



# United States Department of the Interior



## FISH & WILDLIFE SERVICE

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**JAN 30 2012**

In Reply Refer To:  
FWS/R4/CESFO/72 LP012

Col. Alfred A. Pantano, Jr.  
District Commander  
Jacksonville District Corps of Engineers  
701 San Marco Boulevard.  
Jacksonville, FL 32207-0019

Re: Permit Application SAJ 2010-02881, Via  
Verde Pipeline Project, Puerto Rico

Dear Col. Pantano:

This letter is in response to your Public Notice dated November 30, 2011, for the above referenced project and supporting documents. Supporting documents submitted for our evaluation included a draft Environmental Assessment (D-EA) dated November 30, 2011; a Wetland Mitigation and Project Construction BMP Documents dated December 2, 2011; and a Wetland Mitigation Plan submitted on December 28, 2011. Our comments are issued in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.), the Endangered Species Act (ESA) (16 U.S.C. 1531 et. seq. as amended), and the Migratory Bird Treaty Act (MBTA), as amended (16 U.S.C. 703 et seq.).

The proposed action consists of the construction and operation of a 24" pipeline, approximately 92 miles long, commonly referred to as "Vía Verde"; to transport natural gas from the EcoEléctrica, L.P., Liquid Natural Gas (LNG) facilities in Guayanilla, Puerto Rico, and provide alternative fuel to three power plants operated by the Puerto Rico Electric Power Authority (PREPA) on the north coast of Puerto Rico. An estimated 22 crossings will be made with HDD, the rest of the stream crossings and most of the pipeline route will employ open trench methods for pipe installation. Based on information currently available to us, the total project area is about 1,672 acres. The proposed pipeline will cross an estimated 235 rivers and wetland areas for a total of 369 acres of jurisdictional Waters of the United States. Since the original Public Notice was published in November 19, 2011, the project alignment and construction right of way (ROW) has been modified. The pipeline has been relocated in several areas to avoid impacts to sensitive areas and minimize possible adverse effects on federally listed species. In addition, the ROW has been reduced to 60 feet in wetlands and selected forested areas, and permanent impacts to wetlands have been identified.

This letter contains the Service's concerns. A detailed analysis of the D-EA and supporting documents with specific comments are included in the enclosures of this letter.

### **Project Final Alignment and construction Right of Way (ROW)**

The D-EA states that the project alignment and construction ROW have changed. The D-EA mentions "There are some minor changes to the drawings at this time for which the Corps will be consulting with the FWS, and re-initiating consultation as necessary once the drawings are complete and prior to any decision on the permit".

The Service's Biological Opinion dated August 23, 2011, was based on the GIS shape-files of the project route that were submitted by the Corps of Engineers on July 27, 2011. Since then, the Service became aware that modifications to the route have been made. In December 2011, the applicant submitted to the Service additional project route files that are not consistent with the files we evaluated in July 2011. In addition, proposed route changes included HDD in some karst areas. The Service understood that HDD was not going to take place in karst areas because of the risks of voids, possible impacts to water quality and native stream fauna. In a recent telephone conversation, the Corps indicated that the files submitted in December 2011 were not the final project alignment shape-files and that the final project alignment of the project will be submitted in the near future. Therefore, our evaluation of the project on our trust resources and listed species cannot be considered final until the final alignment of the project and final construction ROW shape-files are submitted and evaluated.

Regarding Section 7 consultation under the ESA, until we receive the final alignment and construction ROW of the project we cannot determine if the Corps' effect evaluations are still valid or if re-initiation of section 7 consultation would be required. The Service is will work with the Corps in evaluating any changes to the route alignment or construction ROW that may affect our trust resources, once we receive this information. We continue to recommend that all project components, including permanent and temporary access roads, parking areas, equipment storage areas, and construction sites associated with all the components for the proposed project (e.g., pipeline, valves, HDD sites, etc.) need to be included in the final shape-files and evaluated in the D-EA.

### **Scope of Analysis and Alternative Analysis**

The D-EA's overall project purpose has been narrowly defined by the Corps as to supply natural gas to the north coast power plants. Thus, the Corps' alternative analysis is limited to the applicant's stated project purpose and need, discarding any alternative that does not meet the applicant's criteria. We believe that the Corps should evaluate all the expected goals of the proposed project. The overall project purpose must be specific enough to define the applicant's needs, but not so restrictive as to preclude all discussion of alternatives. Defining the overall project purpose is the responsibility of the Corps, taking into consideration the applicant's needs and the type of project being proposed, but not allowing the applicant to make a determination of what the overall purpose should be.

The Alternative Analysis of the D-EA is based on the Commonwealth Final EIS and PREPA's 2009-2012 Strategic Plan to reduce dependency on oil and reduce operating costs. The Strategic Plan chose natural gas as the alternate fuel source to reduce costs, to PREPA and the consumer. Throughout the D-EA, the applicant's goal of reducing dependency on oil as a justification to construct the project is extensively discussed. Recent public statements made by the new President of the PREPA's Board of Directors indicate that they are willing to consider reasonable alternatives to the proposed including the use of Floating Storage Regasification Units (FSRU).

The Council for Environmental Quality in their Frequently Asked Questions regarding National Environmental Policy Act (NEPA) compliance (<http://ceq.hss.doe.gov/NEPA/regs/40/40p3.htm>) addresses alternatives in this manner. "Section 1502.14 requires the Environmental Impact Statement (EIS) to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant".

No Action Alternative - South Coast Power Plants. The D-EA specifies that the entire available natural gas supply can be utilized by the existing Costa Sur power plant (page 35) which is adjacent to the Eco-Eléctrica LNG. There is an existing gas pipeline from Eco-Eléctrica LNG to the Costa Sur power plant and work has been already conducted in Costa Sur to convert several existing turbines to natural gas. Costa Sur is the largest power plant on the island with the generating capacity in excess of the combined north coast power plants of Palo Seco and Puerto Nuevo. Costa Sur generates 40% of the island's electricity. Thus, according to existing information, we believe that the least damaging, practicable and environmentally preferable alternative; that would meet the stated goals of the current PREPA's Strategic Plan, would be to power the Costa Sur power plant with the available natural gas through the existing pipeline to the power plant.

Based on the above, we believe that converting the largest power plant on the island (Costa Sur) to natural gas would meet the overall goal of reducing dependency on oil and lowering the cost of electricity with minimal environmental impacts. Thus, should not be discarded but further analyzed.

Tanker Buoy System. In past, PREPA's consultants denied that PREPA was considering the use of vessels to supply natural gas to Puerto Rico's power plants. This alternative was discarded in the Commonwealth EIS. The D- EA concludes that the use of a Tanker Buoy System would have significant impacts to coral reefs and the marine environment. However, this conclusion is not supported by a detailed impact analysis. For example, examining the NOAA benthic habitat maps which were used in the effects analysis indicates that in the Arecibo area (NOAA map number 11) the coral areas are located across the bay to the west of the existing port facility. The port facility is located on the eastern side of the bay and has been maintained by dredging, the port does not contain coral reefs or sensitive marine habitats, locating a regasification vessel in

the Arecibo port should not impact sensitive marine resources. The Levittown area maps (NOAA maps 22 and 23), show a break in the reef communities in the center of the bay, which is consistent with the nautical charts which show a channel about 22 feet deep running between the two reef areas. We believe that, if a pipeline is carefully placed along the center of this channel impacts to corals would be avoided or significantly minimized.

The D-EA also states that for the Tanker Buoys System alternative the corals could be indirectly impacted by deposits from sediment plumes from the trenching and installation of the anchors due to the difficulty of controlling sediment plumes in open coastal waters and concludes that the potential for sediment resulting from the terrestrial trenching to enter streams and then reach the corals is considered unlikely due to the “proven effectiveness of terrestrial erosion/turbidity control methods”. We do not agree with this conclusion. Based on the topography of the island, nature of soils, extensive vegetation removal along the project corridor, rain frequency, proposed construction methods (open trenching) and applicant proposed BMPs; the proposed project alternative may result in significant erosion and sedimentation impacts to aquatic resources, including coral reefs and sea grass beds. Furthermore, the BMPs provided by the applicant provide lower level of protection, particularly on sedimentation and erosion control. This issue needs to be carefully evaluated by the Corps.

The D-EA states, as another reason to discard the Tanker Buoy System, that the wave energy on the north coast would prevent continuous mooring of the FSRU vessels thereby resulting in periods of time when an alternative fuel supply would not be available to the power plants. This analysis is contradictory since, under the current gas supply scenario, the gas supply available for the preferred alternative of the D-EA is not sufficient to run all three plants in the north coast with natural gas, thus an alternative fuel supply would be required for the preferred alternative. It is important to mention that Service Staff recently attended a Corps interagency meeting where Excelerate Inc., presented a project to construct an off shore storage and regasification facility to provide natural gas to the Aguirre power plant, the second largest power plant in Puerto Rico after Costa Sur. After the meeting, Service staff asked representatives from Excelerate Inc. if they had looked at providing the north coast power plants with natural gas. They mentioned that the only alternative studied by their company was providing natural gas individually to each power plant (the applicant’s alternatives analysis in the Commonwealth EIS). The possibility of having a Gas Port, FSRU or Tanker Buoy System at the existing dock in Arecibo, to supply gas to the north coast power plants via pipeline, was never considered. We believe that this is a viable alternative to provide natural gas to the north coast power plants, via a much shorter pipeline located in areas that may not have as many environmental concerns. This alternative would meet the Corps Level 1 review and avoid impacts to the sensitive mountain forested region of the island and the dry forest in the south coast. We recommend the Corps to perform a detailed alternative analysis considering a single Tanker Buoy System or FSRU at Arecibo to supply gas to the north coast power plants via pipeline. The Corps should consider this option as a viable and least damaging alternative to the currently proposed project.

### Valve Stubs for Future Work

The D-EA recognizes the presence of the three valve stubs for future work. However, the Corps discarded the impacts analysis for these valves because the applicant stated there are no plans to serve industrial users. At least one of the three valves is located in wetlands. We do not agree with the Corps' statement that "the proposed connection does not impede the ability to avoid or minimize future impacts". We believe that the presence of these valves in the construction plans represent future predetermined connections which impede and bias future alternative analysis since the connection has to be made at that valve stem. To that extent, PREPA would commit public funds for the installation of these features without being considered part of the NEPA review. According to the applicant, these valves were added at the request of the Puerto Rico Industrial Development Company (PRIDCO), but that request is not clearly represented in the Agency Comments Section of the Commonwealth Final EIS.

The D-EA on page 8 states that "*in July 2002, through resolution 3024, PREPA adopted a Strategic Plan for development and expansion to control the high cost of electricity and meet requirements under the Clean Air Act. This plan includes the following parameters: . . . To comply with these parameters, the plan required, among other things, increased generating capacity in western Puerto Rico using natural gas as a primary fuel. In addition, the plan contemplated the construction of a gas pipeline from Cambalache at Arecibo, the industrial area of Barceloneta, to the Palos Seco and San Juan stations*" (Emphasis added). This implies that there is a predetermined intent by PREPA to supply the industrial areas of Barceloneta, which if continues to be in effect, needs to be factored into the direct, indirect and cumulative impacts.

Based on the comments made in the consultant's June 2, 2011 letter, stating that it is not the applicant's intent in the foreseeable future to provide natural gas to any facility other than the three north coast power plants, we believe that the designated valve stems for Bayamón, Barceloneta and Aguirre should be eliminated from the project and construction drawings. Otherwise they should be made part of the scope of the project and review under NEPA/ESA/Clean Water Act (CWA). In addition, following the Corps' stated permit criteria; these valve structures would not pass the First Level review since they do not serve the purpose of the project. We continue to recommend that these valves be eliminated from the project since they do not serve the project purpose.

### **Impacts to Aquatic Resources and Mitigation**

The proposed pipeline will cross an estimated 235 rivers and wetland areas for a total of 369 acres of jurisdictional Waters of the United States. The D-EA states that most, if not all, wetland impacts are temporary in nature with the exception of 1.68 acres of impacts associated with several main line valves (MLV) in wetland areas.

The D-EA states that most if not all impacts associated with the pipeline construction are temporary; including all temporary access roads and construction pads for the HDD work in wetland areas. Only 1.68 acres of wetlands will be permanently impacted as a result of gravel fill for main line valves (MLV) stations. The D-EA states that the applicant will restore the

temporary wetland impacts to surrounding conditions. Neither the D-EA or the mitigation plans included specific details as to what measures will be taken to assure that wetland impacts will be restored in the yet to be determined time period. The mitigation plan only addresses the known permanent impact on about 1.68 acres; while the remaining 367.32 acres of “temporary impacts” would be quantified once the period of temporary impacts expires. However, the definition of temporary is not well defined in the D-EA, different time periods from a few weeks to as much as 3 years are given in the D-EA and supporting documents when discussing temporary impacts. The exact time period that will be used to define the duration of temporary impacts for the project should be clearly established by the Corps prior to any further discussions regarding impacts and mitigation.

During the consultation process, the Corps formed an Interagency Team and followed the Uniform Mitigation Assessment Method (UMAM) to evaluate the functions and values of the aquatic resources that will be affected by the project, and then evaluate a conceptual mitigation plan to determine how impacts may be appropriately compensated.

We do not agree with the applicant’s statement that impacts to wetlands will be temporary in nature. When wetlands were assessed by the interagency UMAM Team, which included an applicant representative, the specific wetland scores were based on the topography, soils, vegetation and best professional knowledge of the group. Failure to meet vegetation criteria due to changes in micro topography was one of the factors that the UMAM Team used to determine permanent impacts. Micro topography plays an important role in wetland restoration, and the determination of hydroperiod and wetland plant communities. Even after re-grading there may be additional soil settling and compaction in the trench that would change the final grade and thus change the wetland structure and conditions within the ROW. This is particularly the case of soils with high organic content and soils with high shrink swell potential like those found along the Caño Tiburones and Sabana Seca pipeline sections. Human disturbance was another factor used by the UMAM team to determine permanent impacts. Based on these criteria, the UMAM Team determined that given the nature of certain wetland types, restoration would not occur naturally after the construction of the pipeline in spite of following the BMPs.

It is important to note that FERC’s 2004 study of wetland mitigation along pipeline routes, determined that 80% of mitigation failures were based on the same criteria cited by the UMAM Team; not reaching the vegetation criteria, failure to reach proper grade and human disturbance (Research of Wetland Construction and Mitigation Activities for Certificated Section 7(c) Pipelines FERC Final Report 2004).

Wetlands in Puerto Rico are characterized by predominance of humid conditions, varied topography, complex geology, warm conditions (frost-free environment), and relatively small size, which make them different from those of temperate zones and continental areas. Wetland and associated upland habitat losses in Puerto Rico have contributed to the decline of many wetland-dependent species. The loss of approximately 50% of total wetland area in the Island has resulted in isolated relict fragments of wetlands in the coastal plains. Moreover, open freshwater wetlands have experienced some of the biggest losses for a wetland type. Agriculture

and urban development have caused loss and degradation of these ecosystems in the Island, making restoration a management priority in coastal areas of critical importance for aquatic and terrestrial wildlife. For example, Caño Tiburones, the largest freshwater herbaceous wetland existing in Puerto Rico, has been subject to direct and indirect impacts from neighboring urban development despite being designated a natural reserve. Although the proposed gas pipeline will only impact the southern edge of this wetland, the cumulative impacts on this and other wetlands along the proposed alignment, will certainly affect fish and wildlife resources, particularly resident and migratory waterbirds associated to these habitats. Although there are no waterbirds listed under the ESA for Puerto Rico, these species are protected under the Migratory Birds Treaty Act (MBTA) and are considered part of our trust resources. Indeed, migratory waterfowl are an important component of the bird community in Puerto Rico, which need and heavily use the few wetland habitats existing on the Island. Therefore, immediate restoration after pipeline construction is deemed necessary to ensure the ecological functions of these systems.

If wetland impacts are not appropriately restored throughout impacted areas, adverse effects to fish and wildlife resources are anticipated. These effects may include increased sedimentation and erosion, introduction of fast growing undesirable species such as cattails invading the ROW and spreading into adjacent undisturbed wetland areas. Dense stands of undesirable plant species will limit habitat and resource use by wildlife species like waterbirds, hence reducing diversity of flora and fauna by diminishing the habitat values for native, endemic, and migratory species. One of the biggest challenges when managing wetland habitats in tropical ecosystems is the effective control of emergent vegetation, particularly invasive species, due to the continuous growing season. Therefore, in the absence of appropriate restoration within a short period of time, “temporary” impacts may result in permanent impacts to these wetland systems.

On July 7, 2011, the Service provided the Corps with a list of recommended Best Management Practices (BMPs) for the construction of the Via Verde pipeline. This list of BMPs were a compendium of relevant BMPs from current FERC procedures for construction in wetlands and uplands, pipeline BMPs created by the Service’s Arkansas Field Office for construction in karst and BMPs created in Texas for excavating in karst. We believe that the implementation of these BMPs would represent the most conservative measures to minimize environmental impacts and improve the likelihood of successful restoration of the pipeline route. However, it is important to note that even with the use of these BMPs the UMAM Team determined in some areas that successful restoration would not be possible.

Nevertheless, the applicant has provided their own version of BMPs spread across several documents such as the Storm Water Pollution Prevention Plan (SWPPP), Wetland and Water Body Construction and Mitigation Procedures, Upland Erosion Control, Revegetation and Maintenance Plan (copy of FERC 2003 document) and the HDD Frac Out Plan. With the exception of the verbatim FERC 2003 upland BMPs, the BMPs offered by the applicant represent a much lower conservation standard, than those recommended by the Service. Most of the proposed applicant BMPs are vague and general, making implementation, monitoring and assuring compliance those BMPs difficult to monitor. For example, the applicant’s BMP for the use of silt fences simply states that when properly installed and monitored it forms an effective

barrier to sediments leaving the site, monitoring is to be done weekly or after each rainfall. The Service recommended BMPs have 30 criteria for the proper location, installation, monitoring (on a daily basis) and maintenance of a silt fence. This level of detail is needed in order to assure that the contractors and inspectors know what is expected to assure that a silt fence functions and environmental impacts are minimized. Based on what has been presented by the applicant, we cannot conclude the applicant's BMP provides effective erosion and turbidity control.

As stated above, the Service Recommended BMPs are standard and used in mainland U.S. pipeline construction as a requirement, we do not understand why a lesser standard would be applied to a pipeline being constructed in Puerto Rico.

The Service remains concerned with stream impacts in the central mountains and karst regions. Based on the current topography of the work areas and erodible soils, we believe that the D-EA underestimates direct and indirect effects on streams, rivers and associated habitats. The D-EA fails to provide a detailed analysis of alternatives and methods to restore stream banks after construction. Poor stream bank restoration can lead to bank failure, increased bank erosion, and increased sedimentation in fairly inaccessible areas. Permanent structures to stabilize the stream bank such as rip-rap can cause erosion on the opposite banks, toe erosion along the rip-rap, permanently eliminate stream bank vegetation and permanently alter stream habitat at the crossing.

Permanent impacts to streams caused by open trench excavation and the need for bank stabilization have not been adequately addressed. While stream bank stabilization is a recognized BMP by FERC and the Service, the applicant has decided to allow the project engineer to decide on a case by case basis the need and type of bank stabilization. This determination by the applicant does not allow the Service or the Corps to quantify impacts at stream crossings. The Service is concerned with the impacts to native stream fauna, alteration of habitat and degradation of habitat and water quality caused by the multiple stream crossings being proposed.

The Corps and the applicant can initially identify streams at risk of being permanently impacted using the topography of the area and Natural Resources Conservation Service (NRCS) soil survey maps; stream crossings located adjacent to steep slopes or in valleys will most likely require bank stabilization. These streams should be marked. We recommend that all streams identified to be impacted be visited in order to determine the need for permanent bank stabilization, and to adequately determine the number of permanent stream impacts. These impacts need to be taken into account to develop a proper stream mitigation plan.

We believe that the number of stream crossings has been underestimated because intermittent streams are not well represented in the existing GIS layers. We continue to recommend that the Corps utilize the Soil Survey Maps published by NRCS to identify all the intermittent streams that will be impacted by stream crossings.

The D-EA (page 56) states that for the tanker and buoys alternative, the corals could be indirectly impacted by deposits from sediment plumes from trenching and installation of anchors due to the difficulty of controlling sediment plumes in open coastal waters. However, it concludes that the potential for sediment resulting from the terrestrial trenching to enter streams and then reach the corals is considered unlikely due to the proven effectiveness of terrestrial erosion/turbidity control methods. As stated above, based on what has been presented by the applicant regarding sediment controls, we cannot conclude the applicant has provided effective erosion and turbidity control to consider that detrimental effects to corals are unlikely as a result of terrestrial trenching. Therefore, we do not concur with the Corps conclusion. Based on the topography of the island, nature of soils, extensive vegetation removal along 92 miles, rain frequency, proposed construction methods (open trenching), and proposed BMPs; the alternative of terrestrial trenching may result in much higher impacts to aquatic resources, including coral reefs and sea grass beds. This issue needs to be carefully evaluated by the Corps in coordination with NOAA, since two coral species are federally protected under the ESA.

The proposed wetland restoration success criteria currently vary throughout the different documents submitted with the D-EA. Some of the wetland restoration success criteria currently proposed (e.g. helicopter over flights to determine vegetation success) are not practicable in the field. Be aware that vegetation success criteria should be determined by species of plant and not just for vegetation cover. A practical method for compliance needs to be agreed upon among the interested agencies.

The applicant has proposed to use drill tailings as soil supplement and trench backfill material. We do not agree with this proposal because the soil characteristics and soil fertility would not be suitable for wetland restoration (See enclosure for more detail). We believe that tailings should be disposed of in an approved landfill. Construction of a pipeline on steep slopes or hillsides usually requires a certain amount of cut and fills to keep the pipeline route level, which may cause additional impacts to forested areas; side casting or storing excavated material on the side slope.

The Service is concerned that the Corps will authorizing another project without assurances that temporary impacts to wetlands are appropriately restored. The Gasoducto del Sur project is an example. On this project, PREPA has not demonstrated the ability to fully restore all temporary impacts to wetlands impacted. Restoration of impacts to wetlands by the now defunct south coast gas pipeline (Gasoducto del Sur) are still pending years after the construction was abandoned. Wood mats have not been removed from wetland areas or stream crossings restored. This was a much smaller and less complex pipeline, yet the issues remain.

In order to properly assure that wetland restoration/mitigation is carried out, we continue to recommend that the Corps require financial assurance from PREPA as a guarantee that the proposed work will be carried out. The financial assurance should be based on the cost of the complete restoration of all impacted wetlands.

On January 25, 2012, we received a revised version of the Compensatory Mitigation Plan, this plan does not contain any substantial changes, and therefore our comments regarding the mitigation plan remain the same.

### **Best Management Practices (BMPs)**

The Service has done it due diligence in reviewing a great amount of information available to the public regarding several natural gas pipelines that have been evaluated and constructed in mainland United States. For those projects, FERC and the Service have developed guidelines and BMPs to address environmental impacts on trust resources. We provided the Corps with a compendium of recommended BMPs for the Via Verde pipeline on July 7, 2011 to minimize possible environmental impacts during construction and operation. However, instead of utilizing existing BMPs, the applicant developed BMPs for the project. We have evaluated the BMPs developed by the applicant and for the most part, the applicant's BMPs represent a lower standard of environmental conservation than either the FERC or the Service's BMPs.

### **Impacts to Candidate and Federally-listed Species**

On July 15, 2011, the Service concurred with the Corps that the project, as proposed at that time, would not likely to adversely affect 27 plant species and four animal species. This concurrence was based on the project alignments and construction ROW submitted in July 2011, and the implementation of conservation measures for the species. In addition, on August 23, 2011, the Service submitted a biological opinion (BO) to the Corps to conclude formal consultation for the Puerto Rican boa, Puerto Rican broad-winged hawk and Puerto Rican sharp shinned hawk. The Service evaluated possible adverse effects of the project on the species, based on project alignment and construction ROW submitted in July 2011. In the BO, the Service established non-discretionary Reasonable and Prudent Measures and Terms and Conditions to minimize the effects of anticipated Incidental Take to the species. If a Corps' permit is issued, the Corps and the applicant must comply with the non-discretionary Reasonable and Prudent Measures and Terms and Conditions described in the BO.

On December 2011, the Corps provided the Service with an electronic version of the project alignment. It is important to mention that the Service has identified incongruence between the alignments provided in December 2011 and July 2011. The Service notice changes on the route, particularly in Peñuelas, that may affect previous effects determinations. These changes may let to further impacts to suitable habitat that were no anticipated and evaluated. Since the early stages of the project the Service has been working with the Corps and the applicant to develop alternatives to minimize the impacts to the habitat of federally listed plant species. It was agreed that the alignment will overlap an existing dirt road in the Peñuelas area to minimize impacts to the habitat. Despite that this agreement is included on the BA (Page 78. Section (4)(ii)(b)) the project plan provided by the applicant shows a route that impacts prime habitat and do not use the existing dirt road as a corridor.

The D-EA also states that the route was realigned to an area with a previous agricultural land use. Again, the latest project plan provided by the applicant shows a different alignment that impact prime habitat on areas that were not surveyed. The Service has been emphatic about the importance of conducting a systematic survey or screening of the ROW and any area to be affected (deposition of fill material) on areas that harbor remnants of native vegetation. Such changes in the route and the fail to adequately survey these areas may result on impacts to undetected populations of species with a very limited number of individuals and viable populations (e.g., *Juglans jamaicensis* and *Catesbaea melanocarpa*). These changes on the route would also increase the amount of prime habitat to be affected of the Puerto Rican Nightjar (*Caprimulgus noctitherus*).

The Service recommends that the Corps and the applicant provide a shape-file of the complete final route alignment to appropriately evaluate the D-EA and to comply with the NEPA process. The shape-files should include all project components, including access roads, equipment storage areas, parking and areas associated to installation of valves. Once we receive the final alignment we can provide substantive and site specific comments.

Recently we received new information from the Puerto Rico Department of Natural Resources (DNER). Based on information provided in December 2011, DNER has located the endangered Puerto Rican Parrot east to the Rio Abajo Commonwealth Forest, within the action area of Via Verde project. The Service informed the Corps by email on December 22, 2011 about the presence of the species in the project action area. At the present time, the Service has requested additional information to DNER. In the near future by a separate letter the Service will provide the Corps a recommendation about the need to re-initiate consultation for the parrot.

Also, once we receive the final project alignment and construction ROW we will evaluate if reinitiation of consultation for other species is required.

### **Impacts to Migratory Birds**

The impact of the project on migratory birds is not adequately addressed in the D-EA. The Service is legally mandated to implement the conservation provisions of the MBTA which includes responsibilities for managing migratory bird populations, domestic and international coordination, and the development and enforcement of regulations. The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of Interior. The Enclosure 3 of this letter includes the Service's guidance and technical assistance to address MBTA issues for the Via Verde project.

## Conclusion

The D-EA determines that the project would not result in significant impacts to the environment and concludes with a Finding of No Significant Impact (FONSI). We have reviewed the information discussed in the D-EA, the wetland mitigation plans, and the findings of the FONSI. Based on our evaluation, we believe that the D-EA has unresolved issues as outlined above and in our enclosures. The Service believes that the project's overall purpose should be refined to ensure that what is presented in the NEPA review in line with applicant's goal and expectations, that the alternatives are reasonable and practicable and their respective environmental impacts are analyzed adequately. The applicant and the Corps both recognize that there is not sufficient gas to supply the pipeline to run all the power plants at the same time; however, determined that the proposed alternative is practicable. At the same time, other alternatives such as the No Action Alternative and Tanker Buoys alternatives were discarded without detailed analysis. Therefore, we recommend the alternative analysis be revised to analyze all reasonable and practicable alternatives, including those with less overall environmental impacts to trust resources.

In addition, the D-EA does not address all direct, indirect and cumulative site-specific impacts on wetlands, rivers, creeks, marine aquatic resources and upland forests; and does not provide site-specific measures to restore and mitigate possible impacts to trust resources. Furthermore, the BMPs developed by the applicant, for the most part, do not appropriately minimize possible effects during construction and operation. We recommend that the Corps do not approve those BMPs since they establish lower standards of environmental conservation than either the FERC or the Service's BMPs.

At this time, since the final project alignment and construction ROW has not been provided, we have not been able to appropriately evaluate the proposed project and impact on the resources. We will provide guidance to the Corps regarding the need to re-initiate consultation under Section 7(a)(2) of the ESA once we received the information we have discussed.

Based on the above and detailed information included in the enclosures, we cannot not agree with the Corps' determination that there are no significant impacts to human health and the environment with this project. We recommend that the Corps either supplement the D-EA with information addressing our concerns or prepare an Environmental Impact Statement for the project.

Thank you for the opportunity to comment on this action, if you have any questions please contact Ms. Marelisa Rivera, Deputy Field Supervisor, at 787-851-7297, extension 206.

Sincerely yours,

A handwritten signature in blue ink that reads "Edwin E. Muñiz". The signature is fluid and cursive, with the first name being the most prominent.

Edwin E. Muñiz  
Field Supervisor

Enclosures

cc:  
PREPA, San Juan  
COE, San Juan  
EPA, San Juan  
EPA, New York

## **Enclosure 1: Impacts to Aquatic Resources and Mitigation**

### **D-EA Specific Comments**

#### **Page 2, (h) Compensatory Mitigation**

The Service is concerned with the inconsistencies in some mitigation criteria. For example, in this section there is a statement that wetland organic soils will be separated and stockpiled to assure that the top 6 inches of the trench in wetland areas has 100% organic material. The applicant's Wetland Mitigation and Project Construction BMP Documents mention 12 inches of topsoil. FERC 2003 requires 12 inches of topsoil to be replaced in the trench, FWS Recommended BMPs stated 6-12 inches of vegetation and topsoil or more. The proper replacement of topsoil in both wetland and upland trench restoration is critical if the area is to be restored within a reasonable amount of time. In order to maximize the success of natural restoration of the pipe trench in wetlands, then it should strive to replace as much topsoil with vegetation as possible.

#### **Page 72, Part 10, Wetlands**

The applicant provided 82 drawings entitled Wetland Impacts, these drawings show 286.26 acres of temporary wetland impacts. This is less than the 369 acres of wetland impacts stated in the public notice, D-EA and mitigation plan. The Corps should explain this discrepancy; all documents should be using the correct acreage for impacts to Waters of the US.

#### **Page 73, Part 10, Wetlands**

The Corps and the applicant are proposing to survey wetland along entire route six months after construction, sampling every 200 feet. We do not consider this sampling plan practical because of accessibility of the areas, logistical constraints and extent of the route. For example, the UMAM team was not able to reach some of the wetland areas to be inspected because they were inaccessible (flooded, no access). Therefore, after all mats and temporary access are removed, it would be difficult to carry out sampling in 200 foot intervals as proposed. Also, compliance inspections should be conducted jointly with the Corps, EPA and the Service. We do not agree with the proposal in the D-EA of allowing additional time if wetlands have not naturally restored during the initial 6 months. Due to the continuous growing season in Puerto Rico, , invasive plant species are likely to establish and dominate impacted wetland areas in a relatively short period of time (i.e., less than a year), affecting the ecological functions of these ecosystems.

The table in Page 97 has a statement indicating that on-site restoration monitoring will be performed every six months for three years and if the site passes two consecutive inspections it is considered successful. As mentioned above, we do not agree with this method.

We recommend that a fixed time period be established by the Corps to determine the duration of "temporary impacts" to wetlands. If the wetland areas and aquatic resources

are not restored at the end of that period, then the restoration has failed and compensatory mitigation is required.

### **Comments and Recommendations Regarding the December 2, 2011, Wetland Mitigation and Project Construction BMP Documents and the December 28, 2011 Via Verde Compensatory Mitigation Plan.**

On December 2, 2011, the Corps submitted a compendium of documents totaling 228 pages. These documents covered a variety of topics relating to impacts and mitigation in Waters of the U.S. On December 28, a draft Compensatory Mitigation Plan was submitted to us by the applicant's consultant.

#### **Section I. Wetland Mitigation and Monitoring Plan 12/28/2011**

Mitigation is currently only being considered for the 1.68 acres of permanent impacts resulting from construction of main line valves and access roads in wetlands.

The proposed mitigation area is a 42.9 acre site designated Mitigation Area II. It is still not clear if the proposed 42.9 acres of Mitigation Area II exclude the Via Verde pipeline ROW which runs along the southern boundary of the mitigation area. In the past we have stated that the construction ROW and the permanent 50 foot ROW must be excluded from all wetland mitigation area proposals and calculations. The proposed mitigation site should not include areas which could be re-impacted by future pipeline maintenance work, need to have vegetation removed, or need to have access as per Pipeline Hazardous Material and Safety Administration (PHMSA) regulations. The proposed mitigation area needs to be calculated excluding the construction ROW and shown so on all illustrations.

The current plan calls for the acquisition of a total of 119 acres of wetlands, 42.9 of which will be used for compensatory wetland mitigation. The entire tract of land will be transferred to the Puerto Rico Department of Natural and Environmental Resources (DNER) for inclusion into the Caño Tiburones Natural Reserve.

A site visit to Mitigation Area II was carried out by Corps, EPA and Service personnel in conjunction with the applicant's representative on December 13, 2011. Some of the applicant's UMAM scores were modified during this site visit based on comments from EPA and the Service.

After inspecting the site the UMAM group agreed that the proposed eradication/removal of exotic species such as *Megathyrsus maximus* (syn. *Panicum maximum*) through disk or root rake is an interim measure, but cannot be maintained in perpetuity.

The proposed mitigation plan involves wetland enhancement measures that include initial disking and planting of suitable herbaceous wetland vegetation that would include individual plants at 3 meter centers per acre. However the document does not provide any detail regarding the justification for the low planting density. Some areas may receive supplemental planting at a later date. In areas that will receive supplemental planting, the proposed density of 50 herbaceous individuals per acre. We believe that the

proposed planting densities will not provide any measurable improvement to the wetlands and will be quickly over-run by fast growing invasive vegetation.

We recommend the applicant consider alternate planting schemes such as 10 meter by 10 meter plots, alternating planting strips, or other similar strategies.

For the proposed Forested Improvements, we recommend that the trees to be planted be at least 1.5 meters tall to avoid being overgrown by the herbaceous vegetation and planted in 4 meter centers instead of the proposed 10 meter centers. This would increase the likelihood of success and form a denser stand of trees.

Based on the information provided, we believe that the exact planting densities and species to be planted still need refinement; we recommend that the applicant meet with the Service and DNER to discuss these issues prior to the approval of any mitigation plan.

#### **Section L. Financial Assurances**

The applicant continues to state that no bond of other financial assurance needs to be proposed. We do not concur with the applicant's statement, given the magnitude and complexity of this project combined with the applicant's past performance and uncertainties regarding restoration of temporary impacts. We strongly recommend the Corps use its discretionary authority and require that a financial assurance for the total cost of the 300 plus acres of wetlands impacts, land acquisition and other proposed mitigation. This assurance will be discounted as mitigation or restoration is deemed successful.

#### **Section II, Via Verde Compensatory Mitigation Plan for Impacts Identified as a Result of Additional, Unexpected Fill Impacts dated 12/28/2011**

This Section addresses the UMAM Team and Service concern that in spite of their best efforts, additional wetland impacts will occur as a result of pipeline construction. Rather than implement the Service Proposed BMPs with an independent environmental monitor, the applicant is proposing to conduct monthly aerial over-flights of the construction area to assure that all conservation measures are being implemented and to determine wetland restoration. The proposed use of aerial photography to determine if construction ROW in wetlands has been restored is not appropriate, most wetland plants or grasses usually have the same color signature; it takes a trained eye to determine differences in herbaceous vegetation from the air and success criteria is based on both vegetation type and cover. We believe that this proposal is completely impractical from a compliance and implementation point of view.

In order to assure that all construction and restoration efforts are carried out as proposed, we continue to recommend that the Service's Recommended BMP list with the implementation of the Environmental Inspector position as outlined by FERC 2003 be used instead. This would provide real time corrections and supervision of construction restoration work that aerial surveys cannot provide.

If PREPA wishes to consider aerial surveys, they should do so along the ROW once construction has been and area deemed restored by the Environmental Inspector, to document recovery or identify areas for possible corrective action or restoration during period of “temporary impacts”.

**Section d. Page 22.** This Section states that within a two year period, restoration along the ROW will be considered successful if conditions in the sampling point have passed three successive sampling periods (18 months). The applicant is assuming that the “temporary impacts” definition of the pipeline construction activities will last at least for a period of two years. We find this methodology completely unacceptable as stated on other sections of this document. The Corps needs to determine what will be the time period used to determine temporary impacts so that the applicant can design an adequate monitoring plan.

## **Section II B. Stream Impacts**

We acknowledge the applicant’s recognition that permanent impacts to streams by the pipeline crossing will occur. However the number of streams that may be permanently impacted by pipeline crossing is still undetermined and the type of stream habitat mitigation to be used is not specified. The applicant has determined that permanent stream bank impacts will most likely occur in the mountainous terrain between Peñuelas and Arecibo, we recommend that the applicant make a concerted effort to determine the number of stream crossing that would require hardened banks and develop a stream mitigation plan prior to the completion of the Corps NEPA document.

### **Storm Water Prevention Plan (SWPP) submitted 12/2/2011**

As stated previously, we believe that the BMPs provided in the SWPP are too generic, and many are also repeated in the subsequent Upland Erosion Control FERC 2003 document. BMPs should be in one stand alone document and referenced in the SWPP.

### **Page 113, Section 1.4**

This Section mentions the possible use of terracing slopes in order to stabilize slopes and control runoff. It is not clear if construction of terraces will be limited to the 100 foot construction ROW. Construction of terraces outside the ROW will result in additional permanent impacts to upland forested areas that were not accounted for in the D-EA. We continue to recommend that all impacts direct and indirect as a result of construction need to be quantified prior to completion of the NEPA process.

### **Page 117, Section 1.9 Endangered Species Act Certification**

This section mentions coordination under the ESA with the Service for terrestrial species; however, the applicant needs to be aware that given Puerto Rico’s topography and narrow coastal plain, sediments and erosion in the mountains can rapidly impact coastal areas

where listed species under the jurisdiction of NOAA are located (e.g. listed corals, sea turtles, etc). This issue needs to be appropriately addressed with NOAA.

**Page 119, Section 1.12 Maps**

The project maps used in the SWPP are the maps included in the Commonwealth EIS. The project's route and construction ROW have been modified after the issuance of the Commonwealth's Final EIS. At present time, the final route and plans have not been submitted for review. We continue to recommend that NEPA review process should not be finalized until final alignment is appropriately evaluated.

**Page 142, Sediment barriers near wetland areas BMP**

This BMP (developed by the applicant) advises that sediment barriers near wetland can be constructed of material left over from site clearing (brush piles) covered with filter cloth. This method is not recommended in either the FERC 2003 or FWS Recommended BMPs. Stumps and other vegetation need to be removed from the wetland areas. Silt fencing and hay or straw barriers are the preferred method for sediment barriers if properly installed following BMP guidelines.

**Page 143, Slope stabilization, Grading and Reforestation of Exposed Areas BMP**

This BMP (developed by the applicant) states that the majority of the exposed areas will be replanted with local vegetation and monitored for 12 months. We do not believe that a re-vegetation plan has been submitted for either upland or wetland areas. In order to comply with this BMP such a plan is needed. The BMP calls for watering the areas when needed. We agree with this practice but how this will occur in inaccessible areas once temporary access is eliminated, is not addressed.

**Wetland and Waterbody Construction and Mitigation Procedures submitted  
12/2/2011**

There are two such documents, the second of which was modified for the Via Verde project. These documents address construction in wetland areas and have their own set of BMPs with reference to the SWPP. It is not clear which one of the two documents will be used by the applicant.

**Page 159, Extra Work Areas**

It is important to note that the proposed exception for maintaining extra work areas 50 feet from water's edge is for actively cultivated cropland and should not include unimproved cattle pasture or hay fields. Many of the areas along the route are no longer actively cropped; however, they are being used as unimproved pasture for cattle or occasional hay cutting. This has allowed wetland characteristics to return, the areas should be considered wetlands if they from part of the COE jurisdictional determination.

**Page 163, Trench Dewatering**

We were told during meetings by PREPA's environmental consultant that trench dewatering was not going to occur. Trench dewatering would discharge water filling the pipeline trench into adjacent wetlands and or streams. Discharge of silt laden construction waters into sensitive areas could impact water quality and habitat quality. If this construction method is being considered, additional BMPs are needed to minimize possible adverse effects.

**Page 187, Restoration, Section 2.**

This is part of the modified Via Verde Procedures, proposing the use of earth berms as sediment barriers for wetlands. We do not consider earth berms to be adequate sediment barriers for adjacent wetlands, they constitute additional fill being placed in wetlands which would eventually need to be removed. Earth berms are subject to erosion and pose a more difficult removal process than properly placed bales or sediment fencing. We do not recommend the use of earth berms as suitable sediment barriers for wetlands.

**Page 188, Section 4**

The use of ryegrass is recommended but this is usually a standard applied to the continental U.S. PREPA should consult with NRCS and DNER to find a more suitable native grasses or other grass species that can be used as fast growing ground cover.

**Page 188, Post-Construction Maintenance, Section 3 and Section 4**

Multiyear monitoring of wetland re-vegetation is recommended. Section 4 states that if at the end of 3 years wetland revegetation is not successful then a remedial revegetation plan would be developed. We do not consider a 3 year period to be "temporary" impact. The Corps needs to determine the time period that will be used to determine temporary impacts.

**Page 228, Proposed Permit Condition to address possible construction issues near caves (Matos and Jaguar Complex).**

These procedures include a one page process to address the discovery of voids near particular caves. We agree with the applicant's recommendation that no explosives be used, and that the appropriate agencies are notified. However, the Service recommended a Karst Void Mitigation Procedure developed in Austin, Texas that is more complete and address the issue of voids in all karst areas from Peñuelas to San Juan. Voids can be found anywhere along the excavation route in the karst zone. We recommend the measures outline in the Service Recommended BMPs be used with the additional recommendation from the applicant.

The D-EA determines that impacts from sediment and erosion to be neutral citing the above documents. We believe that the above documents provides lower environmental and conservation standard than the Service Recommended BMPs. The applicant's

documents represent a much diluted version of BMPs that are not as protective as those used in standard pipeline construction in the US.

## Enclosure 2: Candidate and Federally-listed Species

### Specific comments to the EA regarding plants

**Page 76.** The table of species has *Cordia rupicola* named as (Chigger tree or Palo de Nigua). *C. rupicola* does not have a recognized common name in Puerto Rico. On same page the above mentioned common name must be applied to *Cornutia obovata*.

**Page 77.** Note that none of the ferns with the exemption of *Cyathea* has a common name (English or Spanish). *Cyathea dryopteroides* is the elfin tree fern.

**Page 78. Section (4)(ii)(b).** There is a statement indicating that the alignment was moved to an existing dirt road. This was not validated on the latest construction work plan that shows a ROW running within an undisturbed native forest and not using the existing dirt road as a corridor. There is another statement that indicates that the route was moved to a former agricultural area. Again, the work plan does not indicate that. Project final alignment should be carefully evaluated to ensure it complies with the previous commitments done during section 7 consultation.

**Page 78. Section (4)(iii).** It must be clearly indicated that the Peñuelas to Adjuntas (Cerrote and Forman property) will have a reduced ROW due to the steep topography and the presence of suitable habitat for listed species.

**Page 78. Section (4)(iii).** The statement about possible realignment of the route due to the presence of federally listed plants must list the plant species that does not qualify to be transplanted and emphasize the conditions under which a plant may be transplanted.

**Page 86. Section (11)(iii).** It must be clarified that “buffer area” of 25 feet from the base of the limestone hill (mogote) must be clearly marked before any land clearing. This area was particularly of interest due to the possible presence of listed plants. Since PREPA indicated that the areas will be avoided we agreed that it will be specified on the project plan and that the area will be marked in the field.

**Page 87. Section (13)(ii).** The reforestation plan should be promptly evaluated as failure to adequately restore an area will result in permanent impacts instead of temporary impacts. Areas of highlands in Puerto Rico that are not adequately reforested may end covered by invasive species and by ferns, making these areas susceptible to fires. Moreover, these areas may be susceptible to landslides resulting in permanent impact to the habitat and further impacts to areas outside the ROW depending on the size of the landslide.

### PR Boa

**Page 83.** The Service does not agree with the capture and relocation protocol proposed by the applicant. The applicant shall follow the capture and relocation protocol

established in the BO's terms and conditions (A.5, page 56) and included as Appendix I in the BO.

### **Puerto Rican Crested Toad**

**Page 81.** The Service does not agree with the capture and relocation protocol proposed by the applicant. The Service has previously stated that we do not recommend relocation of this species. If any PRCT toads are detected, we recommend that all work in that area stop, the applicant immediately contact the Service and coordinate future actions in order to avoid impacts to the species.

### **Coquí llanero**

**Page 82.** The Service does not agree with the capture and relocation protocol proposed by the applicant. If any coquí llanero's are found, efforts and conservation alternatives should be carefully evaluated with the Service and species expert to ensure the protection of the species.

### **Puerto Rican Nightjar**

**Page 80 b. (5)(iii)** The Corps should specify that emergency situations that may allow PREPA to construct during the Puerto Rican nightjar breeding season is when life and property are seriously in danger. In those situations, it is important to clarify how the situations will be coordinated with the Service.

### **Puerto Rican Sharp-shinned Hawk**

**Page 85. (10)(ii)** The D-EA mentions that "Because four individuals were sighted within the proposed project alignment, it is concluded that at least two occupied home range could be affected". The Corps should include the analysis conducted to conclude that at least two home ranges are occupied if when four individuals were observed in different areas.

### **Puerto Rican Parrot**

**Page 85 (11)(iii)** New information provided by DNER in December 2011 reports sightings of the Puerto Rican parrot within the action area of project, specifically to the east of the Rio Abajo Forest. The Service informed the Corps by email on December 22, 2011 about the presence of the species on the project action area. We are in the process of obtaining additional information from DNER. In the near future by a separate letter the Service will provide the Corps a recommendation about the need to re-initiate consultation for the parrot.

### **Determination intensity of impacts**

**Page 101 (c) -3.** As mentioned in the D-EA the project may result in fragmentation of important wildlife habitats. Even though the applicant has realigned the pipeline to some

locations that has been disturbed by humans, the pipeline still intersect and fragments forested habitat for endangered species and wildlife. The D-EA has not provided any information to support their conclusion of Low-Degree impact on fragmentation of wildlife habitat.

## **Enclosure 3: Additional Concerns**

### **Bentonite and Horizontal Directional Drilling**

HDD was originally proposed in areas of karst geology, the Service expressed concerns regarding this because of voids in karst can be direct conduits to subterranean streams and ground water. The possibility of a release of drilling mud into a void could impact water quality and habitat in these systems. Service comments have been based on the project route that was submitted by the Corps of Engineers on July 27, 2011. Since then, the Service is aware that several modifications to the route have been made. In December 2011, the applicant submitted to the Service additional project route files that are not consistent with the files we evaluated in July 2011. These proposed route changes included HDD in some karst areas. The Service understood that HDD was not going to occur in karst areas because of the risks. The Corps has said that the files submitted in December 2011 are not the final project alignment shape-files. Careful evaluation of the project route along the northern karst region needs to be performed to avoid impacts to these sensitive areas.

#### **D-EA Page 57, Section 5, 404(b)(1) Guidelines, (a). Factual determination. (1) Physical Substrate.**

The impacts to adjacent substrate will be caused by the side-cast of excavated material. The applicant is proposing to mix the HDD cuttings with top soil to back fill and restore the trench. This proposal is completely contrary to BMPs for trench backfilling and restoration. FERC requires that top soil be separated in both uplands and wetland pipe trenching; the top soil is then used as the final cap in the trench restoration process. FERC and the Service recommend that at least the top 12 inches of topsoil be separated and stored during trench excavation; this is then used for the final grade of the trench.

The Service has found that drill cuttings are made up of ground rock and soil coated with a layer of drilling fluid. Most drill cuttings are managed through disposal, although some are treated and beneficially reused. Before the cuttings can be reused, it is necessary to ensure that the hydrocarbon content, moisture content, salinity, and clay content of the cuttings are suitable for the intended use of the material. One use of cuttings is to stabilize surfaces that are subject to erosion, such as roads or drilling pads. Where it is permitted, operators must obtain permission from the regulatory agency and the landowner before spreading cuttings.

Some cuttings are thermally treated to remove the hydrocarbon fractions, leaving behind a relatively clean solid material. Other cuttings are screened or filtered to remove most of the attached liquid mud.

Treated cuttings have been used in various ways:

- fill material,
- daily cover material at landfills,
- aggregate or filler in concrete, brick, or block manufacturing,

- Other possible construction applications include use in road pavements, bitumen, and asphalt or use in cement manufacture.

The applicant is not proposing to treat the cuttings in any way, but to simply mix the cuttings with the topsoil for use as backfill. The applicant's allegation that deep soils are similar to the upper root zone is not biologically correct. Deep soils do not have the same fertility as the upper soils which have a higher organic content, mixing cuttings with topsoil will defeat the purpose of a topsoil cap for the restoration of vegetation.

The Service believes that all HDD cuttings and drilling mud should be removed from the area and disposed of as non-hazardous waste in a designated land fill for use as daily cover, once properly treated.

#### **D-EA Page 58, Section 4, Contaminants availability.**

With regards to bentonite, the D-EA did not completely quote the applicant's HDD Plan stating that bentonite is not toxic. The second paragraph describing Drilling Fluid in Page 6 Section 2.4 of the July 2011 FRAC-Out Plan ends with the following statement "In the immediate vicinity of a release, benthic organisms may be smothered if sufficient quantities of bentonite settle upon them." This is the concern that the Service has stated in the past, bentonite may be chemically non-toxic, but it can physically smother and clog gills of nearby aquatic organisms in the event of a spill. Many of the native stream fauna is composed of shrimp species and gobies which require good water and substrate quality, a bentonite spill would impact both these parameters.

The current FRAC-Out Plan and the EA do not envision compensatory mitigation in the event of a frac out in wetlands or water bodies. Some form of mitigation process should be developed in the event of a frac out in these sensitive areas.

#### **Pipeline Maintenance**

##### D-EA Page 60, Section 7 (a), Public Interest Factors

Based on the information provided in the D-EA, the Puerto Rico Public Service Commission will be assuming all pipeline safety inspections and enforcement under the direction of the Pipeline Hazardous Material and Safety Administration (PHMSA). One of the requirements of PHMSA is that the pipeline route be visible and accessible at all times. This means keeping vegetation low along the upland portions of the pipeline and visibly marking the pipeline route in wetlands.

The Service remains concern with the permanent pipeline access that will have to be established. Permanent pipeline access points will need to be established at regular intervals to maintain vegetation and provide any needed pipeline maintenance. In addition the need for compressor stations has never been properly addressed. These structures are needed to maintain constant pressure in the pipe and move the gas along, the number and location of these structures which represent additional impacts has never been addressed.

The Service has not reviewed a Vegetation Management Plan detailing exactly how these federal requirements will be met. The Commonwealth EIS poorly describes how vegetation will be controlled along the route. Vegetation control is a secondary, permanent and long term impact of this project, whether mechanical, chemical or a combination of both, vegetation control will permanently impact habitats along the 50 foot wide permanent route causing continued disturbance and possibly contamination from runoff in areas that are environmentally sensitive. In the Wetland and Waterbody Construction and Mitigation Procedures submitted by the applicant, Section D 1 states that 10 foot corridor centered on the pipeline may be maintained in a herbaceous state. In the dry forest, and the southern mountain ranges a grassy ROW can be a fire hazard and serve as a channel for fires into otherwise forested areas.

The applicant has never fully addressed these concerns with habitat degradation associated with ROW maintenance in the dry forest, montane and karst regions. The applicant has not clearly defined how these areas will be accessed for vegetation maintenance if all bridged stream crossing will be restored and all temporary roads removed. In addition, while the applicant has stated that in wetlands the ROW will not have to be maintained, it is not clear if this would comply with the PHMSA pipeline safety requirements, the need and method to access wetland areas in the future has not been addressed. The long term maintenance of the pipeline right of way needs to be fully addressed by the Corps in their impacts evaluation.

#### **Page 96, Part 6, Fish and Wildlife Values**

The applicant has mentioned that they will replant the construction corridor with woody vegetation in a 3:1 ratio leaving only the 50 foot permanent Right of Way in non-woody/herbaceous vegetation. However, a detailed reforestation plans have not been developed. The plan should include a detailed list of which native tree species or species beneficial to wildlife would be used by habitat type, what would be the sizes (at least one meter tall) and what the scheduled maintenance plan for these trees. It is important to note that merely planting trees is not habitat restoration; the Service believes that the areas should be restored as habitat not just planted with trees.

#### **Migratory Birds**

The Corps' D-EA states that with regards to possible impacts to migratory "Birds are expected to move to nearby areas due to construction noise". This does not adequately address impacts to native and migratory bird species, especially in forested areas that will be impacted. The proposed pipeline project is located within occupied and suitable habitat for avian species protected under the Migratory Bird Treaty Act of 1918 (16 United States Code [U.S.C.] § 703-712) (MBTA) and birds are found year-round in all of the habitats contained within the boundaries of the Project and surrounding areas. The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. Migratory as well as many resident avian species

are included on the MBTA list. Violations of the MBTA are subject to penalties and fines.

For a list of birds covered under the MBTA please refer to:

<http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtandx.html>

Executive Order (EO) No. 13186, issued in 2001, also protects migratory birds and habitats by requiring federal agencies to support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency's activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions; and restore and enhance the habitat of migratory birds, as practicable. The Order directs federal agencies to develop and implement a Memorandum of Understanding (MOU) with the Service to promote the conservation of migratory birds. Agency compliance with the Executive Order and the MOUs developed in consultation with the Service, while not eliminating the possibility of violations of the MBTA, should ensure that migratory bird populations are safeguarded. By avoiding or minimizing the impact of activities on migratory bird populations and otherwise implementing the terms of the MOUs, agencies can reduce or eliminate the biological significance of any potential violation, as well as the possibility of enforcement action.

A MBTA MOU exists between the Service and FERC; it is used to develop migratory bird protection plans for pipeline projects in other areas of the US. To our knowledge the Corps has not developed such an MOU with the Service. However this does not exempt the Corps from striving to comply with both the MBTA and the Executive Order. In order to aid the Corps to comply with EO 13186 and PREPA with the MBTA we have the following recommendations:

1. Avoid any take of migratory birds and/or minimize the loss, destruction, or degradation of migratory bird habitat while completing the proposed project or action.
2. Determine if the proposed project or action will involve below- and/or above-ground construction activities since recommended practices and timing of surveys and clearances could differ accordingly.
3. If the proposed project or action includes a reasonable likelihood that take of migratory birds will occur, then complete actions that could take migratory birds outside of their nesting season. This includes clearing or cutting of vegetation, grubbing, etc. The primary nesting season for migratory birds varies greatly between species and geographic location, but in the Caribbean nesting generally contains two peaks August to November and February to April. Due to this variability, project proponents should consult with the appropriate Service's Regional Migratory Bird Program [Florida/Caribbean Field Office Migratory Bird Program, USFWS, Tallahassee, FL, Telephone: (850) 539-1684 cell: (561) 573-2882] for specific nesting seasons. Strive to complete all disruptive activities outside the peak of migratory bird nesting season to the greatest extent possible. Always avoid any habitat alteration, removal, or destruction during the primary nesting

season for migratory birds. Additionally, clearing of vegetation in the year prior to construction (but not within the nesting season) may discourage birds from attempting to nest in the proposed construction area, thereby decreasing chance of take during construction activities.

4. If a proposed project or action includes the potential for take of migratory birds and/or the loss or degradation of migratory bird habitat and work cannot occur outside the migratory bird nesting season (either the primary or maximum nesting season), project proponents will need to provide the Service with an explanation for why work has to occur during the migratory bird nesting season. Further, in these cases, project proponents also need to demonstrate that all efforts to complete work outside the migratory bird nesting season were attempted, and that the reasons work needs to be completed during the nesting season were beyond the proponent's control.

Also, where project work cannot occur outside the migratory bird nesting season, project proponents should survey those portions of the project area during the nesting season prior to construction occurring to determine if migratory birds are present and nesting in those areas. In addition to conducting surveys during the nesting season/construction phase, companies may also benefit from conducting surveys during the prior nesting season. Such surveys will assist the company in any decisions about the likely presence of nesting migratory birds or sensitive species in the proposed project or work area. While individual migratory birds will not necessarily return to nest at the exact site as in previous years, a survey in the nesting season in the year before construction allows the company to become familiar with species and numbers present in the project area well before the nesting season in the year of construction.

In the event large historical rookeries (repeated annual colonial nesting areas eg. egrets) are found on-site, contact the Service's Regional Migratory Bird Program to discuss potential strategies to avoid removal of the rookery/take of nests. Bird surveys should be completed during the nesting season in the best biological timeframe for detecting the presence of nesting migratory birds, using accepted bird survey protocols. Service's Regional Migratory Bird Program can be contacted for recommendations on appropriate survey guidance. Project proponents should also be aware that results of migratory bird surveys are subject to spatial and temporal variability. Finally, project proponents will need to conduct migratory bird surveys during the actual year of construction, if they cannot avoid work during the primary nesting season (see above) and if construction will impact habitats suitable for supporting nesting birds.

5. If no migratory birds are found nesting in proposed project or action areas immediately prior to the time when construction and associated activities are to occur, then the project activity may proceed as planned.

6. If migratory birds are present and nesting in the proposed project or action area, contact the Service's Regional Migratory Bird Program for guidance as to appropriate next steps to take to minimize impacts to migratory birds associated with the proposed project or action.

7. The Service recommends the development of a voluntary Avian Protection Plan to serve as a guideline minimize take of migratory birds during construction as well as operation throughout the life of the project. This plan will demonstrate do diligence in protection and conservation of migratory birds.