#### PUBLIC PRESENTATION ENVIRONMENTAL IMPACT ASSESSMENT NEGRIL BREAKWATER JULY 29, 2014 NEGRIL COMMUNITY CENTRE COMMENCING AT 3:30PM

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MS. RICKETTS: Good afternoon again everyone. We are about to start. I am just going to ask that all persons be seated please.

Custos of Westmoreland the Very Rev. Canon The Hon. Hartley Perrin; Members of the Panel Stakeholders; Foreigners; Ladies and Gentlemen; good afternoon. Once again welcome to this our public presentation of the Environment Impact Assessment for the Negril Breakwater Project.

Once again I am going to take this opportunity to apologize for our late start.

Let me introduce myself again. My name is Janel Ricketts and I am the Community Relations Officer for the National Works Agency, Western Region. At this point I going to invite Miss Leanne Roper a member of that audience to start us off with prayer.

MS ROPER: Good afternoon everyone.

AUDIENCE: Good afternoon.

MS ROPER: Let us pray.

(Prayers said)

MS. RICKETTS: Thank you Leanne.

The proceedings this afternoon will be chaired by the Custos the Very Rev. Cannon Hartley Perrin. You will notice with us some persons at the head table. At this point I will introduce them. We have Mr Carlton Campbell from C L Environmental. We also have Mr Christopher Burgess who is seated right beside him from CEAC Solutions Limited, and we also have Miss Jessica Stewart from CEAC Solutions.

At this time I am going to introduce our Moderator, Custos Rotulorum, The Very Rev. Canon The Hon. Hartley Perrin, Custos of Westmorland, the Anglican Dean and Past President of Westmorland Lay Magistrate's the Association has an outstanding track record for success in the parish of Westmorland spanning some thirty years. He is a true leader who believes in the power of discourse in mediating problems.

Father Perrin, as he is known by many, has impacted countless lives in the parish of Westmoreland, especially in his community of Petersfield. He is a true son of Westmoreland whose life is marked by legendary service to his fellowman.

At this point I am going to turn you over to our Moderator, the Custos of Westmoreland. Thank you.

#### APPLAUSE

- MODERATOR: Thank you very much Miss Rickets for those kind words of introduction. Ladies and Gentlemen; distinguished Lady and Gentlemen on the platform; Distinguished Ladies and Gentlemen in the audience; good afternoon.
- AUDIENCE: Afternoon.
- MODERATOR: You don't sound so enthusiastic about the afternoon. I am so thrilled about the afternoon. Good afternoon.

AUDIENCE: Good afternoon.

MODERATOR: That sounds better.

We are here this afternoon primarily for one purpose, to show again our love for our country. And we are here for the advancement and the welfare of all of us. Decisions that we will make this evening, discussions that we will have, will all be to the benefit of this place that we love so much, Jamaica. We may have different views and different opinions, and that is what makes life dynamic and interesting, and we are this evening, we feel very free to express our opinions our suggestions our ideas, whatever they may be on this most important subject that we are called upon to discuss this evening. And so I am very excited to be here and look forward to seeing and hearing the presentations that will be made, as well as your responses to such presentations as they are made.

The fact is that for those who have this programme you will notice that there 5 which is Item allows an for questions - although it says **Question** and Answer, I would ask you to look at that and put and 's' because it will allow for questions and answers. So it's a question and answers segment but we will have the plural. We will have as many questions as we can facilitate and as many answer as there are. So we are going to relax, we are

going to get ourselves very comfortable as we enjoy the company of each other and we look holistically at the development of this area of Westmoreland, Negril for today as well as for tomorrow.

We have representatives from the National Works Agency and I would like them to wave, National Works Agency, representatives from National Works Agency please wave, indicate.

(Representatives indicate)

Yes we have representatives from NEPA, (National Environment and Planning Agency). Would you wave please, NEPA.

(NEPA Representatives wave)

And then we have participants from the Negril community. Could you waive let me see.

(Community Reps wave)

Alright, so everybody is on board. We appreciate his coming and we look forward to your participation.

We are going to have a presentation now from NEPA, it is going to be a statement and I invite the appropriate person, Mr. Ainsley Henry to come forward now and make the presentation. Mr. Henry sir. Please let him feel welcome.

#### APPLAUSE

MR HENRY: Thank you very much. I am deputizing. Good afternoon ladies and gentlemen and all stakeholders.

This is a brief statement from NEPA as is customary at public consultations, to provide information on the process that assessments process.

On the 25<sup>th</sup> of January, 2013, NEPA received a beach licence application for the proposed construction and maintenance of two breakwaters approximately 1.5 kilometers off the coast of Long Bay, Negril by the National Works Agency.

reviewing On the information presented in support of the conducting the environment and site inspection, the Agency determined that an environmental impact assessment was required for this project. Consequently, the applicant was advised and the terms of reference for the EIA was prepared by the NWA and submitted to the proponents.

The EIA report was submitted to the Agency on the 29th of April, 2014. The report was widely circulated for review and comments. The circulation lists included the Hanover and Westmoreland Parish Councils, the Negril Green Island Area Local Planning Authority; the Negril Coral Reef Preservation Society, the Negril Environmental Protection Trust; the University of the West Indies, the University of Technology and the of Environmental Jamaica Institute Professionals.

This public presentation is being

undertaken by the applicant in accordance with the terms outlined in letter dated 25th June, 2014.

The public consultation process is guided by specific terms and conditions and a team from NEPA is present to ensure that these are met.

You will be pleased to note that the Agency views this Public Consultation as integral to the whole process. The issues raised by you the stakeholders will be treated as material consideration and the Agency will, where appropriate, require that the applicant provides clarification and/or additional information.

This process is important and I would like to just pause to recognize that we have members of the Natural Resources Conservation Authority who are also here joining in this consultation.

The Agency is in attendance at this meeting. We are only here to observe the processes and to record the issues raised. Consequently, and subsequent to this, statements, The NRCA will not speak or answer questions and this is the sole responsibility of the applicant and the consulting team at this forum.

Please be reminded that there has been no decision on the application at this time.

The process with respect to this public presentation is as follows:

A copy of the verbatim minutes from this presentation to be submitted to the Agency by the applicant within seven days.

The public is given the opportunity to provide written

comments to the Agency within thirty days of the date of this presentation today.

- The issues raised along with the responses provided by the applicant are incorporated in the respective submissions to the various committees and authorities and will facilitate deliberations of the technical persons on the project.
- A recommendation will be made to the NRCA which is the body with the sole responsibility for making the final decision.
- The public presentation and public consultation is extremely important in the further processes of the application and the decision making process. The public consultation is to provide the public an opportunity or an additional

opportunity to air concerns, comments, opinions, and views and will also provide adequate opportunity to address them.

Your comments, as we said earlier, are important and comments may be sent in writing to the Agency at 10 Caledonia Avenue, Kingston 5 via e-mail addressed to applications@nepa.gov.jm.

Of course even before that, the documentation for the EIA are presently available on our website. Thank you very much.

(A P P L A U S E).

MODERATOR: Thank you very much Mr. Henry for that presentation from NEPA I think it has been comprehensive and seeks to outline exactly the role and function of NEPA in this whole developmental process. Thank you very much, Mr. Henry. If you have questions for him hold them until such time when the questions time segment comes.

Now we are going to have a presentation Design Process by Miss Jessica Stewart. Please make her feel appreciated.

(A P P L A U S E).

MISS MCCAULAY: Mr. Chairman, I have a bit of a point of order.

MODERATOR: Point of order taken.

MISS MCCAULAY: Which is that the audience really has no idea and they should really have some idea of the time that each of these presentations would take to make sure you have enough time for the Q and A.

My name is Dianna McCaulay and I am a veteran in these things and we really should start out with some idea that presentation one is going to be whether it is fifteen minutes, twenty minutes and speak for the requirement. I am just asking you as chairman to really determine how much time they speak.

MODERATOR: Okay, fair, fair. I can take that on board because we don't want to be here all night either. Everything has to be in context. Sometimes presentations are so lengthy and the time for questions and answers are so short, that yes, it is a timely reminder.

- I make an appeal here because I am told that the presentation, well the first one, is going to be about twenty minutes long and the other one will be about that time. Which means that you can take the numbers that there are and multiply by twenty minutes and it gives you a fair idea how long before we get to where we want to go.
- MISS MCCAULAY: We have four of them. One and two or all of them are going to talk for twenty minutes?
- MODERATOR: About twenty minutes I am advised. Let's see how twenty minutes are because where I am from twenty minutes could be ten or fifteen minutes so let's see what happens in the twenty minutes. All right. Let

the first presentation come forward and let us see how on the twenty minutes pans out. Please make her welcome. Thank you.

(APPLAUSE)

MISS STEWART: Thank you Custos. Good afternoon everyone. I will be going through The Design Process associated with the Breakwater Project. This is the outline that I will be following. I will be reviewing some interesting studies that we used, that we incorporated in our planning process; I'll be going through the data that we collected; our assessment of climate change and just some of the models

that we ran to actually put this Breakwater together. So this is the project summary.

The PIOJ, on behalf of the Government of Jamaica, has implemented the "Enhancing the Resilience of the Agriculture Sector and Coastal Areas to Protect Livelihoods and Improve Food Security Project"

Under this programme the "Construction of Break Water Structures Offshore Negril" sub-project was formulated to support climate resilient coastal management in Negril. Project Life up to 2050 (37 years) and 1 in 100 year return period event

As we know Jamaica is vulnerable to climate related

hazards and we experience frequent hurricanes, storm surge and sea level rise and the PIOJ in response to that, behalf of the Government on of implemented Jamaica has the enhancing resilience the of the agricultural sector and coastal areas to protect livelihoods and included food security projects which is a part of the adaptation project and under this programme construction the of breakwater structures off shore Negril was formulated.

Now these are the number of the studies that we actually used, some are engineering design reports coming up with suggestions to address the erosion along the Negril coastline, some were studies on climate change effect and things that are occurring; some were done by NEPA and some were done by Smith Warner Engineering Consultant and this is just to give you a feel of the work that we done in creating a grasp of the problem.

Now this is a summary of some of the main points that we have seen from our studies.

One is that Shoreline erosion rate averaged between 1 metre per year between 1968 and 2007.

This was obtained primarily from the Smith Warner Report in 2007.

We also learnt from our research that the Central and Northern sections of the beach are most vulnerable to shoreline erosion and this was completed from a study by NEPA in 2012.

And we also learnt that the beach requires a minimum of 3 to 4 years to recover to its pre-storm position following a Category 4 event. So if you had a category four event it would take three to four years for the beach to get back to what it was before the hurricane occurred.

As I said before the central and northern sections were identified as the most vulnerable to natural hazards and the coral reef that currently exists in the central part of Long Bay has become damaged over time due to the passing of a lot of hurricanes and so it doesn't offer as much protection as it used to, particularly to the central section of Long Bay.

So several options for shoreline stabilization were considered.

We looked at beach nourishment; we looked at providing breakwaters in the near shore of the bay; We looked at beach nourishment breakwaters; we and looked at extending the reef; so just having the breakwaters alone just surrounding the reef itself; and we looked at an integrated solution which was а combination of many of these options.

And the integrated solution was the one that received the most support when we went to stakeholders initially in 2012.

Now this initial stakeholder consultation involved many persons who are stakeholders within

the Negril area including Jamaica Hotel and Tourist Association; the Jamaica Tourist Board; we had some hotels themselves like Couples Resort, Breezes Grand Resort and Spa and they supported the view that central and other sections of Long Bay were to They were the areas be focused on. susceptible that were more to shoreline damage. They is also an of the integrated account solution which is a combination of breakwaters and beach nourishment.

So this is the initial integrated solution that was presented during that initial stakeholder consultation. It was that we would have nine breakwaters; some offshore, about 1.5 kilometers off the shoreline and some nearshore and then you would also have between thirty meters of beach nourishment for Long Bay and thirty meters of beach nourishment for Bloody Bay and it was at a cost in 2012 of between 19.4 to \$US25.5 million. So if we convert that to 2014 dollars that would be about between 21 to 28 million \$US.

We modified this integrated solution in 2013 because of budget constraint and to really just focus on the most critical areas of the shoreline and we decided to implement two breakwater solutions; reef extension offshore and this will have the breakwaters being; one being 400m long and the other 590m long; 1.3km offshore; in 3 to 4m depth of water.

- And it will provide a timely solution in protecting 2,000 to 2,500m of the Long Bay shoreline and it will cost USD5.48M which now in 2014 dollars would be about USD5.6M.
- So having done that and modified our approach, we started to collect data to finalize the design for the option, the solution. So we had a Bathymetric Survey completed where we discovered that the shallow coastal depth, the shallow area of the shoreline in Long Bay, the depth is between 4-12 metres and it extends up to about 2km offshore.
- We also learned that there is a 500m long pavement located 1 - 2 km offshore and that a I believe that everybody is very familiar with in the Negril area.

We collected some information on the currents in the area and the sand, the type of sand that is actually present in Long Bay. So we used Moored ADCP currents to collect current data over a one-month period offshore Negril. We moved it from one location to another so it stayed in each location for two weeks and collected current data there.

We also used Drogue tracking. Drogues are also used to also measure current data in the area. We collected samples at six locations. I am not sure if it is very clear to you but there are six locations highlighted along the Long Bay shoreline.

We also went and interviewed persons who are living and diving in the area. We interviewed 55 persons living and working in the area

and we used that information to calibrate the models because we didn't want the models to tell us something and the when we talked to people they tell us that nothing like that happened following We а certain event. collected that information and we found out that Hurricanes Gilbert and Ivan caused the most damage to the Long Bay shoreline and that after the hurricanes residence/employees manually removed or reshaped the sand that the beach was eroded in the area so that affects the time in which the beach will take to recover because they are speeding up the process themselves.

We also did Deep Water Wave Climate Analysis. So what
we did was we took a point offshore Negril, about 4.5km offshore Negril and we checked our hurricane database, an international hurricane database to find out which hurricanes came through the area and damaged the shoreline and then we found out that nine category 5 and 21 category 4 events have affected this knoll or this area of Negril over the period from the 1800's to 2013.

We also found out that most severe hurricanes originate from the west, and we tracked the hundred year return period event so we were able to identify what would the wave height be for a period that would affect the shoreline and that is what we are going to use in our actual models.

So this is just, this image is just showing you some of the hurricanes that have affected the Negril coastline or in the area, not all of them directly affect Negril but just some that are in the area.

This table is showing you the storm surge, how high did the water come up to on the shoreline depending on the direction following the storm.

And then this image is showing you that after we looked at all the hurricanes that have affected the area we see that there is a trend of higher or stronger more damaging hurricanes coming and affecting the shoreline over time. As you can see, more category 4 and 5 hurricanes are occurring now than before so that we know that the shoreline is really susceptible to damage in the future. We looked at the transformation model and identified that if we put the breakwaters in place, just what kind of problem effect can we notice and we found that, the circle on the right, you will see that there was more protection to the northern and central sections of the coastline when we put the breakwaters in place.

We also looked at long term shoreline change so we have data going back to 1968. We looked at aerial imagery and satellite imagery and we want to know how has the shoreline moved over time because is it really true that the shoreline is changing? Is it really true that the shoreline is being eroded? And we found that there is that occurring; that the most critical sections are indeed the northern and central sections.

If you look at the chart the area covers up to Rondel and Sandals, Negril, you see that they are getting the most erosion in our map when we look at the aerial imagery. And we also noticed that about 63, 73% of the erosion that actually occurs is because of sea level rise. So we know that climate change is playing a great part in the damage that the shoreline is experiencing.

We looked at cross-shore sediment transport to see, okay, when the waves are coming to the shoreline and attacking it perpendicular to the shoreline what kind of damage will occur and can breakwaters really stop that?

If we go back we see that the main damage is erosion that is actually occurring, when we put the breakwater in place, the model breakwater in place, we noticed that erosion that previously was there was diminished. So we noticed, the results reveal that the breakwaters will reduce and in some instances reverse shoreline erosion.

We then looked at along shore sediment transport model. We calibrated it based on storm events that persons remembered so we used the data that was actually collected on the ground from persons living and residing in the area.

We had two options for the breakwaters and we noticed that when we used the option of having the southern breakwater being about 417m long and the northern being 517m long they get more protection of the vulnerable areas of the coastline.

I am showing you some of the model results that we got. This is before any breakwaters are in place with seven years of actual wave data being used. We found that there is erosion in the specific area of the ocean along the shoreline, but when we put the breakwaters in - you can see the two lines there - when we put the designed breakwaters in place you see that those same areas that had erosion, there is actually accretion of beach growth occurring in those areas.

We then looked at the current movement in the area

because we want to know that when the breakwaters are in, you are not creating stagnant water and you are not going to affect the marine life and we found that when we put the breakwaters in place there was a minor decrease in the current speed in the area of up to 22%. It varies between 4 and 22%.

We looked at beach safety. Will the breakwaters break currents and cause it to be unsafe for persons to swim because Negril is a tourist area? We found that, speaking for island-wide, it's about 55 drownings per year; in Negril there are about 3 or so and in Long Bay in particular, you usually get about one drowning per year, and when we apply the beach safety criteria, international standard, we found that when we put the breakwaters in place under current conditions the beach is actually safer because the current actually decreased in those conditions.

We did a flushing analysis. We wanted to see all right, if the wave is coming and leaves as it usually does because we wanted to make sure that the water flow is not hampered by the breakwaters. We found that the flushing time in the Bay increases between 4 and 13% but the criteria is that it not be more than seven days, even with increase but it does not increase past seven days, at most four days that it will take to flush the bay.

We looked at Sediment Dispersion Modeling. When we put the boulders in the water, if there is any sediment on it, how will the current move in the Bay? And we found that the boulders will not - the plume that would be generated by the boulders will not reach the shoreline. the design Remember had the breakwaters 1.5km offshore so even with the natural current and changes in the current because of the breakwaters, the plume will not reach shoreline so it will not affect the anybody who is swimming in that area. We then did a structural design of the breakwater and we had installed a cross-section that we built a scale model. Also we went to the University of Delaware. We built a scale model of this actual breakwater to see how would it work and what kind of material to make sure, fine tune the design to make sure we didn't put something in there that wasn't going to be effective, and when we did that we realized that we needed to make some changes to the type of stone that we will be putting in the cross-section and so the final selection was for core stone, heavy armour, primary and heavy armour between 5 and 10 tons actually in the cross -section for the breakwaters.

So to summarize, this is a description of the project. There will be two breakwaters located between 1.5 and 1.6km offshore. The northern breakwater will be 516m long; the southern breakwater 422m long and they will be set at, at least the crest will be at sea level and so it is not possible for somebody who is actually at the shoreline to actually see the breakwaters in the water. You would have to be about 150m from the breakwater to actually it.

It is not a relatively popular divers and surfers site, it is about 1.0km away from those sights so we don't see it affecting the regular livelihood of persons in the area.

The project has three phases which will last a total of 30 months. The design plans are to be completed in about 7 months. We are finalizing it now with this consultation. Construction is to be completed in 11 months and monitoring will be a year.

So it will take another twelve months.

It will provide protection for 2.5km of shoreline and accretion will be in some areas up 42 metres wide.

They will need 53,280 cubic metres of armour stone to complete the project and this is just telling you the different sizes that we will require.

In terms of the construction methodology we will have to prepare the, extend the site for construction so we are going to create a stockpile; we are going to drive piles in the area and extend the land in the area of the South Negril River. We are going to dredge the South Negril River so that you can have space to stockpile - dredge the river, take up sand, put the sand in the area of the South Negril River and then we can actually expand the land that is actually there.

This is just showing you how the construction will actually look like and you have the machinery to take up the sand and place it in that area to extend the area. We are then going to use, place the boulders; I am the term "turbidity going to use barriers" to reduce the amount of The sediment that comes sediment. off the boulders, we don't want it to reach the shoreline so we are going to trap the sediment using a turbidity barrier and we are going to place geotextiles on the sea floor to make

sure it is structurally stable.

This is showing you, this is simulating how the boulders will be placed in the area for the development of the breakwater.

In terms of quality control measures we are going to ensure that, we will be recommending that the contractors conduct hydrographic surveys and weight sensor measurements to make sure that the right stones are going out there, that we have minimal damage to the marine environment when we put the breakwater in a place.

We also have environmental specifications and NWA and NEPA are to ensure these are actually enforced and observed.

I have questions here but we'll wait for the actual question and answer session for you to ask your questions.

(A P P L A U S E)

MODERATOR: Thank you very much, Jessica. You will agree that she went below the twenty-minutes mark if you were timing her.

The environmental Impact Assessment Findings and Measures will be presented now by Mr. Carlton Campbell and I invite him to come forward. Speeding up this process, not talking, just allowing him to speak. So, Mr. Campbell, please come.

## (APPLAUSE)

MR CAMPBELL: Members of the Head Table, Specially Invited Guests, General Public; good afternoon.

During the presentation on the EIA Findings I will try and do it in the twenty minutes. I might be going a little bit fast so you have to see with me.

This Project as Jessica said falls under the general Adaptation Fund Programme. We know Negril has been experiencing over a forty year erosion period. An erosion is anywhere between 0.5-1m per year along the shoreline. Of course there are areas that have a higher erosion and as we were saying it can be anywhere between 20 - 55m of beach per year.

As you have heard, the proposal is to have the two breakwaters offshore, 1.5 kilometres offshore and it is a way of mitigating the erosion forces along the shoreline.

This is just to give you an idea. These are the breakwaters the central reef, and you have some idea of some the properties along the Long Bay area.

That yellow line here, we will talk a little bit about it, but it's more for where we expect the barge that is carrying out the boulders to the breakwater areas to travel. I am just giving you the satellite imagery so you can get a better feel for it.

The stockpile area as Jessica had mentioned is down town. This is the road to West End, this is the road behind Burger King and the area that we are talking about is here - (indicating on map) - that we want to create the stockpile.

This is just a schematic which gives you an idea. One of the dredging as she said is at the mouth of the river, that was the thought, and to dredge a small channel here to allow the fishers to get in and out because presently at times they have difficulty getting in and out of the river because of silt in it.

This material is dredged here and some here to create the stockpile area. These arrows are what we expect in terms of the truck traffic in terms of delivering boulders for the project.

Coming down from the roundabout, right here we will have flagmen; come on the site; deposit the boulders and they travel back, all the way back up behind Burger King, up to here where they enter the main road at the roundabout and NWA to make the necessary adjustments to deal with that traffic flow situation.

height. We expect with the Reduction in Wave breakwaters, there is going to be a reduction in the wave height; we expect a 22% reduction on average in current and the flushing time will increase, meaning that the time for water to leave the the Bay will slightly. That we don't increase expect to be a problem because, well this here is the time period.

First these were the areas that we had checked for the currents. Unfortunately you can't see below to see the different reductions and points.

We looked at water quality, which is an important thing.

We did 18 stations three times just to get an idea of what the water quality was around. We took water samples also in the water, using whole and collected samples; sent back to the lab for tests. Different parameters were checked. These are the stations all spread out over the Bay so that we could get a good coverage of what the water quality is like.

Observation for water quality; Temp., salinity, SpC, pH and TDS showed little variation, meaning from point to point there is not much change between stations that we just showed you.

South Negril River which everybody knows seems to be in

an area that is carrying in nutrients, fresh water nutrients into the Bay and, level of course, nutrient as we generally know is higher than the standard that NEPA has set, the national standard, and the areas that are the main culprits, the South Negril River area, the northern end of the Bay and somewhere in the middle.

Just a point to note, even though we have these areas and I know a lot of people are saying that the river is up there, there are other things such as upwellings and such that also carry nutrients into the Bay that also contribute, and also run offs from properties and things like that. In terms of coliform levels and in terms of the likelihood of you having any problems from bacteria from sewage, they are all within the standard.

We looked at Phytoplankton, which is another important thing, a check and balance; the water quality we did was looking at the physical, but the phytoplankton also is another indicator and what it did basically, it confirmed that the area that we are talking about in the Bay is mildly mesotrophic, meaning that the nutrients are moderate, not extreme as some persons would think and it's not pristine as others would also think. There is some evidence that nutrients are in there.

We looked at Benthic Community, that is what we call sea bottom, the bottom of the sea. Giving an idea of what the breakwater area like. It's located would be on pavements and dominated by algae, as you can see a lot of algae. We had different coral sizes in the area and the are very low, which numbers is affected from over fishing. A point to note, apart from that, the reef has damaged been Jessica said, as because of hurricanes but also fishing practices. I understand that sometimes people used to dynamite out there and stuff so it has damaged the reef.

We have different methods which we used to do the

survey. I won't bother to bore you with this, but generally we did three transects; these are lines that we drew across the areas that we looked at. Three transects were done in the northern breakwater location, two in southern; three along the coral reef between the two breakwaters and one each in each of the major dive sites that we know, Shark Reef and Throne Room.

This map only gives you an idea of the points that were related to these transects.

Just for information, Pavement: Flat, with low relief, made of solid carbonate rock and little or no fine-scale rugosity. It's covered with a thin veneer of sand, also you have some algae, hard coral, gorgonians or other sessile organisms. Negril's pavement is typical so most of the species are encrusted. As we say we have no idea of the estimate of the size classes.

This gives you an idea of what one of the photo transect shots look like. This is the pavement, this is a colony and you can see most of that is covered by algae or it appears that way but when look closer you sometimes find some very small coral located, encrusted in in that area.

What the research has shown, the area has less than 1%

hard coral. We did a manual count just to get an idea, not just doing the programme.

The forereef as we are saying has low relief, not much elevation, it is generally flat. Shark Reef and Throne Room both have more structure and coral diversity. Although it is a dive site it also has some algae there but not as much as in the breakwater area. Of course as I said both sites are deeper than where the breakwater is.

Conditions for relocation not ideal. Management of the area and fishery will offer greater benefits to the benthic community. These are some pictures to give you an idea of some of the coral community - Shark Reef and Throne Room.

The Reef crest/forecrest, slightly more diverse than the breakwater area. We have endangered A.Palmata there. It's bordered by dense sea grass beds and it has slightly more structure than the breakwater area, hence more diversity. It too is also dominated by algae.

Reef Crest/Forereef; those are some pictures.

We looked at the Lagoon; typical of the shallow crest reefs that's along the North Coast, not only Negril. Dominated as I said by algae and turfs; a patch reef and there are some large colonies outside of it.

In the lagoon you have d seagrass beds dominated by two main species, Thalassia and Syringodium and turf.

Some pictures to give an idea of what it looks like in terms of the sea grass beds.

Looking at the comparison of the reef community; this is the north breakwater; south breakwater. The thing that stands out immediately is the algae, the amount of algae in the area. You can see both north and south has higher algae than fore reef and dive sites.

We also looked at the groyne which is along the South

Negril River. If you look at the north groyne, it's composed mainly of algae too. There are some sponges and hard corals attached to the groyne. There are also invertebrates; urchins, bivalves and lobsters and there you find relatively large schools of fish mostly Goat fish and juvenile Mahogany Snapper. Also there was a numerous amount of lionfish.

The groyne acts as a fish aggregating device; you can see you have a lot of fish in that area, not seen when you are snorkeling or on glass bottom boats.

Relatively little structure in the reef in Negril, there is not much structure for it to support the organism growth, and we anticipate that with the breakwaters it will also act as a fish aggregating device as we have shown here. If managed this site can also be used in the future as an alternative dive site and we expect organisms to come in and occupy it.

We also looked at fish using the AGRRA protocol. We did surveys along the transect lines. The numbers and sizes were recorded. The general presence of fish pots, nets, spear fishers, as also invasive and rare species.

In the breakwaters there were ten species of fish observed. The dominant fish in the north was the French Grunt of the size 11-20cm; in the South was the Bar Jack, that was dominant, also small fishes 6-10cm. Fish densities were generally low in those areas except for French Grunt and Bar Jacks.

Herbivorous fish is important in terms of removal of algae from the reef and structures. In the north breakwater we only found five species; in the south we only found about four and if you notice the parrot fish was the most abundant, but the size - 0-5cm, which means a lot of the adults are being taken away.

In the Forereef, the same general thing, the small parrot fish. We have a problem when it comes to parrotfish, preserving parrotfish.

In the Forereef there are some lion fish that were observed, in low numbers though. Moderate species diversity - 17 species were found in the Forereef which is much more than what is saw in the breakwater area.

At the dive sites which showed the highest density and diversity, Parrot Fish, Damsel Fish and *Chromis Spp.* Dominated. They were small but a little bit bigger than what is found in the reef areas - 11 to 20cm and of course they had more herbivorous fish at the dive site so that will help in containing the algae growth in those areas. We also did a social survey. We looked at a 4km area and we did surveys in there. The SIA covered two parishes, Hanover and Westmoreland and they encompass Orange Bay, Negril Sheffield, Whitehall and Westland which we know as "West End".

From the STATIN data we know that in 2001 you had about 3,700 persons in that area and in 2011 it increased to about 4,500. Based on that growth rate we expect that in the next twenty-five years that population will grow somewhere between 7,900 persons.

We looked at tourism. Negril accounts for 20.9% of the

stopovers in 2012. You have a lot of hotels here so I am preaching to the converted. It is the third most visited resort area in the island.

- It has about 5,350 rooms which represents about a quarter of the hotel rooms on the island. The occupancy rate was about 61.3% in 2012 which showed a marginal increase from 2011.
- And from the tourism market they generate about 9,300 direct jobs, which accounts for 26%, 27% of employment in this sector and from those direct jobs we expect induced and indirect jobs of about 19,000.

The Social Survey, we used two techniques. We used questionnaires, and that gives you an

idea; we did 355 questionnaires which gives you an idea of the breakdown and we also looked at focus groups; we did four focus groups.

To present some of the results from the survey: For the community, approximately 66% of the persons stated that they had not noticed any environmental change in their community. Others observed other changes; temperatures, burning, beach erosion, and the list goes on.

When we did specific to Long Bay the problems that they encountered were; odour, garbage, flooding, beach erosion, burning of logs, seaweed on the beach and you can see blockage of the river by sand.
If you look, 89.7% of the persons interviewed weren't plans of the to construct aware 82% didn't have any breakwaters. concern regarding the project when we outlined to them what was the project and those that had concerns had a variety of concerns including; impact on recreational activities; water sports the duration of and the persons construction phase. 94 or 95 percent of the residents that were interviewed believe that breakwaters are needed in the Long Bay area.

When asked about the construction's possible impact on business, the majority stated that they believe that it would have no effect; 72% expressed that the construction would not affect their income.

We looked at the water sports operators, 70% indicated that they have noticed changes in the water or their environment in which they work. Responses that were given, the most significant was beach erosion was the one that was most stated.

55% observed the changes had effects on their business so because the change had an impact on their business, but most of them, 59% never lost any customers due to the problem. 68% of these watersports persons stated that they had not lost customers and 68% believe that the breakwaters would alleviate some of the problems being experienced in erosion in the Bay area.

- 47% had other opinions on how the Bay could be protected. This is from the building an artificial reefing, implementing mooring restrictions in the Bay - you have the list there.
- We looked at fishers. 88% were aware of the environmental problems. When asked any changes they observed in the last ten years, they included river pollution mainly from sewage discharged from the treatment plant; blockage of the river from slime; beach erosion; the unhealthy appearance of the reef and

reduction in fish numbers.

We also surveyed tourists just to have a feel for what they 80% think. of who we had interviewed visited Long Bay previously. The main activities sunbathing, restaurants, jogging/walking, swimming and glass tours. 89% said bottom boat the quality environment plays an important role in where they choose to do their tourist destination. When asked rate the environmental to quality of Lang Bay beach, 54% rated it as "good".

28 as "excellent".

11 as "satisfactory".

3.8% as "fair"; and.

1.9% as "poor".

Problems they described: Beach erosion, garbage, noise pollution from jet skis; visually unpleasant beach vegetation; Presence of oil in the water and beach and thus the reef deterioration.

75% were of the opinion that the construction of the breakwaters will assist in protecting of the beach from erosion. About 23% said there were other means that could have been used; 56% said they would be willing to pay an additional amount to use Long Bay Beach in there were conservation efforts there.

Retailers and other services along the Long Bay Beach: 71% noticed changes in the water or environment. Most significant; Beach erosion, hotel development on the beach and smaller fish populations.

We also did retail and other persons along the Long Bay Beach just to get a feedback from them. Most of them believed that the breakwaters were needed in the Long Bay Beach area; 85% believed that the construction would not cause them to relocate;

70% believed that the breakwater would not affect their core business; but there is 50% figure that believed that it would impact their livelihood.

Focus Groups. We had four focus groups with a total of 52 persons. These are the

stakeholders: Environmental groups (NEPT, NEPA), one hotelier and one representative from the Negril craft-market. (8 pers.)

Fisher folk and water sport operators (13 pers.)

Planning and law enforcement agencies in Negril such as the police, fire services and health department (8 pers.); and.

Hoteliers and key personnel from the tourism industry (23 pers.)

In addition there was another meeting that we had, a preliminary meeting with the Negril Resort Board, just to brief them of what were we were talking about.

Technical issues raised by the focus group. Participants suggested the monitoring period

proposed was insufficient.

Review of technical specifications; appropriateness of the location and design of the breakwater. Disagreement with the major points of erosion identified in the project.

The negative effects of dredging the river.

The effect of the structure on the natural flow of the ocean and sea life.

The Aesthetics of breakwater during construction and post construction.

In terms of logistics issues: The concern about the ability of the trucks to manoeuvre within the designated stockpile area. They identified the need for indicators on or near the breakwaters to alert boaters of the physical structure so that people don't run aground. The appropriateness of the season for Construction of the breakwaters could indirectly interrupt the tourist season.

Emergency procedures in case of accidents (particularly fire).

And the justification for the route taken for transport of material and the choice of location for stockpiling area that we are going to open.

They also talked about airquality issues; traffic congestion in the stockpile area.

Safety concerns of in particular with the trucks transport boulders in the Negril area and the impact of breakwater on the livelihoods of snorkelling, diving, fishing and water sports persons.

These are some of the snorkeling areas and these are some of the dive sites as you can see.

So in conclusion of the main issues: Greater effort needs to be made by the relevant authorities to sensitize the public in Negril about the project.

There is a high level of awareness of the erosion problem facing the area.

General concerns regarding logistics and technical specifications.

The alternatives that were suggested; and the project is likely to yield benefits in terms of mitigating the erosion problem.

This is a picture showing you the beach and some of the

activities.

looked We alternatives. There different at were alternatives suggested such as no action; leaving the project area as it project as proposed is; the with configuration different of the breakwaters; different staging areas; improved with aesthetics; project reefball breakwater designs; proposed project with some de-silting action at the mouth of the river or sections of the mouth of the river with a proposed project with corals and sponges relocation and beach nourishment.

What we did, we looked at impact and mitigation. We have some slides so you can look at

the things I think is standard.

We looked at where the stockpiling material. Looked at how we deal with marine boating Environment aesthetics - we issues. have the feeling you won't be able to see in terms of the feed that is there. Looking at what impacts potentially. One of the important things I think going forward is this; Community Engagement. It is recommended that a Stakeholders Engagement Committee be established to solve some of the issues, so that there is an interface where project managers, contractors, the community can meet on a regular basis to discuss initial issues that they are having with the construction of the breakwaters.

Just a look at that picture up there where we expect some of beach accretion to happen.

And I think that's about it. Thank you.

(APPLAUSE)

MODERATOR: He may have gone on a little longer than the twenty minutes but he certainly was not boring. He wasn't boring, was he?

AUDIENCE: No!!! Yes!!!

MODERATOR:

should come to church on Sunday morning. (Laughter)

Anyway, Mr. Campbell, thank you very much for informing and educating us in this with way. We are now going to be having...Yes, Miss McCauley.

MISS MCCAULAY: The main function of Mr. Campbell at this meeting here today is to talk about environmental impacts and that is the piece he just zipped through at the end there.

(A P P L A U S E).

So besides the need for us to have enough time to talk about these things, I think if we want to really hear about how they are proposing to mitigate what they are planning to do, Mr. Campbell, you really have to spend a little bit more time on the reason why you are standing up there and less time telling people about the tourism industry and all that kind of stuff. I certainly want to know a bit more about how all these truckloads of stone and all of the silt screens which I have photographed washed up on every beach where it has be used in Jamaica serving no function whatsoever is going to work.

(APPLAUSE)

**MODERATOR:** In fairness, Item (b) Okay. Response to Issues Raised In the Media; Number 1 says Environmental and number 2 Engineering and the Mr. Carlton Campbell is the same person who is going to speak about the environmental impact. So in fairness to him there is a little slot there for him to address that. So we want to thank him, we don't want to hurt him too much; we want to thank him for his presentation.

Now, we are going to call upon him again. He is going to be the one to tell us about the response to the issues raised in the media relative to the environmental and other such matters. Mr. Campbell. Alright, since this is what we want to hear give him a round of applause as he comes.

## ( APPLAUSE)

Mr Campbell.

MR CAMPBELL: I would have loved to go back to the impact section but because of the time constraint. Can I go back to the impact section? AUDIENCE: Yes, go back. MR CAMPBELL: We go back to the impact section which is site preparation, construction and during the operation phase of the project. That highlights what we think were the major issues that would have been a problem.

We talked about the Materials Storage and Equipment Operation on this stockpile area. That is the first thing here. We are saying to prevent run off from that stockpile the marine environmental area to area, what is proposed is what is called an oil/water separator which would be designed to drain water; the water collects in a sump and then from there any collected water that is the oil/water separator would drain that off. Oil would be taken out and the water that's left would be without the impurities that could be released. That's the first thing.

In the terms of air quality a couple of things hat we have One is in terms of the to look at. quarry section, even though we didn't touch on much of it because of what was happening, you have to, in terms general good practice; of wet frequently depending the on temperature then you might have to wet even more frequently. In terms of at the stockpile area, then of course if there is an issue with dust then we have to wet there too.

From time to time a lot of the trucks that we have that operate on our roads tend to trap, the wheels tend to trap the dust. What is proposed is that at the quarry end before they leave the quarry then the wheels would be washed off.

Noise Pollution. Within the Area, we did some models to give you an idea of what we expect from the piling operations of two weeks piling. We also looked at the operation of the front end loaders to load the boulders on to the barge and we also looked at the noise from the barge going out to the breakwater areas. In there based on what we found the operation of the barge is not an issue. In terms of looking, I mean seeing the barge is fine, but in terms of looking at the piling, we expect there to be some short term impacts communities nearby, the on businesses nearby and communities. And in terms of the operation of moving the boulders to the barge then expect the don't noise to be we exceeding 55 decibels, much louder than probably closer to the river.

In terms of water quality, the same thing, you have to look at; drainage.

In terms of boulders, what is proposed, the boulders are to be washed from the quarries so we don't expect, and this is the instruction that that once it reaches here if there is any sediment on those boulders then they are to be rejected so the dust that we expect to come from the boulders will be eliminated from source.

In terms of water quality, the silt screens. Silt screens are generally effective within three to four meters of water. Over that then you tend to have problems. The area around there is three to four meters and once -- they have dedicated silt screen teams; it's anchored properly, but you have to have persons that monitor to ensure that any movement then it is fixed quickly. You don't expect that during storm occasions or storm events the silt screens should be out there because then they would get dislodged and of course you have the reef in proximity which we have to consider as well. So in terms of that the contractor would have to have a dedicated silt screen team in place to constantly monitor the way the silt screen is behaving, looking at the silt screen to ensure that they are in place and fastened properly and in the case of storm events they are removed. Same thing with the operations, we don't expect the operations, the laying of the boulders to occur during storm surges.

Monitoring of water quality as we said, should be conducted fortnightly. One of the

reasons why we suggest fortnightly is because we also want to look at the phytoplankton community. Phytoplankton community is microscopic plants which are important for fish; a lot of fish eat the phytoplankton as food so we don't want whatever activity we are doing to impacts that food chain.

In terms of the South Negril River, at the meeting we had, some concerns were raised about the drying of the out morass. Consequently we spoke with the engineers of the component to look at what's the best way handle to something like this. There are two options, or three options that are on the table. One was that we would have reduced the area that we wanted to dredge out in the river to a channel so as to allow the fishers to go in and out, but we also said that based on that though, it was better we did a hydrological study to ensure that it doesn't change. There is also another option, this is really not new, that is to get the materials from somewhere else whether or not off shore. Those are the options.

We know in terms of Waste Generation and Disposal, we don't expect people to bathe and use bathrooms, that we should use porti potties. Roads Safety: There has to be a traffic management plan. That has to be produced. It would include flagmen, operating the trucks off peak and stockpiling the rest so that you don't have a whole heap of trucks coming in at any one time.

This is just a schematic to give you an idea of stockpiling, the area. This is the stockpile there. This is the front end loader loading the boulders that are here unto the barge; and this is the navigation route out as we had showed earlier going towards the breakwater. You can see the South Negril River; that is the north breaker and that is in South Ground.

In terms of the maritime operation during construction;

clearly defined path has to be put out for the barge and we say that marker buoys will be there so that the barge operators know the lane that they need to operate and away from any reef or any other sensitive areas in the Bay. That area is already defined it is just for buoys and stuff to be put in a bit further down the Bay.

As I said before, the Contractor has to give a maritime traffic management and safety plan, and a part of the thing that I highlighted before that community engagement committee, is that both the Management Plan, the times of operation, all of that in my mind is to be discussed and agreed on within that community so that everybody is on the same wavelength. You might, as the community, have seen other potential issues that can arise and this is where you can trash it out so that solutions can be arrived at and persons don't feel that they are left out, that their ideas or opinions are not valid or valued.

In terms of pavement as we were saying, it's low, fish diversity is also low. Also in terms of the operation of the barge because there is a reef near we have to ensure that the barge is properly averted. No defective barge used so that it will run aground, or get out of control. We also as I said before, the material, the boulders will be washed before being carried out so we don't expect any sediments from the boulders to get into the water.

In terms of the fish community, there is to be a sensitization, education effort especially construction personnel how to deal with things like turtles and invertebrate, how to deal with them if they come across them and we have said that a spotter should be used especially when you are coming in with the barge and to put on the boulders, just to ensure they are not crushing any of those sensitive marine animals.

As I said users, the maritime users, the watersports persons, snorkelers, the swimmers

need to have an idea of the route and also the times so that people can adequately plan and don't run into problems that you ending up in the same lane.

Employment: The no mitigation required.

- Aesthetics: One of the things that was recommended or pointed out, that we should put construction screens around the staging area so as to block out some of the litter intrusions from persons on the roads and along the area.
- In terms of the barges, you have to have properly functioning barges. You don't want barges traveling with oil tailing behind

or things failing off or rust leaking. And also importantly, appropriate signage, both construction and on the barge and also in the stockpile area.

As part of the education thing, the hoteliers need to have information so that they can inform their guests about what is happening.

In terms of local maritime businesses, we need a fishing liaison officer, I think someone who knows about the whole fishing culture here to ensure that whatever is proposed is not obstructing or creating a problem for the fishers.

The others are, as I spoke about. Also to ensure that the safety and management plans are in place, especially emergency plans. What happens if there is a fire on board, or if there is an accident where they do they go to get medical assistance. All of that would have to be done as part of the contract and I think it would be presented to the Committee to oversee, which is what is proposed.

We spoke about that already, that is what I think is the best way I have seen it done. We have used this method already in project in an area that was considered difficult to do construction. We have done it in West Kingston and I think it worked well. We never had any stoppages, we never had any fires; we never had any killings on site and that project was easily a hundred times more expensive than this.

During operations, we expect some accretion to occur. As we were saying we can have a look; this where we expect most of it, from central up and then you have a section here where you are also going to have accretion going on in the southern area. We don't anticipate, based on that, and based on what we expect in terms of the wave energy reaching the shore that is where the mitigation is in terms of erosion.

In terms of -- persons have asked about sea grass beds; persons have asked about marine organisms in terms of the changes in flushing time and the currents; because the changes are relatively small we don't anticipate that much change will happen that will negatively impact these organisms.

Of note is the flushing time. Seven days are what is the critical considered mass when you're getting to consider being nervous, one of the major points; in all these areas during all wind conditions, we expect to meet that seven-day so of eutrophication in terms and nutrients we don't expect that to happen.

They spoke about the safety of swimmers; as we said

because of the calmer waters we expect that swimming safety will improve. I am saying this is where we expect the accretion.

During operation, we expect the breakwaters because of the structure of boulders with spaces in between as we had shown with the groyne at the South Negril River there are spaces in between which fish and other invertebrates like lobsters and such can occupy as a safe haven. Presently out there because the area is flat there is not much, what we would call housing for these organisms so that will improve the area in terms of that.

There are questions in terms of the breakwaters blocking organisms and animals from coming ashore. The breakwaters are situated 20-40 metres from the end of the back reef, the reef crest so there is a gap there that they can use bearing in mind that in times past there was a reef there. So we don't expect that - I mean yes, it will cause a little challenge, but I mean animals are smart enough to go through that gap to get to the shoreline.

As I said before we don't expect any significant changes to the crustaceans and the sea grass in terms of the currents and waves.

Maritime operations; two things have to happen. There
has to be a marker there so that persons know that it is there and don't run aground but also be a part of the charts; that is where the Maritime Authority, Port Authority had proposed putting those in charts so that persons coming in can know that there is an obstruction there. So it is a two-fold thing that has to be done.

In terms of the aesthetics we looked at -- doing the calculations we said in the EIA that once its out there we wouldn't be able to see the breakwaters from shore. I know some persons are doubtful but we went a step further and we used a fishing boat of approximately the same height of where if any boulders that would come out, the height of those boulders. That I took off of this presentation because it was long but you would get a feel for what it looks like from the shore. We really can't see it. We expect the most a boulder, it's not the whole stretch, a boulder or two might be out .4m; it's not a whole stretch so you really can't see it, I am confident of that, unless you right up on it.

This, has been shown before, we are away from the main dive sites so we don't expect them to have any impact on it. Because of the structure we expect fishes to congregate there. One of the things that we had proposed is that we are going to have to manage this area because once you have that happening then you find that the fishers are going to go out there and it's easy catch. To make it effective then we are going to have some amount of management prevention fishing; and of either limited or none at all in that area. It gives a chance for the fish to start to recover in Negril but that is something that management plan has to deal with.

I think I covered most of concerns.

Thank you for listening and I hope I have solved most of your concerns.

## (A P P L A U S E)

MODERATOR: Thank you very much Mr Campbell. He has done well. It's very few occasions that one batsman gets to bat twice.

We are now going to be having the engineering report and going this is be done by Mr. Christopher Burgess. He will say something engineer part of it. We have heard about the environmental impact, we are now going to be hearing about the engineer. So I now invite Christopher Mr. Burgess. Please make him welcome.

## (A P P L A U S E).

Thank you Custos. Good evening MR BURGESS: gentlemen. slight ladies and Α correction, I am going to add to the engineering presentation which Jessica had done earlier by addressing some of the issues which were raised in the media over the last three/four months as it relates to the engineering of the project the format of this and presentation is answering a number of questions which had appeared in one form or the other.

The first question that I am attempting to answer is why Negril, why Negril for this project? How does Negril beach compare to other beaches in Jamaica? The fact is that Negril is the fastest eroding beach in Jamaica when compared to approximately eight or nine other beaches in terms of rate averaging between .6m and .8m in most of its length and the next fastest beach is Old Harbour Bay in Clarendon/St. Catherine, and so there is need to bear that in mind, followed by Fort Clarence and Hellshire at .42 metres per year. Negril is at the top of the list in So terms of eroding rate, but very closely behind is Older Harbour Bay and then fort Clarence and that essentially is shown in this graph which represents beaches island various across the observe out of this set over hoping and that a bit.

So the next question that I am trying to address in the presentation is why do breakwaters fail? And the reality is that there are some breakwaters that fail, there are breakwaters that some such have failed, and they tend to be breakwaters which were implemented in the sixties/seventies/eighties. And the reason why they failed has only recently come to light, to the attention of the scientists and engineers recently being involved; the last ten/fifteen years. And the reason they have failed is because in most instances they were placed too close to the shoreline and they interrupted the sediment transport rate and they also modified the currents and waves in such a way that the coastal erosion sometimes ends up in the breakwaters. And this is clear to the coastal engineering scientists involved.

Just to illustrate that point in the graph: We see a submerged breakwater here, the shoreline which is the beach to the north and the currents which come out on either side of the breakwater eroding the shorelines in the few orange areas.

This is similar to what would happen if the near shore breakwaters in the implemented plan were to have been implemented and so for that reason we cannot see the integrated goods plan as a finished plan, we have to see it as a work in progress.

Why won't this happen in Negril? This won't happen in Negril, the two breakwaters that are being proposed for Negril are too far off shore, and not only are they far off shore but whereas the breakwaters that failed in the past had a two-cell scenario, our breakwaters will have at the very least, a four-cell scenario. The cells that will be set up will be in near sand whereas the breakwaters that were previously proposed would have resulted in erosion. And so the Negril breakwaters we have a four cell situation for our currents and we are

also well off shore, so we are not in that category of breakwaters which will lead to erosion.

Why two breakwaters? Well it is not just two breakwaters in total that will be necessary in Negril to function or rather to resolve the problem, the erosion reality as suggested, Jessica had that the suggested integrated plan nine breakwaters; five off shore and four near shore, total nine, plus beach nourishment of 500,000 cubic meter; 30m for Long Bay and 10km for Bloody Bay. We are only doing, or focusing on two of these five breakwaters for this project because that is the focus of this project.

So why these two breakwaters? These two breakwaters are necessary because the focus of erosion is the northern and central parts of Long Bay; also in terms of phasing, these two breakwaters will us more accretion for the give investments involved than any other two of the breakwaters in Negril; the breakwaters in the plan that was suggested before, the integrated plan suggested four. Also the funds available don't allow us to do more than two breakwaters.

Some have said we need more breakwaters and some have said we need no breakwaters and the beach merchants asked us to explain why just two breakwaters and it is exactly as described in the integrated plan.

Why not the beach nourishment first? Why not the beach nourishment first, because evidence has showed us that sand is eroding The shoreline is eroding. gradually. Our of assessment transport simulations have showed us that if you put the nourishment there it would be unstable and will move to the south. our understanding of climate Also change is that sea level is active and has been responsible for 63 to 73% of the erosion that we have experienced, so putting sand there will not mitigate against the effects of sea level rise. It

will delay it, but not mitigate it.

- Also why not beach nourishment first and why the breakwaters first? Because the preliminary engineering report which can be referred to, suggested that in activity of the phasing integrated solution that the breakwater is needed in addition to the nourishment and this consistent with the preliminary is engineering report.
- And why not beach nourishment first? Because if you look at investing in beach nourishment first, and look at the cost at the end of a twelve-month period, the cost for beach nourishment is approximately 28 million and the cost for breakwaters

in comparison to beach nourishment is 22 million.

So lastly, why not beach nourishment first? because the reality is that beach nourishment does have environmental impacts associated with it.

In this diagram you will see approximately five red pipelines leading to the shoreline which are our approximation of the pipelines that were required to pump the sand on shore. These pipelines would cross a number of the sea grass beds which means a lot to the people of Negril. It is on those beds that the pipelines would be floated, but they floated without being cannot be

anchored and can only be anchored to the sea grass beds; the same sea grass beds that were earlier referred to. So the reality is that pumping the sand shore does have on environmental issues which entail crossing the sea grass beds and pumping the sand unto the shoreline.

This is an example of a beach management programme.

You can see the tractor on the shoreline, on the beach. Here is another one pushing the sand that has been pumped on the shore around and shaping it. Here is another one; the pipeline on the shoreline with the sand being pumped on, and this one of the realities that we will have to cope with in order to do beach nourishment.

Another aspect of beach nourishment, this does generate a sediment pool unless it is controlled and that can affect the sea grass bed. So that too has environmental issues.

Another question that has been raised as it relates to our engineering approach to this, why are we doing engineering designs without first doing a coastal zone management The reality is that we have a plan? challenge now; Erosion. And the reality is that we have a solution now; Adaptation Funds the which the Planning Agency has managed to NEPA as far as we are aware secure. are working on a plan for Negril. Also what we have done in terms of our approach in the engineering and environmental impact assessment, does not jeopardize an integrated coastal zone management plan.

What is an integrated coastal zone management plan? An integrated coastal zone management plan, or rather management is the process of managing a coastal area using integrated an approach. Essentially this is coming out of Rio DeJanerio in 1992, a concept which calls for nations to be responsible in they integrate planning how with communities and natural resources.

What are the main aspects? There is a spatial aspect

functional aspect there is that considers different issues; fisheries circulation, livelihood, there is the legal the aspect of gathering aspect; knowledge from local knowledge to expert knowledge, and there is also the aspect of participation. All of these key ingredients that I have named have been incorporated in this process from the initial consultation started by PIOJ in 2012 to today and project will continue until the is completed. The long and short of it is that what we are doing is similar to and consistent with carrying out an integrated plan.

It does not jeopardize the holistic plans that we have for

the area and when that plan is being crafted by the relevant institution. You will find that what we have done would not have jeopardized them in carrying out that plan.

The question next is, Are storms increasing? And yes; Jest included it in our The reality is presentation. that yes, categories four and five storms are increasing but overall there is less hurricanes anticipated in the future. But hurricanes that will happen we will have more category four and five. In other words what we have is stronger storms,

and it's consistent with what we have observed locally and it's consistent with what other researchers have observed looking at their own situation.

Another interesting question; will the stones move, will they end up in the hotels? The is reality that every engineering structure, buildings including are expected to move and to shift and it's the position after the movement that will determine the success of the structure.

We expect that 1 in 200 of the

toe stones and 1 in 930 of the armour stones to move in a hundred years and not move towards land but rather to move seawards.

How do we know this? We know this from a number of physical case studies that we have been undertaken.

I have a short video to show which is this structure in a wave plume. I am sorry that the sound is not there, but here is the same structure we are proposing being exposed to hundred-year case and we ran it for the hundred-year wave with climate change, as in the more intense waves expected in the future and also at higher sea levels. And after the study was complete and the water had settled down, we looked at where the stones had moved.

this When process was repeated for the duration of hurricanes and several the model scale was scanned; these are the stones and this is the sanding plume; you could see outside, what we observed that there was were

approximately three stones the entire length of the breakwater that moved seaward. There is a physical reason for it and actually it is based on an imagery of Negril that goes out to the outer bank. That outer reef action is a filtering of the and these waves, now moderate what is happening and even more important, to preserve the reefs that are off shore.

So the long and short of it is yes, a few stones will move, they are well within the tolerance of traditional engineering and it will move seaward, not landward.

How does the cost of the beach nourishment compare with the cost of the breakwater? Well, the reality is that estimates for the beach nourishment; copies of which have been circulated to you; have not had the benefit of the hydrographic survey which we have done.

As a matter of fact the hydrographic survey which we did as a part of this study actually detect certain errors in the previous surveys that were used for preliminary survey of .5 meters. But that .5m which sounds like a large doesn't sum translates to about half a million dollars (US) in material cheaper than they actually were showing on those charts. with So this accurate information which goes from the shoreline out to our breakwaters we are able to develop an accurate estimate of the quantities of the two options and the long and short of it that if you is take maintenance into consideration, is that а representative reasonable

beach nourishment programme which will consist of 35m of beach nourishment along the Long Bay beach, would be inadequate, would cost about USD 31 million and then all the necessary breakwaters and some beach nourishment, are estimated when break we down the cost, about 21 million for the beach nourishment and breakwaters option versus the nourishment option alone.

So longer term, medium term costs favour an approach which implements the breakwaters first then the beach nourishment.

Is The Estimate For This Phase Enough?

The professionals involved in creating or generating the estimates for this project have involved been in coastal engineering projects that have successfully. been executed We are talking about teams of quantity surveyors, construction engineers, engineers. I believe that to the best of my knowledge, and based on the ten quarries that we have seen and surveyed, and speaking to them, looking their costs, the at and implications of transportation, the implications of fuel prices, looking at ocean studies of the maritime equipment from the stockpile area which I believe Carlton spoke about, going out to the breakwater, I believe estimate for that our this project is reasonably accurate.

MODERATOR: Thank you very much Mr. Burgess for answering those questions relative to the concerns and I am sure that there are some concerns still residual and the microphone is there and you will be approach called upon to the microphone, identify yourself and then direct the question. We will allow for two or so questions for one person, just one question at a time. Yes sir, you are the first speaker. You will approach the microphone. If there are persons interested to make a comment or ask a question you can get in readiness so that we do not waste too much time with the movement. So, if you have a question, then join the line so that we can facilitate swift movement.

Good afternoon. I DR. FRESDON: am Dr. Garth Fresdon(?) I am a Negril resident. just want to make one very quick statement before asking the question. Mr. Campbell eloquently very has during described Impact his on Mitigation presentation, the way things would be or he would like it to be. It is not the way it is going to be unless he has an army of a hundred thousand Inspectors to inspect boats, trucks all the rest of it going through town with all these enormous stones, boulders. So really if he does not have any back-up he spoke about how he would like it to be, not the way it will be with broken down trucks and all the rest of it.

- MODERATOR: No, we are not going to be accepting that. There are good trucks in Jamaica. They are not all broken down. Please! Please sir! Please! I take exception to that.
- DR. FRESDON: I beg to differ with you very strongly, sir. My question: Can anybody in the panel there inform us as of today, can they show us one other place or more other places where approximately one kilometre of breakwater in the middle of a seven mile stretch of beach has actually been successful or is this all theoretical?

## (APPLAUSE)

- MODERATOR: Thank you. Mr. Campbell or Mr. Burgess, who is going to answer that question? Fair question.
- MR. BURGESS: I know that in Jamaica we tend to have long memories of projects that don't go well. The fact of the matter is that Negril is an important location. The oversight that will be provided, I mean it has been done in terms of Palisadoes in terms of carrying those boulders. I know personally for a power plant we did in Downtown, Kingston where a lot of trucks came in and out, we didn't hear of any traffic snarls, we didn't hear of any problems and I am sure with the importance that is placed on Negril from the political standpoint, I don't think that anybody involved with this project would be dragging their feet and not ensure that the proper structures, checks and balances are in place.

- MODERATOR: Thank you very much Mr. Burgess for answering those questions relative to the concerns and I am sure that there are some concerns as a result. The microphone is there and you will be called upon to approach the microphone, identify yourself and then direct the questions. We will allow for two or so questions, but one person, just one question at a time.
- Yes sir, you are the first speaker. You will approach the microphone. If there are persons interested to make a comment or ask a question you can get in readiness so that we do not waste too much time with the movement. So, if you have a question then join the line so that we can facilitate swift movement.
- DR. FRESDON: afternoon. Dr. Garth Good Ι am Fresdon(?), resident of Negril. I just want to make one very quick statement before asking the question. Mr. Campbell was very eloquent during his Impact on Litigation presentation, the

way things would be, which he would like it to be. It is not the way it is going to be unless he has an army of one hundred thousand of Inspectors to inspect boats, trucks all the rest of it going through town with all these enormous disturbed noise. So really if he does not have any back-up - he spoke about how he would like it to be, not the way it will be with broken down trucks and all the rest of it.

- MODERATOR: No, we are not going to be accepting that. There are good trucks in Jamaica. They are not all broken down. Please sir, please. I will take exception to that.
- DR. FRESDON: I beg to differ with you very strongly, sir. My question: Can anybody in the panel there inform us as of today, can they show us one other place or more other places where approximately one kilometre of breakwater in the middle of a seven mile stretch of beach has actually been successful or have all these been theoretical?

## (APPLAUSE)

- MODERATOR: Thank you. Mr. Campbell or Mr. Burgess, Who is going to answer that question? Fair question.
- MR. BURGESS: I know that in Jamaica we tend to have long memory of projects which don't go well. The fact of the matter is that Negril is an important location. The oversight that will be provided, I mean it has been done in terms of Palisadoes. in terms of carrying those boulders. I know personally for a power plant in Downtown, Kingston where a lot of trucks came in and out. We did not hear of any traffic snarls, we did not hear of any problems and I am sure with the importance that is placed on Negril from the political stand point, I don't think that anybody involved with this project would be dragging their feet and not that the ensure proper structures, checks and balances are in place. For me, I know probable because you have had a bad experience

with the pipe laying which is a much different scenario than the boulders coming there. I have had experience with pipe laying. I understand where your memory is coming from, but this project in terms of the boulders in Negril is a completely different thing.

- PARTICIPANT: He did not answer the question.
- MODERATOR: He has answered one part. We have the question. Mr. Burgess is going to answer the second part.
- MR. BURGESS: Good afternoon again. The gentleman who had asked the question, I would like to dissect your question by pointing out to you that there are not many places in the world that have seven miles of beach in the first place. Many places in the world envy us for this beautiful shoreline. The reality is that a lot of the other projects that are being implemented on the US West Coast and to a lesser extent on the East Coast have been shorter breakwaters; they tended to be mostly in the range of two
hundred to four hundred metres long and in some instances you had the odd one that is a kilometre. A lot of them were from the '70s and very few in the '80s but there are some.

These are projects which we found in the Caribbean of a similar nature. Accra Beach in Barbados is a very short breakwater. It is about two hundred metres long. Golden Beach in Florida; these breakwaters again are not very close but I hearing am someone asking how far out. I would just like to remind them of my presentation that it is only in the last ten to fifteen years that scientists have identified the reason why a lot of the nearer breakwaters have failed and the near shore breakwaters in integrated plan was because they were simply too close and were set up under very adverse conditions. You have those in Barbados, you have Marriott in Grand Cayman; these are shorter breakwaters and then obviously what would be our project.

- DR. FRESDON: Thank you sir. The short the answer is no.
- MR. BURGESS: As I said to you initially, sir, there are very few places like Negril and I asked you if you could show us where there are seven miles of white sand beach just like Negril pointing west and I don't think you can find it either.
- DR. FRESDON: (Inaudible) Therefore this is theoretical.
- MODERATOR: Thank you, sir. You asked and he has answered. Will you allow somebody else?
- We are going to have about three questions before we have the answers. Please identify yourself, ask your question and then you take your seat and then somebody else, after which one of the two gentlemen or the lady will answer the questions. So please make note of the questions so that they may be answered.

Yes, madam?

- MS. SAMSKIJAN: My name is Samskijan.(?) I operate a diving business in Negril.
- My question. I have plenty but I will I will start with one. I am still not getting over the question of how you identified your location of the Breakwater. It said that the central and the Northern part is more affected. If look around Negril, I would say - if I look at Travellers, if I look at Legends, if I look at these places they are far more affected.
- If I look at the environmental impact pictures which they show us, the impact of hurricanes, it doesn't matter where the hurricane comes from the south is far more affected than the north.

# (APPLAUSE)

Additional to this, if you look at all the water sport operators of Negril, guess where they have their boats? In the north. Which means it is the most protected part. Could anybody please explain to me how you come to the resolve that the northern and the central parts are the most affected. (Applause)

- How do you get the boulders in the water because if you just drop them, how do you make sure that all these beautiful pictures with the little stones in the middle, the big stones on the outside will look exactly like it is shown? How many divers will be in the water safely operating this? Do you have qualified divers? My second question.
  - MODERATOR: That is not your second.
- MS. SAMSKIJAN: That is my second. I have a third. Please, I can count.
- So, then the other Question. The core of the breakwater will be built with limestones, meaning they might be moved. That means that they can break a part. They have moved before as we have seen in the past with boulders when bigger size have been thrown onto the West End. So they will move and nobody can tell me differently. So, now we are having all

the small parts broken up and going and shattering around the reef. How do you address that? Who is taking care of repairs? Who is taking care of maintenance? I have heard nothing on that. What is the aftermath?

MODERATOR: Thank you very much, madam.

# (APPLAUSE)

- MODERATOR: Three questions were made and you want to address these three. Okay
- Good evening again. One lady, three MR. BURGESS: questions, one answer. The answer to the first question is why the focus on the north and the central, whereas the storms that have affected Negril have affected the southern part of Negril more adversely. That is the truth. The truth is that deeper waters come closer to shore on the southern part of Negril, but again the title of the project is It is not about Shoreline Stabilization. hurricane addressing and waves adversities, immediate adversities of

hurricane waves on the shoreline, but we are looking at long term trends of erosion. We are looking at where Central and Northern Negril have lost more than forty metres of shoreline in the last forty years, whereas in the south it has lost somewhere between twenty and thirty, less than twenty to thirty metres in that same period of time. We are looking at a long term trend of erosion. That is how we determined that the focus should be on the northern and central parts of Negril. It was based on where the shoreline is most vulnerable to sea level rise, both now as well as in the future and where it had lost the most sand in the past. That is the answer to the first question.

As it relates to pictures of Negril remaining the same, the question was addressed somewhat by Carlton earlier but the reality is that we did do an Optical Resolution Analysis of the typical stone that might protrude from the breakwater. We are talking about one in twenty stones protruding, somewhat like a cocoon, a foot or so out of the water. Very random looking feature and the human eye has a limit to its resolution. Opticians refer to it as "the eagle eye' and even with eagle eye on the shoreline you cannot resolve one foot one mile away. The reality is that it will not affect the shoreline. If you are uncomfortable with that concept, we will find the most suitable person to address it. If you can see one foot in three miles then you would not need an Optician.

As for qualified divers, the divers that have worked on the project so far are by all definitions, qualified divers; divers with anywhere from ten to thirty years. Chances are that the divers who will work with the contractors will not be the recreational divers that you have diving in Negril or even their instructors but they more than likely will be commercial divers. These are divers that use different types of technology rather than the simple gas tanks and air tanks that you see there. So the answer is, yes, there are qualified divers in Jamaica. Some of them actually work in the Middle East and come home every two months.

- As it relates to the core of the breakwater using lighter stones, and these stones being ejected from the structure and the responsibility for repairs; the reality is that we have the one in hundred years, the level of effort for repairing the structure and we anticipate it is somewhere in the region of 35 to 45,000 US dollars. This is an expense which we are expecting to incur on average in every one hundred years possibly a five/six million for USD That is a very reasonable project. schedule. maintenance hope this answers those questions, Mr Chairman.
- MODERATOR: Thank you very much, Mr. Burgess. Let me clarify something. When I said three questions, I did not mean that persons would be entitled to three questions. It means that each person would give one question, we would have three persons

each giving one question, so there would then be three questions which will be posed and answered. That is what it is. If you have one question, one question per person, then you join the line again if you have to ask another one. But everybody can't come up and asked three questions.

Okay, Mrs. McCaulay.

- MRS. MCCAULAY: McCaulay from the Jamaica Dianna Environmental Trust. The Palisadoes Mitigation Letters have not been implemented to date. The silt screens are all washed up on the side of the sea. The same thing happened in Falmouth. Mr. Campbell, you were the person monitoring the project. I went through all your reports.
- I drove here, Mr. Burgess, by the South Coast. I encountered probably about twelve trucks and several hundred cars and I can assure you that the six to twelve trucks had far greater impact on my journey than any of the hundreds of

cars and furthermore I came through the road works by the National Works Agency between White House and Belmont where there is supposed to be all this of wetting and I can assure you, I have pictures on my phone which I was forwarding to NEPA of all the silt that is going there. The first person who said that all these things are not going to be implemented is right.

Here is my question. I have read the documents that you started with, the RiVamp Study, the Smith Warner Study and countless from NEPA documents about the Negril all problems in and thev mentioned certain things; restoration of the beach vegetation, replanting of the sea grass beds, fixing of the morass problems and the set back from the coastline is because of the sea level rise.

What is being proposed here is reclaiming and dumping up an area of coastline and I want to ask all of you gentlemen and lady, how you can then turn around to any private operator who wishes to do the same thing in Negril at some other point along the 7 miles of beach that we are hearing about, when for more than two decades problems in Negril have the been described, described, described, and not addressed. And here we are about to do the same thing again; more stones, more dredging, more filling up, more piling; all of those things. So I want to know how you can tell anybody here who has a hotel when they are now being affected by sea level rise or beach erosion not to put up piles and stones and reclamation.

# (APPLAUSE)

MODERATOR: Thank you very much madam. Fair question. Is that going to be Mr. Burgess or is that going to be Mr. Campbell or both?

We will hear from Mr. Reynolds.

- MR. REYNOLDS: Mr. Chairman, are you saying that I should encourage a non-answer from a question?
- MODERATOR: No, no. Remember I said, three questions at the end of which we will respond.
- MR. REYNOLDS: I think all persons in here, Mr Chairman, dearly love Negril, hence the reason why we are here, we are all here. I don't think there is no one person who loves Negril more than the other and would not deservingly so.
- There is this question about breakwaters, what is breakwaters? Based on a lot of - Mr. Chairman you have to forgive me because I know that you are Chief Justice of the Peace for the parish and since you have started in the balance you will have to continue. You would like to get the facts.
  - MODERATOR: Go ahead, Mr Reynolds.
- MR. REYNOLDS: A lot of what have been said on the streets, a lot of persons are completely

confused. A lot of persons have contributed directly to ensure that persons are confused for one reason or the other.

### (APPLAUSE)

Mr. Chairman, I am begging for no applause because that is not why I am here.

I do a lot of community service and for these things I want the facts to come on the table. I grew up at Roots Bamboo. A lot of persons here don't know that. Mr. Forrester, Mr. Arthurs would know. I grow up at Roots Bamboo – Mr Hill. I apologise. And if I allow my hair to grow I would look very much like Mr. Foote.

MODERATOR: Get to the point.

MR. REYNOLDS: I am in the middle of the point, Mr. Chairman. I walked the Nigel beach many years. I have seen the Negril beach disappear just like I am seeing the sunset going down this evening. I have seen the erosion of the Negril beach. I have seen also it happening rapidly that if we do not do something about it we are going to lose tourism. But let me just tell you this. The main contributor to what we are all here about to correct, are humans. Humans is the cause of it. Humans have to put a temporary measure in place to fix it. I am sure if it was on a Sunday you would say somebody else could do a better job.

MODERATOR: Praise the Lord.

MR. REYNOLDS: Mr. Chairman, I am saying that to say We seen this have lot а of presentations and presentations that have scientific background. Some of these things that were explained, persons in the audience were saying, but what is silt this, what is that, and you have to break it down so that persons can understand. At the end of the day we have to be guided by persons in those areas. While at the same time when you go on the beach and see things happening you know as a

fact there are areas where it happens more so than other areas. So, you are a little bit astonished when you hear that in the north there is more erosion as opposed to - all storms come from the north go to the south and I would not debate that because am not а professional in that field. What I am saying, Mr. Chairman, the big question is, and I using this analogy. We are in this room now and the breaker trips, what is the right thing to do? We should go and find out what is the right thing to do before we reset that breaker.

- We are having beach erosion; there are proposals on the table to correct beach erosion. Now, we are having a calling for one, beach nourishment which Mr. Foote has done in the past and others have done it, and beach nourishment can work at a stage.
- The proposal I see put on the table here and we have professionals in this room and I am expecting clear answers: One, breakwaters which would break the

current and if I don't understand you well you need to correct me. Break the current so that when it comes to the beach it won't eat away the sand as rapidly. If I am right don't say anything. Okay. After which you could have beach nourishment and that sand won't move that rapidly. I don't want a shake of the head, I want you to shout loudly.

Mr. Chairman, one of the key factors that I have identified in all of this presentation and I am seeing it for the second time, as I have had previous experience of а massive construction in Negril, Central Sewerage. Key to this, we will have to have continuous supervision. A lot of what is presented here and I have heard other persons spoke about it, sounds very good. Without proper supervision we know what will happen. We need to ensure we have, whatever it is, maybe a smaller committee or something round up, but we need to ensure we have that kind of monitoring so the things that are on paper are actually implemented.

We are all lovers of Negril whether we live here or not. Within another four/five years we will see all the lovers of Negril visit Negril, Jamaicans. We all love Negril. We want what is best for Negril so we are appealing to NWA. Well, NWA are the contractors but we are depending on others to ensure that we have a working committee to monitor whatever is planned is done accordingly.

(APPLAUSE)

MR. BROWN: Mr. Chairman, good evening. Cecil representing Brown Water Sports Ambers Beach Resort. I have a few questions. L have no intention to violate your guidelines, sir, but I would love the opportunity to ask my questions. Some may be directed to Mr. Campbell who had addressed some of my previous questions before.

One, what provision will be made for the weather coming in from the south? I noticed that the breakwaters that we will be laid out will be accounting for the current or the waves coming in from the north of the beach but the south is not accounted for. I just want to point out to them that being in Negril for many, many years and I have observed the dynamics of the flow of the waves, whatever comes in from the south is more devastating than what comes in from the north.

I would also like to highlight Hurricane Mitch that travelled approximately 200 miles away from Negril some years ago, did not come to Negril, but the entire stretch of Negril beach was grossly devastated. I would like Mr. Campbell to remember that I had pointed that out to him.

- The next question is, he mentioned about markers going out there on the boulders, is that just for the day time or is that...
  - MODERATOR: I did not hear the word, you said markers?

- MR. BROWN: Yes. He mentioned markers. Is there going to be navigational lights for boaters? That is important because the boats do go out at nights. How are they going to identify those boulders out there?
  - MODERATOR: The last question, sir.
  - MR. REYNOLDS: No, I have two more.
- MODERATOR: No, sir, I have three more. We just think that we should facilitate you because you should get one and you are getting three, be reasonable.
- MR REYNOLDS: Monitoring period, I observed that he has extended that monitoring period to one year which I had recommended. My question is who is going to monitor the effectiveness of the breakwater? The last time he suggested, possibly the community. I said to him, we don't have the expertise; are they going to provide training for us so that we can be trained to monitor that? And it is important

that, that is be taken into consideration, sir.

- MODERATOR: Thank you very much, sir. Thank you. Fair questions. (Applause)
- Please hold your horses. We are going to answer those questions that were previously posed then we will go again. We are going to have Mr. Burgess first.
- MR. BURGESS: I am going to try and answer a part of Mrs. McCauley's question which was, how is it that we can stand on our soup box after reclaiming that small portion of the shoreline by the South Negril River and set an example for others? Is that the question?
- The reality is Carlton may speak to this afterwards that the area that we were proposing for the footprint of the staging area is mucky. He will tell you a little bit more about it. It is the areas on the side of the drawing did act or are acting as a fish aggregating device but the footprint of the sea floor is mucky and no wonder

because the morass discharges sediments in that area, but we must also not take things out of context. The reality is that there is going to be a need to use a small area of land to benefit a much longer or larger area of land. We are talking about less than seventy metres of shoreline for a project which is going to address almost four thousand metres of shoreline, so it is seventy metres versus four thousand metres continuous.

- I am going to make to attempt to at the end of the day, Mrs. McCauley, it is NEPA's call how they view the application and the context of the application relative to the bigger project.
- I will go on to the second question which the gentleman raised. Mr. Chairman, I don't remember his name.
  - MODERATOR: Mr. Reynolds.
- MR. BURGESS: Mr. Reynolds, you were 99% spot on with your observations and your

thinking as to what were presented and your grasp of what were presented.

- MR. REYNOLDS: And in terms of the supervision?
- MR. BURGESS: And questions your related to the supervision of the project and your concern is whether the project will be adequately supervised. You had mentioned sewerage treatment, I think you were probably mentioning when the sewage pipeline projects were put in. Is that the reason why you mentioned it?
- MR. REYNOLDS: For two reasons. One there were concerns about the trucks in the town and there was detour used during those times which was completely blocked, the roads were completely blocked. That was one reason, and the other reason was also for the proper planning to be done.
- MR. REYNOLDS: Right. So your question had to do with your concerns about if adequate supervision was going to be in place for the project and you were recalling when

the sewer pipelines were being put in and the traffic diversions and the traffic inconvenience and you are also calling for a working committee during the project. Is that what your question was about?

MR. REYNOLDS: Yes, sir.

MODERATOR: Okay. As it relates to the supervision of the project, the project is being implemented at the National Works Agency who is going to hire а contractor. C. L. Environmental and CEAC Solutions are going to monitor the project for approximately a year. That is the term of our contract. The need for two additional years has been cited It is an administrative by several. matter which will have to be decided by those who can identify the funding and There put that in place. is а suggestion that maybe the last, the second and the third year could be done by the Works Agency themselves or by others and I leave that decision up to those who would have to make that decision and identify the funds at the same time.

to the working committee, that is As it relates а recommendation of the Environmental Impact Assessment and NEPA has all the authority to make а recommendation that such a committee be put in place and submit regular reports to the agency; that again is up to NEPA.

The third question for Mr. Brown had to with him perceiving that waves from the south were not considered. Was that it, Mr. Brown?

MR. BROWN: Yes.

MR. BURGESS: And you had asked if markers were going to be installed on the breakwaters so as to prevent collision with the breakwaters or minimize boaters colliding with the breakwaters.

The reality is that waves from all possible directions were considered including which - there is actually another project that we are

Negril working on in were this specifically happened as well, but as I have mentioned in one of the slides Integrated Solution calls for five offshore breakwaters and four near shore breakwaters. We can only afford two in this project. Yes, there is a need for more and so you will have to lobby the powers that be to help Negril to find these funds. Maybe it is that the Private Sector Organization can find these funds for the other three breakwaters.

- As it relates to workers, there is a representative from the Port Authority here and one of the many institutional stakeholders or well. government agency that has to submit is the Port Authority and they have the opportunity up until the project is approved to provide recommendation markers. If for the it is deemed necessary then I am certain that they will be installed. Yes, and that is it.
- MODERATOR: Thank you very much Mr. Burgess. I do not hear any other comment so I

suspect that he has answered those questions.

Yes, madam, identify yourself.

MRS. BRADLEY: Good evening. I am Elaine Allen-Bradley and I am a resident in Negril. Before I ask my question I am just saying lot of emphasis is being made on the NWA to monitor and to look after these things that are happening. NWA don't have a good track record, all they have to do is look at the roads, so how are they going to monitor the sea?

#### (APPLAUSE)

- They have NWA doing this, doing that. They have proof; the track record is there. It is the roads so there is proof, so I am not fabricating this.
- Now, my question is this, where are the results of the Hydrological Survey Assessment as recommended by the EIA before any dredging of the river can take place?

Dredging of the river - this is environmental - can result in bank erosion, beach erosion, change in the salinity of the water and change in the ecosystem in the morass and sea. Now, was there any test made for the enterococci bacteria? know they mentioned in a water quality about the Now enterococci has a habit of e-coli. living in salt water and that is quite dangerous to humans and people swimming in the water. Also a lot of the mess that is coming from the morass goes into the sea. When they dredge the river it will flow more frequently and mark my word, there will be a lot more illnesses in Negril.

# (APPLAUSE)

Thank you very much Mrs. Allen-Bradley. You said that you are only a resident in Negril but you sound very informed. Thanks, thank you very much.

Yes, sir?

- MR COONEY: Good evening everybody. My name is Ken Cooney. I am a resident of Negril. Mr Campbell places a lot of importance on the survey that was done as part of the Social Impact Assessment earlier this year. An observation on two very closely related questions. The beach community by far when the survey was done, sorry the biggest group that was surveyed as part of that survey was the community group. Over 60% of the entire survey was addressed at people who are members of the community.
- Here is the issue, the observation. When those people were asked if they were aware of the project to build breakwaters, almost 90% said, no. And then when they were asked if they knew what breakwaters were, 64% said they did not, and yet the survey goes on to tell us that 95% of them then said, yes to the question of breakwaters needed and 82% had no concern.

(APPLAUSE)

Here is my question, two brief questions. What was the surveyor's brief to say re breakwaters particular the and in need for breakwaters in Negril. And were the surveyors briefed on the plans to use the Town Centre as the staging post for this project and was that information conveyed to those people they were surveying? And I know one of the questions to do with the retail group we heard about, some twenty-six people were questioned, the shop owners, store owners and all that sort of thing. The question is, were any of those people operating businesses, hotels, bars, et cetera, in the west end of Negril and were those people advised of the decision to use the Centre of Negril as the staging post for this project? Thank you.

(APPLAUSE)

MODERATOR: Thank you very much, sir.

The third speaker.

Good afternoon. My name is Marilyn MRS. VIERRA: Veira, resident of Negril. My question would be primarily for Mr. Burgess. You said that these structures are going to cause sand to freeze on the beach. However, the Smith Warner Report said that the driving force for sand movement is waves and currents in the near shore zone. The breakwaters are not in the near shore zone, they are 1.5 kilometres off shore so are they really going to accrete sand and if they are, where is this sand going to come from because Negril is known, every report tells you that our sand production is low, so if we are going to accrete sand it has to come from somewhere. It must come from somewhere. Therefore it must come from elsewhere on the beach because there is nowhere else for it There to come from. is no nourishment here. Furthermore, I would like to know really and truly on this project who are the coastal engineers and their qualifications because it is my understanding that your degree is Civil and Environmental Engineering Engineering. The NWA, Mr. Mark Richards is not here. I see he is called an Environmental Engineer but in fact reading his resume on the NWA website he is actually not an engineer. So I would love to know on what basis we should accept that this project is well out, thought well planned, well modelled, accurate, going to work?

NEPA had out a tender last year for someone to monitor this project on their behalf, to look at the design, to monitor the project from start to finish. That tender closed October the 11 of 2013 and to date no one has been given that contract. So, who is it that is looking at this to say that this is something that will work; that it is done correctly; that your modelling is correct; that there is not errors: We are all humans and as you are not really Costal Engineers I have to question the ability and the integrity of the project.

### (APPLAUSE)

- MODERATOR: Thank you very much, madam. Sorry but you will have to hold your horses as there are three questions, three persons ahead. Mr. Burgess, you are singled out, would you please come.
- MR. BURGESS: The first question related to NWA's track record and the hydrological study. The latter part of the question had to do with the Enterococci. Am I correct? Where is the person who had asked the question?
  - MRS. BRADLEY: The hydrological Study and the bacteria.
  - MR. BURGESS: Bacteria?
  - MRS. BRADLEY: Yes.
- Campbell MR. BURGESS: Mr. will speak to the Enterococci and the choice of that parameters he used for characterizing the water. As it relates to the hydrological study as a part of the review of the EIA which was submitted to the engineering report which was

submitted to the National Works Agency - sorry, the Water Resources Authority, they had some comments and agreed on a need for the Hydrological Study. We are still awaiting instructions from the National Works Agency or to be informed by the National Works Agency as to what will be done either in the EIA stage or post EIA permitting, but we agree that it is important that before the mouth of the river is opened up fully and I used the word 'fully' intentionally, that some study be done of the morass and physiological implication of the morass. In fact because we are aware of the drying up of the morass and I think that concern is being taken on board by NEPA, so it will not qo unaddressed.

The third question relates to us and the qualifications of the members on the team involved. I will not address the qualifications of individuals directly, whether our team members or Mr. Richards because without doubt Professor Nobu Kobayashi and his team of Coastal Engineers of Delaware were very instrumental in reviewing this project and designing this project, their qualifications go well above anyone that can be found regionally

- MRS. BRADLEY: They didn't design your things.
- MR. BURGESS: As it the relates to design, the Study, the Oceanographic Data Collection Programme, it is traditional in our field that the technicians and the engineers who are involved are specialists in these areas. We have engineers in our office who specialize in field work and the deployment of instruments. We have Hydrographic surveyors. As a matter of fact there Hydrographic Surveyors are two in Jamaica. The one who sets boundary internationally and in the region worked on this project, Mr. Noel Francis. And we can go on and on in detail about the specialists who were involved with this project. If you are concerned about the

analysis conducted or the veracity of it, I agree that you should subject it to your external view. It is your prerogative. The last question was, why was the tender for coastal engineering review not approved by NEPA, NRCA? That you will have to be directed to them. They are here, but that you will have to direct to them.

- The second question which has to do with the socio-economic survey, Carlton will address that.
- MR. CAMPBELL: I am going attempt to address two. Enterococci: In term of Enterococci you are correct to say that Enterococci lasts longer in salt water but over the years most of Negril's water quality, because remember now when we are doing EIAs, we are looking to see the historical trend of what is happening. So for comparison sake that is why we went with faecal coliform to see what is happening now compared to what was happening before hence why we can say

about the nutrients and the other stuff. That is why we went with faecal coliforms. As part of the TORS you would list what you are going to test for. So I mean your point is valid. Now, I mean, if you are going to do that, then in the future I guess everybody would have to start going to enterococci so that we can compare apples and apples in that case.

There was something I was reading about the hydrological I can touch on. In terms of the morass, I know that NEPA has a project that they are looking at in terms of the hydrology or the drying out of morass. I am reliably informed that they are looking at that and that project will soon be on stream in terms of that but there is also another option and that is the option that the material, instead of getting the material from the mouth of the river it can be transported in and leave the river as is. So there are options.
- In terms of the social survey; when you are doing a social survey in such a field like a project you tend to demarcate an area two to four kilometres just to get a feel of the persons who are close, assuming that the closer you are to a project, all things being equal, you are the one who is most affected. In terms of - you are talking about percentage, it might be a little bit confusing, but in terms of the information that was given - at the top of the questionnaire I don't have it here to read exactly what but the project is detailed; if the person doesn't know about the project, you tell them about When they are not aware of what a it. breakwater is, we explain to them what a breakwater is and then we give them the options of answering it. Is not like we say, okay a breakwater is...
- MRS. BRADLEY: That part is not in the EIA. All the questions asked about is, where they live, what kind of house they live in.
  - MR. CAMPBELL: The questionnaire is not here.

- MRS. BRADLEY: The questionnaire does not include what you said; when they asked you explain to them.
- MR. CAMPBELL: I know the one that went out it is missing,. But it's there. We basically gave the team going out, introduce themselves and tell them about the project and then you get their feedback. My apology if it is not in here but we will put the correct questionnaire in the final document. That was it?
- DR. FRESDON: No, that wasn't it. What you seem to be suggesting was that - you are explaining to us that you draw a circle around the project. Did you forget that the centre of town is also going to be a part of this project so many people living within four kilometres of the beginning of the West End, live in the West End and will be affected by this project. That is the question I was asking, whether people were aware of the impact it would have. And you haven't really dealt with the issue of

why suddenly people who don't know about the project and don't know about breakwaters suddenly say, yes they need it and yes....

- MR. CAMPBELL: I just said to you that we explained to them, but in terms of the point about the questionnaire, point taken, but also remember though it is a survey. Some of the persons on West End were interviewed. As I had said that four kilometres included part of West End. Might have not gone as far back as four kilometres from the staging area.
- DR. FRESDON: But, sir, you have been explaining all this stuff about circles and things like. I just ask the question and...
- MR. CAMPBELL: I just said to you that I agree with what you are saying.
- DR. FRESDON: Okay, but you still have not answered the question; were any people who run businesses in the West End included in the survey?

- MR. CAMPBELL: We did part of the retailers, we would have had some retailers in there, but what we tried to do is to deal with the community, persons resident and then we try to deal with...
  - DR. FRESDON: You have not answered my question.
  - MR. CAMPBELL: And I said yes they would have.
  - DR. FRESDON: Okay, tell me how many.
  - MR. CAMPBELL: I would not know it off hand now.
- DR. FRESDON: Could you just get it for us. You are not answering any questions actually.
- MR. CAMPBELL: Sir, I have answered it, unless you want me to make up things along the way.
  - MODERATOR: Thank you very much, Mr. Campbell.

Yes, sir, it is over to you.

MR. SMITH: Good evening. My name is Damion Smith. I am a resident of Negril. I have a three-part question. What happens if a storm or hurricane comes along during the construction? The shore site would be damaged as well as bathing sites. Who will be responsible? Is there any assurances for this? Thank you.

## (APPLAUSE)

MODERATOR: Thank you.

Yes, sir, your turn.

MR DAVIS: Mr. Chairman, my name is Kenrick Davis. I am the Chairman of the Negril Environmental Protection Trust. 1 would just like to really say to fellow Negrilians to tone down a little bit because we are about to shoot ourselves in the foot. Everybody knows the problems that we have been having with beach erosion for years. As a matter of fact we brought the Cubans here and they told us the problems they had in Barabera. They did some research themselves and it was out of that research that we went and got money in the EFJ to get Smith Warner to do the study.

The Chairman of the Beach Restoration Organization took a delegation to Jamaica House and asked

for help because we had no money to carry out the restoration project and it took quite a while before anything happened but it happened. The PIOJ was asked to go out and find some funds and they did. Now, we are sitting on the periphery of losing those funds. and it turned out she was from German Watch. She had read about what was going on the Internet and they decided to send somebody in here incognito to see what really was happening in Negril. So we have to be careful. We bad mouth our own organizations; vou know, we really don't weigh what we are doing. What has been happening, Mr Chairman, is that a lot of small hotels have been doing there own thing like my friend Blushi over there, and the longer we take to correct the problem is the more you are going to have people, some putting in reef balls; some putting in boulders, some putting in beach nourishment. We are going to all have different kinds of things happening; un-supervised, not organized. So my take on it is that we should seriously - and if you have. I don't have is a question, I am making a comment. I am saying if you don't have the money to do something and you go to someone and ask them help you and they are attempting to help you and you do not agree with the methodology, what you should do is to go and sit down with them and say you are not using the right methodology, can we look at something else. You don't curse them off in the press.

## (APPLAUSE)

MODERATOR: Okay. Maybe somebody may say he did not have a question. The truth is that there are some persons who asked more than once, so he is okay.

Yes, sir.

MR. ASANTY: Good evening. Kofie Asanty. We have a problem. We have a problem in the last forty years and it is not being addressed

and we pretended that we started dealing with the problem of beach erosion, but at the end of the day we have an option to try and get rid of the problem now.

First of all I was surprised that one of the responses from one of the preferred groups was that we do nothing. That is not true. I think the problems that we have need to be tackled and tackled urgently. We need consensus from all parties concerned. We all love this town and want it to progress. It is pointless to trying to tear the whole thing down rather than trying to make suggestions on how we can make the project work and make it fit our situation here rather than just tear it down. (Applause)

Now, the point I am making is that we have to deal with this problem. At the end of the day if we don't it will remain until it get worst. The only criticism I have of this thing here is that we did not have more sessions like this so that people are properly informed in the community and know more about it than we have now. That is my major concern but otherwise I think this project needs to go ahead. What we need to do is to get people who are concerned about the issues that have been highlighted, let us all join hands and deal with the problem. Let us not try to tear it down because that benefits no one. That is my point. Thank you.

- By the way when will the project start? (Applause)
- MODERATOR: There were three persons but in truth and in fact there is only one question, so please madam.
- MS. PRESOROMEL: My name is Sophie Presoromel. My family owns two properties in Negril for over forty years. We have a property on West End and we have a property on the beach. First of all I would just like to make Mr, Dennis know that Mr. Daniel Grizzle, my father was the Chairman of the Beach Restoration

Committee and he has always advocated for beach nourishment. The Cubans came from Baradera they found the sand out there and they told us the best thing do beach to was nourishment.

- I also want to remind everybody who thinks this is such a wonderful project, is Negril viable with one-and-a-half mile of beach? Is it? We are saying Negril; Long Bay is five miles long. So, yes it is a great project and from what I understand from the gentleman when we get more money we are going to have breakwaters all along the bay of Negril. I think that is going to look very ugly personally.
- Anyway, Mr. Chairman, could you excuse me for a few minutes. There are several people who could not make it to the meeting Mr. Neru tonight, One of them is Holsten, who is the owner of Crystal Waters. He with Negril for over sixty-five years and he has been a resident in Negril for fifty. This is his

question, he is saying that there is never any erosion on the northern section of the beach. Coconut Grove and Sundowner never had erosion nor did they remove sea grass. Hedonism and Sandals started pulling up the sea grass which has then created a lot of the beach erosion in the northern section.

## (APPLAUSE)

Will the breakwaters bring back the sand to this area which used to produce sand before and has massive erosion? That is Mr. Holstein's question. I now beg you to ask one of my own questions. According to the EIA in the focus group discussion with NEPA, Craft Market vendors and hoteliers, the view of everyone was that once the river was dredged it was only a matter of time before the sand would be re-deposited in the river. The focus group discussed with the fishermen and the water sport operators stated that the movement of sand would cause the re-deposition of

According to the sand over time. beach nourishment costing in EIA over six thousand cubic yards or one hundred and twenty trucks loads equivalent of sand will be taken out of the river and the foreshore to create land.

- Now according to the costing in the EIA I reckon that is US\$.8M worth of sand. Now, this is going to be the fourth time that we dredged the river that was never a river and my estimation is that if we go ahead with this dredging the estimated loss of sand over that period is equivalent to today's prices \$3.6M worth of sand.
- My question is, will this project be replaced by accretion this sand lost from the beach which will occur again if the river is dredged once again. Can we afford to lose that sand from the southern section of the beach all over again? Thank you sir.

MODERATOR: Thank you very much, madam for that question.

(APPLAUSE)

One more question.

MS BOENO: Good evening. My name is Debra Boeno(?)I am a business owner on the beautiful beach here. I have been here for about eight years. I joined every organization, pretty much, when I first came here and the first conversations were about beach erosion.

The first thime we ever heard about this project was at the Resort Board Meeting in February.

MODERATOR: Of this year?

Ms. BUENO: Of this year. Never was this ever discussed. Never did we ever want this. But anyway, it was brought up in February. We were told that it was starting at the end of March, we are now into July. I am a business woman okay, so I am looking at how much money you said that you have to spend to build these breakwaters. I personally don't believe you have enough money to build two breakwaters. Watching how things are done around here, be honest.

My questions are, are you tapping into those funds while you go about doing all this work? You said that you are already committed to these funds. Secondly, if you do run out of funds, what you are going to do? You said that it is going to take nine months to twelve months to do this? And last but not least - those were my questions- I just want to say the current change is worldwide and I insist that a documentary be done, whatever we choose to do on that beach because we do have one of the longer beaches, we do have one of the longest tourist's beaches. We used to be in the top ten of the world. We are not on that any more. But a documentary needs to be done on whatever approach you take.

MODERATOR: Thank you very much, Madam.

You have to hold your horses, sir.

- PARTICIPANT: I am not a horse sir, I am a human.
- MODERATOR: I did not call you a horse, you know. I said you will have to hold your horses. Don't worry about it, my brother?
  - PARTICIPANT: I am not worried about that.
- MR. BURGESS: Good evening again. The first question if I got it correct had to do with if during construction there was a storm or hurricane what would happen and if the works would be covered by insurance? Is that the question?
  - A: Yes.
- MR. BURGESS: The short answer to that is in most Civil Engineering Contracts a very typical provision is insurance for the works. However, in tendering the works and allowing the contractors to offer prices for the work, one of the things you do not want to do is take away all the risks

So the specification will from them. speak to them anticipating what the normal troubles are so that they will consider these things in their prices and not try to impact the project for variations for standard things. То answer your question, during storms and hurricanes the typical things will be done to bring the boats into safe harbour assuming that they were not into safe harbour. The operators know where around the island is safe. etcetera, for certain vessels and, yes it will be covered by insurance. There is a provision in the draft tender agreement and it is very unlikely that it will be taken out because in 99% of our engineering contracts it is a typical provision. Did that answer your question?

A:

Yes.

- MR. BURGESS: The second real question had to do with --the second real question came from Miss Grizzle.
  - PARTICIPANT: They are all real questions.
- MR. BURGESS: Miss Grizzle, you will have to help us to understand, not what your statements are, but what your question really is. We had two questions, one from you. If I get it correctly you said that there are areas in the northern part of Negril which have not eroded in his estimation, ever, and what we are saying about erosion in the north is new for him. Is that correct. Miss Grizzle?
- It is from Mr. Posay, 65 years knowing MISS GRIZZIE: Negril there was never any erosion in northern section. The the water travelling was in the stones because it was in the most defined place. His question; if the erosion that was taking place, has taken place since the sea grass was pulled out of the sea and killed, and his question is, is this breakwater going to bring back, accrete

sand back in the northern section since sea grass has not been and presumably will not be replanted in that area.

- MR. BURGESS: As it relates to the back part of your question where you asked if the erosion had occurred after the sea grass had been removed...
- MISS GRIZZLE: We are not asking you, we are telling you that erosion took place after the sea grass was removed.
- MR. BURGESS: So he has now observed erosion after the sea grass had been removed. That question is answered very eloquently in a brief answer. I suspect there is a strong co-relation between the stabilization of the shoreline and the presence of the sea grass near a shore. I hope that answers your question?
- MISS GRIZZLE: Will the breakwater accrete sand in front of Sandals and Hedonism? That is the question.

- MR. BURGESS: I am going to answer your second question. The removal of the sea grass has a lot to do with the shoreline being eroded.
- A Yes, sir, but will the breakwater accrete sand in front of Sandals and Hedonism, yes or no?
- MR. BURGESS: I am going onto your second question.
- MISS GRIZZLE: But that was the first question. Please answer, yes or no.
- MR. BURGESS: The long and short of it yes, Miss Grizzle, approximately twelve to thirteen meters. That is what we expect with the wave climate in which we observe in a particular period we observed that there is a window of time before thees increase and evolve and stabilizes for a long term position, approximately seven years and it will be about twelve to thirteen meters. Does that answer your guestion?
- MISS GRIZZLE: Can you tell me where the stand is going to come from?

MR. BURGESS: Miss Grizzle, what happen during a storm is that the waves articulates itself on the sea floor. It gets suspended. When the breakwater hits a particular current in the wave pattern the sand deposits in the lee of the breakwaters as well other areas associate with the breakwaters. The sand deposits, because the sand is suspended its runs up the shoreline on the back of the beach and it is deposited on to the beach. So where the sand is going to come from, the sea. It is actually going to come from the sea floor. Where does the sand goes to after the storms, on the sea floor. It did not disappear. It did not go in that big trench off Florida. Does that answer your question?

MISS GRIZZLE: Not really.

- MR. BURGESS: Feel free to come and sit with me for maybe two hours in Kingston and we can discuss it.
- MISS GRIZZLE: Why don't you come to Negril, We are very nice people down here, you know.

The second question, can you question it?

- MR. BURGESS: So that was Neru's question?
- MISS GRIZZLE: Right.
- MR. BURGESS: The second question or your first question had to do with when we dredge the river there is an adverse impact and your estimation is that sand really comes from the southern beaches or at the south part of the beach and pass into the mouth of the river.
- One of the mitigation measures which we had conceptualized which was removed from the project, we had proposed a fifteen meter extension to that southern run extension actual an to that was southern run to keep the sand on the beach and also change the way the waive pattern approach the southern beach. You will notice that when the sand goes over the back of the groin and into the back of the river, I am certain if you look at it and note the

condition, that is what happens and so unfortunately because of budget constraints, there would be a need for Five Hundred Thousand US Dollars, We were asked to remove it from the plans of this phase of the project. So, again if there are private individuals who would like to put Half a Million US Dollars towards this project to facilitate an extension of the drawing on the South Negril River it is an excellent starting point.

MISS GRIZZLE: I am afraid I don't think that you did your homework right because most of the sand goes over the top of the groin that is how it get into the river. So, unless you are going to build a six foot wall there to stop the sand going over and I think it is very hard to ask people at the southern section of the beach to find money to stop them losing their own sand that is going to go back into the river. That is very difficult to accept. Thank you. (APPLAUSE)

MR. BURGESS: The third question, the topping up of the fund or rather a statement about the topping up of current funds. The topping up of the funds is not really a matter for me to discuss. As far as I know there is no topping up of these funds, the funds are distributed from PIOJ, the National Works Agency based on certain things and they have to do real things for the projects. Real things done for this project started from last year August, have to do with our studies and their supervision of our studies, et cetera. As far as I know there is no more use or access to these funds, the funds are tightly controlled. The representatives from PIOJ is here. PIOJ does not really have access to those funds for any other purpose other than for the project that was described by the project in 2012. So for want of a better word, it is not a willy-nilly affair as far as I know.

- MISS GRIZZLE: But as the project progresses you will need more people doing this, doing that and the cost goes up. Isn't there going to be need for more funding?
- MR. BURGESS: You are correct, madam. The need for the project at this stage is larger than immediate budget available. The reality is that there is going to be a some topping up for what need for PIOJ has access to from the Adaptation Fund and to make the project a better project, I am certain that the project would be grateful for Four or Five Million US Dollars the Private Sector can put towards this project.
- MODERATOR: Thank you very much. Sir.
- MR. HILL: My name is Dalton Hill otherwise called Pelly. I look around this room and I don't see anybody here, maybe older but not really older when it comes to knowing Negril like me. I was born just five hundred meters up the street.

- Now I only heard about this particular project some weeks ago, couple weeks ago and I have been living here all my live other than traveling to various areas. Nobody has informed us. No survey, nobody came about checking on people who really know what is going on.
- Now, in 1959 when this road was built by Raymond Caribbean Construction Company, I am not forgetting it, those breakwaters down there they told them that, do not build those like the way they did. Distinguished people like my father, Grandfather and many more people told them who were plain fishermen in this They because they knew what town. would have happened. They continued to build them. They build them. The south side should have a building quay. The right side going further out to ocean and turning in the middle here so, that sand would have gone all the way round and would only come in. It would not have interfered with the river that was dredged.

Since 1962-63 we had a major storm. We had to use a ladder to climb from the top of the beach part down to the sea. That was what happened the first time when we saw what was going to happen. Since then the beach has been going and going and going. If these planners had come and talk to people who have some kind of experience to what was going on, then it would not have gone to the stage where they are deciding to take away Downtown Negril which is going to cause a major problem for business When they were doing the people. sewage thing that caused a major problem. We had to go through Red Ground, we had to go through Orange Hill to go to our business place. We lost millions. We never came back, West End never came back together after the sewage. It never did and it will never come back because of what happened.

Now, all of a sudden the planners in Kingston decide that they are going to take our beautiful little town and going to put some kind of breakwaters down here. Who do they think they are catering to, some squatters? For what? So that they can start shooting one another again. No, sir, I don't agree with that. I think we can find somewhere else to remove the boulders to and do not disturb Downtown Negril because it is the entrance to West End.

(APPLAUSE)

It is the entrance to Red Ground buses are usually found. When you have these big buses going to Ritz Cafe, you think that they are going to go through Red Ground? They can't. The school children have to come from their primary school through Hermitage and up the road towards town. The big buses cannot go through there. It is not going to work. It can't work. We have to go back to the drawing board. This project needs to go back to the drawing

board. We need some experts from abroad who have experience in this kind of thing because Negril beach will be destroyed more. As far as am concerned if you put a breakwater out there the current is not going to move the way it is supposed to move. The stagnation is going to be on there. It is going to turn into something that you Baltic see in the Sea or the travel extensively Mediterranean. over many oceans from the North Sea to the East Sea to the Baltic, the Mediterranean everywhere and I see projects and the projects that I see is something that they should go and they should study it, look and check with the proper engineers. I am not saying that these people are not learning in Jamaica. They are learning but they do the not have experience. The experience is what we need and until we have that kind of experience, I say the project should sit in some corner for a while because I believe will come back if we adhere to certain and make sure the building codes are adhere to and all the things that the planning authority should be doing which they are not doing.

From that time, from the major hotel, from the first hotel entered this town which was Negril Beach Village, they put a breakwater out there. Then when Sandals came in they did their thing, they keep moving out sand and when everybody said don't move the grass because the grass it part of the sand, they have to come in, replenish and then go on out again. But when you put it in a truck and you take it away and you dump it, you are dumping ten tons of sand. This is an ecological thing and I would like the scientists to see what is going on down there.

I totally disagree with Downtown Negril.

- We have got to find somewhere else if the project is going to go on and we cannot stop it, it cannot be Downtown Negril.
  - MODERATOR: All right sir.
  - MR. HILL: It just cannot be Downtown Negril.
- MODERATOR: I hear you, sir. Jesus said, those who have ears to hear let them hear.
- MR. HILL: And any way, all I have to say is that when you have the project who is going to maintain it, who is going to monitor it, who is going to keep check of what is Every contractor who has going on. this town to do major come into development has been found wanted. The roads are a mess, the water is a Where are you going to get mess. water from to wash these stones? We are in а drought, severe drought. Jamaica is in a crisis with water and it is not stopping because the entire world is You can changing. see what is happening to some of the countries in Singapore and Thailand and China, all

the hurricanes and water is heading in direction. Nothing that is in the Caribbean, absolutely nothing. And all of a sudden you bring all of these big engineers and they come and they want to put a project in place and they don't talk to native people who have some kind of idea! We might not be learned enough but talk to us and let us give you some ideas. I don't want to go any further but I feel so terrible with what is going happen to this country unless some sensibleness come into the whole thing.

MODERATOR: Thank you very much, Mr. Hill.

(APPLAUSE)

PARTICIPANT: I am back again. Before I ask my question, I would just like to clarify one thing that Kenrick Davis said. The young lady from German Watch was not here incognito, she came to take part in a conference that Pan Caribbean Hyatt had in Montego Bay which I attended. I met her when she met you on the bus coming to Negril. I met her at Catch a Falling Star and she had lunch with me the next day and spent the afternoon with me. So, she was not here incognito as you said. She is part of an NGO out of Germany that their role is to projects monitor seven that the Adaptation Fund is doing one of which is here in Jamaica and that is why she came down.

About the stones, I would like to know if a supplier has been selected. I saw the Quarry Assessment in the EIA. It was fairly obvious from the extreme bias in the EIA, it was extreme bias towards one supplier based on wording. I mean they were 'superb', they thought they were great. Everything about them was wonderful. Mr. Foote, your quarry was not one of those.

MR. FOOTE: Yes.

PARTICIPANT: And I would like to know if the quality of the stones that this quarry supplies has been assessed and confirmed because your EIA said that they must have specific gravity of 2.5 and there is nothing that indicates that any assessment of any of the stones that any of the quarries supply have actually been tested to meet this specification.

MRS MCCAULAY: I have a model questions. I have a long list of them but I am just going to ask one. Figure 451 of the EIA - who is going to answer the model questions, Mr. Burgess? I do not know if you all understand this model business. I had to do a lot of reading and I did get Mr. external review as Burgess suggested. There are picture models and computer models and there are physical models. That picture that he showed you of the waves rushing up the kind of a trench, that is a physical model and it seems to me that they are showing you so different things. So the model constructed was at Ocean Engineering at the University of

Delaware by well qualified people show that the breakwaters to reduce wave height by less than half, so a co-efficient of .53. Agree? So if this is so, isn't that in conflict with the physical model results which, sorry - then why did the wave model use an EIA that is ST wave, assuming that the breakwaters reduce wave heights by 75%. So physical-trans-sessional model says .53, roughly half and ST wave says 75%. Then figure for 51 of the EIA shows the wave height landing at the breakwaters. So inside the breakwaters is created by SB, different to the zero percent to the waves approaching it. So we have three different results, the physical model saying .53, we have ST waves saying 75% and we have S beach showing 50%. So the predictions in the EIA seems to be somewhat in question. The SB model seems very doubtful to They are saying three different me. things. I would like some explanation on that.

- MODERATOR: Before the men come I am going to ask that we only have three questions.
- MR. BURGESS: The first question was by Mr. Hill. Your observation as the people who are carrying out the work on the survey, you felt that the local experts were not consulting also it and was your estimation that there is a need for experts to be brought in to assist and that the stock pile being put Downtown was inappropriate and there was a need for another location to be sought. IS that what you said?
  - MR. HILL: Yes, that is what I said.
- MR. BURGESS: Mr. Hill, by your own admission you said that you have travelled oceans. I suspect that when you were going over those oceans we were here because if I look at the time that the Hydraulic Surveyor, the Environmental Engineering team was here certainly over the last nine months you would have found that specific to this project, the team was here between six and

eight weeks continuously, if you were to add up all the time, at different points in time, if you were to add up all the time. And that is not so with many other projects that we have work on in this area. I appreciate your local knowledge and after this maybe we can spend five or ten minutes and you can tell me what your interpretations of breakwaters are in your seventeen years period. But I do take offence and I think I speak on behalf of other members of the team. When you say that we are not in the business of consulting. Locals, for want of a better word, fifty-three persons were surveyed and with Carlton 200 -300 persons. Is it that those 200 - 300 other persons don't count? Is it that only those who live close to Negril that count?

MR. HILL: Do not misinterpret what I said.

MR. BURGESS: Mr. Hill, Mr. Hill, Mr. Hill, it is me responding now. It is my turn now.
- MR. HILL: No, no, you are saying that I don't count, so you are insulting me.
- MR. BURGESS: No, no, no. I am asking you if it is that those 300 or 400 other persons don't count.
  - MR. HILL: Ninety percent of them don't count.
  - MR. BURGESS: We will take that as your opinion, Mr. Hill.
- I am going to take the third part of your question. You said that we needed overseas. We got three of them. I take some offence to that statement as a local professional. It is time now that we start to believe in our people specially our professionals and I am tired of people like you really want to put us down. (noise, inaudible) Now, you want more foreigners to come here. Mr. Hill, I am just saying to you that you said that you want foreigners on the Three of them were on the project. project. You are satisfied? Three of them were on the project.

- MR. HILL: You listen to me! You listen to me!
- MR. BURGESS: No, no, no.
- MR. HILL: I didn't even insult you.
- MODERATOR: Mr. Hill, I am here.
- MR. HILL: I did not insult you.
- MODERATOR: Yes, sir, I am here.
- MR. HILL: He owes me an apology. I did not insult him.
- MODERATOR: He said that he felt insulted that you should think that as a Jamaican...

(Mr. Hill shouting and a lot of cross talking)

- All right, don't be offended, sir, don't be offended. Mr. Pelly has good intention. He means well.
- MR. HILL: I didn't offend them. I also said that I do not know what the situations are. All I was saying is that I do not think that we should not have proper experts and I believe Negril deserves that.

- I am a Negril person. I was born here. All I am saying is that I do not like what is going on because I was not told and many of us were not told.
  - MODERATOR: All right, Mr. Hill. I thank you.
- A We are not here for war; we like peace. (Loud noise) We are trying to develop Negril. Mr. Hill, don't worry about it. You are elevated, you are on a hill. You are not a plain, you know, you are a hill.

PARTICIPANT: The word is love.

(Noise and confusion)

The word is love.

MR. BURGESS: Mr. Chairman, just to return to the line of questions. In a previous point in the questions and answers the question was raised as to members of the team. Yes, Mr, Chairman, just to complete my response to that question, the issue of stagnation was raised and the breakwaters would result in stagnation and that we probably didn't consider that sufficiently. Well, let me alleviate those fears, that the model that we use is a three-dimensional. I am one of two persons in the Caribbean who has actually designed this. There are either or four persons who three have purchased models like this. There are very few people who have a final year Dissertation on Coastal Water quality specially relating to Jamaica, Kingston Harbour, the development of a model, coastal water model. Rest assured that it relates to the potential as for stagnation а result of the as breakwaters, we have used the best tools possible. I am even going so far as to say on another coastal project in Jamaica I observed and I read the Costal Engineering The Report gentleman is from Ireland and it is very similar to the two-dimension models which you can use engineering students to erect but it is not something that you use for practice. And I observed where his report was accepted by the relevant

authorities yet still our own is still up for scrutiny.

Rest assured that we have studied stagnation. I may have been born in Jamaica, raised in Jamaica and live in Jamaica but we know these things.

The second question has do with the biased language in the contract as it relates to quarries and if the stones were tested to meet the specifications.

MISS VIERA: I ask specifically if a supplier was given the contract to supply the stones. I said there was bias in the contract based on the quarry assessment and the wording that was used, the humility. You can see for yourself that there is obviously a preferred supplier and I am asking if the stones from that which I understand are dull and are taken as lime stones have been tested and assessed to be the specific gravity of what the EIA says in your design. It says the stones need to be stones to build breakwaters.

- MR. BURGESS: May I get your name?
- MISS VIERA: Mary.
- MR. BURGESS: Mary, first of all there is no contract signed as yet for the supply of anything. Right now we are in project development stage. We are planning. We are going to tender soon. What we have now is a tender document for the supply and placement of boulders and that tender document has specifications in there which any contractor from St. Thomas to Negril point can choose to try and meet. I am sorry that you see the bias but it is preference for a particular quality of stone in a quarry as bias. The reality is that Mother Nature does not, but down stones in equal quality elsewhere and stones. So when we see stones of a certain quality and formation

we highlight it just to draw to the attention of all of those who reading that this is the ultimate preference, but as long as you meet the specification or specifications and I must tell you, it is much more than 2.5. The specifications for the supply of rocks is actually about seven pages and the 2.5 is actually about one line on those seven pages. So what we have done is open it up and said, no we are not going to select a contractor for a quarry. Meet these quality criteria which suit our project and what this does is that it opens up the quarries all around the Jamaica. I hope that answers your question. Your question is was there a contract or was a contract selected, no. Was the quarry tested to meet the 2.5? The records of the Geological Survey Department that is, Mines and Geology Department are very extensive, beautiful data base of information on the quality of stones. Many instances there is no need to keep re-testing stones in these quarries

because the information exist there. In some instances from the 1950s and 1960s. As for if we tested it, no. As for if there are test results, yes. All right, I think that I have answered your question.

- A No you did not. I am asking, you have not assessed it but there is information at Mines whatever.
- MR. BURGESS: How is that relevant to you? Are you going to tender? The tender will come out in another month or two.
  - Mr. Chairman, I do not remember that gentleman's name.
  - MR. REYNOLDS: Reynolds
- MODERATOR: I want us to know that we are not going to be here all night. So, I think that is Mrs. Jackson. I think that we are going to be terminating there. Sorry, Mrs. Grizzle, you have spoken more than once. We are going to cut right by there. Were you in the right, sir?

MR. REYNOLDS: Yes.

- MODERATOR: Well, wherever you were we will go back there. Okay, are you yielding to her, madam?
- MISS GRIZZLE: Yes, I am.
- MODERATOR: Well, fine. Listen it is nearly 8 o'clock and we have been here from 3 o'clock. Yes, sir.
- MR. WILLIAMS: Ladies and gentlemen, Lenworth Williams here from the Negril Coral Reef Preservation Society and I am also the Chairman of the Negril Advancement Now, I must say to the Foundation. Kingston that people from all the concerns that the Negril people have are extremely legitimate, very legitimate because I have seen a lot of good intents for Negril that have gone sour. For example, when Norman Manley built the Highway in 1958 and drained the Wet Land, he didn't know that these disasters; the drying out of the Wet Land and the sugar cane seeping into

the canal over flooding the coral reef with algae and Ethanol, nobody knew that. When they built the sewage for West End and shut down the community for three years, all of those were done with good intent. I am saying that dog nam oonu supper, if this breakwater that is going to be built should go amok dog will nam your supper.

But let me say this, for the people in Kingston NEPA and PIOJ who have spent hours and toiled tirelessly to get this funding for Negril, it is a good intent and we the people of Negril are extremely grateful, or should be extremely grateful for the effort.

(APPLAUSE)

And let me say that the study that the PIOJ used to get the funding the owner of that study legitimately or legally is the Negril Coral Reef Preservation Society. Let me say this that a lot of people are saying 'breakwater', we never hear of this, where it come from? Some of us have selective memories because when Smith Warner needed to get the other 50% of the money to complete the study, the Beach Restoration Committee Chairman had to sign off on the study. Daniel Grizzle signed off. I took the letter to Daniel Grizzle who signed it so that Smith Warner could get the money from which the recommendation to build breakwaters and/or beach nourishment.

- MS. GRIZZLE: The first action was beach nourishment.
- MR WILLIAMS: The first action was beach nourishment. The ultimate scenario is а comprehensive scenario. I spoke to Smith Warner in 2004 an never once I was of the opinion that you should re-nourish before you build the breakwaters. I was, the NCRA was always under the impression that you build the breakwaters and then you re-nourish and then do you the comprehensive; meaning you start with

coral reef, and sea grass and stop eat the Parrot Fish because it is the Parrot Fish that will make back the sand in the event that you may need to re-nourish again because sand comes like Milo, sometimes it is soft. And where you are going to get the sand from? You have to have coral reef where Parrot Fish can make because one Parrot Fish makes 800 pounds of reef in its life time and we nyam them out at the stage of a ticky-ticky.

The relationship between PIOJ and NEPA is not so good, but let me warn Negril people, the West End road that got all of these projects that we have, came through the PIOJ and so we must be very careful how we treat these people from the PIOJ and NEPA because the race nuh done run yet and we are going to need them in the event we need to re-nourish.

Now I believe what the PIOJ needs to do is, in the event we are going to be getting this breakwater,

I only hope that they have a maintenance budget in place because while I trust the PIOJ I don't trust Mother Nature. Because I don't know who knows Little Bay but I see some big stones a roll out of the ocean by waves.

- I have seen a community in St. Mary, a housing scheme, that stones mash up. So I trust the PIOJ people, I trust the NEPA people because I have worked with them over the years but I don't trust Mother Nature.
- PARTICIPANT: There is this saying that we will be doing one-and-a-half miles when we need five miles. I believe that the climate change for one which is very Caucasian came from out of a Caucasian Treaty where the industrialized nations agreed to put up a billion US dollars to help Third World countries adopt and adjust to climate change phenomenon.

- Now, I believe too that we also need to maintain a good relationship with these people because if they fund a project for Negril and we kick it over, what is going to happen next time. I am saying that PIOJ, if we are to do the breakwaters make sure that you have a maintenance fund in place and if you want to disturb the traffic going to West End, if have to do that, please do it at night.
- MODERATOR: All right, sir. Well spoken.

(APPLAUSE)

MR. CUMMINGS: Good evening. Conroy Cummings, JAMUSJARRET Charities. I just got a text and this question is for anybody on the panel. Farmers in Sheffield say, please remember them when you issue permit to dredge the river.

For me now, I would want to ask any person who sits from the three on top of the platform. When last have you taken a swim in the Negril River on a Sunday? Anyway I experienced some strange happenings three Sundays ago. I went to the Beach with my son and while having a swim I saw the water started to get discoloured into а areen form. However, I still maintain my presence in the water with my son and after half-an-hour he started to behave like he was drowning or gasping. I rushed him to the Savanalamar Hospital where it was very technical to get medical attention anyway. When finally I asked the doctor what was happening and I explained to him, he said maybe it is chemical from that which trigger off an asthma attack.

Now, I am saying if the boulders should be in the water how fast would those chemicals disburse itself to other areas or would it be trapped inside our swimming zone? For some reason up to date I don't think Negril get a data on the treatment quality coming from Sheffield coming into the river and the sludge. They need to have a data so that we can know what we are getting ourselves involved with the treatment plant in Sheffield. I went there and it was well fenced but I assure you that there is a skeleton behind the 'Keep Off'. Thank you.

(APPLAUSE)

- MODERATOR: Okay, the next speaker.
- MISS GRIZZLE: Thank you, sir. I would just like to point out that the Smith Warner International Report says, the first option beach nourishment and we have to deal with degradation in the quality of the water in the Bay of Negril before anything else can be done.

- The second option was if after five years we are still experiencing some erosion, then the possibility of shore some near breakwaters were considered. Since then, the world has changed. There is a thing called the Salmon Engine. It has been used by the Dutch and it replaces breakwaters. It is a fantastic idea and L am hoping you get more information on that. So I just want to deal with the Smith one.
- The second point. You mentioned about PIOJ getting a bad reputation with the donor agencies. Well, to be honest with you if you don't use the money PIOJ will just have to find another project and re-apply. So you won't lose the money.
- Secondly, I think that Jamaica has already burned their boats with the International Lending Agencies with what Jamaica plans to do

with Goat Island. So I do not think that Negril is going to make any difference.

(APPLAUSE)

My question to you Mr. Chairman - I am sorry but I will have to give you a little bit of work so just bear with me please, sir. I am asking you to read those two pages. They are coming from out of the EIA. I printed them out of the EIA. There are many, many more like that in the EIA and I have question here for C&L а Environmental. The question is, please explain why the quality of the diagrams and the maps in the EIA are such a horrible quality? Dr Wickham McNeil, our M.P., and the Ministry of Tourism has requested that better quality maps and diagrams be supplied before this Do you not agree that the meeting. Negril people deserve the right to be able to see and to fully comprehend the scope of the project in its entirety and that another public meeting should be called once they have been able to peruse these documentations before any final decision is made to this project? Thank you.

(APPLAUSE)

MISS GRIZZLE: I think a high school student could produce a better quality diagram than this.

MODERATOR: Thank you. The last speaker. Yes, sir.

MR. ISSA: My name is Lee Issa, Chairman of Couples Resort. For the past say, forty restoration, beach years beach nourishment has been the preferred method of improving the quality of your beach in coastal regions. Now, I know the argument why it was not considered because the experts say that it is not sustainable. Now, my question is, based on the EIA Report if we are losing approximately two feet of beach per year and we were to do a beach nourishment programme that takes everybody from one end of Long Bay to the top of Long Bay, 90 feet of beach,

and we are losing two feet per annum, that means that in 45 years we would be back to where we were before we started the project.

MODERATOR: You and I will be around that time too.

Well, I hope so. But he point I am MR. ISSA: trying to say, is that to me that is sustainability. Where you have a hard structure, based on а lot of the comments and questions that were asked, is that what happens if it doesn't work? It isn't reversible. With beach nourishment, it is a soft environmentally and everybody will solution sound benefit, from the people in the south to the people in the north and it will take 45 years for us to get back; if we gave everybody 90 foot of beach it will take 45 years for us to get back to where it was before we started that project. For that reason I go for beach nourishment. We don't need the breakwaters. We do need the two-pronged solution. not This is a shallow bay, it is a natural thing. Let us work with nature. Let us do the beach nourishment and let's forget about the breakwaters.

(APPLAUSE)

- MODERATOR: Sorry, sir. My word is my bond. This was the last speaker. Back to you, madam.
- MR CAMPBELL: Miss Grizzle, in terms of the figures you were talking about, I am trying to figure out which figures you were talking about.
- MISS GRIZZLE: I was pointing out about the maps and the diagrams in the EIA we were unable to read any of them. Minister McNeil at the last meeting asked you to supply with better quality map. We need to get this information to be better able to access what it is that is planned for Negril.
- MR. CAMPBELL: My understanding of the map was to have a map that shows some of the

properties, so that you would have some ideas of locations along the Long Bay.

- MISS GRIZZLE: Did you look at the map that I gave to the Chairman? Was it intentional?
- MR. CAMPBELL: Some of the diagrams come from the engineering aspect and because they have a bigger thing, to get it into the report, so we had to get it in. I do not have any problem with you saying that you cannot read it. When you are saying the quality, you are talking about the readability in terms of the writing? I have no problems with that.
- MISS GRIZZLE: This one today was given out. We cannot read it, we cannot read what it says. I think that we have the right to take the information home, peruse it, discuss it with our families and friends and make proper evaluation of it. Without the correct information we are unable to do so. I think that we have the right.

- MR. CAMPBELL: The idea of that is that we make notes as we go along so that we will have any clarification that we will need.
- MISS GRIZZLE: I can't. I think we should be able to read the EIA. I think it is a basic human rights. You are proposing something for Jamaica, for Negril, as a human right we have the right to know what you propose to do. The size dimensions...
- MR CAMPBELL: And that is why we are here right here community. Let me clarify in the something about EIA. An EIA is a technical document. It is not а document that is for John Public. Yes, we know that you need to read and get an idea yes, that is why we have public meetings for us to discuss it, but the sum total of EIA is a technical document for agencies and such to make decisions. Some of the terminologies in the EIA would be above some persons.
- MISS GRIZZLE: I am not saying no. I would like to send it to technical people and they cannot read it, so I think I have the

right to see what it says. That is all I am asking for.

- MR CAMPBELL: Fine, but you have my number, you have my name, so it is not a problem for you to call me.
- MISS GRIZZLE: We have requested NWA over and over for the documents and the diagrams and we have not had any response.
  - MR. CAMPBELL: I said me, I did not say them.
- MISS GRIZZLE: Dr McNeil asked for the information too and we still have not received it.
- MODERATOR: Madam Grizzle, I think that you have asked some legitimate questions with respect to the documents that have been presented. I think the onus of responsibility is upon them to ensure that the documents that they are going to present are presented in such a manner that they are at least legible. So we are going to ask them.
  - MISS GRIZZLE: I appreciate it. Thank you very much, sir.

- MODERATOR: Sure. Ladies and gentlemen, it tells me that you love your town Negril and you want the best for it. Don't you want the best for it?
  - PARTICIPANT: Yes, but we do not want any breakwater.
  - MODERATOR: You do not want to have to break any water.

This coming together has been instructive for all the parties Т that concerned. am sure the respective agencies would have listened and would have noted all the comments, all the all recommendations. the suggestions that have been made and in the end because the Negril product is so critical to Jamaica, not just to persons but critical who live here to the development and advancement of our beloved country that the right decision will be taken because in the long run, history is going to determine whether we had made a right decision or the wrong decision. We are going to thank those from near and far.

Just to remind you, you have thirty days to formally write to these agencies regarding your feelings, your suggestions, your recommendations and I implore you to use that opportunity to make those recommendations and suggestions and expressions.

Could we stand for the National Anthem, please?

ADJOURNMENT