**UNITED STATES OF AMERICA**
**DEPARTMENT OF ENERGY**
**HYDROCARBONS AND GEOTHERMAL ENERGY OFFICE**

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| **In The Matter Of:** | § | |
| | § | |
| **Corpus Christi Liquefaction, LLC** | § | **Docket No. 26-32-LNG** |
| **Corpus Christi Liquefaction Stage IV, LLC** | § | |
| | § | |
| **Cheniere Marketing, LLC** | § | |
| | § | |

**MOTION TO INTERVENE AND PROTEST OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC**

# EXHIBIT 2

**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

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| **Cheniere Corpus Christi Pipeline, L.P.** | **§** | **Docket No. CP18-513-000** |
| **Corpus Christi Liquefaction Stage IV, LLC** | **§** | **Docket No. CP26-82-000** |
| **Corpus Christi Liquefaction, LLC** | **§** | **Docket No. CP26-87-000** |

# SCOPING COMMENTS OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC

Pursuant to the Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Corpus Christi Liquefaction Stage 4 Project and the CCPL Expansion Project ("Project" or "Expansion"), Request for Comments on Environmental Issues, and Schedule for Environmental Review dated April 29, 2026 ("Notice of EIS"),[1] Ingleside on the Bay Coastal Watch Association, Inc., Indigenous Peoples of the Coastal Bend, Karankawa Tribe of Texas, and the Carrizo/Comecrudo Tribe of Texas, LLC (collectively "Commenters") submit these Scoping Comments. Commenters previously filed a timely Motion to Intervene and Protest dated March 10, 2026[2] and Motion for Leave to Answer and Answer dated April 8, 2026.[3] These filings are incorporated here by reference. Scoping comments are presented in full below.

[1] Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Corpus Christi Liquefaction Stage 4 Project and the CCPL Expansion Project, Request for Comments on Environmental Issues and Schedule for Environmental Review (Apr. 29, 2026) (hereinafter "Notice of EIS").
[2] Protest and Motion to Intervene of Ingleside on the Bay Coastal Watch Association, Inc., Indigenous Peoples of the Coastal Bend, Karankawa Tribe of Texas, and the Carrizo/Comecrudo Tribe of Texas, LLC, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000 (Accession # 20260310-5159) (Mar. 10, 2026).
[3] Motion for Leave to Answer and Answer of Ingleside on the Bay Coastal Watch Association, Inc. et al. to Corpus Christi Liquefaction Stage IV, LLC's et al. Answer et al. filed on 03/25/2026 under CP26-87 et al., Docket No. CP18-513-000, Docket No. PF25-10-000, Docket No. CP26-82-000, Docket No. CP26-87-000, (Accession # 20260408-5182) (April 8, 2026).

## I. INTRODUCTION

The Coastal Bend of Texas is not an empty place but a living region. The Coastal Bend is where the Nueces River meets the Gulf and where Karankawa Villages stood for thousands of years—and where one of the most ecologically productive estuary systems in North America works to sustain itself. With this Project's Expansion, the Commission must reckon with this place, which differs dramatically from the empty industrial backdrop the Resource Reports describe. At the heart of FERC's analysis is the "public interest." The public interest should weigh heavily in considering this Project, particularly in the context of threats from significant air emissions, severe threats to water quantity and quality conditions, water demands, potential for groundwater contamination, threats to endangered species, and impacts to precious remaining cultural resources.

Corpus Christi LNG became the second-worst emitter of nitrogen oxides in the State of Texas shortly after the liquefaction unit at its Texas export terminal came online. From that point through the end of 2019, the company reported emissions events every month (except for one) while it was getting three new liquefaction units operational.[4] It reported more than 50 unpermitted air emission events between January 2018 and May 2025.[5] Meanwhile, the airshed teeters on the edge of attainment for national standards for particulate matter. This Expansion, which is larger than the prior 3, promises to be an additional major source of pollution in the region for Nitrogen Oxide, Carbon Dioxide, Volatile Organic Compounds, Sulfur Dioxide, and Particulate Matter. This will all be added on top of CCL's prior three Stages.[6]

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[4] Environmental Integrity Project, *Terminal Trouble: Pollution Violations at America's LNG Export Terminals* (Oct. 29, 2025) at 19-23.
[5] *Id.*
[6] Resource Report 9 at 9-12.

This Project would substantially increase water consumption in a Texas region on the brink of a water emergency. It's in every headline: there is no water,[7] but this Project is *still* asking for it—lots of it. The City's reservoirs sit at around 9% (or lower) with everyone planning for an imminent water emergency. While the region and its people are waterless, this Project wants water for years—millions of gallons annually[8] into the foreseeable future.[9]

Significant cultural resources are threatened by this Project. Within 1 mile of the Project, there are over 30 previously recorded sites including: a burial ground and 13 unevaluated shell middens.[10] The current cultural resources report identifies 18 historic sites, but more recorded sites are in the Project's path. Among what is also at stake is a recently rediscovered shell midden of paramount and prehistoric importance—Donnel Point. The cultural resources risk erosion the same as the recreational and commercial economies that once defined this region of Texas *also* do. The shoreline suffers the same, or more: the Project's own estimates report that the shoreline has been disappearing a minimum of 1-3 feet every year.[11]

In preparing the EIS for this project, FERC should analyze and consider the following.

- The Corpus Christi water crisis;
- More than doubled vessel traffic;

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[7] *See e.g.*, Michelle Hummel, Fortune, *America's largest oil export hub is so starved of water that it's been illegal to have a green lawn for 2 years* (May 25, 2026) https://fortune.com/2026/05/25/corpus-christi-water-crisis-oil-export-hub-lawn-ban/; Dylan Baddour, Neena Satija, Emily Salazar, *KUT News*, Corpus Christi plans to declare a 'water emergency.' What does that mean? (April 23, 2026) https://www.kut.org/energy-environment/2026-04-23/corpus-christi-texas-water-emergency-crisis-restrictions; Mezabahnur Masum, The Texas Observer, *The Corpus Christi Water Crisis Isn't Exceptional. It's Early.* (April 2, 2026) https://www.texasobserver.org/corpus-christi-water-crisis-climate-projections/.
[8] Resource Report 1 at Table 2.2-3.
[9] *Id.*
[10] Resource Report 4 at 4-6–4-11.
[11] Resource Report 6 at 6-9.

- Comprehensive air quality impacts and nonattainment risks to the region;
- Endangered Species; and
- Irreplaceable cultural resources.

Commenters urge the Commission to take a broad approach to the EIS process and to comprehensively review the relative risks and burdens posed by this Project.

## II. IMPACTED GROUPS

The groups described below will each be uniquely impacted by the Project.

### A. Ingleside on the Bay Coastal Watch Association, Inc.

Ingleside on the Bay Coastal Watch Association, Inc. ("Coastal Watch") is a 501(c)(3) non-profit organization formed in 2019 to promote the health, safety, and quality of life for the residents of Ingleside and surrounding communities through research, education, communication and action.[12] The Project will adversely affect the geographic region that Coastal Watch is specifically focused on preserving.

On December 23, 2025, Coastal Watch submitted scoping comments on the Expansion.[13] According to the April 29, 2026, Notice of Intent to Prepare an EIS, the Commission staff "will address the concerns raised during the pre-filing scoping process" as well as those received in response to the current Notice.[14] These comments are fully incorporated by reference.

In Coastal Watch's previously submitted comments, Patrick Nye, Co-President of Coastal Watch, explained many concerns on behalf of the group and its members, who live and recreate near the Project. Coastal Watch has many concerns related to the Project

[12] Coastal Watch Association, https://www.iobcwa.org/ (last visited Mar. 9, 2026).
[13] Ingleside on the Bay Coastal Watch Association, Inc., Opposition Letter, Request for Deadline Extension and Request for EIS, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.*, Docket No. PF25-10-000 (Accession # 20251229-5123) (Dec. 23, 2025).
[14] Notice of EIS at 2.

including: adverse impacts to local water resources and wetlands; long-term adverse health and environmental impacts due to the Project site previously being the location of the Sherwin/Reynolds Aluminum Plant; air pollution impacts related to Corpus Christi Liquefaction's reported emissions events and the related enforcement proceedings at the Texas Commission on Environmental Quality; higher energy prices; increased vessel traffic; adverse impacts to cultural resources and historic properties like Donnel Point; health effects; and adverse impacts to water quality like high turbidity and silt-laden bay water.[15] These should all be evaluated in the forthcoming Environmental Impact Statement ("EIS").

### B. Indigenous Peoples of the Coastal Bend

Indigenous Peoples of the Coastal Bend ("Indigenous Peoples") is an intertribal community group in Corpus Christi, Texas. The group is made up of different lineages and wishes to honor peoples who lived in the area now named Corpus Christi off the Nueces River, which include Karankawa, Lipan Apache (Nde), Comanche, Tonkawa and Coahuiltecan (Pamaque) tribes.[16] In 2016, the group came together when Corpus Christi was put on a series of boil water notices as a result of impacts from industrial operations.[17] Then, in 2018, the group began advocating for Indigenous Rights and received its first proclamation honoring the Indigenous Peoples of the Coastal Bend. The group's mission is to preserve and conserve Indigenous Culture and create a livable, sustainable world

[15] *Id*.
[16] Indigenous Peoples of the Coastal Bend, https://indigenouspeoplesofthecoastalbend.org/ (last visited March 9, 2026).
[17] *Id.*

through culture and food while protecting Youth, Elders, Women, Warriors and the Environment.[18]

Currently, the group includes more than 100 members, and several individual members live very close to the Project.[19] Because of its members' proximity to the Project, Indigenous Peoples echoes the concerns Coastal Watch raised. But these risks are not all. There is more. The group is also working together to preserve artifacts, remains, and cultural sites of the Karankawa People—all of which are an integral part of the history of the region and to the descendants of the Karankawa People. Importantly, Indigenous Peoples, through its Karankawa members, and others, historically had a significant presence on the Texas Coast. In fact, this region was dominated by the Karankawa People. This Project risks damage to their irreplaceable cultural resources.

### C. Karankawa Tribe of Texas

The Karankawa Tribe's historic homelands are located along the Texas Gulf Coast, stretching from Galveston Bay to Corpus Christi Bay.[20] Thousands of Karankawa lived in dozens of seasonal, but permanent, settlements on the Texas Coast, and approximately 950 archeological sites have been identified on the same stretch of coast this Project will share.[21] As a result of these settlements, the Texas Coast is rich with artifacts—carrying meanings beyond their physical form for their members—like Rockport pottery, shell

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[18] *Id.*
[19] *See* Motion to Intervene of Indigenous Peoples of the Coastal Bend at 1, *Corpus Christi Liquefaction LNG, LLC*, Docket Nos. CP23-129-000 & PF22-10-000, (Accession # 20230504-5148) (May 4, 2023).
[20] Carol A. Lipscomb (rev. Tim Seiter), *The Karankawa Indians: History, Culture, and Legacy*, TEX. STATE HIST. ASS'N (Nov. 13, 2020), https://www.tshaonline.org/handbook/entries/karankawaindians#:~:text=The%20Karankawas'%20entrance%20into%20the,some%20debris%20from%20the%20wreckage.
[21] Robert A. Ricklis, *The Karankawa Indians of Texas: An Ecological Study of Cultural Tradition and Change* (University of Texas Press, 1996). On the number of sites see U.S. Army Corps of Engineers, Galveston District, *Appendix A: National Historic Preservation Act Compliance for Coastal Texas Protection and Restoration Feasibility Study* (August 2021), 2.

middens, and stone tools.[22] These cultural resources are an invaluable piece of Texas Coast history that could be lost to this Project.

Because the Karankawa population was decimated by genocide at the hands of the Spanish, Mexican, and Anglo-Americans—by the 1800's many historians wrongly claimed that the Tribe had gone extinct.[23] But the Karankawa Tribe survived, and their descendants are actively working today to preserve and revive their culture, language, and traditions.[24] Together, they continue to protect their cultural sites, share their history, and reclaim their narrative.[25]

The Karankawa Tribe's work to save historic sites, burial grounds, artifacts, and cultural heritage, will be directly impacted by the Expansion. Specifically, the Expansion directly affects large swaths of shoreline with identified, potential, and unevaluated cultural resources. But it doesn't stop there. The Expansion pushes inward affecting Chiltipin Creek—an area known to have late prehistoric campsites. Indeed, the largest samples of prehistoric ceramics in South Texas were previously found there.[26] Given the Karankawa Tribe's current work to preserve cultural resources, and the threats this Expansion poses to the same, the Karankawa will be directly affected by this Project.

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[22] *Frequently Asked Questions*, KARANKAWAS, https://karankawas.com/frequently-asked-questions/#:~:text= (last visited Mar. 9, 2026).
[23] *Frequently Asked Questions*, KARANKAWAS, https://karankawas.com/frequently-asked-questions/#:~:text= (last visited Mar. 9, 2026).
[24] Erin Douglas, *The Karankawa were said to be extinct. Now they're reviving their culture — and fighting to protect their ancestors' land*, TEX. TRIB. (Oct. 4, 2021), https://www.texastribune.org/2021/10/04/karankawa-corpus-christitexas-artifacts/.
[25] *Id.*
[26] Kristina Solis, *A concise chronology of the Rio Grande Delta from the Paleo-Indian period to early Spanish exploration and colonization*, Univ. of Tex. Rio Grande Valley (May 2009), https://scholarworks.utrgv.edu/cgi/viewcontent.cgi?article=2005&context=leg_etd.

### D. Carrizo Comecrudo Tribe, LLC

The Carrizo Comecrudo Tribe of Texas, LLC ("Carrizo/Comecrudo Tribe"), is a Tribe comprised of the Original Peoples of the Rio Grande Delta. The Carrizo/Comecrudo have a shared language and heritage.[27] Their historic homeland is located along the South Texas Rio Grande Delta, where they were active as hunter-gatherers on both sides of the Rio Grande during the seventeenth and eighteenth centuries. In the early 1990's, the Carrizo/Comecrudo Tribe of Texas was officially reconstituted.[28] The Tribe also goes by Esto'k Gna, and it has provided comments on other Liquefied Natural Gas ("LNG") projects affecting its peoples and lands within other LNG project areas.[29]

This Expansion is particularly concerning to the Carrizo/Comecrudo Tribe because it threatens to erase indigenous artifacts and the cultural heritage of Indigenous Peoples.[30] As is well documented, there were dozens of settlements on the Texas Coast.[31] Nevertheless over the last 50 years, industrial activities like this Expansion have failed Original Peoples—like the Karankawa and Carrizo/Comecrudo Tribes—and have failed to acknowledge or preserve precious few remaining cultural resources.

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[27] Carlos Castañeda, *The Indigenous Groups Along the Lower Rio Grande*, INDIGENOUSMEXICO.ORG, https://www.indigenousmexico.org/articles/the-indigenous-groups-along-the-lower-rio-grande (last visited Oct. 28, 2025).
[28] Carlos Castañeda, *The Indigenous Groups Along the Lower Rio Grande*, INDIGENOUSMEXICO.ORG, https://www.indigenousmexico.org/articles/the-indigenous-groups-along-the-lower-rio-grande (last visited Oct. 28, 2025); *and see* Dylan Badour "Forgotten Keepers of the Rio Grande Delta" Texas Observer (May 13, 2024) https://www.texasobserver.org/forgotten-keepers-of-the-rio-grande-delta/.
[29] Carlos Castañeda, *The Indigenous Groups Along the Lower Rio Grande*, INDIGENOUSMEXICO.ORG, https://www.indigenousmexico.org/articles/the-indigenous-groups-along-the-lower-rio-grande (last visited Oct. 28, 2025).
[30] *Supra* at Section Ib.
[31] Peter Moore, *Assessment of the Impact of the Bluewater SPM Pipeline on Indigenous Cultural Heritage Sites in Southern Live Oak Peninsula* (Originally authored Aug. 2023 and updated Feb. 2026) at 2.

## III. THE PROJECT

On February 3, 2026, an Application for Authorizations Under the Natural Gas Act and Amendment of Certificate Authorization of Corpus Christi Liquefaction Stage IV, LLC Corpus Christi Liquefaction, LLC, and Cheniere Corpus Christi Pipeline, L.P. ("Application") (collectively "CCL") to site, construct and operate an expansion of the existing and approved liquefied natural gas ("LNG") terminal in San Patricio and Nueces Counties, Texas on the La Quinta Ship Channel was submitted to the Federal Energy Regulatory Commission.[32] CCL proposes this fourth major expansion of its already massive Corpus Christi complex on the La Quinta Ship Channel in San Patricio and Nueces Counties. The existing terminal already includes three storage tanks, two berths, and 10 liquefaction trains—along with other components and infrastructure. This Expansion would add, among other things, four *more* liquefaction trains, two *more* LNG storage tanks, three ground flares, a third marine berth, a terminal supply line, and other associated infrastructure ("Expansion Project" or "Project").[33] It will dredge 1.2 million cubic yards of bay bottom to a depth of 46 feet.[34] Once operational, the facility would load LNG at rates up to 14,000 cubic meters/hour and accommodate carriers up to 200,000 $m^3$.[35] LNG carrier traffic will more than double. And 25.8 miles of pipeline will be added—if not well

[32] Notice of Application and Establishing Intervention Deadline, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, *and Cheniere Corpus Christi Pipeline, L.P.*, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000 (Accession # 20260217-3044) (Feb. 17, 2026).
[33] Application for Authorizations Under the Natural Gas Act and Amendment of Certificate Authorization, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000 (Accession # 20260204-5150) (Feb. 3, 2026) (hereinafter "Application").
[34] Resource Report 1 at 1-26.
[35] Application at 14.

over 100 miles[36]—a new compressor station, and associated meter stations to deliver feed gas to the expanded terminal.[37]

The Expansion Project will cause numerous and cumulative significant environmental impacts due to its scale and vessel traffic route. As already stated, it will consist of four liquefaction trains. These trains have the capacity to produce 24 million tons of LNG per annum ("MTPA").[38] Construction impacts will disturb over 2,893 acres, and operations will require more than 2,000 acres.[39] A new 150 mile pipeline must be built for the Project to meet its export capacity.[40] The project also requires a new marine terminal including a third marine berth, over 26 miles of other new pipeline, and vessel traffic will dramatically increase.[41] It will include three multi-point ground flares and one encapsulated marine flare.[42] The Project expects significant emissions (including increased pollution from marine vessels, on-road vehicles, and increased use of facilities at the existing CCL LNG Terminal). Site-wide emissions are approximately: 5,483 tons per year ("tpy") of CO; 3,915 tpy of $NO_X$; 103 tpy of $PM_{10}$ and $PM_{2.5}$, 64 tpy of $SO_2$; and 722 tpy

[36] Resource Report 1 at 1-4, n.3 ("The proposed Traverse Pipeline will be constructed and operated by a non-affiliated third-party, WhiteWater. The Traverse Pipeline is expected to be in service in 2027, pending the receipt of customary regulatory and other approvals. (https://www.prnewswire.com/news-releases/traverse-pipeline-reaches-final-investment-decision-totransport-natural-gas-between-agua-dulce-and-the-katy-area-302419326.html)"); and see Cheniere Corpus Christi, Pipeline L.P., CCPL Stage 4 Expansion Project Binding Open Season, December 18, 2025-January 02, 2026.
[37] Resource Report 1 at 1-1.
[38] Application at 9.
[39] Application at 21; Resource Report 1 at Table 1.5-1.
[40] Resource Report 1 at 1-4, n.3 ("The proposed Traverse Pipeline will be constructed and operated by a non-affiliated third-party, WhiteWater. The Traverse Pipeline is expected to be in service in 2027, pending the receipt of customary regulatory and other approvals. (https://www.prnewswire.com/news-releases/traverse-pipeline-reaches-final-investment-decision-totransport-natural-gas-between-agua-dulce-and-the-katy-area-302419326.html)"); *and see* Cheniere Corpus Christi, Pipeline L.P., CCPL Stage 4 Expansion Project Binding Open Season, December 18, 2025-January 02, 2026.
[41] Application at 9-11.
[42] Application at 9-15.

of Ozone—to name a few.[43] Over seven million tons of greenhouse gas emissions will be released each year.[44] Anywhere from 50.9 to 100 tons per year of Hazardous Air Pollutants ("HAPs") will be emitted.[45] Construction and operations will destroy floodplain, over 9 acres of seagrass, and wetlands.[46] The Project will affect at least 7 waterbodies.[47] The municipal water supply and local creeks must provide millions of gallons of water to meet the Project's demand for years—five for build out, two for commissioning and start up, and then for the life of its operations.[48] For dust suppression alone, the Project needs approximately 90 million gallons of water a year.[49] FERC must review all these environmental impacts during the NEPA process.

## IV. LEGAL BACKGROUND

Commenters are providing these comments as part of the NEPA scoping process for an EIS that would inform the decision by FERC whether this Expansion is in the public interest.[50] Specifically, the Commission seeks "comments on potential alternatives and effects, and any relevant information, studies, or analyses of any kind concerning effects affecting the quality of the human environment" to understand and consider the public's "concerns" and the "environmental effects that could result" from the project."[51,52]

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[43] Appendix 9A – Air Permits at 49, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026) (hereinafter "Appendix 9A").
[44] Appendix 9A at 50.
[45] Resource Report 9 at Table 9.2-15 (Potential to Emit, Total HAP 47.9).
[46] Notice of Intent to Prepare an EIS at 5.
[47] *Id.*
[48] Resource Report 1 at Table 1.8-1; Resource Report 2 at Table 2.2-3.
[49] *Id.*
[50] *See* Notice of EIS at 1.
[51] *Id.*
[52] *Id.* at 2.

Both NEPA and the Natural Gas Act require discussion of the purpose *and need* for the proposed action.[53] FERC uses the purpose and need statement to define objectives of the Project and identify alternatives to consider.[54] And although an agency has considerable discretion to define the purpose and need, it "may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power *would* accomplish the goals of the agency's action."[55] Agencies can "take into account the needs and goals of the parties involved in the application."[56] But, ultimately, the agency, not the applicant, must determine the purpose and scope of its EIS.

### A. NEPA Requirements

Under NEPA, agencies must issue an environmental impact statement for the proposed action that "has a reasonably foreseeable significant effect on the quality of the human environment."[57] The agency must take a "hard look" at those effects, including cumulative effects, which "represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions."[58] An EIS addresses, among other things, the adverse environmental impacts of a proposal, and weighs a reasonable range of alternatives that could meet the proposal's purpose and need at a lower environmental cost.[59] Completing an EIS for projects with reasonably foreseeable significant effects on

[53] 40 C.F.R. 1501.5(c)(2); 18 C.F.R. 380.2(d)(3).
[54] *In re Transcontinental Gas Pipe Line Co.*, 182 FERC ¶ 61,148 (2023).
[55] *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).
[56] *Id*.
[57] 42 U.S.C. § 4336(b)(1) (2023).
[58] *See e.g.*, *Sierra Club v. Fed. Energy Regul. Comm'n*, 153 F.4th 1295, 1302 (D.C. Cir. 2025).
[59] 42 U.S.C. § 4332(2)(C)(iii); *see also N. J. Conservation Found. v. FERC*, 111 F.4th 42, 51 (D.C. Cir. 2024).

the environment is necessary for agencies to meet their obligation under NEPA to "take a hard look at the environmental consequences before taking a major action."[60]

According to FERC Staff Guidance, environmental impact statements must be consistent with the requirements of NEPA and should include:

> (1) Reasonably foreseeable environmental effects of the proposed action;
> (2) Reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented;
> (3) A reasonable range of alternatives to the proposed action, including an analysis of any negative environmental impacts of not implementing the proposed action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal;
> (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity;
> (5) Any irreversible and irretrievable commitments of Federal resources which would be involved in the proposed action should it be implemented; and
> (6) Any means identified to mitigate adverse environmental effects of the proposed action.[61]

This review is no different and must be broad enough to evaluate all of the requirements above.

CCL asserts that it's submission "comports with NEPA requirements as historically applied by the Commission."[62] Thus Commenters understand that this review is being conducted under traditional NEPA framework—guided by historic regulations to ensure consistency.

### B. Natural Gas Act Requirements

The Supreme Court held that "an agency may weigh environmental consequences as the agency reasonably sees fit under its governing statute and any relevant substantive

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[60] *Ctr. For Biological Diversity v. FERC*, 67 F.4th 1176, 1181 (D.C. Cir. 2023) (quoting *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983)).
[61] Federal Energy Regulatory Commission, Office of Energy Projects, Staff Guidance Manual on Implementation of the National Environmental Policy Act (June 2025) at 8; *See* 42 U.S.C. § 4332(2)(C).
[62] *Id.*

environmental laws."[63] Under FERC's governing statute, the Natural Gas Act ("NGA"),[64] FERC must evaluate a project's market need and must balance the project's benefits and harms before issuing a license.[65] That analysis includes "all factors bearing on the public interest, including environmental ones."[66]

The failure to properly evaluate an LNG project's harms to ecosystems and communities renders FERC's Natural Gas Act decision-making arbitrary and capricious.[67] The U.S. Court of Appeals for the D.C. Circuit has upheld FERC balancing benefits against harms, including environmental harms, as consistent with the standard in Section 3 of the Natural Gas Act that presumptively favors approval of LNG terminals.[68] Weighing "all factors bearing on the public interest" pursuant to the substantive requirements of the Natural Gas Act through this Environmental Impact Statement under NEPA will demonstrate the Expansion's harms render it inconsistent with the public interest.

FERC must weigh the Expansion's real and potential substantial harms against its benefits to determine its consistency with the public interest, and the EIS is an opportunity to collect and evaluate those potential impacts. This collection and evaluation of impacts should inform FERC's ultimate decision whether to permit the Project and, if the Project does go forward, these analyses must dictate what mandatory mitigation is required.

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[63] *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colo.*, 605 U.S. 168, 173 (2025).
[64] 15 U.S.C. § 717.
[65] *Minisink Residents for Env't Pres. & Safety v. FERC,* 762 F.3d 97, 101 (D.C. Cir. 2014).
[66] *Sierra Club v. FERC,* 153 F.4th 1295, 1304 (D.C. Cir. 2025) (quoting *Food & Water Watch v. FERC*, 104 F.4th 336, 341 (D.C. Cir. 2024)); *see also Atl. Refin. Co. v. Pub. Serv. Comm'n,* 360 U.S. 378, 391 (1959).
[67] *Vecinos para el Bienestar de la Comunidad Costera v. FERC,* 6 F.4th 1321, 1331 (D.C. Cir. 2021).
[68] *See Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176, 1188 (D.C. Cir. 2023) (accepting FERC's section 3(e) determination as weighing whether "benefits" of a project are "outweighed by the projected environmental impacts").

## V. SOCIOECONOMIC ANALYSIS

Because the Natural Gas Act requires the Commission to consider "all factors bearing on the public interest," community impacts must be reviewed.[69] Current regulations also require the Commission to review the existing socioeconomic conditions near a proposed project.[70] And FERC's recent guidance requires a review of impacts and the distribution of those impacts.[71] Accordingly, the EIS must include an analysis of how the Project's pollution and other impacts are distributed across the nearby populations. Comparing the distribution of these impacts across the demographic composition of affected communities determines which populations are shouldering the Project's relative risks and burdens to ensure that FERC can adequately review whether the Project is in the public interest.

The EIS must review impacts in *both* San Patricio and Nueces Counties because the Project's footprint extends to Nueces County.[72] The current environmental review only references San Patricio County. Within these two counties, and near the Project, the EIS must also evaluate sensitive receptors. Sensitive receptors near the Project require evaluation and mitigation of the environmental effects on those areas. Sensitive receptors will heighten the need for related noise, air, and safety risk assessments, so they can be sufficiently guarded against. The magnitude of the impacted residential areas needs appropriately and transparently characterized in the EIS—especially given the Project's proximity to those areas.

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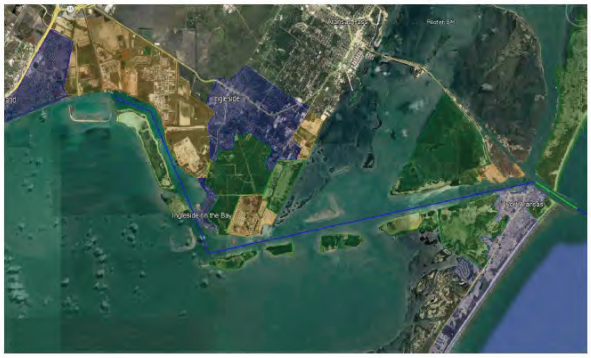
[69] *Atl. Ref. Co. v. Pub. Serv. Comm'n of N.Y.*, 360 U.S. 378, 391 (1959).
[70] 18 C.F.R. § 380.12(g).
[71] Federal Energy Regulatory Commission, Office of Energy Projects, Staff Guidance Manual on Implementation of the National Environmental Policy Act (June 2025) at 3.
[72] *See* Resource Report 5 at 5-1, n. 2 ("Nueces County was excluded from the defined study area due to the Projects' minimal footprint within its jurisdiction, resulting in negligible anticipated impacts; however, data for Nueces County is included in some sections, as relevant.")

***Figure 1: Residential communities are adjacent to the Project***[73]

EXHIBIT B

AREA CLASSIFICATION MAP



| Color | Area Description |
|---|---|
| Orange | Industrial |
| Blue | Residential/Commercial |
| Green | Parks/Marshland/Wildlife Refuges |

## VI. CONNECTED ACTIONS

NEPA requires a "detailed statement" on "the environmental impact of the proposed action.[74] Here, the EIS Notice also indicates that the review to follow will and should include an analysis of "expected effects."[75] Among the expected effects are "reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented."[76] Both expected effects and reasonably foreseeable adverse environmental effects would encompass analyzing the environmental consequences of connected actions—or actions that could automatically trigger other actions, cannot or will not

[73] Appendix 1G: Agency Correspondence at 80, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.*, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026) (hereinafter "Appendix 1G").
[74] 42. U.S.C. § 4332(2)(C).
[75] Notice of EIS at 5.
[76] Federal Energy Regulatory Commission, Office of Energy Projects, Staff Guidance Manual on Implementation of the National Environmental Policy Act (June 2025) at 8; *See* 42 U.S.C. § 4332(2)(C).

proceed unless other actions are taken, or are interdependent parts of a larger action and depend on the larger action.[77]

As already stated, according to the Applicant, its submission "comports with NEPA requirements as historically applied by the Commission."[78] Historically, under NEPA, in evaluating whether physically connected actions can be analyzed separately, a court reviews whether these actions have "substantial independent utility."[79] The test asks "whether one project will serve a significant purpose even if a second related project is not built."[80] Here, the Traverse Pipeline will be physically connected to this Project, has no independent utility and may not serve a significant purpose without this Expansion.

Apart from NEPA, FERC's own regulations require an analysis of the Traverse Pipeline.[81] Specifically, FERC must determine "[w]hether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity."[82] This Project includes the new Traverse Meter Station, named for the Traverse Pipeline, and identified by the Applicants as the connection point at which the Project anticipates purchasing delivered gas from the Traverse Pipeline.[83] Without this connection, the Project "would not have sufficient access to domestic natural gas supply to meet the purpose and need of the

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[77] *See* (repealed CEQ regulations) at 40 C.F.R. § 1501.9(e)(1) (2023) (formerly 40 C.F.R. § 1508.25(a)(1) (2022)).
[78] *Id.*
[79] *See, e.g., City of Bos. Delegation v.* ***FERC***, 897 F.3d 241, 252 (D.C. Cir. 2018) (citations omitted).
[80] *Coal. on Sensible Transp., Inc. v. Dole*, 826 F.2d 60, 69 (D.C. Cir. 1987); *see also O'Reilly v. U.S. Army Corps of Eng'rs*, 477 F.3d 225, 237 (D.C. Cir. 2007)(defining independent utility as whether one project "can stand alone without requiring construction of the other [projects] either in terms of the facilities required or of profitability").
[81] 18 C.F.R. § 380.12(c)(2)(ii).
[82] 18 C.F.R. § 380.12(c)(2)(ii)(B).
[83] RR1 at Section 1.2, p. 1-4; Resource Report 10 at Section 10.1, n.3.

Project."[84] Additionally, the Traverse Meter Station was sited and sized to received gas from the Traverse Pipeline—as is explained more below.

### A. Traverse Pipeline is a project component or a connected action.

The Traverse Meter Station is included as a project component, but the interdependent, approximately 152-mile pipeline—Traverse Pipeline—is excluded from the listed project components.[85] According to the Binding Open Season Notice issued by CCL, wherein CCL is soliciting binding commitments from shippers for capacity on a new expanded pipeline, the Traverse Pipeline is identified as the largest single receipt point by available contract quantity.[86] More specifically though, the Traverse Pipeline is sized 1:1 with the new CCL delivery capacity—making it appear to be the anchor supply source for the current Expansion. While there are other interconnections shown, Traverse Pipeline is also the only *new* interconnection being built simultaneously with this Expansion; the other connections already exist. As such, the Traverse Pipeline and the Project appear to be paired buildouts.

***Figure 2: Design Capacity & Available Contract Quantities***[87]

| Receipt Location | Meter Number | Available Contract Quantity (Dth/d) |
|---|---|---|
| TRAVERSE | N/A | 3,060,000 |
| TGP | CC121033 | 51,000 |
| NGPL | CC121053 | 397,800 |
| ETP | CC121063 | 464,100 |
| KM TEJAS I | CC121073 | 306,000 |
| KM TEJAS II | CC121083 | 1,020,000 |

Design capacity for the Eligible Primary Firm point of delivery include:

| Delivery Location | Meter Number | Available Contract Quantity (Dth/d) |
|---|---|---|
| CCL Stage 4 LNG Facility | N/A | 3,060,000 |

[84] Resource Report 10 at Section 10.1.2, p. 10-2.
[85] https://traversepipeline.com/
[86] Cheniere Corpus Christi, Pipeline L.P. , CCPL Stage 4 Expansion Project Binding Open Season, December 18, 2025 -January 02, 2026.
[87] Cheniere Corpus Christi, Pipeline L.P. , CCPL Stage 4 Expansion Project Binding Open Season, December 18, 2025 -January 02, 2026.

The Traverse Pipeline is a critical Project component because it delivers the gas to be compressed and exported. The Project's stated purpose and need is to meet increased international demand for natural gas; the natural gas to meet that demand will primarily come through the Traverse Pipeline.[88] Thus, that pipeline cannot be omitted from the environmental analysis—even if the Project anticipates purchasing delivered gas from "one or more third-parties at the Traverse Meter Station."[89] Because of this interdependent relationship between the Traverse Pipeline and the Project, the pipeline must also be included and reviewed.[90]

## VII. THE WATER CRISIS

The Coastal Bend is running out of water. For seventy years, two reservoirs held the region in their cupped hands—Lake Corpus Christi and Choke Canyon. Texas once had some confidence that their rivers would rise again to meet whatever needs surfaced, but the natural rise of rivers is no match for what's come to this region, and what this Project shows is on the way.[91] There are reasonably foreseeable effects this project would have on the dwindling water supplies that this environmental review process must examine. And that impact and the public interest more broadly, must be evaluated and weighed against the purpose of this Project.

The City of Corpus Christi is rationing its remaining water. While residents are cutting their water use—this Project asks to use more. Preceding this Expansion are three

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[88] Application at 20.
[89] Resource Report 1 at 1-4.
[90] Resource Report 1 at 1-4, n.3 ("The proposed Traverse Pipeline will be constructed and operated by a non-affiliated third-party, WhiteWater. The Traverse Pipeline is expected to be in service in 2027, pending the receipt of customary regulatory and other approvals. (https://www.prnewswire.com/news-releases/traverse-pipeline-reaches-final-investment-decision-totransport-natural-gas-between-agua-dulce-and-the-katy-area-302419326.html)")
[91] Resource Report 1 at Table 2.2-3.

prior phases at the same site already drawing on the same rationed water supply against the drought baseline. The Commission's EIS analysis must evaluate water supplies in the context of this Project's relationship to its predecessor parts because the combined water consumption is a cumulative impact.

The Application itself exposes that the Project has not secured a reliable source of water for its extraordinary need. For example, the Commission has already requested confirmation that the San Patricio Municipal Water District can "adequately supply the anticipated volume of hydrostatic test water and dust suppression water."[92] But the Application lacks confirmation. The Commission asks for "copies of local or state agency correspondence regarding surface water withdrawals and restrictions" etc. to support the Project's water use.[93] But the Application lacks copies of this correspondence. The Application doesn't mention the drought or any water emergency—despite its being filed this year. The EIS is responsible for answering these questions and evaluating the Project's context of the current regional drought and water emergency.

### A. Reasonably Foreseeable and Cumulative Impacts to Water Resources must be considered.

NEPA requires FERC to take a "hard look" at reasonably foreseeable environmental impacts.[94] One of those impacts is the impact on the local watershed. In its current condition, that watershed cannot support the water supplies needed for this Project. This issue needs to be fully analyzed and impacts mitigated during the EIS process.

Specifically, water demand and usage must be assessed as a cumulative impact. Water resources are especially vulnerable in the Project area. Water is a finite resource in

[92] Resource Report 2 at viii, Comment 22.
[93] Resource Report 2 at viii, Comment 17.
[94] *See e.g.*, *Sierra Club v. FERC*, 153 F.4th 1295, 1302 (D.C. Cir. 2025).

increasing demand that must be quantified so the Commission can weigh whether the strain this Project will put on scarce resources can be justified—especially over municipal water needs. This strain requires the Commission to review current commitments to industrial uses and the cumulative impacts those commitments pose to the region's water supply. In considering the cumulative impacts to water scarcity, the Commission needs to look at all four Stages of the CCLNG Project together *and* all the other industrial users in the same watershed including, but not limited to: ArecelorMittal, Steel Dynamics, Gulf Coast Growth Ventures, Exxon-Mobil SABIC, and more.[95] Additionally, Project Stages 1-3 may have a stale baseline assuming pre-drought and pre-water crisis conditions. Stage 4 must be required to conduct its analysis against the current baseline: a regional water supply crisis.

Below are figures demonstrating the current drought conditions and current water commitments. To the extent that this Project will make consistent demands on this water supply for consecutive years, that picture needs to be complete for the public and decision-makers' review and evaluation.[96] Specifically, an EIS must cumulatively evaluate: water supply, withdrawal rates, source capacity, and competing demands.

[95] Texas Policy Research, *Corpus Christi and What Comes Next*, https://www.texaspolicyresearch.com/corpus-christi-water-crisis-and-what-comes-next/ (Mar. 21, 2026).
[96] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (internal citations omitted) (requirement to prepare and review an environmental impact statement ensures the agency will have important information available to carefully review the federal action).

*Figure 3: Projected Drought Status*[97]

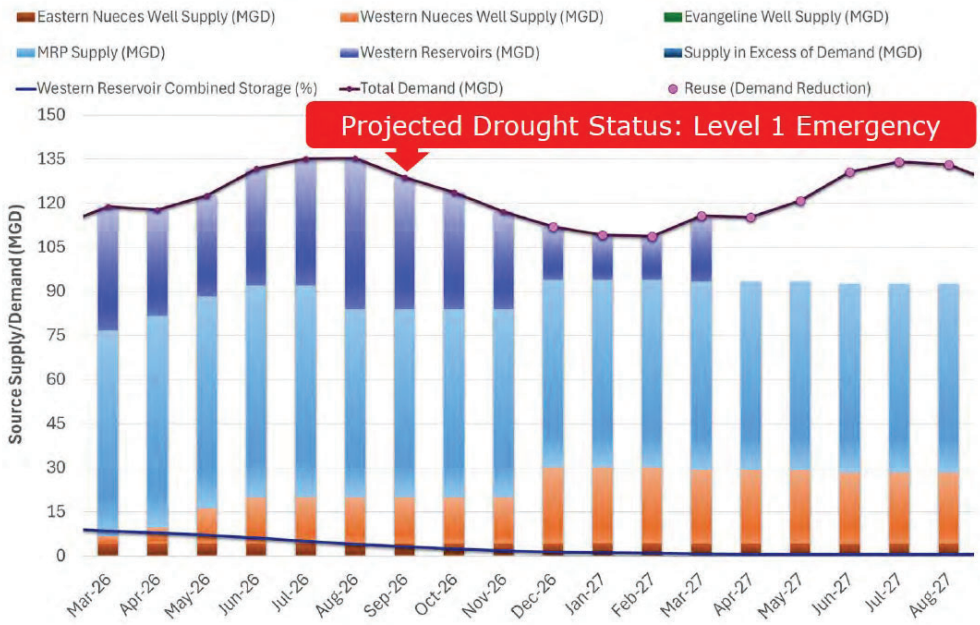
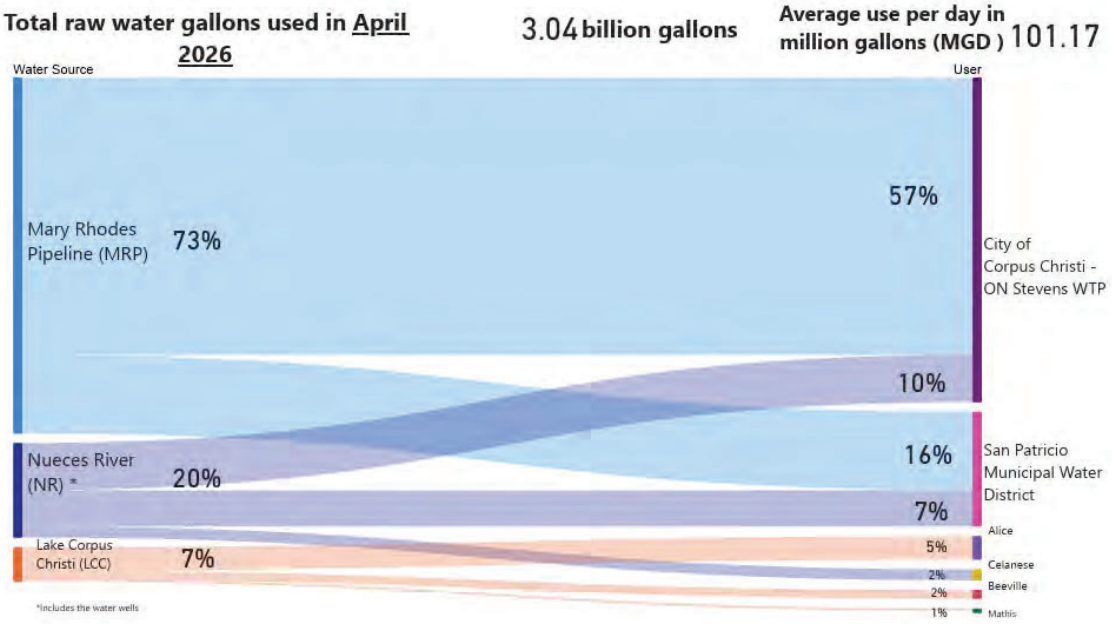



*Figure 4: Average Daily Water Use in Corpus Christi*[98]




[97] City of Corpus Christi Water Supply Dashboard, (May 21, 2026) https://www.corpuschristitx.gov/department-directory/corpus-christi-water/water-supply-dashboard/

[98] City of Corpus Christi Water Supply Dashboard, (May 21, 2026) https://www.corpuschristitx.gov/department-directory/corpus-christi-water/water-supply-dashboard/

The water crisis promises to intensify. As is acknowledged in the 2014 FEIS, this region's groundwater is of varying usefulness and has "high concentrations of chloride, salinity, and alkalinity."[99] Accordingly, much of the region depends on the same limited freshwater supply that this Project will draw on. It is critical that the Commission fully evaluate the Project's water usage over the life of the Project to inform its decision on whether the Project is in the public interest.

The Project's water consumption is materially problematic for several reasons. First, the facility itself is growing—so the water consumption is also growing. It is currently pushing for its fourth expansion since 2014. Second, there is no current replacement for the water that is being consumed. Given the severe water crisis the Project region faces, alongside the intensive water consumption needs of this project, the EIS must analyze and FERC must weigh the region's need versus the Project's need—for water—against the reality that the reservoirs that supply the City of Corpus, are combined below 9% full.[100]

### B. Potential for Groundwater Contamination must be considered.

Beyond the Project's tremendous water consumption, this Project poses another threat to the already dwindling regional water supply—potential for contamination of the limited groundwater in the area. In Texas, groundwater is a major source of drinking water. It provides 55 percent of the 14.7 million acre feet of water used in the state.[101] And in the

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[99] 2014 FEIS at 4-19.
[100] Water data for Texas; Corpus Christi Area Reservoirs, https://www.waterdatafortexas.org/reservoirs/municipal/corpus-christi (the city's primary western reservoirs specifically—Lake Corpus Christi and Choke Canyon—are at a combined capacity of about 8.5% to 9%) (May 25, 2026).
[101] Texas Water Development Board, Groundwater, https://www.twdb.texas.gov/groundwater/#:~:text=Groundwater%20is%20a%20major%20source,the%202020%20Water%20Use%20Survey.

past, CCL has acknowledged that there is a potential for groundwater contamination by "accidental release of hazardous substances, such as fuels, lubricants, and coolants, while constructing and operating the Terminal facilities."[102] Given the limited water supplies, it is especially important that the Commission undertake this evaluation here.

Additionally, the Project poses a threat to groundwater due to its location on the site of the old Sherwin Alumina Plant. Decades of alumina production left arsenic contamination in shallow groundwater. This area is required to complete groundwater quality monitoring as part of a Remedial Action Plan, which established a plume management zone for the natural attenuation monitoring of arsenic concentrations in groundwater.[103] There are currently three documented arsenic plumes with arsenic levels above the Texas Protective Concentration Levels ("PCLs").[104]

This Project will involve major construction activities. For example, excavations, dewatering during construction, the weight of the constructed facilities. Each of these activities may alter the groundwater flow, direction and gradient. The effects could destabilize the three naturally attenuating plumes. Construction-phase and operational phase plume stability analysis should be conducted understanding the potential to alter hydrogeologic conditions. The EIS must analyze how construction will affect the plumes. While FERC may not be responsible for monitoring or the Remedial Action Plan, the Commission *is* responsible for evaluating a Project's risks through the NEPA process.[105] As such, threats posed to groundwater must be evaluated.

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[102] 2014 FEIS at 4-19.
[103] 2014 FEIS at 4-19.
[104] Resource Report 2 at 2-4–2-6.
[105] *Save Barton Creek Ass'n v. Fed. Highway Admin*, 950 F.2d 1129, 1134 (5th Cir. 1992)(recognizes that "major Federal action" can exist even when the primary actors are not federal agencies. A "distinguishing feature of 'federal' involvement is the ability to influence or control the outcome in material respects.; *see also* W. Rodgers, Environmental Law § 7.6, at 763 (1977) (The EIS process is supposed to inform the

## VIII. VESSEL TRAFFIC

All consequences of vessel traffic must be evaluated including: air emissions, shoreline erosion, risk of accidents/spills/explosion, harm to endangered species and habitat. According to Resource Report 2, there is no plan to evaluate the potential impacts associated with the doubling of the LNG Carriers ("LNGC") traffic. In fact, the Report states:

> Isolating and quantifying potential impacts associated with only those vessels in a reliable way is technically infeasible. For this reason, CCL does not plan to conduct project-specific modeling related to the proposed increased number of vessels that would utilize the federal channel.[106]

However, the Commission has an affirmative obligation to review and evaluate the Project's impacts as well as the Project's contribution to already heavily affected areas. Once impacts are fully scoped, mitigation should be suggested.

Environmental Impact Statements for previous CCL projects and expansions have discussed the impact that increased traffic would have on shoreline erosion. For example, the 2014 FEIS, acknowledges that all ships will have an impact and captures ways to determine impacts (in part) as follows: "All ships passing through the Corpus Christi and La Quinta channels have the potential to contribute to shoreline erosion. The severity of potential shoreline erosion bordering ship channels is dependent on the number of ships; ship size, hull shape, speed, and draft; propeller action; and channel proximity to shore, shoreline shape, and the type of material of the shoreline."[107]

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decision-maker. This presupposes [the decision-maker] has judgment to exercise. Cases finding 'federal' action emphasize authority to exercise discretion over outcome.")

[106] Resource Report 2 at 2-23 (Feb. 2026).

[107] Corpus Christi 2014 FEIS at 4-12.

Vessel traffic must also be reviewed comprehensively. Specifically, the addition of 390 LNGCs calling on the CCL Stage 4 Project is an incomplete portrait of the additional ships that will be traveling La Quinta Ship Channel from this Project. Resource Report 2 acknowledges "additional tugs will be added as operations dictate to accommodate additional cargos associated with the CCL Stage 4 Project."[108] These additional tugs must be quantified and their corresponding environmental impacts assessed. Barges will also be necessary for construction, and those impacts must be quantified.

### A. Increased Vessel Traffic will cause increased shoreline erosion.

The Project plans to more than double vessel traffic, and this will directly contribute to increased shoreline erosion, which will potentially damage cultural resources and historic properties on the Texas Coast.[109] Studies have shown that increased vessel traffic leads to a significant increase in the erosion of areas that are already shown to be susceptible.[110] Vessel wakes are the dominant cause of erosion in commercial shipping channels. Because larger vessels produce larger wakes and LNGCs and VLLCs are some of the largest ships, they cause significant wakes leading to increased shoreline erosion.[111]

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[108] Resource Report 2 at 2-22 (Feb. 2026).

[109] *See* Final Environmental Impact Statement for Corpus Christi LNG Project at 431, *Corpus Christi Liquefaction, L.L.C. and Cheniere Corpus Christi Pipeline, L.P.,* Docket Nos. CP12-507-000, CP12-508-000, DOE Docket No. FE 12-97-LNG, FER/EIS-0252F (Accession # 20141008-4001) (Oct. 2014) (". . . *is exposed to erosional forces created by a combination of wind driven waves and wakes of ships transiting Copus Christi Channel.* The area's small islands, seagrass beds, and marsh habitats are being eroded at an average rate of 5.2 ft/yr., placing a large area of seagrass and marsh habitat at risk.") (hereinafter "2014 CCL FEIS").

[110] Gian M. Scarpa, et al., *The effects of ship wakes in the Venice Lagoon and implications for the sustainability of shipping in Coastal Waters*¸ Scientific Reports 9, 19014, https://www.nature.com/articles/s41598-019-55238-z.

[111] Cassandra L. Everett, *Ship wake forcing and performance of a living shoreline segment on an estuarine shoreline*, Frontier in Built Environment, Coastal and Offshore Engineering, Section Coastal and Offshore Engineering, Vol. 8 (Aug. 8, 2022), https://www.frontiersin.org/journals/built-environment/articles/10.3389/fbuil.2022.917945/full; *see also* Steven D. Meyers, *Ship wakes and their potential shoreline impact in Tampa Bay*, Ocean & Coastal Management, Vol. 211 (Oct. 1, 2021), https://www.sciencedirect.com/science/article/abs/pii/S0964569121002325; *and see Review of boat wake wave impacts on shoreline erosion and potential solutions for the Chesapeake Bay* (2017)

And in confined channels, like the Corpus Christi Ship Channel, erosive effects of ships are amplified.[112] Finally, cumulative vessel traffic is significant, and this Expansion seeks to authorize over twice the traffic, which will only compound the existing erosion problem.[113] This is especially significant because tanker traffic in Corpus Christi has skyrocketed in recent years—doubling from 2015-2022.[114] These losses may be irreversible for the coastal ecosystems. Once the marsh edge is lost, seagrass beds are scoured, and shell middens are undercut, those features will not likely regenerate on a human timescale.

### B. Increased Vessel Traffic will adversely impact seagrasses.

Increased vessel traffic additionally will negatively affect seagrasses which perform important functions like preventing shoreline erosion and serve as food and habitat for marine life.[115] As such, seagrass is critical to the coastal environment by supporting fisheries and endangered species.[116] They also capture atmospheric carbon dioxide and produce oxygen that supports marine life. Seagrass stabilizes the coastline by anchoring sediment and improves water quality by filtering pollutants. Because the Texas Coast is

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https://ccrm.vims.edu/2017_BoatWakeReviewReport.pdf; Jacob Geersen, *Ship wake-induced water column mixing and meter scale seabed erosion in the Baltic Sea*, Nature Communications (Feb. 10, 2026) https://www.nature.com/articles/s41467-026-68875-6.

[112] Gian M. Scarpa, et al., *The effects of ship wakes in the Venice Lagoon and implications for the sustainability of shipping in Coastal Waters*¸ Scientific Reports 9, 19014, https://www.nature.com/articles/s41598-019-55238-z; *see also* Cassandra L. Everett, *Ship wake forcing and performance of a living shoreline segment on an estuarine shoreline*, Frontier in Built Environment, Coastal and Offshore Engineering, Section Coastal and Offshore Engineering, Vol. 8 (Aug. 8, 2022), https://www.frontiersin.org/journals/built-environment/articles/10.3389/fbuil.2022.917945/full.

[113] Application at 9; *and see, Review of boat wake wave impacts on shoreline erosion and potential solutions for the Chesapeake Bay* (2017) https://ccrm.vims.edu/2017_BoatWakeReviewReport.pdf.

[114] Sierra Fletcher *et al.*, *Viability of Moving Increased Crude Oil Volume via the No-Action Alternative in the Bluewater DEIS*, NUKA RESEARCH at 3 (Sept. 2023).

[115] Marjolijn Christian, *Low-canopy Seagrass Beds Still Provide Important Coastal Protection Services*, PLoS One (May 28, 2013) https://pubmed.ncbi.nlm.nih.gov/23723969/.

[116] Seagrass Meadow, FL. KEYS NAT'L MARINE SANCTUARY, https://floridakeys.noaa.gov/plants/seagrass.html (last visited Mar. 9, 2026).

clustered with cultural resources, shoreline erosion endangers these resources. As a result, damage to seagrass has corresponding detrimental effects to marine life and the shoreline. The 2014 EIS documented significant shoreline erosion in sensitive ecosystem areas—estimating as much as 5.2 ft/year would be lost.[117] Due to this erosion rate, CCL was required to implement almost a mile of segmented rock breakwaters to preserve the existing habitats.[118] The same kind of evaluations need to be performed and potential mitigation of these areas must be proposed and implemented.

## IX. AIR QUALITY IMPACTS

The current status of regional air quality must be evaluated, including changes in relevant Clean Air Act standards, State Implementation Plans, or attainment or non-attainment status changes, and changes to the National Ambient Air Quality Standards ("NAAQS"). FERC must evaluate the Project's anticipated air emissions both from construction and anticipated operations, including the use of Best Available Control Technology ("BACT") for relevant pollutants. The forthcoming EIS should also consider the impacts of new developments, pipelines, roadways, and industrial facilities (also including, but not limited to, those with Title V operating permits) on air quality. This analysis should consider the sum of pollutants emitted by the Project along with emissions, and new or increased emission sources.

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[117] "Attachment A" to 2014 EIS at 2 of 17 ("The Ransom Point to Dagger Island area is exposed to erosional forces created by a combination of wind-driven waves and wakes of ships transiting the Corpus Christi Ship Channel. The area's small islands, seagrass beds, and marsh habitats are being eroded at an average rate of 5.2 ft./yr., placing a large area of seagrass and marsh habitat at risk. Texas Parks and Wildlife Department (TPWD) presently has a master plan to preserve Redfish Bay area habitats including Dagger Island, Dagger Point, and Ransom Point, which are all located within the Redfish Bay State Scientific Area. CCL is proposing to construct approximately 3,500 feet of segmented rock breakwaters to preserve the existing habitats on Ransom Point as well as the habitats within Redfish Bay that Ransom Point.")

[118] *Id.*

### A. Prevention of Significant Deterioration ("PSD")

The Prevention of Significant Deterioration ("PSD") Program is the principal federal mechanism designed to prevent the cumulative degradation of attainment areas like the Coastal Bend.[119] The PSD increment is the maximum allowable increase in air pollution permitted above a predefined baseline concentration in an area where the air is in attainment. For Corpus Christi, the relevant federal dates are: August 7, 1977 ($PM_{10}$ and $SO_2$), February 8, 1988 ($NO_2$), and October 20, 2011 ($PM_{2.5}$).[120] Because Nueces and San Patricio Counties have had PSD applications since at the mid-1980's, every subsequent change in actual emission from major, minor, area and for ($PM_{10}$ and $SO_2$) mobile sources within the area consumes increment. A credible increment analysis for this Project must be conducted and that analysis should inventory all post-baseline emission changes in the relevant airshed for each pollutant.

Appendix 9 currently states it will obtain a current list of increment-consuming sources, *if necessary*, and proposes to use the NAAQS inventory as a "conservative estimate" for the increment analysis.[121] This approach is problematic for several reasons. First, this overly relies on the Significant Impact Level ("SIL") in lieu of modeling and analysis—effectively deferring all increment-consumption modeling. And, ultimately, will result in no pollutants undergoing the appropriate increment-consumption analysis. Corpus Christi is undergoing rapid industrialization, but the increment analysis has not kept up.

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[119] 42 U.S.C. §§ 7470-7479; 40 C.F.R. § 52.21(c).
[120] 40 C.F.R. 52.21(b)(14)(ii).
[121] Appendix 9B at 2-5–2-6; *and see* 40 C.F.R. § 52.21(c); 40 C.F.R. Part 51, Appendix W (Guideline on Air Quality Models (NAAQS analysis uses background plus nearby sources; increment analysis must include "all increment consuming sources); EPA NSR Workshop Manual (1990) at Sections C.IV.C.1 and C.IV.C.2; EPA Guidance on Developing Background Concentrations for Use in Modeling Demonstrations (Nov. 2024).

Instead, the SIL stands in place of the review industrial users need to engage in for a complete portrait of air pollution in the region.

Using the NAAQS inventory as a proxy should be prohibited.[122] This proxy-approach is not defensible because it is overwhelmingly clear that the Project's approach to air quality analysis (in Appendix 9) is already too narrow. First, the NAAQS inventory is limited to 10 km of the Project site and should extend to at least 50.[123] Second, pending PSD and NSR actions are excluded from the inventory based on whether they are "readily available" which may be arbitrarily limiting what's included in the analysis. Notably sources referenced elsewhere in the Project's application are missing from Appendix 9, including: CCL Trains 8 & 9 Project,[124], Bluewater deepwater port, and the Traverse Pipeline.[125] And still there are other likely other pending permit actions that would affect this Project's analysis. For example, there are other newly operational major sources identified in the Project's application, including: Steel Dynamics Sinton, Voestalpine HBI Plant,[126] and Exxon Mobil/SABIC. Notably an analysis of the emissions from increased vessel traffic (including LNGCs, tugs and barges) may also be missing.

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[122] TCEQ, Air Quality Modeling Guidelines, APD-ID255v1, June 2024; *see also* EPA Guidance on Developing Background Concentrations for Use in Modeling Demonstrations (Nov. 2024).
[123] Appendix 9B at 5-5–5-6 ("Therefore, consistent with this guidance, CCL proposes to limit the inventory sources to those located within approximately 10 km of the project site if the ROI is less than or equal to 10 km, or limit the inventory sources to sources within the ROI, if the ROI is greater than 10 km. In addition, it is anticipated that the maximum impact occurs near the site. Thus, it is expected that sources located at a distance of more than 10 km or the ROI (if greater than 10 km) from the project site would not have a significant impact in the area of the project site, and maximum impacts from sources located at a distance beyond 10 km or the ROI (if greater than 10 km) would be unlikely to occur at the same location where impacts from on-site sources are the highest. Therefore, given EPA's assertion that including nearby sources out to 50 km from the project location will produce overly conservative results, limiting the inventory sources to those located within the greater of 10 km or the ROI is representative of actual ambient concentrations expected in the area and is consistent with recent U.S. EPA guidance.").
[124] Resource Report 1 at Figure 1.15-1.
[125] Resource Report 1 at Section 1.4.2; Resource Report 10 at Section 10.5, n.3.
[126] Resource Report 11 at section 11.2.7 (acknowledges it is adjacent to the terminal).

The prior stages of the project showed significant increment consumption over the last decade. Or, at worst, the increment analysis was avoided altogether—now raising the question of whether it's been overconsumed. The Stage 1 Project in 2014 showed the annual $NO_2$ PSD was around 40% consumed.[127] Additionally, the Sinton Compressor Station, part of Stage 1 left only .28 ug/$m^3$ of headroom.[128] The Stage 2 Project in 2019 skipped the PSD increment analysis for $NO_2$ because it relied on the SIL, so an increment analysis was not performed.[129] But, Stage 2 had to model the increment for 24-hour $PM_{2.5}$, which showed that Stage 2 consumed 84% of the available increment—and that was 7 years ago.[130] The Stage 3 Project in 2024 was originally subject to a full PSD increment analysis, but then revised its project design to include electric turbines to drive refrigeration compressors instead of using gas-fired combustion turbines.[131] Because the current FERC 3-step framework requires cumulative consideration—this increment consumption for the Project's 4 stages must be re-reviewed.[132]

Meaningful PSD increment review for this Project Expansion is required and includes, at a minimum, a complete inventory of post-baseline changes (additions, modifications, and shutdowns) for major sources in San Patricio and Nueces Counties;

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[127] 2014 FEIS at 4-123.
[128] 2014 FEIS at Table 4.11-21.
[129] 2019 EA at 131.
[130] 2019 EA at Table B.8.1-12 at 130 (7.6 ug/$m^3$ of 9 7.6 ug/$m^3$) ("A full impact analysis also was required to demonstrate compliance with the 24-hr PM2.5 PSD Increment (9 µg/$m^3$). The total PM2.5 impact from off-site PSD increment-consuming emission sources and the Project emission sources, including the estimated secondary PM2.5 formation contribution, was 7.6 µg/$m^3$; therefore, emissions associated with the Project LNG Facilities would neither cause nor contribute to an exceedance of the 24-hr PM2.5").
[131] 2024 EA at G-3–G-4.
[132] *See* RR 9 at Comment 72: "Per the Commission's prior orders in Venture Glob. CP2 LNG, LLC, 191 FERC ¶ 61,153 (2025), Commonwealth LNG LLC, 191 FERC ¶ 61,205 (2025) and Rio Grande LNG LLC, 192 FERC ¶ 61,198, at P 34 and n. 105 (2025) the Commission has adopted a three-step analysis to evaluate a project's potential air quality impacts. The three steps are: (1) a preliminary screening step; (2) if necessary, a full cumulative impacts analysis; and (3) if necessary, a cause and contribute (i.e., culpability) analysis."

inclusion of pending PSD sources; and an appropriate radius from which to collect and evaluate relevant sources.

### B. National Ambient Air Quality Standards ("NAAQS")

The EIS should provide comprehensive modeling of the Project to ensure compliance with the NAAQS. Currently, the background concentration in the Corpus Christi airshed for $PM_{2.5}$ is 8.44 $\mu g/m^3$, nearing the federal limit of 9.0 $\mu g/m^3$. These background concentrations do not include this Project's emissions.[133,134] The Project's total ozone emissions suffer the same concerns. When compared against the 8-hour Ozone NAAQS, current emissions creep dangerously close to that standard, too.[135] And, as shown in its application, even among the major sources recently permitted, CCL will have—by far—the largest emissions likely endangering the region's ability to maintain its attainment status. This Expansion is expected to increase $NO_x$ by 1,093 tons per year and Volatile Organic Compounds ("VOCs") by 472 tons per year.[136] In comparison, the previous CCL Expansion (Stage 3) increased $NO_x$ by only 349 tons per year and VOCs by 358 tons per year. The EIS must ensure that currently unaccounted for major sources are evaluated on top of CCL's massive emissions increases. For example, Seadrift Coke, L.P. is expected to increase $NO_x$ by 80 tons per year and VOCs by 39 tons per year.[137] The Project continues to put Corpus Christi's attainment status at risk.[138] Comprehensive modeling should be done in the EIS process to ensure compliance.

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[134] Appendix 9A at 363.
[135] Appendix 9A at 335.
[136] Resource Report 9 – Air and Noise Quality at Table 9.2-5, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.*, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026) (hereinafter "RR9").
[137] Appendix 9A at 335.
[138] *See* Appendix 9A at 335 (CCL responsible for 1,065 tpy $NO_X$ of the estimated total $NO_X$ 1,921 tpy for projects authorized in the last two years).

***Lack Jackson Monitor***

This Project relies on the Lake Jackson monitor for $NO_2$ background concentrations and that is inappropriate. Using a monitor from 135 miles away is not justified, especially because $NO_2$ is among the highest and most impactful pollutant from the Project. According to CCL's own Application materials, the Gregory Fresnos monitor (located approximately 3,200 feet northwest of the CCL Terminal)[139] is both closer to the Project and may be more representative of the background air quality.

***Table 1:***

| NAAQS | Lake Jackson (Appendix 9B Table 6-7) | **Gregory Fresnos (Appendix 9B at Section 6.2.1)** |
|---|---|---|
| 1-hour $NO_2$ | 30.2 μg/$m^3$ | **37 μg/$m^3$** |
| Annual $NO_2$ | 2.91 μg/$m^3$ | **5.32 μg/$m^3$** |

But rather than using this monitor, the Applicant selected the Lake Jackson monitor with more preferable readings. The Expansion will cause significant air pollution harms that NEPA and the Natural Gas Act require FERC to chronicle and consider.

**C. NAAQS and the Natural Gas Act ("NGA")**

The Expansion will cause a substantial amount of harmful air pollution. The Natural Gas Act requires FERC to consider environmental impacts when determining whether an LNG facility is consistent with the public interest.[140] Where record evidence indicates that a project's air pollution will create harm, even in the absence of a NAAQS violation, FERC

[139] Appendix 9 at 6-10 ("The Gregory Fresnos monitor discussed above for PM2.5 also collects NO2 monitoring data. The NO2 concentrations from the Gregory Fresnos monitor is summarized in Table 6 of the quarterly report, found in Appendix D. The annual and 1-hour 98th percentile 3-year averages (2022 – 2024) are 2.83 ppb (5.32 μg/m3) and 19.7 ppb (37 μg/m3), respectively.")

[140] *Sierra Club v. U.S. Dep't of Energy*, 867 F.3d 189, 202–03 (D.C. Cir. 2017); *NAACP v. Fed. Power Comm'n*, 425 U.S. 662, 669–70 & n.6 (1976) (stating that in addition to the purpose of "encourag[ing] the orderly development of plentiful supplies of ... natural gas at reasonable prices," the Natural Gas Act's "subsidiary purposes" include consideration of "conservation, environmental, and antitrust questions").

cannot rationally exclude such harm from its decision-making. CCL's projected emissions and modeling demonstrate that such harm will occur here. Because the NEPA review is intended to inform substantive decision-making, FERC must also evaluate this pollution as part of its NEPA review.

EPA repeatedly has stated that while the NAAQS provide a "margin of safety," 42 U.S.C. § 7409(b)(1), the NAAQS are not set at a level "below which . . . pollutants are known to be harmless."[141] Indeed, in setting the NAAQS for many criteria pollutants, including $PM_{2.5}$ and $NO_2$, which the Project would emit, EPA stated that there was no evidence of a threshold below which the pollutant is harmless.[142] When setting the NAAQS for ozone, EPA similarly stated that if there was a threshold below which ozone is harmless, studies indicated that it must be below 40 or even 30 parts per billion, well below the 70 parts per billion NAAQS.[143]

Because EPA has clearly established that air pollution may cause adverse health impacts even at levels below NAAQS, FERC must fully analyze and consider the impacts of the Expansion Project's air pollution regardless of whether it violates the NAAQS. EPA has explicitly and repeatedly predicted the health impacts that would be expected to occur at air pollution levels that do not violate the NAAQS, and EPA has determined that it is appropriate to consider harms arising from pollution below the NAAQS when making decisions outside the Clean Air Act's Prevention of Significant Deterioration ("PSD")

[141] *Am. Trucking Ass'ns, Inc. v. EPA*, 283 F.3d 355, 360 (D.C. Cir. 2002).
[142] EPA, Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, 89 Fed. Reg. 16,202, 16,226 (Mar. 6, 2024); EPA, Primary National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 6,474, 6,480 (Feb. 9, 2010).
[143] National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,303, 65,304, 65,306, 65,309 (Oct. 26, 2015).

program.[144] Further, emission limits that reduce pollution below the NAAQS have co-benefits from avoided premature deaths that can be predicted, quantified, and monetized. In its 2012 Mercury and Air Toxics Standards, EPA concluded that the rule would provide $33 to $81 billion of co-benefits, largely from avoided premature deaths, by reducing $PM_{2.5}$ and sulfur dioxide (which contributes to secondary formation of $PM_{2.5}$).[145] After the Supreme Court remanded the rule for additional consideration of costs, *Michigan v. EPA*, 576 U.S. 743 (2015), EPA reaffirmed that "there is a substantial body of scientific evidence supporting the existence of health impacts from exposure to $PM_{2.5}$, even at low concentrations below the NAAQS," that "there is no scientific basis for ignoring health benefits" of further reducing $PM_{2.5}$, and that the NAAQS did not limit EPA's ability to consider harm caused by pollution below the NAAQS in other regulatory contexts.[146] Thus the Commission must comprehensively review potential harms from this Project's air emissions.

### D. Significant Impact Levels ("SILs")

The Commission cannot shortcut its environmental review relying on Significant Impact Levels ("SILs") or ignore air pollution harms resulting from cumulative air pollution. Specifically, FERC must not improperly rely upon EPA's SILs to find that the Expansion Project does not have a significant cumulative impact on air quality or to dismiss the Project's impacts. The D.C. Circuit has held that it is unlawful for FERC to conclude

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[144] *See, e.g.*, EPA, Supplemental Finding that it is Appropriate and Necessary to Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units, 81 Fed. Reg. 24,420, 24,427, 24,440 (Apr. 25, 2016).
[145] EPA, National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial Institutional, and Small Industrial Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,304, 9,305-06 (Feb. 16, 2012).
[146] 81 Fed. Reg. at 24,440.

that a project does not have a cumulatively significant air pollution impact solely because a project's individual air pollution impacts are below the SILs.[147] FERC has also recognized that it cannot rely on SILs to fulfill its duty to consider cumulative impacts.[148]

Commenters reiterate that any use of the SILs to justify the Project's cumulative air impacts is improper. In addition, CCL has signaled it intends to use the outdated annual $PM_{2.5}$ SIL of 0.3 $\mu g/m^3$ instead of the current annual $PM_{2.5}$ SIL of 0.13 $\mu g/m^3$ for the NAAQS significance analysis.[149] If any use of the SIL is relied on, CCL must be required to use the current $PM_{2.5}$ SIL of 0.13 $\mu g/m^3$.

Dispersion modeling that CCL will be required to complete for its PSD permit applications also cannot rely on a SILs analysis to substitute for a comprehensive analysis of cumulative air pollution impacts that FERC must complete under NEPA *and* the Natural Gas Act.

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[147] *Healthy Gulf v. FERC*, 107 F.4th 1033, 1043–44 (D.C. Cir. 2024).
[148] *Venture Global CP2 LNG, LLC*, 189 FERC ¶ 61,148, PP 183–185 (2024) (granting request for rehearing in part to allow for FERC's reconsideration of cumulative $NO_2$ and $PM_{2.5}$ impacts based on *Healthy Gulf*); *and see* Air Plan Disapprovals; Interstate Transport of Air Pollution for the 2015 8-Hour Ozone National Ambient Air Quality Standards, 88 Fed. Reg. 9336, 9,372 (Feb. 13, 2023) (EPA has similarly determined that the SILs do not represent a level below which health impacts are absent or statistically insignificant.).
[149] Appendix 9A at Section 2.1, p. 2-2; *compare with* U.S. EPA Memorandum, *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention Significant Deterioration Permitting Program*, (Apr. 17, 2018); *and see* TCEQ, *Air Quality Modeling Guidelines*, APD-ID255v1 (June 2024).

### E. General Conformity Analysis

Consistent with the 2014 FEIS,[150] 2019 Environmental Assessment,[151] and the 2024 Environmental Assessment,[152] the Commission is required to conduct a General Conformity Analysis.[153] A General Conformity Analysis must show that the emissions would conform to the applicable State Implementation Plan ("SIP") and would not degrade air quality in a nonattainment area. This analysis must be completed when the total direct and indirect emissions of a planned project would equal or exceed the specified pollutant conformity emission thresholds per year in each nonattainment area. A federal agency cannot approve or support any activity that does not conform to an approved SIP. Conforming activities should not: (i) cause or contribute to new violations of the NAAQS; (ii) increase the frequency or severity of an existing violation of any NAAQS; or (iii) delay timely attainment of any NAAQS or interim emission reductions.

The Commission must use the EIS process to perform a general conformity applicability determination for this Project Expansion operations that will occur in nonattainment areas—like the Houston Galveston Brazoria ("HGB") area. Because vessel traffic will be traveling from the HGB nonattainment areas, these traffic emissions associated with travel in the HGB ozone nonattainment areas are subject to evaluation under the General Conformity regulations. Commenters urge the Commission to include

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[150] 2014 FEIS at Table 4.11-3 (Construction barges).
[151] 2019 EA at 119–20 (Project barge/tug travel emissions).
[152] 2024 EA at G-7 to G-8 (Construction tug/barge emissions).
[153] 42 U.S.C. 7506; 40 CFR §51.853; *see also* CCLNG 2014 Final Environmental Impact Statement at 4-105–106; *and see Golden Pass Products, LLC and Golden Pass Pipeline, LLC*, 157 FERC ¶61,222 (2016) and FERC, *Final Environmental Impact Statement, Golden Pass, LNG Export Project* (July 29, 2016) at § 4.11.1 (FERC must conduct a general conformity applicability determination for Texas Gulf Coast LNG export projects whose marine traffic transits the HGB nonattainment area).

all marine vessel transit traffic, emissions from LNGCs, all LNGC operational emissions, and all construction work related emissions that occur in the HGB nonattainment areas.

***Figure 5: Houston-Galveston-Brazoria Ozone Nonattainment***

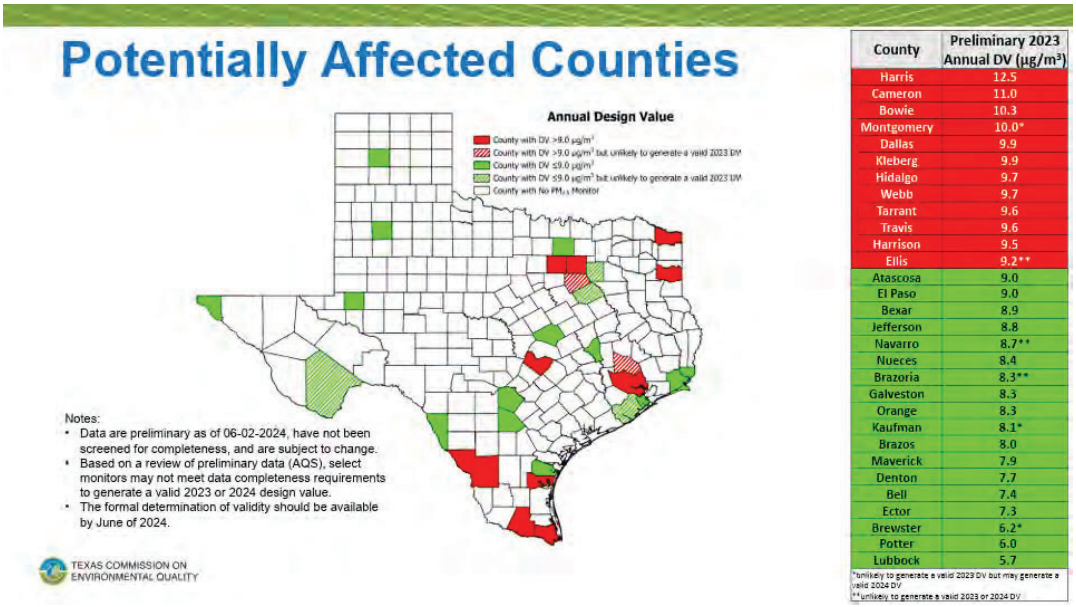
**HGB Area: Attainment Status by Pollutant**

| Pollutant | Primary NAAQS | Averaging Period | Designation | Counties | Attainment Deadline |
|---|---|---|---|---|---|
| Ozone ($O_3$)* | 0.070 ppm (2015 standard) | 8-hour | Serious Nonattainment | Brazoria, Chambers, Fort Bend, Galveston, Harris, Montgomery | August 3, 2027 |
| | 0.075 ppm (2008 standard) | 8-hour | Severe Nonattainment | Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller | July 20, 2027 |

Additionally, FERC must perform a general conformity applicability determination pending the U.S. Environmental Protection Agency's $PM_{2.5}$ imminent nonattainment designation for the HGB area.[154] According to TCEQ, the HGB area is *still* expected to be designated in nonattainment with the primary annual standard for $PM_{2.5}$. This must be conducted for all areas that may be awaiting the nonattainment designation that would also house emissions related to the Project including Cameron County, Hidalgo County, and the HGB area.

[154] TCEQ, Air Pollution from Particulate Matter ("On February 7, 2024, EPA promulgated a revised primary annual $PM_{2.5}$ standard, strengthening the standard from 12.0 to 9.0 micrograms per cubic meter. The agency retained the existing standards for $PM_{10}$. By February 7, 2025, the governor of each state must submit designations of attainment, nonattainment, or unclassifiable under the 2024 primary annual $PM_{2.5}$ NAAQS for all areas of the state.").

*Figure 6: TCEQ map showing all counties in Texas predicted to be in nonattainment*




| County | Preliminary 2023 Annual DV (µg/m³) |
|---|---|
| Harris | 12.5 |
| Cameron | 11.0 |
| Bowie | 10.3 |
| Montgomery | 10.0* |
| Dallas | 9.9 |
| Kleberg | 9.9 |
| Hidalgo | 9.7 |
| Webb | 9.7 |
| Tarrant | 9.6 |
| Travis | 9.6 |
| Harrison | 9.5 |
| Ellis | 9.2** |
| Atascosa | 9.0 |
| El Paso | 9.0 |
| Bexar | 8.9 |
| Jefferson | 8.8 |
| Navarro | 8.7** |
| Nueces | 8.4 |
| Brazoria | 8.3** |
| Galveston | 8.3 |
| Orange | 8.3 |
| Kaufman | 8.1* |
| Brazos | 8.0 |
| Maverick | 7.9 |
| Denton | 7.7 |
| Bell | 7.4 |
| Ector | 7.3 |
| Brewster | 6.2* |
| Potter | 6.0 |
| Lubbock | 5.7 |

*unlikely to generate a valid 2023 DV but may generate a valid 2024 DV
** unlikely to generate a valid 2023 or 2024 DV

### F. Hazardous Air Pollutants ("HAPs")

HAP emissions must be evaluated cumulatively across Stages 1–4. The results of the Human Health Risk Assessment for Stage 3 showed some exceedances for 24.2 tpy aggregate HAPs at the original terminal, plus contributions from Trains 8 & 9.[155] Stage 4 cumulative HAPs are 107.7 tpy—which is more than 4 times the 2014 baseline.[156] Thus, a community-level cumulative HAP exposure assessment to address the actual cumulative HAP burden must be competed. A Human Health Risk Assessment must be completed using the cumulative emissions from Stages 1–4, including analysis of sensitive receptors, and addressing other surrounding industrial sources.

[155] 2024 EA, Appendix F, Table 9.
[156] 2014 FEIS at 4-103 ("The annual PTE HAP emissions from the Terminal would be 24.2 tpy in aggregate and 16 tpy for formaldehyde (the individual HAP with the greatest PTE) (see section 4.11.1.4); therefore, the Terminal would be a major source of HAPs.")); *and see* Resource Report 9 at Table 9.2-15 (Potential to Emit, Total HAP 47.9).

### G. Best Available Control Technology ("BACT")

Electric motors for the 24 LNG refrigeration compressors should be required. The Stage 4 trains have huge annual emissions.[157] But, the application skips assessing the use of electric motors, asserting, "the BACT assessment does not include redesigning the facility to eliminate the need for combustion turbines, as the combustion turbine is the proposed emissions unit being permitted."[158] This failure to conduct an appropriate BACT analysis is only based on the Applicant's choice to permit a combustion turbine as the reason not to evaluate other technologies currently operated at other LNG facilities. Electric alternatives resulting in less pollution must be considered in the EIS process.

This Project will approve 24 LNG refrigeration compressors which single-handedly contribute an enormous amount of pollution to the area. Past environmental evaluations of this Project's prior stages have discussed electric motors to drive refrigeration versus gas turbines. This Project will use gas turbines to perform refrigeration compression, and it fails to review electric alternatives. This choice has been discussed at every previous project stage. Notably, over ten years ago, in 2014, electric motor drivers were considered, but dismissed. This dismissal was based on improper factors because the EIS recognized the pollution caused by the gas turbines and acknowledged that Freeport LNG was using electric motors.[159] The current EIS must review electric alternatives.

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[157] Appendix 9A at Table 1-1 and Table 1-2.
[158] Appendix 9A at 6-12.
[159] 2014 FEIS at 3-22 ("We recognize that the Freeport LNG facility, which is located in the Houston-Galveston-Brazoria ozone nonattainment area, has been authorized with electric motors as well. However, this facility was required to meet more restrictive air permitting requirements for emissions control, which likely was an important factor in designing the facility with electric driven motors for compression. In contrast, the Project would be located in an ozone attainment area and has performed air quality modeling demonstrating compliance with applicable standards; and therefore, we find no compelling reason to not follow the precedent for BACT established by both the TCEQ (as permit developer for non-GHG PSD regulated emissions) and EPA (as permit developer for GHG emissions) for Project permitting, with regard to the consideration of electric motor-driven compression. The BACT analysis is a PSD permitting requirement and the EIS summarizes the BACT and/or mitigation measures to reduce emissions from the

### H. Compliance Problems

Through NEPA, the Commission must review CCL's ability to comply with Clean Air Act. Because CCL has a pattern of noncompliance, a reasonably foreseeable consequence of the Expansion is air pollution which exceeds its permitted limits. CCL's pattern of non-compliance poses a substantial risk to the region's delicate attainment status and poses weighty public health concerns. Notably—not only does CCL admittedly plan to create the lion's share of pollution in the Corpus Christi airshed—but (as already discussed) between January 2018 and May 2025, CCL reported 59 emission events.[160] These upset events lasted anywhere from seven days to one month.[161] Specifically concerning, from both an attainment and public health perspective, in 2023, CCL reported 3,348,593 tons of Greenhouse Gases and 2,945 tons of other health-damaging air pollutants.[162] With this Expansion, CCL seeks to emit even more pollution. Further, CCL has also recently been subject to at least two enforcement orders from TCEQ for failing to adequately maintain, which resulted in significant unpermitted emissions events. CCL's noncompliance is a reasonably foreseeable consequence of permitting this Project which must be incorporated into FERC's evaluation of the cumulative air impacts posed by the Expansion.

## X. ENDANGERED SPECIES ACT

Section 7 of the ESA states that any project authorized, funded, or conducted by any federal agency (e.g., FERC) should not "…jeopardize the continued existence of any

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gas turbines. For the reasons discussed above, an alternative design to replace the 18 gas turbines with electric motors was not considered an environmentally preferable alternative."

[160] *Id.*

[161] Environmental Integrity Project, *Terminal Trouble: Pollution Violations at America's LNG Export Terminals* (Oct. 29, 2025) at 20.

[162] *Id.* at 13.

endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined…to be critical…"[163] Accordingly, FERC must determine which species or habitats may be impacted by the Project, identify the nature and extent of adverse impacts, and recommend measures to avoid or reduce potential impacts on habitat and/or species.

At least 27 species of marine mammals are commonly found in the Gulf of Mexico, seven of which are also protected by the federal and/or state governments. Additionally, five of the world's seven sea turtle species have been recorded in the Gulf of Mexico including: green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricate*), Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), and loggerhead (*Caretta caretta*). All five species are listed as threatened or endangered under the ESA and are managed jointly by the U.S. Fish and Wildlife Service and National Marine Fisheries Service. These species are also listed as threatened or endangered by Texas Parks and Wildlife Department. Commenters request a thorough analysis of the relevant species, and specifically raise the following issues:

- **Green Sea Turtle.** Section 7 was triggered because the Project's footprint overlaps with the green sea turtle's critical habitat.[164] According to Resource Report 3, 8.1 acres of seagrass will be permanently lost, but CCL frames it as a small percentage of loss. The inquiry is not into a percentage, but rather, is whether the action will cause "adverse modification."
- **West Indian Manatee.** Commenters additionally request that a Formal Section 7 consultation—rather than an informal concurrence—be completed for the

[163] 16 U.S.C. § 1536(a)(2) (1988).
[164] Resource Report 3 at 3-57 (GIS data shows that the proposed critical habitat located partially within the CCL Stage 4 Project area; *and see* 50 C.F.R. Section 402.02.

West Indian Manatee given its recent sighting in Port Aransas in August 2025.[165]

- **Bottlenose Dolphin**. Effects on the bottlenose dolphins should also be evaluated as they are protected under the Marine Mammal Protection Act.[166]
- **Tri-Colored Bat**. The tri-colored bat is proposed to be endangered, so federal agencies must confer with the U.S. Fish and Wildlife Service on this species.[167] There are 4 locations along the CCPL pipeline with "moderately suitable habitat for roosting."[168] Additionally, the EIS should evaluate the impacts of any required tree clearing on the bat's habitat.
- **Whooping Crane.** CCPL pipeline crosses the whooping crane's critical habitat.[169]

The Commission has an obligation to conduct a comprehensive review of the effects to habitats and species that the Project will encounter including preparing a Vessel Strike Avoidance Plan.

## XI. SECTION 106 OBLIGATIONS

Section 106 of the National Historic Preservation Act ("NHPA") requires FERC to consider the effects of its "undertakings" on historic properties. 33 C.F.R. § 800.1. The Section 106 process applies to any historic property, which means it applies to any cultural resource that is listed in or is *eligible to be listed in* the National Register of Historic Places.[170] As defined, an "eligible property" does not distinguish between those properties determined eligible and any property that *may* qualify. Specifically, "eligible property" means any district, site, building, structure, or object that meets the National Register

[165] Resource Report 3 at 3-42, 3-54.
[166] 16 U.S.C. § 1536.
[167] Resource Report at Table 3.4-1, 3-39.
[168] Resource Report at 3-49.
[169] Resource Report at 3.4-1, 3-52.
[170] 36 C.F.R. § 800.16(l)(1) and (2).

Criteria.[171] An eligible property for NHPA purposes turns on the property's inherent historical and cultural significance. Section 101(d)(6)(B) of the Act additionally allows "[c]ertain individuals and organizations with a demonstrated interest in the undertaking" to participate as a consulting party.[172] The NHPA requires federal agencies to "take into account" the preservation of historic properties when implementing federal projects.[173] This process requirement is referred to as the Section 106 process.[174]

Because Donnel Point will be affected by this Expansion, it triggers FERC's requirements for the NHPA review of that site, including consultation, identification, reevaluation, and requires assessment and mitigation of adverse impacts.[175] The Section 106 Process requires that CCL's Application be updated to include Donnel Point as a historic property that will be impacted by the Expansion as well as recommended measures to mitigate those adverse impacts.

### A. Donnel Point meets the definition of a historic property.

Donnel Point, also referred to as archaeological site 41SP36, is one of the last remaining intact shell middens and possible Karankawa village sites on the north shore of Corpus Christi Bay.[176] Because this site is one of the last, it has particular cultural

[171] 36 C.F.R. § 800.2(f).
[172] 36 C.F.R. §§ 800.2(c)(2)(ii) and 800.2(c)(5).
[173] 54 U.S.C. § 306108 (requiring that any federal agency "having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking ... prior to the approval of the expenditure of any Federal funds on the undertaking ... shall take into account the effect of the undertaking on any historic property.").
[174] *See* 36 C.F.R. §§ 800.3—800.13. And these regulations, codified at 36 C.F.R. § 800 *et seq.*, identify the steps that a federal agency must take to comply with the NHPA for any "historic property." 54 U.S.C. § 306108.
[175] 36 C.F.R. §§ 800.2-800.5.
[176] Peter Moore, *Report on the Discovery of an Indigenous Archeological Site at Donnel Point, La Quinta Channel, San Patricio County, Texas* (Aug. 21, 2024) at 6 (hereinafter "Donnel Point Report").

significance.[177] It was first identified in the 1930's as one of a string of Indigenous Settlements.[178] But over the years, as La Quinta Channel has been industrialized, it was assumed the site was destroyed by dredging. While this assumption of destruction has been perpetuated, the site itself was also consistently documented as notably significant with warnings to preserve it. For example, in the early 1970's, when the Army Corps proposed to deepen La Quinta Channel, the National Park Service cautioned that doing so may cause "an irreversible commitment to the destruction of archeological resources."[179] Because current evidence indicates the site *is* intact and worth preserving, it must be included in the Project's cultural resource assessment.[180]

To the best of Commenter's knowledge, a shovel test or full assessment has never been completed for archaeological site 41SP36, first discovered in 1933 at Donnel Point.[181] Instead, reports just repeat the unverified assumption that the site was washed into the bay. Since these reports were authored, however, time has passed, and a reevaluation of this cultural resource is required for several reasons.[182] First, 41SP36 was rediscovered in 2024.[183] This discovery proves that any prior survey claiming it was destroyed is no longer an accurate assessment of the site. Second, prior evaluations with shovel testing are incomplete.[184] Instead, the prior evaluations are based on assumptions that are now

[177] Earthjustice, Letter to the U.S. Army Corps of Engineers RE: Port of Corpus Christi 404 Permit SWG-2014-00848, (Nov. 12, 2025) https://earthjustice.org/wp-content/uploads/2025/11/ingleside-terminal-404-letter-without-exhibits-swg-2014-00848_2025.11.12.pdf (last visited Mar. 9, 2026).
[178] Donnel Point Report at 2.
[179] Donnel Point Report at 5.
[180] Donnel Point Report at 7–9; *and see* Ingleside on the Bay Coastal Watch Association, Inc., Opposition Letter, Request for Deadline Extension and Request for EIS, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket No. PF25-10-000 (Accession # 20251229-5123) (Dec. 23, 2025) (photos at 8).
[181] Donnel Point Report at 5.
[182] 36 C.F.R. § 800.4(c)(1).
[183] *See generally* Donnel Point Report.
[184] 36 C.F.R. § 800.4(c)(1).

verifiably untrue. Third, with 41SP36's rediscovery also came a changed perception of Donnel Point's significance.[185]

Because 41SP36 is not lost, and indeed one of the few remaining intact shell middens in the area, its perception of significance has changed. Now, it is not just notable; it is one of the only 2,300-year-old shell middens left.[186] Its significance, from an archeological perspective, has grown tremendously, too, because it is one of the few existing places where we can learn about the lives of ancient people. Its cultural significance has also been transformed. According to the Karankawa, the Texas Coast represents a sacred matrix of interconnected spiritual relationships where they "can feel the memories of their ancestors."[187] From the perspective of a present-day Karankawa, Hawk Clan member Chiara Sunshine Beaumont, this is just a glimpse into the site's cultural importance:

> *The land…is sacred to us. It is where my relatives from the coyote clan journey to pray and gather in thanks and it is where our ancestors left their tools, pottery [and] artifacts for us. It is a tangible piece of our lineage that connects us to that land, and we have been connected to this land living on it, protecting it for at least the last 2000 years.*[188]

The significance of Donnel Point and other cultural resources on the Texas Coast cannot be overstated.

### B. Commenters should be Consulting Parties.

Commenters have requested consulting party status.[189] As is now well-established through the cited history and reports, Donnel Point is a profound and significant cultural

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[185] *Id.*
[186] *See generally* Donnel Point Report.
[187] Bluewater Report at 10.
[188] *Id.*
[189] Commenters' National Historic Preservation Act Section 106 Consulting Party Request for Docket Nos. CP26-87-000, PF25-10-000, CP26-82-000, and CP18-513-000, *Corpus Christi Liquefaction Stage IV, LLC,*

resource of the Karankawa Tribe and should qualify as a historic property under the NHPA.[190] This is the site of a former village of the Karankawa People, and their ancestors. Thus, the site is of particular cultural significance to Commenters. Based on this, and each Tribe's well-documented historic presence on the Texas coast, the Karankawa Tribe and the Carrizo/Comecrudo Tribes requested to be consulting parties in the Section 106 process.[191] Significantly, in other instances, State and Federal agencies have designated the Karankawa and Carrizo/Comecrudo Tribes as consulting parties for properties important to their history and culture.[192] Coastal Watch additionally played an important role in documenting Donnel Point's importance and is also requesting to be a consulting party.

### C. The Project threatens Cultural Resources.

The Expansion's proposed LNG carrier route poses a serious risk to Donnel Point because 870 LNG Carriers ("LNGC") will now be routed directly by the rediscovered intact shell midden, further exposing it to degradation. As discussed, the estimated impacts from the Project include as many as 870 vessel trips per year.[193] Because these tanker ships, also called LNGCs, are up to 294.8 meters in size with a beam of 54 meters and laden draft of 12 meters, these ships will cause shoreline erosion.[194] This shoreline erosion threatens the remaining precious cultural resources on the Texas Coast. In addition to this uptick in

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*Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket Nos. CP26-87-000, PF25-10-000, CP26-82-000, and CP18-513-000 (Accession # 20260414-5005)(April 13, 2026).

[190] 36 C.F.R. § 800.16(l)(1) and (2).

[191] 36 C.F.R. § 800.2(c)(5).d.

[192] *See* Abselom Ketzirah, RE: Request for Consulting Party Status of Stephen F. Austin Elementary (1935), currently Minnei Mae Hooper Elementary, located at 500 Abell Street, Wharton, Texas, 77488 (May 28, 2021); Nancy A. Kenmotsu & Mariah F. Wade, Amistad National Recreation Area, Del Rio Texas American Indian Tribal Affiliation Study Phase I: Ethnohistoric Literature Review, at 5, 136, (Tex. Dep't Of Transportation & National Park Service) (2002), https://npshistory.com/publications/amis/aspr-34.pdf.

[193] Application at 9.

[194] Marine Link, *NYK Signs Long-Term Charter Agreement for New LNG Carriers with Cheniere*, (Feb. 5, 2026). https://www.marinelink.com/news/nyk-signs-longterm-charter-agreement-new-535340 (last visited Mar. 9, 2026).

traffic, the Project will require a new berth to accommodate LNGCs with "cargo capacities up to approximately 200,000 $m^3$."[195] And this new berth will require dredging to a depth of 46 feet and approximately 1,200,000 cubic yards of material.[196] Because dredging deepens and changes the natural shape of the seabed, it can lead to accelerated erosion. Additionally, excavating sediment can destroy seagrass beds, which act as natural buffers against erosion—and all of this threatens significant known cultural resources in the Project area.[197]

### D. Area of Potential Effects ("APE") is too narrow.

As part of the Section 106 process, FERC must identify historic properties which may be adversely affected by a federal project.[198] Per the NGA and NHPA, FERC cannot issue a certificate without taking "into account the effects of their undertakings on historic properties."[199] To begin evaluating how a Project may impact historic properties, an Area of Potential Effects ("APE") may be determined. The APE is defined in regulations as "the geographic area *or areas* within which an undertaking *may directly or indirectly* cause alterations in the *character or use* of historic properties."[200]

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[195] Application at 14.
[196] Resource Report 1 – General Project Description at 1-26, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026) (hereinafter "RR1").
[197] Seagrass Meadow, FL. KEYS NAT'L MARINE SANCTUARY, https://floridakeys.noaa.gov/plants/seagrass.html, (last visited Mar. 9, 2026); Li Chao *et al.*, *Changes in Survival and Growth in Response to Different Combinations of Turbidity and Duration in Eelgrass Zostera Marina Plants*, 249 ESTUARINE COASTAL & SHELF SCI Article 107108 (Feb. 2021) at 1; Kirk Cammarata, *Impacts to Ingleside on the Bay Seagrass Meadows from Siltation and Erosion* (2022), at 10.
[198] 54 U.S.C. § 306108.
[199] 36 C.F.R. § 800.1(a).
[200] 36 C.F.R. § 800.16; *see also FirstLight Hydro Generating Co.*, 162 FERC ¶ 61,235, ¶13 (2018) (FERC-defined Project APE included "(i) all lands within the projects' boundaries and (ii) lands outside the projects' boundaries where project construction, operation, or project-related recreational development or other enhancements may cause changes in the character or use of historic properties.").

Specifically, in determining any APE, the agency must review, seek and gather information on historic properties.[201] Each of these affirmative actions has its own set of criteria as well. When reviewing information, FERC must not only review existing information, but the agency must also review information that includes "data concerning *possible* historic properties *not yet identified*."[202] When seeking information, FERC must pursue information from "consulting parties" *and* "other individuals and organizations *likely to have knowledge of, or concerns with,* historic properties in the area" and "identify issues relating to the undertaking's effects on historic properties."[203] When gathering information, FERC is instructed to collect that information from "individuals and organizations" that have requested to be consulting parties.[204]

Additionally, the APE must encompass direct and indirect project consequences that may affect historic properties.[205] An APE must be tailored to a Project's "scale" and be reciprocal also to the "nature of any undertaking."[206] Commenters urge the Commission to re-draw the current APE referenced in CCL's application materials as it fails to include areas that the "undertaking may directly or indirectly cause alterations" to for several reasons.[207] It is well documented that the Texas Coast is clustered with invaluable Indigenous artifacts.[208] Currently, the APE is constrained to the terminal footprint where subsurface may be impacted.[209] The permitted project area and the APE cannot be

[201] 36 C.F.R. § 800.4.
[202] 36 C.F.R. § 800.4(a)(2) (emphasis added).
[203] 36 C.F.R. § 800.4(a)(3) (emphasis added).
[204] 36 C.F.R. § 800.4(a)(4); *and see* 36 C.F.R. § 800.3(f).
[205] 36 C.F.R. § 800.16(d).
[206] *Id.*
[207] *Id*.
[208] Donnel Point Report at 3–5; *and see* Bluewater Report at 11–12.
[209] *See* RR4 at 4-3 (Figure 4.2-1); 4-2 ("The Direct APE includes areas where ground disturbances will occur as a result of the Projects, potentially impacting subsurface resources (archaeological sites). The

synonyms. At the very least, an APE must include all project components so that impacts on cultural resources are comprehensive. As is, the currently designated APE fails to do the work its definition requires because: it excludes impacts from the terminal's operations and project components; it excludes supporting terminal infrastructure (like compressor stations and portions of pipelines); it excludes a 150 mile pipeline (Traverse Pipeline); and it excludes impacts from the LNGC traffic route—which will now have *at least* 870 vessels routed there from CCL.[210] One primary purpose of the Project stated in its Application is to "enable abundant natural gas supplies to be exported as LNG."[211] This purpose can only be accomplished when all the Project's components work together. To draw a compliant APE means drawing an APE that also includes areas that will suffer other impacts that are central to the Expansion—not just to the terminal's landlocked footprint.

The Application, by way of other maps showing impacts, demonstrates the Project's own adverse impacts are far-reaching from onshore to offshore, and even out into the Bay. For example, a large portion of Corpus Christi Bay was analyzed for impacts on seagrasses.[212] Admitting the Project will have "direct impacts to seagrasses, which are unique and sensitive plant species," CCL acknowledges that "unavoidable loss" of seagrasses will require mitigation.[213] As is shown in Application Figure 3.1-2, these impacted seagrasses extend far beyond the Expansion's footprint.[214] As was explained

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Indirect APE includes areas where the planned aboveground facilities associated with the Projects may alter the viewshed of that location.").

[210] *Compare* RR4 at 4-3 (Figure 4.2-1) with RR1 at 27.

[211] Application at 20.

[212] Resource Report 3 – Fish, Wildlife and Vegetation at Figure 3.1-2 Seagrass within Corpus Christi Bay CCL Stage 4 and CCPL Expansion Projects, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.,* Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026) (hereinafter "RR3").

[213] RR3 at 3-7.

[214] RR3 at 3-7.

above, seagrasses play an important role in preventing shoreline erosion.[215] Additionally, the Project will have dredge placement areas shown in Application Figure 2-3.[216] The current APE does not include any of the dredging areas—or account for the impacts that either the dredging or the placement areas may have on cultural resources. Additionally, Zones of Concern of Accidental Release shown in Application Figures 11.2-1 and 11.2.2.[217] are also unaccounted for in the APE. This is of particular concern because an accidental release may totally destroy remaining cultural resources. Furthermore, the Application explains that areas near Chiltipin Creek (that will house compressor stations, other project components, and portions of a pipeline) may include cultural resources that may be affected, but yet, the APE also fails to include that inland area.[218] The Project will also have its own new 150 mile pipeline—the Traverse Pipeline—to service it, but that area is totally omitted from all the current Resource Reports. Because these maps illustrate other potential impacted areas—these maps illustrate additional ways, but not every way, this Expansion "may directly or indirectly cause alterations" to areas beyond what is currently captured by the APE. As such, the APE must be expanded to include these areas beyond the Expansion's footprint onshore to include all the project components that may affect cultural resources. Including some areas, and not others, defeats the purpose of the APE.[219]

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[215] *Supra* at Section VIII.
[216] Appendix 2A: Figures at 52, Figure 3-2 Dredge Material Placement Areas, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.*, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026).
[217] RR11- Reliability and Safety Study RR11 at 11–13.
[218] *Compare* Resource Report 4 at 4-3 to Appendix 4E—Geoarchaeological Deep Testing Report, Figure 1 Project Overview (Aerial) at 3, *Corpus Christi Liquefaction Stage IV, LLC, Corpus Christi Liquefaction, LLC*, and *Cheniere Corpus Christi Pipeline, L.P.*, Docket CP26-82-000, Docket No. PF25-10-000, Docket CP26-87-000, and/or CP18-513-000, (Feb. 3, 2026).
[219] 36 C.F.R. § 800.16(d).

Importantly, 36 C.F.R. § 800.4 requires FERC to "make a reasonable and good faith effort to carry out appropriate identification efforts" with respect to historic properties within the Area of Potential Effects. The current APE is deficient and fails to include areas with Project components that will be adversely impacted. Movants request that FERC reexamine the APE to include Project impacts that may directly or indirectly injure historic properties on the Texas Coast.

Because the Expansion is on the North Shore of Corpus Christi Bay, which was one of the most intensively occupied Indigenous places on the Texas Coast—more cultural resources are likely at risk.[220] Notably, 41SP36 is missing from the current application's cultural resource assessment. To appropriately evaluate the breadth of resources that may be implicated by the Expansion, the EIS must: (1) document all cultural resources that may indirectly or directly impacted by the Expansion; (2) evaluate whether those cultural resources can withstand project impacts, and (3) determine whether Project footprint changes and/or mitigation is required.[221]

As has been explained, Indigenous settlements were historically clustered on the Texas shoreline and industrialization from the Expansion poses a particular risk to these artifacts. The Cultural Resources Report attached to the Application confirms this, but it remains deficient. Specifically, there are 18 sites within the narrowly drawn APE, and the report shows 38 previously recorded sites within 1 mile of the APE, including:

- 1 historic above ground site that listed on the NRHP;
- 1 burial ground that is NRHP eligible; and

[220] *See generally* Donnel Point Report; *see also* Motion to Intervene of Indigenous Peoples of the Coastal Bend at 2, *Corpus Christi Liquefaction LNG, LLC*, Docket Nos. CP23-129-000 & PF22-10-000, (Accession # 20230504-5148) (May 4, 2023).
[221] *See* 42 U.S.C. §§§ 4331(b)(4), 4332(2)(C)(iii), 4332(2)(C)(v) (NEPA requirements).

- 13 unevaluated shell middens.[222]

But, as many sites as have been identified, if the APE were appropriately drawn to include all the other cultural resources in impacted areas—there would be many more. Shovel tests must be completed at some of these sites because they could be adversely impacted and must be evaluated. Field surveys are still incomplete.[223] No decision can be made on this Project until those field surveys have been completed. Project approval should also not be granted until consultations with the groups requesting it are completed.

[222] RR4 at 4-6–4-7.
[223] RR4 at 4-11.

## XII. EXHIBITS

| NO. | DESCRIPTION |
|---|---|
| 1 | Water Crisis Documentation |
| 2 | Air Quality Documentation |
| 3 | Cultural Resource Documentation |
| 4 | Vessel Traffic Risks and Traffic Reports |

## XIII. CONCLUSION

Commenters have highlighted significant areas of concern where necessary analysis is required. Under NEPA and the NGA, the Commission is required to comprehensively evaluate the impacts described. Commenters appreciate the opportunity to participate in the NEPA process and urge FERC to take a hard look at this Project.

Dated: May 29, 2026

Respectfully submitted,

/s/ *Caroline Crow*
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***Counsel for Ingleside on the Bay Coastal Watch Association, Inc., Indigenous Peoples of the Coastal Bend, the Karankawa Tribe of Texas, and the Carrizo/Comecrudo Tribe of Texas***

## CERTIFICATE OF SERVICE

Pursuant to 18 C.F.R. § 2010(h) and (j), the undersigned served all parties electronically. I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding for the following Docket Nos: CP26-87-000, CP26-82-000, and CP18-513-000.

Dated: May 29, 2026

/s/ *Michelle Carlos*

Michelle Carlos
Supervising Litigation Paralegal
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415-217-2110
mcarlos@earthjustice.org

**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

| | | |
|---|---|---|
| **Cheniere Corpus Christi Pipeline, L.P.** | **§** | **Docket No. CP18-513-000** |
| **Corpus Christi Liquefaction Stage IV, LLC** | **§** | **Docket No. CP26-82-000** |
| **Corpus Christi Liquefaction, LLC** | **§** | **Docket No. CP26-87-000** |

**SCOPING COMMENTS OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC**

# EXHIBIT 1

City of Corpus Christi

# City of Corpus Christi Provides Update on Regional Water Supply

By City of Corpus Christi (/news/authors/city-of-corpus-christi/) - Mar 11, 2026

- City News (/news/city-news/)
- Communications (/news/communications/)
- Corpus Christi Water (/news/corpus-christi-water/)

The City of Corpus Christi is facing a record drought that, if conditions persist, may necessitate further water conservation measures later this year to protect the water supply.

Over the past few years, the City has worked to strengthen its water supply by making essential upgrades to its water distribution system, pipelines, and infrastructure. The City made important improvements to the O.N. Stevens Water Treatment Plant to ensure the infrastructure could support the Mary Rhodes Pipeline at full capacity, long-overdue investments.

These improvements lay the foundation for the next phase of water expansion currently underway. The projects in progress are expected to add up to 76 million gallons per day (MGD) of new water capacity. The community can trust that the water supply is being carefully managed and reinforced.

As part of a nearly $1 billion investment in water infrastructure, the Corpus Christi City Council approved a portfolio of active projects to increase regional water supply capacity significantly. Several of these projects are already producing water, with additional capacity expected to come online gradually over the next 24 months. Active groundwater and reclaimed water projects include:

**The Nueces River Groundwater Wells Project** – 36 MGD across three well fields:

- **Eastern Well Field** 10 MGD
- **Western Well Field** 17 MGD
- **ERF Well Field** 9 MGD

**Evangeline Groundwater Project** – 24 MGD

**Reclaimed Water Project** – 16 MGD

Groundwater resources will be managed carefully to protect the long-term need[illegible]ers, ranchers, and rural communities.

The City has also advanced three seawater desalination projects, recognizing seawater d[illegible]ation as the only water source resilient to operating independently of rainfall.

Let's Chat

The Inner Harbor Desalination Project has received all required permits. It is located within the ship

channel, next to the navigation station, a key hub in the City's water distribution system. The project is set for City Council review in April 2026. A far-field modeling committee is actively collaborating with the City to provide feedback on additional environmental modeling to better protect the health of nearby bays. This effort builds on previous modeling work already completed by the City.

To further secure future supply, the City Council agreed to pay a $2.7 million reservation fee with the Nueces River Authority, guaranteeing the City a share of water when the plant is built. A third potential facility at the Barney Davis site is being explored in partnership with CPS Energy.

The City of Corpus Christi is committed to keeping the community informed about the regional water supply with accurate, up-to-date information.

The City's official website is the most reliable and accessible resource for current data on water supply conditions, project updates, conservation measures, and other City-related news.

This information can be found:

(/news/) City of Corpus Christi – Online Newsroom (/news/)

City of Corpus Christi – For the Record (/news/categories/for-the-record/)

Securing Water, Together Website (https://securingwater.corpuschristitx.gov/)

Drought Status Stage 3 Website (https://stage3.cctexas.com/)

For media inquiries, please contact Ashley Marion, Strategic Business Manager at (361) 826-3706 or ashleym6@corpuschristiTX.gov (mailto:ashleym6@corpuschristiTX.gov) .

Back to News Search (/news/)


**Securing Water, Together.**

Learn about the City's 4-Tiered Approach to Water Security.

(https://securingwater.corpuschristitx.gov/)

## Contact

Call Center Representatives can assist you Monday through Friday from 8 a.m. to 5 p.m.

Call 3-1-1 (tel:311)
3-1-1 Website (https://311.cctexas.com/)
Directions to City Hall (/living-in-our-community/directions-to-city-hall/)

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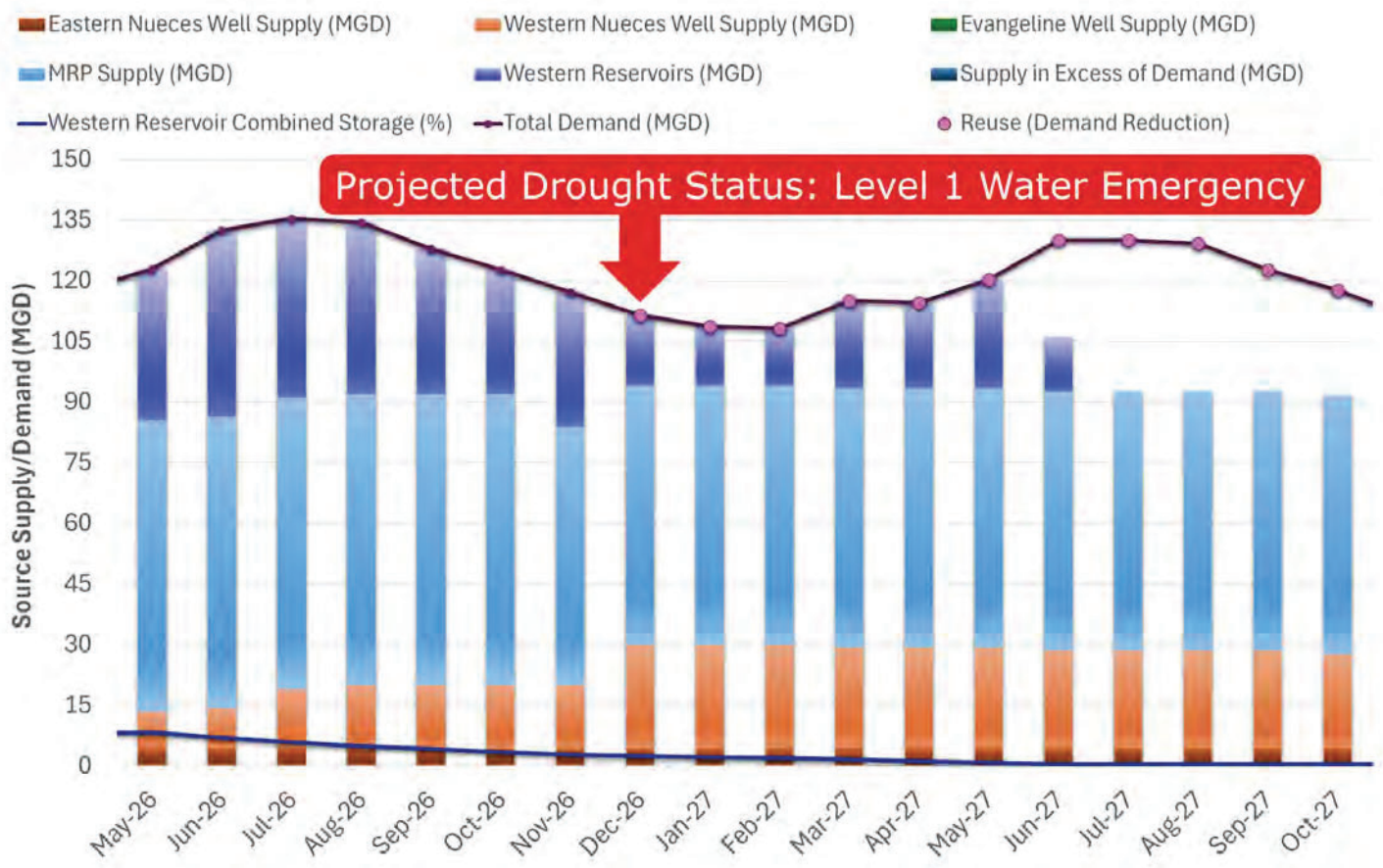
WHAT YOU NEED TO KNOW ABOUT
A POTENTIAL LEVEL 1 WATER EMERGENCY

CITY OF CORPUS CHRISTI
CORPUS CHRISTI WATER



# What You Need to Know About A Potential Level 1 Water Emergency

**Anticipated date for potentially declaring Level 1 Water Emergency: December, 2026**



# Proposed Conservation Mechanisms

## Baseline - Curtailment % = Allocation

## Baselines

Baseline usage is the determined water usage of each customer class to establish its allocation.

## Curtailment

Curtailment is the required water reduction of water usage of each customer class to establish its location. The proposed percentage of curtailment for Level 1 Water Emergency is 25%. ***Pending City Council approval***

## Allocations

Allocations are the amount of water a customer may use per month during Level 1 Water Emergency.

## Under Level 1 Water Emergency *Pending City Council Approval*

| Customer Type | Baseline (Gallons per month) | Curtailment | Allocation |
|---|---|---|---|
| Residential | 8,000 | 25% | 6,000 gallons per month |
| Commercial | Individual baseline per customer | 25% | Baseline - 25% = Allocation |
| Wholesale | Individual baseline per customer | 25% | Baseline - 25% = Allocation |
| Large Volume Users | Individual baseline per customer | 25% | Baseline - 25% = Allocation |
| City of Corpus Christi Municipal Accounts | Individual baseline per customer | 25% | Baseline - 25% = Allocation |

# Community Engagement: Water Information Sessions

Beginning Monday, May 11, 2026, citizens will have the opportunity to attend Water Information Sessions. Water Information Sessions are scheduled across each district, including the Island and Calallen.

| Date | District | Location |
|---|---|---|
| ~~May 11, 2026, 6:00 p.m. to 7:00 p.m.~~ | District 4 (The Island) | **Seashore Learning Gymnasium**<br>15801 South Padre Island Drive |
| May 28, 2026, 6:00 p.m. to 7:00 p.m. | District 2 | **Greenwood Senior Center**<br>4040 Greenwood Drive |

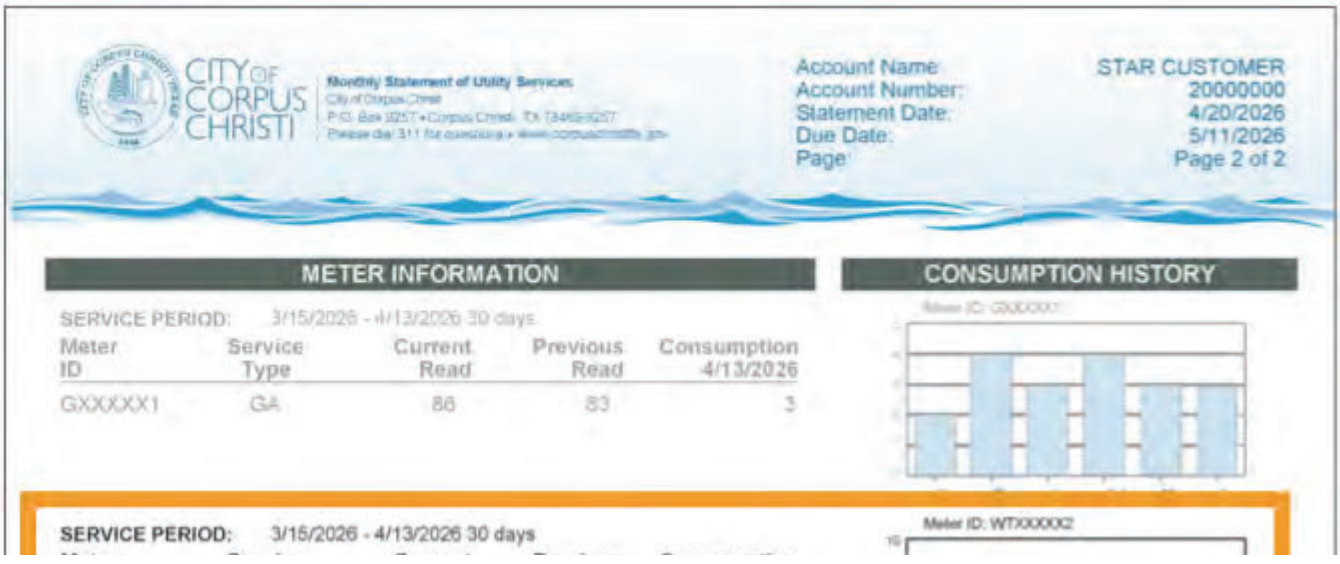
| Date | District | Location |
|---|---|---|
| June 3, 2026, 6:00 p.m. to 7:00 p.m. | District 5 | **CCPD Police Training Academy**<br>6902 Yorktown Boulevard |
| June 24, 2026, 6:00 p.m. to 7:00 p.m. | District 3 | **Moody High School Gymnasium**<br>1818 Trojan Drive |
| July 15, 2026, 6:00 p.m. to 7:00 p.m. | District 4 | **Ethel Eyerly Senior Center**<br>654 Graham Road |
| August 6, 2026, 6:00 p.m. to 7:00 p.m. | District 1 (Calallen/Annaville) | **Grace United Methodist Church**<br>14521 Northwest Boulevard |
| August 26, 2026, 6:00 p.m. to 7:00 p.m. | District 1 | **Antonio E. Garcia Arts & Education Center**<br>2021 Agnes Street |
| September 16, 2026, 6:00 p.m. to 7:00 p.m. | District 2 | **Lindale Senior Center**<br>3135 Swantner Drive |

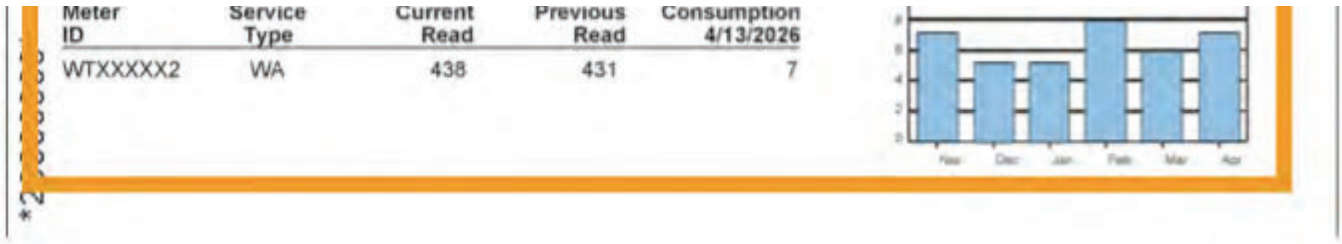
# Understanding Your Water Bill

There are several ways a customer can check water usage.

Utility bill:

- Look for the Meter Information and Consumption History sections.
- Look for the Meter ID that starts with a letter W.
- The number under the word Consumption represents the number of gallons consumed in the service period multiplied by 1,000.
- In this example, the number 7 is multiplied by 1,000 gallons for a consumption of 7,000 gallons.
- The bar graph on the right shows water use for the last 6 months.





| Meter ID | Service Type | Current Read | Previous Read | Consumption 4/13/2026 |
|---|---|---|---|---|
| WTXXXXX2 | WA | 438 | 431 | 7 |

3-1-1:

- Customers can dial 3-1-1, and a representative will assist you.

## Check Your Water Usage Online

Commercial and Residential customers can check their monthly and current water usage, available in both English and Spanish:

- **Commercial Customers**
- **Residential Customers**

## Frequently Asked Questions

**What is a Level 1 Water Emergency in Corpus Christi?**
A Level 1 Water Emergency is declared when the water supply is 180 days away from not meeting demand. During a Level 1 Water Emergency, strict conservation measures are put in place for all customers.

**What are water curtailments, and how do they affect customers?**
Curtailment is a required reduction in water use by all customers to meet water demand. Curtailment is calculated based on each customer class' baseline water use**.** A 25% curtailment during a Level 1 Water Emergency is ***pending City Council approval***.

**What is my baseline water use? **Pending City Council Approval***
Baseline use is water usage by each customer class and is used to establish allocations during a Level 1 Water Emergency.

- The monthly baseline during a Level 1 Water Emergency for a City of Corpus Christi residential water customer account is 8,000 gallons per month.
- The monthly baseline during a Level 1 Water Emergency for a City of Corpus Christi commercial water

customer account is based on the average of the account's monthly usages during 2021 through 2023, excluding the lowest monthly value for each calendar month.

- During a Level 1 Water Emergency, the Summer, Spring/Fall, and Winter seasonal baselines for each large volume account of the City of Corpus Christi is determined using the average of the account's monthly usages from 2022 through 2024 as follows, excluding the lowest monthly value for each calendar month:
    1. Summer: average of monthly usages from June-September
    2. Spring/Fall: average of monthly usages from April-May and October-November
    3. Winter: average of monthly usages from January-March and December
- During a Level 1 Water Emergency, the Summer, Spring/Fall, and Winter seasonal baselines for each of the City of Corpus Christi Wholesale water customer accounts (including San Patricio Municipal Water District, South Texas Water Authority, City of Mathis, City of Alice, City of Beeville, Violet Water Supply Corporation, Nueces County Water Control and Improvement District No.3 and Nueces County Water Control and Improvement District No. 4) are determined for each wholesale customer using the average of the account's monthly usages from 2022 through 2024 as follows, excluding the lowest monthly value for each calendar month:
    1. Summer: average of monthly usages from June-September
    2. Spring/Fall: average of monthly usages from April-May and October-November
    3. Winter: average of monthly usages from January-March and December

**What is an allocation?**

An allocation is the amount of water a customer may use per month during a Level 1 Water Emergency.

**How is my allocation calculated? **Pending City Council Approval***

Baseline – Curtailment % = Allocation

- The residential customer class allocation during a Level 1 Water Emergency is 6,000 gallons per month: 8,000 (baseline) – 2,000 (25% curtailment) = 6,000.
- For commercial, wholesale, and large volume customer classes, the allocation during a Level 1 Water Emergency is calculated on an individual baseline minus 25% curtailment.

**What if I use more water than my allocation?**

Customers who use more than their Level 1 Water Emergency allocation are subject to surcharges.

**What are surcharges, and why are they used?**

Surcharges are temporary fees during a Level 1 Water Emergency that encourage conservation. Surcharges are unique to each customer class. Surcharges need approval from Council.

| | | |
|---|---|---|
| **Residential** | $4.00 per 1,000 gallons<br>$8.00 per 1,000 gallons | Above Allocation to Baseline (6,000 to 8,000)<br>Above Baseline (8,000+) |

| | | |
|---|---|---|
| **Commercial** | $4.00 per 1,000 gallons<br>$8.00 per 1,000 gallons | Above Individual Allocation to Baseline<br>Above Individual Baseline |
| **Large-Volume Users** | $4.00 per 1,000 gallons<br>$8.00 per 1,000 gallons | Above Individual Allocation to Baseline<br>Above Individual Baseline |
| **Wholesale Customers** | $4.00 per 1,000 gallons<br>$8.00 per 1,000 gallons | Above Individual Allocation to Baseline<br>Above Individual Baseline |

***Pending City Council approval***

**What is the Drought Surcharge Exemption Fee (DSEF)?**

The DSEF is a fund that certain large volume customers voluntarily contribute to. The fund is to be used exclusively for new drought-proof water projects, adding an additional source of financing for future water supply. To date, the DSEF has contributed $6 million dollars per year toward water supply projects. The DSEF does not exempt large-volume customers from curtailment.

**Will my water be shut off if I use more than my allocation?**

CCW water customers are not subject to violations, penalties, enforcement, or shut off for exceeding their baseline or allocation during a Level 1 Water Emergency.

**Can I wash my car/boat/motorbike/trailer/vehicle?**

During a Level 1 Water Emergency, use of water to wash any car, boat, motorbike, trailer, or other vehicle is allowed on any day if washing is done by hand using a five (5) gallon bucket or smaller, or if washing is done using a hand-held hose with a shut-off nozzle. Flushing of boat engines is allowed for engine maintenance. Customers who use more than their allocation are subject to surcharges. ***Pending City Council approval***

**Can I water my plants/vegetable gardens/landscaping?**

During a Level 1 Water Emergency, the use of water from the CCW system for the irrigation of landscaped areas is not allowed.

Exceptions:

- Alternate water sources, such as water captured in a rain barrel or well water, may be used for watering.
- Potted plants can be watered with water from the CCW system.

Customers who use more than their allocation are subject to surcharges.

***Pending City Council approval***

**Can I fill my swimming pool?**
During a Level 1 Water Emergency, filling pools with water from the CCW system is allowed to maintain structural integrity. Pool covers are required to minimize water loss from evaporation. Using inflatable pools and water slides is also allowed. Please avoid excessive water use, and please avoid letting water run into streets or gutters. Customers who use more than their allocation are subject to surcharges. ***Pending City Council approval***

**Can I power wash?**
During a Level 1 Water Emergency, power washing with water from the CCW system is allowed. Please avoid excessive water use, and please avoid letting water run into streets or gutters. Customers who use more than their allocation are subject to surcharges. ***Pending City Council approval***

**Can I water my foundation?**
During a Level 1 Water Emergency, watering with drip irrigation is allowed every two weeks on designated watering days. You can find your watering day here: Lake Levels Stage 3 Water Restrictions Dashboard. Customers who use more than their allocation are subject to surcharges. ***Pending City Council approval***

**Will car washes be allowed to operate?**
During a Level 1 Water Emergency, car washes will be allowed to operate. They are classified as commercial customers and will have a baseline and allocation calculated. Customers who use more than their allocation are subject to surcharges. ***Pending City Council approval***

**What is being done to get more water?**
The City has several water supply projects in various stages of development to increase water supply, including groundwater wells, seawater desalination, and reclaimed water. Please visit www.SecuringWater.corpuschristitx.gov for more project information.

**How long will a Level 1 Water Emergency last?**
Based on the Drought Contingency Plan, a Level 1 Water Emergency may be terminated when the City Manager, or designee, determines that the City's total water supply can meet the total regional demands for more than 180 days.

**What are some ways I can conserve water?**
There are many ways to conserve water, such as checking for leaks, using water-saving appliances, and washing full loads of dishes or laundry. Visit Take of Texas's website for water-saving resources and information. Take Care of Texas Blog | Take Care of Texas

**How can residents stay updated on water supply conditions?**
Residents can stay updated in several ways.

- Weekly media briefings are held every Friday and are livestreamed on the City's YouTube channel: City of

Corpus Christi - YouTube

- Water supply project information can be found at: www.SecuringWater.CorpusChristiTX.gov
- For official City statements, often used to clarify factual details, visit For the Record on the City's website: 'For the Record' News | City of Corpus Christi
- Inside City Hall is a long-form video series providing a more in-depth look at water projects and updates: Inside City Hall | City of Corpus Christi
- Official City social media platforms for quick and accurate information: Facebook; X(Formerly Twitter); LinkedIn

**QUESTIONS**

## Submit Your Question About a Potential Level 1 Water Emergency

Questions will be moderated and considered for inclusion on this page.

Ask a question...

Email

Enter your email

Screen name

Enter your screen name

I agree to the Terms of Use and Privacy Policy for using Sentiment & Feedback

Submit

Register Now

*Page last updated: 20 May 2026, 01:16 PM*

## STAY INFORMED

Subscribe for project updates

Your email address...

**Subscribe**

3 members of your community are following this project

**Videos of Level 1 Water Emergency Related Council Meetings and Workshops**

Weekly Water Media Briefing: City Manager Previews Water Emergency Measures May 8, 2026

City Council Meeting April 28, 2026

City Council Meeting April 14, 2026

City Council Workshop April 21, 2026

City Council Workshop Meeting March 31, 2026

**Weekly Water Media Briefings**

Youtube Playlist of Water Update Media Briefings

**How the City is Securing Water**

Securing Water, Together Website

**Media Contact Info**

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Corpus Christi Water

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### Mia Ganceres


Public Information Officer

City of Corpus Christi

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### Corpus Christi Water Media Kit

CCW Media Fact Sheet (1.53 MB) (pdf)

### Stay Updated with the City's Online Newsroom

City of Corpus Christi Online Newsroom

**From:** Robert Black
**Sent:** Friday, March 13, 2026 4:26 PM
**To:** kelly.keel@tceq.texas.gov <kelly.keel@tceq.texas.gov>; Steven Schar <steven.schar@tceq.texas.gov>
**Subject:** Corpus Christi Water...

Executive Director Keel and Deputy Executive Director Schar,

I write you on behalf of Governor Abbott. As the Texas Commission on Environmental Quality (TCEQ) is aware, on July 7, 2022, Governor Abbott issued a disaster proclamation certifying that drought conditions posed a threat of imminent disaster in numerous Texas counties. The Governor has renewed that proclamation every month since then, most recently in February 16, 2026, and Nueces County has been included in each renewal since October 2024.

Unfortunately, disaster is on the doorstep of the City of Corpus Christi, which requires approximately 95 to 130 million gallons per day ("MGD"), which equals about 35 to 47 billion gallons per year. The Lake Corpus Christi and Choke Canyon Reservoirs, which provide most of the City's water, have dropped over the last five years, and each reservoir is now less than ten percent full. According to the City's models, these reservoirs may be depleted as soon as May 2026.

In response, Corpus Christi must diversify its water sources immediately. On January 30, 2026, the City submitted a permit application to TCEQ under Section 11.042(c), Tex. Water Code, to allow the City to convey additional water down the Nueces River. The water sources that would supply this additional water if the permit is approved could immediately increase the City's water supply up to 26 MGD. But the normal permitting process takes several months, and Corpus Christi's demand for water will soon exceed available supplies.

TCEQ has authority under Section 11.138, Tex. Water Code, to issue temporary permits to meet the demands of a water emergency. Temporary permits granted under that provision are limited to ten acre-feet in emergency applications, far less than what is needed to provide City residents relief.

Section 418.016, Tex. Government Code, authorizes Governor Abbott to suspend or supersede any provision of a regulatory statute or rule of a state agency that would prevent, hinder, or delay necessary action in coping with a disaster in this State. As he has made clear, the State will ensure that Corpus Christi residents have the water they need to promote public health and safety.

Therefore, Governor Abbott suspends and supersedes the ten acre-feet limitation set forth in Section 11.138, Tex. Water Code; any requirements related to notice and hearings for temporary permits; and any rule that may delay the expedited issuance or impede the intended effect of a temporary permit, including Sections 30 T.A.C. §§ 295.154, 295.161, and 295.181.

These suspensions and supersessions only apply to the City of Corpus Christi's use of the beds and banks of the Nueces River, and only authorize the conveyance of up to 29,034 acre-feet of groundwater per year from the Gulf Coast aquifer for subsequent diversion and use for municipal purposes for the duration of this disaster.

Governor Abbott further directs TCEQ to continue working with the City in its pursuit of a standard permit in accordance with TCEQ's normal regulatory processes, allowing for full public participation while this temporary permit is in effect.

Sincerely,

Robert Black
Chief of Staff

**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

| | | |
|---|---|---|
| **Cheniere Corpus Christi Pipeline, L.P.** | **§** | **Docket No. CP18-513-000** |
| **Corpus Christi Liquefaction Stage IV, LLC** | **§** | **Docket No. CP26-82-000** |
| **Corpus Christi Liquefaction, LLC** | **§** | **Docket No. CP26-87-000** |

**SCOPING COMMENTS OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC**

# EXHIBIT 2

# Texas Commission on Environmental Quality
## Interoffice Memorandum

**To:** Commissioners **Date:** November 26, 2024

**Thru:** Laurie Gharis, Chief Clerk
Kelly Keel, Executive Director

**From:** Richard C. Chism, Director *RCC*
Office of Air

**Docket No.:** 2024-1660-MIS

**Subject:** Commission Approval for the 2024 Primary Annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) State Designations

2024 Annual $PM_{2.5}$ NAAQS State Designations
Non-Rule Project No. 2024-025-OTH-NR

**Background and reason(s) for the state designations package:**
On February 7, 2024, the U.S. Environmental Protection Agency (EPA) promulgated a revised primary annual NAAQS for $PM_{2.5}$, lowering the standard from 12.0 to 9.0 micrograms per cubic meter ($\mu g/m^3$). Section 107(d) of the federal Clean Air Act (FCAA) requires states to submit their designations to EPA within one year of NAAQS promulgation. By February 7, 2025, the governor of each state must submit designations of attainment, nonattainment, or unclassifiable under the 2024 primary annual $PM_{2.5}$ NAAQS for all areas of the state. The rule establishing the 2024 annual $PM_{2.5}$ NAAQS conveys EPA's intent for state designations to be based on annual $PM_{2.5}$ design values calculated using certified monitoring data from 2021 through 2023 (89 *Federal Register* (FR) 16202). EPA anticipates that final designations will be signed in February 2026 based on annual $PM_{2.5}$ design values calculated using certified monitoring data from 2022 through 2024.

A violation of the 2024 primary annual $PM_{2.5}$ NAAQS at a monitor is a design value greater than 9.0 $\mu g/m^3$. Using certified data, 10 counties with regulatory monitors have 2023 annual $PM_{2.5}$ design values greater than 9.0 $\mu g/m^3$: Bowie, Cameron, Dallas, Harris, Harrison, Hidalgo, Kleberg, Tarrant, Travis, and Webb. Montgomery County has an invalid 2023 annual $PM_{2.5}$ design value greater than the 9.0 $\mu g/m^3$ standard, however, it may generate a valid 2024 annual $PM_{2.5}$ design value greater than the standard if enough valid data are collected.

**Scope of state designations package:**
The recommendation from the commission, along with supporting documentation, will be provided to the governor with information sufficient to make designations for all counties in Texas to EPA by February 7, 2025. EPA will consider the governor's designations in making its own designations.

**A.) Summary of what the state designations package will do:**
Staff's recommendation to the governor is for counties with regulatory monitors with valid 2023 annual $PM_{2.5}$ design values measuring over the 2024 $PM_{2.5}$ NAAQS of 9.0 $\mu g/m^3$ and not significantly impacted by international emissions and/or exceptional events be designated nonattainment. Staff recommends that the following counties be designated nonattainment for the 2024 annual $PM_{2.5}$ NAAQS: Bowie, Dallas, Harris, and Tarrant.

Staff recommends that all counties in the State of Texas that have regulatory monitors that would meet the 2024 annual $PM_{2.5}$ NAAQS if not for international emissions and/or exceptional events be

designated attainment. Staff recommends that the following counties be designated attainment for the 2024 annual $PM_{2.5}$ NAAQS: Cameron, Harrison, Hidalgo, Kleberg[1], Travis[2], and Webb.

Staff recommends that all counties in Texas that have regulatory monitors meeting the 2024 annual $PM_{2.5}$ NAAQS of 9.0 µg/$m^3$, based on 2023 annual $PM_{2.5}$ design value be designated attainment. Staff recommends that the following counties be designated as attainment: Atascosa, Bell, Bexar, Brazos, Denton, Ector, El Paso, Galveston, Jefferson, Lubbock, Maverick, Nueces, Orange, and Potter.

Staff recommends that all counties in Texas that have regulatory monitors but are unable to generate valid 2023 annual $PM_{2.5}$ design values be designated unclassifiable. Staff recommends that the following counties be designated as unclassifiable: Brazoria, Brewster, Ellis, Kaufman, Montgomery, and Navarro. Finally, staff recommends that the remaining counties in the state be designated attainment/unclassifiable.

The following attachments are provided in support of TCEQ's recommendation:

- Attachment A: State of Texas 2024 Primary Annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) State Designations;
- Attachment B: Certified 2023 Annual Fine Particulate Matter ($PM_{2.5}$) Design Values for Regulatory Monitors in the State of Texas; and
- Attachment C: Technical Supplement.

**B.) Scope required by federal regulations or state statutes:**
Section 107(d) of the FCAA requires states to submit their designations to EPA within one year of NAAQS promulgation. By February 7, 2025, the governor of each state must submit designations of attainment, nonattainment, or unclassifiable under the 2024 primary annual $PM_{2.5}$ NAAQS for all areas of the state. The rule for the 2024 $PM_{2.5}$ NAAQS indicates that EPA will rely on monitoring data to identify areas to be designated nonattainment due to violation of the standard. EPA does not intend states to conduct or use modeling in unmonitored areas to determine whether an area is violating the primary annual $PM_{2.5}$ NAAQS for purposes of submitting state designations. EPA addressed designation issues, including guidelines for setting nonattainment area boundaries, in its *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard* memo (2024 $PM_{2.5}$ NAAQS Designations Memo) issued on February 7, 2024.

The state designations are based on certified 2021 through 2023 monitoring data. Prior to EPA's final designations, to be promulgated by February 6, 2026, data from 2024 are required to be submitted and certified by TCEQ. EPA's designation decisions will be based on air quality data from the years 2022 through 2024.

**C.) Additional staff recommendations that are not required by federal rule or state statute:**
None.

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[1] TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.
[2] Travis County has two monitors exceeding the 2024 annual $PM_{2.5}$ standard. The Austin Webberville monitor is impacted by exceptional events. TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual $PM_{2.5}$ NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.

**Statutory authority:**
The authority to propose and adopt the implementation plan and similar documents is derived from Texas Health and Safety Code, Texas Clean Air Act (TCAA), §382.002, which provides that the policy and purpose of the TCAA is to safeguard the state's air resources from pollution; TCAA §382.011, which authorizes the commission to control the quality of the state's air; and §382.012, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air.

**Effect on the:**

**A.) Regulated community:**
Certain industries would eventually be affected if they are located in an area that is designated nonattainment by EPA. Regulated entities in areas designated nonattainment by EPA would be subject to regulatory requirements, some for the first time. These would include additional permitting requirements, general conformity, transportation conformity, and requirements to reduce emissions within the nonattainment area.

**B.) Public:**
These state designations have no immediate effect on the public. Nonattainment designations could cause the public to be subject to increased regulatory requirements, which could have increased financial or operational burdens, but may also result in reduced exposure to this pollutant.

**C.) Agency programs:**
Nonattainment area designations will require additional work from agency programs and functions associated with state implementation plan development and implementation, including rulemaking, program implementation, monitoring, permitting, and enforcement.

**Stakeholder meetings:**
Staff held four public information meetings regarding the 2024 annual $PM_{2.5}$ NAAQS and the designations process in June 2024. These meetings were open to the public, and Spanish language interpretation services were available. TCEQ provided information regarding potential designations for public review, and an informal public comment period was held from July 30, 2024, through August 30, 2024.

**Public Involvement Plan**
Yes.

**Alternative Language Requirements**
Yes. Spanish.

**Public comment:**
TCEQ's potential designations were provided for public review and informal comment through web solicitation and GovDelivery notification. The informal public comment period opened on July 30, 2024, and closed on August 30, 2024. TCEQ received informal written comments on the potential designations from: Air Alliance Houston, American Electric Power, Austin City Council, Coalition for Responsible Environmental Aggregate Mining (CREAM), Earthjustice, Harris County Attorney's Office, Midlothian Breathe, Move the Gas Plant, Ramboll, Reconnect Austin, Rethink35, Save Our Springs Alliance, Sierra Club Lone Star Chapter, Texas Department of Transportation (TxDOT), Travis County Commissioners Court, and 140 individuals.

The Austin City Council, Reconnect Austin, Rethink35, and Save Our Springs Alliance commented on the importance of including all monitoring data when determining the attainment status of Travis County. In anticipation of a nonattainment designation for Travis County, the Travis County Commissioners Court requested support from the commission in efforts to meet the standard. Move the Gas Plant commented that future emissions from the proposed Sandow Lakes Energy Plant in Lee County could impact the attainment status of the Austin area. Individuals were generally concerned with the Interstate 35 expansion project and the health impacts of $PM_{2.5}$.

American Electric Power (AEP) commented that the AEP Pirkey Power Plant is no longer in operation. Midlothian Breathe commented that Ellis County should be designated nonattainment rather than unclassifiable due to the concentration of specific point sources located within the county. The Harris County Attorney's Office commented that Brazoria and Montgomery Counties should be monitored and evaluated for contributions to nonattainment in Harris County. Ramboll submitted data and studies that could be used for possible exceptional event demonstrations and boundary determinations for both Harris and Kleberg Counties. The Sierra Club Lone Star Chapter requested an improved monitoring network to identify counties contributing to nonattainment. Earthjustice, CREAM, and Air Alliance Houston, asked TCEQ to use modeling to analyze counties with design values under the 2024 annual $PM_{2.5}$ NAAQS rather than list counties as unclassifiable due to lack of monitoring data. Earthjustice, CREAM, Air Alliance Houston, and Harris County Attorney's Office asked for a more robust public involvement process.

TxDOT stated that nonattainment designations will impact transportation projects for decades and requested meticulous scrutiny during the evaluation process. TxDOT commented that TCEQ should not consider data from near-road monitors and that exceptional events demonstrations should be considered in the recommendation to the commission.

**Potential controversial concerns and legislative interest:**
The 2016 Exceptional Events Rule (codified at 40 CFR Sections 50.1, 50.14 and 51.930) allows for data to be flagged, and where appropriate, excluded from calculations in determining whether an area has attained the standard. The data flagged as "exceptional" must have been affected by an exceptional event, which is defined as an event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and an exceptional event demonstration requires concurrence from EPA. Initial notifications of intent to submit exceptional event demonstrations, using the applicable data years of 2021 through 2023 for the purpose of initial area designations, are required by no later than January 1, 2025, with submission of the exceptional event demonstration due no later than February 7, 2025. If state designations rely on exclusion of days in 2021 due to exceptional event impacts, those dates should be identified. However, exceptional event flagging and demonstration submissions are not required for these 2021 days.

Exceptional event demonstrations are not required, and not every monitor will have policy-relevant days for which to pursue exceptional event demonstrations. EPA makes the final decision on whether to exclude exceptional event days in its final designations, which may deviate from state designations. For the 2024 annual $PM_{2.5}$ NAAQS designations, staff identified days in 2021, 2022, and 2023 impacted by exceptional events that, if excluded, will make the 2023 annual $PM_{2.5}$ design value at the Karnack monitor in Harrison County and the Austin Webberville monitor in Travis County meet the 2024 annual $PM_{2.5}$ standard. Staff will prepare and submit to EPA, for consideration and concurrence, the exceptional events demonstration in support of an attainment designation for Harrison County and Travis County. TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

Section 107(d) of the FCAA requires EPA to determine the boundaries of nonattainment areas when making designations. EPA recommends a five-factor process for states to evaluate nonattainment area boundaries in its 2024 Annual $PM_{2.5}$ NAAQS Designations Memo: air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. This is consistent with the method used for the 1997, 2006, and 2012 $PM_{2.5}$ NAAQS designations. The process of determining boundaries may be a contentious issue. Upon notification by EPA of its intended nonattainment area designations and associated boundaries in the 120-day letters to the states, staff will consider EPA's intended designations and may prepare an analysis of relevant alternative boundary considerations for the commission and governor to consider and submit to EPA.

**Will this state designations package affect any current policies or require development of new policies?**
No.

**What are the consequences if this state designations package does not go forward? Are there alternatives to the state designations package?**
If the package did not move forward, then the governor's office would not have TCEQ's recommendation to consider for state designations submittal to EPA. The governor could choose to not submit state designations, however, not submitting state designations could lead to EPA designations of Texas counties under the new standard without state input. However, EPA is expected to publish a *Federal Register* notice regarding proposed designations at the time that 120-day letters are issued to states providing an additional opportunity for Texas to comment before EPA finalizes designations under the 2024 annual $PM_{2.5}$ NAAQS.

**Key points in the designations schedule:**

**Anticipated agenda date:** December 18, 2024
**TCEQ recommendation to governor's office:** December 30, 2024
**State Designations due to EPA:** February 7, 2025
**EPA sends 120-day Letters:** October 9, 2025
**Final designations promulgated by EPA:** February 7, 2026

**Agency contacts:**
Alison Stokes, SIP Project Manager, Air Quality Division (512) 239-4902
Terry Salem, Staff Attorney, Environmental Law Division, (512) 239-0469
Amanda Kraynok, Staff Attorney, Environmental Law Division (512) 239-0633
Abigail Adkins, Staff Attorney, Environmental Law Division (512) 239-2496
Jamie Zech, Agenda Coordinator, Air Quality Division (512) 239-3935

cc: Chief Clerk, 2 copies
Executive Director's Office
Jim Rizk
Jessie Powell
Krista Kyle
Office of General Counsel
Alison Stokes
Terry Salem
Amanda Kraynok
Abigail Adkins
Jamie Zech

## ATTACHMENT A

## STATE OF TEXAS
## 2024 PRIMARY ANNUAL FINE PARTICULATE MATTER ($PM_{2.5}$) NATIONAL AMBIENT AIR QUALITY STANDARD (NAAQS) STATE DESIGNATIONS

The following table identifies Texas counties and the State of Texas' designations or the 2024 annual $PM_{2.5}$ NAAQS.

| Designation | Counties |
|---|---|
| Nonattainment | Bowie<br>Dallas<br>Harris<br>Tarrant |
| Attainment | Atascosa<br>Bell<br>Bexar<br>Brazos<br>Cameron[1]<br>Denton<br>Ector<br>El Paso<br>Galveston<br>Harrison[2]<br>Hidalgo[1]<br>Jefferson<br>Kleberg[1]<br>Lubbock<br>Maverick<br>Nueces<br>Orange<br>Potter<br>Travis[2,3]<br>Webb[1] |
| Unclassifiable[4] | Brazoria<br>Brewster<br>Ellis<br>Kaufman<br>Montgomery<br>Navarro |
| Attainment/Unclassifiable | Remainder of state |

[1]Attainment if not for international emissions. See Attachment C: *Technical Supplement* for details.
[2]Attainment if not for exceptional events. See details on the following page.
[3]TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual $PM_{2.5}$ NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.
[4]Counties with monitored invalid 2023 annual $PM_{2.5}$ design values.

## ATTACHMENT A

Texas' designation of attainment for Harrison County and Travis County is based on TCEQ's assessment of exceptional events for 2021, 2022, and 2023. TCEQ submitted initial notification for 2022 and 2023 on November 12, 2024. TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

| Date | EPA Site Number | Type of Event | Exceedance Concentration ($\mu g/m^3$) |
|---|---|---|---|
| April 4, 2021 | 482030002 | Prescribed Fire | 69.7 |
| January 21, 2022 | 482030002 | Prescribed Fire | 98.2 |
| January 22, 2022 | 482030002 | Prescribed Fire | 47.9 |
| January 23, 2022 | 482030002 | Prescribed Fire | 33.0 |
| June 13, 2022 | 482030002 | African Dust | 39.0 |
| June 14, 2022 | 482030002 | African Dust | 33.4 |
| June 15, 2022 | 482030002 | African Dust | 27.1 |
| June 16, 2022 | 482030002 | African Dust | 27.0 |
| July 17, 2022 | 482030002 | Prescribed Fire, African Dust | 26.0 |
| July 18, 2022 | 482030002 | Prescribed Fire, African Dust | 29.5 |
| February 27, 2023 | 482030002 | Prescribed Fire, High Winds | 26.6 |
| March 15, 2023 | 482030002 | Prescribed Fire | 39.7 |
| March 27, 2021 | 484530021 | Fire – Mexico/Central America | 25.0 |
| April 9, 2021 | 484530021 | Fire – Mexico/Central America | 29.0 |
| September 4, 2021 | 484530021 | African Dust | 26.1 |
| May 20, 2022 | 484530021 | Prescribed Fire, Fire – Mexico/Central America | 27.8 |
| June 13, 2022 | 484530021 | African Dust | 30.8 |
| June 16, 2022 | 484530021 | African Dust | 34.8 |
| June 17, 2022 | 484530021 | African Dust | 25.5 |
| July 17, 2022 | 484530021 | African Dust | 29.1 |
| January 1, 2023 | 484530021 | High Winds, Fireworks | 44.1 |
| March 2, 2023 | 484530021 | High Winds, Prescribed Fire, Fire – Mexico/Central America | 32.9 |
| June 13, 2023 | 484530021 | Fire – Mexico/Central America | 31.5 |
| June 14, 2023 | 484530021 | Fire – Mexico/Central America | 27.6 |
| June 15, 2023 | 484530021 | Fire – Mexico/Central America | 27.4 |

TCEQ contends that the 2021 exceedance days, March 27, 2021, April 9, 2021, September 4, 2021, and April 4, 2021, at the Austin Webberville (EPA Site Number 484530021) and Karnack (EPA Site Number 482030002) monitors were likely influenced by fires from Mexico/Central America, Saharan dust, and prescribed fires, to a degree that might otherwise trigger regulatory significance. However, TCEQ has not submitted formal exceptional events demonstrations for such events because TCEQ does not anticipate that events in 2021 will have regulatory significance, as described in EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*, issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $PM_{2.5}$ NAAQS, TCEQ will work with EPA to provide additional information consistent with the requirements in EPA's *Exceptional Events Rule*.

## ATTACHMENT B

## CERTIFIED 2023 ANNUAL FINE PARTICULATE MATTER ($PM_{2.5}$) DESIGN VALUES FOR REGULATORY MONITORS IN THE STATE OF TEXAS

The Texas Commission on Environmental Quality calculated the 2023 annual $PM_{2.5}$ design values for Texas counties with regulatory monitors, as presented in the table below, in support of state designations for the 2024 primary annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). The 2023 annual $PM_{2.5}$ design values were calculated with certified 2021 through 2023 monitoring data.

**2023 Annual $PM_{2.5}$ Design Values by County**

| County | Certified 2023 Annual $PM_{2.5}$ Design Value (micrograms per cubic meter) |
|---|---|
| Harris | 12.5 |
| Cameron | 10.9 |
| Bowie | 10.3 |
| Dallas | 9.9 |
| Kleberg | 9.9* |
| Webb | 9.7 |
| Hidalgo | 9.6 |
| Tarrant | 9.6 |
| Travis | 9.6** |
| Harrison | 9.5*** |
| Atascosa | 9.0 |
| El Paso | 9.0 |
| Bexar | 8.9 |
| Jefferson | 8.8 |
| Nueces | 8.4 |
| Galveston | 8.3 |
| Orange | 8.3 |
| Brazos | 7.9 |
| Maverick | 7.9 |
| Denton | 7.7 |
| Bell | 7.3 |

## ATTACHMENT B

| County | Certified 2023 Annual $PM_{2.5}$ Design Value (micrograms per cubic meter) |
|---|---|
| Ector | 7.3 |
| Potter | 6.0 |
| Lubbock | 5.7 |

* TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.
** Travis County has two monitors exceeding the 2024 annual $PM_{2.5}$ standard. For the Austin Webberville monitor, with the exclusion of days impacted by exceptional events in 2021, 2022, and 2023, the 2023 design value is expected to be 9.0 micrograms per cubic meter. TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual $PM_{2.5}$ NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA.
*** With the exclusion of days impacted by exceptional events in 2021, 2022, and 2023, the 2023 design value is expected to be 9.0 micrograms per cubic meter.

Source: U.S. Environmental Protection Agency Air Quality System database (https://www.epa.gov/aqs)

## ATTACHMENT C: TECHNICAL SUPPLEMENT

### EXTERNAL SOURCES OF FINE PARTICULATE MATTER ($PM_{2.5}$) POLLUTION

Historically, $PM_{2.5}$ in Texas is impacted by long-range transport from natural and anthropogenic emissions from outside Texas and the United States. These emissions include natural events such as wildfires, Saharan dust, and dust from large, intense regional dust storms in the West Texas-New Mexico-Northern Mexico area. Long-range transport from other types of events also impact the Houston area, including smoke from controlled burns and haze and smoke accumulated from man-made emissions in the United States and Canada (also known as continental haze).

Wildfires and agricultural burns in Southern Mexico and Central America are important seasonal sources of international emissions impacting $PM_{2.5}$ levels in Texas. These fires primarily occur from January through May during the dry season in Southern Mexico and Central America. The analysis below shows that $PM_{2.5}$ levels are higher along the Texas Gulf Coast and South Texas during this time of the year, when transport frequently occurs from Southern Mexico.

Another well-known source of $PM_{2.5}$ pollution in Texas is dust transported from the Saharan Desert in Africa. This phenomenon frequently occurs during the summer months. The Texas Commission on Environmental Quality (TCEQ) has documented this transport in multiple exceptional event demonstrations with which the U.S. Environmental Protection Agency (EPA) has concurred. Evidence of this transport is also frequently seen in satellite imagery. For the above reasons, EPA should consider the impact of long-range transport and designate counties with monitors that would meet the 2024 annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) if not for significant impact from international emissions and/or exceptional events as attainment. Further, the EPA should take into consideration the increased background due to long-range transport on all Texas monitors when finalizing boundaries for any nonattainment areas for the 2024 annual $PM_{2.5}$ NAAQS.

### TRAJECTORY ANALYSIS FOR EXTERNAL TRANSPORT TO TEXAS MONITORS

To demonstrate the importance of long-range transport for Texas $PM_{2.5}$ levels, TCEQ analyzed four years (2019 through 2022) of daily HYSPLIT back trajectories at several monitoring sites in Texas. The daily trajectories were generated every day at 2:00 P.M. (central or daylight time) with a backward length of 48 hours. For South Texas, with its low, flat landscape, trajectories terminated at 100 meters above ground level (AGL) and trajectories for other parts of Texas terminated at 200 meters AGL. The daily trajectories for each monitoring site were paired with daily $PM_{2.5}$ averages and analyzed using hierarchical cluster analysis. The cluster analysis algorithm assigns each daily trajectory into one of several groups where trajectories within each group follow similar paths while differences between trajectory groups are maximized. Cluster analysis allowed TCEQ to pair HYSPLIT trajectories with daily average $PM_{2.5}$ values and gain insights regarding the contribution of various transport paths to $PM_{2.5}$ pollution in Texas.

TCEQ's analysis focused on counties where a design value setting monitor had a valid 2023 annual $PM_{2.5}$ design value above the 9.0 micrograms per cubic meter ($\mu g/m^3$) 2024 annual $PM_{2.5}$ NAAQS. Results of the analysis for each monitor and the corresponding state designation are presented below.

#### Counties in Attainment if not for International Emissions

Impacts of international emissions and transport from Mexico are especially pronounced in counties along the United States-Mexico border. In Cameron, Hidalgo, Kleberg, and Webb Counties, TCEQ's analysis showed that a significant percentage (upwards of 50%) of the trajectories were from the southerly and/or southeasterly direction, indicating significant

international impact. To further support the impact of international emissions in these counties, TCEQ is conducting year-long sampling studies with samples taken every three days. A Positive Matrix Factorization analysis will be performed using the data from these sampling studies to characterize the sources contributing to the $PM_{2.5}$ concentrations at the monitors in these counties.

In Cameron County, the Isla Blanca State Park monitor was analyzed, and Figure 1: *Cameron County Trajectory Means* shows that 74% of daily trajectories track back towards a southeasterly direction. Figure 2: *Cameron County Cluster Frequency by Month* shows that daily $PM_{2.5}$ values peak during the spring and summer months when the southeasterly trajectories are predominant.

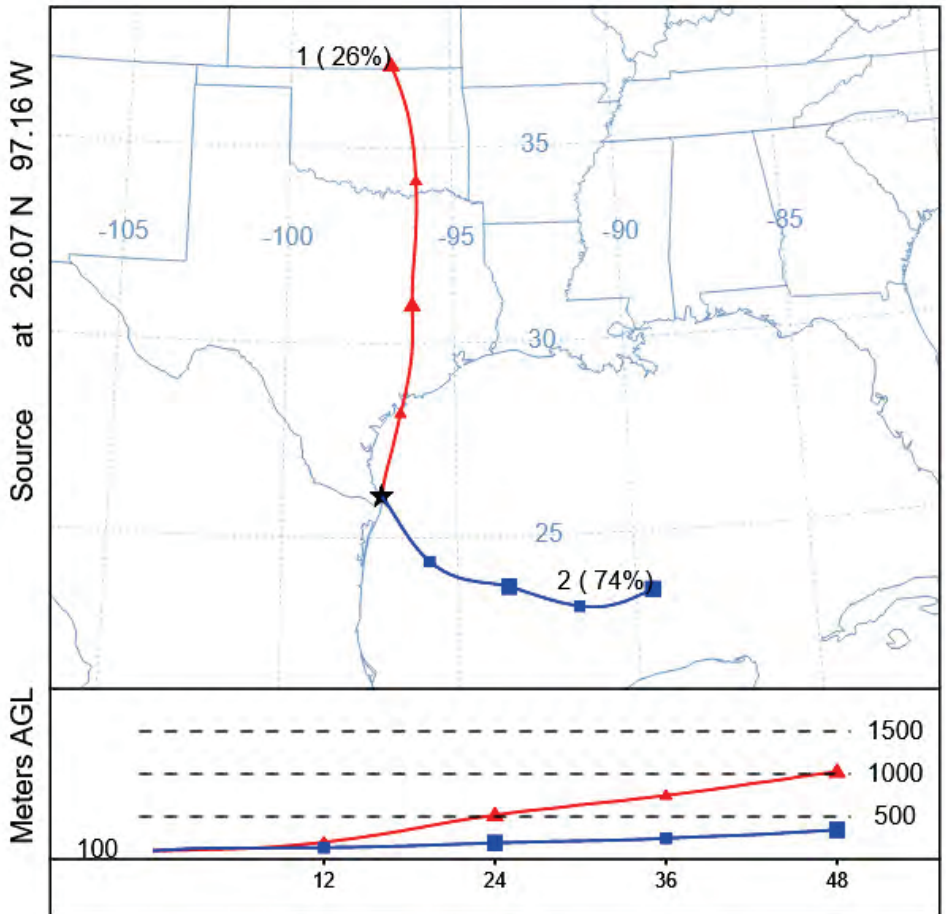



**Figure 1: Cameron County Trajectory Means**

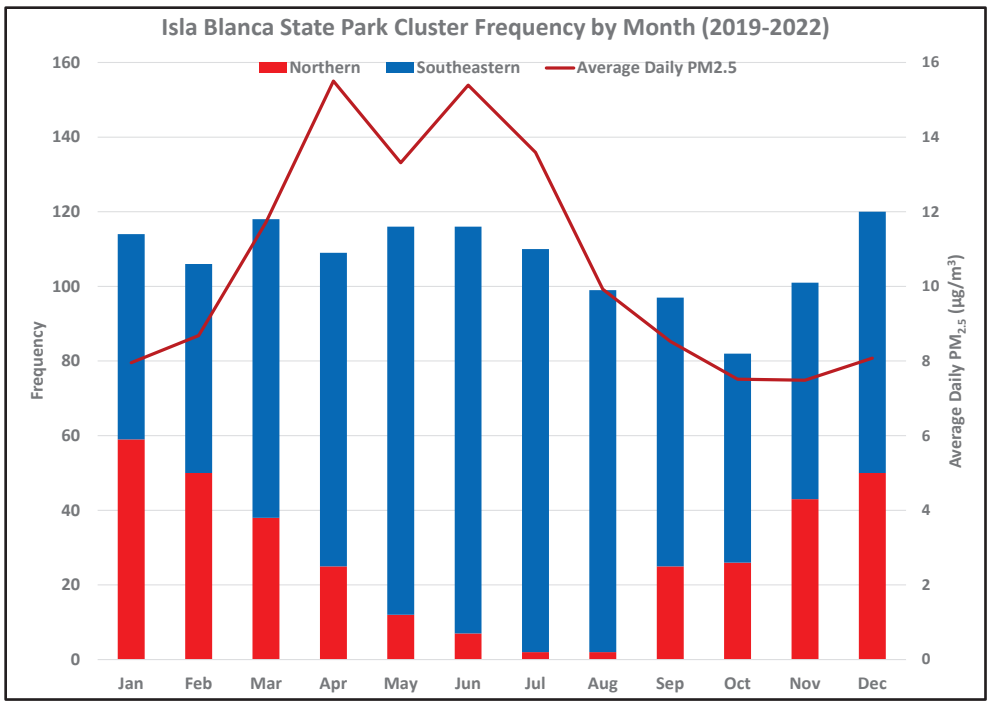



**Figure 2: Cameron County Cluster Frequency by Month**

In Hidalgo County, the Freddy Gonzalez monitoring site was analyzed. Figure 3: *Hidalgo County Trajectory Means* shows that, similar to Webb County, almost two-thirds (63%) of daily trajectories trace back to a southeasterly mean direction linked with transport from Southern Mexico and Northern Africa. Figure 4: *Hidalgo County Cluster Frequency by Month* shows that daily $PM_{2.5}$ measurements are also higher during the spring and summer months when transport from the southeast predominates.

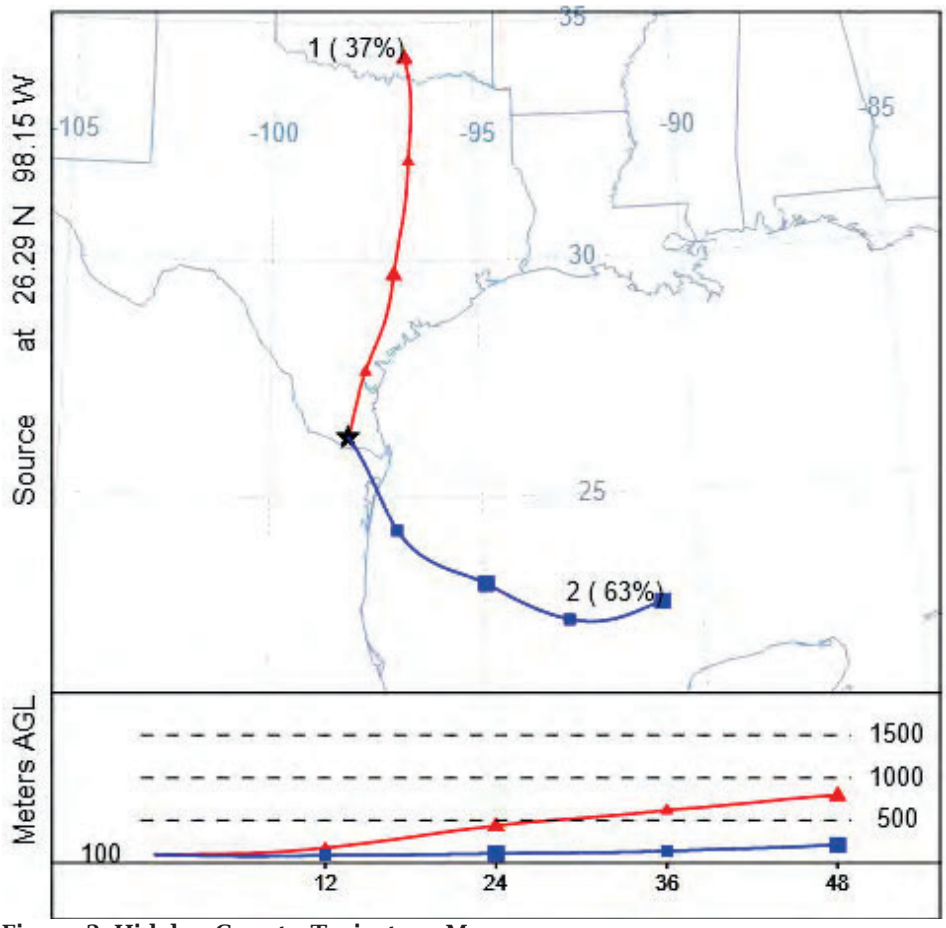



Figure 3: Hidalgo County Trajectory Means

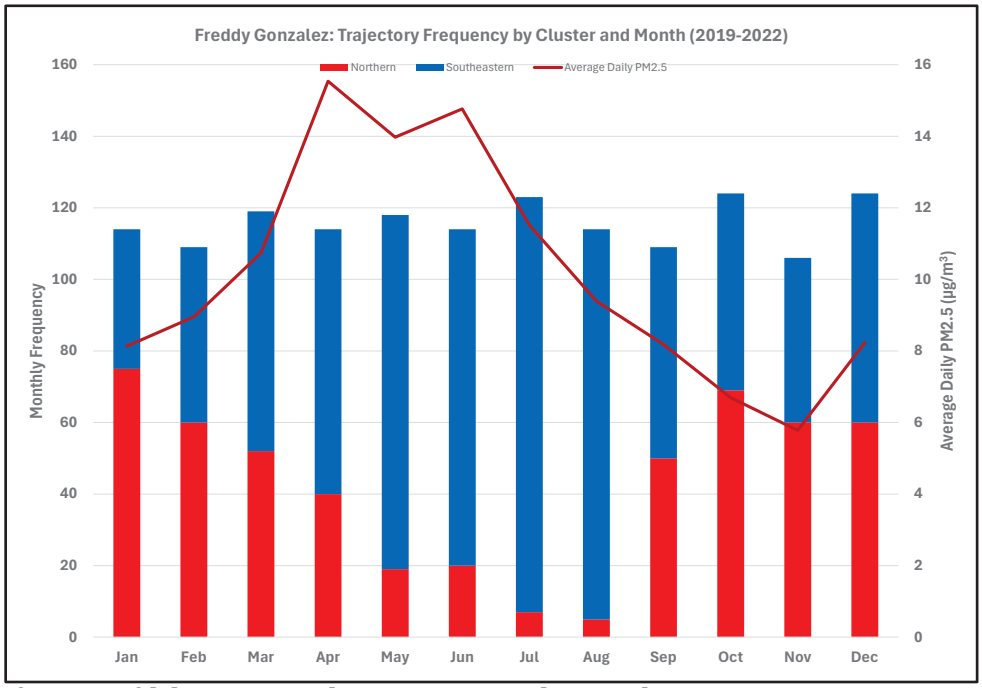



Figure 4: Hidalgo County Cluster Frequency by Month

The next monitoring site analyzed by TCEQ was the National Seashore monitor in Kleberg County. TCEQ deployed a non-NAAQS comparable $PM_{2.5}$ monitor at the National Seashore site in October 2002. Located in Padre Island National Seashore southeast of the Corpus Christi city center, the site is ideally situated to measure the transport of $PM_{2.5}$ levels coming off the Gulf of Mexico from Saharan dust and smoke from agricultural burning from Mexico and Central and South America. The non-NAAQS comparable monitor was upgraded to a $PM_{2.5}$ FEM monitor in March 2018. There are no significant point sources in Kleberg County, with the county's 2020 point-source $PM_{2.5}$ emissions totaling only 38.1 tons per year as opposed to the adjacent Nueces County (with the Corpus Christi city center) totaling 1,362.2 tons per year. It should also be noted that in the Corpus Christi area, all $PM_{2.5}$ monitors have 2023 annual $PM_{2.5}$ design values less than or equal to 9.0 µg/m$^3$. Figure 5: *Location of National Seashore Monitor and Major Highways in Kleberg County* shows the unique location of the National Seashore monitor as well as the lack of major roadways in the county.

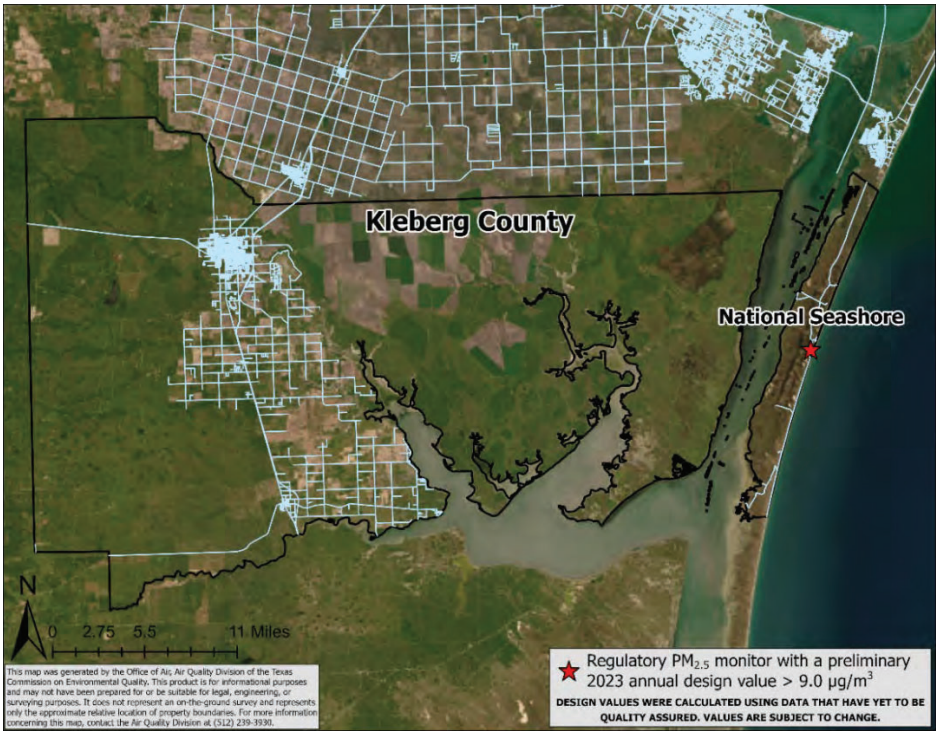



**Figure 5: Location of National Seashore Monitor and Major Highways in Kleberg County**

Figure 6: *Kleberg County Trajectory Cluster Means*, shows that almost 83% of daily back trajectories come from an easterly or southeasterly direction. Figure 7: *Kleberg County Cluster Frequency by Month* shows that daily $PM_{2.5}$ averages peak during the spring and summer months when trajectories from the southeast and east comprise many trajectories. In addition to impacts from international emissions, it is likely, due to its location, that the National Seashore monitor is impacted by exceptional events. TCEQ is continuing to evaluate if the National Seashore monitor has days in 2021 through 2023 that were impacted by exceptional events and should be excluded from design value calculation.

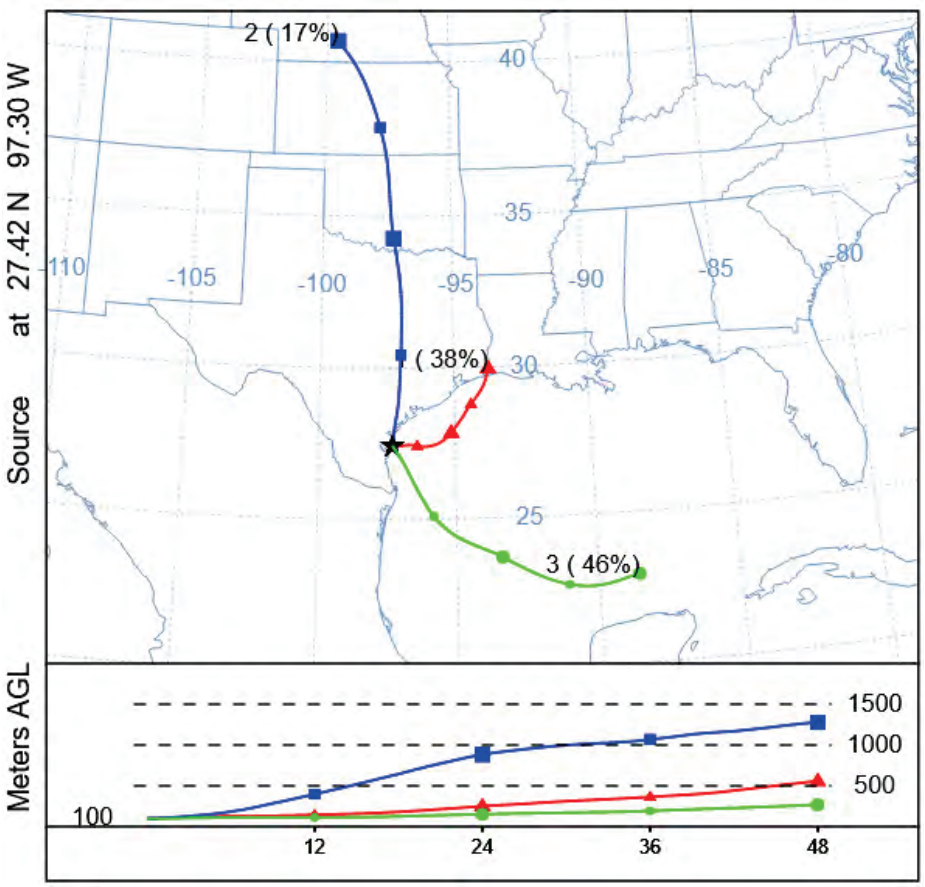



Figure 6: Kleberg County Trajectory Cluster Means

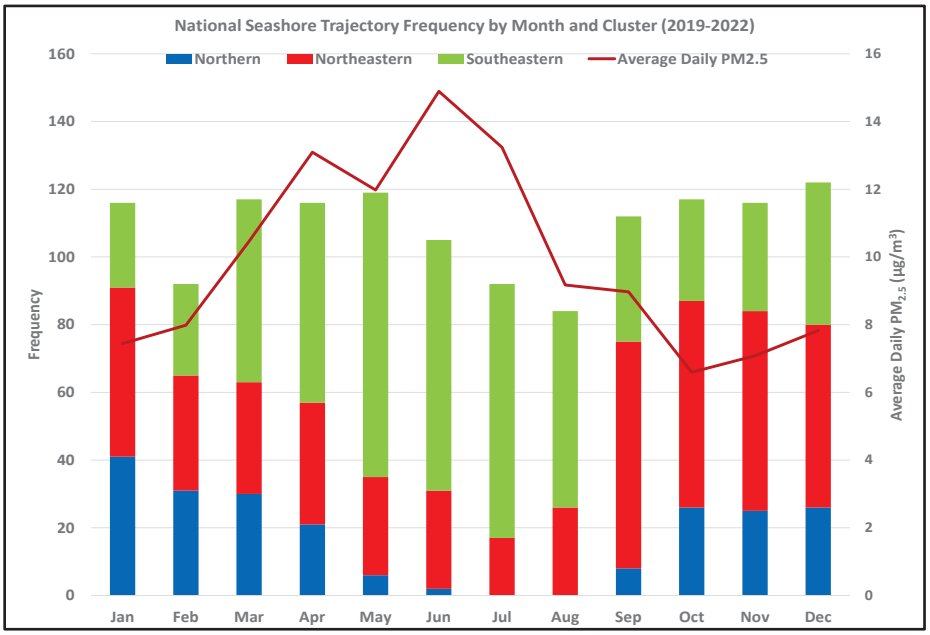



Figure 7: Kleberg County Cluster Frequency by Month

Figure 8: *Webb County Trajectory Means* shows that 78% of the trajectories from 2019 through 2022 are southeasterly trajectories linked to transport from Southern Mexico and Northern

Africa. Figure 9: *Webb County Trajectory Frequency by Month* shows that monthly $PM_{2.5}$ averages are highest in the spring and summer months when these southeasterly trajectories are especially prevalent.

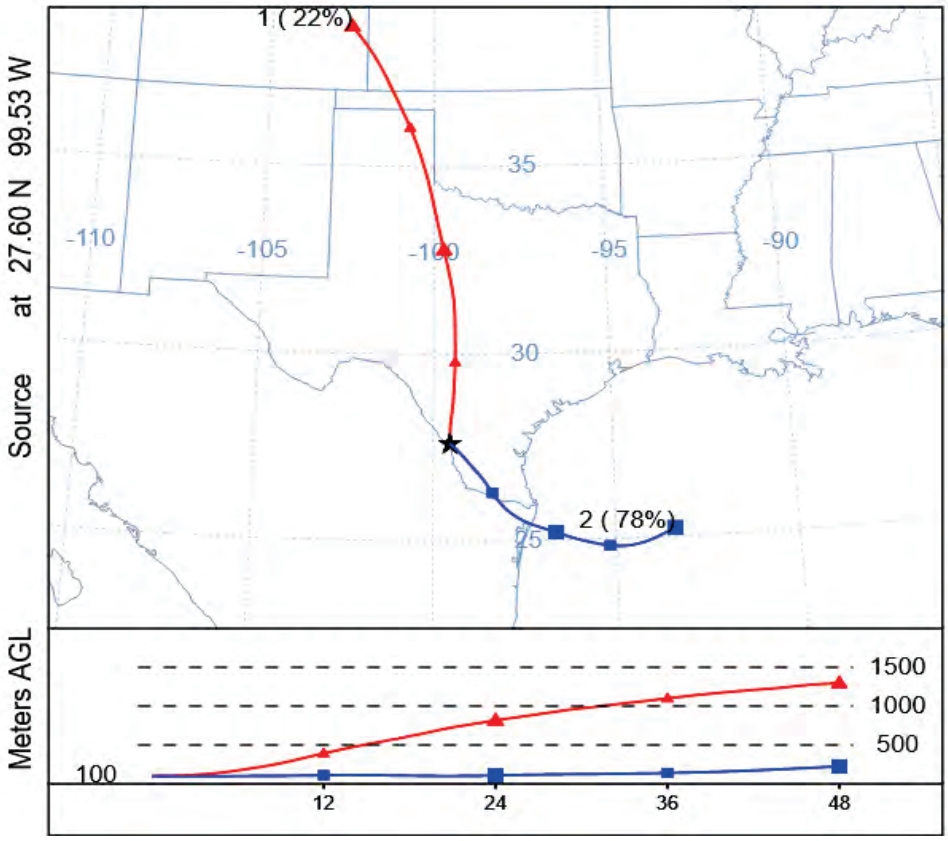



**Figure 8: Webb County Trajectory Means**

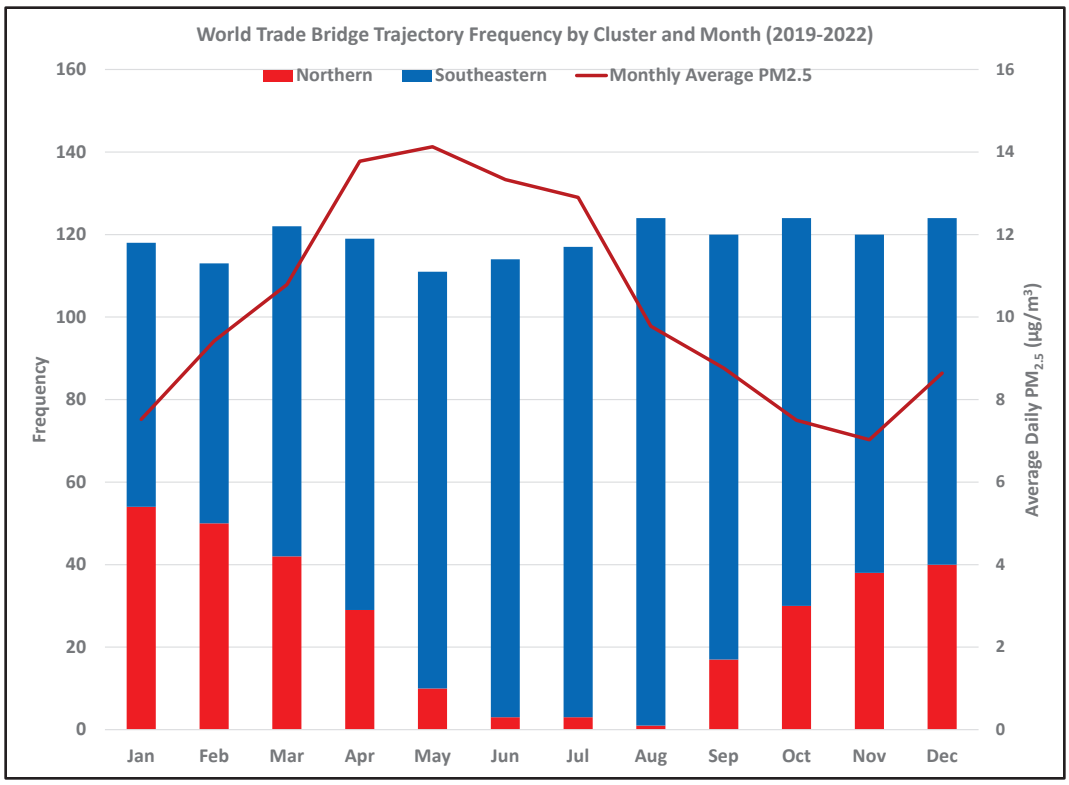



**Figure 9: Webb County Trajectory Frequency by Month**

The analysis presented above shows that high $PM_{2.5}$ concentrations at the monitors in Cameron, Hidalgo, Kleberg, and Webb Counties are significantly influenced by international emissions and would be in attainment if not for international emissions.

### Counties in Attainment if not for Exceptional Events

Two counties, Harrison and Travis, will have 2023 annual $PM_{2.5}$ design values that would meet the 2024 annual $PM_{2.5}$ NAAQS if days in 2021, 2022, and 2023 influenced by exceptional events are excluded from the design value calculation. TCEQ has identified these dates and will submit the required exceptional event demonstration to EPA by the February 7, 2025, deadline. Cluster analysis at these monitors also showed a high percentage of out-of-state transport impacting the $PM_{2.5}$ concentrations. In addition to Harrison and Travis Counites, TCEQ continues to evaluate if the National Seashore monitor in Kleberg County has days in 2021 through 2023 that were impacted by exceptional events.

For the Karnack monitor, based on TCEQ's assessment of exceptional events for 2021, 2022, and 2023, with the exclusion of the days listed in Table 1: *Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Karnack Monitor*, the 2023 annual $PM_{2.5}$ design value will meet the 2024 annual $PM_{2.5}$ NAAQS.

**Table 1: Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Karnack Monitor**

| Date | EPA Site Number | Type of Event | Exceedance Concentration (µg/m³) |
|---|---|---|---|
| April 4, 2021 | 482030002 | Prescribed Fire | 69.7 |
| January 21, 2022 | 482030002 | Prescribed Fire | 98.2 |
| January 22, 2022 | 482030002 | Prescribed Fire | 47.9 |

| Date | EPA Site Number | Type of Event | Exceedance Concentration ($\mu g/m^3$) |
|---|---|---|---|
| January 23, 2022 | 482030002 | Prescribed Fire | 33.0 |
| June 13, 2022 | 482030002 | African Dust | 39.0 |
| June 14, 2022 | 482030002 | African Dust | 33.4 |
| June 15, 2022 | 482030002 | African Dust | 27.1 |
| June 16, 2022 | 482030002 | African Dust | 27.0 |
| July 17, 2022 | 482030002 | Prescribed Fire, African Dust | 26.0 |
| July 18, 2022 | 482030002 | Prescribed Fire, African Dust | 29.5 |
| February 27, 2023 | 482030002 | Prescribed Fire, High Winds | 26.6 |
| March 15, 2023 | 482030002 | Prescribed Fire | 39.7 |

The Karnack site is located a few miles west of the Texas-Louisiana border in Harrison County. Figure 10: *Harrison County Trajectory Means* shows that international and out-of-state transport is involved in almost 85% of the days in 2019 through 2022. Figure 11: *Harrison County Cluster Frequency by Month* shows that daily $PM_{2.5}$ measurements are highest in the summer months when transport conditions from the southeast of Texas exist.

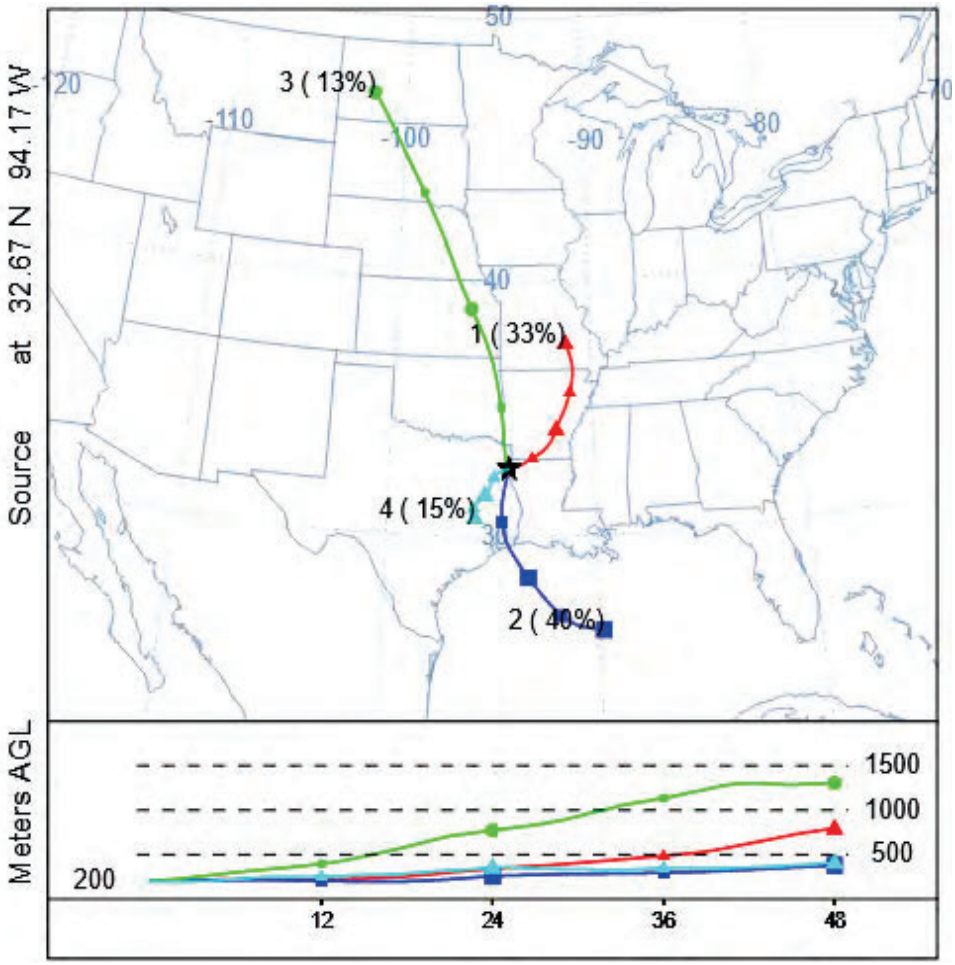



Figure 10: Harrison County Trajectory Means

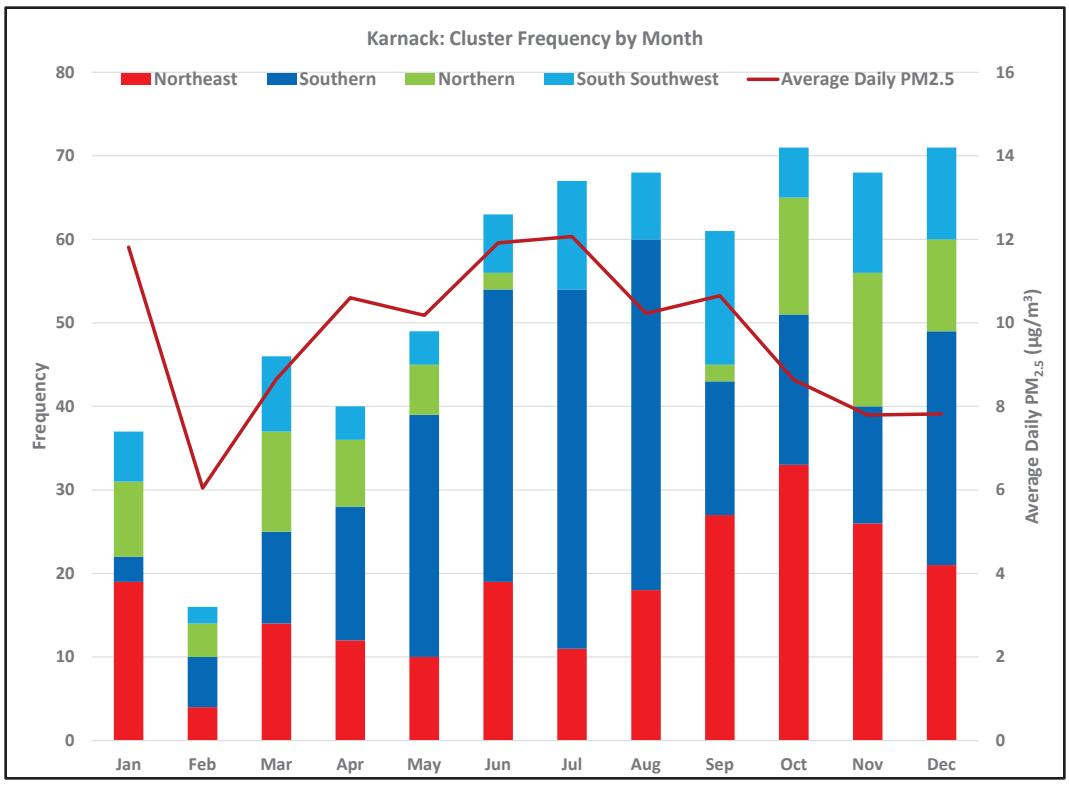



**Figure 11: Harrison County Cluster Frequency by Month**

In Travis County, though the Austin North Interstate 35 was the design value setting monitor in 2023, TCEQ will identify the Austin North Interstate 35 monitor as not suitable for comparison against the annual $PM_{2.5}$ NAAQS due to the monitor not being representative of area-wide air quality. The identification will be made in the Annual Monitoring Network Plan and must be approved by EPA. Based on TCEQ's assessment of exceptional events for 2021, 2022, and 2023, with the exclusion of the days listed in Table 2: *Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Austin Webberville Monitor*, the 2023 annual $PM_{2.5}$ design value will meet the 2024 annual $PM_{2.5}$ NAAQS.

**Table 2: Days in 2021, 2022, and 2023 impacted by Exceptional Events at the Austin Webberville Monitor**

| Date | EPA Site Number | Type of Event | Exceedance Concentration (µg/m³) |
|---|---|---|---|
| March 27, 2021 | 484530021 | Fire – Mexico/Central America | 25.0 |
| April 9, 2021 | 484530021 | Fire – Mexico/Central America | 29.0 |
| September 4, 2021 | 484530021 | African Dust | 26.1 |
| May 20, 2022 | 484530021 | Prescribed Fire, Fire – Mexico/Central America | 27.8 |
| June 13, 2022 | 484530021 | African Dust | 30.8 |
| June 16, 2022 | 484530021 | African Dust | 34.8 |
| June 17, 2022 | 484530021 | African Dust | 25.5 |
| July 17, 2022 | 484530021 | African Dust | 29.1 |

| Date | EPA Site Number | Type of Event | Exceedance Concentration (µg/m$^3$) |
|---|---|---|---|
| January 1, 2023 | 484530021 | High Winds, Fireworks | 44.1 |
| March 2, 2023 | 484530021 | High Winds, Prescribed Fire, Fire – Mexico/Central America | 32.9 |
| June 13, 2023 | 484530021 | Fire – Mexico/Central America | 31.5 |
| June 14, 2023 | 484530021 | Fire – Mexico/Central America | 27.6 |
| June 15, 2023 | 484530021 | Fire – Mexico/Central America | 27.4 |

TCEQ further analyzed the Webberville monitoring site, and Figure 12: *Travis County Trajectory Means* shows that more than a third of the daily trajectories come from southeasterly directions that are likely to contain wildfire emissions or Saharan dust. Figure 13: *Travis County Cluster Frequency by Month* shows that daily $PM_{2.5}$ levels at the Webberville monitoring site reach a maximum during the summer months when the southeasterly trajectories are more frequent.

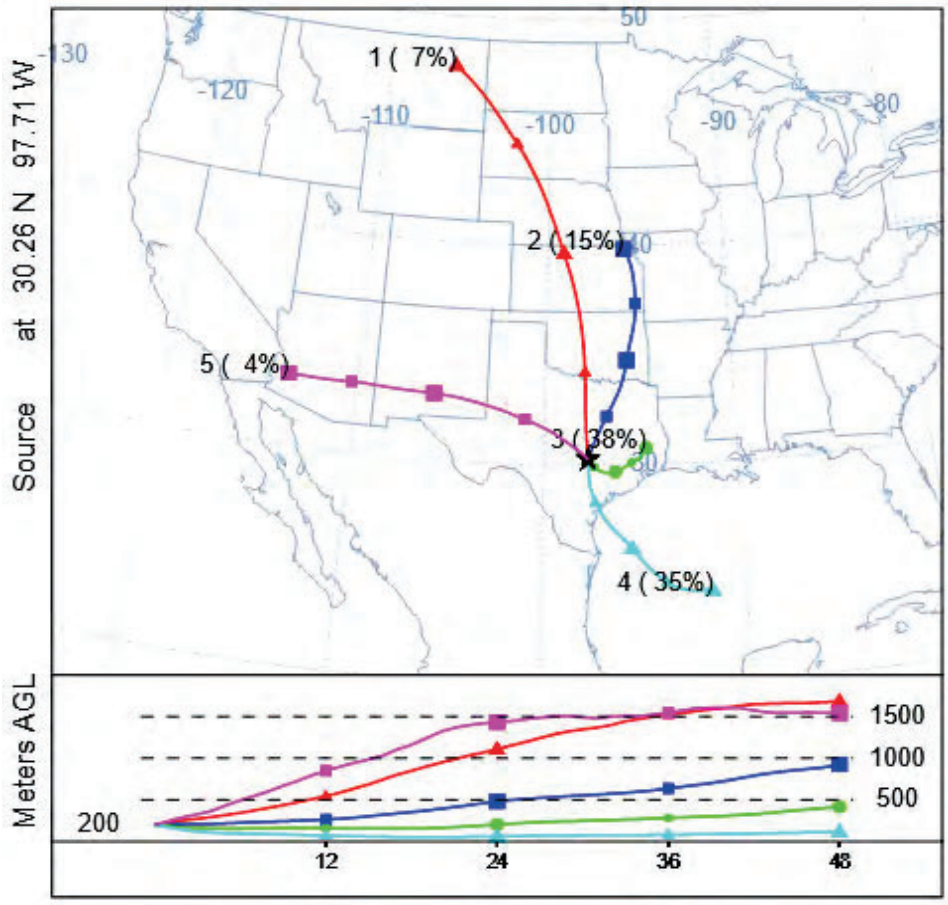



**Figure 12: Travis County Trajectory Means**

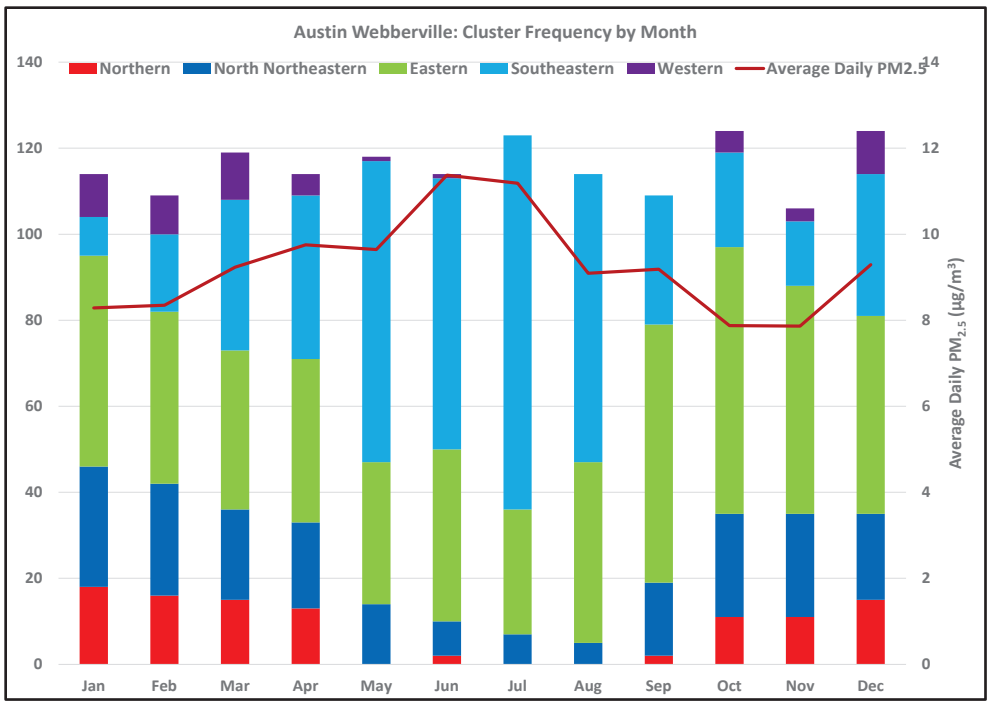



**Figure 13: Travis County Cluster Frequency by Month**

### Long-range Transport Impact on Other Texas Counties

In Harris County, TCEQ analyzed the Houston North Wayside site, which is the design value setting monitor for the county in 2023. Figure 14: *Harris County Trajectory Means* also shows that nearly two-thirds of daily back trajectories come from southerly or southeasterly directions. Figure 15: *Harris County Cluster Frequency by Month* shows that daily $PM_{2.5}$ measurements are highest when southeasterly or southerly trajectories are most frequent.

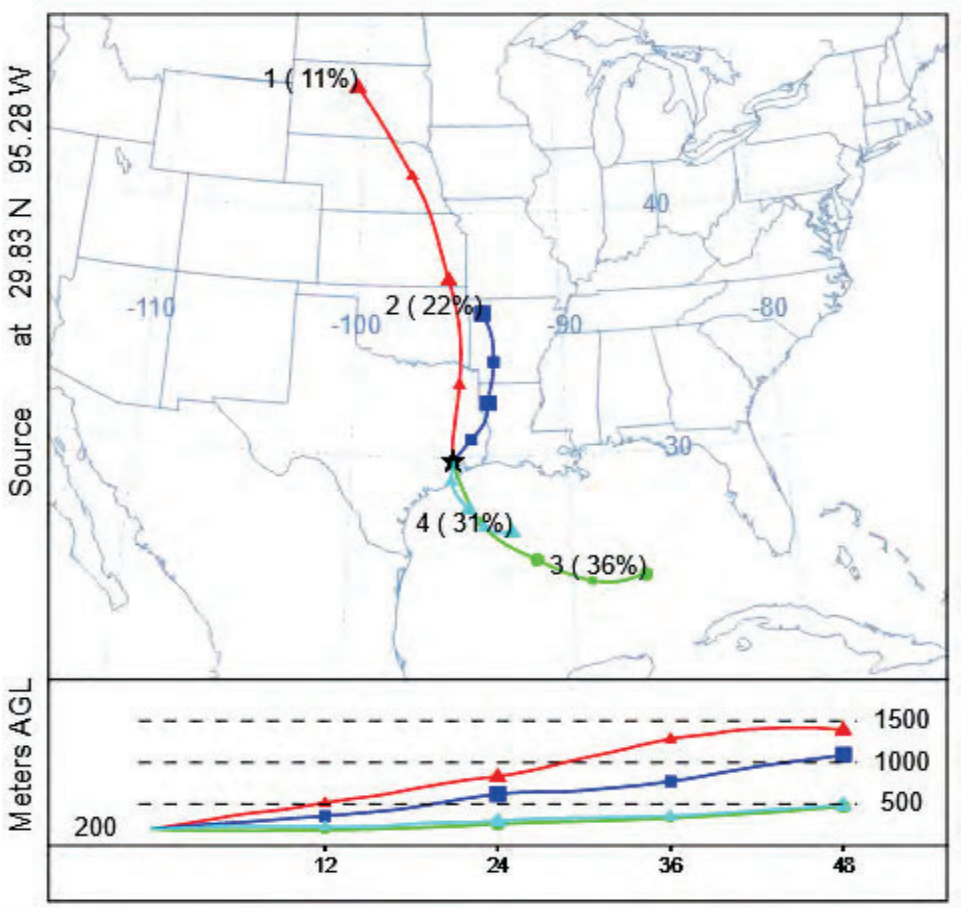



Figure 14: Harris County Trajectory Means

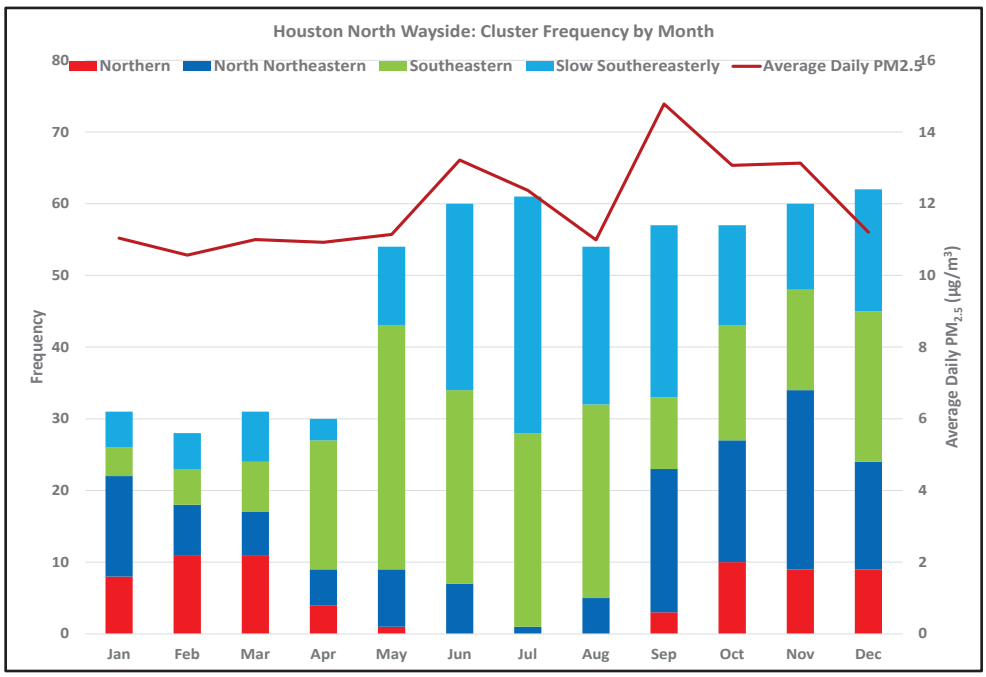



Figure 15: Harris County Cluster Frequency by Month

TCEQ also analyzed the Dallas Convention Center monitoring site in Dallas County. Figure 16: *Dallas County Trajectory Means* shows that Dallas County is impacted nearly 33% of the time by out-of-state transport. The figure also shows that another 28% of the days show evidence of international transport from the south. Figure 17: *Dallas County Cluster Frequency by Month* shows that daily $PM_{2.5}$ concentrations are highest when the southeastern trajectory directions are the most frequent.

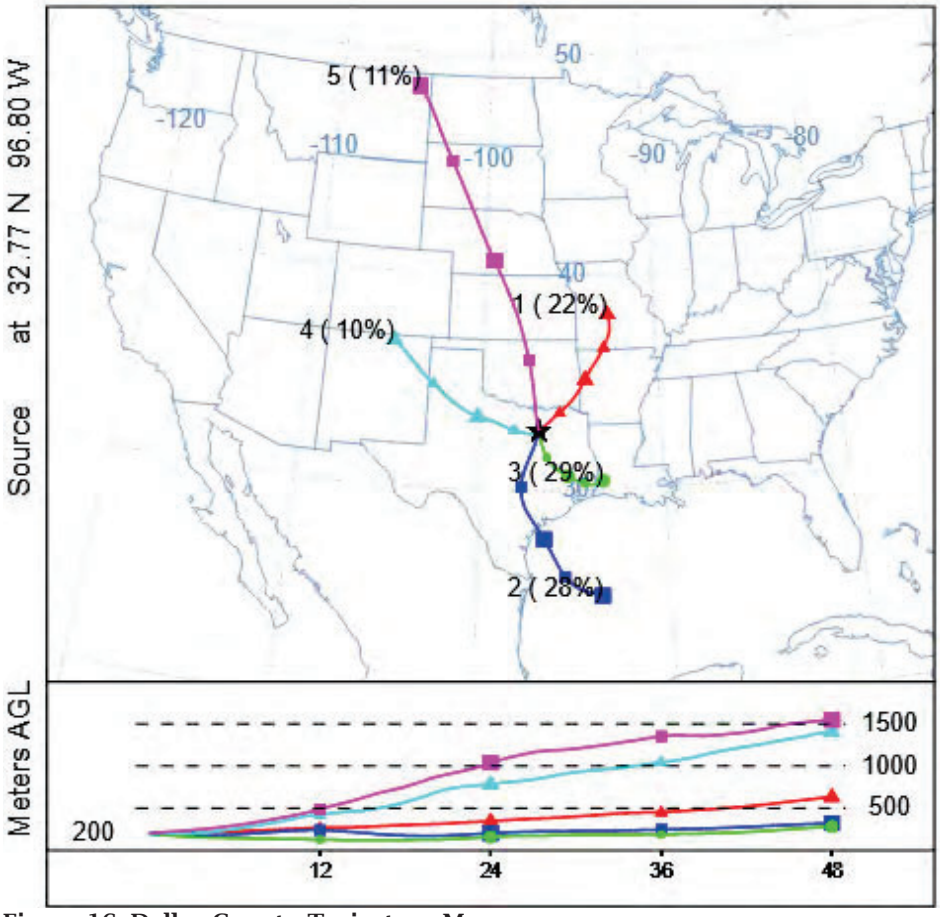



**Figure 16: Dallas County Trajectory Means**

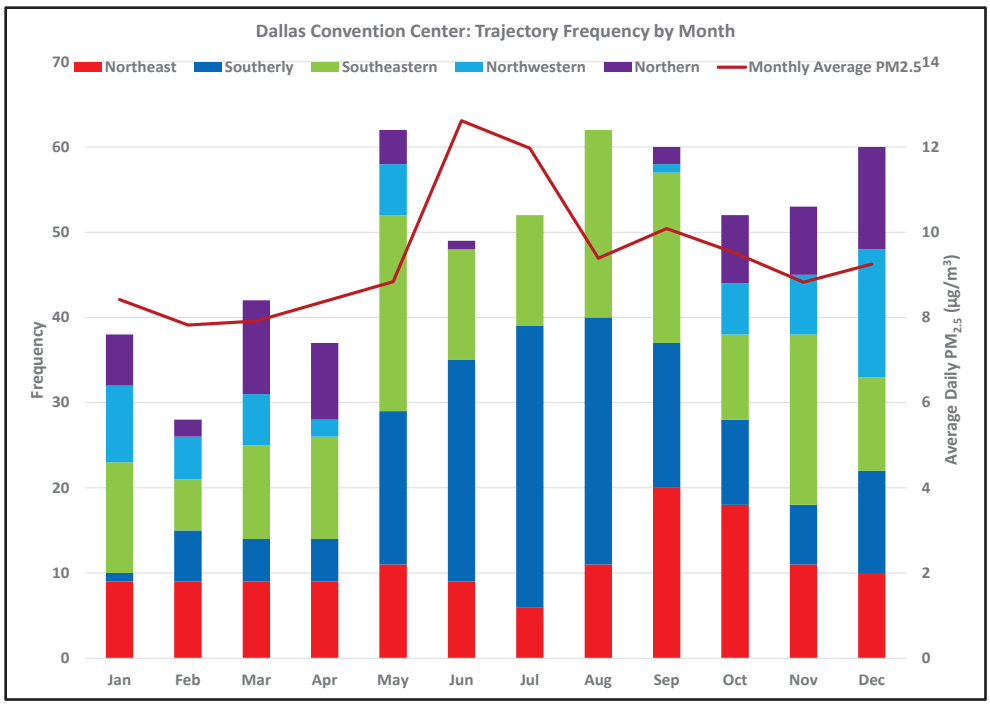



**Figure 17: Dallas County Cluster Frequency by Month**

For the Fort Worth Northwest monitoring site in Tarrant County, Figure 18: *Tarrant County Trajectory Means* shows that nearly 42% of the daily trajectories show a likelihood of out-of-state transport. Another 30% of the daily trajectories from the southeasterly direction show the potential for international dust transport. Figure 19: *Tarrant County Cluster Frequency by Month* shows that daily $PM_{2.5}$ levels are highest during the potential Saharan dust months of May through August.

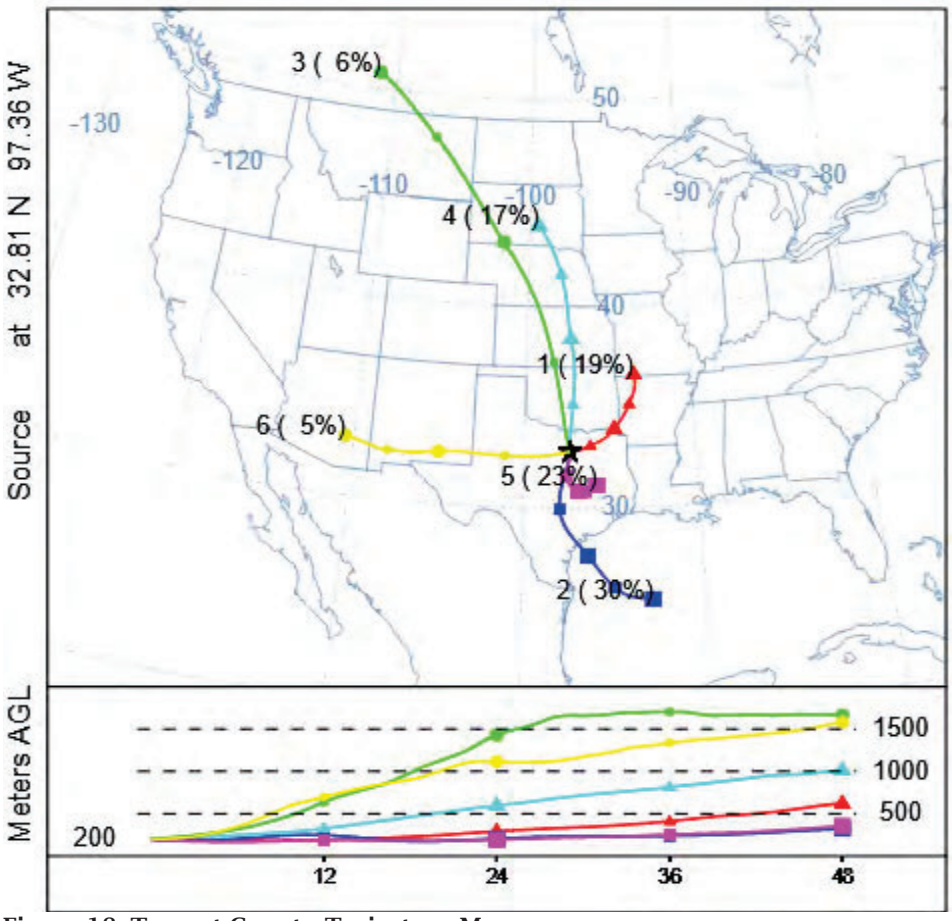



Figure 18: Tarrant County Trajectory Means

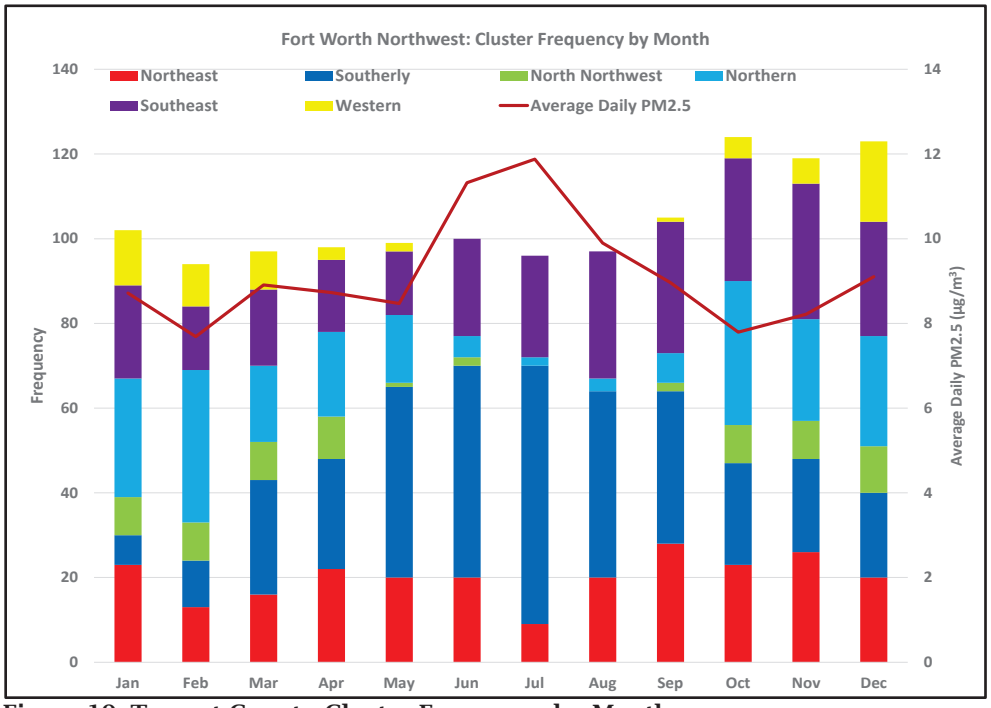



Figure 19: Tarrant County Cluster Frequency by Month

The last monitoring site analyzed by TCEQ was the New Boston monitoring site in Bowie County. Located in the far northeast corner of Texas, the Bowie County site shows a high potential for out-of-state transport. Figure 20: *Bowie County Trajectory Means* shows that 57% of daily trajectories have the potential for out-of-state transport. Another 40% of the trajectories show southerly direction with the potential for international transport in the form of Saharan dust. Figure 21: *Bowie County Cluster Frequency by Month* shows that daily $PM_{2.5}$ levels are at their highest during summer months when transport of Saharan dust is at its maximum.

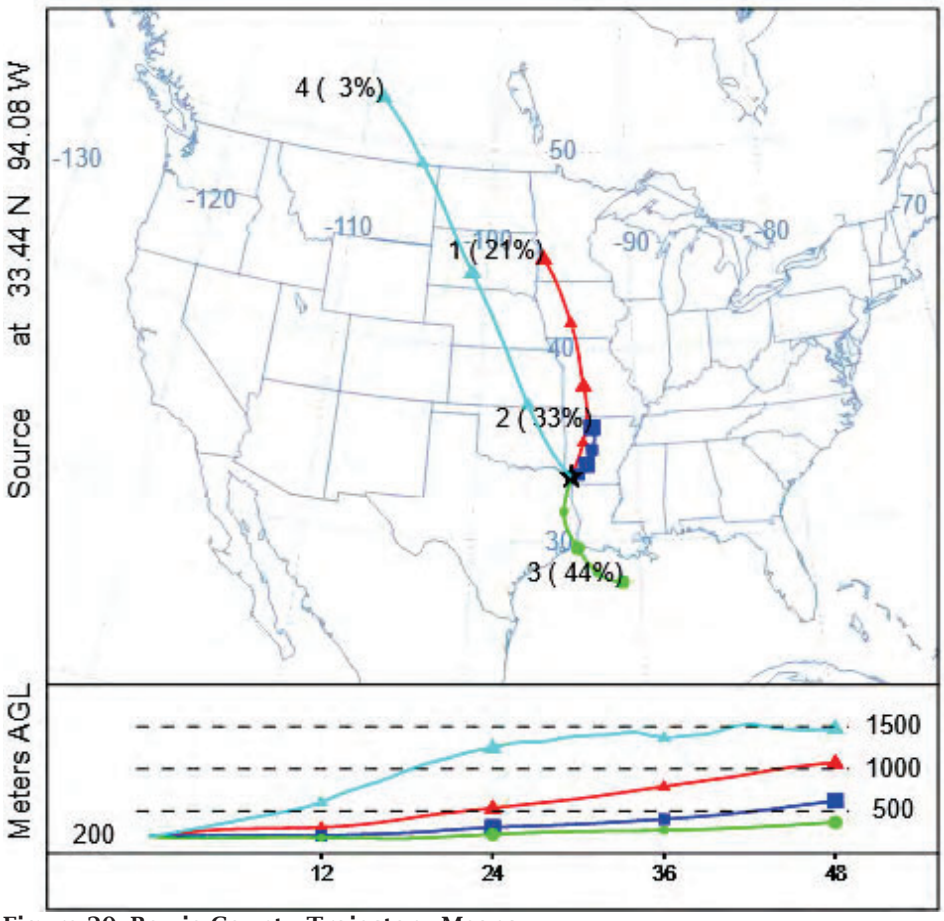



**Figure 20: Bowie County Trajectory Means**

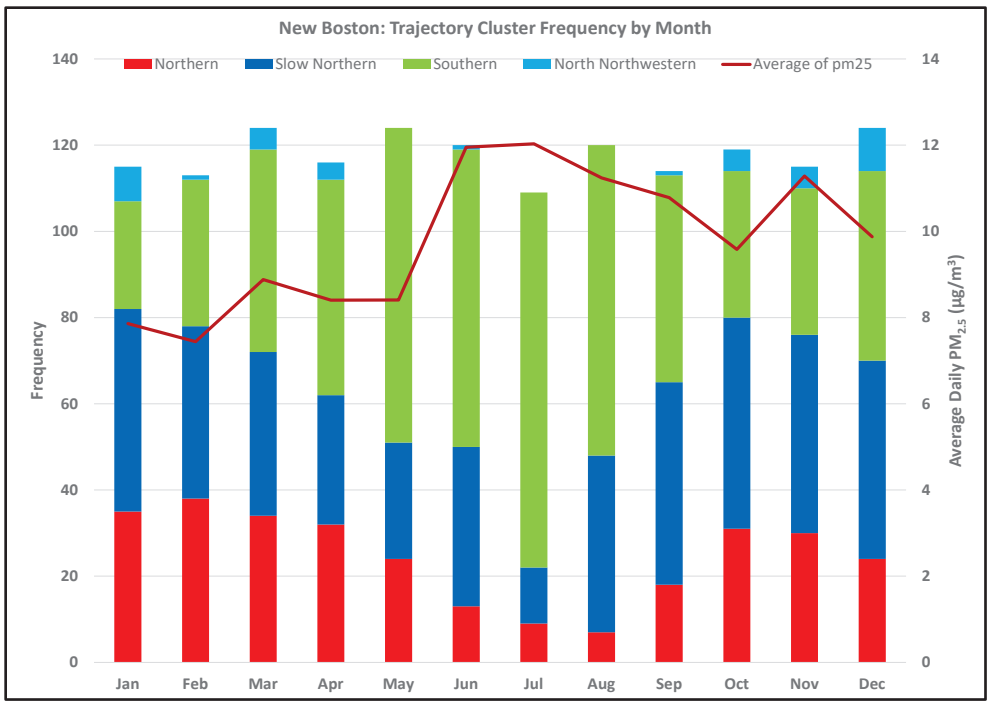



**Figure 21: Bowie County Cluster Frequency by Month**

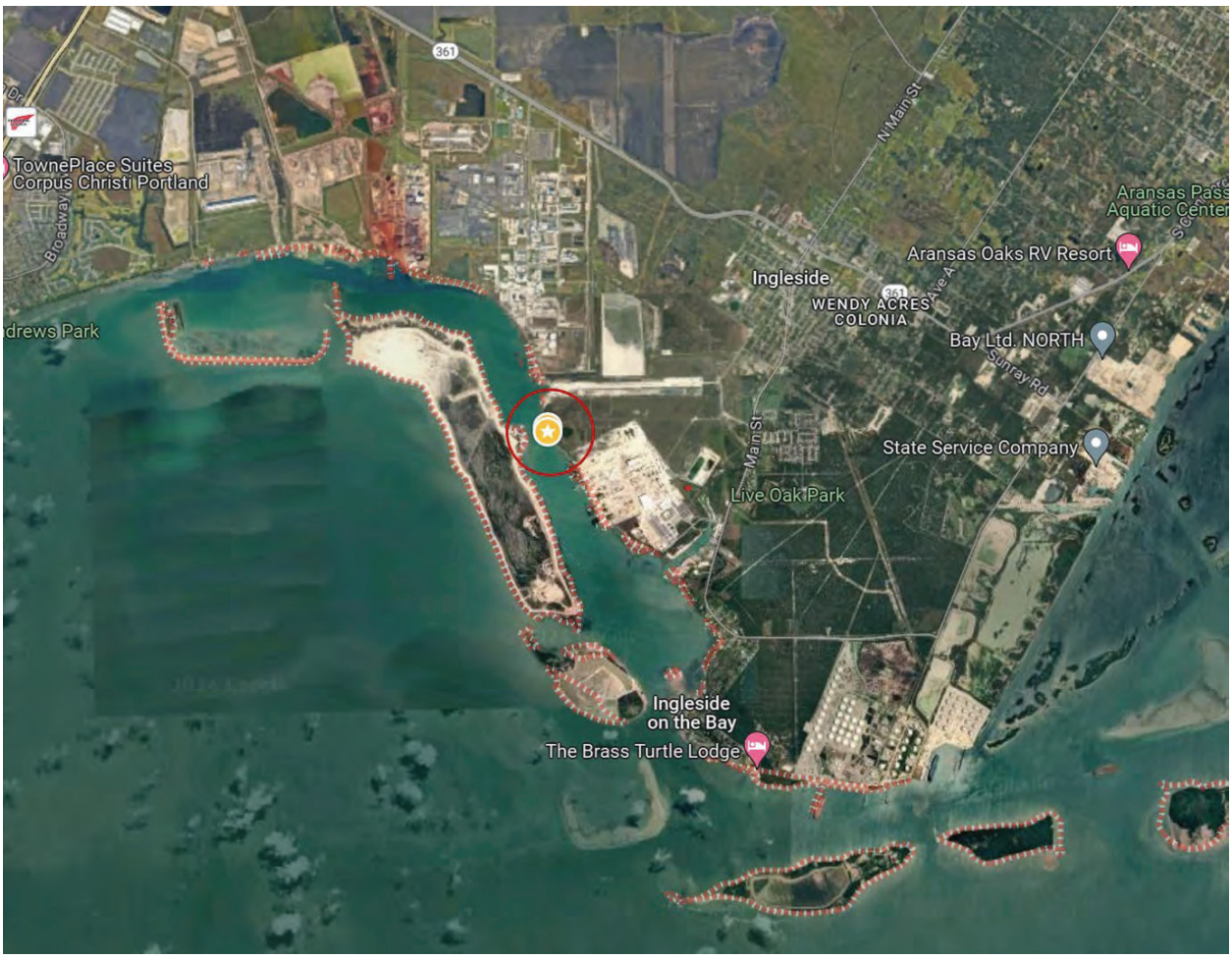
**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

| | | |
|---|---|---|
| **Cheniere Corpus Christi Pipeline, L.P.** | **§** | **Docket No. CP18-513-000** |
| **Corpus Christi Liquefaction Stage IV, LLC** | **§** | **Docket No. CP26-82-000** |
| **Corpus Christi Liquefaction, LLC** | **§** | **Docket No. CP26-87-000** |

**SCOPING COMMENTS OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC**

# EXHIBIT 3

# Report on the Discovery of an Indigenous Archeological Site at Donnel Point, La Quinta Channel, San Patricio County, Texas

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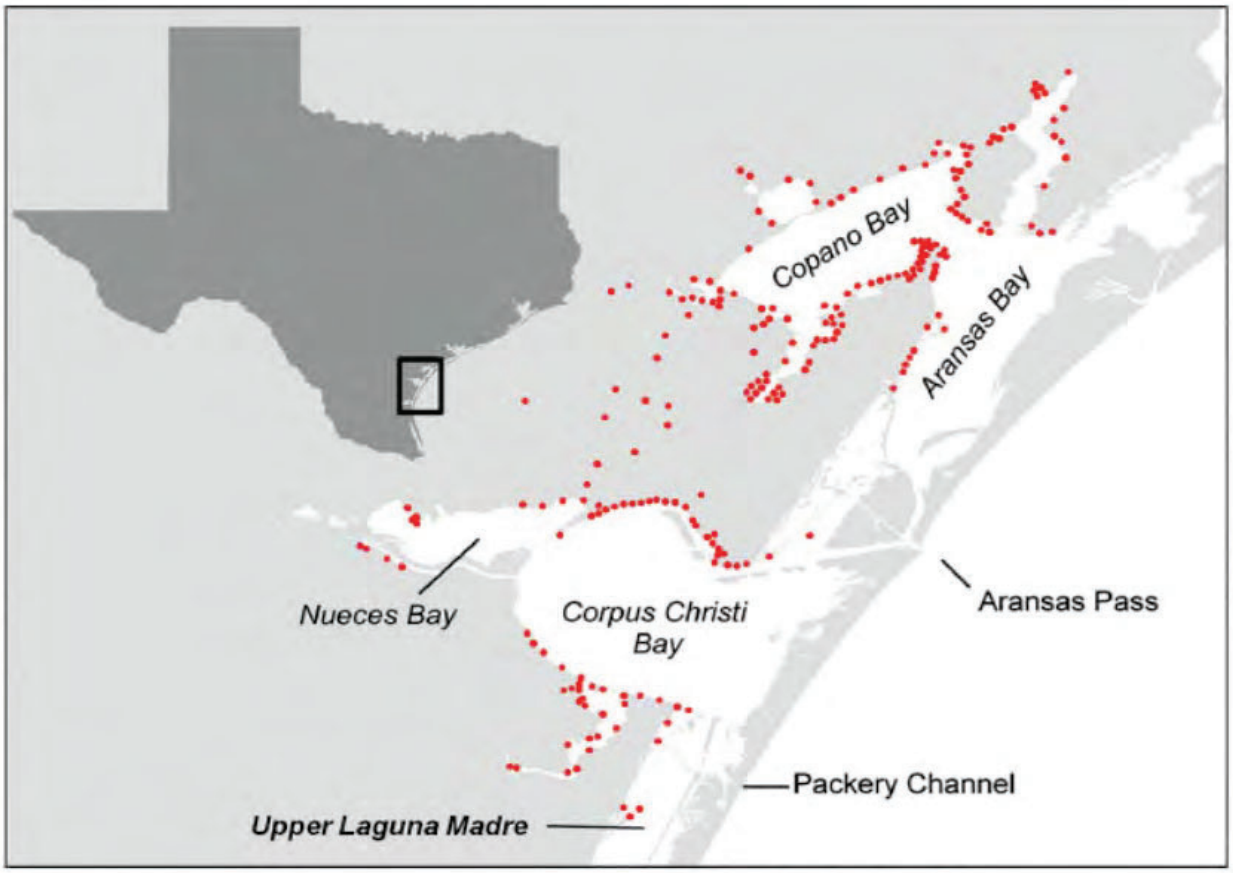
1 A *The Karankawa Indians of Texas: An Ecological Study of Cultural Tradition and Change* 1 A *Appendix A: National Historic Preservation Act Compliance for Coastal Texas Protection and Restoration Feasibility Study* A 2 21 2

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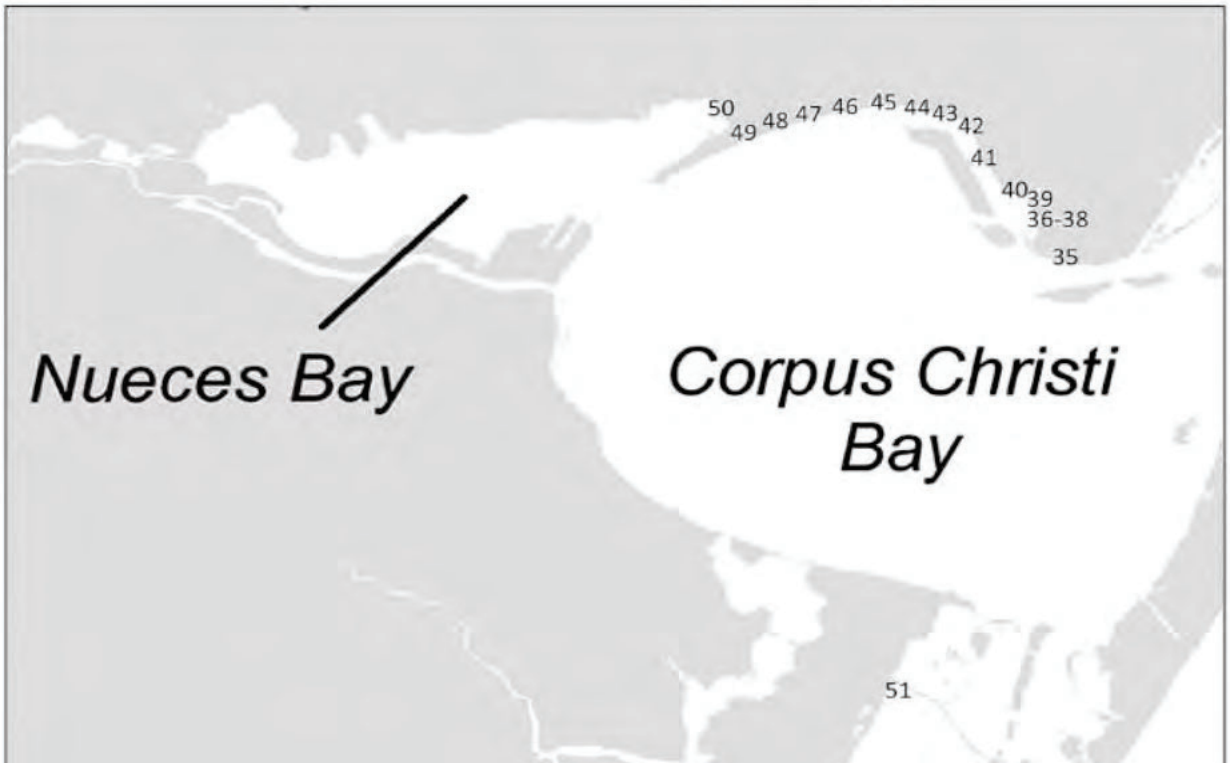


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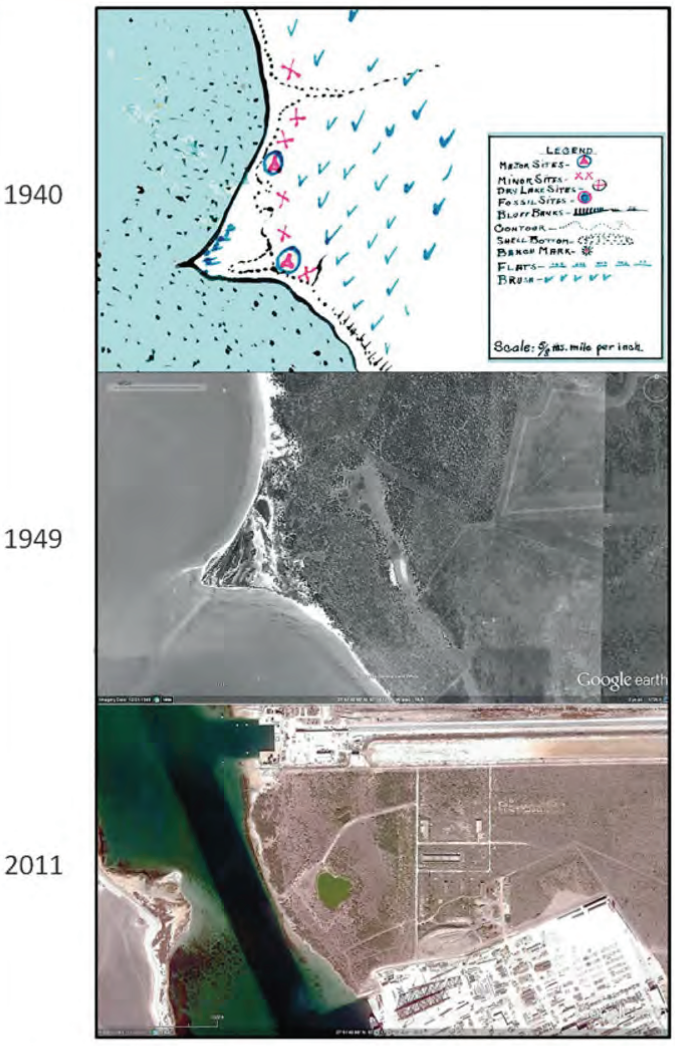


Changes in Donnel Point, 1940-2011. Source: Tunnell and Pape, *Pioneering Archeology*, 312.

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# Assess ent of the I pact of the Blue ater SPM Pipeline on In igenous Cultural Heritage Sites in Southern Li e Oak Peninsula

Prepared for the Indigenous Peoples of the Coastal Bend

by

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August 2023
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Purpose and Scope

Bluewater SPM has applied for a permit to construct a deepwater port crude oil pipeline from its facility in Taft, Texas to a point 27 miles seaward of St. Joseph Island, Texas. This pipeline has three components: a 22-mile onshore portion from Taft to the Redfish Bay shoreline in Aransas Pass; a 7.15-mile inshore portion across Redfish Bay and Harbor Island to the Gulf of Mexico shoreline at St. Joseph Island; and a 27-mile offshore portion. As part of its permit application, Bluewater conducted separate cultural resource surveys for each portion of the pipeline. For the onshore and inshore portions – which are the focus of this study – Bluewater's cultural resource management contractors concluded that no significant cultural resources (those eligible for listing in the National Register of Historic Places, or NRHP) would be affected by the pipeline. They therefore recommended that "no further work" be done to identify cultural resources or mitigate the impact of construction.[1]

The purpose of this report is to provide an independent assessment of the threat of the Bluewater pipeline and industrial development more generally to Indigenous, and principally Karankawa, sacred and ceremonial places on Live Oak Peninsula. An independent assessment is needed for three reasons. First, nearly all of the Indigenous settlements in the Coastal Bend are on or near the shoreline, and as such, they are subject to contamination by crude oil spills. Though the survey conducted on behalf of Bluewater for the onshore portion of the project claimed to "assess *any* potential for the Project to directly or indirectly affect historic properties, or other sensitive cultural resources," it did not consider the potential impact of oil spills on the numerous Karankawa villages, camps, and burial grounds along coastal Live Oak Peninsula and its neighboring islands (the report for the inshore portion of the pipeline project was not available for this independent review, which must rely instead on summaries of that report given in the Bluewater SPM *Port License Application*). [2] Second, over the past half-century, industrial developers have accomplished the nearly wholesale destruction of Indigenous places on the southern half of Live Oak Peninsula. This has occurred in spite of fully compliant cultural resource surveys like those completed for Bluewater. Notably, the Bluewater report and application ignore this historical context. Third, the report and application fail to incorporate the perspective of present-day Karankawa people to get a more expansive view of the meaning, value, and significance of their ancestral places. Instead, they view and value these places as repositories of historic artifacts and potential sources of scientific knowledge. A Karankawa perspective is needed to understand the sacred character of these ancestral lands and assess their cultural value apart from their archeological significance.

This report is based on cultural resource survey reports and site files from the Texas Archeological Research Laboratory (TARL); peer-reviewed archeological publications; other books, articles, and news items; and site visits. Of particular importance is the groundbreaking work of two early twentieth century avocational archeologists, Harold Pape and John Tunnell. For two decades beginning in the late 1920s, Pape and Tunnell visited and recorded over 200

[1] Bluewater SPM Project, *Deepwater Port License Application for the Bluewater SPM Project, Volume II: Environmental Evaluation, Section 9: Cultural Resources* (no publisher or date provided); Jennifer L. Cochran, *A Phase I Cultural Resources Survey of the Onshore Components for the Proposed Bluewater SPM Project, San Patricio and Aransas Counties, Texas* (Perennial Environmental Services, Inc., April 2019), ii.

[2] Cochran, *Phase I Cultural Resources Survey*, 9. The report for the inshore portion of the project, *Intensive Cultural Resources Survey for the Bluewater Single Point Mooring Project, San Patricio, Nueces, and Aransas Counties, Texas* (2019), was on file with SWCA Environmental Consultants as of August 2023.

Indigenous sites across the coastal bend, most of them on Live Oak Peninsula, the north shore of Corpus Christi Bay, and Copano Bay. Their work has been published in *Pioneering Archeology in the Texas Coastal Bend: The Pape-Tunnell Collection*, edited by John W. Tunnell and Jace Tunnell (College Station: Texas A&M University Press, 2015). The Bluewater *Port License Application* and onshore cultural resources survey report have not consulted this source.

This report is divided into four sections. A two-part section on historical background discusses, first, Indigenous settlements on the north shore of Corpus Christi Bay and Live Oak Peninsula, and second, the destruction of these Indigenous places by development and nature in the 20th and 21st centuries. Section two assesses the threat of further industrial development to these sites, with particular attention to the Bluewater pipeline. It focuses on those Karankawa settlements most vulnerable to oil spill due to their proximity to the pipeline – that is, coastal sites in Redfish Bay, Ingleside Point, and Ingleside Cove, as well as sites on Hog Island in Redfish Bay. The third section addresses the Karankawa perspective on their sacred places and the exclusion of local Indigenous peoples from decision-making about land use. The final section provides a summary of findings and recommendation.

Historical Background: Indigenous Places

The Texas coast as we know it today took shape about three thousand years ago. Sea-level rise filled in the channels of rivers flowing into the Gulf, and wave action formed the barrier islands and created the broad, shallow bays and estuaries that characterize the coastal bend. The bays provided an ideal habitat for varieties of mollusks, fish, and edible plants, and they became a magnet for the humans who hunted and gathered on the coastal plain. Thanks to the abundance of marine life in the bays, the human population expanded, and early coastal peoples established dozens of settlements along the shores of Oso, Nueces, Corpus Christi, Redfish, Aransas, and Copano Bays. Called Archaic Indians by present-day anthropologists, these peoples were ancestors of the Karankawa, a Late Prehistoric people who emerged as a distinct cultural group around the thirteenth century. Like their ancestors, the Karankawa were sophisticated hunters and gatherers who were well-adapted to the coastal environment. They practiced seasonal mobility, spending their winters fishing and gathering in the estuaries and their summers hunting and gathering along the rivers and prairies further inland. Unlike their ancestors, the Karankawa hunted with bows and arrows and made a unique style of pottery which they coated with asphaltum (called Rockport Pottery by archeologists). By the time the first Europeans washed ashore in the early sixteenth century, thousands of Karankawa lived in dozens of seasonal but permanent settlements on the Texas coast (indeed, 950 archeological sites have been identified on this stretch of the coast).[3]

The Karankawa and their ancestors made Live Oak Peninsula one of the most intensively occupied places on the coast. The work of Tunnell and Pape in the 1930s gives us a detailed snapshot of these sites before industrialists colonized the area in the mid-20th century. Tunnell and Pape identified two dense clusters of nearly continuous settlements in the area: one on the north shore of Corpus Christi Bay stretching from present-day Portland down to Ingleside; the other wrapped around the north end of Live Oak Peninsula, from Rockport north to Live Oak

[3] Robert A. Ricklis, *The Karankawa Indians of Texas: An Ecological Study of Cultural Tradition and Change* (University of Texas Press, 1996). On the number of sites see U.S. Army Corps of Engineers, Galveston District, *Appendix A: National Historic Preservation Act Compliance for Coastal Texas Protection and Restoration Feasibility Study* (August 2021), 2.

Point and then south along the shoreline of Copano Bay (figure 1). Many of these sites were small encampments whose inhabitants left few cultural traces behind. Others were bustling villages whose massive shell middens reflect generations of occupation. Between Portland and Ingleside, Tunnell and Pape recorded multiple dense villages and camps: a mile-long settlement extending from Portland east along the north shore of Corpus Christi Bay; a village with artifacts "far too numerous to mention" at the La Quinta Mansion site; multiple Archaic and Late Prehistoric middens, many of them still intact, at Donnel Point; and a continuous string of camps and villages running from Kinney Bayou southward 1.5 miles along Ingleside Cove, comprising one of the largest Indigenous settlements in the Coastal Bend (figure 2). By the mid-20th century, Tunnell and Pape noted, storms and waves had severely eroded some of these sites, which had once extended 50-100 yards further into the bay. Nevertheless, several settlements at the southern end of the north shore retained much of their integrity into the 1980s, when archeologist Robert Ricklis found persistent evidence of "an extensive zone of prehistoric occupation" along the shore of Ingleside Cove. Archeologists deemed seven of these sites eligible for inclusion in the NRHP: Kinney Bayou (41SP40), Ingleside Cove (41SP43), Ingleside On the Bay (41SP131), McGloin Bluff (41SP11), and three unnamed sites (41SP123, 41SP124, and 41SP197).[4]

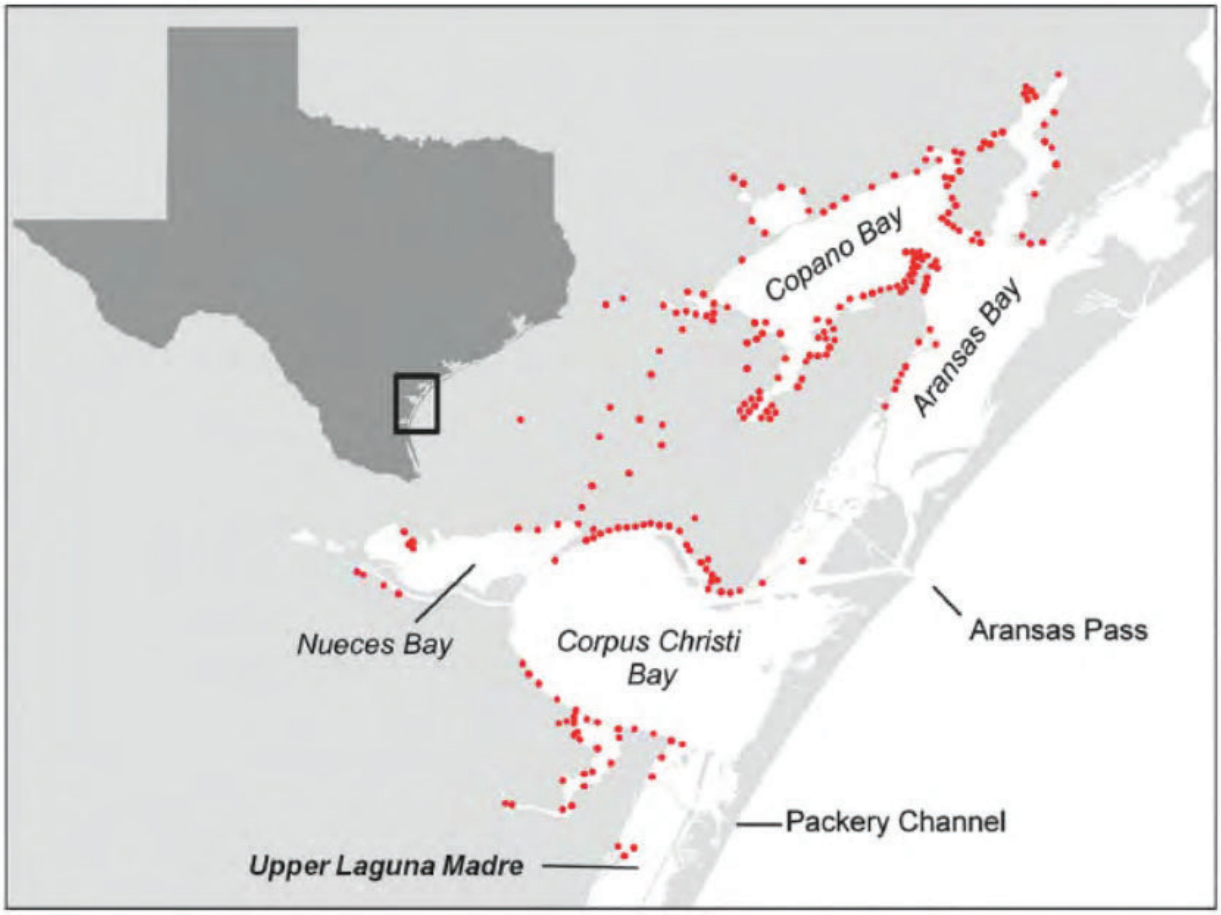


Figure 1: Sites documented by Tunnell and Pape in the 1920s-40s. Credit: Tunnell and Tunnell, eds., *Pioneering Archeology*, 81.

[4] Atlas site forms 9409004001, 9409004302, 9409013101, 9409001101; John W. Tunnell and Jace Tunnell, eds., *Pioneering Archeology in the Texas Coastal Bend: The Pape-Tunnell Collection* (College Station: Texas A&M University Press, 2015), 285, 259-300; Ricklis, *Karankawa Indians*, 37.

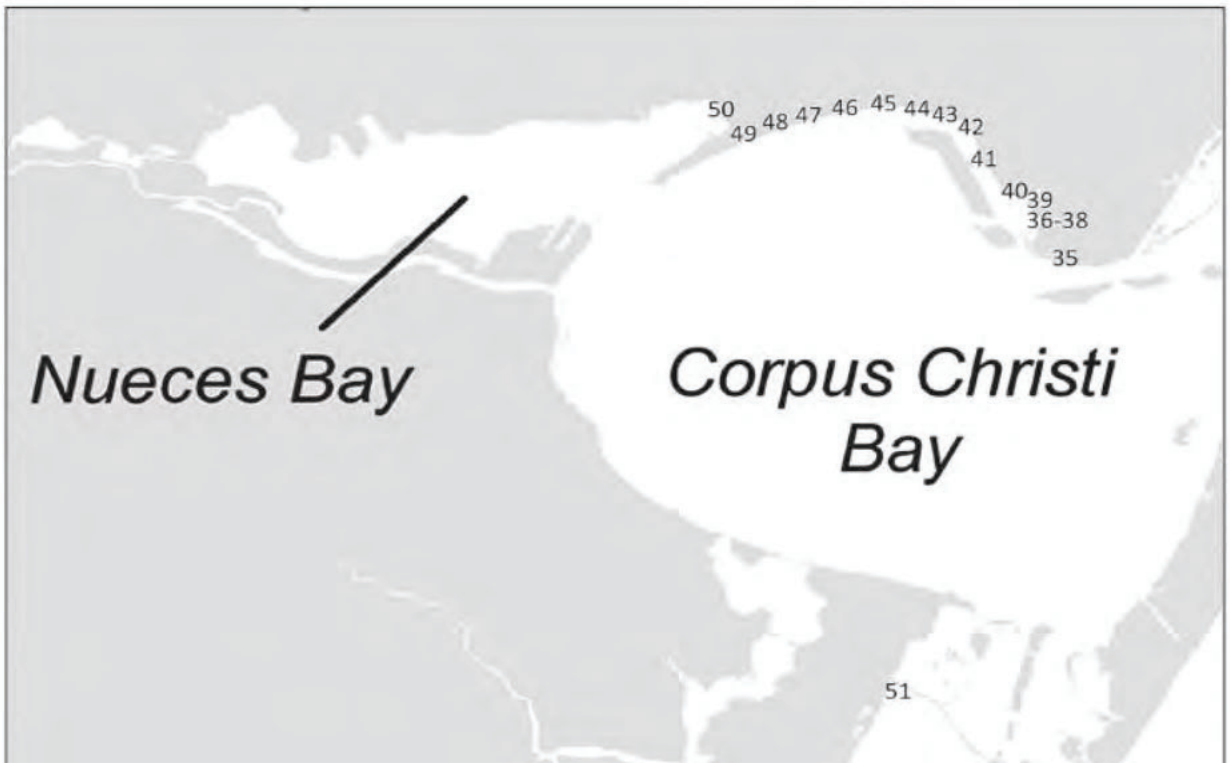

Figure 2: Campsite locations on the north shore of Corpus Christi Bay surveyed by Tunnell and Pape in the 1920s-40s. Credit: Tunnell and Tunnell, eds., *Pioneering Archeology*, 173.

Stretching for twelve miles along the coast of the north shore, these sites once contained tens of thousands of artifacts, reflecting intensive occupation from the Archaic to the Historic era. However, few human remains have been found at these locations.[5] Conversely, there are practically no Indigenous settlements on the twelve-mile shoreline bordering Redfish Bay on the east side of Live Oak Peninsula. Tunnell and Pape found no sites there (Figure 1), and subsequent searches have turned up just one significant site, Redfish Bay 1 (41SP72), which lies just south of Aransas Pass. Yet this coastline includes three known Indigenous cemeteries. Two of these cemeteries, Ingleside Burial Sites 1 and 2 (41SP64 and 41SP78), are on the southern end of the peninsula, in proximity to but clearly separate from the north shore settlements. Burial Site 1 was exposed by erosion in 1967 and contained at least four burials. Burial Site 2 was discovered by a local man digging for bait in 1969 and contained 5-7 burials. The third cemetery, Palm Harbor (41AS80), is at the extreme northern end of Redfish Bay, in proximity to but clearly separate from the occupation sites on Aransas Bay in north Live Oak Peninsula. It was discovered during construction in 1983 and contained twelve burials.[6] None of these burial

[5] A partial skull was found at Ingleside on the Bay (41SP203); see Atlas site form 9409020301. A nineteenth-century source claimed that two burial sites were found near Ingleside but did not give the number of burials or precise locations; see A.R Roessler, "Antiquities and Aborigines of Texas," *Annual Report of the Board of Regents of the Smithsonian Institution … for the Year 1881* (Washington, DC: Government Printing Office, 1883), 613-16.

[6] T.R. Hester and J.E. Corbin, "Two Burial Sites on the Central Texas Coast," *The Texas Journal of Science* (August 1975); TARL site files, 41SP78, Ingleside Burials Site, San Patricio County; E.R. Mokry and W.L. Fitzpatrick, *The Palm Harbor Site, 41AS80: A Prehistoric Mortuary Site from the Central Texas Coast* (typescript, TARL, 1986).

grounds is in close proximity to the settlement at Redfish Bay (41SP72). The relative isolation of these cemeteries from settlements is consistent with practices noted along Oso Bay and Creek, where much more extensive cemeteries have been found. The Karankawa and their ancestors preferred to put distance between their settlements and their cemeteries.[7] The evidence suggests that Indigenous people treated the Redfish Bay shoreline as an extended burial precinct. It is entirely possible that other cemeteries have either eroded into the bay or have not yet been discovered.

Historical Background: The Destruction of Indigenous Places

Little remains of the extensive settlements documented by Tunnell and Pape in the mid-20th century. Waves and storms had already washed portions of them into the bay, and the two men scrambled to record as much as they could before these sites were further submerged. But in the decades following World War II these Indigenous settlements and cemeteries, which were and still are sacred to the Karankawa and their descendants, would face a far greater threat from commercial, residential, and especially industrial development. Indeed, in the last half century the Port of Corpus Christi, intracoastal waterway, and petrochemical industry have transformed southern Live Oak Peninsula from a lightly developed agricultural area and tourist destination into a despoiled industrial wasteland. The relentless and deliberate disturbance of significant Karankawa places, many of them deemed NRHP eligible, has compromised them as archeological sites and justified their complete destruction through further development. Notable examples include:

- Donnel Point, aka Boyd's Point (41SP36, Tunnell and Pape #41): this was a triangular peninsula that jutted about 1,000 feet into Corpus Christi Bay in what is now La Quinta Channel. Tunnell and Pape identified six minor and two major camp sites there in 1940. In the mid-1950s, Donnel Point was literally wiped off the map when the Army Corps of Engineers dredged La Quinta Channel. However, the Indigenous sites mapped by Tunnell and Pape lay along the current shoreline, not on the point itself, so they would have survived the dredging. Though multiple archaeological surveys – in 1972, 2004, 2006, and 2014 – found no traces of Indigenous culture at the site, a local resident discovered an ancient shell midden in the eroded shoreline at Donnel Point in 2024. To date, the Port of Corpus Christi, which owns the property, has not conducted an archeological survey of the site to determine its extent and significance.[8]
- Kinney Bayou (41SP38-41, Tunnell and Pape #39 and 40): This bayou is situated on the northern edge of Ingleside Cove. Tunnell and Pape found numerous settlements on both sides of the bayou in 1940, which they described as an "extensive village" that was "much larger than the present Oso Site" on the south shore of Corpus Christi Bay and "is not equaled by the Puerto Site" south of Copano Bay. Much of this village was destroyed by dredging, roads, and residential construction in the 1950s and 60s. The lower portion of the bayou was also dredged and developed into a ship channel, destroying any remaining sites along its edges.[9] Two significant additional sites were later identified

[7] Cheryl Claassen, *Beliefs and Rituals in Archaic Eastern North America: An Interpretive Guide* (Tuscaloosa: University of Alabama Press, 2015), 178; Robert A. Ricklis, *Archeological Testing at the Callo del Oso Site, 41NU2, Nueces County, Texas* (Coastal Archeological Research, Inc., 1997), 70-71.

[8] Tunnell and Pape, *Pioneering Archeology*, 310-12. For a full report on the recent discovery at Donnel Point, see Peter N. Moore, *Report on the Discovery of an Indigenous Archeological Site at Donnel Point, La Quinta Channel, San Patricio County, Texas* (August 21, 2024).

[9] Tunnell and Pape, *Pioneering Archeology*, 265, 310.

further inland: 41SP39, a large shell midden extending 200 yards along the north bank of the bayou; and 41SP40, a 130-meter long, 1-meter thick shell midden on the south bank, which, despite erosion and disturbance, was deemed NRHP eligible in 1984.[10] Instead of protecting the site, the owners continued to disturb it. By 2014, a survey for an LNG project found little evidence of Indigenous culture at these sites. The middens were "conspicuously absent" from both sides of the bayou. Trenching, channel construction, and erosion had left shell deposits "too diffuse to be called a shell midden." These sites had been neutralized and no longer posed a problem for industrial developers seeking federal permits.[11]

- Baker's Port (41SP123 and 41SP124): A 1983 survey for a proposed industrial project found multiple Indigenous sites on the southeastern portion of Ingleside Point, two of which were deemed NRHP eligible. 41SP124 was a "fairly dense" shell concentration, possibly extensive, immediately inland and just east of McGloin Bluff.[12] Current aerial maps show that it has been completely enclosed and probably destroyed by a Flint Hills oil storage facility.[13] 41SP123 lay just east of intersection of FM 2725 and FM 1069. It was a large cluster of shell concentrations, 1 meter in depth. As one of the "few intact prehistoric sites known in the…general region," it was recommended for "extensive controlled excavations" and NHRP eligibility.[14] Instead, it was enclosed by 20-foot earthen walls and converted into an open pit dredge dump.[15]
- Ingleside Burial Sites 1 and 2 (41SP64 and 41SP78): These two Indigenous cemeteries lay 1,500 feet apart on the shores of Redfish Bay between Ingleside and Aransas Pass. Both were discovered in the late 1960s, and together they contained at least 10-12 burials. Some of these remains were removed by looters, others by archeologists. No effort to protect these cemeteries was made after their bones were removed. Though skeletal fragments were subsequently found in a test pit at the northernmost site, 41SP64, in 2001 it was "totally eroded or under industrial development" and is now a dumping site for waste materials.[16] Archeologists believe that Burial Site 2 was once situated on an island, but the landward side waters were filled in, presumably by dredge spoil. Looters removed 5-6 bodies from this cemetery. Despite assumptions that more burials were present at this site, it was totally destroyed by construction of a boat basin by the early 1980s. A 2001 survey confirmed that it was "under extensive development as an industrial property."[17]
- Redfish Bay (41SP72): This coastal camp site lay south of Aransas Pass. It contained a large shell midden that was excavated by local archeologists in the 1960s. In 1978 an avocational archeologist found olive shell beads there, an unusual find. The site was visited three times in the early 1980s and deemed eligible for NRHP inclusion, though it was covered by fill and trash and crossed by a paved road. However, nothing was done to

[10] TARL file 41SP39, Kinney Bayou Site 1 (Jim Corbin), San Patricio; Atlas site forms 9409004001; Elton R. Pruitt, *Archeological and Historical Investigations in the Proposed Baker's Port Project and Vicinity, Southern Live Oak Peninsula, San Patricio County, Texas* (Prewitt and Associates, Inc., 1984), 63, 71.

[11] Atlas site form 9409004004.

[12] Pruitt, *Archeological and Historical Investigations*, 77-78; Atlas site form 9409002401.

[13] Google Maps, accessed August 8, 2023.

[14] Pruitt, *Archeological and Historical Investigations*, 72; Atlas site form 9409012301.

[15] Atlas site form 9409012302.

[16] Atlas site forms 9409006401-02; TARL file, 41SP78, Ingleside Burials Site…San Patricio County.

[17] Atlas site forms 9409007802-03; TARL file, 41SP78, Ingleside Burials Site…San Patricio County.

preserve or mitigate this site. In 2005 it was found to be "extensively disturbed" and "mostly destroyed," thus no longer NRHP eligible.[18]

As these examples show, state and federal laws and enforcement mechanisms have done little to stop the destruction of Karankawa places and cultural resources by industrial developers on Live Oak Peninsula and the North Shore of Corpus Christi Bay. Even sites that have been deemed NRHP eligible have not been spared. This has been an incremental process with a significant cumulative impact. And the threat to Karankawa heritage is ongoing, making it critically important to protect the remaining intact sites.

The Bluewater SPM Deep Water Port Pipeline

In 2019 Perennial Environmental Services, Inc. conducted a cultural resource survey for the onshore portion of the Bluewater pipeline.[19] This 22-mile section will run from the facility in Taft to the shoreline where Texas Highway 361 enters Redfish Bay. Perennial designated a 300-foot margin from the center of the proposed pipeline as the project area, a total of 812 acres. Sixteen acres are on public lands and subject to the state antiquities code. The remaining 796 acres are privately owned. The cultural resource survey consisted of two parts: 1) background research using the Texas Archeological Sites Atlas and other textual sources to identify known historic and archeological sites within one mile of the proposed pipeline; and 2) a field survey of the 300-foot wide project area. For the field survey, Perennial conducted a surface inspection and made 438 shovel tests. No cultural resources were found on public lands within the project area, and only historic-era (non-Indigenous) sites were found on private lands. None of these were deemed NRHP eligible.

Given the concentration of Indigenous settlements along the shoreline, it is not surprising that Perennial's background research identified only three Karankawa sites within one mile of the onshore project area. Two, a shell midden (41SP70) and an open campsite (41SP71), are on Gum Hollow Creek in the western portion of the project area on Nueces Bay. They are not likely to be affected by the pipeline. Perennial also identified an "artifact scatter" (41SP55) directly within the path of the pipeline. They recommended avoiding this site, and the pipeline was routed around it. No artifacts were found in the test holes they dug near this site, though their caution to avoid it suggests that monitoring construction near 41SP55 is advisable.[20]

Perennial's background research minimized or overlooked two significant Indigenous sites that are threatened by the project. Both are well within the one-mile radius of the projected pipeline:

- Puerto Lake (41SP45): Perennial noted this site in its report but provided no data, claiming instead that the nature and NRHP eligibility of 41SP45 was "unknown," in spite of the fact that a site form is on file in the Texas Archeological Sites Atlas. The site form locates 41SP45 at coordinates 27°56'00.0"N 97°11'00.0"W, placing it at the southernmost extension of Puerto Lake and within 1,500 feet of the project area. Human remains were found at this site.[21]

[18] TARL file, 41SP72, Redfish Bay Site …. San Patricio County; Atlas site forms 9409007205-06.
[19] Cochran, *Phase I Survey.*
[20] Cochran, *Phase I Survey,* 20.
[21] Cochran, *Phase I Survey*, 20; Atlas site form 9409004501.

- Bentwood Burial Ground: During the construction of highway 1069 in 1917-18, Indigenous human remains were found near what is now the intersection of 1069 and Bentwood Lane/Resendez Road. This is within one mile of 41SP45 and .5-.75 miles of the project area.[22]

The proximity of these cemeteries to one another suggests that these were not isolated burials but instead were part of a more extensive burial precinct. If so, pipeline construction is likely to disturb or destroy other Indigenous burials in this area.

The inshore portion poses an even greater threat to Karankawa cultural places. This 7.15-mile section runs from the Redfish Bay shoreline at Aransas Pass to a booster station on Harbor Island and from there to the seaward coast of St. Joseph Island. SWCA Environmental Consultants conducted the inshore survey; notably, this is the same company that overlooked evidence of the site at Donnel Point in its 2014 survey for Cheniere.[23] SWCA defined the project area as a mere 100-foot wide strip along the proposed path of the pipeline.[24] The survey found no Indigenous sites within this narrow project area, and only one Indigenous settlement, an open campsite on Hog Island (41NU286), within one-half mile of the proposed pipeline. The cultural resource management consultants concluded that "no known historic properties or state landmarks…will be impacted by the Proposed Project construction" in the inshore area, and there was "a low potential for unknown cultural resources to be impacted by construction."[25]

Significantly, the report did not note the discovery of multiple Indigenous burials at Hog Island. In January 1971, collectors donated two sets of human remains taken from Hog Island to the Corpus Christi Museum of Science and History. Days later, museum staff removed another burial from this site. All three are now curated by the Department of Anthropology at Texas State University. In 2004, a burial was excavated from a Hog Island site, 41NU298, by the South Texas Archaeological Association; the SWCA report identifies neither the burial nor the site, though its location has been published. The remains of at least two other individuals were later discovered by fisherman. The first was found in 2001 and stored for over two decades at the University of North Texas Center for Human Identification. The second was discovered in August 2022 (admittedly, after the inshore survey was conducted). Both were repatriated to the Karankawa by the Nueces County Medical Examiner in 2023.[26] Though there is extensive evidence that the Karankawa or their ancestors used Hog Island as a burial ground, none of it is mentioned in Bluewater's license application. By omitting multiple known human burial sites from its onshore and inshore reports, all of which fall within the stated project boundaries,

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[22] Harriet Johnson, *Our First Residents: The Karankawa Indians* (typescript, Ingleside Public Library, Ingleside, TX), 1.

[23] SWCA Environmental Consultants, *Intensive Archaeological Survey of Portions of the 550-Acre Cheniere Ingleside Terminal Project, San Patricio County, Texas* (October 13, 2014), 15.

[24] Bluewater SPM, *Deepwater Port License Application*, 9-2. The cultural resources survey report was unavailable for review. Information about the inshore survey is taken from the *Port License Application*.

[25] Bluewater SPM, *Deepwater Port License Application*, 9-19-9-20.

[26] File on Human Remains, Accession Record 461, Corpus Christi Museum of Science and History, Corpus Christi, Texas (1971 remains); Nueces County Inventory, TARL; and Matthew S. Taylor, "Dental Pathology as an Ethnic Marker on the Upper Texas Coast," *Bulletin of the Texas Archaeological Society*, 81 (2010), 194 (41NU298 remains); Aransas Pass Police Department, "Human Remains Found – Hog Island," https://police.aptx.gov/human-remains-found-hog-island/2/; Nueces County PIO, News Release, "Remains of Indigenous Male Found in 2011 Repatriated," April 21, 2023 (author's possession).

Bluewater evinces a pattern of either deliberate obfuscation or callous disregard for sacred Indigenous places.

Because of their proximity to the shoreline, Karankawa settlements and burial sites in Redfish Bay and southern Live Oak Peninsula are especially susceptible to contamination by oil spill. Data from two major spills – the 1989 *Exxon Valdez* spill in Prince William Sound, Alaska, and the 2010 Deepwater Horizon BP spill in the Gulf of Mexico – offer object lessons on the impact of oil and its cleanup on Indigenous cultural resources. In Alaska, significant damage was done by spill cleanup personnel who were vandalizing sites in search of high-value artifacts. Costly cleanup procedures were put in place to minimize the disturbance of archeological sites by clean-up crews and prevent unauthorized access to onshore sites by treasure-hunters. Other sites were so damaged by oiling that they had to be excavated and stabilized. On Louisiana's Gulf coast, oil has become part of the archeological record. Oil and dispersants used in cleanup have been found in permeable artifacts such as bone and pottery sherds. Unfortunately, little is known about the long-term effects of these chemicals on artifacts and sites. Severe coastline erosion, propelled in part by oil and gas development, has submerged many coastal Louisiana sites, so that the effect of the Horizon spill on intact shell middens is difficult to assess. Likewise, the long-term impact of these chemicals on artifacts and on carbon dating techniques is unknown.[27]

With the proliferation of shoreline terminals and deepwater ports, more and more crude oil passes through Live Oak Peninsula each year, increasing the risk of spill. In December 2022 a sump pump at Flint Hills Ingleside oil terminal discharged 335 barrels of crude into Corpus Christi Bay. This facility is located on Ingleside Point adjacent to the McGloin Bluff site. Despite emergency clean-up efforts for this relatively small spill, oil drifted across the bay and was found on North Beach (11 miles away) and University Beach (10 miles away, and adjacent to the Cayo del Oso burial ground, 41NU2). Yet no assessment has been made of the impact of this spill on the Karankawa village at McGloin Bluff, where artifacts that might have eroded into the shoreline would be subject to contamination.[28]

A spill in Redfish Bay could have an immediate impact on sites on Hog Island; on two exposed, though mostly destroyed, shoreline sites: the Indigenous settlement south of Aransas Pass (41SP72) and Ingleside Burial Site 1 (41SP64); and on shoreline deposits along McGloin Bluff and Donnel Point, the only significant intact sites on southern Live Oak Peninsula. If oil were to wash into Aransas and Copano Bays, it could do incalculable damage to the massive, pristine, and otherwise protected shell midden at the Kent-Crane Site (41AS3), which is a State Archeological Landmark and is listed on the National Register of Historic Places.

A Karankawa Perspective on Indigenous Places

For the Karankawa and their ancestors, settlements along the Coastal Bend were not just sites for foraging, fishing, harvesting oysters, and making pots and points. Instead, these places were filled with spirits. Indigenous peoples had what anthropologists call an animistic view of the cosmos: everything was animated by spirits -- plants, animals, stones, stars, water, wind,

[27] Robert C. Betts, et. al., *Site Protection and Oil Spill Treatment at SEL-188* (Exxon Shipping Company, 1991); Exxon Valdez Oil Spill Trustee Council, "Archeological Resources," https://evostc.state.ak.us/status-of-restoration/archaeological-resources/; Mark A. Rees, Samuel Huey, and Scott Sorset, *An Assessment of the Effects of an Oil Spill on Coastal Archeological Sites in Louisiana* (U.S. Department of the Interior, 2019);

[28] Flint Hills Resources, Discharge Event Summary, Ingleside, Texas, April 24, 2023.

enemies, as well as the tools, weapons, baskets, and ceramics they made. These spirits were powerful and interacted with humans, sometimes for good, at other times for ill. To placate these spirits, harness their power, maintain balance, and ward off disaster, the Karankawa covered violent interactions with ritual, paid close attention to dreams and visions, and purified themselves and their communities with ceremonial smoking, dancing, and drinking the black drink.[29]

The spirits of the dead were especially powerful. If treated honorably, they might intercede with the spirit world on behalf of the living. If not, they might wander and do harm. The placement of burial grounds apart from settlements reflects the fear and respect Indigenous peoples accorded the dead. Because burial released the spirit from the bones of the deceased, mortuary practices were designed to appease disembodied spirits and ease their path to the afterlife. Coastal peoples typically buried their dead near water, in flexed positions, facing east or southeast toward the rising sun, and with a variety of grave goods such as beads, pendants, and whelk shells. At the Cayo del Oso burial ground (41NU2) near the south shore of Corpus Christi Bay, many generations of Archaic and Prehistoric Karankawa brought their dead for burial, reflecting the sacred character and great spiritual power of this place. The Karankawa also had elaborate mourning rituals. The community fed mourners for three months following the death of a loved one, and the immediate family of the deceased wailed mournfully three times a day for a full year, after which they performed purification rituals.[30]

For many present-day Karankawa, these ancestral places are still filled with spirits. Hawk Clan member Chiara Sunshine Beaumont decries the threat of industrial development to "our swimming and crawling relatives" in the coastal waters off McGloin Bluff. "The land…is sacred to us. It is where my relatives from the coyote clan journey to pray and gather in thanks and it is where our ancestors left their tools, pottery [and] artifacts for us. It is a tangible piece of our lineage that connects us to that land, and we have been connected to this land living on it, protecting it for at least the last 2000 years." For Beaumont and other Karankawa, artifacts are not "cultural resources." They are part of the land, their land, for the Karankawa did not cede their lands when they were driven out in the nineteenth century. This land is a sacred matrix of interconnected, spiritual relationships. Attuned to this sacred power, present-day Karankawa linguist Alex Perez "can feel the memories of my ancestors" in his home on Galveston Island, just as Karankawa leader Love Sanchez hears the voice of her ancestor in a croaking bullfrog at a secluded burial ground on Oso Creek, and as the late Corpus Christi spiritual guide Larry Running Turtle Salazar heard the voices of his people, the plant people and rock people and the dead at rest in the Cayo del Oso, carried in the wind.[31]

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[29] David La Vere, *The Texas Indians* (College Station, TX: Texas A&M University Press, 2003).

[30] Claassen, *Beliefs and Rituals*, 159-65; Barbara M. Meisner, et. al., *The Cayo del Oso Site (41NU2), Volume II: Results of Archeological Monitoring of Spur 3, Corpus Christi, Nueces County, Texas, 2000-2007* (Center for Archeological Research, 2009), 74; La Vere, *Texas Indians*.

[31] Keaton Peters, "Karankawa Kadla Fight to Protect Sacred Land," *Branch Out*, April 27, 2022, https://branchoutnow.org/karankawa-kadla-fight-to-protect-sacred-land-water-against-enbridges-fossil-fuel-expansion-in-texas/; John Nova Lomax, "We're Still Here," *Texas Highways*, June 2022, https://texashighways.com/culture/people/karankawa-descendants-are-reclaiming-their-heritage-after-being-written-off-extinct/?fbclid=IwAR3FYFcRWjtLCZVnT7_MkyausX-EQiHclqszV2tOIG9qkAJfSbZeCGRoq9s; Love Sanchez conversation with the author, May 24, 2023; *Truly Texas Mexican*, directed by Adán Medrano, JM Media, 2021.

These voices and perspectives find no place in the cultural resource reports and permit applications that greenlight the destruction of Indigenous places in southern Live Oak Peninsula. This is ironic, given the central role archeology has played in preserving Indigenous culture over the past century. By privileging an exclusively scientific understanding of sacred Native places as "sites" and Native objects as "cultural resources," this cultural resource management process silences Native voices and contributes to the erasure of Indigenous people, like racism, allotment, boarding schools, forced relocation, enslavement, and genocide.

Conclusions and Recommendations

Destruction of Karankawa settlements and burial grounds on southern Live Oak Peninsula is widespread, but it is not yet complete. Indeed, the nearly wholesale destruction of these places makes it all the more important to preserve what few remain. At least two significant sites on the North Shore, McGloin Bluff and Donnel Point, have been minimally disturbed by construction, as has the burial ground at Hog Island. Others, such as the Redfish Bay settlement and Ingleside Burial Ground 1, have been largely erased but not enclosed by development, and they remain sacred places to present-day Karankawa. To prevent further erasure of Indigenous cultural heritage in this area, agencies like MARAD and the USCG should halt all further industrial development, including construction of the Bluewater SPM pipeline.

Key Archeological Sites on the North Shore of Corpus Christi Bay and Southern Live Oak Peninsula (sites in red type are from Tunnell and Pape)

| Name | Trinomial | Location | Description | NRHP | Status |
|---|---|---|---|---|---|
| Brown VIII | 41SP33 | North shore | Small shell midden | | |
| -- | 41SP106 | North shore | Shell accumulation | | |
| -- | 41SP107 | North shore | Shell scatter | | Eroded (1973) |
| -- | 41SP108 | North shore | Shell accumulation | | Eroding (1973) |
| Brown VI | 41SP31 | North shore | Small shell midden | | |
| Brown IV | 41SP29 | North shore | Small shell midden | | |
| Brown III | 41SP28 | North shore | Small shell midden | | |
| -- | 41SP100 | North shore | Shell accumulation | | Eroding (1973) |
| -- | 41SP101 | North shore | Scattered shell | | Eroding (1973) |
| -- | 41SP102 | North shore | Shell accumulation | | Eroding (1973) |
| -- | 41SP103 | North shore | Shell scatter | | Eroding (1973) |
| Brown II | 41SP27 | North shore | Shell midden | | Residential development (1985) |
| -- | 41SP104 | North shore | Shell midden | | Eroding (1973) |
| Brown X | 41SP51 | North shore | Large midden | | Eroding (1963) |
| Prairiedog | 41SP50 | North shore | Shell midden | | Eroding (1963) |
| Brown I | 41SP26 | North shore | Shell midden | | |
| -- | 41SP25 | North shore | Large campsite | | Good (1937) |
| Kinney Bayou 2 | 41SP40 | Kinney Bayou | Large, dense shell midden | Yes (1984) No (2014) | Industrial development |
| Windy Hill | 41SP42 | Ingleside Cove | Shell midden | | Residential development |
| Ingleside Cove | 41SP43 | Ingleside Cove | Large shell midden | Yes (1984) No (2021) | Erosion, residential development |
| Hatch House | 41SP120 | Ingleside Cove bluff | Shell midden and historic house | Nominated (1985) | |
| Ingleside on the Bay | 41SP131 | Ingleside Cove | Dense midden | Yes (1985) Unknown (2002) | Residential development |

| | | | | | |
|---|---|---|---|---|---|
| -- | 41SP158 | Ingleside Cove | Midden | | Industrial and road dev. |
| -- | 41SP197 | Ingleside Cove | Small midden | Potential (1998) | |
| -- | 41SP418 | Ingleside Point | Camp site | | Industrial and road dev. |
| Baker's Port | 41SP123 | Ingleside Point | Shell concentration | Yes (1984) | Industrial development, dredge fill site, completely destroyed by 2007 |
| -- | 41SP124 | Ingleside Point | Shell concentration | Yes (1984) | Destroyed by MODA development |
| -- | 41SP127 | Ingleside Point | Artifact scatter | | Erosion, bulldozing, destroyed by clearing by 2007 |
| -- | 41SP203 | Ingleside Point | Human skull | | Isolated find, no site, no other bones |
| McGloin Bluff | 41SP11 | Ingleside Point | Large fishing camp | Yes (2006) | Excavated but intact |
| -- | 41SP64 | Redfish Bay | Cemetery | No (2005) | Destroyed by development and erosion by 2001 |
| -- | 41SP72 | Redfish Bay | Large shell midden | Yes (1984) No (2005) | Destroyed by development and erosion |
| -- | 41SP78 | Redfish Bay | Cemetery | No (2005) | Destroyed by development by 1983 |
| Palm Harbor | 41AS80 | Redfish Bay | Cemetery | | Preserved by owner 1980 |
| -- | 41AS84 | Redfish Bay | Shell midden | | Destroyed by dredging by 1984 |
| Bentwood | -- | Hwy 1069 near Bentwood Rd. | Cemetery | | |
| Puerto Lake | 41SP45 | S tip of Port Lake | Camp, burial | | |
| Hog Island | 41NU286 41NU298 | Redfish Bay | Camp, burial | | Undisturbed but vulnerable to spill |
| Kinney Bayou | 39 | Kinney Bayou south | Large camp or village | | Some erosion, brush cleared by road workers, more erosion expected |
| Kinney Bayou | 40 | Kinney Bayou south | Extensive village reaching 15 miles south around point, much larger than Oso Site | | Much eroded and continuing to erode |
| Boyd's Point | 41 | Boyd's Point in La Quinta Channel | Old and large site with multiple intact shell middens, as well as newer sites at same location | | Much eroded but still much intact |
| La Quinta Shoreline | 45 | La Quinta Mansion | Village, numerous artifacts | | Much eroded |
| North Shoreline | 48 | Portland Point one mile east | Large village one mile long | | Much eroded |

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

| | | |
|---|---|---|
| Cheniere Corpus Christi Pipeline, L.P. | § | Docket No. CP18-513-000 |
| Corpus Christi Liquefaction Stage IV, LLC | § | Docket No. CP26-82-000 |
| Corpus Christi Liquefaction, LLC | § | Docket No. CP26-87-000 |

SCOPING COMMENTS OF INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION, INC., INDIGENOUS PEOPLES OF THE COASTAL BEND, KARANKAWA TRIBE OF TEXAS, AND CARRIZO/COMECRUDO TRIBE OF TEXAS, LLC

# EXHIBIT 4

# Viability of Moving Increased Crude Oil Volume via the No-Action Alternative in the Bluewater DEIS

SEPTEMBER 2023

**Sierra Fletcher, Alisha Chartier, Haley Griffin, and Bretwood Higman**

# Table of Contents

# 1 Introduction

This report was developed based on review of the Draft Environmental Impact Statement, Bluewater Texas Terminal LLC, Docket No. MARAD-2019-0094 (hereafter, "Bluewater DEIS") which would provide for offshore loading of large tankers via two mooring buoys and a pipeline system. The Bluewater DEIS asserts that the volume of crude oil moving through the area by the proposed project would move through the area regardless of whether this project is approved. This is based on an assumption that, absent Bluewater, the same amount of crude oil would be moved via smaller tankers from shore ("reverse lightering") instead of the larger ones proposed to be loaded offshore via subsea pipeline in the Bluewater project. Based on this unsupported assumption, the Bluewater DEIS determines that Bluewater would have net beneficial impacts compared to not building the project. This report examines the feasibility of moving the same volume of additional crude oil out of the Port of Corpus Christi in the absence of the proposed Bluewater Terminal based on existing onshore export terminal capacity and congestion.

## 1.1 Background

The Bluewater project capacity would be enough to load 16 VLCCs per month. This totals 384 million barrels of oil, or more than 16 billion gallons, per year (Bluewater DEIS, pg. 1-3).[1] If the Bluewater project was approved, that oil would be loaded for export onto very large crude carriers (VLCC) from two single point mooring buoy systems in offshore waters. The crude oil would reach the buoy systems via two adjacent 30-diameter pipelines that would extend more than 50 miles from an on-shore facility (not included in the DEIS), together comprising more than 100 total miles of new pipeline extending from south of Taft, Texas, across Harbor Island, and out to the mooring buoys approximately 17 miles offshore.

In its consideration of the No-Action Alternative and potential cumulative impacts, the Bluewater DEIS describes how crude oil for export would be moved if the project was not constructed: smaller tankers (or partially loading VLCCs) would load at shoreside terminals, then transfer oil cargo to VLCCs in deeper waters offshore (or filling VLCCs that were partially loaded onshore) (Bluewater DEIS, p. 2-32). The filled VLCCs would then transport the oil for export. This type of process, called reverse lightering, is used when the port area is too shallow to accommodate fully loaded, larger tankers. The DEIS estimates the number of smaller tankers (Aframax and Suezmax sizes) and VLCCs that it would take to move the same additional 384 million barrels of oil as Bluewater's proposed exports through reverse lightering in the Corpus Christi area. This information is used to indicate an environmental benefit of the project compared to the No-Action Alternative. For example, the DEIS concludes that Bluewater will reduce air pollution and greenhouse gas emissions compared to the No-Action Alternative (Bluewater DEIS, pp. 2-32, 3-330-31).

[1] VLCCs typically hold 2 million barrels of oil. This can vary from 1.9 – 2.2 million barrels (EIA, 2014). Therefore, 16 VLCCs/month would represent 32 million barrels of crude oil per month loaded via the Bluewater project, or 384 million barrels per year. (A barrel of oil is 42 US gallons, so this is 16,128,000,000 gallons per year.)

The assumption that in the absence of the Bluewater project, the same amount of additional crude oil would be exported through reverse lightering in the Corpus Christi region relies on two related capacity assumptions, neither of which is supported in the DEIS: (1) the same volume of crude oil could be moved and stored onshore for loading on vessels and (2) that same volume of oil could be loaded onto tankers for export via reverse lightering with existing port capacity. This report examines the second assumption. The DEIS estimates how many tankers would need to enter the Port to move the increased volume of crude oil for export but does not assess whether there is sufficient tanker berth capacity to do so. This report uses vessel movement data to determine how many hours are spent by tankers at the relevant berths (for 2022), and whether the additional tanker movements that the DEIS presumes would happen in the No-Action Alternative are viable.

Additional qualitative information on existing port congestion is included. Further analysis is needed to determine the navigational safety considerations regarding the hypothetical addition of significant numbers of tankers to the port area.

This analysis does not consider the economic factors underlying the assumption regarding the likelihood of the annual movement of 384 million barrels of crude oil for export via reverse lightering.

## 1.2 Materials reviewed and data sources

Nuka Research considered the explanation and assumptions in the Bluewater DEIS for an overall understanding of the proposed project, associated volume of oil and ship traffic, and underlying assumptions. The Bluewater DEIS does not discuss the details of how the increased number of smaller tankers is needed to move an additional 384 million barrels of crude oil out of the existing terminals. For context on port operations and risk factors, we reviewed Port of Corpus Christi dock information (POCC, 2023) and the U.S. Coast Guard's last two Ports and Waterways Safety Assessments (USCG, 2015; 2019).

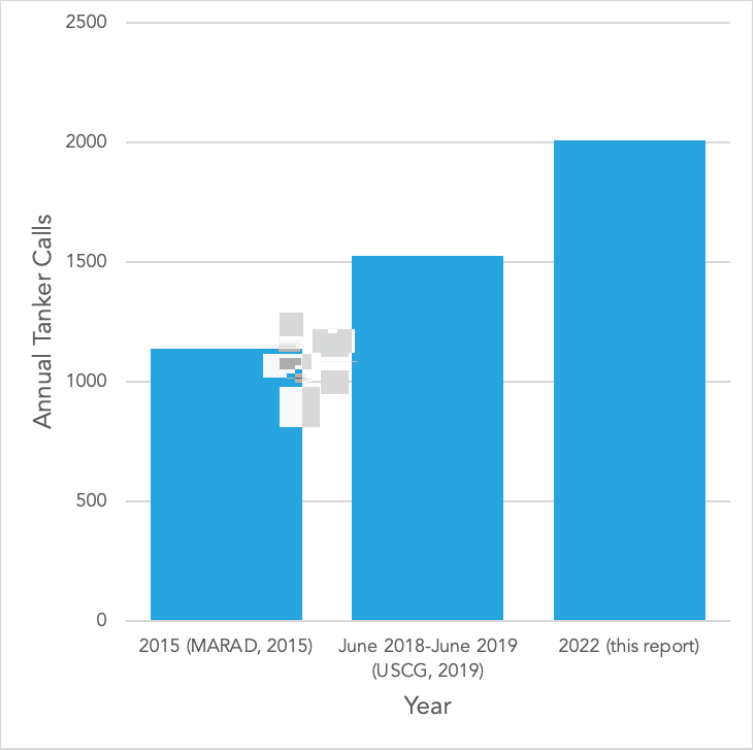
The most recent port call data available from the U.S. Department of Transportation's Maritime Administration (MARAD) is for 2015. For a more current picture of tanker movements, and to be able to calculate time spent at tanker berths, we used 2022 Automated Identification System (AIS) data from the National Oceanic and Atmospheric Administration's (NOAA) website.[2] The dataset compiles AIS transmissions from ships that are received at U.S. Coast Guard shore stations and allows for calculations regarding vessel movements and time spent in an area. The processing and application of the dataset is described in Section 3.

[2] https://coast.noaa.gov/htdata/CMSP/AISDataHandler/2022/index.html

# 2 Commercial vessel traffic congestion as a risk factor in the area

Commercial vessel traffic congestion is already a recognized risk factor in the area. The U.S. Coast Guard has conducted two recent Ports and Waterways Safety Assessments (PAWSA) for Corpus Christi in 2015 and 2019. These assessments follow a standard, qualitative approach that is applied around the country to engage waterway users in identifying and recommending mitigations for risk factors based on local waterway configurations, conditions, and vessel traffic. Waterway users (in this case, Texas and US federal agencies and industry) identify and score risk factors associated with vessel traffic, then consider whether those risk factors are adequately mitigated by existing measures.

The 2019 PAWSA workshop report identifies the volume of commercial traffic as a "very high baseline risk" (7.7 out of 9). This was a slight increase from the 2015 PAWSA, when the baseline risk of commercial traffic congestion was 7.0 out of 9.0 (USCG, 2015). In the 2019 PAWSA workshop, there was not consensus regarding whether existing mitigations balance the risk of commercial vessel traffic congestion. For this process, consensus was defined as having agreement of 2/3 of workshop participant teams, so we assume that more than 1/3 of those workshop participant teams did *not* believe mitigations were adequate to that risk factor (USCG, 2019).




In addition to concern about overall congestion, the data show that tanker traffic is increasing at the Port substantially, almost doubling from 2015 to 2022. Tankers are just one type of commercial vessel, but in the Port of Corpus Christi they are a prominent one. A full analysis of multiple years of AIS data was not conducted, but the increase is evident from the annual tanker call numbers in Figure 1 that were excerpted from MARAD, the 2019 PAWSA, and this study (see Section 3).

*Figure 1. Increasing number of tanker calls in the Port of Corpus Christi from 2015 to 2022*

In 2018, the Port reported approximately 850,000 bbl/day were exported (for more than 310 million barrels per year) (Port of Corpus Christi, 2019). Against that backdrop, oil tanker traffic would grow significantly if the DEIS is correct in its assumptions with the addition of 384 million barrels of crude oil through the Port of Corpus Christi via reverse lightering (the No-Action Alternative in the DEIS) would represent more than double the amount of crude oil exported in 2018. (The increased number of tankers that would be needed is explained in the DEIS and discussed below.)

The DEIS does not address the existing congestion in the Port to evaluate (plus any additional ship traffic since the 2019 PAWSA) or whether it is feasible to add the additional tanker traffic it presumes in the hypothetical No-Action Alternative scenario. At a minimum, the agencies should evaluate the overall port congestion to determine the feasibility of safely exporting the full 384 million barrels of oil via reverse lightering.

# 3 Examination of tanker movements in 2022

Nuka Research examined tanker movements for 2022 to understand the hypothetical potential for additional onshore tanker loading under the DEIS No-Action Alternative. Because the DEIS did not consider the feasibility of moving 384 million more barrels of oil through the Port per year, new analysis was conducted with Automated Identification System (AIS) data, to assess whether there are enough hours in the year at the berths for loading crude oil exports, to load the additional tankers required. These data do not indicate the impact of weather or weather closures ranging from fog to hurricanes, the movement of all vessels (particularly barges and smaller vessels that are not required to use AIS), overall port congestion particularly in the channels, or the availability of tugs to assist tankers in docking or undocking. All of these factors could add additional constraints on loading capacity within the Port.

## 3.1 Processing of AIS data

Nuka Research processed AIS data for 2022. AIS data consists of a set of signals sent by a vessel and received (in this case from a shore receiver). Signals are collected to visualize the track a vessel travels and can be used to identify the number of times a vessel enters or exits an area, how much time it spends there, and where it goes. AIS data do not always show the exact route a vessel traveled, especially if there are longer than usual gaps between the signals received, but when looking across thousands of vessel transits, it is possible to observe where vessels go generally as well as how long they spend there. Vessels identified in the AIS as tankers were included. This does not reflect all vessels active in the area, since not all vessels, such as barges, are required to carry AIS. There can also be gaps in the sending or receipt of AIS signals. However, since AIS is required for all tankers and those vessels are regularly monitored by a vessel traffic service, we assumed that the use and self-identification of tankers in the AIS dataset would be sufficient to present a picture of tanker activity.

Figure 2 shows a density plot of tankers that entered Port Aransas Channel for 2022. For the purposes of this study, we were interested in the Port area, rather than the offshore area that was the focus of

the Bluewater DEIS. While the Bluewater DEIS used AIS data to consider collision risk in offshore waters,[3] it failed to consider collision risk in the Port and inshore shipping channels.

In Figure 2, the extent to which tankers must wait outside Port Aransas Channel is illustrated with the dark red blobs where ships are apparently at anchor. While we have not quantified the amount of time spent at anchor, the potential for congestion in this area may warrant additional analysis by those considering vessel traffic mitigations and reflects one aspect of the overall level of congestion raised in the Coast Guard's PAWSA processes. (The tracks in Figure 2 that appear to be crossing over land represent gaps between AIS data points. In thousands of transits, this only occurred a few times.)

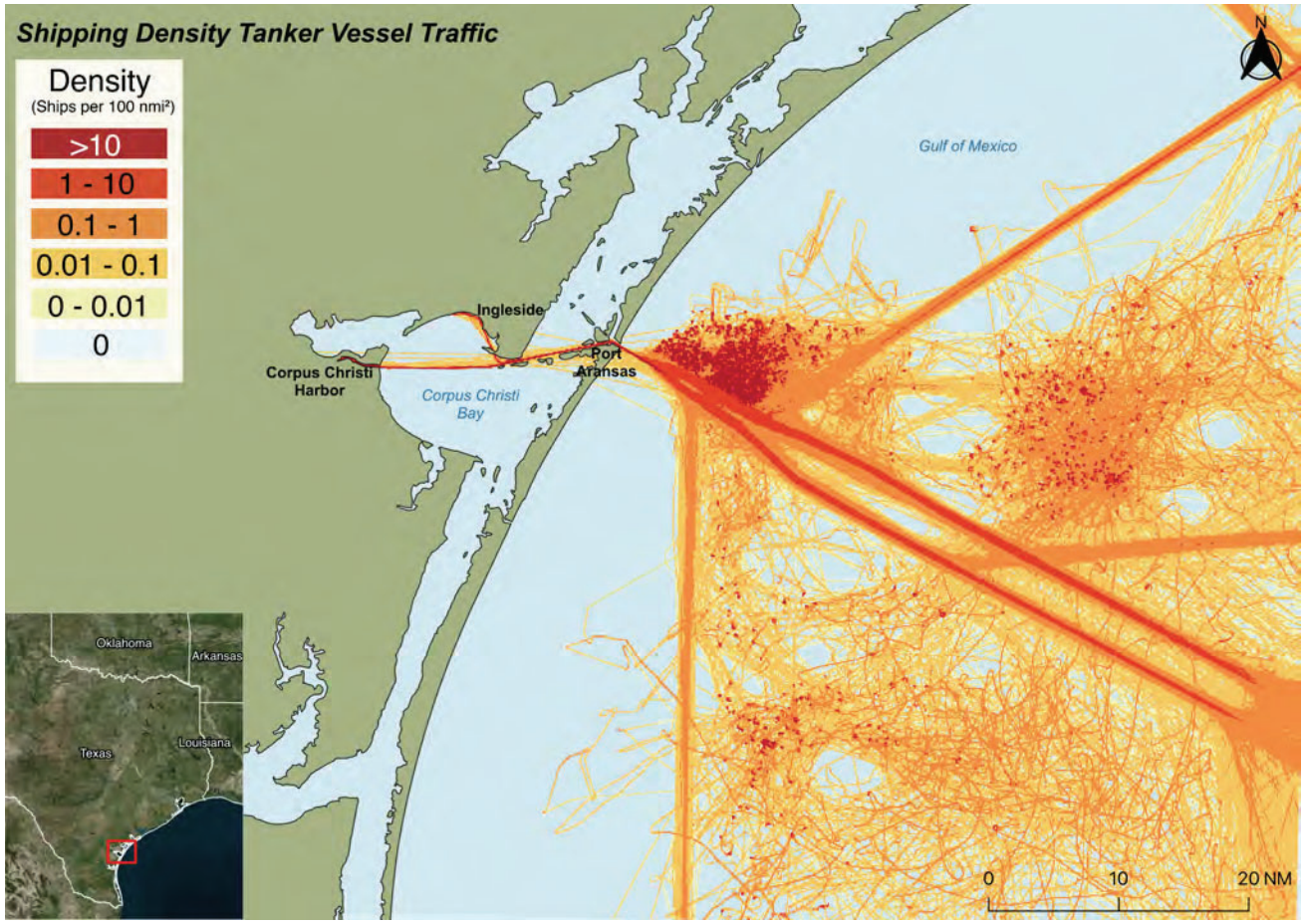



*Figure 2. Density of tanker tracks from tankers that entered/exited Port Aransas in 2022. This presents only the tankers that entered Port Aransas Channel on their depicted voyage, not tankers that pass through the offshore area without entering the channel.*

[3] Appendix S of the DEIS presents an analysis of vessel traffic, collisions, and risk assessment for the offshore area where the mooring buoys would be located as part of the proposed Bluewater project (Golder Associates, Inc., 2021). That study used the same source of AIS data we use for this report, but it was focused only on the offshore waters while we focus on the Port.

## 3.2 Estimating the number of tanker entrances to Port Aransas Channel

The AIS data indicates ***2,008 one-way tanker transits*** of Port Aransas Channel in 2022, meaning tankers passed through the Channel more than 4,000 times when considering both in-bound and out-bound voyages. Even with confidence in AIS data for tankers in this region generally, as mentioned above, there were a few cases where a vessel was identified as going in one direction but not the other. Therefore, 2,008 should be considered a conservative number of total tanker entries to the port area.

## 3.3 Estimating capacity at tanker berths

Because the DEIS did not consider the feasibility of moving 384 million more barrels of oil through the Port, new analysis was conducted to estimate the availability of berths suited to loading crude oil onto Aframax, Suezmax, or VLCCs inside the Port. These are the sizes of tankers assumed in the DEIS to be involved in additional shoreside loading, including for ship to ship transfer purposes (DEIS, page 5-20). We used this information to consider whether the assumptions in the DEIS' No-Action Alternative are plausible given the time available at shoreside docks based on 2022 AIS data. This was done by:

1. Using the AIS data to calculate the number of tanker calls and average time spent at docks assumed to be used to move the additional oil volume.
2. Considering the viability of adding the additional hypothetical tanker calls to the Port that would be associated with the No-Action Alternative based on time.

The time-based approach is highly conservative. This analysis could be further refined with modeling. Each step is described further below.

### 3.3.1 Estimating time tankers spent at docks

We considered 8 existing docks where the hypothetical oil tankers would be most likely to load in the No-Action Alternative: those on the east side of Corpus Christi Harbor. See Figure 3. LNG docks were not included because they load liquefied gas, not oil. For each included dock, we identified the number of times a tanker entered a circle around the dock and the average amount of time spent there (based on calculating the time when the tanker entered until it exited). The circles are sized and positioned to generally capture the time a vessel is at the dock and serve as an analytical tool to allow calculations of vessel movements around a certain area.

A circle was drawn around each included dock. For each circle:

- The geographic display of AIS tracks was used to exclude any tankers that were just passing through the circle without clearly calling in at the dock in question. These were removed from the analysis. Circles were sized to exclude other vessels in the area and focus only on the vessels while at dock.

- With the remaining tracks, the number of times a tanker entered the circle to call at the dock was counted. These were checked against exits of the circle to remove any errant data (e.g., if a ship entered but did not exit). These data were removed so as not to impact the time calculations in the next step.
- Total hours spent by the included tanker tracks in the circle were calculated.
- Average hours spent per tanker call was calculated based on the total hours spent by tankers in the circle and the total number of tanker entries.


*Figure 3. The eight analytical circles used for this analysis, each drawn around a dock based on visualizing the tanker tracks (and with the intent of excluding tankers passing by without stopping at that dock, which accounts for some variations in their size).*

As an example, Figure 4 shows a Google Earth image of the circle drawn for analytical purposes around one dock. The red lines depict tanker tracks in the AIS data. From the image alone, it is difficult to visualize how long tankers spend in the circle, but from the calculations based on entries and exits, we estimate an average of 42 hours/tanker spent within the white circle in 2022. There were 93 identified tanker entrances and a total of 3,895 tanker hours spent at that location.

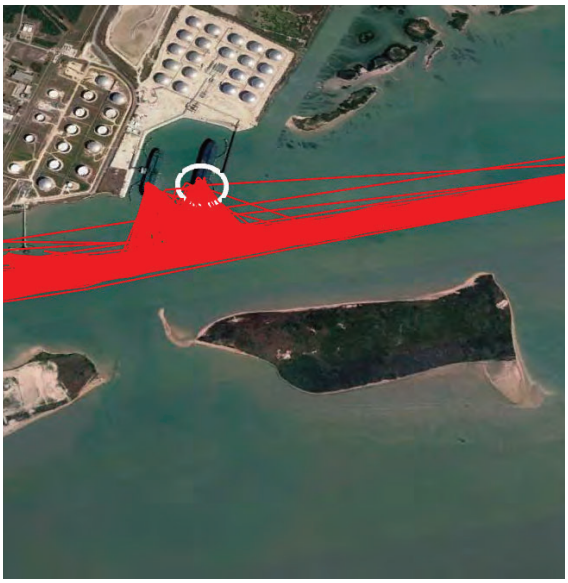


*Figure 4. Example Google Earth image showing vessel tracks from 2022 AIS data and one of the analytical circles used to calculate time spent by tankers at that dock*

### 3.3.2 Examining DEIS assumption in context of tanker time at docks

At the 8 included docks, there were a total of 717 tanker calls recorded in the AIS data. These vessels spent an estimated total of 28,180 hours at those docks in 2022, for an average of 39.3 hours. (This does not include time spent getting to or from the docks, or time spent anchored awaiting entrances to the Port Aransas channel.) As there are 8,760 hours in a year and 8 docks, the 28,180 hours already used represents about 40% of maximum available hours in a year (70,080). An estimated 41,900 hours remain if it was hypothetically feasible to completely max out every hour in the year with a tanker at one of those docks without regard for the availability of docking tugs, ability to maneuver ships in close quarters, inclement weather, or congestion elsewhere in the Port away from the actual dock.

| Table 5-5. Calculation of Cumulative Lightering Trips | | | | | |
|---|---|---|---|---|---|
| | Project | | | | |
| Trip Type | SPOT | GulfLink | Bluewater | BMOP | Total |
| No Action Alternative: | | | | | |
| VLCC Shoreside loading percent | 0% | 50% | 50% | 25% | -- |
| Aframax shuttle tanker loads per VLCC | 2.7 | 2.7 | 4.0 | 4.0 | -- |
| Suezmax shuttle tanker loads per VLCC | 1.6 | 1.6 | 2.0 | 2.0 | -- |
| Number of Aframax tankers per Suezmax tanker | 7 | 7 | 2 | 2 | -- |
| Average shuttle tanker trips per VLCC | 5.1 | 6.1 | 7.7 | 7.7 | -- |
| **Total lightering trips, No Action Alternative** | **1,870** | **1,102** | **1,472** | **2,799** | **7,243** |
| Annual VLCC trips a/ | 730 | 360 | 384 | 730 | 2,204 |
| **Total vessel trips, No Action Alternative** | **2,600** | **1,462** | **1,856** | **3,529** | **9,447** |
| a/ Reflects the total number of inbound and outbound VLCC trips to and from the project region, regardless of project scenario. For the Proposed Action for each project, this includes all VLCC trips to and from the DWP; for the No-Action Alternative, this includes VLCC trips inbound to either an offshore lightering area or to a shoreside facility, plus trips by fully loaded VLCCs outbound from the region. As described in Section 2, trips between shoreside facilities and offshore lightering areas are included in the "Total lightering trips" category. | | | | | |

*Figure 5. Table 5-5 excerpted from DEIS*

The DEIS (Table 5-5; see Figure 5) states that under the No-Action Alternative, if the project was not developed but the same oil volume was moved through the area, this would be achieved by 1,472 smaller tanker trips[4] plus some number of VLCCs that load shoreside (the table states 384 "annual trips" but is not specific about how many of these would be partially loaded shoreside or loaded offshore).

Applying our average of 39.3 hours at dock to those 1,472 smaller tanker trips from Table 5-5, we estimate that at least 57,853 available dock hours are needed for just those tankers. The No-Action alternative proposed in the DEIS failed to consider the dock space and time required to load smaller tankers shoreside to deliver oil to VLCCs offshore. However, from examining available dock time based on 2022 AIS data, the same amount of oil cannot be exported via reverse lightering (as assumed in the DEIS No-Action Alternative) given the time and space constraints of the Port. In addition, as noted above, the DEIS fails to address the possibility that congestion in the number of vessels entering and exiting the Port independently makes even this increase impossible with current port infrastructure.

[4] The smaller tanker trips are referred to as "lightering" – another term used to describe the ship-to-ship transfer of oil cargo at sea.

### 3.3.3 Additional Considerations Not Quantified

The above analysis uses a simple, conservative approach of examining time at dock as an indicator of the plausibility of the No-Action Alternative. A more refined analysis could be done that would include more capacity and time constraints. For example, the following factors were not quantitatively analyzed, but would further reduce the feasibility of the No-Action Alternative:

- Barges are used to move oil in the Port and represent additional unquantified time already spent at some of the docks (particularly at the PCCA dock which we understand is heavily used by barges). Barges are not required to use AIS so were not included in the analysis, but if they were included then the available time at existing docks would be reduced further.
- Some unknown number of VLCCs would also partially load shoreside according to the Bluewater DEIS, but since we did not have a firm number of these in Table 5-5, these were not included. Including the VLCCs loading at existing docks would further reduce dock space capacity.
- Port movements are affected by weather (including more severe events like hurricanes, but also more routine events like fog, which alone shuts down movement for approximately 20 days/year per the 2019 PAWSA), vessel traffic congestion, incidents, tug availability, and other factors determined by those who are responsible for safe vessel operations in the area. These limitations on vessel maneuvering were not included, but would also further reduce available time at existing docks.

Other factors require further information and analysis to determine whether they would impact the viability of the No-Action Alternative. To model traffic most accurately, the DEIS would also need to explore these factors:

- Channel congestion is a significant consideration to overall port congestion, but this would require additional analysis and modeling of all vessel movements, including barges and including safety zones around LNG tankers or other considerations in line with port traffic management practices.
- The number of docking tugs and personnel capacity needed to sustain significantly increased tanker activity in the Port.

These calculations alone based simply on average time at dock demonstrate that the No-Action Alternative as presented in the DEIS is not feasible. A more refined analysis would very likely demonstrate that shoreside capacity is even more limited due to consideration of more real-world factors.

# 4 Findings and Conclusion

The Bluewater DEIS suggests that the increased volume of oil moving through the Port of Corpus Christi and offshore waters would be the same regardless of whether the project is developed or not. This assumption is used to justify the benefits of Bluewater compared to the No-Action Alternative. From examining the DEIS, contextual information such as the U.S. Coast Guard's PAWSAs, and 2022 AIS data, we find that:

- Based on a simple time calculation, there are not enough hours in the year at the crude oil exporting berths in the Port of Corpus Christi to make it possible to move the same amount of oil as in the proposed project (as assumed in the No-Action Alternative). Several areas require additional analysis if this No-Action Alternative remains in the DEIS, including channel congestion, weather impacts to traffic, queuing in the offshore areas awaiting entry, and availability of docking tugs.
- The additional volume of crude oil that would be transported through the area by the proposed project in one year would more than double the amount of oil that left the Port in 2018.
- The Bluewater DEIS's conclusions about impacts from Bluewater compared to the No-Action Alternative, such as from air pollution and greenhouse gases, are based on its unsupported assumption that if Bluewater was not built, the same volume of oil would be exported by loading tankers shoreside and filling VLCCs for export via transfer offshore (reverse lightering).
- The additional tanker traffic that would be required for the assumptions in the No-Action Alternative to be true would be added to a port area where tanker traffic is already high and increasing.
- Commercial vessel traffic congestion is an identified risk factor for safe navigation, as the 2019 PAWSA found a "very high baseline risk" to safety from the Port's congestion. As of 2019, there was not consensus in the maritime community regarding whether safety measures adequately mitigate that risk.
- The DEIS does not consider capacity or congestion constraints associated with the No-Action Alternative.

In conclusion, the No-Action Alternative in the DEIS is not feasible as presented. Therefore, the DEIS fails to compare the potential impacts associated with the oil volume proposed to be moved via the proposed project compared to the No-Action Alternative.

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