carefully at Covell's Beach to get an idea of historically is the beach -- is it stable; is it eroding; is it accreting? And, in fact, it is accreting. I don't have the figure memorized but it was something to the tune of about 150 feet of accretion over the last century or thereabouts. So, that's certainly a positive thing.

The physical installation that we'd be conducting at Covell's, as Nate went through in his presentation, uses HDD. So the cable is placed at a depth of roughly 25 to 30 feet below the water at its maximum depth. It's in

conduits. It terminates in a concrete vault that will be buried under the Covell's Beach parking lot and then that continues into a duct bank that will go through the streets. All of that is designed to operate in a wet environment if need be. So it could be something much less dramatic than sea-level rise. It can be just ordinary storm flooding; it can be unusual participation events and the like. So the equipment is designed to maintain that, and we believe the design of the installation is sufficiently robust that it will certainly endure even in a significant sea-level rise environment for the 30 to 40 year life of the project.

MR. CHARLES MCCAFFREY: Thank you.

MR. THEODORE BARTON: You're welcome.

CHAIR HAROLD MITCHELL: Yes, Ernie.

MR. ERNIE VIRGILIO: You recognized the plow method; however, you haven't mentioned there also could possibly be mechanical trenching, there may be a dredge used, or identifying other possible ways of digging this trench, shallow water cable installation tractor, pre-trenching boulder removal and replacement and jetting. I'm

a little bit concerned on, one, you only mentioned that you've got to plow it in, but yet you've indicated in all these other methods that you're going to use if you have to that, to me, is certainly a concern for disturbing the ocean floor.

Next, you haven't brought up anything about, I'm sorry, correct myself. I haven't found any answers for the NOAA questions. I can't find any data that you updated or you answered any of their concerns.

My next question is what is the depth of the cable on land and the width, and what's the termination points of these junctions? Are they 500 feet, 600 feet? I know I should be reading your plan but I have reasons for those questions. And how are these properly protected in the road areas? And I'm assuming you're going to, of course, replace the road and not just the trench. It's quite a few miles of disturbed roadway. So I've got a few questions if you'd like to answer them.

MR. THEODORE BARTON: Okay. Well, that was a pretty long list, so I think we'll start

with the roadways and we'll work back. So the cable, as Nate explained in his presentation, goes in a duct bank. The duct bank basically will consist of eight roughly 10-inch plastic ducts. They're typically arranged in a two-wide, four-deep form, although depending on where we are in interferences with other utilities that can vary. There's an option to do a four-wide, two-deep variation. But, typically, for most of the road sections it will be either two ducts wide or two conduits wide, four deep. There's a minimum cover requirement of about three feet and the trench itself is going to be two-and-a-half feet wide or so and it will go down allowing for the 3 feet of cover. It will be down at a depth of 7 or 8 feet to the bottom of the trench.

So the plastic sleeves are encased in concrete and then there's soil or compacted material placed over that. The roads will be restored by -- there will be a temporary patch but then there is provision for full-width repaving of the road. The town of Barnstable was pretty insistent on that and that's the right way to do it. So we've made that commitment.

There are splice vaults at a spacing of roughly 1,500 feet, it can vary somewhat depending on the number of bends and such in the cable, but typically every 1,500 feet there's a concrete vault that goes under the street. The cable is pulled in at one end, and then the next stretch of cable is pulled in from the other end. They're spliced in the vault. There's six cables in total. So the eight sleeves that I described in the duct bank allows for two spares if they're ever needed. This is pretty typical underground electric utility construction. This question came up in some of our other reviews. There are, if memory serves me correctly, something like 30 other cities and towns in Massachusetts where this technology or something very similar is in use for voltages ranging from 46 kV for the Nantucket cables of which there are some buried in Barnstable streets all the way up to 345 kV in places like Stoughton and Milton and the city of Boston. There's quite a bit of 115 kV cable as well. So we're certainly confident that this can be installed properly and operate reliably for the life of the facility.

Questions on that before I go onto the other questions?

MR. ERNIE VIRGILIO: Well, I'm familiar with duct lines. Just one more on your junction boxes, those are concrete?

MR. THEODORE BARTON: Concrete, yes.

MR. ERNIE VIRGILIO: It's a cast iron frame, right?

MR. THEODORE BARTON: For the manhole covers above, yes.

MR. ERNIE VIRGILIO: Thank you. I would like to get back to your process, which -- I'd like to get back to your process where you mention all these other methods that you're probably going to need bringing this cable across. This is a great concern to me. I wish I could comment about the windmills but I won't because I don't think I'm supposed to. But, anyway, a great concern to me is what you're going to encounter, and this is a long path, and all these other methods are not simply plowing a couple of cables in the ground. So, how are --

MR. THEODORE BARTON: So --

MR. ERNIE VIRGILIO: Let's try and

answer that, but on top of that I'm going to ask you one more. Go ahead.

MR. THEODORE BARTON: Okay. So we're transitioning now from -- my first answer was on the land cables, the under street cables; now we're out in the ocean. So, you're right. It is a long cable route. It's roughly 40 miles from the offshore wind farm itself up through Muskeget Channel, across Nantucket Sound to Covell's Beach. So we started surveying that route about three years ago. We did some preliminary surveys, some sort of single line geophysical and bathymetric surveys to get an idea of the basic characteristics of the sediment. Obviously, we had lots of map charts and other information to start with. That survey, in turn, was used to refine the routes. Then there was an area roughly 800 meters wide surveyed very carefully for the entire length of that route. So that mapping is a level of detail; it does not appear in this record but it has been submitted as part of the BOEM, the federal record, and it's also been submitted as part of the MEPA and state review efforts. So people have had a chance to

look at this very carefully.

So we've characterized not only the obvious like water depth and bottom contours but we've taken vibracore samples along the entire route so we have an idea down to a depth of 10 or 12 feet what the sediment actually looks like. We've used geophysical techniques to take a, basically, take a scan of what the bottom conditions are, and we've done a host of biological surveys as well.

So all that material was used by the engineering team that's going to be responsible for actually installing the cable to figure out where within that 800 meter-wide swath is the best location to route the cable.

So, the long list of potential methods that you see listed there, some of those are preparatory. So if we get in an area where the conditions look pretty favorable but there may be a boulder or more than one boulder in the way, we've described a technique basically to pick up the boulder, relocate it within the corridor but to get it out of the way of the path that we'd like to follow. We're confident that the vast

majority of the installation can be done using jet plow, the sediments are conducive to that. They're uniform; they're relatively soft. The jet plow technique we think will work fine.

Now that said, there are areas where there are stiffer sediments that we have to go through, and there are areas where there are active sand waves primarily in the Muskeget Channel area. So you'll notice that we describe the installation as a burial depth of 5 to 8 feet below the stable sea floor, so that means we have to get through the mobile sand wave and into the stable sediment in order to do the jet plowing. So the dredging was described as one method to, basically, make a temporary notch in a sand wave so that we can then run the jet plow through the stable sediment and install the cable that way and then the sea will restore those dunes.

We've been looking at a variant of a jet plow which is a basically more capable version of the normal jet plow that will allow us to go through the sand waves without the need to dredge in advance. And that looks like the installation technique that we will use well

offshore.

The area that is in front of the Commission, the Barnstable County piece of this, which is about seven miles, that we are confident we can use the jet plow technique as we've described.

Lastly, the jetting is something that -- it's a hand jetting operation and that's used in very specific circumstances, for instance, where you bring the end of the cable into the end of the HDD. You can't run the equipment right up to the end of the HDD pipes so you use hand jetting to put the cable to the right depth there. So we've left some flexibility but the vast majority of the installation we expect to be as described with a jet plow.

MR. ERNIE VIRGILIO: I just wanted my colleagues to understand a little bit better, I hope. Is there some reason why the NOAA questions were not answered or were they answered? Was there any information passed along regarding their concerns? Can you answer that or would someone else?

MR. THEODORE BARTON: No, I can speak

to that. So you're talking about the NOAA letter, the comments --

MR. ERNIE VIRGILIO: Right.

MR. THEODORE BARTON: -- letter on the DEIS?

MR. ERNIE VIRGILIO: Yes.

MR. THEODORE BARTON: Yeah. So, NOAA is a federal agency and within that is the National Marine Fisheries Service, so they're one of several cooperating agencies in the federal review process, which has been going on for the last year and a half.

MR. ERNIE VIRGILIO: Yes.

MR. THEODORE BARTON: So in the course of that, NOAA and NMFS have made their concerns and questions known. They have been addressed by the BOEM team that is working on the federal MEPA review, so it's sort of like a parallel to MEPA but this is on the federal level. They did, I think, a decent job of addressing the NOAA concerns in the DEIS; however, NOAA had additional questions and those are being resolved as the FEIS is being put together. That document is out for federal agency review as we speak, and

it's scheduled to be made available for public review in early June.

So, I think the NOAA comments have been taken seriously by their counterparts in the federal agency that's doing the MEPA review. They're certainly taken seriously by the project. That said, I think it probably is good to bear in mind that they are an advisory agency; they're not a permitting agency, so they can offer comments and those comments are seriously considered but there's a balancing that goes on in the federal review process. And what you may see in that letter is some of that balancing process so.

MR. ERNIE VIRGILIO: To be fair, I live here; I fish here. I love Cape Cod. I love the waters; I love the area, that's the reason for my questions. Thank you for doing your best.

MR. THEODORE BARTON: You're welcome.

CHAIR HAROLD MITCHELL: Any other questions? Yes, Liz.

MS. LIZ TAYLOR: Thank you. I just had a few questions about the cable and the more benthic questions, so you might as well come back

up again.

MR. THEODORE BARTON: Okay.

MS. LIZ TAYLOR: There have been some discussions about cable depth and cables coming back to the surface or not being deep enough. But in part of the run from the turbine to land, you're not even going to have it buried? It's going to be on the sea floor because you ran into obstructions of some sort? It's going to be buried with I think it was concrete blankets or something? I'm just curious why you have to bury it at all? Is that for storm damage protection?

MR. THEODORE BARTON: So, I'll start with that piece. This is a project that has a physical and economic life expectancy measured in many decades, so we want to make sure that the cable, which there are two cables, which are the essential link between the offshore generation and the onshore grid are installed such that they are protected not only from storms but also from fishing activity, from potential anchor drops, etcetera, etcetera.

So it is accepted and expected normal practice that the cables will be buried, and we

have set a burial, a target burial depth of 5 to 8 feet below the stable sea bed, which is sufficient to protect the cable from that list of hazards that I just went over. There could be, although we expect this to be very limited, there could be instances where the sediments are stiff or rocky and we can't get that proper burial depth. So we will make repeated efforts to get to the burial depth, but if it just proves impossible in short stretches, then we'll use cable armoring to protect the cable. And, typically, that is placing rocks over the cable. So these could be stones of this size and a swath about 10-feet wide and a couple feet thick is placed over the cable and that provides a similar level of protection to if you're able to bury it.

What we have told the federal and state agencies is that our objective is to bury every last foot of the cable so that we do not have to use any armoring. But we have, given that it's a 40-mile cable, albeit carefully surveyed, we want to have the flexibility if we do find a spot where we can't bury it to the target depth, we can protect it using other means. So that's

basically the armoring that was described.

Another technique to do that is to use something called a concrete mattress, but our feedback from the fishing community is that they would rather see us use rock, not the concrete mattresses because there has been some incidences of gear being snagged on the mattresses which have sort of sharper edges if you will. So our preference would be to use the rock armoring.

MS. LIZ TAYLOR: Okay. Thank you. There was a lot of discussion about noise issues; are there any issues with vibration, underwater vibration issues because I would think the turbines would produce vibrations which would be transferred?

MR. THEODORE BARTON: In a word, no, and Jack Arruda may want to speak to this as well, but vibrations in this kind of equipment, very bad thing. So the turbine operations are monitored carefully and if there is any sign of vibration which can lead to more severe problems, the equipment is shut down until it can be checked. So this is normally very smoothly operating rotating equipment.

MS. LIZ TAYLOR: Okay. Thank you. I just have one last question about economics using local people to install or do the lifetime management/maintenance of the turbines. I assume the company that installs them provides their own maintenance so how are we getting locals involved even if you train them?

MR. THEODORE BARTON: So I may ask Nate to expand on this, but as you probably know, the company has committed to establishing its operations and maintenance base out on the Vineyard. The initial maintenance will, in fact, likely be done largely by the people who have provided the equipment, but that is intended to be kind of a bridge to being able to train and then use people from the local region to do that work over the 30-plus year life of the project.

Nate.

MR. NATHANIEL MAYO: Yeah, I would add to that, you know, there has been a substantial priority put on local employment both -- both for the community benefit associated with it and for the fact that local knowledge when you work in a marine environment or in a municipal, you know,

local environment that those are, you know, you benefit from that significantly.

To add to that -- so O&M facility is, for the long-term maintenance of the project, is planned for Martha's Vineyard. There will be some additional support services that will be needed to be brought in periodically off-Island. But we have also had a good dialogue with some of the local individuals who come out of Mass. Maritime, for example, or individuals who are doing -- we have a guy from Bourne that we've been in touch with specifically who's done cable-laying operations for some of the Vineyard work.

Adding to that, there's sort of a twofold set of priorities in terms of getting local talent to be building not just this first project but, perhaps, subsequent projects. The Mass. CEC has done a lot of work to try and provide anchoring for the industry in southeastern Mass.

Additionally to that, Vineyard Wind has made a $10 million infrastructure commitment. The idea is we can front load and build some of the resources in New Bedford to support these,

that's going to be an economic draw for the region -- region at large.

And I would add to it, you know, folks that I know from Mass. Maritime that I went to high school with are often finding themselves having to go out to the Gulf or the West Coast. This is a burgeoning industry that's going to be available to them.

To add to the technical skill set that our maritime industries have, fisheries on the Cape, Islands, South coast, there is a need for some specialized training associated with transferring your basic and important marine skills to an offshore wind environment, construction or maintenance. We've devoted $2 million to a wind -- we call the Windward Workforce for workforce investment to actually build that local talent. So we're already working with Cape Cod Community College, Bristol Community College, Mass. Maritime as well, some of the universities that certainly Cape Codders and people in Southeastern Mass. access. It's a benefit to the industry to have local talent and it's also, of course, a benefit to the

communities.

MS. LIZ TAYLOR: Thank you.

CHAIR HAROLD MITCHELL: Anyone else? Kevin.

MR. KEVIN GRUNWALD: Just a follow-up to Elizabeth's question; do you have an estimate as to how many jobs would be generated by this project both during construction as well as operations?

MR. NATHANIEL MAYO: Sure. So the operational, you know, the long-term operational is, I think, roughly about 80 full-time jobs to management the operations and maintenance of this first project. That number and the number of about 1,600, I believe, jobs associated with construction, both came from work that we did with UMass Dartmouth. They did an economic evaluation of the projects, labor and workforce benefits. That study was released last spring, I believe.

MR. KEVIN GRUNWALD: Another benefit that you cited was improved regional grid. My understanding, and I could be wrong, is that the reliability of the regional grid has more to do

with transmission and distribution of power than it does with generation of power.

MR. NATHANIEL MAYO: Uh-huh.

MR. KEVIN GRUNWALD: So could you explain how this project is going to improve the grid?

MR. NATHANIEL MAYO: I could lean on more technical experts but I could also provide an anecdote. There was about, what was it, January of last year we had the bomb cyclone that hit. Part of that storm took Pilgrim off-line due to a power line going down. Immediately thereafter, there was a massive cold snap that we all might, unfortunately, remember. That caused the managers to divert natural gas resources to home heating. So natural gas is sort of the fuel that a lot of our electrical infrastructure demands. In doing that, that brought diesel online at Canal. So Canal needed to provide basically emergency power due to that loss. It cost ratepayers a huge amount of money, in the tens of millions over just a short period of time.

And in addition to that, for

environmental concerns, the amount of emissions associated with flipping Canal over to diesel and cranking that into the environment for a few days was, you know, jaw-dropping. It was tens of thousands of tons of CO2 in a short time. An analysis was done about Vineyard Wind potentially being involved in the grid when that occurred. The wind resources, as we can all imagine, more robust in the winter. The analysis asserted that Canal would not have had to operate during that time due to the consistent wind resource that was going to be pumping wind and energy into the grid on Cape Cod. As you know, our option for generation and bringing power are unlimited.

I could, if that doesn't suffice, tap some of the other talents behind me to address that.

MR. KEVIN GRUNWALD: Well, again, I'm curious because my understanding is that the regional grid draws power from lots of sources. It's not just our local sources.

MR. NATHANIEL MAYO: Correct. This guy will have a better answer for you.

MR. KEVIN GRUNWALD: All right. Thank

you.

MR. THEODORE BARTON: Yeah, and that's true. I mean it is a regional grid for a reason. But both transmission and generation are important to reliability, and I think it's worth thinking about the fact that in southeastern Mass. in general, the Cape in particular, two of the major baseload plants that served that part of the state, Pilgrim and Brayton Point, are no more. So having a significant source of generation that feeds directly onto the Cape certainly helps the reliability. It's not a panacea and it's not the only factor. There still needs to be reliable transmission and the like, but it certainly helps the reliability of power to the Cape.

MR. KEVIN GRUNWALD: Okay. Great. Thank you.

MR. THEODORE BARTON: Sure.

CHAIR HAROLD MITCHELL: Thank you, Kevin.

CHAIR HAROLD MITCHELL: Yes, Cheryl.

DR. CHERYL ANDREWS: I'm happy to say all of my questions have been answered except one

that I think maybe would go to Mr. Idman. They consider the very last condition with Open Space, so there are two questions. One, there's a dollar value listed in that condition, and I was curious how that is developed? How does that number per acre, the dollar value per acre get generated?

MR. JONATHAN IDMAN: That formula is within the Technical Bulletin for Open Space. So really how it's arrived at, and Heather McElroy, help me if I get this wrong, it's the average assessed value of developable but undeveloped open space in excess of two acres in the town.

DR. CHERYL ANDREWS: In that town?

MR. JONATHAN IDMAN: Correct.

DR. CHERYL ANDREWS: Okay. So it's town specific.

MR. JONATHAN IDMAN: Yes.

DR. CHERYL ANDREWS: And that leads to a second question which that I was curious where the land that is to be donated or restricted comes from? And you keep saying a municipality as opposed to the municipality. So will this be in Barnstable or are other municipalities

options?

MR. JONATHAN IDMAN: It's not; it's not specific to the town of Barnstable. They could work with -- to the extent that Open Space is a regional issue, they could work with a land trust in a neighboring town, for instance. But I think it's more likely if the commitment is made through an actual restriction on land, it's likely that that will occur in the town of Barnstable, but this is not prescriptive as to that issue.

This could also be met by a commitment to use some of those funds under the Host Community Agreement to actually acquire and restrict Open Space. Right now, those funds could be used for that but they're not necessarily earmarked for that. They're earmarked towards a water investigation and development of supplies.

DR. CHERYL ANDREWS: Right, right. Okay. And so just for clarity, certainly that this kind of issue is not going to be enough for me to withhold a yes vote on this. But based on what I'm reading and hearing, it would be my

preference particularly since the dollar value is related specifically to the municipality that the land restriction and the open space if you're taking it from one, should happen in the same municipality. That would be my bias for obvious reasons. Every town is different in terms of their Open Space, you know.

MR. JONATHAN IDMAN: If others share your view, that's an easy fix here. We could make that unique to the town of Barnstable. It's just as you see, there are different considerations but it's something the Commission has done for a long time. If there's an open space commitment, it's often done and required to be done in a particular town where the project is located. So if that was the desire of the body, that could easily be modified.

CHAIR HAROLD MITCHELL: Okay. Thank you. Any other questions? David.

MR. DAVID WEEDEN: Yeah, my question just as a matter of transparency, I just want to say that, you know, my office, we do work with Vineyard Wind and have been for a long time on reviewing it, the project, under Section 106, so

my office has been involved throughout the process.

But my question today is more of a statement that I think it was a statement that I disagree with when it was mentioned that the project will not affect any cultural resources. I say this only because there's a significant amount of the project that will be going in the roadway and such and archaeological assets aren't always unbeknown to us. Sometimes, you know, you have to do archaeological studies and because a lot of this project is in the roadway, there's areas that haven't been tested.

So, you know, I would be hesitant to make a blanket statement that the project will in no way affect cultural resources. You know when you do a preliminary desktop review of the project area with a one-mile buffer, there's known archaeological assets that pop up within the Mass. Historical Commission's Listed Inventories. So, you know, some of which are burials habitation sites year round. When you look at predictive modeling and such, you're coming right down along the Wequasset Lake, to

me, would be a flag, that kind of area -- that whole area of Phinneys Lane and such. There could be cultural assets unbeknown to all involved. So I just disagree with that statement, and I wanted to go on record stating such.

MR. JONATHAN IDMAN: May I respond, Mr. Chair?

CHAIR HAROLD MITCHELL: Yes.

MR. JONATHAN IDMAN: I agree with you and, actually, I misspoke. There is a finding. It uses the term "known cultural assets." So you're absolutely right. Basically, the information we had is to work off mapping. So to the extent that we're dealing with that road layout, that disturbed road layout, it's true to say there are known assets within the layout. But you're absolutely right, these things could get discovered and that's what populates the state's database, if you will.

MR. DAVID WEEDEN: Uh-huh.

MR. JONATHAN IDMAN: So I agree with you and misspoke but that language is actually in the decision itself as known assets or resources.

MR. DAVID WEEDEN: Okay. Thank you.

CHAIR HAROLD MITCHELL: Thank you. Tom.

MR. TOM WILSON: The dielectric fluid that's used for cooling, is that unique to a wind turbine project or is it a fluid that's normally used in electrical generation? And is there any history of leaks of dielectric fluid in Massachusetts?

MR. THEODORE BARTON: So there's nothing unique about this project in terms of dielectric fluid. Dielectric fluid, which is essentially refined mineral oil, is used in, essentially, every substation, big and small, throughout Massachusetts of which there are several hundred. So it's used in any transformer, any reactive compensation device, capacitor banks, etcetera. So it's a necessary component and it serves both an insulating and a cooling purpose within a transformer.

There have -- and it's used not only in substations but smaller transformers that are mounted on poles. As you go up and down a street, you'll see every, you know, 500 or 1,000

feet. So there is, in fact, some spill history not infrequently. If there's an auto accident and somebody knocks down a pole, the pole transformer comes with it, and when it hits the ground, there are sometimes ruptures of those. So the utilities be it Eversource or National Grid have procedures in place to clean that up and it's a relatively small volume.

Within substations proper, the equipment is a very robust design so leaks are certainly infrequent but that's why you have containment below them. In the event that there is a problem with the equipment, the dielectric fluid, be it a slow drip or something more than that, it ends up in a concrete sump and it can be cleaned up properly from there.

The whole subject is something that the electrical power industry monitors and studies and pays careful attention to. So there are some pretty lengthy reports from IEEE and others that talk about the causes of potential failures of transformers and means to prevent them. So there's nothing -- there's nothing unique about this facility in that regard.

MR. TOM WILSON: There was mention of a secondary containment to supplement the primary; could you describe how that works?

MR. THEODORE BARTON: Yeah, so the basic containment design that has been developed and this has been kind of a joint effort between the project with input from the town of Barnstable, the town of Barnstable has hired outside engineers to assist them in their review. So the transformer itself is basically a heavy steel vessel with windings inside it and the dielectric fluid is within that vessel. So beneath it, there's a concrete sump which basically is sized to accommodate 110 percent of the volume of the dielectric fluid in the transformer. So if you lost the entire transformer, it contains all of the fluid with a 10 percent margin. Then on top of that the assumption's made that all that happens in the midst of a torrential rainstorm so you have not only the dielectric fluid but you have rain water accumulating in the sump. And, typically, the industry design standard for that has been basically a 24-hour storm, basically a heavy

thunderstorm, so maybe 5 inches/6 inches of rainfall. For the Cape, that was updated recently to a 9-inch storm event which was our original design assumption.

In discussions with the town of Barnstable, they wanted to see something beyond that, so their engineers basically recommended as kind of a belt and suspenders approach to this that we use the probable maximum precipitation event which is 30 inches of rainfall. So the containment is going to be sized for 110 percent of the dielectric fluid plus 30 inches of rainwater on top of that at the same time.

So the balance of the system, there's an outlet pipe at the base of the containment, and that has, basically, something called an oil inhibition device in it, which is a series of plastic, special plastic beads, so they allow rainwater to pass through it. But if there is any dielectric fluid or oil mixed with that water, they swell up and seal off the containment so that the dielectric fluid stays put. Those then drain to an oil-water separator that, in turn, drains to a large containment -- I

shouldn't say containment, basically a basin at the south end of the site which its primary purpose is for stormwater retention, but it also serves as a second line of defense, if you will, for the dielectric fluid.

So we think this is a -- it's a very robust design that goes, as was mentioned earlier in our presentation, it goes well beyond the normal industry standards. A lot of thought has gone into it, and both the project and the town of Barnstable are taking this very seriously. So I think we have a good solid design there.

MR. TOM WILSON: If there were a leak of that dielectric fluid, would it necessitate those nearby wells being immediately shut down or not?

MR. THEODORE BARTON: No, because the whole intention of the system is to make sure that the dielectric fluid stays in the containment sump.

MR. TOM WILSON: Okay. Thank you.

MR. THEODORE BARTON: Sure.

CHAIR HAROLD MITCHELL: Okay. Len, I'm going to go to you for one last question, and

then we're going to close off the questions. So you've got the final question.

MR. LEONARD SHORT: Wow. My question -- I'm a little confused when you showed one of the graphics, you showed the boring and it was down through the beach in the sand and out into an open body of water. And then you talk about the fact that everything is going to be underground; will this cable at any point be exposed?

MR. THEODORE BARTON: Okay. The short answer, no, and let me explain a little bit about the graphic that you saw. So that was a very simple depiction of the horizontal directional drill, which starts in the parking lot and, basically, follows kind of a shallow arc for roughly a thousand feet. At its deepest point, it's down maybe 30 feet or so, but as it gets out a thousand feet or so from the shore, it comes up to the sea bottom and you, basically, are leaving -- you're placing a conduit. So then you bring the submarine cable as close as you can get to that. And then the cable is put into the open end of that conduit, pulled through to the beach

where there's a splice vault. And then that -- it's a little hard to do it without a chalkboard, but the point at which the HDD sleeve and the cable come together at the seafloor, that is then hand jetted so that you have five or six feet of sediment below it. So once it's in place, you then, basically, remove -- temporarily remove the sediment from below it so that that sinks into the sediment and is covered at that point.

MR. LEONARD SHORT: Thank you.

CHAIR HAROLD MITCHELL: All right. So we'll close questions for now, but we do have another round of questions and comments after public comment.

Public Comments

CHAIR HAROLD MITCHELL: So, at this time, I'm going to open up the microphone for public comments.

We'll start with any state or federal officials? Seeing none.

Any local officials who would like to speak?

MR. CHARLES MCLAUGHLIN: Good afternoon, Mr. Chairman. Charles McLaughlin,

Attorney for the Town of Barnstable. I appreciate the opportunity to comment and in -- since the subject of the very last condition has been raised, we had an exchange with counsel on that matter today, and we just wanted to clarify from the town's perspective that, obviously, as we look to utilize this dedicated fund that will be coming to us in the way of mitigation the opportunity to search out new sites and the like is very arduous for new wellhead sites, etcetera, and it can take as long as five years. So we don't know at this point where we're fairly -- a fair amount of publicity on the subject lately and we're looking very actively for sites. We don't know -- we have not identified any particular properties for acquisition. We just wanted to make it clear that there is no obligation of the town to dedicate these funds in any particular direction and we need that flexibility to find the best opportunity.

So unless I get hit by a bus or counsel moves on for Vineyard Wind that we just want the record to be very clear that this is a wide open discussion. And when presented with the

opportunity at the time that it arises, the town will certainly weigh it.

I would respectfully suggest in terms, and Mr. Chirigotis may want to comment from his experience on the Town Council, there's always a concern at the council level in our town about taking properties off the tax rolls, which would be accompanied by at least a diminished income for the town when we devote properties to conservation restrictions. And depending on what property it might be that's identified, the council always wants to weigh in on it. I would think that in terms of giving Vineyard Wind the most expeditious and wide-ranging opportunity for a dedication to find land that's appropriate. I think we're quite content with leaving that open not only to the Town of Barnstable but to other towns that might have pressing needs. This is a regional project.

So I don't want to speak for the town on that. The subject has not come up because, again, it's quite premature in terms of our analysis, but I do think it gives everyone the best chance to consider that. So I might make

that simply as an observation and leave it to you to vote accordingly.

The question -- let me step back for a moment, and as I said last month, the town's extremely grateful to the interaction that we've had from day one with the Vineyard Wind folks. We learned a lot of lessons from the prior failed project, and I think all of those lessons were employed in the negotiations that resulted in this Host Community Agreement. And I think the Host Community Agreement will act as a standard bearer going forward as more projects are proposed and as these projects inevitably come ashore both in the Commonwealth and outside.

And in terms of setting standards, I'll also make the observation that in conjunction with the last failed project, we spent a lot of time looking at the IEEE Standards for containment and, quite bluntly, it's woefully out of date. And so we're out on the cutting edge here, and my sense without knowing that industry as well as I know other matters, my sense is that what our consulting engineers and even today with Mr. Jack Arruda who's here are about to

accomplish is something that will be certainly a state standard if not a national standard for these types of projects.

These dielectric fluids are -- the selling point is with due respect to my friends at Vineyard Wind, it's like mineral oil. Well, not unless you're in love with cancer. The Massachusetts contingency plan that addresses allowable levels of various chemicals in our drinking wells, drinking water rather in the Commonwealth says that you can only allow, and it's a generic description, I think you may see as a result of, again, something that's getting a lot of publicity and is going to get more, a real thorough review by DEP of trying to create more definitive standards for different types of products. Right now, the generic version of this because it relates to, basically, all oil products it's 1 to 5 million standard. So if you have a 10-gallon spill of dielectric fluids, that translates into a pollution level if evenly distributed of 50-million gallons of water. And so because this site is directly upstream of not only the Barnstable wells but also the Yarmouth

wells and so forth, it's been a real concern to all of us, and Vineyard Wind has been very appreciative and respectful of that concern.

Fire Chief Burke at the Hyannis District said to us, "You know, the chance of something going wrong is very minimal, but God help us if it does, we lose Hyannis." So we've got to get this right, and I think the work that we have all done and about to complete with a subsequent written agreement on the question of containment will set certainly state maybe even national standards to be used for this type of work done.

Even today, there was a handshake on the subject of, well, what happens, as we had in Wellfleet just last year, an explosive situation on the ground with a transformer failure and you've got, of course, those product spraying all over the place. Today, at the suggestion of our engineers, we've reached at least a tentative oral understanding with Vineyard Wind that three sides are going to be contained by blast walls. The fourth side will have the cooling radiator which is part of the transformer to help in which

usually is the last thing to be destroyed in an explosion there to prevent material getting out. There's an extensive site control design and directive leading to containment on the site so if this gets out beyond the walls.

So we've given it a lot of thought and very happy to say, I think, with dealing with a difficult push/pull situation, benefit/detriment analysis that we're happy as we can be with what's coming forth.

You did ask a question and one lesson I asked this Commission to consider going forward and it's not directly related, actually one piece of good news added to this mix, is Eversource has their station a couple hundred feet away and it's going to be, obviously, the connecting point to the grid. Eversource has been aware of the town's concerns in all of our hearings and has done their risk analysis and recognizes what a tremendous risk it is to their bottom line if things go wrong at their substation. And so they have voluntarily agreed and we expect to sign the agreement probably tomorrow that Eversource is going to retroactively retrofit its substation

next door which is not currently to these standards -- to the standard that Vineyard Wind is adopting. So, again, it's a national model going forward.

I say that Cape-wide because I think the next place to have this discussion including in July and among the managers and among the Selectmen's Associations and like is an opportunity to discuss what this hazard is, what it can do to your water source if it, God help us, something goes wrong and an opportunity to work I think with Eversource as they consider what this risk is and how best to protect us all. So it's a great byproduct coming out of this project.

I think that's probably -- the town has been very supportive of this project understanding that we needed first to protect ourselves and we've had great response from them. I know the manager spent, as we all did, hours and hours and hours last fall working out this very detailed Host Community Agreement, and I think we can all be proud of and complementary to the Vineyard Wind for having the candor to

recognize these risks and address them up front.

So, we thank you, and we do recommend your support for the approval of this project. Thank you.

CHAIR HAROLD MITCHELL: Thank you. At this time, we've had three people sign the sign-in sheet, only one asked to speak, Marjorie Thearle.

MS. MARJORIE THEARLE: Yes. Can I just ask a question, two questions?

CHAIR HAROLD MITCHELL: If you want to come up to the podium, ma'am.

MS. MARJORIE THEARLE: Okay. Oh, I just wanted --

CHAIR HAROLD MITCHELL: Ma'am, I need you to come to the podium, please, and state your name.

MS. MARJORIE THEARLE: Marjorie Thearle, West Hyannis Port. I'm within about a tenth of a mile of this project, and I was wondering about communication if the landowners that are being affected by this have been notified because I know a lot of the people -- I'm a full-time resident, but a lot of the people

are -- this is their second homes on Craigville Beach Road, Strawberry Hill Road, and I was wondering if -- I don't know if it's Barnstable that does it or --

CHAIR HAROLD MITCHELL: I'm going to let Jon Idman answer your question for you.

MS. MARJORIE THEARLE: No, I just have one quick -- ask the engineer a question.

MR. JONATHAN IDMAN: In terms of legal notice for the hearings, yes. We received a certified abutters list from the applicant per our regulations, and we sent out like almost 800 abutters notification forms to everybody within 300 feet of the project. So that means in terms of land, everyone within 300 feet of that land-based route.

MS. MARJORIE THEARLE: Oh, that's good because I live in a community just a hair's breath away and a lot of the people don't read the Times or anything and they don't know about this coming at Covell's Beach. And a couple of the people I did talk to are worried about what that cables emit in the water coming into Covell's Beach, if there's any emissions --

emissions of any kind?

CHAIR HAROLD MITCHELL: Ma'am, can you speak into the microphone, please?

MS. MARJORIE THEARLE: Is there any kind of emissions coming out of the cables in the water coming into Covell's Beach? You know, I had a lady say, "Oh, I'm not going there anymore because there's going to be radiation," which is, to me, ignorance, but I just wanted to be able to go back and tell them.

CHAIR HAROLD MITCHELL: Okay. Any other questions, ma'am?

MS. MARJORIE THEARLE: No. Thanks.

CHAIR HAROLD MITCHELL: Thank you.

MR. THEODORE BARTON: Just a short comment on the notice also, a similar process was followed for the EFSB process where folks -- everybody along the route and abutters of the abutters were all notified by mail and there's been a host of other notification processes.

But to answer the question on cable emissions, the subject of EMF or electrical magnetic fields was something that in particular the EFSB looks at quick carefully. We did a

modeling study that looked in a conservative fashion at ground-level fields both underwater and on land. For a buried cable like this, there are no electric fields. Those are easily shielded by the conduits and the soil. There are very low levels of magnetic fields. The modeling that we did for the typical submarine installation, we looked at burial depths of a meter and two meters. At two meter burial depth, the sea floor magnetic field level directly above the cable was something in the vicinity of 30 or 40 milliGauss and that compares to a health protective standard that's been established by an international group that looks at this of 2,000, so a very, very small fraction of that standard. Similar levels above -- directly above the cable as it's buried under the street and specific to the beach, the levels are going to be lower still because the HDD will place the cable down at depths of 15 or 20 feet below the beach. So we think you can confidently tell your neighbors not to worry about that subject.

MS. MARJORIE THEARLE: Thank you. Thank you.

CHAIR HAROLD MITCHELL: Thank you.

MR. NATHANIEL MAYO: I would like to add just one quick thing about the outreach effort because it's among our highest priorities. We mentioned the open houses and forums that we've been having in Barnstable and other towns over the last year and half. In addition to the formal filings we do in terms of abutters which was stipulated by law, we did in some of those forums we worked mailed note cards, do mailings to people, households along the route. And then in later stages while also in addition to ads in the Cape Cod Times, the Barnstable Patriot, went into media a little bit too, and I think we actually did get a, from a broad demographic, response to us posting ads on Facebook, Google Ads, that kind of thing to go a little further to try to make sure we touch as many people as possible. In addition to that, several appearances before the Town Council in Barnstable to use that medium to get the word out.

CHAIR HAROLD MITCHELL: Thank you. Never want to stymie, is there anyone here that feels they must speak? I'll open the microphone

up for one last time. Going, going, gone.

All right. So at this time, Commissioners, any last statements, questions, comments you'd like to make? Yes, David.

MR. DAVID WEEDEN: I was wondering with all the talk about the dielectric fluids and such if there was going to be around the adjacent area where they're going to require the fluids if there's monitoring wells and if there will be required monitoring intervals to track? Worst-case scenario, I think it's always better to plan for the worse, hope for the best, and, you know, are there monitoring wells to determine if anything has gotten into the water?

MR. JACK ARRUDA: Jack Arruda with Vineyard Wind. Yes, the short answer is we have put, as we speak, they're actually installing those monitoring wells over the last couple of days. So they'll be three monitoring wells, one on the north, one on the southwest corner, and one in the southeast corner at the town's request and our own request. We'd like to have them so that we can do post -- pre, post, and if anything was to happen be able to identify the original

source.

MR. DAVID WEEDEN: Thank you.

CHAIR HAROLD MITCHELL: Yes, Fred.

MR. FRED CHIRIGOTIS: Thank you, Mr. Chairman. Briefly, I heard my name and it woke me right up. Just two issues; one is with regard to the last condition, I see it says 5.98 acre area for Open Space restriction, conservation restriction. It doesn't say a single parcel though and that's significant, I think, that it doesn't designate just one 5.9 acre parcel. That's important.

And the Town of Barnstable, I think, all over the Cape given the significant buildout that we have and the unavailability of space and the need for a residential space, I think the idea that we can divide that parcels up where needed, and I think what we really need to be protecting when we do conservation restrictions is our wellheads, you know, zone ones first and look from there.

And the other thing that we considered and at least that I've heard considered, as Attorney McLaughlin mentioned, is taking

properties off the tax rolls and putting conservation restrictions puts the burden on the existing householders and nobody likes to hear that they're going to be footing the burden and someone else -- and other properties are going to come off; so that's one issue.

My concern or at least a thought and it may not be appropriate for today, but the route of the cable which goes from primarily Strawberry Hill Road to Phinneys Lane is a very significantly dense residential area. And while the road's open, I would like to be able to hope that the town has the time to be able to encourage the burying of utilities, and I think it's also the main route or one of the main routes we're going to use for wastewater treatment and sewering, so I'd like to be able to see the pipes get in the ground while the road's open all at one time. Thank you.

CHAIR HAROLD MITCHELL: Thank you, Fred. Looking around the room, any -- Jon.

MR. JONATHAN IDMAN: Yeah, can I just make one quick comment about that? That's a really important issue, Fred, that's been

discussed under the Host Community Agreement. It's also the subject of a few different conditions to make best efforts with the town to coordinate infrastructure installation is in the conditions as one of the requirements. So I think that's responsive to the issue you raised.

CHAIR HAROLD MITCHELL: Thank you, John. Yes, Len.

MR. LEONARD SHORT: Tom, to address your concern about the mineral oil; in Orleans we have some permeable reactive barriers, PRBs, which have been installed. And my understanding is that the fluid that is used as mineral oil in the PRB, and we're told that there is no adverse effect and that the mineral oil can be contained reasonably well so.

MR. TOM WILSON: Thank you.

CHAIR HAROLD MITCHELL: Okay. At this time, what I would like to do is take a motion too close the public hearing on the Vineyard Wind project.

MR. JACK MCCORMACK, JR.: So moved.

CHAIR HAROLD MITCHELL: I have a motion.

MR. ROGER PUTNAM: Second.

CHAIR HAROLD MITCHELL: Second. All in favor?

COMMISSION MEMBERS: Aye.

CHAIR HAROLD MITCHELL: Any opposed? Any abstention?

MR. STEPHEN MEALY: Abstention, Mr. Chairman.

CHAIR HAROLD MITCHELL: Yes, sir.

(Public Hearing closed.)

So at this time, what I'm going to do is open back up the computer for us to vote. Thank you. And then on your buttons in front of you, you see a plus, that would be -- I'm going to read the motion now for you.

I move that the Cape Cod Commission adopt the draft written DRI decision as recommended by the hearing officer and grant DRI approval for the Vineyard Wind Connector project subject to the conditions set out in said decision. Can I have a motion?

MR. ROGER PUTNAM: So moved.

CHAIR HAROLD MITCHELL: I have a motion. Do I have a second?

MR. LEONARD SHORT: Second.

CHAIR HAROLD MITCHELL: Thank you. Voting on the green votes in favor; the yellow is an abstention, the negative red is a vote against. Please vote now.

MS. JESSICA WEILGUS: Mr. Chair, could we take this by roll call as well so that the stenographer can have the benefit of knowing what each individual vote is?

CHAIR HAROLD MITCHELL: So I will ask Gail to please take a roll call vote also. You've already voted on the machine; we'll leave that open. Once you voted, your light will stay one color and just make sure that's the vote you want to have. And, Gail, if you could do the roll call vote for me, please.

MS. GAIL HANLEY: Barnstable, Fred Chirigotis.

MR. FRED CHIRIGOTIS: Yes.

MS. GAIL HANLEY: Bourne, Stephen Mealy.

MR. STEPHEN MEALY: Abstain. Thank you.

MS. GAIL HANLEY: Brewster, Elizabeth

Taylor.

MS. LIZ TAYLOR: Yes.

MS. GAIL HANLEY: Chatham, Tom Wilson.

MR. TOM WILSON: Yes.

MS. GAIL HANLEY: Falmouth, Charles McCaffrey.

MR. CHARLES MCCAFFREY: Yes.

MS. GAIL HANLEY: Harwich, Jacqueline Etsten.

MS. JACQUELINE ETSTEN: Yes.

MS. GAIL HANLEY: Mashpee, Ernest Virgilio.

MR. ERNIE VIRGILIO: Yes.

MS. GAIL HANLEY: Orleans, Len Short.

MR. LEONARD SHORT: Yes.

MS. GAIL HANLEY: Provincetown, Cheryl Andrews.

DR. CHERYL ANDREWS: Yes.

MS. GAIL HANLEY: Sandwich, Harold Mitchell.

CHAIR HAROLD MITCHELL: Yes.

MS. GAIL HANLEY: Truro, Kevin Grunwald.

MR. KEVIN GRUNWALD: Yes.

MS. GAIL HANLEY: Wellfleet, Roger Putnam.

MR. ROGER PUTNAM: Yes.

MS. GAIL HANLEY: Yarmouth, John McCormack, Jr.

MR. JACK MCCORMACK, JR.: Yes.

MS. GAIL HANLEY: Minority Representative, John Harris.

MR. JOHN HARRIS: Yes.

MS. GAIL HANLEY: Native American Representative, David Weeden.

MR. DAVID WEEDEN: Yes.

MS. GAIL HANLEY: Mr. Chairman, we have 14 votes in favor and one abstention.

CHAIR HAROLD MITCHELL: I'm happy to say that's what shown on the computer, so the DRI decision passes.

(DRI Decision passed.)

Other Business

CHAIR HAROLD MITCHELL: Thank you. At this time seeing the late hour, we do have a little new business I'd like to handle and then we'll take a motion to adjourn.

Due to a recent opening, we have an

opening now for an alternate on the committee on Regulation and Planning. They meet usually before this meeting on Thursdays. If you'd like to be considered for that, please meet me or have a discussion with me, send me an email. I have had one person express an interest, so it will be an alternate position. I'm happy to say that Jackie has stepped up as an alternate into a voting position on that board. So I do have an opening for that.

All right? Then any other new business that anyone has? Seeing none. I'm not surprised. I'll take a motion to adjourn.

MR. ROGER PUTNAM: So moved.

MR. JACK MCCORMACK, JR.: Second.

CHAIR HAROLD MITCHELL: I have a motion and a second. All in favor?

THE COMMISSION MEMBERS: Aye.

CHAIR HAROLD MITCHELL: Any opposed? Thank you and we'll see you next time.

(Whereupon, the Cape Cod Commission meeting moved to adjourn at 5:17 p.m.)

C E R T I F I C A T E

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF BARNSTABLE, SS

I, Linda L. Wesson, a Certified Verbatim Reporter and Notary Public in and for the Commonwealth of Massachusetts, do hereby certify that the foregoing volume is a true and accurate transcript, prepared to the best of my ability, of the Cape Cod Commission Hearing, which was held on Thursday, May 2, 2019, at the East Wing Conference Room, Barnstable County Complex, 3195 Main Street, Barnstable, Massachusetts, 02630.

5/13/19
Date

Linda L. Wesson ORIGINAL
Linda L. Wesson, CVR
Notary Public
My Commission Expires: June 3, 2022

J