



**Federal Energy Regulatory Commission**  
 Office of Energy Projects  
 Washington, DC 20426

**Rio Grande LNG Project**  
*Final Environmental Impact Statement*  
*Volume III, Part 2*



**Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC**

**April 2019**  
**Docket Nos. CP16-454-000, CP16-455-000**  
**FERC/EIS-0287F**

**Cooperating Agencies:**



U.S. Environmental Protection Agency



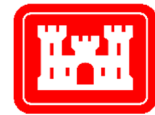
U.S. Department of Transportation



U.S. Coast Guard



U.S. Department of Energy



U.S. Army Corps of Engineers



U.S. Fish and Wildlife Service



Federal Aviation Administration



National Park Service



National Oceanic Atmospheric Administration -  
 National Marine Fisheries Service

Elected Officials (EO)

EO1 - Mayor Sylvester Turner, City of Houston

20181130-5016 FERC PDF (Unofficial) 11/29/2018 5:29:02 PM



CITY OF HOUSTON  
Office of the Mayor

Sylvester Turner

Mayor  
P.O. Box 1562  
Houston, Texas 77251-1562  
Telephone - Dial 311  
www.houstontx.gov

November 26, 2018

Chairman Neil Chatterjee  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington, D.C. 20426

RE: Rio Grande LNG and Rio Bravo Pipeline  
Docket Nos. CP16-454-000 and CP16-455-000

Dear Chairman Chatterjee:

I am writing to express my strong support for Houston-based NextDecade Corporation and its plans to develop and operate the Rio Grande LNG project in the Port of Brownsville, a deepwater port in South Texas. I encourage the Commission to issue its final approval of Rio Grande LNG as soon as possible.

EO1-1

As you know, the U.S. has a unique opportunity to become a major supplier of abundant, clean-burning, U.S.-produced natural gas to markets around the world. We are proud of our companies and professionals in Houston who are working diligently to deliver the long-term economic and environmental benefits that come with the continued advancement of this promising industry.

Members of my staff and I have visited with NextDecade's team several times in recent months, both in Houston and on the sidelines of the Gastech conference in Barcelona (as you know, we are honored to be hosting Gastech in Houston in September 2019). We have observed that NextDecade is committed to safety and integrity as a good neighbor - both here in Houston and in the Rio Grande and surrounding communities. I am confident that the team's steadfast commitment to these and other core values will bring a safe, reliable facility to fruition, creating thousands of jobs and providing the world with efficient, cleaner energy.

EO1-2

Improving the global environment for future generations is a key policy initiative of mine. I am a co-chair of Climate Mayors, a group of more than 300 mayors of cities from coast to coast working together to strengthen local efforts for reducing greenhouse gas emissions and to support efforts for binding federal and global policymaking. I am also a member of the C40 Alliance of Cities, the Carbon Disclosure Project, and the Global Covenant of Mayors for Climate & Energy. In September 2018, I was proud to announce Houston's Climate Action Plan at the Global Climate Action Summit in San Francisco, highlighting Houston's tremendous recovery and resiliency progress in the aftermath of Hurricane Harvey.

NextDecade's Rio Grande LNG project will enable developed and emerging markets around the world to reduce greenhouse gas emissions by replacing carbon-intensive fuels with natural gas and other forms of cleaner energy. The project will also provide energy producers across the State of Texas an important link to global markets and an opportunity to reduce wasteful flaring of valuable energy resources into the atmosphere.

EO1-3

EO1-1 Comment noted.

EO1-2 Comment noted.

EO1-3 Comment noted.

**Elected Officials (EO)**

**EO1 - Mayor Sylvester Turner, City of Houston**

20181130-5016 FERC PDF (Unofficial) 11/29/2018 5:29:02 PM

Rio Grande LNG and other planned LNG export projects will facilitate the export of abundant, clean-burning natural gas and will deliver long-term economic and environmental benefits. We appreciate your continued commitment to the review of U.S. LNG projects, and respectfully request the Commission's final approval of Rio Grande LNG as soon as possible. | EO1-3

Régards,



Sylvester Turner, Mayor  
City of Houston

Elected Officials (EO)

EO2 - Congressman Kevin Brady

CP16-454, CP16-455



KEVIN BRADY  
MEMBER OF CONGRESS  
8TH DISTRICT OF TEXAS  
DEPUTY WHIP

CONGRESS OF THE UNITED STATES  
HOUSE OF REPRESENTATIVES  
WASHINGTON, D.C.

CHAIRMAN  
COMMITTEE ON  
WAYS AND MEANS  
JOINT COMMITTEE ON TAXATION

FEDERAL ENERGY  
REGULATORY COMMISSION

December 3, 2018

Chairman Neil Chatterjee  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington, D.C., 20426

Chairman Chatterjee,

I write to express my support for NextDecade's Rio Grande LNG project in the Port of Brownsville, a deep-water port in South Texas, and its associated Rio Bravo Pipeline that will originate in the Agua Dulce area. These projects will provide significant economic, energy, trade, and environmental benefits. I appreciate your work to facilitate American energy independence and I encourage the Commission to issue its final approval of Rio Grande LNG and Rio Bravo Pipeline as soon as possible.

EO2-1

EO2-2

The Rio Grande LNG project will bring thousands of U.S. jobs to communities in the Rio Grande Valley and throughout Texas. The project is expected to contribute more than \$35 billion to U.S. GDP during construction and more than \$500 million annually during operations. The Rio Grande LNG project will increase access of U.S. natural gas resources for consumers. Especially from producers in the Permian Basin and Eagle Ford Shale who will gain an important link to global markets. This project will help the U.S. mitigate trade deficits with key allies by exporting LNG in large volumes and move us one step closer to energy independence.

EO2-3

Rio Grande LNG will help improve the global environment through the export of clean-burning natural gas to countries and customers around the world who are using gas to reduce emissions from coal and other sources. By providing Texas energy producers a long-term home for associated natural gas, Rio Grande LNG will also help reduce the wasteful flaring of valuable resources into the Texas atmosphere.

EO2-3

On October 12, 2018, FERC released a draft Environmental Impact Statement (EIS) on NextDecade's Rio Grande LNG project and the associated Rio Bravo Pipeline. I appreciate the FERC staff's continued commitment to the review of U.S. LNG projects and understand the time and attention that's required to comply with the National Environmental Policy Act. I look forward to the timely issuance of a final EIS and to your approval of the Rio Grande LNG project. FERC's final approval will unleash the additional natural gas export potential of the U.S. and the state of Texas, driving significant economic, energy, trade, and environmental benefits for generations.

EO2-4

301 CANNON HOUSE OFFICE BUILDING, WASHINGTON, D.C. 20515 • 202-225-4901

<http://www.KevinBrady.house.gov>

2018-00120

EO2-1 Comment noted.

EO2-2 Comment noted.

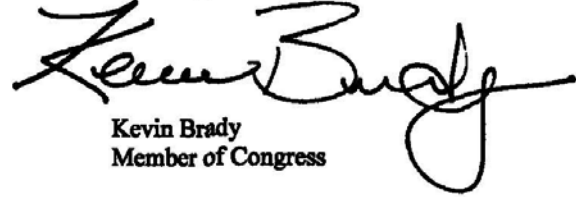
EO2-3 Comment noted.

EO2-4 Comment noted.

20181204-0007 FERC PDF (Unofficial) 12/03/2018

If you have any questions please feel free to contact my Legislative Counsel, Austin Bray, at (202) 225-4901 or by email at [Austin.Bray@mail.house.gov](mailto:Austin.Bray@mail.house.gov).

Sincerely,

A handwritten signature in black ink that reads "Kevin Brady". The signature is written in a cursive style with a large, stylized "K" and "B".

Kevin Brady  
Member of Congress

Elected Officials (EO)

EO3 - Senator John Cornyn

20181207-0009 FERC PDF Unofficial 12/04/2018

CP 10-454, CP 10-455

JOHN CORNYN  
TEXAS

**United States Senate**  
WASHINGTON, DC 20510-4305

December 3, 2018

The Honorable Neil Chatterjee  
The Honorable Cheryl LaFleur  
The Honorable Richard Glick  
The Honorable Kevin J. McIntyre  
**Federal Energy Regulatory Commission**  
888 First Street, NE  
Washington, DC 20426

OFFICE OF  
EXTERNAL AFFAIRS  
218 DEC -4 P 5 38  
FEDERAL ENERGY  
REGULATORY COMMISSION

Honorable Commissioners,

I write to express my strong support for the Rio Grande LNG project and the associated Rio Bravo Pipeline proposals for Southwestern Texas. Rio Grande LNG is a large-scale LNG project to be constructed at the Port of Brownsville, a deepwater port in South Texas. The project is expected to bring thousands of jobs to communities in the Rio Grande Valley and throughout Texas.

EO3-1

The expected investment as a result of the project totals between \$17 and \$20 billion for Texas. The project will add more than \$35 billion to the U.S. gross domestic product (GDP) during construction, and once completed add an additional \$560 million annually during operations. Further, the project is uniquely situated to improve the ability of U.S. natural gas to be exported to consumers around the world, which will help our nation mitigate trade deficits due to our ability to deliver large volumes of natural gas from Texas.

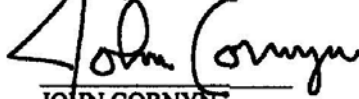
EO3-2

On October 12, 2018, the Federal Energy Regulatory Commission (FERC) released a draft environmental impact statement (EIS) for the Rio Grande LNG project. I appreciate FERC's continued commitment to the review of U.S. LNG projects, and look forward to the timely issuance of a final EIS and approval for the Rio Grande LNG project. FERC's final approval of this project will unleash the additional natural gas export potential of the U.S. and the State of Texas, driving significant economic, energy, trade, and environmental benefits for generations to come.

EO3-3

I look forward to your update on the project and its status within the Commission.

Sincerely,



JOHN CORNYN  
U.S. Senator

2018-00124

EO3-1 Comment noted.

EO3-2 Comment noted.

EO3-3 Comment noted.

Elected Officials (EO)

EO4 - Congressman Bill Johnson

20181207-0011 FERC PDF (Unofficial) 12/04/2018

**BILL JOHNSON**  
6TH DISTRICT, OHIO



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COMMITTEE ON ENERGY AND COMMERCE  
COMMITTEE ON THE BUDGET

CONGRESS OF THE UNITED STATES  
HOUSE OF REPRESENTATIVES

December 3, 2018

Chairman Neil Chatterjee  
Commissioner Kevin J. McIntyre  
Commissioner Richard Glick  
Commissioner Cheryl A. LaFleur  
Federal Energy Regulation Commission  
888 First Street, NE  
Washington, DC 20426

OFFICE OF  
EXTERNAL AFFAIRS  
2018 DEC -4 P 5:38  
FEDERAL ENERGY  
REGULATORY COMMISSION

RE: Docket Numbers CP16-454-000 and CP16-455-000

Dear Chairman Chatterjee and Commissioners McIntyre, Glick, and LaFleur:

I write in support of the Next Decades Rio Grande Project. Rio Grande LNG is a large-scale liquefied natural gas (LNG) project to be constructed in the Port of Brownsville, a deep-water port in South Texas. The project will help bring about thousands of U.S. jobs. Additionally, it is expected to contribute billions to U.S. GDP during construction, and then millions annually during operations.

EO4-1

Natural gas production is at an all-time high, and reserves are so large that they are predicted to meet domestic demand for almost a century. Ohio alone reached new highs in October of 2017, as natural gas production reached 5.5 billion cubic feet per day. Because of this energy abundance, we must do everything we can to grow jobs in Ohio, Texas, and across the United States within the industry. This LNG export facility should be a part of that effort.

EO4-2

In addition to positive job growth, LNG exports help strengthen our geopolitical ties with important trading countries throughout the world. They bolster our national security efforts while providing a reliable source of energy for our allies. However, the window of opportunity for U.S. LNG exports will not remain open indefinitely. The U.S. is in fierce competition with other LNG exporting nations, and if we miss our opportunity to get into these international markets in a big way, our share of the global gas market could be greatly reduced.

EO4-3

I appreciate the FERC staff's continued commitment to the review of U.S. LNG projects, and know that its work is carried out in accordance with NEPA - a rigorous process that includes a detailed review of environmental, engineering, social, and other elements of proposed projects. I look forward to the timely issuance of a final environmental impact statement and to the economic and geopolitical benefits that this project will bring.

EO4-4

Sincerely,

Bill Johnson  
Member of Congress

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2018-00121

EO4-1 Comment noted.

EO4-2 Comment noted.

EO4-3 comment noted.

EO4-4 Comment noted.



**CITY OF HOUSTON**

Office of the Mayor

**Sylvester Turner**

Mayor

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FILED  
SECRETARY OF THE  
COMMISSION

2018 DEC 10 P 3:07

FEDERAL ENERGY  
REGULATORY COMMISSION

ORIGINAL

November 26, 2018

Chairman Neil Chatterjee  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington, D.C. 20426

RE: Rio Grande LNG and Rio Bravo Pipeline  
Docket Nos. CP16-454-000 and CP16-455-000

Dear Chairman Chatterjee:

I am writing to express my strong support for Houston-based NextDecade Corporation and its plans to develop and operate the Rio Grande LNG project in the Port of Brownsville, a deepwater port in South Texas. I encourage the Commission to issue its final approval of Rio Grande LNG as soon as possible.

EO5-1

As you know, the U.S. has a unique opportunity to become a major supplier of abundant, clean-burning, U.S.-produced natural gas to markets around the world. We are proud of our companies and professionals in Houston who are working diligently to deliver the long-term economic and environmental benefits that come with the continued advancement of this promising industry.

Members of my staff and I have visited with NextDecade's team several times in recent months, both in Houston and on the sidelines of the Gastech conference in Barcelona (as you know, we are honored to be hosting Gastech in Houston in September 2019). We have observed that NextDecade is committed to safety and integrity as a good neighbor – both here in Houston and in the Rio Grande and surrounding communities. I am confident that the team's steadfast commitment to these and other core values will bring a safe, reliable facility to fruition, creating thousands of jobs and providing the world with efficient, cleaner energy.

Improving the global environment for future generations is a key policy initiative of mine. I am a co-chair of Climate Mayors, a group of more than 300 mayors of cities from coast to coast working together to strengthen local efforts for reducing greenhouse gas emissions and to support efforts for binding federal and global policymaking. I am also a member of the C40 Alliance of Cities, the Carbon Disclosure Project, and the Global Covenant of Mayors for Climate & Energy. In September 2018, I was proud to announce Houston's Climate Action Plan at the Global Climate Action Summit in San Francisco, highlighting Houston's tremendous recovery and resiliency progress in the aftermath of Hurricane Harvey.

NextDecade's Rio Grande LNG project will enable developed and emerging markets around the world to reduce greenhouse gas emissions by replacing carbon-intensive fuels with natural gas and other forms of cleaner energy. The project will also provide energy producers across the State of Texas an important link to global markets and an opportunity to reduce wasteful flaring of valuable energy resources into the atmosphere.

EO5-1

The comment is a duplicate of comment letter EO1.



**Elected Officials (EO)**

**EO5 - City of Houston**

Rio Grande LNG and other planned LNG export projects will facilitate the export of abundant, clean-burning natural gas and will deliver long-term economic and environmental benefits. We appreciate your continued commitment to the review of U.S. LNG projects, and respectfully request the Commission's final approval of Rio Grande LNG as soon as possible. | EO5-1

Regards,



Sylvester Turner, Mayor  
City of Houston

Elected Officials (EO)

EO6 - Congressman Pete Olson

20181214-0008 FERC PDF Unofficial 12/30/2018  
CP10-454, CP10-455

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22nd District, Texas

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OFFICE OF  
EXTERNAL AFFAIRS  
Congress of the United States  
House of Representatives  
FEDERAL ENERGY  
REGULATORY COMMISSION  
Washington, DC 20426

COMMITTEE ON  
ENERGY AND COMMERCE  
VICE CHAIR  
SUBCOMMITTEE ON ENERGY  
SUBCOMMITTEE ON ENVIRONMENT  
SUBCOMMITTEE ON  
COMMUNICATIONS AND TECHNOLOGY

November 30<sup>th</sup>, 2018

The Honorable Neil Chatterjee  
Chairman  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Dear Chairman Chatterjee,

I write to express my appreciation for the work the Commission has done to expedite review of recent liquefied natural gas (LNG) applications and further call to your attention the pending Rio Grande LNG Project. I strongly support the export of LNG from the United States and ask that you give all due consideration to the Rio Grande project, especially in light of the economic benefits it will likely bring.

EO6-1

I have repeatedly mentioned to the Commission the importance of American "energy diplomacy" and I firmly believe that LNG exports are a tremendous benefit for jobs abroad and here at home. Like many projects in the region, this facility could be an anchor for economic development by bringing thousands of jobs to region. In fact, I am told that this project is expected to contribute more than \$35 billion in GDP during construction and more than \$500 million annually during operations.

EO6-2

In addition to the economic benefit, the Rio Grande LNG Project aims to improve the global environment by providing Texas producers in the Permian Basin a long-term home for associated natural gas, thus reducing the need to flare natural gas during oil production. Similarly, American gas could offset the use of less environmentally-friendly fuels for power generation.

EO6-3

Given this, it is my hope that the Commission can continue its work on these matters and specifically give all due consideration to the Rio Grande LNG Project and similar applications. With FERC's approval, this project could bring economic, energy, trade and environmental benefits for generations.

EO6-4

Very Respectfully,

Pete Olson  
Member of Congress

Visit us at: <http://www.house.gov/olson>

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2018-00120

EO6-1 Comment noted.

EO6-2 Comment noted.

EO6-3 Comment noted.

EO6-4 Comment noted.



**RESOLUTION NO. 2015-29**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SOUTH PADRE ISLAND, TEXAS,**

WHEREAS, Proposals have been made for the construction of Liquefied Natural Gas (LNG) facilities at the Port of Brownsville and along the Brownsville Ship Channel, by Annova LNG, Rio Grande LNG and Texas LNG; and

WHEREAS, Various facilities under consideration are located in close proximity to the City of South Padre Island; and

WHEREAS, Many of the proposed facilities are located along State Highway 48, which is the principal route between Port Isabel and Brownsville; and

WHEREAS, South Padre Island and the other communities of the Laguna Madre area are located in one of the most unique, pristine and scenic ecosystems in the world; and

WHEREAS, The proposed project area is located in a delicate and partially undisturbed salt flat between the Laguna Madre and the Bahia Grande, which together form part of the Laguna Atascosa National Wildlife Refuge; and

WHEREAS, The Laguna Madre has been designated by the Texas Parks and Wildlife department as one of the “most important and unspoiled ecosystems in Texas; and

WHEREAS, The Bahia Grande is a recovering ecosystem that was the subject of one of the largest estuary restoration projects in the United States, and serves as a critical habitat for nesting birds and aquatic life; and

WHEREAS, The status of the Laguna Madre and the Bahia Grande as hyper-saline lagoons makes them particularly vulnerable to pollution or contamination, due to their naturally low level of sea and fresh water exchange; and

WHEREAS, In addition to the risk of potential contamination by pollutants or sediment, the potential construction of these facilities presents a risk of visual pollution, by replacing natural vistas with industrial facilities; and

WHEREAS, Light and noise generated by the LNG facilities have the potential to impact sensitive ecosystems, and to impair the public’s enjoyment of recreational facilities; and

EO7-1

EO7-1

The resolution regarding opposition to the Project is noted.

**Elected Officials (EO)**

**EO7 – City Council of the City of South Padre Island**

WHEREAS, Traffic and security restrictions along State Highway 48 and the Brownsville Ship Channel related to the operation of LNG facilities have the potential to limit public access to recreational facilities near the proposed facilities, including the Laguna Atascosa Wildlife Refuge and the Jaime Zapata County Park; and

WHEREAS, Owing to the present design of State Highway 48, which lacks turning lanes or turn-arounds, heavy traffic associated with the LNG facilities has the potential to negatively impact quality of life and public safety; and

WHEREAS, The close proximity of some proposed LNG facilities to State Highway 48 and the City of South Padre Island creates potential safety issues for citizens of South Padre Island in the event that the proposed facilities are impacted by natural or technological hazards; and

WHEREAS, The economy of South Padre Island and the Laguna Madre Area is heavily-dependent on tourism and fishing industries, which rely upon the natural resources within the area; and

WHEREAS, In addition to the environmental, economic, quality of life and safety concerns connected with the proposed construction of LNG facilities, the proposal also raises questions of environmental justice, given that the proposed facilities are to be located in close proximity to a community comprised of ethnic minorities and persons of low to moderate income; and

WHEREAS, The City Council of the City of South Padre Island wishes to oppose the construction of any LNG facility in the vicinity of the City of South Padre Island, Port Isabel and surrounding areas.

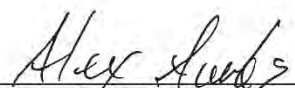
THEREFORE BE IT RESOLVED, that the City of South Padre Island hereby expresses its opposition to the construction of LNG facilities; and

BE IT FURTHER RESOLVED, that the City Council hereby directs that a copy of this resolution be entered into the proceedings of the Federal Energy Regulatory Commission related to these applications.

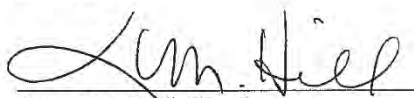
**PASSED, APPROVED AND ADOPTED** on this the 2nd day of September, 2015



**CITY OF SOUTH PADRE ISLAND, TEXAS**

  
Alex Avalos, Mayor Pro-tem

ATTEST:

  
Susan M. Hill, City Secretary

EO7-1

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

Rio Grande LNG, LLC )  
Rio Bravo Pipeline Company, LLC ) Docket Nos. CP16-454-000  
CP16-455-000  
)  
)

**COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Rio Grande LNG, LLC (“RG LNG”) and Rio Bravo Pipeline Company, LLC (“RB Pipeline”) (collectively, the “RG Developers”)<sup>1</sup> respectfully submit these comments pursuant to the procedures set forth in the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) October 12, 2018 Draft Environmental Impact Statement (“DEIS”) for the Rio Grande LNG Project (“Project”).<sup>2</sup> The Project consists of a 27 million tons per annum (“MTPA”) liquefied natural gas (“LNG”) export facility that will be located at the Port of Brownsville and a connecting pipeline capable of transporting 4.5 billion cubic feet per day (“Bcf/d”) from the Agua Dulce area to the proposed export terminal.<sup>3</sup>

The DEIS concludes that the environmental impacts resulting from the construction and operation of the Project would be reduced to less-than-significant levels with the implementation of RG Developers’ proposed mitigation measures as well as the additional measures recommended by FERC Staff.<sup>4</sup> With this filing, RG Developers are providing FERC with additional information in response to several conditions included in the DEIS, including those

<sup>1</sup> RG Developers are subsidiaries of NextDecade Corporation, an LNG development company focused on LNG export projects and associated pipelines in Texas.

<sup>2</sup> Rio Grande LNG, *Draft Environmental Impact Statement*, Accession No. 20181012-3019 (Oct. 12, 2018) [hereinafter *Draft EIS*].

<sup>3</sup> *Id.* at ES-2.

<sup>4</sup> *Id.* at ES-18.

conditions for which FERC requested a response prior to the end of the DEIS comment period.

RG Developers also are requesting clarification on certain conclusions and conditions in the DEIS.

**I. Responses to FERC DEIS Conditions Requiring Response Prior to the End of the DEIS Comment Period**

Consistent with other LNG infrastructure projects, FERC Staff included in the DEIS a number of conditions that RG LNG and RB Pipeline should address prior to the end of the DEIS comment period on December 3, 2018. Since the issuance of the DEIS, RG Developers have worked diligently to address these issues and to satisfy the conditions where appropriate. Attachment 1 to this pleading is a matrix of these ten (10) conditions that require a response by December 3, 2018, with RG Developers' annotations next to each condition. Attachment 1 includes a number of additional attachments reflecting contact reports from meetings with various agencies as well as other reports and analysis. Additional work is ongoing with regard to some of these conditions and RG Developers will continue to update FERC with all relevant information as soon as possible.

APP1-1

**II. Comments on Cumulative Impacts**

The DEIS concludes that when combined with other projects within the geographic scope of the Rio Grande LNG Project, the potential for the Project to contribute to cumulative impacts primarily results from the LNG Terminal, not the related RB Pipeline, and that the LNG Terminal's contribution would not be significant for most resources.<sup>5</sup> RG Developers respectfully submit the following comments on the DEIS conclusions regarding the cumulative impacts (1) from sediment/turbidity and shoreline erosion within the Brownsville Ship Channel

<sup>5</sup> *Id.* at ES-15.

APP1-1

Comment noted. The EIS has been updated to include additional information provided by RG Developers as appropriate.

(“BSC”) during operation of the Project; (2) on the federally listed ocelot and jaguarundi; and (3) on visual resources from the presence of the facilities.

**a. Cumulative Impacts on Surface Water**

The DEIS concludes that “while the proposed Project would contribute to cumulative impacts on surface water and wetlands, along with other projects in the area, this impact *would not be significant*.”<sup>6</sup> RG Developers agree with this conclusion, but note that the conclusion is less clear in other sections of the DEIS<sup>7</sup> and respectfully encourage FERC Staff to modify the DEIS so that this conclusion is consistent throughout the document.

RG Developers believe that when combined with the other projects in the geographic scope, the cumulative impact of the Rio Grande LNG Project and the other projects on surface water and wetlands would not be significant. RG Developers and the other LNG project developers on the BSC have committed to implementing mitigation measures to minimize any impact on the shoreline, including RG Developers’ use of rip-rap to stabilize the shoreline along the Terminal and turning basins.<sup>8</sup> This process also reduces the potential for suspended sediment to be transported in the Bahia Grande via the Bahia Grande Channel.<sup>9</sup>

Further, the BSC is a manmade waterway specifically designed for the purpose of facilitating commercial activity; the use of the BSC by LNG carriers, barges, and support vessels

<sup>6</sup> *Id.* at 5-20 (emphasis added).

<sup>7</sup> *See, e.g., id.* at ES-19, 4-405.

<sup>8</sup> *Id.* at 4-14 and 4-41. *See also* Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC Response to July 29, 2016 FERC Environmental Information Requests Nos. 2 and 7 and Aug. 2, 2017 FERC Environmental Information Requests Nos. 35, 40(f), 42, and 62 at 1-18 (Apr. 19, 2018, Accession No. 20180419-5210); *see generally* Resource Report 1 (May 5, 2016, Accession No. 20160505-5179).

<sup>9</sup> *Draft EIS, supra* note 2, at 4-41. *See also* Rio Grande LNG, LLC Response to Aug. 29, 2016 FERC Environmental Information Request (Sept. 28, 2016, Accession No. 20160928-5172).

APP1-2

The applicable text in section 4.13.2.2 has been revised to clarify that although locally significant cumulative impacts on water quality may occur within the BSC, overall cumulative impacts within the geographic scope would be minor. No updates to the Executive Summary were warranted.

APP1-3

As indicated by the comment, sections 4.3.2.1 and 4.3.2.2 discuss the approved deepening of the BSC, including acknowledgement that FERC has no jurisdiction over transiting LNG carriers and deferring to final permitting for the Brazos Harbor Channel Improvement Project to account for impacts on unarmored shorelines within the BSC for transit of the larger vessels.

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is fully consistent with this purpose.<sup>10</sup> In fact, a project has been approved to deepen the Brazos Island Harbor (“BIH”), of which the BSC is a part, with the specific intention of facilitating larger commercial vessel traffic in the BSC.<sup>11</sup> The Project’s use of the BSC is consistent with the BSC’s purpose to facilitate commercial activity in the Brownsville area. Consistent with that objective, construction of the LNG Terminal is estimated to have a total positive economic impact in Cameron County of \$5.6 billion.<sup>12</sup> Operation of the Terminal is estimated to have an annual economic impact in Cameron County of \$1.4 billion.<sup>13</sup> On balance, therefore, any cumulative impact on surface water resulting from the Rio Grande LNG and other LNG projects does not outweigh the clear benefits of the Project, which are consistent with the intended expansion of the BSC.

APP1-3

**b. Cumulative Impacts on the Ocelot**

RG Developers also seek clarification on the DEIS conclusion that the cumulative impacts on the federally listed ocelot would be significant<sup>14</sup> because of the loss of suitable habitat within the LNG Terminal Site.<sup>15</sup> As indicated in the DEIS, the potential ocelot habitat within the LNG Terminal Site is not suitable to support breeding pairs and likely would serve only as stopover or temporary habitat for transient individuals due to its size and lack of connectivity with larger more contiguous tracts.<sup>16</sup> RG Developers respectfully request that FERC Staff clarify that (1) the LNG Terminal Site does not support high quality habitat for

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<sup>10</sup> See, e.g., *Draft EIS, supra note 2*, at 4-92 and 4-401–4-402.

<sup>11</sup> In reviewing this BIH project, the US Army Corps of Engineers concluded that it would not result in significant environmental impacts. *Id.* at ES-4.

<sup>12</sup> *Id.* at 4-204.

<sup>13</sup> *Id.* at 4-204.

<sup>14</sup> *Id.* at ES-18–ES-19, 4-422, 4-423, and 5-20.

<sup>15</sup> *Id.* at 4-420.

<sup>16</sup> *Id.*

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Section 4.7.1.4 identifies the known breeding areas and suitability of the habitat at the LNG Terminal site. Further, the discussion in section 4.13.2.5 is not restricted to loss of habitat within the LNG Terminal site but rather includes consideration of adjacent habitat that could be indirectly affected by construction and operation of the Project. As such, no revision to the language in the EIS, nor the conclusion on cumulative impacts for the species was deemed warranted.



ocelots, (2) the potential habitat within the Terminal Site is fragmented and isolated, and (3) the potential habitat is only suitable as a temporary shelter for transient individuals. RG Developers also request that FERC Staff reconsider the cumulative impacts assessment accordingly.

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The significant cumulative impacts assessment also appears to be based on a suggested potential increase in vehicular strikes on ocelots during construction.<sup>17</sup> This suggestion is not supported by the record. First, the USFWS has determined that the increase in traffic levels would not result in a jeopardy determination for the ocelot.<sup>18</sup> Second, consistent with Condition 15 in the DEIS, and as outlined in more detail in Attachment 1, RG Developers have modified their proposal for transportation of fill material from the Port Isabel dredge pile to the LNG Terminal Site to use barges rather than dump trucks via the previously proposed “haul road,” thereby reducing the number of vehicles and road traffic associated with the Project and reducing the opportunities for vehicular strikes. Finally, RG Developers highlight for FERC Staff that the DEIS for the adjacent Texas LNG export project concludes that “[d]irect mortality as a result of construction of the projects considered in this cumulative impacts analysis for ocelots and jaguarundi are *unlikely due to the ability of individuals to leave the area.*”<sup>19</sup> Based on the three factors above, RG Developers respectfully request clarification from FERC Staff in the final environmental impact statement (“FEIS”) on the reasoning behind inclusion of vehicular strikes as a factor in the cumulative impacts determination.

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<sup>17</sup> *Id.* at 5-20.

<sup>18</sup> *Id.* at 4-152.

<sup>19</sup> Texas LNG, *Draft Environmental Impact Statement*, Accession No. 20181026-3000 at 4-305 (Oct. 26, 2018) [hereinafter *TX LNG DEIS*] (emphasis added).

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As acknowledged in section 4.7.1.4, the increased traffic levels proposed by RG Developers are within the planned capacity of SH-48, and that the FWS determined that the earlier expansion of SH-48 would not likely result in jeopardy of the ocelot. However, we disagree that a no jeopardy determination for SH-48 traffic negates the fact that increased traffic would result in an increased risk of collision with ocelots and reaffirm that our significance conclusion for cumulative impacts on the ocelot should include the increased potential for vehicular strike. Although the removal of the haul road decreases this potential slightly for the proposed Project, it does not affect our overall determination of significance. Finally, we note that the Texas LNG Terminal is a separate and distinct project and a species determination made for another project does not apply to the proposed Project.

Concerning the RB Pipeline route, FERC Staff specifically point out impacts on CRP-SAFE land.<sup>20</sup> In response to DEIS Condition 35 and as outlined in more detail in Attachment 1, RG Developers have adjusted the pipeline route to minimize impacts to the CRP-SAFE land. Therefore, RG Developers respectfully request that FERC Staff reevaluate their impacts determination for the ocelot with this new information.

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In the event that FERC Staff continue to believe that the cumulative impacts on the ocelot likely are significant, RG Developers respectfully request that FERC Staff determine that the Rio Grande LNG Project does not contribute in a meaningful way to the cumulative impacts.

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**c. Cumulative Impacts on the Jaguarundi**

RG Developers also seek clarification on the determination that the cumulative impacts on the federally listed jaguarundi would be significant<sup>21</sup> in light of the assessment that the potential for the species to occur is extremely unlikely,<sup>22</sup> and FERC Staff’s finding that with proper mitigation, the construction of pipelines in the geographic scope would not adversely affect the jaguarundi.<sup>23</sup> With respect to the Rio Grande LNG Project specifically, FERC Staff state that “[g]iven the lack of confirmed jaguarundi sightings in recent decades, we have determined that the Project is not likely to adversely affect the jaguarundi.”<sup>24</sup> FERC Staff draw

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<sup>20</sup> Through the Conservation Reserve Program (CRP) State Acres for Wildlife Enhancement (SAFE), private land is managed to create habitat that is beneficial for high-priority species.

<sup>21</sup> *Draft EIS, supra* note 2, at ES-19, 4-422, 4-423, and 5-20.

<sup>22</sup> *Id.* at 4-153.

<sup>23</sup> *Id.* at 4-422. FERC Staff also indicate that the Valley Crossing Pipeline would have an “insignificant and discountable impact on the jaguarundi.” *Id.* FERC Staff further states that construction and operation of the pipelines within the geographic scope of the Project would “not be likely to adversely affect federally listed species and would be unlikely to result in a trend towards federal listing for state listed species.” *Id; see also TX LNG DEIS, supra* note 19, at ES-7.

<sup>24</sup> *Draft EIS, supra* note 2, at 4-420. In fact, as recently as November 27, 2018, the Supreme Court issued a decision in a case in which the definition of “habitat” under the Endangered Species Act was at issue. *See generally Weyerhaeuser Co. v. United States Fish and Wildlife Serv.*, No.17-71 (U.S. Nov. 27, 2018). While the Supreme Court remanded the case to the Fifth Circuit Court of Appeals for further analysis and interpretation, the decision

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FERC staff has reviewed the route variation through the Conservation Reserve Program – State Acres for Wildlife Enhancement (CRP-SAFE) parcels and incorporated the updated data into section 4.7.1.4; no change in our determination is warranted.

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As noted in section 4.7.1.4, FERC has determined that the proposed Project itself is likely to adversely affect the ocelot through a number of pathways. For reasons discussed in sections 4.7.1.4 and 4.13.2.5, no change to the overall conclusion is deemed warranted at this time.

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In coordination with the FWS, FERC staff has revised its determination on the jaguarundi to “likely to adversely affect” given that any individuals remaining undetected in the Project area could be significantly affected by habitat loss, as described in section 4.13.2.5.

the same conclusion in the Texas LNG DEIS.<sup>25</sup> RG Developers seek clarification on FERC Staff’s assessment that the cumulative impacts are *significant*, in light of the finding that the impacts are unlikely for the Rio Grande LNG Project and similarly situated projects, and respectfully request that FERC Staff make clear that the impact from the RG LNG Terminal itself is virtually nonexistent, as noted above. RG Developers also request that FERC Staff consider separating the assessment of cumulative impacts for the ocelot and the jaguarundi in the FEIS given the differences in the Project’s impact on each species.

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**d. Cumulative Impacts on Visual Resources**

FERC Staff describe cumulative impacts on visual resources as either significant<sup>26</sup> or potentially significant.<sup>27</sup> While RG Developers understand that the development of three large LNG infrastructure projects on the BSC will change the visual landscape from some perspectives, RG Developers believe that the cumulative impact is not significant based on the extensive mitigation measures described in the DEIS.<sup>28</sup> For example, RG Developers will use ground flares, color the storage tanks gray to blend with the surrounding environment, and utilize horticultural plantings in accordance with the Terminal’s landscape plan outlined in Appendix 1.U of Resource Report 1, “General Project Description.”<sup>29</sup> RG Developers also note that within the visual impact area assessed by FERC Staff, the Project is visible without difficulty or obstruction from only four of ten vantage points, and from these four points, the Project is at

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injects some uncertainty into assessments of critical habitat when species have not been present for extended periods of time. *Id.*

<sup>25</sup> *TX LNG DEIS*, *supra* note 19, at ES-7.

<sup>26</sup> *Draft EIS*, *supra* note 2, at ES-18–ES-19.

<sup>27</sup> *Id.* at 4-431 and 5-21.

<sup>28</sup> *Id.* at at ES-9, 2-55, 4-95, 4-152, 4-191, 4-429, and 5-11.

<sup>29</sup> *See id.* at ES-9, 2-1, 2-12, 4-95, 4-191–4-192, and 4-429.

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The mitigation measures described throughout the EIS are specific to the Project. The findings of potentially significant impacts on visual resources in section 4.13.2.6 is the cumulative impact associated with not only the proposed LNG Terminal but other projects, including the two other Brownsville LNG projects. This finding is based, in part, by the lack of mitigation proposed for the Texas LNG terminal as described within the section. Therefore, we stand by our conclusion.

such a distance as to be *non-distinguishable*.<sup>30</sup> In the event that FERC Staff continue to find in the FEIS that the cumulative impacts on visual resources are significant, RG Developers respectfully request that FERC Staff also find that the Rio Grande LNG Project does not contribute to such impacts in any meaningful way based on the very limited visibility of the Project from various vantage points and the mitigation measures described above, especially the Project's proposed use of ground flares.

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**III. Comments on the Air Quality Assessment**

Throughout the FERC process, RG Developers have been and remain committed to minimizing the Project's environmental impacts through the development of robust environmental mitigation plans and procedures for construction and operation of the facilities. As a result, the DEIS concludes that the Project would have minor impacts on local and regional air quality.<sup>31</sup> In the analysis of concurrent emissions<sup>32</sup> and cumulative impacts on air quality,<sup>33</sup> the DEIS states that the Project could "*potentially exceed*" certain National Ambient Air Quality Standards ("NAAQS").<sup>34</sup> RG Developers understand the DEIS conclusion on concurrent emissions to refer only to the 1-hour NO<sub>2</sub> concentration because NO<sub>2</sub> is the only emission that the DEIS concludes could potentially exceed the NAAQS.<sup>35</sup> Air modeling conducted pursuant to the FERC-specified receptor grid, however, shows that the maximum predicted 1-hour NO<sub>2</sub>

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<sup>30</sup> *Id.* at 4-190-4-194.

<sup>31</sup> *Id.* at 4-260, 4-264, and 4-429.

<sup>32</sup> *Id.* at ES-12, 4-259, and 4-260.

<sup>33</sup> *Id.* at ES-17 and 4-447.

<sup>34</sup> *Id.* at ES-12, ES-17, 4-259, 4-260, and 4-447. RG Developers note that a project having the "potential" to exceed NAAQS is not a recognized, standard finding in air quality modeling.

<sup>35</sup> *See, e.g., id.* at 4-444, 4-446, and Appendix O.

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Section 4.13.2.9 of the final EIS was revised to clarify that, although estimated emissions for each project individually would not exceed the National Ambient Air Quality Standards (NAAQS), the predicted maximum cumulative impact is expected to exceed the short-term NAAQS for 1-hour nitrogen dioxide (NO<sub>2</sub>).

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concentration of 78.92 ug/m<sup>3</sup> is well below the 1-hour NO<sub>2</sub> NAAQS of 188 ug/m<sup>3</sup>.<sup>36</sup> RG Developers understand, therefore, that FERC Staff's conclusion on concurrent emissions is based on the potential cumulative, not standalone, 1-hour NO<sub>2</sub> concentrations. RG Developers respectfully request that FERC Staff confirm RG Developers' understanding in the FEIS and clarify the concurrent emissions analysis accordingly.

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RG Developers also respectfully disagree with the DEIS conclusion that the Project has the potential to exceed the short-term 1-hour NAAQS for NO<sub>2</sub> based on the air modeling conducted in response to data requests from FERC.<sup>37</sup> This air modeling was conducted pursuant to the FERC-specified receptor grid that includes the RG LNG stationary sources and mobile ship emissions (*i.e.*, LNG vessels and tug boats).<sup>38</sup> As noted above, the maximum predicted 1-hour NO<sub>2</sub> concentration of 78.92 ug/m<sup>3</sup> is well below the 1-hour NO<sub>2</sub> NAAQS of 188 ug/m<sup>3</sup>.<sup>39</sup> The DEIS adds this maximum predicted 1-hour NO<sub>2</sub> concentration to background concentration estimates and the Annova LNG and Texas LNG peak concentration estimates to arrive at the conclusion that the maximum cumulative impact has the potential to exceed the 1-hour NO<sub>2</sub> NAAQS of 188 ug/m<sup>3</sup> at 196 ug/m<sup>3</sup>.<sup>40</sup> As the DEIS explains, however, these concentrations were combined without regard to wind direction, day or time of occurrence of the maximum emission rate from each of the facilities,<sup>41</sup> all of which are critical variables in reliable cumulative air emissions modeling. It also appears that the three LNG projects used different

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<sup>36</sup> Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC Response to on Aug. 2, 2017 FERC Environmental Information Request, No. 68 (Oct. 27, 2017, Accession No. 20171027-5250).

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Draft EIS, supra* note 2, at 4-446 and O-4.

<sup>40</sup> *Id.*

<sup>41</sup> *Id.* at O-4.

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Comment noted. As stated in section 4.11.1, FERC has determined that the proposed Project itself would not result in significant impacts on air quality. In section 4.13.2.9, the EIS acknowledges that the method used to develop the peak cumulative concentrations is conservative. The EIS indicates a potential exceedance of the 1-hour NO<sub>2</sub> NAAQS based on the analysis presented and acknowledges that the exceedance is based on conservative assumptions. For reasons discussed in section 4.13.2.9, no change to the overall conclusion is deemed warranted at this time.

meteorological data sets and 1-hour NO<sub>2</sub> concentration ranks in each project's respective modeling. Therefore, RG Developers do not agree that the cumulative impact of 1-hour NO<sub>2</sub> will exceed the respective NAAQS.<sup>42</sup>

APP1-11

If FERC Staff retains the determination in the FEIS that the 1-hour NO<sub>2</sub> concentration could potentially exceed the NAAQS, RG Developers do not believe this conclusion should unduly factor into the Commission's public interest determination for several reasons. First, FERC Staff's determination that the cumulative emissions have the *potential* to exceed the NAAQS does not render the Project inconsistent with the public interest.<sup>43</sup> The location of the predicted peak potential exceedance is at a discrete location around the fence line between the RG LNG and Texas LNG sites that is not accessible to the public; therefore, any potential exceedance would not impact the public.<sup>44</sup> Additionally, the DEIS concludes that the cumulative impacts on regional air quality would be only minor.<sup>45</sup> With respect to concurrent emissions during RG LNG's proposed staged construction, the DEIS concludes that "these [potential]

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<sup>42</sup> RG Developers' conclusion is consistent with the NAAQS modeling that RG Developers conducted for the Texas Commission on Environmental Quality ("TCEQ") PSD permit application for the Project. For each pollutant and averaging time that has ground level concentrations ("GLCs") which exceed the Significant Impact Level ("SIL") (e.g. 1-hour NO<sub>2</sub>), RG Developers modeled all sources associated with the Terminal and Compressor Station 3 and off-property sources within a 50-kilometer (31-mile) distance of the Terminal, including stationary sources at the Annova LNG and Texas LNG site. The representative monitored background concentration was added to predict GLCs from the combined on-property and off-property modeling analyses. The modeling predicted 1-hour NO<sub>2</sub> cumulative concentrations of 57.35 ug/m<sup>3</sup> against the 1-hour NO<sub>2</sub> NAAQS of 188 ug/m<sup>3</sup>.

<sup>43</sup> Pursuant to the Natural Gas Act, "[t]he Commission shall issue [an authorization] order upon application, unless . . . it finds that the proposed exportation or importation will not be consistent with the public interest." 15 U.S.C. § 717b(a). The Commission and federal appellate courts have interpreted this provision to mean that the Commission must approve a Project (albeit conditionally) unless evidence affirmatively demonstrates that the project will be inconsistent with the public interest. *Magnolia LNG, LLC*, 155 FERC ¶ 61,033 at P 19-P 25 (Apr. 15, 2016); *see also Distrigas Corporation v. FPC*, 495 F.2d 1057, 1063-64 (D.C. Cir. 1974), *cert. denied*, 419 U.S. 834 (1974), and *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

<sup>44</sup> *Draft EIS, supra* note 2, at 4-444. The receptor with the potential exceedance is between RG LNG's and Texas LNG's Terminal Sites. If both projects are constructed, the receptor would be located in an area in or around either the RG LNG or Texas LNG security fence and would not be accessible by the public. If for some reason the Texas LNG project is not constructed, then there would be no potential exceedance and therefore no impact on the public.

<sup>45</sup> *Id.* at 4-447.

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Comment noted.

exceedances would not be persistent at any one time . . . due to the dynamic and fluctuating nature of construction activities within a day, week, or month. Therefore, these concurrent emissions would not have a long-term, permanent effect on air quality in the area.”<sup>46</sup> The DEIS also concludes that the Project’s environmental impacts are not significant for most resources, including but not limited to geology, groundwater, wetlands, cultural resources, land use, and recreation.<sup>47</sup> Finally, the export and use of LNG to replace higher-emitting power sources in destination markets will improve air quality globally. Based on these factors, even if the FEIS concludes that the 1-hour NO<sub>2</sub> concentration could *potentially* exceed the NAAQS, this conclusion would not be enough to support a Commission finding that the Project would be inconsistent with the public interest.

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**IV. Comments on the Impact of SpaceX on the Project**

Conditions 52 and 126 in the DEIS relate to the proposed Space Exploration Technologies Corporation (“SpaceX”) Boca Chica, Texas rocket launch site (the “Boca Chica Cite”). RG Developers are committed to having a robust safety regime and protocols in place during construction and operation of the proposed LNG export facilities. Consistent with this commitment, RG Developers will develop and file with FERC robust plans pursuant to Condition 52 and Condition 126 related to construction and operation processes and procedures during SpaceX rocket launches. RG Developers will create and implement procedures for notifying construction crews and plant personnel of planned rocket launches; actively monitoring such rocket launches; interfacing with SpaceX and the Federal Aviation Administration (“FAA”), as appropriate; and shutting down operating equipment, if prudent and operationally

<sup>46</sup> *Id.* at 4-259–4-260. The DEIS reaches the same conclusion with regard to concurrent emissions during the LNG Terminal operation. *See id.* at 4-260.

<sup>47</sup> *Id.* at ES-15 and 5-20.

feasible, in the event of a rocket launch failure. RG Developers note that FAA regulations require SpaceX to provide at least 15 days prior notice to the FAA of each licensed mission including the time and date of the intended launch and reentry.<sup>48</sup> Additionally, SpaceX's Emergency Response Plan must include a dissemination plan for notifying the public of launch details.<sup>49</sup> Accordingly, RG Developers will have the notice and the time to prepare for rocket launches from the SpaceX facility and will be in a position to act in the event of a rocket launch failure.

As FERC Staff are aware, on March 21, 2017, RG Developers submitted a detailed analytical study (the "ACTA Study" or "Study") conducted by a third-party consultant, ACTA, Inc. ("ACTA").<sup>50</sup> ACTA is a recognized subject matter expert in the evaluation of safety hazards and risks from launch vehicle debris, blast and toxic gases, and routinely completes such analyses for the Department of Defense, the FAA, National Aeronautics and Space Administration, and other international companies and agencies. The ACTA Study assessed the risk of impact of SpaceX's Falcon 9 V1.1 ("Falcon 9") and Falcon Heavy<sup>51</sup> under adverse wind conditions.<sup>52</sup>

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<sup>48</sup> 14 C.F.R. § 431.79.

<sup>49</sup> 14 C.F.R. § 431.45.

<sup>50</sup> See Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC Response to FERC Engineering Information Requests No. 2, 3, and 4 on Rocket Launch Failures Siting Concerns (Mar. 27, 2017, Accession No. 20170321-5137) [hereinafter *ACTA Spaceport Study*].

<sup>51</sup> See generally *id.*

<sup>52</sup> ACTA defines "adverse wind conditions" as when "average wind speeds within the vertical profile are in the 25 to 35 knot range [approx. 30 to 40 mph] and blowing predominately to the west or west-northwest," and notes that the likelihood of such occurrence on the day of a launch is 2.7%. *Id.* at 3. It is RG Developers' understanding that in wind speeds greater than this, SpaceX will not launch from the Boca Chica site. *Id.* at Cover Letter 3-4 (describing the FAA regulations); Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC Response to FERC Engineering Information Requests No. 1-20 on Rocket Launch Failures Siting Concerns at 20 (Aug. 22, 2017, Accession No. 20170822-5093) (describing ACTA's methodology for determining adverse wind conditions).



The ACTA Study concludes that the risk of impact from such activity to the Terminal Site is “insignificant and adequately controlled for personnel sheltered and in open areas of the Terminal Site during site preparation, construction, commissioning, normal operations, maintenance, and turnarounds, or on LNG ships while docked.”<sup>53</sup> Specifically, the Study finds that “[f]or a launch under adverse wind conditions, the probability of an individual event that would reach or extend into the BSC will not exceed the FAA criteria of  $1 \times 10^{-5}$  per launch for the BSC,”<sup>54</sup> and “[t]he cumulative annual frequency of launch events that would impact [the LNG plant] critical assets, or the BSC will not exceed the FERC frequency criteria of  $3 \times 10^{-5}$  per year.”<sup>55</sup> The cumulative assessment is based on a maximum of 12 launches per year, which is consistent with the FAA’s FEIS for the Boca Chica Site.<sup>56</sup> The Study also explains that the probability of a rocket launch impact without adverse wind conditions “is at least 1 to 2 orders of magnitude less than that of an adverse wind condition (less than a 1 in 5,000,000 occurrence per launch).”<sup>57</sup> Therefore, regardless of wind conditions, the risk to the Project’s critical assets as well as the societal and individual risks caused by rocket launch activity by SpaceX during construction and operation of the Project is extremely low.

Finally, recent trade press reports quoting senior SpaceX executives indicate that SpaceX may launch the Big Falcon Rocket (“BFR”) from the Boca Chica Site and plan to make the Boca

<sup>53</sup> *ACTA Spaceport Study*, *supra* note 50, at Cover Letter 7.

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

<sup>56</sup> SpaceX Texas Launch Site, *Final Environmental Impact Statement*, ES-13 (May 2014); *see also ACTA Spaceport Study*, *supra* note 50, at Cover Letter 7 (describing how the study assessed 12 launches per year as “12 launches of the Falcon 9, 11 launches of the Falcon 9 and 1 launch of the Falcon Heavy, and 10 launches of the Falcon 9 and 2 launches of the Falcon Heavy . . .”).

<sup>57</sup> *Id.* at Cover Letter 6.

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Comment noted and restates conclusions of the ACTA analysis. See response to Comment Letter IND67.

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Chica Site the hub for the BFR.<sup>58</sup> Unlike the Falcon 9 and Falcon Heavy, the FAA’s FEIS for the Boca Chica Site did not assess a BFR launch.<sup>59</sup> It is RG Developers’ understanding, therefore, that the FAA will need to conduct additional analysis for a BFR launch from the Boca Chica Site. Similarly, the ACTA Study did not assess the BFR because the BFR “represents a visionary concept, *but has yet to be developed with sufficient specificity or finality to meet the threshold for realness and relevance.*”<sup>60</sup> If the FAA reviews and approves a BFR launch from the Boca Chica Site, RG Developers will update the ACTA Study and their internal plans and procedures accordingly.

APP1-14

In light of this important background, RG Developers seek clarification on DEIS Condition 52. Condition 52 requires that RG Developers “develop, file, and implement procedures to position construction crews outside of areas that could be impacted by rocket debris of a failed launch during initial moments of rocket launch activity.”<sup>61</sup> RG Developers believe that the available record evidence supports a clear finding that risks to the Project site and construction and operations crews are extremely low and, as a result, the existing, comprehensive FAA procedures for launches and the robust safety and security plans that RG Developers will have in effect during construction and operation will add a further layer of safety and mitigate the need to position construction crews “outside of higher risk areas during rocket launch activity.”<sup>62</sup>

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<sup>58</sup> Mike Wall, *SpaceX to Build ‘Mini BFR’ Version of Mars Ship to Fly on Falcon 9, Elon Musk Says*, SPACE.COM, Nov. 7, 2018, <https://www.space.com/42375-spacex-mini-bfr-launch-on-falcon-9.html> (emphasis added).

<sup>59</sup> See generally SpaceX Texas Launch Site, *Final Environmental Impact Statement*, ES-13 (May 2014).

<sup>60</sup> *ACTA Spaceport Study*, *supra* note 50, at A-3.

<sup>61</sup> *Draft EIS*, *supra* note 2, at 5-34.

<sup>62</sup> *Id.* at 4-337. RG Developers note that the DEIS states that FERC Staff relied on a third party study, in part, to reach its conclusions regarding impacts from the proximity to the SpaceX facility.

APP1-14

Comment noted. Section 4.12.1.6 of the final EIS has been updated to reflect the launch vehicles analyzed in the ACTA study. See response to Comment Letter IND67.

APP1-15

The recommendation has been updated as stated in response to Comment Letter IND67.

As a result, RG Developers respectfully assert that a more appropriate condition during construction would be to require RG LNG to have plans and procedures in effect during construction that require (1) active monitoring of the rocket launch, (2) notification to and engagement with all construction crews on site in advance of any rocket launch regarding appropriate activities during a launch, and (3) in the event of a failed launch, the movement of construction crews immediately to designated muster areas of the Project site that are unlikely to be impacted by such failed launch.<sup>63</sup> In this way, Condition 52 would more closely mirror Condition 126 in the DEIS, ensuring there are adequate plans in place to protect on-site workers in the event of a failed launch without unduly impacting construction and commercial operations.

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In the event that FERC Staff maintain the requirement to reposition construction crews “outside of higher risk areas” during a rocket launch, as currently written in the DEIS,<sup>64</sup> RG Developers understand the term “higher risk areas” and the “areas that could be impacted by rocket debris”<sup>65</sup> to refer to the potential green-shaded Impact Probability Contour representing  $1 \times 10^{-7}$  probability of impact (approximately 1 in 10,000,000), identified in the ACTA Study.<sup>66</sup> To the extent operationally feasible and prudent, at the beginning of a Falcon 9 launch, RG Developers will move construction crews outside of this green shaded potential impact area identified on the ACTA Study map.<sup>67</sup> As depicted in the Study, a Falcon Heavy launch would not impact the LNG Terminal Site,<sup>68</sup> so no such action would be required. As noted above, SpaceX has not received authorization from the FAA to launch a BFR from the Boca Chica Site

<sup>63</sup> Such areas will be based on the ACTA Study as described in the subsequent paragraph.

<sup>64</sup> *Id.* at 4-337.

<sup>65</sup> *Id.* at 5-34.

<sup>66</sup> *ACTA Spaceport Study, supra* note 50, at 53-54.

<sup>67</sup> *Id.* at 53.

<sup>68</sup> *Id.* at 54.

	129.7 - 130.5) - ATWS-406: SS-T09-003 and SS-T09-002 (MP 129.9 - 130.5)	
23	<p><b>Prior to the end of the draft EIS comment period</b>, RG Developers shall file with the Secretary updated information on the impacted wetland areas in appendix F of the draft EIS identified as unacceptable. The information shall include all appropriate details in a consistent manner for each area, updated site-specific justifications for alternative measures to the Commission's Procedures, and revised alignment sheets, as necessary. (section 4.4.2.3). Per App F, the following ATWS within this wetland is not adequately justified: - ATWS-001: WW-TDS-060 (MP 0.0 - 0.1)</p>	<p>RG Developers reviewed the placement of ATWS-001 within wetland WW-TDS-060. Based on the review of the site-specific characteristics at these locations, RB Pipeline has determined that ATWS-001 will be eliminated as construction workspace. Therefore, RB Pipeline will not be requesting a variance for the placement of ATWS-001 in wetland TDS-060. RB Pipeline will prepare updated shapefiles of the pipeline workspace, FERC variance tables, Project-specific Procedures, associated alignment sheets, and impact tables as part of a separate submittal in the first quarter of 2019.</p>
30	<p><b>Prior to the end of the draft EIS comment period</b>, RG Developers shall file with the Secretary, their preliminary plans to support aplomado falcon recovery, as recommended in the BMPs for the northern aplomado falcon, specifically identifying any intent to mitigate for the loss of foraging habitat at the LNG Terminal site. RG Developers shall include in their filing, evidence of correspondence with the FWS and The Peregrine Fund regarding potential mitigation. (section 4.7.1.3)</p>	<p>RG Developers met with the U.S. Fish &amp; Wildlife Service (USFWS) on November 7, 2018 to discuss the DEIS recommendations regarding the aplomado falcon. A copy of the contact report is presented in Attachment D. RG Developers will continue to coordinate with the USFWS to determine the appropriate mitigation to offset the loss of foraging habitat at the LNG terminal site. RG Developers have initiated coordination with the Peregrine Fund to discuss potential mitigation options to offset the loss of foraging habitat at the LNG terminal site.</p> <p>Further, RG Developers have outlined the aplomado falcons best management practices (BMPs) that will be adhered to during the construction and operation of the Project in Attachment E.</p>
35	<p><b>Prior to the end of the draft EIS comment period</b>, RB Pipeline shall consult with the NRCS and FSA to determine the specific location of the three CRP-SAFE easements located between MPs 108.1 and 128.2 and identify appropriate measures to avoid (or minimize or mitigate for)</p>	<p>RG Developers met with the Cameron County Farm Service Agency (FSA) Center Office in San Benito, TX on May 8, 2018 to identify potential wildlife and/or conservation easements that would be crossed by the RB Pipeline in Cameron County, TX. A copy of the contact report is presented in Attachment F. Based on the</p>

	<p>impacts on the easements and the wildlife that they support. Results of this consultation shall be filed with the Secretary. (section 4.8.1.5)</p>	<p>recommendations of the meeting, on August 3, 2018, RB Pipeline conducted a site visit of the parcels supporting CRP-SAFE (Tracts ND-CAM-046.000, ND-CAM-045.00, and ND-CAM-044.00 [located between MP 113-116.5]) with the landowners and representatives from Cameron County FSA and the Natural Resource Conservation Service (NRCS). During the site visit, the parties evaluated the current pipeline alignment and developed a potential new alignment through the parcels that would both reduce the potential impacts to the CRP-SAFE habitat and address landowner concerns. RB Pipeline is currently designing the new alignment on these parcels and will allow the landowner, FSA and NRCS to review the draft alignment before it is finalized. Upon finalization of the re-route, RB Pipeline will prepare updated shapefiles of the pipeline workspace, FERC variance tables, Project-Specific Procedures, associated alignment sheets, and impact tables as part of a separate submittal in the first quarter of 2019.</p>
<p>37</p>	<p><b>Prior to the end of the draft EIS comment period</b>, RG Developers shall file with the Secretary traffic mitigation procedures, developed in consultation with applicable transportation authorities, to monitor LOS on roadways proposed for use during construction of the Project. These procedures shall describe mitigation measures that will be implemented for a resultant LOS of C or below, including alternative routes if necessary. (section 4.9.9.1)</p>	<p>On November 19, 2018, RG Developers met with the TxDOT in the regional office in Pharr, TX to discuss traffic mitigation procedures that were developed in consultation with TxDOT traffic engineers. RG Developers and TxDOT staff reviewed the project traffic mitigation measures that were initially discussed with TxDOT in 2016. TxDOT recommended that RG developers update the project Traffic Impact Analysis, conduct a speed study, and submit 60% design plans for the traffic mitigation measures and permanent driveway designs. RG developers plan to submit the updated traffic impact analysis, speed study, and 60% design plans for mitigation measures and permanent driveways in the second quarter of 2019. RG Developers will file with the Secretary the updated traffic impact analysis, which will include traffic mitigation procedures that describe measures that will be implemented for a resultant LOS of C or below in the second quarter of 2019 as well as information on future consultations with TxDOT. RG Developers will monitor traffic on Highway 48 during construction. A copy of the contact report of the meeting with TxDOT is presented in Attachment A.</p>

45	<p><b>Prior to the end of the draft EIS comment period</b>, RG LNG shall determine if the heights of the LNG carriers will be higher than other objects that traverse the waterway and if applicable, file for an Aeronautical Study under 14 CFR 77 for LNG carriers that may exceed the height requirements in 14 CFR 77.9. (section 4.12.6)</p>	<p>Under Federal Aviation Administration (FAA) regulation 14 CFR § 77, RG Developers are required to provide notice to the FAA of proposed construction identifying equipment that may be 200 feet or more above ground level if the facilities are within a certain proximity to airports or helipads. The regulation also includes notice for mobile objects, such as LNG carriers, if that mobile object would be higher than those “that would normally traverse the waterway.” The DEIS correctly notes that RG Developers have received a determination from the FAA of “No Hazard to Air Navigation” for temporary construction cranes that may reach or exceed 200 feet above ground level. RG Developers believe after reviewing industry sources on LNG carrier specifications and heights that such notice should not be applicable for the LNG carriers expected to call on the proposed terminal. Additional analysis of global LNG carrier fleets is presented in Attachment G. If, during commercial negotiations, RG Developers learns that the vessels anticipated for use in the export of LNG will have an air draft that exceeds the heights of the carriers set out in the table in Attachment G, they will file a notice to the FAA for the LNG carrier.</p>
46	<p><b>Prior to the end of the draft EIS comment period</b>, RG LNG shall consult with DOT PHMSA on whether using normally-closed valves as a stormwater removal device on local bunds and curbs will meet the requirements of 49 CFR 193. (section 4.12.6)</p>	<p>On August 22, 2018, RG Developers submitted a petition to Department of Transportation’s Pipeline &amp; Hazardous Materials Safety Administration (DOT PHMSA) requesting approval from the DOT PHMSA Administrator to use drain valves in place of pumps for water removal in non-LNG and refrigerant impoundment areas in accordance with 49 CFR § 193.2173. In response to FERC Staff’s recommendation to consult with DOT PHMSA to discuss whether using normally-closed valves as a stormwater removal device on local bunds and curbs will meet the requirements of 49 CFR 193, RG Developers held a conference call with DOT PHMSA on October 19, 2018. On October 29, 2018, DOT PHMSA confirmed that DOT PHMSA had spoken to FERC regarding this recommendation and that DOT PHMSA would coordinate with DOT PHMSA - South West Region regarding RG Developers’ petition for use of an alternate means of</p>

**Applicant (APP)**

**APP1 - NextDecade**


		impoundment drainage in accordance with 49 CFR § 190.9. DOT PHMSA also noted that 49 CFR §193.2173 is a Subpart C - Design requirement and is typically addressed during construction. A copy of the record of correspondence with DOT PHMSA regarding this recommendation is presented as Attachment H.
47	<b>Prior to the end of the draft EIS comment period</b> , RG LNG shall consult with DOT on whether the use of 130 mph 3-second gust in ASCE 7-05 for "other structures" will be subject to DOT requirements under 49 CFR 193 Subpart B. (section 4.12.6)	In response to FERC Staff's recommendation to consult with DOT PHMSA to discuss whether the use of 130 mph 3-second gust in ASCE 7-05 for "other structures" will be subject to DOT requirements under 49 CFR 193 Subpart B, RG Developers held a conference call with DOT PHMSA on October 19, 2018. On October 29, 2018, DOT PHMSA confirmed with RG Developers that DOT PHMSA had informed FERC Staff that the issue of whether the use of 130 mph 3-second gust for "other structures" is acceptable will be addressed as part of PHMSA's Subpart B - Siting Review and a determination will be made by DOT PHMSA 30 days prior to the FERC FEIS issuance date. A copy of the record of correspondence with DOT PHMSA regarding this recommendation is presented as Attachment H.

**ATTACHMENT A**

TxDOT Contact Report (19 Nov 2018)



Texas Department of Transportation NextDecade Meeting – November 19, 2018

		<h3>Contact Report</h3>
Check one: Confidential <input type="checkbox"/> Public <input checked="" type="checkbox"/>		Check one: Telephone <input type="checkbox"/> Meeting <input checked="" type="checkbox"/>
<b>Date and Place:</b> Texas Department of Transportation Pharr District Pharr, Texas		<b>Purpose:</b> 1) Provide status of and updates to the Project (Rio Grande LNG and Rio Bravo Pipeline Projects) 2) Discuss the status Traffic Impact Analysis and Traffic Mitigation Measures for the Rio Grande LNG and Rio Bravo Pipeline Project
<b>Participant Name:</b> Jesus Leal, PE Gabriel Garcia, PE Vincent landoli Komi Hassan		<b>Agency/Organization:</b> Texas Department of Transportation (TxDOT) NextDecade / The RG Developers Aldana Engineering & Traffic Design
<b>Summary</b> <p>In response to the FERC Staff's recommended mitigation measure No. 37 in the RGLNG Draft EIS, Mr. Albert Aldana scheduled a meeting with The TxDOT Pharr District on behalf of the RG Developers. Mr. Aldana was contracted by CB&amp;I to perform the initial traffic impact analysis (TIA) for Rio Grande LNG. The RG Developers met with Mr. Jesus S. Leal, Director – Transportation Operations and Mr. Gabriel Garcia, Traffic Engineering Supervisor. We stated that our objective for the meeting was to resume consultation with TxDOT now that the FERC DEIS had been issued. TxDOT stated they appreciated the opportunity to meet with the project again and they stated there has been growth in the area since the initial TIA report was submitted to TxDOT on April 27, 2016. TxDOT would like to see the TIA report revised to reflect current traffic numbers. They stated that they would also like a report on the traffic numbers after the commencement of commercial operations. TxDOT did not state that they wanted the project to monitor traffic conditions during construction however the RG Developers will conduct traffic monitoring during construction to ensure that the level of service on Hwy 48 does not exceed a LOS of C. The project reviewed all the mitigation measures identified in the initial TIA report that included:</p> <ul style="list-style-type: none"> <li>• The Majority of workforce traveling on Hwy 48 from the Brownsville area.</li> <li>• Temporary intelligent traffic signals</li> <li>• Synchronized lights</li> <li>• Utilization of barges for some fill, bulk material and large equipment</li> <li>• Reduction of traffic utilizing off-site parking</li> <li>• Evaluation of night-time use of SH 48 for delivery of some oversized, heavy equipment</li> <li>• Use of off-duty law enforcement for traffic management as needed.</li> </ul> <p>TxDOT stated that the proposed mitigation measures were acceptable and that they would review the proposed mitigation measures again when the project submitted a revised TIA. TxDOT also noted that if</p>		

**Texas Department of Transportation NextDecade Meeting – November 19, 2018**

the project would like to request a reduction in the speed limit on Hwy 48 near the terminal site, the project should submit a speed study as part of the revised Traffic Impact Analysis.

Mr. Leal said that TxDOT welcomes updates and interface meetings and stated that they would engage the area office in San Benito to participate in the review of the project's proposed traffic mitigation measures.


The RG Developers inquired about the timing and duration of the permit process and TxDOT stated process is not lengthily and suggested that the project submit a revised Traffic Impact Analysis, Speed Study and 60% design drawings and information for proposed mitigation measures and permanent driveways at the terminal so that TxDOT could approve the proposed mitigation measures and driveway design.

Item No.	Action Item	Action By	Date
1	Revise the project TIA, including proposed mitigation measures and prepare a Speed Study.	RG Developers	Q2 2019
2	Submit the revised TIA, Speed Study, and 60 design plans and information regarding the proposed mitigation measures and permanent driveways to TxDOT for review and Approval	RG Developers	Q3 2019

**ATTACHMENT B**

IBWC Contact Report (24 May 2018)

International Boundary and Water Commission Meeting / NextDecade – May 24, 2018

		<h3>Contact Report</h3>	
Check one: Confidential <input type="checkbox"/> Public <input checked="" type="checkbox"/>		Check one: Telephone <input type="checkbox"/> E-mail <input type="checkbox"/> Meeting <input checked="" type="checkbox"/>	
<b>Date and Place:</b> May 24, 2018 International Boundary and Water Commission (IBWC) 325 Golf Course Road Mercedes, TX 78570		<b>Purpose:</b> 1) Introduce the Project to the IBWC. 2) Identify the waterways crossed by the Project that are under the jurisdiction of the IBWC and discuss the IBWC's guidelines for the crossing of these waterways.	
<b>Participant Name:</b>		<b>Agency/Organization:</b>	
John Claudio (Realty Specialist) Francisco Martinez (Assistant Area Operations Manager)		IBWC	
Komi Hassan Eddie Duran		Rio Bravo (RB) Pipeline / Next Decade Corporation	
Jason Zoller		Ecology and Environment (E & E)	
<b>Summary</b> The meeting introduced the Project (both the Terminal and Pipeline System) to the IBCW. This included an overview of the status of the FERC process and the ongoing permitting process with the U.S. Army Corps of Engineers, the Texas Commission on Environmental Quality, and consultation process with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department. Mr. Claudio introduced himself as the point of contact for the project going forward. Upon reviewing the Project details, IBWC stated that the Pipeline System crosses two waterways under the jurisdiction of the IBWC; the North Floodway at milepost 93 and the Arroyo Colorado at milepost 100. RB Pipeline committed to providing the IBWC a kmz file of the pipeline route to confirm that the North Floodway and Arroyo Colorado are the only two waterways crossed by the Pipeline System that are under the jurisdiction of the IBWC.  The IBWC provided RB Pipeline a copy of the Permits and License Checklist (see Attachment A) for projects during the meeting and Construction Criteria (see Attachment B) via email on May 24, 2018. IBWC also recommended that RB Pipeline visit the IBWC Headquarters in El Paso, TX to introduce the Project to the staff prior to submitting the permit application. The IBWC stated when submitting a permit application, a complete application package is preferred, rather than the submittal of draft application package. However, IBWC would be open to meeting with RB Pipeline during the preparation of the permit application.			
<b>Item No.</b>	<b>Action Item</b>	<b>Action By</b>	<b>Date</b>
1	Provide latest KMZ to IBWC	E & E	Completed
2	Schedule a meeting with IBWC Headquarters in El Paso, TX	E & E	Completed

**International Boundary and Water Commission Meeting / NextDecade – May 24, 2018**

**Attachment A**

**IBWC Permits and License Checklist**

**PERMITS AND LICENSE CHECKLIST**

1. **LETTER OF APPLICATION - ~~3~~copies**
  - a. Identify your organization and state what is requested: Permit or License.
  - b. List the type of structure, improvement, or work that is to be constructed.
  - c. Statement of reason for said work, i.e., commercial, public, or private venture.
  
2. **MAPS AND DRAWINGS - General**
  - a. Letter-size drawings are the minimum acceptable.
  - b. Meridian or north arrow shown.
  - c. Drawn to scale with scale stated and shown graphically.
  
3. **VICINITY MAP – 3 copies**
  - a. Show a town, highway, bridge, or major identifiable feature.
  - b. General location of work outlined should be circled in red.
  
4. **LOCATION MAP – 3 copies**
  - a. Area where facilities are to be constructed should be outlined in red.
  - b. Show property lines (metes and bounds, if possible) and/or location of property line markers, such as steel pipes driven into the ground with permanent identification data.
  
5. **PLANS AND SPECIFICATION – 3 copies**
  - a. Drawings of sufficient details to determine exactly what is proposed, how it is to be constructed, and by whom.
  - b. In any operation involving earthwork, such as an excavation, drilling or boring, a cross sections and profile of the proposed works must be furnished. See examples in Attachments I-IV at [http://www.ibwc.state.gov/Files/construction\\_criteria.pdf](http://www.ibwc.state.gov/Files/construction_criteria.pdf)
  
6. If the construction is also on land owned by personnel other than the government, the applicant must include a statement in triplicate from the owners giving permission for such construction on their property and access thereto.
  
7. If the proposed work requires clearing, excavation, or dredging on government property, you must first contact the following agencies:
  - a. Appropriate Historic Preservation Officer(s), to find out if you need a cultural resources survey of the area.
  - b. U.S. Department of Interior, Fish and Wildlife Service, to determine the impact of the project on threatened and endangered species, both animal and plant life.
  - c. U.S. Army Corps of Engineers, to determine the effects of the proposed project on the waters of the U.S., (wetlands, streams, and rivers) in the area.
  - d. The Texas Parks & Wildlife and TCEQ, if applicable, for projects along the Rio Grande.
  
8. The letters from these various state and federal agencies, concurring with the proposed work, must be obtained by the requestor before the International Boundary and Water Commission will issue the requested permit.
  
9. A permit from the State Water Commissions, to divert waters from rivers or reservoirs, is necessary before a permit for pumps and water lines can be issued.
  
10. **LICENSE FEES, (EFFECTIVE JANUARY 1, 1977) ARE AS FOLLOWS:**
  - a. Commercial License                               -\$150 per year plus \$28 per year per acre or part thereof.
  - b. Permanent Commercial Utilities               -\$115 per year

INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION

INSTRUCTIONS ON REQUESTS FOR LICENSES  
TO CONSTRUCT FACILITIES ON  
INTERNATIONAL BOUNDARY AND WATER COMMISSION  
RIGHTS-OF-WAY

INSTRUCTIONS

The purpose of this pamphlet is to help you in applying for authority to perform work or place structures on or across rights-of-way of projects under the jurisdiction of the United States Section, International Boundary and Water Commission (USIBWC), and to describe briefly such jurisdiction and your responsibility under the Federal laws and the method of compliance therewith. The United States Section is responsible for the construction, operation and maintenance of all United States properties under its jurisdiction and, the administration of laws for the protection and preservation of these properties. Licenses for all work to be performed on rights-of-way must be approved by the Commissioner for the United States Section before such work is begun. The authorization is ordinarily granted in the form of a revocable license. The license does not authorize any trespassing upon or injury to private property, or the invasion of private rights, nor does it affect water rights or concede that the licensee has any water rights.

FEE - Generally, in the Upper Rio Grande Canalization Project, an administrative fee of \$150.00 is charged for each license issued. No fee will be charged to Cities, States or political subdivisions thereto, or to owners of lands over which the Government has an easement only, and to others where the purpose of the license is for the direct benefit of such landowners.

If licensed works will cause additional cost to the United States a special fee for such license will be assessed in an amount determined appropriate in the circumstances by the United States Commissioner.

HOW TO APPLY FOR A LICENSE - An application for a license shall consist of a letter, in duplicate, requesting the license and accompanied by four copies each of a location map, vicinity map, and plan of the proposed work. The letter of application will be addressed to the Engineer in Charge of the Commission activities of the locality in which the proposed work lies. The letter will bear the date, the applicant's address and telephone number and, the location and description of work. It will give an explanation of the plans in sufficient details to enable the Commission to determine exactly what work is proposed and, to show that the structure or other works will not create a hazard or interfere with any project operations. The letter will be signed by the owner or proprietor of the proposed work, or his duly authorized agent, but not by the contractor who it is proposed to be employed to do the work. In case the application is from a corporation, the letter will give the name and location of principal office, telephone number, State in which incorporated and, title and name of official who will sign the license.

## Applicant (APP)

### APP1 - NextDecade

If the proposed work requires clearing, excavation or any other form of ground disturbance on government property, the applicant must first contact the following agencies for the state where the works will be performed:

- a. The Historical Preservation Commission
- b. The U. S. Fish and Wildlife Service
- c. The U. S. Army Corps of Engineers

Letters from these state and federal agencies, concurring with the proposed work, must be obtained and provided with the application, as required under the National Environmental Policy Act of 1969, as amended, (42 U.S.C. 4321 et. seq.). Where a major adverse impact will result, the applicant may also be required to furnish a detailed Environmental Impact Statement (EIS) as is further required by said National Environmental Policy Act.

Since all of the lands administered by the United States Section are within floodplain areas, no permanent improvements will be licensed except those that are not subject to flood damages and are floodproofed in accordance with the Unified National Program for Flood Plain Management of the Water Resources Council.

In the event a license is requested for the purpose of constructing facilities to convey water diverted from the Rio Grande, independent of, or in connection with any project works of the United States Section of the International Boundary and Water Commission, or for the purpose of enlarging or expanding facilities to increase the conveyance of such diversions, the applicant must submit a copy of his Water Rights Certificate with his application or, if he has a riparian right, state by affidavit under what authority or law the water has been, or is to be diverted.

The vicinity map will show the location of the proposed work with reference to a town, highway, or some major topographical feature. The location map will show the specific location of the proposed work with reference to some established monument on the Commission's project. Ideally, each map will be on an 8-1/2" x 11" sheet, or if practical, the vicinity map may be shown as an inset on the location map.

The location of the work will be outlined in red on each map. All drawings and maps should be drawn to scale and the scale shown graphically. Maps must have the usual meridian arrow. In general, the meridian arrow should be parallel with the 10-1/2" dimension of the drawing.

If, upon examination of the application, it is found that the proposed work or its operation and maintenance will not interfere with the operation and maintenance of any project works of the United States Section, and is consistent with permissible flood plain uses defined in the Unified National Program for Flood Plain Management of the United States Water Resources Council, a license will be prepared by the Commission and transmitted to the applicant, in duplicate, for his signature and return to the office from which it was received. The applicant shall send, if applicable, a postal money order or certified check, made out to the International Boundary and Water Commission, United States Section, in the amount of the appropriate fee for each license. Upon final execution of the license, a duplicate-original copy will be sent to the licensee for his files.



Applicants desiring to make application for authority to perform work or plan structures on or across right-of-way of projects under the jurisdiction of the United States Section of the Commission will often find it in the interest of economy and convenience to write or visit the nearest office of the Commission relative to their desires before incurring any expense in connection with the preparation of maps and plans.

GENERAL CONDITIONS - For the information of the applicant, the general conditions established by this Commission, relative to licensing, are given below. Special conditions may be added if it is determined that the interests of the United States so require:

1. The work shall be subject to the inspection and approval of the Engineer in Charge of the area in which the proposed work is to be done to determine if the work is being performed in conformance with the plans, as approved. The Engineer in Charge may temporarily suspend the work at any time if, in his judgment, the interests of the Commission so require.
2. The United States will not be held liable for any damage or injury to the structure or work herein authorized which may be caused by, or result from, the future operations of Government-operated and maintained properties under the jurisdiction of the Commission, and no claim or right to compensation shall accrue from any such damage.
3. The licensee is required to operate and maintain the facilities for which the license is requested and such operation and maintenance shall be performed in such manner as not to interfere with the construction or operation of project works. The license granted is personal and shall not be assigned without the written permission of the Commissioner of the United States Section or his duly authorized representative.
4. The license will continue so long as, in the opinion of the Commissioner, it is considered to be expedient and not detrimental to the public interests, and shall be revocable by said Commissioner upon 90 days written notice to the licensee. Upon such revocation, or if the project is abandoned, the structure or other works shall be removed by licensee without delay and at his sole expense.

**International Boundary and Water Commission Meeting / NextDecade – May 24, 2018**

**Attachment B**

**IBWC Construction Criteria**



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION

*United States Section Directive*

Volume: IV  
Chapter: 315  
Date: July 27, 2000

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**SUBJECT** : Criteria For Construction Activities Within The Limits of USIBWC  
Floodways

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**TO** : Division Engineers, Project Managers, Presidents - AFGE Locals 3060 &  
3309

---

**CONTROL** : Principal Engineer, Operations Department

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**315.1 Requirement/Authority**

This Directive is issued under the authority of the United States Section Directive Volume I, Chapter 001, Dated March 12, 1999, SUBJECT: United States Section Issuance System.

**315.2 Purpose**

The purpose of this Directive is to transmit Handbook H 315 which contains criteria and guidelines for the review, approval and inspection of construction activities within the limits of United States Section, International Boundary and Water Commission (USIBWC) floodways which are currently maintained and operated by the USIBWC.

**315.3 Responsibilities**

The recipients of this Directive shall be responsible for applying the criteria when reviewing and inspecting the construction of facilities within the limits of existing USIBWC floodways.

**315.4 Supersession**

**There has been no previous Directive on this subject.**

**315.5 Effective Date**

**This Directive shall be effective upon issuance.**

**FOR THE COMMISSIONER**



**Carlos Marin  
Principal Engineer, Operations**

CB:cb  
DIR\_Vol\_IV\_Ch\_315.wpd  
7/27/00

**INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION**

**CRITERIA FOR CONSTRUCTION ACTIVITIES  
WITHIN THE LIMITS OF USIBWC FLOODWAYS**



**Volume IV  
Chapter 315  
Handbook H315  
Date: July 27, 2000**

INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION

CRITERIA FOR CONSTRUCTION ACTIVITIES WITHIN THE LIMITS  
OF USIBWC FLOODWAYS

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INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION

CRITERIA FOR CONSTRUCTION ACTIVITIES WITHIN THE LIMITS  
OF USIBWC FLOODWAYS

**I PURPOSE**

The purpose of this document is to present criteria and guidelines for the review, approval and inspection of construction activities within the limits of United States Section, International Boundary and Water Commission (USIBWC) flood protection works which are currently maintained and operated by the USIBWC.

**II APPLICABILITY**

This document applies to all USIBWC Divisions and Project field offices having responsibility for reviewing and inspecting the construction of facilities within the limits of existing USIBWC floodways.

**III GENERAL**

The USIBWC retains right of approval on all improvements which are to pass over, under, or through the walls, levees, improved channel, or floodways of the following USIBWC Flood Control Projects:

- Upper Rio Grande Flood Control Project  
Rio Grande Canalization Project  
Rio Grande Rectification Project

- Presidio Valley Flood Control Project

- Lower Rio Grande Flood Control Project

- Colorado River Project

- Tijuana River Flood Control Project

In addition, approval must be received from the USIBWC prior to commencement of construction of any facility which passes over, under, or within the floodplain of the international reaches of the Rio Grande and Colorado Rivers.



**IV GENERAL CRITERIA**

A License or Permit is required from the USIBWC for any proposed activities crossing or encroaching upon the floodplains of USIBWC Flood Control Projects and Right-of-Way. The License/Permit is issued by the General Services Division which coordinates the review and approval process with the Operation and Maintenance, Design, and Environmental Management Divisions and the appropriate Project field office. If required, a review from our legal office is conducted.

To obtain a License/Permit from the USIBWC, the Sponsor or Owner (hereafter referred to as Sponsor) of the proposed project shall comply with the National Environmental Policy Act (P.L. 91-190, as amended), the Endangered Species Act (P.L. 93-205, as amended), the National Historic Preservation Act (P.L. 89-665, as amended), the Clean Water Act (Federal Water Pollution Control Act)(P.L. 92-500, P.L. 93-243, and P.L. 95-217; 33 U.S.C. Sec. 1251, et seq.), the Clean Air Act (42 U.S.C.A. 7401 et seq.) and the USIBWC implementing procedures published in the Federal Register.

In addition to other requirements set forth in this document, the Sponsor must submit to the USIBWC all necessary permits, environmental studies and documents as required by the above U.S. agencies assuring adherence to all environmental laws and regulations for work within a floodway.

The USIBWC requires coordination with several agencies in the approval of proposed works along the international boundary with Mexico, including but not limited to the United States Fish and Wildlife Service, United States Environmental Protection Agency, United States Army Corps of Engineers, and the appropriate State Historical Commissions. The USIBWC will also coordinate with the Mexican Section of the IBWC when required or is appropriate.

Construction shall not start until final plans and specifications have been approved in writing by the USIBWC. In addition, final construction plans shall be stamped and signed by a Registered Professional Engineer prior to USIBWC approval.

**V. PIPELINES CROSSING EXISTING LEVEES**

**A. General**

Levee integrity is to be maintained with any pipeline crossing. Each pipeline crossing should be evaluated for its potential damage which would negatively impact the integrity of the flood protection system and could eventually lead to catastrophic failure. Serious damage to levees can be caused by inadequately designed or constructed pipelines, utility conduits, or culverts (all hereafter referred to as "pipes") beneath or within levees. During high water, seepage tends to concentrate along the outer surface of pipes resulting in piping of fill or foundation material. Seepage may also occur because of leakage from the pipe through joints. In the case of pipes crossing over levees, leakage can cause erosion in the slopes. In addition, loss of fill or foundation material into the pipe can occur if joints are open. Some of the principal inadequacies that are to be avoided or corrected are as follows:

- Pipes having inadequate strength to withstand loads of overlying fill or stresses applied by traffic.
- Pipe joints unable to accommodate movements resulting from foundation or fill settlement.
- Unsuitable backfill materials or inadequately compacted backfill.

Major factors to be considered in deciding if an existing pipe can remain in place under a new levee or must be rerouted over the levee, or if a new pipe should be laid through, under or over the levee are as follows:

- The height of the levee.
- The duration and frequency of high water stages against the levee.
- The susceptibility to piping and settlement of levee and foundation soils.
- The type of pipeline (low or high pressure line, or gravity drainage line).
- The structural adequacy of existing pipe and pipe joints, and the adequacy of the backfill compaction.
- The feasibility of providing closure in event of ruptured pressure lines, or in the event of failure of flap valves in gravity lines during high water.
- The ease and frequency of required maintenance.
- The cost of acceptable alternative systems.
- Possible consequences of piping or failure of the pipe.
- Previous experience with the owner in constructing and maintaining pipelines.

The methods of pipe installation should be understood by the designer to anticipate problems with: over excavating around the pipe, type of backfill materials, compaction of the pipe backfill, piezometric head acting on the pipe for the design flood, grouting of the pipe annulus, and high pressures from directional drilling that could result in hydro-fracturing the surrounding materials. In areas where backfill compaction is difficult to achieve, flowable low strength concrete fill has been used to encapsulate pipe in narrow trenches.

**B. Small Diameter Pipelines Crossing Through Levees**

**1. General**

- a. Small diameter pipes (2"-8" dia.) shall be placed a minimum of two feet below the levee road surface and side slopes. See Attachment I, for details.
- b. Small diameter pipes must be properly designed and constructed to prevent (a) flotation if submerged, (b) scouring or erosion of the embankment slopes from leakage or currents, and (c) damage from debris carried by currents, etc.
- c. Valve or junction boxes shall not be permitted within the levees. All valves located within 15 feet either side of the toe of the levee shall be housed in a concrete box enclosure with a manhole type cover and shall have a minimum cover of one foot (1').
- d. Sewer manholes within the floodway is strictly prohibited. All sewer manholes shall be placed on the land side of levees.

- e. Pipeline installations shall not parallel the levees on either the channel or land side of the levees (this will avoid utility corridors). Pipelines are allowed only to cross perpendicular to channels, rivers or USIBWC right-of-way and levees.
- f. Leakage from or infiltration into any pipe crossing over, through, or beneath a levee must be prevented. Therefore, the pipe joints as well as the pipe itself must be watertight. All pressure pipes should be pressure tested at the maximum anticipated pressure before they are covered and put into use.
- g. During the design, the potential for electrochemical or chemical reactions between the substratum materials or groundwater and construction materials should be determined. If it is determined that there will be a reaction, then protective measures to be taken may include the use of cathodic protection, coating of the pipe, or use of a corrosion-resistant pipe material.
- h. All pipes on the crown and riverside of the levee should have sufficient cover to withstand heavy equipment traffic during maintenance activities or debris during high water. Where mounding of soil is required, the slope should be gentle to allow mowing equipment or other maintenance equipment to operate safely on the slopes and to allow traffic to move safely on the levee crown.

2. Pressure Pipelines

Pressure pipelines (2"-8" dia.) shall be placed a minimum of two feet below the levee road surface and side slopes. See Attachment I, for details. Before consideration is given to allowing a pressure pipe to extend through or beneath the levee, the pipe owner should provide an engineering study to support the request for such installation. It is imperative that pressure pipes be fitted with rapid closure valves or devices to prevent escaping gas or fluid from damaging the levee.

C. Pipelines Crossing Through Levees

1. General

Pipes constructed through a levee are very susceptible to seepage along the pipe surface and piping of the levee embankment material can occur. **Directional drilling through levees is strictly prohibited.** Provisions for maintaining flood protection will be made and become an enforceable criterion with all pipe crossings. As an example, the Sponsor will be required to maintain a 24 hour emergency service equipment and personnel during construction work in order to backfill and compact all excavated trenches and to reconstruct the levee to its original condition in case of a flood situation.

The installation of pipes (10" diameter and larger) through levees shall be performed using the open cut method. See Section V.G.2 and Attachment No. II, for installation requirements.

2. Gravity Pipelines

Generally, the only pipelines allowed to penetrate the foundation or embankments of the levee are gravity drainage lines. The number of gravity drainage structures should be kept to an absolute minimum.

- a. Gravity flow pipes and conduits shall be designed with a positive cut-off structure (gatewell) located on the riverside of the levee crown to prevent water from the riverside to flow through the pipeline to the landside. The cut-off structure shall be extended to the levee crown elevation. This structure must be accessible no matter what flood condition may exist. The closure device must be operational by manpower. See Sections V.G.2.i,j,k for equipment requirements.
- b. All gravity storm drains discharging into a river or channel shall contain means of positive closure such as an automatic flap gate or sluice gate at the discharge end of the line and energy dissipators, as required. The Sponsor, as per license agreement, shall be responsible for inspection and maintenance to ensure proper operation of the gates and energy dissipators.
- c. The Sponsor shall provide scour protection at the outfall consisting of riprap or a stilling basin depending upon the issuing jet velocity. Pipelines discharging into a river or channel, may be required to be aligned 45 degrees toward the flow of water, this will prevent possible erosion to the opposite bank of the river or channel.

D. Pipelines Crossing Under Levees

1. General

Pipes crossing beneath levees shall be constructed with open excavation methods and in accordance with the requirements stated in Section V.G.2.

2. Nearsurface Directional Drilling

Directional crossings include pipelines that carry natural gas, oil, petrochemicals, water, sewerage, and other products. Ducts are also installed to carry electric and fiber optic cables. Directional crossings have the least environmental impact to any alternate method. The technology also offers maximum depth of cover under the obstacle thereby, affording maximum protection and minimizing maintenance costs. In addition, river traffic and flow are not interrupted, as most of the work is confined to either bank.

If directional drilling methods are used, seepage conditions may be aggravated by the collapse of levee foundation materials into the void left by the drilling and washing of the pipe runs. Penetration through the top stratum of fine grained materials may concentrate seepage at those locations. Pipes constructed with directional drilling methods should proceed only after a comprehensive evaluation of the following: comprehensive understanding of the subsurface soil and groundwater conditions to a minimum depth of 20 feet below the lowest pipe elevation, locations of the pipe penetration entry and exit, drilling procedure, allowable

uplift pressures, on-site quality control and quality assurance monitoring during drilling operation, grouting of the pipe annulus, backfilling of any excavated areas, and repair of the construction-staging areas. For installation requirements, see Section V.G.3.

3. Boring and Jacking of Sleeves for Gravity Pipeline

**Installation of pipes in existing levees by tunneling or jacking is strictly prohibited.**

4. Electrical, Telephone, Telegraph and T.V. Cables

All cables shall be placed a minimum of two feet below the levee road surface and side slopes. See Attachment I, for details.

E. Antiseepage Devices

Antiseepage devices have been employed in the past to prevent piping or erosion along the outside wall of the pipe. The term "antiseepage devices" usually referred to metal diaphragms (seepage fins) or concrete collars that extended from the pipe into the backfill material. The diaphragms and collars were often referred to as "seepage rings." However, many piping failures have occurred in the past where seepage rings were used. Assessment of these failures indicated that the presence of seepage rings often results in **poorly compacted backfill at its contact with the structure.**

Where pipes or conduits are to be constructed through new or existing levees to depths greater than the design freeboard allowance, then concrete collars shall be provided for the purpose of increasing seepage resistance. See Attachment III for details. The number of collars required based on the pipe diameter, length, soil conditions and hydraulic head shall be determined by the Sponsor and calculations of such determinations shall be submitted to the USIBWC for review and approval.

F. Closure Devices

1. All pipes allowed to penetrate the embankment or foundation of a levee must be provided with devices to assure positive closure. Gravity lines should be provided with flap-type or slide-type service gates on the water side of the levee. Automatic flap-type gates are usually used where the water is likely to rise to the "Gate Closing Stage" rather suddenly and where the water stage is likely to fluctuate within a few feet above and below the "Gate Closing Stage" for prolonged periods of time during flood season. For an emergency gate to be effective it must be located so that its controls are accessible during flood stage.
2. Slide-type gates are usually preferred as service gates where the rate of rise of the water during major floods is slow enough (minimum of 12-hr flood prediction time) to give ample time for safe operation. The principal advantages of the slide gate in comparison with automatic flap gates are greater reliability of operation and the ease with which emergency closure can be made in event obstructions prevent closure of the gate. Usually an emergency closure can be made by filling a pipe manhole with sandbags. The obvious disadvantage of slide-type gates is that personnel must be on hand for their operation. Also their initial cost is generally greater than that for a flap-type gate.

3. A slide-type gate with a flap-type gate attachment is often used and affords the advantages of automatic flap gate operation with the added safety of the slide-type gate.
4. Pressure pipes should be fitted with valves at various stations that can be closed rapidly to prevent gas or fluid from escaping within or beneath a levee should the pipe rupture within these areas.

G. Installation Requirements

1. General

- a. The installation of pipes or other structures within the levee or foundation probably requires the greatest care and the closest supervision and inspection of any aspect of levee construction. Most failures of levee systems have initiated at the soil-structure interface and therefore every effort must be made to ensure that these areas are not susceptible to piping. Of overriding importance is good compaction of backfill material along the structure. Pipes and seepage collars should be installed in the dry and a dewatering system should be used where necessary.
- b. The Sponsor shall practice approved construction methods to minimize erosion at the construction site. Construction equipment, supplies, forms, etc., shall not be stored in the floodway during the construction. Any item that might float during a flood shall not be stored in the floodway. The sponsor must obtain approval from the Commission, before placing any excess material excavated from the structure, and the material excavated from the drain ditch on USIBWC right-of-way.
- c. The Sponsor shall furnish all necessary environmental studies and documents as required by U.S. environmental laws and regulations. The Sponsor shall furnish plans and specifications for the proposed work to the USIBWC, sufficiently in advance of construction to allow adequate time for review and approval. USIBWC personnel will discuss proposals at the concept level prior to preparation of plans to avoid major revisions. Concept proposals may be submitted for review. Proposals should include the proposed construction starting date and the construction schedule prior to initiation of work.
- d. See Section VII, for additional requirements during the installation of pipelines through USIBWC floodways.

2. Pipelines Crossing Through or Beneath Levees

- a. The preferred method of installing pipes within the embankment or foundation of a levee is by the open cut method. The trench should be excavated to a depth of 2 feet below the bottom of the pipe and at least 4 feet wider than the outside diameter of the pipe. Pipe collars shall be constructed in undisturbed or compacted soil where required. See Attachment II for details.

Work requiring the open cut method shall be scheduled during the following non-flood seasons:

Upper Rio Grande Flood Control Project: October 16<sup>th</sup> thru May 31<sup>st</sup>

Presidio Flood Control Project: October 16<sup>th</sup> thru May 31<sup>st</sup>

Lower Rio Grande Flood Control Project: November 1<sup>st</sup> thru May 31<sup>st</sup>

Tijuana Flood Control Project: April 1<sup>st</sup> thru October 31<sup>st</sup>

When installing pipelines through new levees, the levee embankment should be brought to grade about 2 feet above the proposed crown of the pipe. This allows the soil to be preconsolidated before excavating the trench and installing the pipe.

- b. The excavation through the levee and berm area (35 feet from the levee toe) for the length of the structure shall meet OSHA criteria and have a side slope of one vertical foot to one horizontal foot (1:1) minimum or flatter and shall be excavated to maintain the 1:1 slope from the top of the levee or berm area to the bottom of the cut as shown on Attachment II. During the excavation for the structure, if unsuitable material is encountered, the Sponsor shall keep it separate from suitable material and shall not use it for backfill. Unsuitable materials shall be any soil classified in accordance with ASTM D2487 as organic (OL, OH, or PT), elastic silts (MH), fat clays (CH), clean sands (SW, SP, SW-SM, SW-SC, SP-SM, or SP-SC), or clean gravels (GW, GP, GW-GM, GW-GC, GP-GM, or GP-GC). Where imported material is required for backfill, it shall consist of natural soil which is not judged unsuitable according to the above criteria. All fill material shall be free from roots, trash, organic matter, and other objectionable material. The Sponsor shall submit to the USIBWC for approval, soil classification test results for any borrow source proposed for use.
- c. For small diameter pressure pipelines (2" to 8" diameter), the pipeline shall be installed by the open cut method with a minimum of two feet below the levee road surface and side slopes. See Attachment I, for details.
- d. After the trench has been excavated, it should be backfilled and compacted to the pipe invert elevation. The backfill should be brought up and compacted evenly on both sides of the pipe to avoid unequal side loads that could fail or move the pipe. Special care must be taken in the vicinity of any protrusions such as joint collars to ensure proper compaction. Trench backfill through the levee and berm area (35 feet from levee toe), including any bedding material for the pipe, shall consist of suitable material placed in horizontal lifts not exceeding six (6) inches in compacted thickness. Suitable material shall be imported material as defined in the above Paragraph V.G.2.b, or material excavated from the levee or foundation which is not judged unsuitable according to Paragraph V.G.2.b. Backfill material used shall have a uniform moisture content within plus or minus 3% optimum. Each layer of material shall be bonded to the next and shall be compacted to not less than 95% of maximum density, as determined by ASTM Designation: D 698, Method A. Backfill outside the levee and berm area, shall approximate that of the surrounding natural ground.

The Sponsor shall repair any settlement in the trench which may occur within one (1) year of completion of the work. Tests to verify moisture content, compaction or soil classification, as may be determined to be necessary by the USIBWC, shall be performed by an independent testing laboratory at the expense of the Sponsor. A USIBWC representative shall designate the times and locations of the tests.

All pipes shall be installed in the dry, and a dewatering system shall be used where necessary.

- e. The Sponsor shall restore the surfaces of the levee crown, slopes, and ramps, along with all gravel surfacing disturbed by the excavation with a minimum thickness of six (6) inches of compacted surfacing material. The surfacing shall be compacted to not less than 90% of maximum density, as determined by ASTM Designation: D 698, Method A. Should settlement of the repaired roadway occur within one year following completion of work, Licensee shall rework and relay the road surface, bringing it up to its original grade and structural stability.

Gravel surfacing material shall be uniformly graded and shall conform to the following specifications:

Lower Rio Grande Flood Control Project Only:

Surfacing material shall be composed of caliche (argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate gravel, sand or granular materials.)

<u>Retained on Square Sieves</u>	<u>Percent Retained</u>
2" (50 mm)	0
1/2" (12.5 mm)	20-60
No. 4 (4.75 mm)	40-75
No. 40 (0.425 mm)	75-85

Max Liquid Limit 40  
Max Plasticity Index 12

All other IBWC Projects:

Surfacing material shall be crushed stone produced from oversized quarried aggregate, sized by crushing and produced from a naturally occurring single source. Crushed gravel or uncrushed gravel shall not be acceptable for this type of material. No blending of sources and/or additive materials will be allowed.

<u>Retained on Square Sieves</u>	<u>Percent Retained</u>
1-3/4" (45 mm)	0
1" (25.4 mm)	0-10
No. 4 (4.75 mm)	35-70
No. 40 (0.425 mm)	65-90

Max Liquid Limit 35      Max Plasticity Index 12



- f. The Sponsor shall install and maintain suitable markers or signs indicating the location of the pipeline where it crosses the levee, pilot channel or river and where the pipeline changes direction within the Project right-of-way where practicable. The markers or signs should be a minimum height of five feet (5') above the ground. No markers are to be installed on the levee slopes or fifteen (15) feet from the toe of the levee.
- g. All pipes on the river side of the levee shall have a minimum of 3 ft of soil cover for protection from heavy equipment.
- h. Leakage from or infiltration into any pipe crossing through or beneath a levee must be prevented. Therefore, the pipe joints as well as the pipe itself must be watertight. For pipes located within or beneath the embankment, the expected settlement and outward movement of the soil mass must be considered. **Corrugated metal pipes will not be allowed to cross USIBWC levees.**
- i. The Sponsor shall be required to install a gatewell operation platform at least three (3') feet from the levee crownline. The Sponsor shall be required to install and maintain a galvanized, or equivalent, grill/grating over the gatewell opening.
- j. HYDRO 50-10 WATER CONTROL GATE or equal shall be used. All anchor bolts in the gatewell and the gate stem shall be stainless steel.
- k. Steps shall be installed in accordance with OSHA requirements in the gatewell on twelve-inch (12") centers for access.

3. Installing Pipelines by Nearsurface Directional Drilling

a. Pipe Location

For installation under both levees and the river or pilot channel: The proposed pipeline entry or exit location, when located landside of a levee, shall be set back sufficiently from the landside levee toe to ensure that: (a) the pipeline reaches its horizontal level (maximum depth), and/or (b) the pipeline contacts the substratum sands or some other significant horizon but is no less than 300 feet landside from the levee centerline.

For installation under river or pilot channel only: The proposed pipeline entry or exit location, when located on the riverside of the levee, shall be located at least 35 feet from the levee toe.

The Sponsor shall determine the minimum cover under the bed of the river channel and submit plans for review and approval.

b. Drilling Requirements

The Sponsor shall furnish information addressing the following concerns and give specific dimensions, distances, pressures, weights, and all other pertinent data.

The pilot hole cutter head shall not be advanced beyond/ahead of the wash pipe more than a distance such that return flow is lost. Also, the wash pipe ID shall be sufficiently greater than the OD (cutting diameter) of the pilot cutter head such that return flow is enhanced. The applicant shall directly address the methodology which he plans to employ in his efforts to keep the return of flow up the drill hole during his entire operation. These requirements are to assure that blockage of the annular space between the wash pipe and drill pipe and associated pressure build-up do not occur.

Drilling fluid (mud) shall be of sufficient viscosity, be of sufficient weight and contain sufficient noncolloidal lubricating admixtures to: (a) assure complete suspension and removal of sands and other "solids" cuttings/materials; and (b) provide adequate lubrication to minimize bridging by cohesive materials.

The fly cutter used in the prereamer run shall have an OD (cutting diameter) sufficiently greater than the OD of the production pipe to assure that the hole diameter remains adequate to minimize hang-ups of the production run and thereby, associated stresses on surrounding soils.

The prereamer boring diameter shall be of sufficient size to ensure that the production pipe can be advanced without delay and undue stress to the surrounding soils. The prereamer boring operation shall be a continuous operation for the down-slope and up-slope cutting sections to prevent undue stress on the surrounding soils during re-start operations.

The depth of the pipe under the levee shall be at a level to maintain a minimum factor of safety of 3.0 against uplift from the pressurized drilling fluid during the drilling operation. A positive means of maintaining an open vent to the surface will be required whether through bored holes or downhole means while installing the drill pipe.

Automatic shut-off capability in the production pipeline shall be provided to immediately cutoff flow through the pipeline should leakage occur.

Excessive drilling fluid pressures can hydraulically fracture the levee foundation and levee embankment and shall be avoided. Should evidence of sinkholes, depressions, unexpected settlements, drilling fluid or grout manifest themselves on the ground surface or levee during the pipe installation, hydraulic fracturing of the levee foundation should be suspected and repairs to the levee shall be accomplished immediately. The Sponsor is liable for replacing/repairing the damaged levee to the USIBWC's satisfaction. The levee repair includes: degrade the levee embankment, open an inspection trench, excavate the damaged levee foundation, backfill under controlled conditions, and reconstruct the levee by placing and compacting with satisfactory levee construction materials and methods (See Section V.G.2). As example of the damage to levees which occurred on similar projects, the levee was hydraulically fractured and drilling fluid exited on the crown and/or toe of the levee. Repair may include total replacement of the levee and installation of a grout curtain to the depth of the pipe.

4. Reseeding of Levee and Berm Areas

Upon completion of any construction with USIBWC right-of-way, the worksite area shall be left in a clean and neat appearing condition with all debris and excess material removed from the site. That portion of the levee and berm area disturbed in the process of constructing a structure shall be re-seeded with "bermuda-type NK-37" or other native sod grasses such as Buffalo Grass. Seeds may be broadcast along with a good commercial grade fertilizer 16-20-0 or 16-8-8. The Sponsor shall water as frequently as necessary for a period of twenty-one (21) days to ensure a germination rate of not less than eighty percent (80%).

5. Headwalls, Chutes, Gate Valves, Flap (Automatic) Gates, etc.

The Sponsor shall provide a headwall, chutes, gate valve, flap (automatic) gates, energy dissipators, and other types of outfall structures in such a manner to prevent obstruction of flow or creation of scouring conditions in the floodway. In addition, the Sponsor shall provide scour protection at the outfall such as riprap. The Sponsor shall design the riprap based upon the issuing jet velocity. Pipelines discharging into a river or pilot channel, shall be required to be aligned 45 degrees toward the flow of water, this will prevent possible erosion to the opposite bank of the river or channel.

**VI PIPELINES CROSSING RIVERS, PILOT CHANNELS OR DRAINAGE DITCHES**

A. Pipelines Crossing Under Rivers

Restrictions must be placed on all construction activities involving temporary water diversions or constrictions placed in the river channel. No constrictions or diversions will be allowed during the flood seasons listed below:

- Upper Rio Grande Flood Control Project: June 1<sup>st</sup> thru October 15<sup>th</sup>
- Presidio Flood Control Project: June 1<sup>st</sup> thru October 15<sup>th</sup>
- Lower Rio Grande Flood Control Project: June 1<sup>st</sup> thru October 31<sup>st</sup>
- Tijuana River Flood Control Project: November 1<sup>st</sup> thru March 31<sup>st</sup>

Note: flood conditions may exist before or after the flood season that would require restrictions.

During the non-flood seasons (listed in Section V.G.2.a), river constriction or diversion shall not exceed more than 50% of the river channel width at any one time. Any temporary embankments or similar constructions to divert water from a portion of the river channel must be limited to an elevation of one foot lower than the over bank floodway surface. As much work as possible should be performed during the "non-irrigation" season that usually extends from mid-October to mid-January.

The Sponsor shall determine the minimum cover under the bed of the river channel and submit plans for review and approval. The pipeline shall be constructed in a straight alignment for a minimum distance of 15 feet beyond the landside of the levee toe.

The Sponsor will assure that no borrowed material will be left in the floodplain.

The Sponsor will replace to its predisturbed condition rip-rap material along the levee or river bank.

See Section V.G for installation requirements.

**B. Pipelines Crossing Under Pilot Channels or Drainage Ditches**

The pipeline shall be installed with a minimum cover of five feet (5') under the channel side slopes and bed of the pilot channel or drainage ditch. However, the Sponsor shall submit to the USIBWC scour calculations to justify depth. See Attachment IV for details.

**C. Pipelines Crossing Over Rivers and Pilot Channels**

Where the pipeline crosses over a river, the pipeline shall be placed on piers (the piers must not obstruct flood flows of the river). See Section VIII for additional requirements that apply to the construction of pipelines crossing over rivers.

The Sponsor shall submit final plans and hydraulic computations to indicate the effects the proposed project would produce on flows and floodway capacity.

Pipes crossing over the Rio Grande and Colorado Rivers shall require a Department of Transportation permit (US Coast Guard). Clearances and requirements shall be directed by the US Coast Guard.

**VII CONSTRUCTION REQUIREMENTS FOR LICENSES**

**A. General**

A License or Permit is required from the USIBWC for any proposed activities crossing or encroaching upon the floodplains of USIBWC Flood Control Projects and Right-of-Way. Each License/Permit shall contain different construction requirements, depending on the type and method of construction. Therefore, the following requirements shall apply to most USIBWC Licenses:

- The Licensee shall maintain a 24 hour flood emergency service equipment and personnel during construction work on USIBWC right-of-way. The Licensee will be required to take immediate action upon notification by USIBWC to backfilling and compacting all excavated trenches and to reconstruct the levee to its original condition to prevent any flooding. The Licensee will also be required to remove all excess material from the floodplain and levees. The Licensee shall furnish to the USIBWC, the names and telephone numbers of two persons responsible for this emergency service. Any damages and cost associated with such, to person(s) or property resulting from the Licensee's failure to conduct the necessary emergency measures, will be the Licensee's responsibility. The following requirements shall be included in all USIBWC Licenses for construction within USIBWC Right-of-Way.
- Upon completion of the construction work, the site of the work shall be restored to a clean and neat appearing condition. Restore the areas disturbed by the project to pre-project conditions. All debris and excess materials shall be removed from the site to the satisfaction of the USIBWC.

- The Licensee shall provide a full-time construction inspector for the duration of the work. The construction inspector shall be responsible for overall construction requirements and must be on-site during all compacted embankment work.

- Licensee shall notify the USIBWC at least one week prior to the start of work authorized by each License.

- Protection of Existing Improvements

During construction of work within USIBWC Right-of-Way, care shall be exercised to prevent damage to existing United States facilities. Any facilities damaged as a result of the construction shall be repaired or replaced at the Licensee's expense to the satisfaction of the USIBWC. United States facilities include but are not limited to levee roads and slopes and ramps.

- Safety to the Public

The Licensee shall provide, erect, and maintain all necessary barricades, suitable and sufficient flasher lights, flagmen, danger signals, and signs; and shall take all necessary precautions for the protection of the work and the safety of the public. Roads closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning and detour signs. All barricades and obstructions shall be illuminated at night by lights kept burning from sunset until sunrise.

- Landscape Preservation

The Licensee shall exercise care to preserve the natural landscape and shall conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing is required for permanent work, for approved construction roads and for excavation operations, all trees, native shrubbery, and vegetation shall be preserved and shall be protected from damage which may be caused by the Licensee's construction operations and equipment. Movement of crews and equipment within the right-of-way and over routes used for access to the work shall be performed in a manner to prevent damage to United States' facilities.

- Prevention of Water Pollution

The Licensee shall comply with applicable Federal and State laws, orders, and regulations concerning the control and abatement of water pollution.

The Licensee's construction activities shall be performed by methods that will prevent entrance, or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into the river/channel, flowing or dry watercourses, and underground water sources. Such pollutants and wastes include, but are not restricted to refuse, garbage, cement, concrete, sewage effluent, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution. Sanitary wastes shall be disposed of in accordance with State and local laws and ordinances.

Dewatering work for structure foundations or earthwork operations near streams or watercourses shall be conducted in a manner to prevent excessive muddy water and eroded materials from entering the river or watercourses by construction of intercepting ditches, bypass channels, barriers, settling ponds, or by other approved means. Mechanized equipment shall not be unnecessarily operated in flowing water.

- Abatement of Air Pollution

The Licensee shall comply with applicable Federal, State, interstate, and local laws and regulations concerning the prevention and control of air pollution.

In conduct of construction activities and operation of equipment, the Licensee shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants. Equipment and vehicles that show excessive emissions shall not be operated until corrective repairs or adjustments are made.

The Licensee's methods of storing and handling cement shall include means of controlling atmospheric discharges of dust.

During the performance of the work required by these specifications or any operations appurtenant thereto, whether on right-of-way provided by the United States or elsewhere, the Licensee shall furnish all of the labor, equipment, materials, and means required, and shall carry out proper and efficient measures wherever and as often as necessary to reduce the dust nuisance, and to prevent dust which has originated from his operations from damaging crops, lands, and dwellings, or causing a nuisance to persons. The Licensee will be held liable for any damage resulting from dust originating from his operations under these specifications on United States right-of-way or elsewhere.

- Temporary Erosion Control

Erosion and sedimentation control devices shall be constructed or installed as needed based upon site conditions during construction activities. These preventive measures are required to minimize the potential for soil erosion or sedimentation of streams and rivers and to restore the construction site.

Erosion control techniques may be vegetative or physical. The vegetative techniques includes reseeding with native grasses as stated in Section V.G.4. The physical structure techniques include sediment barriers such as hay bale berms or silt fences.

**VIII BRIDGE CROSSING OF FLOODWAYS AND RIVERS**

A. General

The Sponsor shall submit final plans and hydraulic computations to indicate the effects the proposed project would impact on flows and floodway capacity. The plans shall include cross and transverse section drawings covering the floodplain bound by levees or high ground in both the United States

and Mexico and reasonable distances up and downstream of the proposed structure. The drawings should have sufficient detail on existing vegetation, roads and structures along with proposed improvements in the overbanks such as paved roads and ramps.

B. International Bridges

1. General

Pursuant to the International Bridge Act of 1972 (P.L. 92-434, 86 States. 731, approved September 26, 1972) and Executive Order 11423, the U.S. bridge sponsor must acquire a Presidential Permit through the Department of State authorizing the construction, operation and maintenance of the international bridge.

After issuance of Presidential Permit, the bridge Sponsor must apply to the Department of Transportation (U.S. Coast Guard) for issuance of a bridge permit to construct a bridge crossing over a navigable waterway. The USIBWC and MXIBWC must approve the bridge conceptual plans prior to U.S. Coast Guard action on the application.

Approval of any proposed structure to be constructed within an international river floodplain will be required from the IBWC to assure compliance with provisions of Article IV, B of the 1970 Boundary Treaty. At the present time, the U.S. and Mexican Sections have informal agreements to use criterion or design flood flow data, requiring two meters of freeboard between the lowest bridge chord and the design water surface elevation to help facilitate approval of bridge structure and to minimize effects which would be in contravention to Article IV, B of the 1970 Boundary Treaty.

The bridge designers or owners will seek design coordination and assistance from the U.S. and Mexican Sections, IBWC by forwarding their request through the appropriate sponsoring authority in each country.

2. Items to Review

- a. The bridge structure must be designed to pass the project design or criterion flood (although there is no official flow policy, the two sections use informal agreements) at the bridge site without causing an obstruction to normal or flood flows. No significant increase in water surface elevation is allowed, and the proposed structure may not deflect the normal or flood flow to one bank or the other.
- b. A minimum clearance of 6.6 feet (two meters) must be provided between the bottom of the lowest bridge chord (usually at abutments) and the design water surface for the project design or criterion flood at the bridge site. This freeboard provides extra capacity for passage of debris, wave buildup and uncertainties in the hydraulic analysis (i.e. variable conditions of an alluvial river).
- c. For bridges crossing over levees, a minimum vertical clearance of 14.5 feet (4.42 meters) shall be provided above the levee crown to allow for the safe passage of heavy equipment.

- d. Pier bents are to be aligned with the direction of the river flow to prevent the least obstructive area to the flood flows and floating debris. Piers will be sufficiently founded to preclude scour failure.
- e. Provisions must be incorporated into the bridge design for installation of an international boundary monument(s) over the centerline of the normal flow channel. The Commission will provide the exact location for the monument(s). In addition, demarcation of the international boundary shall be provided on the road surface. The criteria for demarcation shall be provided by the USIBWC.
- f. Generally, earth fills or approach roadway embankments within the floodplain should be kept to a minimum and not allowed to increase the water surface elevations upstream of the proposed bridge.
- g. For parallel bridge crossings, new bents and piers will be placed adjacent to each other and in alignment with the river flows with the understanding that the number of bents and piers can be decreased in favor of longer spans. In other words, the number of bents and piers in a new bridge are to be decreased to the extent that is practical; however, the new bridge piers are to conform to location of existing bents of parallel bridge.
- h. Approval must be received from the IBWC prior to commencement of bridge construction or any structure within the floodplain of the international reaches of the Rio Grande and Colorado River.
- i. The integrity of the levee systems must be maintained during (and after) bridge construction. Provisions should be made to assure that construction does not impede the ability of the project to convey the project design or criterion flood.
- j. The Sponsor(s) shall submit hydraulic studies to assure compliance with items above. This includes a scour analysis using Federal and Highway standards.

C. Bridges within Texas and New Mexico (Rio Grande Canalization Project)

1. General and Construction Requirements

- a. Restrictions must be placed on all construction activities involving temporary water diversions or constrictions placed in the river channel. No constrictions or diversions will be allowed within the river channel during the flood season. As a general rule, flooding should be anticipated during June, July, August, and September. Additionally, there may be some risk of flooding in May and October for some years that must be evaluated on a case by case basis with due consideration of river conditions in that year. During non-risk months, river constrictions or diversions shall not exceed 50% of the river channel width at any time. Any temporary embankments or similar constructions to divert water from a portion of the river channel must be limited to an elevation of one foot lower than the overbank floodway surface. Additionally, as much construction work as possible should be performed during the



"non-irrigation" season that usually extends from mid-October to mid-January.

- b. Contractor's program of work shall be such as to have the minimum impact on river flows. The program should be submitted to the USIBWC for review and approval before initiating work.
- c. River flow diversions for construction of any one pier or placement of beams should be restricted to a period not to exceed 45 days.
- d. The river channel, river banks, floodplains, and levees must be restored to their original condition promptly in the event of unexpected high river flows and prior to the next flood season which ever occurs first.
- e. For bridges crossing over levees, a minimum vertical clearance of 14.5 feet (4.42 meters) must be provided above the levee crown to allow for the safe passage of heavy equipment.
- f. The bridge's Sponsor will be responsible for coordinating construction activities with the USIBWC Project Manager.
- g. The Sponsor will be required to submit a schedule of construction to the local USIBWC Field Office Project Manager for approval.
- h. The Sponsor will be responsible for obtaining other permits as may be required (i.e. 404 permits, etc.) for the subject work and for complying with restrictions of the same.

2. Items to Review

- a. Old bridge piers must be removed to an elevation two feet below the invert of the channel and to 12 inches below ground level in the floodplain, as a minimum.
- b. The Sponsor must submit scour calculation analysis to assure the depth of the bridge foundation is adequate. This information is requested to assure the sponsor has taken scour into account in the design.
- c. The bottom chord of the bridge will be no lower than the elevation at centerline of the levee(s) in the vicinity of the proposed bridge site.
- d. For replacement of an existing bridge, the proposed bridge length will be no shorter than that of the existing bridge. Additionally, the USIBWC may require longer bridges than the existing bridges if hydraulic analysis show this is necessary.
- e. The bridge structure will be designed to pass the project design flood at the bridge site without causing an obstruction to normal or flood flows, without significantly increasing the flood stage, and without deflecting the normal or flood flow to one bank

or the other.

- f. Piers and bents are to be aligned with river flow in order to present the least obstruction area to the path of flood waters and floating debris. Piers must be sufficiently founded to preclude scour failure.
- g. For parallel bridge crossings, piers and bents will be placed adjacent to each other and in alignment with the river flow, however, piers and bents shall be spaced to the maximum distance as practical (ie. the new bridge can have fewer bents and piers than the nearby existing bridge).
- h. Approval must be received from the USIBWC prior to commencement of construction of any structure within the floodplain.
- i. The integrity of the levee system must be maintained. Provisions should be made to assure that construction does not impede the ability of the project to convey the project design flood.
- j. Stockpiling of materials within the floodway is not permitted.
- k. The Sponsor must submit hydraulic studies to assure compliance with items above.

**IX NATURAL GAS DRILLING WITHIN THE RIO GRANDE FLOODPLAIN**

The following requirements shall be enforced for all vertical drilling within the Rio Grande floodplain:

- All drilling and completion operations shall be performed in accordance with the rules and regulations of the Texas Railroad Commission (TRC) and the Bureau of Land Management (BLM). A permit shall be required from the TRC and a lease from the BLM.
- Prior to completion, the casing and wellhead shall be pressure tested to maximum allowable operating pressure to insure complete control in case of future leaks/equipment failure.
- No separators or tanks of any type shall be permitted in the floodplain. Such facilities shall be located on the landside of the levees or outside of the 100-yr floodplain when the well is completed and in service. All facilities constructed within the floodplain shall project over the natural ground no more than three feet (3').
- The Sponsor shall install and maintain suitable markers or signs indicating the location of the well site within the USIBWC right-of-way. The markers or signs shall be a minimum height of five (5') feet above the ground. No markers are to be installed on the levee slopes or fifteen (15) feet from the toe of the levee.
- The USIBWC shall notify Mexico of the proposed operations in accordance with Section XVII.

- If the drill site is located within USIBWC Right-of-Way, a permit to perform the work and maintenance of the site will be required.

**X FENCES**

Fences within the floodplain of a river or floodway channel are not recommended where avoidable. During high flood stages, floating debris may pile up on a fence line and consequently raise flood stages. However, the installation of chain link fences may be allowed if they are designed to collapse during high flood stages or if they can be removed within a twenty-four hour period. In addition, four strand barbed wire fencing is authorized with posts no larger than four (4") inches in diameter, spaced no closer than twelve (12) feet apart and the wire shall be attached to the downstream side of the posts. The sponsor shall submit plans and design calculations to assure compliance with the above criteria.

No fencing shall be placed on the levee slopes or roadway that is running parallel to the levee itself. All fencing placed parallel to the levee shall be a minimum distance of fifteen (15) feet from the toe of the levee. No fencing shall be placed inside or across a pilot channel.

**XI GATES**

Gates on the levee roads will be allowed once reviewed and approved by the USIBWC. They are not to interfere with the construction, operation, and/or maintenance of the USIBWC flood control project work. All gates shall have a minimum clear opening of sixteen (16) feet and will be such that they can easily be opened or closed by one individual. Suitable markers and reflectors shall be placed on the gate so as to be readily visible at night. All gates shall be located a sufficient distance back from any off-ramp or roadway to permit a vehicle to park on level ground while opening and closing the gate. The exact location and type of gate shall be reviewed and approved by the USIBWC prior to installation.

**XII RAMPS**

Ramps on the riverside of the levee will be allowed when a new bridge is constructed across a river or channel. These ramps are used for the purpose of crossing under the bridge. Ramps for other purposes shall be avoided and will be approved only if they are essential. The actual location of the ramps shall be reviewed and approved by the USIBWC prior to any construction.

All ramps shall have a minimum width of 20 feet (20'). Some widening of the crown of the levee at its juncture with the ramp may be required to provide adequate turning radius. The grade of the ramp should be no steeper than 12 percent. Side slopes on the ramp should not be less than 1V on 3H to allow mowing equipment to operate. The fill material shall meet the requirements of Section V.G.2.b and compacted in accordance with Section V.G.2.d. The ramp shall be surfaced in accordance with Section V.G.2.e. See Attachment V, for details.

**XIII ELECTRICAL AND TELEPHONE CRITERIA FOR OVERHEAD WIRE CROSSING**

The overhead transmission line shall be constructed and maintained in such a manner as to provide a minimum vertical clearance (at the temperature of 60 degrees Fahrenheit) of not less than 28 feet above the levee crown and at least 12 feet (3.7 meters) above the floodway design high water surface level in the area of the floodway channel.

No structure (poles or guy wires) shall be located closer than 35 feet from the toes of any levee. No structure (poles or otherwise) shall be located closer than 15 feet from the top of any channel bank.

Guy wires may be anchored within the USIBWC right-of-way in such a manner that they do not interfere with the operation and/or maintenance of the channel, levees, or related structures. A witness post, not less than five feet (5') above the ground, shall be installed by each anchor or the cable shall be wrapped up to a point at least five feet (5') above the ground with a bright colored material to make it obviously visible.

It shall be the Sponsor's responsibility to maintain the areas clear of brush within a ten foot (10') radius of each pole, under the guy wires and around the anchors, on both sides of the levee and within the USIBWC right-of-way limits.

**XIV LOW DAMS OR DIVERSIONS OF FLOWS**

The Sponsor shall submit plans, hydraulic and structural computations and specifications for low dams or other obstructions for review and comments prior to the construction of any type dam structure in a floodway area. These plans will be reviewed to determine if adverse hydraulic or structural effects would occur within the floodway as a result of the proposed construction. Prior to an extensive engineering study for any type of water barrier in a floodway, the concept plan, proposed location, and purpose shall be reviewed by the USIBWC and MXIBWC (international projects).

Further, the Sponsor(s) are responsible for obtaining the proper water rights permits from the Texas National Resource Conservation Commission, Water Master before providing diversions structure plans to the USIBWC. Additional permits mentioned in Section IV must also be obtained.

Should such diversions be permissible, the Sponsor of the facilities shall install at his expense, the measuring devices that the USIBWC considers necessary to carry out treaty-required water measurements and water accounting.

**XV CONSTRUCTION OF RECREATION FACILITIES**

The Sponsor shall submit plans to USIBWC for review and approval on any proposed recreation type facilities to be constructed in an existing or approved floodway area. Each plan including hydraulic computations will be reviewed for individual and cumulative effects to determine if the proposed construction would produce adverse effects on an existing or approved floodway area.

**XVI PLANTING OF TREES**

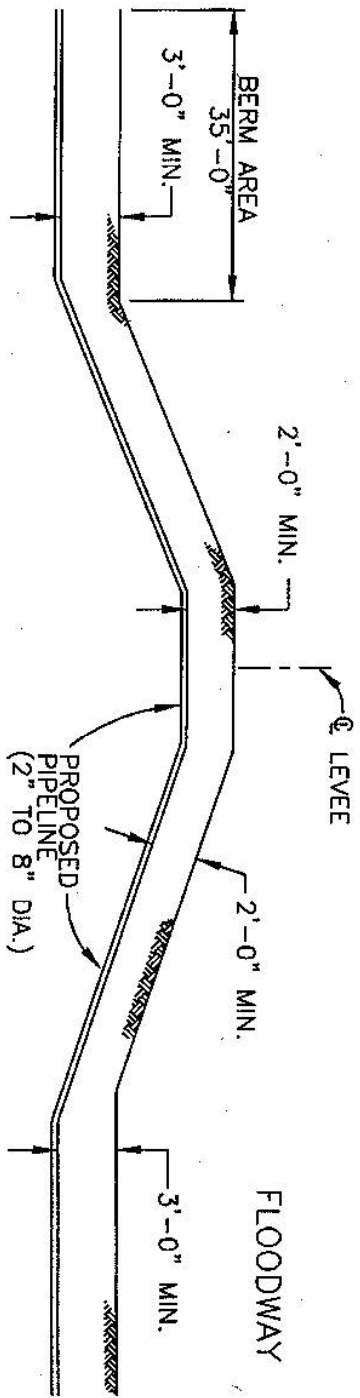
Planting of trees in existing floodways is not encouraged and shall be permitted only where levee freeboard is available to permit an increase in water surface elevation. Only trees with deep-type root systems may be planted in selected areas of existing or approved floodways. The planting shall be a minimum of 50 feet from the toe of the levee or the top of the channel bank unless otherwise directed by the IBWC. Trees shall be planted at an average spacing of 100 feet, center to center. Appropriate protection against rodents or beavers shall be provided and each tree location shall be identified to prevent damage while mowing operations are conducted. Trees shall be pruned by the Sponsor to allow mowing with tractor type mowers. No bush or vine plants will be permitted.

The Sponsor shall submit a coordinated planting plan with hydraulic computations for review and approval.

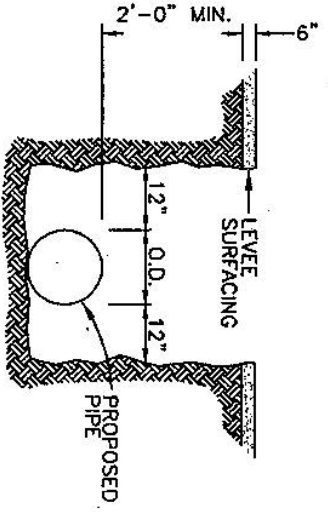
**XVII COORDINATION WITH MEXICO**

The USIBWC is required by the 1970 Boundary Treaty (23 UST 371) between the United States and Mexico, to join the Mexican Section of the IBWC in approving any activities within the channel of the Rio Grande and Colorado River or their design flood floodplains to assure that their construction will not cause deflection or obstruction of the normal or flood flows of these international boundary rivers. Further, the IBWC under provisions of the 1944 Water Treaty (59 Stat 1219) between the United States and Mexico, must be assured that the construction will not result in an international water quality problem and that the activities will not interfere with the operation of IBWC Flood Control Projects. Statutory authority of the USIBWC for carrying out actions in the United States is provided in 22 U.S.C. 277 a-d.

ATTACHMENT I



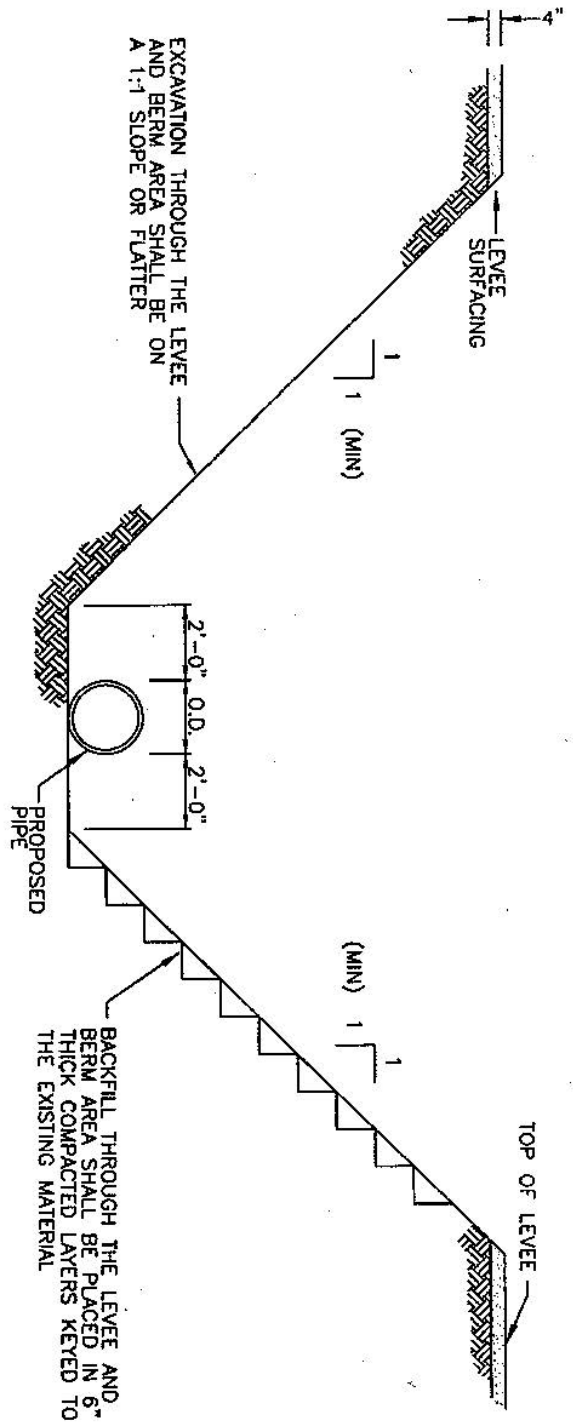
TYPICAL PIPELINE LEVEL CROSSING DETAIL  
 N.T.S.



TYPICAL EXCAVATION SECTION  
 N.T.S.

REV.	DESCRIPTION	RECORD. BY	DATE
INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO UNITED STATES SECTION			
<b>PIPELINES CROSSING LEVEES            2" TO 8" DIAMETER PIPES            DETAILS</b>			
DRAWN	C.B.	RECOMMENDED	C.M.
CHECKED	R.P.	APPROVED	
1 OF 1	EL PASO, TEXAS	JANUARY 1999	24953

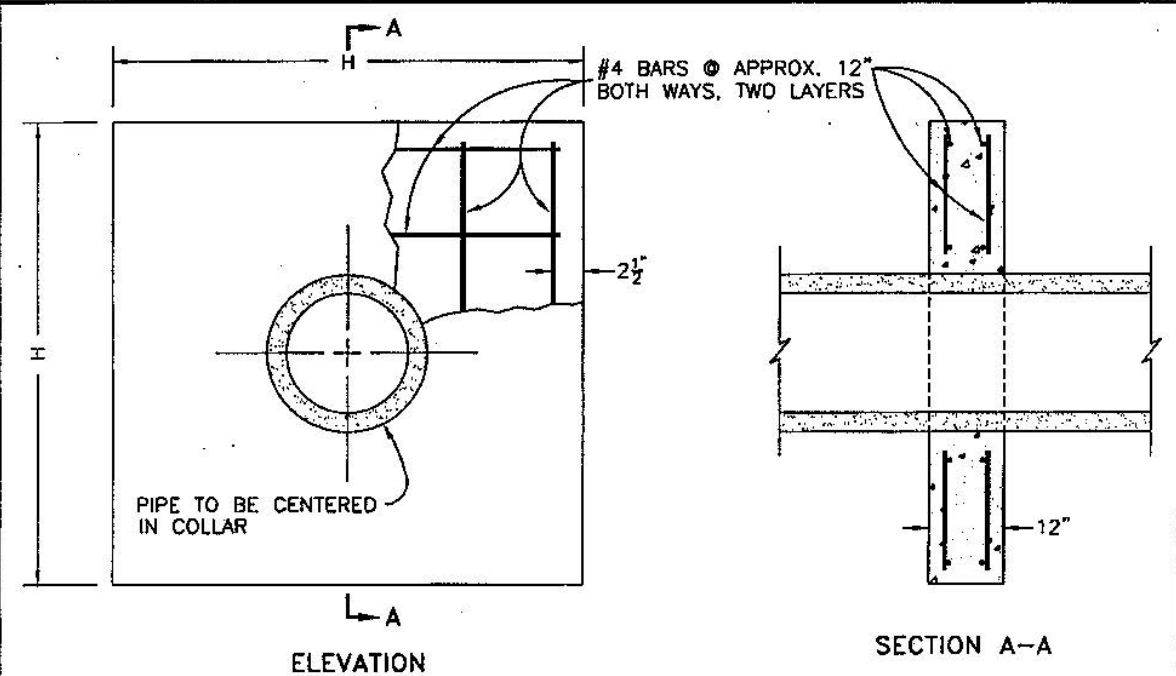
ATTACHMENT II



TYPICAL EXCAVATION SECTION  
 N.T.S.

REV.	DESCRIPTION	RECORD	BY	DATE
INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO UNITED STATES SECTION				
EXCAVATION THROUGH LEVEES OPEN CUT METHOD (10" DIAMETER PIPES & LARGER)				
DRAWN	C.B.	RECOMMENDED	C.M.	
CHECKED	R.P.	APPROVED		
1 OF 1	EL PASO, TEXAS	JULY 1988		29083

ATTACHMENT III



**PIPE COLLAR FOR PRECAST CONCRETE PIPE**  
 N.T.S.

**DIMENSIONS**

PIPE DIA.	H
10"	4'-0"
12"	4'-3"
15"	4'-6"
18"	5'-0"
21"	5'-3"
24"	5'-6"
27"	6'-3"
30"	7'-0"
36"	8'-6"
42"	9'-3"
48"	10'-0"
54"	11'-6"
60"	12'-0"
72"	14'-0"

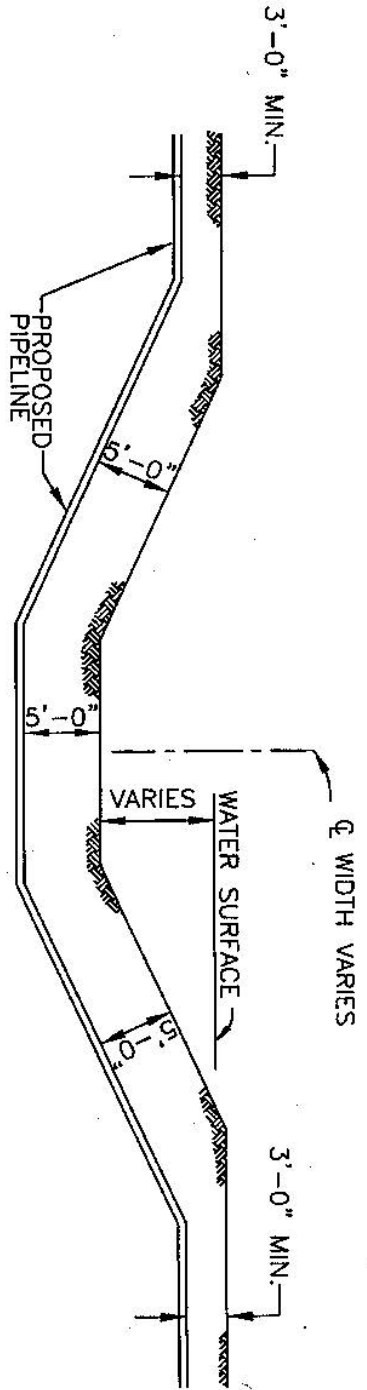
**NOTES:**

1. CONCRETE CUT-OFF COLLAR(S) SHALL BE INSTALLED ON THE LEVEE CENTERLINE. THE COLLAR SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12") INCHES.
2. THE NUMBER OF COLLARS SHALL BE DETERMINED BY SPONSOR AND SUPPORTED BY CALCULATIONS.
3. FORMS FOR CUT-OFF COLLAR SHALL REMAIN IN PLACE FOR FOUR (4) DAYS.
4. COMPACTION AROUND CUT-OFF COLLAR SHALL BE PERFORMED USING MANUAL EQUIPMENT TO AVOID DAMAGING THE COLLAR.
5. CONCRETE STRENGTH SHALL NOT BE LESS THAN 3,000 psi.

REV.	DESCRIPTION	RECOMM'D. BY	DATE
<b>INTERNATIONAL BOUNDARY AND WATER COMMISSION</b> UNITED STATES AND MEXICO UNITED STATES SECTION  <b>PIPE COLLAR</b> <b>DETAILS</b>			
DRAWN	C.B.	RECOMMENDED	
CHECKED	R.P.	APPROVED	C.M.
EL PASO, TEXAS		DECEMBER 1995	24954



ATTACHMENT IV



TYPICAL PIPELINE CROSSING DETAIL  
 N.T.S.

- NOTES:  
 1. THE SPONSOR SHALL SUBMIT SCOUR CALCULATIONS TO JUSTIFY DEPTH.

REV.	DESCRIPTION	RECORD BY	DATE
1	INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO UNITED STATES SECTION		
PILOT CHANNEL & DRAINAGE DITCH PIPELINE CROSSING DETAILS			
1 OF 1	EL PASO, TEXAS	JULY 1998	25016

United States Section  
International Boundary and Water Commission  
United States and Mexico

*United States Section Directive*

Volume IV  
Chapter 701  
November 2, 1998

106 11/4  
F.B.:  
note & memo  
Directive  
which is  
superseded

---

SUBJECT: Occupational Safety and Health Program

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TO: Executive Management Staff, Division Engineers, Heads of Office, Project  
Managers: Director, EEO; and Presidents, AFGE Locals 3060 & 3309

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CONTROL: Headquarter's Occupational Safety & Health Manager (OSHM) (915) 832-4162

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701.1 Requirement/Authority:

The purpose of this Directive is to establish the United States Section's Occupational Safety and Health Program; provide implementation procedures; and assign responsibilities for program accomplishment. Authority: Executive Order 12196, February 26, 1980; Occupational Safety and Health Act of 1970, as amended (Public Law 91-596 as amended by Public Law 101-552).

701.2 Organization and Responsibilities

A. Occupational Safety and Health Manager (OSHM).

The OSHM shall be responsible for the direction and implementation of the US Section's Occupational Safety and Health program. Specifically, the OSHM shall:

1. Serve as the safety and occupational health expert for the United States Section International Boundary and Water Commission (USIBWC) and is responsible for administering the Occupational Safety and Health Program. Assures program implementation in accordance with the Executive Order, Occupational Safety and Health Act of 1970, as amended, and other regulations and requirements.

2. Develops and directs the establishment of occupational safety and health requirements manual (s), Standard Operating Procedures (SOP's) Standard Operating Rules (SOR's) and approves Organizational Operating Procedures (OOP's) and Organizational Operating Rules (OOR's).
3. Develops and directs the USIBWC safety and health inspection program to assure oversight of operations and compliance with applicable regulatory standards and other requirements; and
4. Reports to the Principal Engineer - Operations Department on the status of the USIBWC program.
5. Develops and conducts a safety education program to fulfill the employee development requirements of USIBWC employees.
6. Maintains Safety and Health information, OSHA records and files. Reviews accident reports, evaluating such reports, and directing implementation of measures designed to prevent recurrence of such accidents and/or the prevention of similar accidents in the future.

**B. Occupational Safety and Health Committees**

As provided for in the Executive Order, Occupational Safety and Health Committee's shall be established. Two committee shall be established at the USIBWC: an Executive committee and a field office committee.

1. The Headquarters Occupational Safety and Health committee shall consist of the Principal Engineer's, Operations Department, Engineering Department, Special Projects Department, Human Resources Director and The Occupational Safety and Health Manager (OSHM).
2. Each field office shall have at least one employee elected by his/her peers as the field office safety and health committee member (including one each for the Las Cruces, Fort Hancock, and Anzalduas Dam facilities).

701.3 **Supersession:**

This directive supersedes Headquarters Directive; Volume IV, Chapter 701, January 30, 1997, Subject: Occupational Safety and Health Program.

701.4 **References:**

(1) EXECUTIVE ORDER 12196, February 26, 1980  
Occupational Safety and Health Program for Federal Employees

(2) 29 CFR 1900-1999 Occupational Safety and Health Administration

701.5

**POLICY**

It is the Policy of the United States Section, International Boundary and Water Commission, United States and Mexico that:

- A. The USIBWC will operate an Occupational Safety and Health program in accordance with Executive Order 12196, February 26, 1980 and the Regulations promulgated by the Secretary of Labor in 29 CFR 1900-1999;
- B. The USIBWC will provide places and conditions of employment that are free from recognized hazards which cause or are likely to cause death or serious physical harm;
- C. The USIBWC will conduct safety and health activities based on open, honest, and responsive communications;
- D. The USIBWC will promote teamwork through the involvement of all its employees;
- E. The USIBWC will empower its employees through training, information and program involvement to effectively protect themselves and the public;
- F. The USIBWC will establish clear ownership and accountability for all activities;
- G. The USIBWC will promote and encourage the sharing of safety and health information and resources;
- H. The USIBWC will manage and conduct a consistent positive approach to safety and health across all USIBWC facilities;
- I. The USIBWC will allocate appropriate resources to support safety and health activities;
- J. The USIBWC will integrate safety and health into all activities;
- K. The USIBWC will apply a systemic approach to all activities that affect safety and health;

L. The USIBWC will continue to improve its safety and health performance;

M. The USIBWC employees will accept and demonstrate individual responsibility for their own safe behavior.

The USIBWC strongly believes that all accidents are preventable and that all tasks can be completed without injury, illness or property damage. Our commitment to a pro-active safety and health management; continuously improving process; complying with all applicable State, Federal and Local Regulations; and employee involvement will cultivate a strong safety and health culture and assist in the achievement of our goal -

**"ZERO ACCIDENTS"**

701.6 General:

A. Nothing in this directive shall prohibit or interfere with management's:

1. Right to hire, assign, direct, layoff, or retain employees as well as suspend, remove, reduce in grade of pay, or take other disciplinary action;
2. Right to assign work and determine personnel by whom operations shall be conducted; and
3. Right to take necessary actions in emergencies to carry out the USIBWC's mission.

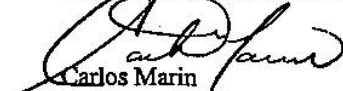
B. Committee members shall be authorized official time to participate in activities provided in this Directive.

C. Specific implementation instructions in program areas shall be issued as a Safety and Health Manual/ Policy /Standard Operating Procedure (SOP's)/ Standard Operating Rule (SOR), Organizational Operating Procedures (OOP's) and/or Organizational Operating Rule (OOR's) to this Directive and shall be incorporated as part of the USIBWC's policy and requirements.

707.7 Effective Date:

This Directive is effective upon issuance.

FOR THE COMMISSIONER

  
Carlos Marin  
PE-Operations Department



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO  
UNITED STATES SECTION

MEMORANDUM

FOR INFORMATION  
November 2, 1998

TO : All USIBWC Supervisors  
Presidents, AFGE Locals 3060 & 3309

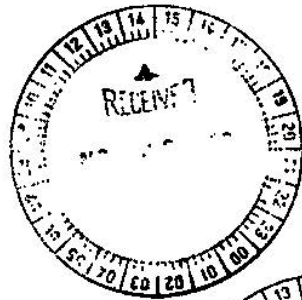
FROM : Victor J. Brandt, Safety and Health Manager

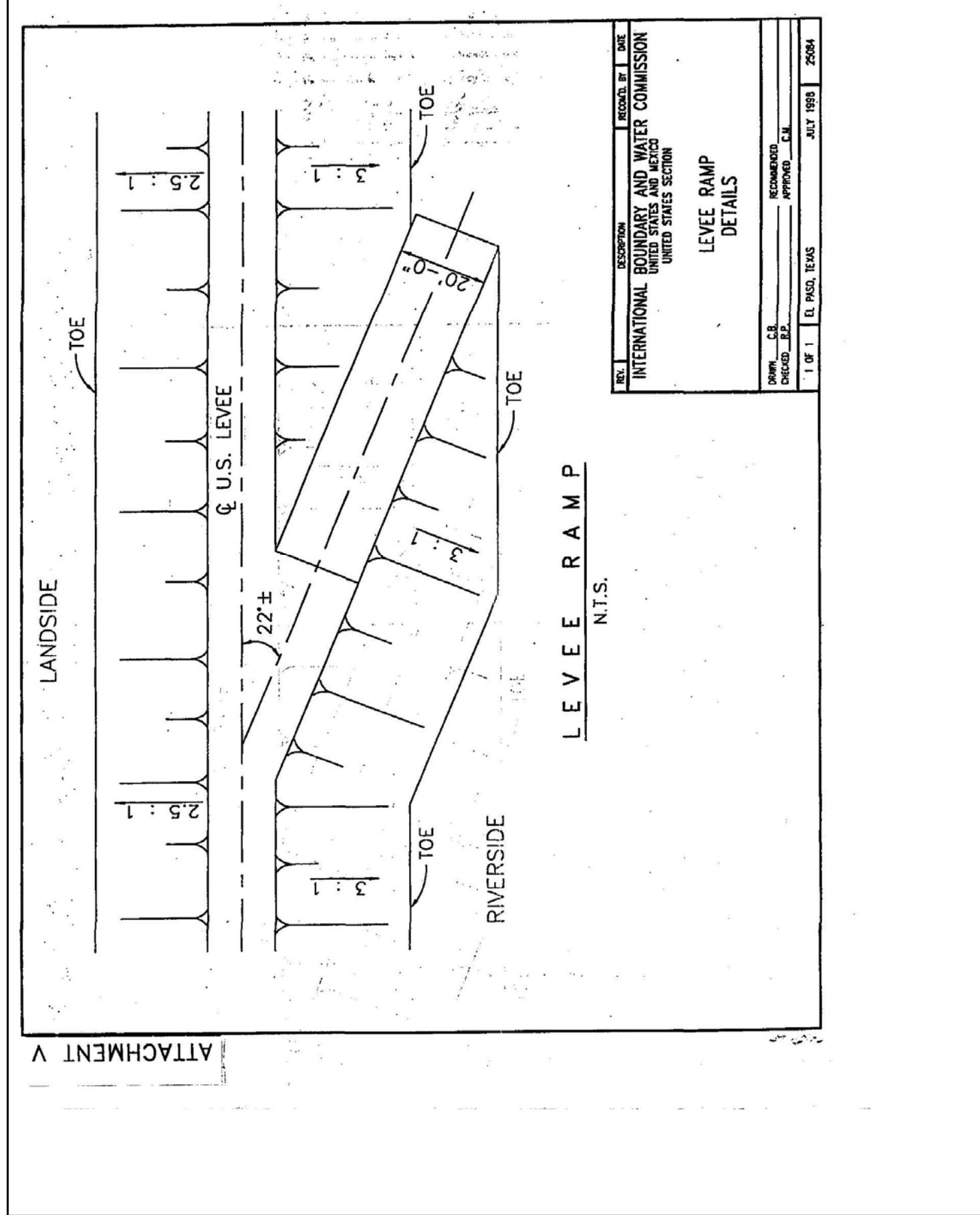
SUBJECT: Safety and Health Directive Volume IV, Chapter 701

This memorandum transmits the USIBWC's new Safety and Health Directive. It is effective immediately upon receipt. Comments and suggestions were received from the PE's and the field offices. These were appreciated, and most of the suggestions have been incorporated into the final document.

This directive is the first step in the development of the USIBWC safety and health program. Like all directives, this is a living document and is subject to change or modification from time to time. If after the document is implemented, you find an area that you feel needs to be changed or modified, please contact me by phone, fax, E-mail or cc:mail.

Other directives and the safety manual will be developed and distributed as soon as possible.





REV.	DESCRIPTION	RECORD BY	DATE
	INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO UNITED STATES SECTION		
LEVEE RAMP DETAILS			
DRAWN	C.B.	RECOMMENDED	
CHECKED	R.P.	APPROVED	C.M.
1 OF 1	EL PASO, TEXAS	JULY 1998	25004


ATTACHMENT V

**ATTACHMENT C**

IBWC Contact Report (31 Jul 2018)



International Boundary and Water Commission Meeting / NextDecade – July 31, 2018

		<h3>Contact Report</h3>
Check one: Confidential <input type="checkbox"/> Public <input checked="" type="checkbox"/>		Check one: Telephone <input type="checkbox"/> E-mail <input type="checkbox"/> Meeting <input checked="" type="checkbox"/>
<b>Date and Place:</b> July 31, 2018 International Boundary and Water Commission (IBWC) 4171 North Mesa, Suite C-100 El Paso, TX 79902		<b>Purpose:</b> 1) Introduce the Rio Grande LNG and Rio Bravo Pipeline projects ("Project") to the IBWC. 2) Identify and discuss the IBWC's requirements for the crossing of waterways under IBWC jurisdiction.
<b>Participant Name:</b>		<b>Agency/Organization:</b>
Diana Forti (Chief Administrator Officer) Jose A. Nunez (Commissioner) Daniel Avila Padinare Unnikrishna (Principal Engineer) Gilbert Anaya (Supervisory Natural Resources Specialist) Jose Vela (Civil Engineer)		IBWC
Komi Hassan		Rio Bravo Pipeline / Next Decade Corporation
Jason Zoller		Ecology and Environment (E & E)
<b>Summary</b> The meeting introduced the Project (both the Terminal and Pipeline System) to the IBCW. The introduction included an overview of the status of the FERC process and the ongoing permitting process with the U.S. Army Corps of Engineers, the Texas Commission on Environmental Quality, and consultation process with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department. Rio Bravo (RB) Pipeline also provided a summary of the June 12, 2018 meeting with Mr. John Claudio and Mr. Francisco Martinez of the IBWC Mercedes Field Office. During this meeting, IBWC confirmed that the Pipeline System crosses two waterways under the jurisdiction of the IBWC; the North Floodway at milepost 93 and the Arroyo Colorado at milepost 100. The following are the main topics discussed during the meeting: <ul style="list-style-type: none"> <li>• The IBWC expressed concerns whether the pipeline would be installed at a suitable depth (i.e. &gt; 50 feet). These concerns were based on previous projects that had issues such as                         <ul style="list-style-type: none"> <li>○ Previous pipeline project that had a frac-out in the waterbody; and</li> <li>○ Previous pipeline project that caused the levee to collapse.</li> </ul> </li> </ul> RB Pipeline explained that the HDD design was still at preliminary stage and RB Pipeline would be compliant with IBWC requests. IBWC stated that new recommendations were developed to address frac-outs and would provide this information to RB Pipeline.		

**International Boundary and Water Commission Meeting / NextDecade – July 31, 2018**


- The IBWC stated when submitting a permit application, a final and complete application package is preferred. However, they would be open to meeting with RB Pipeline during the preparation of the permit application.
- The IBWC expressed that prior to RB Pipeline’s engagement with the IBWC, there had not been communication between the IBWC and FERC. Since the initiation of RB Pipeline’s initial meeting with IBWC, IBCW has initiated discussions with FERC regarding the Project prior to the RB Pipeline meeting.
- RB Pipeline expressed that any concerns or requirement of IBWC could be submitted to FERC during the DEIS comment period. The IBWC will require as-built drawings of the two waterway crossings as part of the permit process.
- RB Pipeline committed to providing the IBWC (Mr. Jose Vela) a kmz file of the pipeline route, so that the IBWC could provide any cross-section or engineering drawings related to the these two crossings.
- The IBCW engineers could provide cross-sections of the North Floodway and Arroyo Colorado.
- The IBWC requested electronic file of presentation material.

Item No.	Action Item	Action By	Date
1	Provide latest KMZ of the proposed pipeline route and electronic file presentation material to the IBWC	E & E	Completed

**ATTACHMENT D**

USFWS Contact Report (7 Nov 2018)

USFWS Meeting / NextDecade – November 7, 2018

		<h3>Contact Report</h3>
Check one: Confidential <input checked="" type="checkbox"/> Public <input type="checkbox"/>		Check one: Telephone <input type="checkbox"/> E-mail <input type="checkbox"/> Meeting <input checked="" type="checkbox"/>
<b>Date and Place:</b> November 7, 2018 U.S. Fish and Wildlife Service (USFWS) Ecological Services Field Office Corpus Christi, Texas		<b>Purpose:</b> 1) Provide an update on the Rio Grande LNG Project. 2) Discuss finding and comments presented in the FERC DEIS related to federally listed threatened and endangered species. 3) Discussion of the Project's Mitigation Plan.
<b>Participant Name:</b>		<b>Agency/Organization:</b>
Pat Clements Ernesto Reyes Laura de la Garza		USFWS
Shaun Davison Komi Hassan Diane Neal		Rio Grande (RG) Developers
Jason Zoller		Ecology and Environment (E & E)
<b>Summary</b> The meeting was held to provide USFWS an update on the development of the Rio Grande LNG Project (Project) and to discuss the findings and recommendation of the FERC October 12, 2018 Draft Environmental Impact Statement (DEIS) for the Project. The discussion of the DEIS focused on the FERC's effects determination for the aplomado falcon, piping plover, and ocelot under the Section 7 consultation process. The RG Developers also discussed the next steps for finalizing the Project's Mitigation Plan. The following is a summary of the meeting:		
<ul style="list-style-type: none"> <li>• The RG Developers started the meeting by providing an overview of the status of the FERC process and the ongoing permitting process with the U.S. Army Corps of Engineers (USACE) and the Texas Commission on Environmental Quality, and the anticipated Project schedule leading up to the start of construction.</li> <li>• The RG Developers identified the schedule and location of the upcoming public comment meetings to be held by FERC and committed to sending USFWS the schedule of the meetings.</li> <li>• The RG Developers presented and discussed the findings of the DEIS as it relates to the assessment of the aplomado falcon, piping plover, and ocelot and FERC's requests for formal consultation under Section 7 for these three species.</li> <li>• USFWS indicated that they would review the impacts presented in the DEIS and would make a determination whether formal consultation was required for these three species. USFWS estimated that their review would take approximately one month. The RG Developers committed to sending USFWS a copy of this letter.</li> <li>• USFWS noted that during their review of the Administrative DEIS, they commented about the loss of both aplomado falcon and ocelot habitat due to the ongoing development in the Rio Grande Valley.</li> </ul>		

USFWS Meeting / NextDecade – November 7, 2018

Aplomado Falcon

- The RG Developers reviewed the finding of the DEIS regarding the impact on the aplomado falcon habitat due to the construction and operation of the Terminal. This impact would result in the loss of approximately 191 acres of aplomado falcon habitat.
- The RG Developers reiterated the best management practices (BMPs) that had already been committed to based on previous discussions with USFWS.
- USFWS acknowledged that these BMPs would address impacts to nesting falcons, and that there is still a concern regarding the loss of aplomado falcon habitat. The Terminal would permanently affect approximately 191 acres of this habitat (i.e., grassland habitats, South Texas Loma Grassland, Gulf coast Salty Prairie, and Coastal Ox-eye Daisy Flats). USFWS noted a concern about the loss of additional habitat from continuing and planned development in the Rio Grande Valley. USFWS specifically identified the increasing number of wind farms as a concern for the conservation of the aplomado falcon.
- USFWS stated that preservation of suitable habitat is preferred over the restoration of habitat, as the USFWS expressed that it is very difficult to restore or create high quality aplomado falcon habitat.
- USFWS requested the conservation of aplomado falcon habitat as an offset for the Project's impacts to this habitat. The agency recommended working with The Conservation Fund and the Peregrine Fund to identify and secure conservation land.
- The RG Developers committed to creating an Aplomado Falcon Plan that will clearly identify the BMPs and mitigation measures that will be adhered to during construction, and will also outline the RG Developers' plan to offset the loss of suitable falcon habitat at the Terminal site.
- The RG Developers committed to working with the Peregrine Fund to acquire the latest nest data and will present this data to USFWS.

Piping Plover

- The RG Developer reviewed the finding of the DEIS regarding noise impacts to piping plover critical habitat resulting from the operation of the Terminal.
- USFWS inquired about the total acreage of critical habitat that would be impacted by elevated noise levels. The DEIS estimated that noise levels would return to ambient levels within about 1.5 miles from the Terminal, or approximately 1,100 acres of the critical habitat. The RG Developers stated that the estimate would be confirmed and would provide a map of this.
- USFWS agreed that there is a lack of scientific literature that evaluates noise impacts on wintering piping plovers.

Ocelot

- The RG Developer reviewed the finding of the DEIS regarding the loss of potential ocelot habitat due to the construction and operation of the Terminal. This would result in the loss of approximately 189 acres of potential ocelot habitat. However, as indicated in the DEIS, the potential ocelot habitat within the LNG Terminal site is not suitable to support breeding pairs and would likely serve only as stopover or temporary habitat for transient individuals due to its size and lack of connectivity with larger more contiguous tracts. Additionally, this potential habitat is isolated between State Highway 48 to the north and the Brownsville Ship Channel to the south and is not directly connected to the established wildlife crossing along State Highway 48 located to the west of the Bahia Grande Channel.
- USFWS requested the permanently impacted potential ocelot habitat be mitigated through the preservation of habitat as part of the wildlife conservation corridor that abuts the Laguna

USFWS Meeting / NextDecade – November 7, 2018

Atascosa National Wildlife Refuge (NWR), the Lower Rio Grande Valley NWR, and the recently established conservation lands. USFWS recommended working with the Conservation Fund to identify suitable ocelot habitat for conservation. USFWS stated that they knew of available land near State Highway 100 (~ 400 acres) at a cost of approximately \$2,500 per acre. USFWS stated that they would provide the RG Developers the contact information of Andy Jones with The Conservation Fund in Austin, Texas.

- USFWS stated that the Valley Crossing Pipeline (VCP) mitigated impacts to ocelot habitat through reduced construction footprint and through the purchase of ocelot habitat for preservation using a 4:1 mitigation ratio. The RG Developers stated that they would provide USFWS with the latest KMZ of the RB Pipeline route and would review the route directly with USFWS to determine if there were any specific areas crossed by the route that were considered high quality ocelot habitat. If suitable habitat were identified, then the RG Developers would work with USFWS to determine measures to minimize habitat impacts, either through avoidance or a reduction of workspace.
- The RG Developers identified the locations of the pipeline route that had already been modified to reduce impacts to ocelot habitat based on the previous recommendations of the USFWS.
- USFWS stated that they would provide the location of the ocelot crossings along State Highway 77 and the locations where VCP adjusted their workspace to minimize impacts to ocelot habitat.
- USFWS highlighted that the prime areas of ocelot habitat were near mileposts 70-115.

The following is a summary of the discussion regarding the Project's Mitigation Plan that is focused on preservation of the Loma Ecological Preserve (LEP).

- USFWS stressed that any preservation of the LEP would need to be in perpetuity. The RG Developers confirmed that this would be the case and it would be required to comply with the USACE's Mitigation Rule.
- USFWS acknowledged that the LEP is currently highly functional and this limits enhancement or restoration opportunities in the LEP that would support the offset of impacts to wetlands. USFWS stated that the USACE will need to articulate that preservation will be a suitable mitigation alternative.
- USFWS inquired if a wetland mitigation ratio had been proposed by the USACE for the use of preservation. The RG Developers stated that no ratio has been defined by the USACE and that SpaceX used a 12.5:1 mitigation ratio.
- USFWS indicated that they prefer the restoration/preservation of ocelot habitat north of the Brownsville Ship Channel within the wildlife conservation corridor.

The following are additional items discussed with USFWS:

- The FERC recommendation that pollinator species be included in the seed mixes for habitat restoration along the pipeline. USFWS stated that they could provide the seed mixes the VCP used that included pollinator species. USFWS also recommend coordinating with Caesar Kleberg Wildlife Center for appropriate seed mixes.
- The RG Developers informed USFWS that the ATWS that overlapped the Lower Rio Grande NWR near milepost 115-116 had been modified and will no longer overlap the NWR.
- USFWS inquired about the status of the species-specific surveys for the federally listed plant species. The RG Developers indicated that the surveys could not be conducted until land access is granted for remaining unsurveyed parcels, to which the RG Developers anticipate obtaining access after the issuance of the FERC Order. The RG Developers reiterated that the surveys would be completed as required by USFWS and FERC. The RG Developers propose to complete

USFWS Meeting / NextDecade – November 7, 2018

the surveys during flowering season and the result would be discussed with USFWS prior to the start of any construction activities for the pipeline.

- USFWS also commented the RG Developers should consider the opportunity to train the operational staff of the Terminal on the proper reporting protocol for cold stun turtle events. USFWS recommended that the RG Developers coordinate with the Sea Turtle Rescue Center to develop an appropriate reporting protocol.

Item No.	Action Item	Action By	Date
1	Provide USFWS a copy of the October 25, 2018 Section 7 Endangered Species Act Consultation letter issued by FERC.	E & E	Completed
2	Provide USFWS the latest KMZ file of the Rio Bravo Pipeline and schedule a time to review the route with the agency to identify potential ocelot habitat.	E & E	Completed
3	Contact The Conservation Fund to identify mitigation lands for the ocelot and aplomado falcon.	The RG Developers	Completed
4	Send USWFS the public comment meeting schedule and locations that were published by the FERC.	E & E	Completed
5	Request the latest nesting data for the aplomado falcon from the Peregrine Fund and provide this data to USFWS.	E & E	Completed
6	USFWS to provide the locations of wildlife crossings on I-77.	USFWS	Completed
7	USFWS to provide the contact information for Andy Jones (The Conservation Fund, Austin, TX).	USFWS	Completed
8	USFWS to provide a contact for the seed mixes that were used by VCP that included pollinator species.	USFWS	Completed

**ATTACHMENT E**

Aplomado Falcon BMPs



**Rio Grande LNG Project  
Northern Aplomado Falcon Best Management Practices  
November 2018**

Rio Grande LNG, LLC ("RG LNG") and Rio Bravo Pipeline, LLC ("RB Pipeline") (collectively, "RG Developers") will implement the following best management practices ("BMPs") during the construction and/or operation of the Rio Grande LNG Project ("Project") to avoid, minimize, and mitigate impacts to the northern aplomado falcon (*Falco femoralis septentrionalis*). The following BMPs are based on the results of consultations with U.S. Fish and Wildlife Service ("USFWS"), Texas Parks and Wildlife ("TPWD"), and the BMPs for the northern aplomado falcon recommended by the USFWS Texas Coastal Ecological Service Field Office ("ESFO") – Corpus Christi.

Project Planning and Documentation

- Prior to the start of construction, RG Developers will coordinate with USFWS and The Peregrine Fund to acquire the most recent aplomado falcon nest data. The data will be shared with USFWS.
- Prior to construction, RG Developers will consult with USFWS to determine if pre-activity surveys should be conducted in suitable habitat for territorial aplomado falcons and/or nest sites. Pre-activity surveys will be conducted by qualified, permitted individuals in accordance with protocols that are recognized by USFWS and/or TPWD.
- RG Developers will provide training to construction and maintenance staff on the species, the BMPs identified for species protection, and the role of the biological monitor.
- Measures to reduce adverse environmental impacts to aplomado falcons will be incorporated into the Project, in accordance with agency plans, permits, and regulations.

During Construction/Maintenance

- RG Developers will adhere to the Project-specific Upland Erosion Control, Revegetation, and Maintenance Plan.
- RG Developers will adhere to the Project-specific Wetland and Waterbody Construction and Mitigation Procedures.
- RG Developers will adhere to the Rio Grande LNG Project Migratory Bird Conservation Plan.
- Within areas deemed to be suitable habitat, RG Developers will construct the Rio Bravo Pipeline System between August 1 and January 31 (outside of the breeding season). Alternatively, RB Pipeline will use biological monitors during the breeding season to monitor active aplomado falcon nests within 0.5 mile of construction activities.
- RG Developers will construct the Rio Grande LNG Terminal and associated temporary offsite facilities that are within one (1) mile of active aplomado falcon nests between August 1 and January 31. Alternatively, if construction will occur during the nesting season, RG LNG will use biological monitors to monitor active aplomado falcon nests within one (1) mile of construction activities.

**Rio Grande LNG Project  
Northern Aplomado Falcon Best Management Practices  
November 2018**

- Construction and maintenance activities will be conducted during daylight hours to avoid noise and lighting issues during the night to the extent possible. If construction or maintenance work activities continue at night (i.e., horizontal direction drill crossings), all lights will be shielded to direct light only onto the work site, the minimum wattage needed will be used, and the number of lights will be minimized.
- The perimeter of all Project workspace to be disturbed during construction or maintenance activities will be clearly demarcated using flagging or temporary construction fence, and no disturbance outside that perimeter will be authorized.
- All access roads into and out of the Project workspace will be flagged, and no travel outside of those boundaries will be authorized.
- To prevent drowning of aplomado falcons, open-top liquid or water storage containers will not be used.
- Waste materials and other discarded materials will be removed from the site as quickly as possible. This should assist in keeping the Project area and surroundings free of litter and reduce the amount of disturbed area needed for waste storage.

Post Construction

- The need for and extent of site restoration will be determined in coordination with USFWS, TPWD and the landowner.
- The Project management plan will provide a report describing the implementation of BMPs and their effectiveness at the completion of the Project. Documentation of completion of any mitigation actions will be included in the report. Mitigation will be developed in coordination with USFWS.

Facility Operations

- Security lighting along fences and other facilities will be designed to minimize light pollution beyond the designated security zone while achieving light levels needed for safety and operational purposes.


Additional General Recommendations

- RG Developers will report all newly discovered aplomado falcon active nests within one (1) day, and new aplomado falcon sightings within three (3) days, to the USFWS Texas Coastal ESFO - Corpus Christi at 817-277-110.
- RG Developers will minimize incidental take through BMPs and coordination with USFWS Texas Coastal ESFO - Corpus Christi.

**ATTACHMENT F**

Cameron County FSA Contact Report (8 May 2018)

Cameron County Farm Service Agency / Next Decade – May 8, 2018

		<h3>Contact Report</h3>
Check one: Confidential <input type="checkbox"/> Public <input checked="" type="checkbox"/>		Check one: Telephone <input type="checkbox"/> E-mail <input type="checkbox"/> Meeting <input checked="" type="checkbox"/>
<b>Date and Place:</b> May 8, 2018 Cameron County Farm Service Agency (FSA) Center Office 2315 W Frontage Road Exp 77/83 Suite 1 San Benito, TX 78556		<b>Purpose:</b> Identify potential wildlife and/or conservation easements that would be crossed by the Rio Bravo Pipeline in Cameron County, TX.
<b>Participant Name:</b>		<b>Agency/Organization:</b>
Cristobal "Cris" Perez		U.S. Department of Agriculture Cameron County FSA County Executive Director
Komi Hassan		Rio Bravo Pipeline / Next Decade Corporation
Jason Zoller		Ecology and Environment (E & E)
<b>Summary</b> Rio Bravo Pipeline, LLC (RB Pipeline) and E & E attended a meeting at the Cameron County FSA Office to review the proposed route in Cameron County to identify if there were any know conservation easement that were crossed by the route. The following is a summary of the meeting:		
<ul style="list-style-type: none"> <li>• Mr. Perez identified that the current pipeline route crossed the lands of two landowners enrolled in the Conservation Reserve Program (CRP) State Acres For wildlife Enhancement (SAFE) program. Through SAFE, private land is managed to create habitat that is beneficial for high-priority species. In the case of the SAFE parcels crossed by pipeline route have been established for the protection of ocelot habitat.</li> <li>• The following are the parcels that will be crossed by the pipeline route that are designated as CRP SAFE easements (see Attachment A for details of these parcels).                         <ul style="list-style-type: none"> <li>○ Colima Ranch Partnership Parcel - Tract ND-CAM-046.000 (MP 116.2- 117.1)</li> <li>○ Scaief Michael &amp; John – Tract ND-CAM-045.000 (MP 113-7 – 114.5)</li> <li>○ Scaief Michael &amp; John – Tract ND-CAM-044.000 (MP 113-7 – 113.6)</li> </ul> </li> <li>• For the above-mentioned parcels, Mr. Perez stated that he believed the current position of the FSA is that if there is disturbance to the SAFE designated acreage then the land under contract would need to be removed from the program. He indicated that he was going to verify what the requirements and process were for removing land from the easement. He explained that SAFE lands involve habitat creation/preservation for T&amp;E species and that since construction would affect the protected habitat, this is considered a loss of habitat. In this case, the ocelot habitat has been both created and protected to extend contiguous habitat for the ocelot from the Laguna Atascosa NWR to the east.</li> </ul>		

Cameron County Farm Service Agency / Next Decade – May 8, 2018

- Mr. Perez suggested that there is the potential for moving the pipeline route to the western boundary of the above parcels, which may place the pipeline footprint outside of the designated SAFE lands (see maps in Attachment A for notes). On May 14, 2018, Mr. Perez sent an email that stated, *“that the contractual acreage is further away from the property boundary line on the west side. NRCS will be reviewing the boundaries of the contractual acreage with me and these landowners. If the proposed pipeline is done along that side, it appears there will be no impact on the contractual acreage.”* A copy of this email is presented in Attachment B.
- Mr. Perez also identified a parcel owned by the Pine Tree Conservation Society, Inc. (Tract – ND-CAM-041.000 [MP111.7 – 11.9]) is designated as SAFE lands; however, the SAFE contract will end at the end of the 2018 fiscal year; therefore, the parcel will not be enrolled in the SAFE program when construction of the pipeline is proposed.
- Mr. Perez stated that he would follow-up with the FSA legal department to double check how “disturbance” to designated SAFE lands is evaluated and mitigated. Additionally, he stated that he would contact the two landowners with SAFE lands that are crossed by the pipeline route to further evaluate the options of siting the pipeline on the parcel, without disturbing the designated SAFE acreage.

Item No.	Action Item	Action By	Date
1	None		

Cameron County Farm Service Agency / Next Decade – May 8, 2018

Attachment A

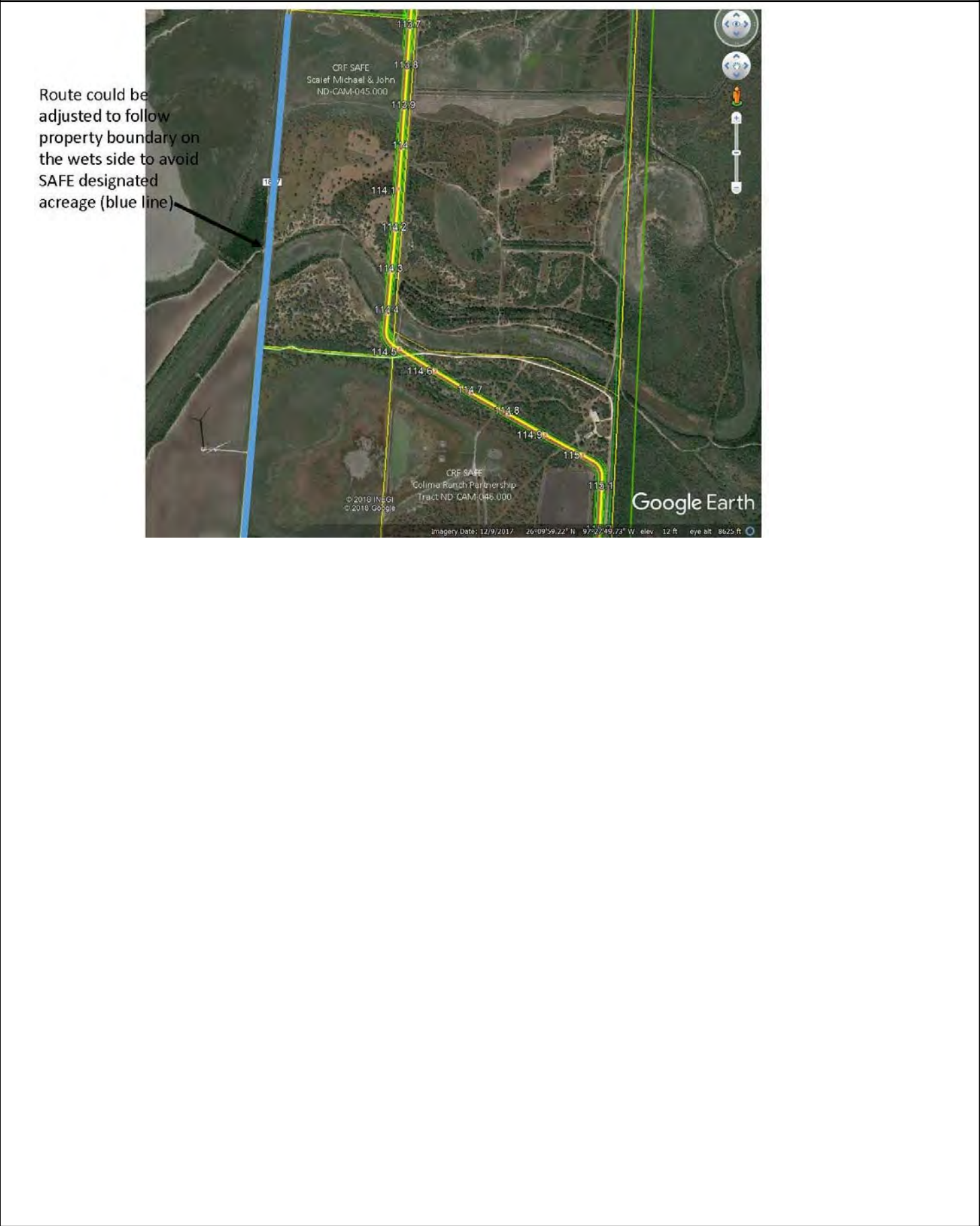
Parcels Designated as CRP SAFE Easements

**Applicant (APP)**  
**APP1 - NextDecade**

Route could be adjusted to follow property boundary on the west side to avoid SAFE designated acreage (blue line)



**Applicant (APP)**  
**APP1 - NextDecade**





**Applicant (APP)**  
**APP1 - NextDecade**



**Applicant (APP)**  
**APP1 - NextDecade**



Route could be adjusted to follow property boundary on the wets side to avoid SAFE designated acreage (blue line)

**Applicant (APP)**

**APP1 - NextDecade**

Cameron County Farm Service Agency / Next Decade – May 8, 2018

Attachment B

Cameron County FSA May 14, 2018 Email Copy

**Zoller, Jason**

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**From:** Perez, Cris - FSA, San Benito, TX <Cris.Perez@tx.usda.gov>  
**Sent:** Monday, May 14, 2018 10:41 AM  
**To:** Zoller, Jason  
**Subject:** CRP Acreage

Good morning Jason,

Tomorrow afternoon I am meeting with the 2 owners of the CRP SAFE acreage that we discussed. It appears that the contractual acreage is further away from the property boundary line on the west side. NRCS will be reviewing the boundaries of the contractual acreage with me and these landowners. If the proposed pipeline is done along that side, it appears there will be no impact on the contractual acreage.

**Cristóbal Pérez**

County Executive Director  
Cameron County FSA Office  
2315 W Exp 83 Ste #1  
San Benito TX 78586  
P: 956/399-1311  
F: 844/496-8083

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# ATTACHMENT G

Information on Heights of LNG Carriers

*Condition 45: Prior to the end of the draft EIS comment period, RG LNG shall determine if the heights of the LNG carriers will be higher than other objects that traverse the waterway and if applicable, file for an Aeronautical Study under 14 CFR 77 for LNG carriers that may exceed the height requirements in 14 CFR 77.9 (section 4.12.6)*

Under Federal Aviation Administration (“FAA”) regulation 14 CFR § 77, RG Developers are required to provide notice to the FAA of proposed construction identifying equipment that may be 200 feet or more above ground level if the facilities are within a certain proximity to airports or helipads. The regulation also requires notice for mobile objects, such as LNG carriers (“LNGCs”), if such a mobile object would be higher than those “that would normally traverse the waterway.” The DEIS correctly notes that RG Developers have received a determination from the FAA of “No Hazard to Air Navigation” for temporary construction cranes that may reach or exceed 200 feet above ground level. RG Developers believe after reviewing industry sources on LNGC specifications and heights, such notice should not be applicable for the LNGCs expected to call on the proposed terminal.

Current LNG fleets in operation are trending towards use of LNGCs that are 170,000 m<sup>3</sup> to 180,000 m<sup>3</sup> with membrane tanks rather than the Moss containment systems. These vessels are currently the largest LNGCs that can traverse the expanded Panama Canal. RG Developers expect that these vessels will be the largest ones to call on the RG LNG facility on the Brownsville Ship Channel (“BSC”).

Larger vessels, such as the Q-Flex (216,000 m<sup>3</sup>) and Q-Max (260,000 m<sup>3</sup>) vessels, are owned and operated by Nakilat and are only in use by QatarGas (an affiliate of Nakilat) for transporting LNG from the Qatari LNG export facilities in Ras Laffan, Qatar. These vessels are not chartered out to third parties and QatarGas is not an anticipated customer of RG LNG. According to general industry shipyard information, no other LNG buyer or shipper is on record as having a Q-Flex or Q-Max vessel on order. Therefore, the probability that one of these larger vessels will load an LNG cargo from the RG LNG facility is highly unlikely.

RG Developers reviewed the Panamax LNGC’s characteristics and design as stated in the Gas Form – C<sup>1</sup> of various individual vessels to confirm the height of the LNGCs likely transiting to the RG LNG terminal. Based on that review, RG Developers believe that no additional notice to the FAA under 14 CFR § 77 is needed to comply with Condition 45.

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<sup>1</sup> The Gas Form - C is a standardized industry document that captures the individual LNG vessel technical, design, engineered specifications, and parameters including containment, length, fuel and draft. Examples can be found at ([http://maritime-connector.com/ship-search/?keyword=&ship=&imo=&type=lng-tanker&limit=25&sort=&sort\\_type](http://maritime-connector.com/ship-search/?keyword=&ship=&imo=&type=lng-tanker&limit=25&sort=&sort_type)).

**Applicant (APP)**

**APP1 - NextDecade**

The table below provides several vessel sizes, not all of which could be expected to dock at the RG LNG terminal:

LNGC Capacity	Air Draft (under normal ballast conditions)*
260,000 m <sup>3</sup> (Q-Max)	54.1 meters (177.5 ft)
216,000 m <sup>3</sup> (Q-Flex)	50.3 meters (165.0 ft)
177k m <sup>3</sup> membrane (HHI)	52.7 meters (172.9 ft)
180k m <sup>3</sup> Moss (MHI)	54.4 meters (178.5 ft)
165k m <sup>3</sup> SPB (JMU)	54.4 meters (178.5 ft)
125k m <sup>3</sup> Moss (MHI Northwest Shelf)	63.8 meters (209.3 feet)**

*\* Air draft is the distance from the surface of the water to the highest point on a vessel and is normally measured under normal ballast conditions. This is the "height" of the vessel to be considered from an impact standpoint.*

*\*\* These nine (9) vessels are project specific to the North West Shelf project in Australia built specifically for trade with Japan. None of these vessels are expected to call on Brownsville.*

If, during commercial negotiations, RG Developers learn that a vessel anticipated for use in the export of LNG from the RG LNG facility will have an air draft that exceeds the heights in the table above, it will file a notice to the FAA for the LNGC.

**ATTACHMENT H**

PHMSA Contact Report



## Applicant (APP)

### APP1 - NextDecade

#### **Komi Hassan**

---

**From:** White, Senth (PHMSA) <senth.white@dot.gov>  
**Sent:** Monday, October 29, 2018 12:20 PM  
**To:** Jenna Wilson  
**Cc:** Shaun Davison; Komi Hassan; Diane Neal  
**Subject:** RE: Rio Grande DEIS Conditions

CAUTION: This email originated from outside of NextDecade. DO NOT CLICK links or open attachments unless you recognize the sender and know the content is safe.

Jenna,

Yes, I spoke with Ghanshyam and indicated to him that we received Next Decade's request on 8/22/2018 for use of an alternate means for impoundment drainage in accordance with §190.9. I indicated that PHMSA will coordinate this request with the PHMSA SWR and noted that §193.2173 is a Subpart C - Design requirement and is typically addressed during construction. However, I clarified that the wind speed requirement on whether the use of 130 mph 3-second gust for "other structures" will be addressed as part of PHMSA's Subpart B - Siting Review and a determination will be made 30 days prior to the FERC FEIS issuance date.

Thanks,

Senth K. White, P.E.

Pipeline and Hazardous Materials Safety Administration Engineering and Research U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590  
Office: (202) 366-2415  
Mobile: (202) 734-8138  
senth.white@dot.gov

-----Original Message-----

From: Jenna Wilson [mailto:jwilson@blueeandc.com]  
Sent: Tuesday, October 23, 2018 11:07 AM  
To: White, Senth (PHMSA) <senth.white@dot.gov>  
Cc: Shaun Davison <sdavison@next-decade.com>; Komi Hassan <khassan@next-decade.com>; Diane Neal <dneal@next-decade.com>  
Subject: RE: Rio Grande DEIS Conditions

Hi Senth,

Hope you had a good weekend.

Just wanted to touch base with you to see if you've been able to make contact with G at FERC regarding the two DEIS conditions we discussed on Friday.

Thanks,

# Applicant (APP)

## APP1 - NextDecade

Jenna

Jenna M Wilson, P.E.  
Consultant

Main: 410-394-8730

Direct: 410-394-8940

Mobile: 937-572-4626

Email: JWilson@BlueEandC.com

Web:

<https://na01.safelinks.protection.outlook.com/?url=www.BlueEngineeringandConsulting.com&data=02%7C01%7C%7C3bb5c236d8684673652f08d63dc2d94e%7Cc531a4d983564c1bbce7ee5779012d07%7C0%7C0%7C636764304420952181&sdata=tuNsT7ixOLC4%2B5BmPmq3eKhmEXBUbpWnudGPLZVGkGg%3D&reserved=0>

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-----Original Message-----

From: Diane Neal <dneal@next-decade.com>

Sent: Friday, October 19, 2018 10:23 AM

To: Jenna Wilson <jwilson@blueeandc.com>

Cc: Shaun Davison <sdavison@next-decade.com>; Komi Hassan <khassan@next-decade.com>; White, Senth (PHMSA)

<senth.white@dot.gov>

Subject: Re: Rio Grande DEIS Conditions

I thought that was a helpful call. Thanks for coordinating!

Diane Neal  
202-288-5567  
Sent from my iPhone

> On Oct 19, 2018, at 08:45, Jenna Wilson <jwilson@blueeandc.com> wrote:

>

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> CLICK

> links or open attachments unless you recognize the sender and know the content is safe.

>

>

> Sorry! We had a last minute double-booking on our webex and I had to

> send out new call-in details!

> Senth is going to send you all an email explaining that you are

> "consulting" with PHMSA to satisfy conditions 46 & 47. She is also

> going to check with FERC on item #46 to ask why they wanted the drain

> valves approved before detailed design.

>

> Jenna M Wilson, P.E.

> Consultant

>

> Main: 410-394-8730

> Direct: 410-394-8940

> Mobile: 937-572-4626

# Applicant (APP)

## APP1 - NextDecade

> Email: JWilson@BlueEandC.com  
> Web:  
https://na01.safelinks.protection.outlook.com/?url=www.BlueEngineeringandC  
onsulting.com&data=02%7C01%7C%7C9f265167cda9425f784a08d635c91cbb%7Cc53  
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>  
> -----Original Message-----  
> From: Shaun Davison <sdavison@next-decade.com>  
> Sent: Friday, October 19, 2018 9:37 AM  
> To: jwilson@blueeandc.com; Diane Neal <dneal@next-decade.com>; Komi  
> Hassan <khassan@next-decade.com>; 'White, Senth (PHMSA)'  
> <senth.white@dot.gov>  
> Subject: RE: Rio Grande DEIS Conditions  
>  
> Are you guys on?  
>  
> Shaun Davison  
> NextDecade Corporation  
> Office: + 1 832-403-3040  
> Cell: +1 832-415-6659  
>  
> -----Original Appointment-----  
> From: jwilson@blueeandc.com <jwilson@blueeandc.com>  
> Sent: Friday, October 19, 2018 8:11 AM  
> To: jwilson@blueeandc.com; Shaun Davison; Diane Neal; Komi Hassan;  
> 'White, Senth (PHMSA)'  
> Subject: Fwd: Rio Grande DEIS Conditions  
> When: Friday, October 19, 2018 9:30 AM-10:00 AM (UTC-05:00) Eastern  
> Time (US & Canada).  
> Where: Conference Call  
>  
> CAUTION: This email originated from outside of NextDecade. DO NOT  
> CLICK links or open attachments unless you recognize the sender and  
> know the content is safe.  
>  
> Just realized Jenna did not forward to you. Just in case you want to  
> dial in.  
>  
> Komi  
>  
> When: Oct 19, 2018 8:30:00 AM Where: Conference Call Here are the two  
> items we would like to discuss: 46 Prior to the end of the draft EIS  
> comment period, RG LNG shall consult with DOT PHMSA on whether using  
> normally-closed valves as a stormwater removal device on local bunds  
> and curbs will meet the requirements of 49 CFR 193. (section 4.12.6)

# Applicant (APP)

## APP1 - NextDecade

> 47 Prior to the end of the draft EIS comment period, RG LNG shall  
> consult with DOT on whether the use of 130 mph 3-second gust in ASCE  
> 7-05 for "other structures" will be subject to DOT requirements under  
> 49 CFR 193 Subpart B. (section 4.12.6) Thanks!  
> -- Do not delete or change any of the following text. --  
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> Meeting number (access code): 629 573 493 Meeting password: 8VscFhfK  
>  
>  
> Join from a video system or application Dial  
> 629573493@blueengineeringandconsulting.my.webex.com<sip:629573493@blue  
>engi  
>neeringandconsulting.my.webex.com>  
> You can also dial 173.243.2.68 and enter your meeting number.  
>  
> Join by phone  
> +1-510-338-9438<tel:+1-510-338-9438,,\*01\*629573493%23%23\*01\*> USA Toll  
> Global call-in  
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## Applicant (APP)

### APP1 - NextDecade

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Applicant (APP)

APP2 - NextDecade

20181129-5109 FERC PDF (Unofficial) 11/29/2018 12:05:29 PM



1000 Louisiana Street  
Suite 3900  
Houston, TX 77002  
+1 713-574-1880

November 29, 2018

Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington DC 20426

Re: Response to USFWS Letter dated November 19, 2018, Accession No. 20181127-0012  
FERC Docket Nos. CP16-454-000 and CP16-455-000

Dear Ms. Bose:

In response to the U.S. Fish and Wildlife Service (“USFWS”) letter to FERC dated November 19, 2018,<sup>1</sup> Rio Grande LNG, LLC (“RG LNG”) and Rio Bravo Pipeline Company, LLC (“RB Pipeline”) (collectively, “RG Developers”) provide the following additional clarifying information regarding the location and status of information requested by USFWS in their letter.

First, consistent with the standard practice for preparing the environmental documents that support FERC in its execution of its responsibilities under the National Environmental Protection Act (“NEPA”) review process, many of the documents identified by USFWS were submitted in draft form since they were prepared prior to FERC Staff’s publication of the Draft Environmental Impact Statement (“DEIS”) on October 12, 2018. Further, many of the applicant-prepared documents cannot be finalized until the resource agencies have the opportunity to review, comment and in some cases approve the documents following issuance of the DEIS. It is only after this DEIS review process that the applicant-prepared documents can then evolve into a final version. In response to USFWS’s questions about how these documents are finalized as part of the FERC NEPA process, RG Developers respectfully request that FERC provide an overview to USFWS in addition to any other clarifying information FERC deems necessary.

APP2-1

Second, for clarification and to ensure all cooperating agencies have access to the necessary information, RG Developers submit the following information with respect to the documents and other plans that USFWS asserts are missing:

APP2-2

1. *RG Developers’ Plan and Procedures* – The project-specific plan and procedures are provided as Appendices D and E in the DEIS (Accession Number [20181012-3019](#)).
2. *Spill Prevention, Control and Countermeasure Plan (SPCC Plan)* – Consistent with DEIS Condition 18 at page 5-29, prior to construction, RG Developers will file with the Secretary final versions of their SPCC Plans for construction and operation of the project

<sup>3</sup> The USFWS letter originally was misfiled in the Texas LNG LLC docket, not the RG LNG docket. This morning, FERC refiled it in the correct docket.

302790392.y4

[www.next-decade.com](http://www.next-decade.com)

APP2-1

The FWS is a cooperating agency for preparation of the EIS. After issuance of the draft EIS, FERC and FWS staff held multiple meetings to discuss FWS comments on the draft EIS and to further clarify the FERC environmental review process.

APP2-2

Comment noted.



for review and written approval by the Director of FERC's Office of Energy Projects ("OEP"). The draft plan was submitted to FERC on September 1, 2016 and December 29, 2016 (Accession Numbers [20160901-5281](#) and [20161229-5149](#)). The DEIS indicates on page 2-35 that FERC has reviewed the RG Developers SPCC Plans for construction and found them to be acceptable.

3. *Stormwater Pollution Prevention Plan (SWPPP)* – The plan was submitted to FERC on September 1, 2016 and February 2, 2017 (Accession Numbers [20160901-5281](#) and [20170202-5038](#)). Consistent with DEIS Condition 18 at page 5-29, prior to construction, RG Developers will file the final versions of their SWPPPs for construction and operation of the project with the Secretary for review and written approval by the Director of the OEP.
4. *RG LNG's Dredged Material Management Plan (DMMP)* – The plan was included in the RG Developers application filed with FERC on May 5, 2016 ([Final Resource Report 1 Part08of11 App10-R.PDF](#)). The DMMP will not become final until the issuance of the U.S. Army Corps of Engineers ("USACE") permit.
5. *RB Pipeline completed pre-construction vegetation surveys for the preferred routes of pipeline 1 and pipeline 2 and work corridor* – Field delineated land cover data previously has been submitted to:
  - FERC on November 17, 2017 (Accession Number [20171120-4067](#)), and
  - USFWS on November 12, 2018 (transmitted via email).

Pre-construction surveys are typically conducted prior to the start of the clearing activities in the lead up to pipeline construction. RG Developers will perform such work prior to the start of the RB Pipeline project.

6. *RG Developers' Migratory Bird Conservation Plan* – RG Developers filed the plan with FERC on December 29, 2016 (Accession Number [20161229-5149](#)). Per page the DEIS at page 5-8, "RG LNG proposes measures to avoid or minimize impacts on migratory birds and has developed a Migratory Bird Conservation Plan outlining these measures, which it would implement, as practicable, during construction of the Project; RB Pipeline would also implement measures in this plan if vegetation clearing along the Pipeline System would take place between March 1 and August 31. Because of the high use of habitat at the LNG Terminal by migratory birds (including birds of conservation concern), [FERC Staff] agree that the measures in RG LNG's Migratory Bird Conservation Plan are appropriate, and [FERC Staff] recommend that the plan be finalized in consultation with the FWS." RG Developers note that USFWS provided two sets of comments on the plan by email directly to RG Developers on September 15, 2017, and October 6, 2017. As directed by the DEIS in Condition 24 at page 5-29, RG Developers will finalize the plan after further consultation with USFWS.
7. *FERC's recommendation that RG Developers' consult with the National Resource Conservation Service and our agency to develop a final seed mix to be used in areas to be restored. The Service also recommends requiring a post construction, and a monitoring plan for restored areas* – The seed mix recommendation by the NRCS was presented in Resource Report 7 of the RG Developers application, which was filed with FERC on May 5, 2016 (Accession Number [20160505-5179](#), [Final Resource Report 7.PDF](#)). RG

APP2-3

APP2-4

APP2-3

Comment noted.

APP2-4

Section 4.6.1 of the final EIS was revised to indicate that RG Developers consulted with the FWS regarding seed mixes and that consultation with the Caesar Kleberg Wildlife Research Institute is ongoing.



Developers met with Ms. Pat Clements and Mr. Ernesto Reyes of the USFWS on November 7, 2018, in Corpus Christi, Texas to discuss the seed mixes that included pollinated species (contact report for this meeting will be filed with FERC on December 3, 2018 pursuant to DEIS Condition 30 at page 5-30). In a follow up email dated November 13, 2018, USFWS provided the contact information for the Ceasar Kleberg Wildlife Research Institute at Kingsville A&M as an additional resource for developing a seed mix specific to the pollinated species given the Institute’s similar role for the recently constructed Valley Crossing Pipeline.

APP2-4

8. *Coordination with Texas Parks and Wildlife Department for identification of impacts to, and implementation of Texas Tortoise best management practices* – As indicated on page 4-164 of the DEIS, the RB Pipeline has committed to using the Texas Parks and Wildlife Department’s (“TPWD”) Texas Tortoise Best Management Practices (“BMPs”) for the construction of the pipeline. The BMPs may be accessed here: [https://tpwd.texas.gov/huntwild/wild/wildlife\\_diversity/habitat\\_assessment/media/texas\\_tortoise\\_bmps.pdf](https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/media/texas_tortoise_bmps.pdf). The BMPs are not applicable to the Terminal site because construction of the Terminal will result in a permanent conversion of habitat to maintained industrial land. RG Developers note that per the DEIS at page 4-165, “for tortoises within the footprint of the LNG Terminal site, the TPWD does not currently recommend relocation.” TPWD currently is considering offsite conservation for an ongoing mining Project that may be appropriate for the Rio Grande LNG Project. RG Developers will continue to coordinate with TPWD prior to construction of the Terminal to assess whether viable relocation alternatives exist for any Texas Tortoise found on the Terminal property.

APP2-5

9. *Texas Coastal Management Plan concurrence documentation* – The initial consistency determination was filed as part of the USACE permit application on July 27, 2016. This documentation will be issued concurrently with the USACE permit, which is consistent with standard procedures. The referenced document is reviewed independently of the DEIS process and will not be issued prior to FERC’s issuance of the Final Environmental Impact Statement (“FEIS”) because the FEIS precedes issuance of the USACE permit. The USACE permit was placed on public notice on October 18, 2018.

10. *Documentation that the RB Pipeline route would avoid National Wildlife Refuge lands* – As stated in DEIS Condition 25 at page 5-29, “prior to construction of the Rio Bravo Pipeline between MPs 115.9 and 116.6, RB Pipeline shall file with the Secretary, for review and written approval by the Director of OEP, updated alignment sheets depicting the modification of ATWS [additional temporary workspace] within this section to avoid surface impacts within the boundary of the Lower Rio Grande Valley NWR.” During routing, RB Pipeline inadvertently sited three ATWSs, the boundaries of which encroached upon the formal property line of the NWR. In response to DEIS Condition 25, RG Developers are in the process of adjusting the pipeline ATWSs to avoid encroachment into the NWR lands. With this adjustment, none of the project work spaces or facilities will encroach into any NWR. RG Developers will file these adjustments to remove the overlap of the ATWSs and the NWR with FERC during the first quarter of 2019.

APP2-6

APP2-5

Section 4.7.2.1 includes impacts and mitigation for the Texas tortoise.

APP2-6

FERC staff has reviewed the revised workspace at this location and has incorporated the changes into the EIS as applicable.





11. *Final surveys and completion of consultation under Section 106 of the National Historic Preservation Act* – The DEIS recognizes that surveys have not been completed for all properties for which landowner access has not been granted, which is not unusual at the DEIS stage of the project’s review. As stated in DEIS Condition 38 at pages 5-31 and 5-32, “RG Developers shall not begin construction of facilities or use of staging, storage, or temporary work areas and new or to-be-improved access roads until:

- a. RG Developers file with the Secretary:
  - i. outstanding SHPO [State Historic Preservation Office] comments on reports, plans, special studies, or information provided to date, as well as any NPS comments, as applicable;
  - ii. any outstanding updates, reports, plans, or special studies, and the SHPO’s comments on these, as well as any NPS comments, as applicable; and
  - iii. any necessary treatment plans or site-specific avoidance/protection plans, and the SHPO’s comments on the plans.
- b. The ACHP is afforded an opportunity to comment if historic properties will be adversely affected.
- c. The FERC staff reviews and the Director of OEP approves all cultural resources survey reports and plans, and notifies RG Developers in writing that construction may proceed.”

All cultural resources surveys conducted prior to October 2018, have received the required concurrence from the SHPO (Accession Number [20170202-5038](#) (Public) / [20170202-5039](#) (P&C); Resource Report 4 of the FERC application, Accession Number [20160505-5179](#), [Final Resource Report 4 Pub Part01of2.PDF](#), [Final Resource Report 4 Pub Part02of2.PDF](#)). RG Developers will finalize all remaining surveys once the required landowner access is granted.

APP2-7

12. *Final, approved plan by RG Developers to FERC and State Historic Preservation Office for addressing unanticipated discovery of cultural resources or human remains during construction* – As stated in the DEIS at page 4-231, “RG Developers provided a plan addressing the unanticipated discovery of cultural resources or human remains during construction to FERC and the SHPO. [FERC Staff] and the SHPO requested revisions to the plan. RG Developers submitted a revised plan which [FERC Staff] find acceptable. The SHPO concurred with the plan on November 10, 2016.” (Accession Number [20170202-5038](#)).

13. *Site-specific measures to mitigate noise impacts from 24-hour horizontal directional drilling activities near the identified noise sensitive areas (NSAs)* – DEIS Condition 26 at page 5-30 and Condition 42 at page 5-33 require RB Pipeline to take certain actions related to noise impacts resulting from horizontal directional drilling (“HDD”) activities at various locations along the proposed pipeline route prior to construction of those HDDs. RG Developers will comply with these two FERC conditions.

APP2-8

14. *Approved alternative to RG LNG’s proposed, 1-mile-long temporary haul road through wetlands* – In DEIS Condition 15 at page 5-28, FERC has requested that “prior to the end of the draft EIS comment period, RG LNG shall file with the Secretary a feasibility assessment for transporting fill material from the Port Isabel dredge pile to the LNG

APP2-9

APP2-7

Comment noted. The status of cultural resource surveys is described in section 4.10.1 of the EIS.

APP2-8

Comment noted.

APP2-9

Comment noted. Supplemental information regarding the haul road (which is no longer being proposed) has been incorporated into the EIS where appropriate.



Terminal site via barge and via the existing system of roads. RG LNG's filing shall include documentation of its consultations with the local transit authorities to identify any road improvements necessary for the road transport alternative." RG Developers are currently preparing a response to this recommendation, which will be filed with FERC at the end of the comment period on December 3, 2018.

APP2-9

RG Developers will provide USFWS electronic copies of these documents to facilitate their review of the DEIS.

If you have any questions or require additional information, please do not hesitate to contact me by telephone at 832-403-3040 or via e-mail at [sdavison@next-decade.com](mailto:sdavison@next-decade.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Shaun Davison".

Shaun Davison  
NextDecade Senior VP of Development and Regulatory Affairs

- cc:
- Pat Clements - U.S. Fish and Wildlife Service
  - Charles Ardizzone - U.S. Fish and Wildlife Service
  - Delfinia Montano - U.S. Fish and Wildlife Service
  - Ernesto Reyes - U.S. Fish and Wildlife Service
  - David Wochner - K&L Gates
  - Jenny McCoy - EDGE Project Manager
  - Komi Hassan - NextDecade Director - Regulatory Affairs & Permitting