

# LNG REVIEW PROCESS STRENGTHS WEAKNESSES CHALLENGES

Office of Energy Projects  
Federal Energy Regulatory Commission



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## STRENGTHS



1. Specific Regulations – design & filing.
2. Staff with experience:
  - a) LNG Engineering branch.
  - b) Siting.
3. Culture of cooperation with DOT and USCG.
4. FERC's Cryogenic design review program.
5. FERC's Biennial inspection program.
6. FERC shares safety-related practices/issues.

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# WEAKNESSES

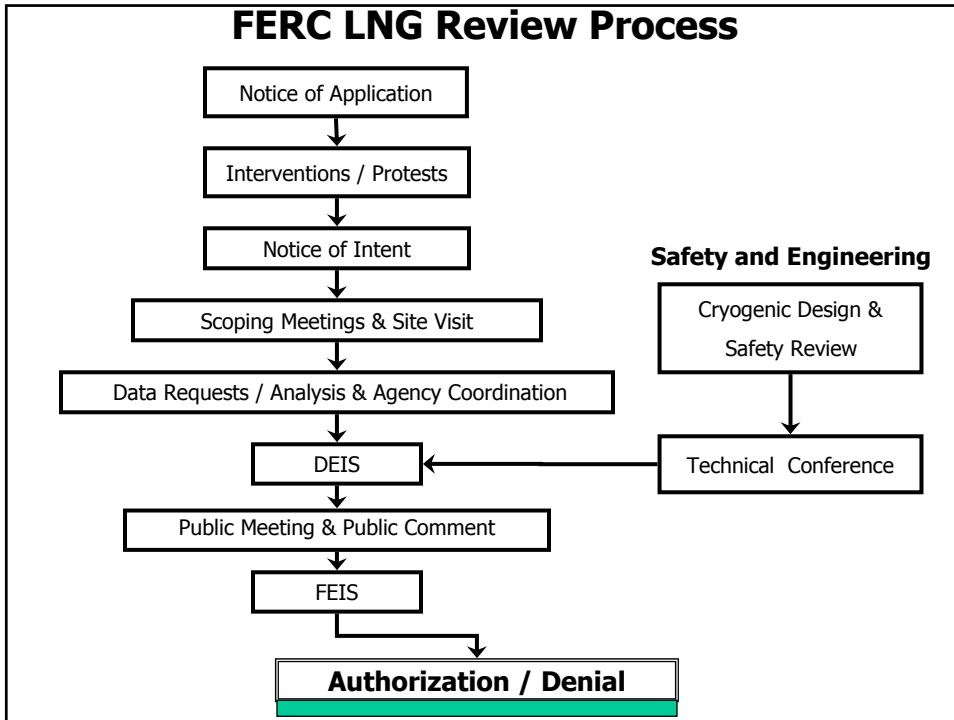


1. Regulations
  - a) Level of detail
  - b) Regulatory overlap
2. Adoption of Industry Consensus Standards
3. Conflicting agency policies.
  - a) Coastal zone management issues.
  - b) FERC certificate versus Agency permits.
4. Succession planning.

# CHALLENGES



1. Clear (non-controversial) regulations
  - a) Siting criteria.
  - b) Technical regulations and standards.
  - c) Filing requirements.
2. Training – making time
  - a. Specialized training -- Customization Needed.
3. Field office cooperation.
4. Public education
5. Security/Exclusion zone issues:
  - a) Models; Spill containment issues.
  - b) Emergency response



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## Staff's Engineering Review



### Onshore Facility Review

- Cryogenic design and technical review
- Safety systems – detection and control
- Exclusion zone calculations
- Security and emergency plans

### Marine Safety Review

- Coordination w/ US Coast Guard
- LNG vessel operations and controls
- Cargo spill hazard analysis

## Interagency Agreement



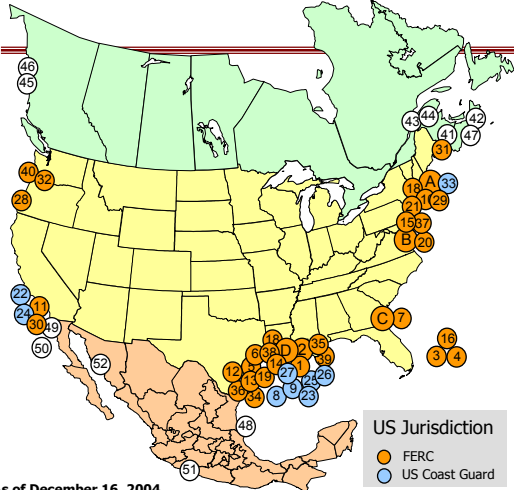
- IA for LNG Safety and Security
  - Signed January 2004 by FERC, USCG, DOT
  - Defines roles and responsibilities
  - Establishes FERC as lead for NEPA review
  - Stresses coordination, seamless review
  - Coordination continues from initial review through construction and operation
  - Includes terminal facilities and ships



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## Existing, Proposed and Potential North American LNG Terminals



As of December 16, 2004

\* US pipeline approved; LNG terminal pending in Bahamas  
 \*\* These projects have been approved by the Mexican and Canadian authorities

**Constructed**

- A. Everett, MA: 1.035 Bcfd (Tractebel - DOMAC)
  - B. Cove Point, MD: 1.0 Bcfd (Dominion - Cove Point LNG)
  - C. Elba Island, GA: 0.68 Bcfd (El Paso - Southern LNG)
  - D. Lake Charles, LA: 1.0 Bcfd (Southern Union - Trunkline LNG)
- Approved by FERC**
- 1. Lake Charles, LA: 1.1 Bcfd (Southern Union - Trunkline LNG)
  - 2. Hackberry, LA: 1.5 Bcfd, (Sempra Energy)
  - 3. Bahamas: 0.84 Bcfd, (AES Ocean Express)\*\*
  - 4. Bahamas: 0.83 Bcfd, (Calypto Tractebel)\*\*
  - 5. Freeport, TX: 1.5 Bcfd, (Cheniere/Freeport LNG Dev.)
  - 6. Sabine, LA: 2.6 Bcfd (Cheniere LNG)
  - 7. Elba Island, GA: 0.54 Bcfd (El Paso - Southern LNG)

**Approved by MARAD/Coast Guard**

- 8. Port Pelican: 1.6 Bcfd, (Chevron Texaco)
- 9. Gulf of Mexico: 0.5 Bcfd, (El Paso Energy Bridge GOM, LLC)

**Proposed to FERC**

- 10. Fall River, MA: 0.8 Bcfd, (Weaver's Cove Energy/Hess LNG)
- 11. Long Beach, CA: 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
- 12. Corpus Christi, TX: 2.6 Bcfd, (Cheniere LNG)
- 13. Corpus Christi, TX: 1.0 Bcfd (Vista Del Sol - ExxonMobil)
- 14. Sabine, TX: 1.0 Bcfd (Golden Pass - ExxonMobil)
- 15. Logan Township, ND: 1.2 Bcfd (Crown Landing LNG - BP)
- 16. Bahamas: 0.5 Bcfd, (Seaflare - El Paso/FPL)
- 17. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)
- 18. Providence, RI: 0.5 Bcfd (Keyspan & BG LNG)
- 19. Port Arthur, TX: 1.5 Bcfd (Sempra)
- 20. Cove Point, MD: 0.8 Bcfd (Dominion)
- 21. LI Sound, NY: 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)

**Proposed to MARAD/Coast Guard**

- 22. California Offshore: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
- 23. Louisiana Offshore: 1.0 Bcfd (Gulf Landing - Shell)
- 24. So. California Offshore: 0.5 Bcfd, (Crystal Energy)
- 25. Louisiana Offshore: 1.0 Bcfd (Main Pass McMoran Exp.)
- 26. Gulf of Mexico: 1.0 Bcfd (Compass Port - ConocoPhillips)
- 27. Gulf of Mexico: 2.8 Bcfd (Pearl Crossing - ExxonMobil)

**Potential Sites Identified by Project Sponsors**

- 28. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
- 29. Somerset, MA: 0.65 Bcfd (Somerset LNG)
- 30. California - Offshore: 0.75 Bcfd, (Chevron Texaco)
- 31. Pleasant Point, ME: 0.5 Bcfd (Quoddy Bay, LLC)
- 32. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
- 33. Offshore Boston, MA: 0.8 Bcfd (Northeast Gateway - Excelerate Energy)
- 34. Galveston, TX: 1.2 Bcfd (Pelican Island - BP)
- 35. Pascagoula, MS: 1.0 Bcfd (Gulf LNG Energy LLC)
- 36. Port Lavaca, TX: 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
- 37. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
- 38. Pascagoula, MS: 1.8 Bcfd (Chevron/Texaco)
- 39. Cameron, LA: 2.6 Bcfd (Creole Trail LNG - Cheniere LNG)
- 40. Astoria, OR: 1.0 Bcfd (Skipanon LNG - Calpine)

**Canadian Approved and Potential Terminals**

- 41. St. John, NB: 1.0 Bcfd, (Chaparral - Irving Oil)\*\*
- 42. Point Tupper, NS: 1.0 Bcfd (Bear Head LNG - Anadarko)\*\*
- 43. Quebec City, QC: 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
- 44. Riviere-du-Loup, QC: 0.5 Bcfd (Cocoma Energy - TransCanada/PetroCanada)
- 45. Kitimat, BC: 0.34 Bcfd (Galveston LNG)
- 46. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
- 47. Goldboro, NS: 1.0 Bcfd (Kettle Petrochemicals)

**Mexican Approved and Potential Terminals**

- 48. Altamira, Tamulipas: 1.12 Bcfd, (Shell)\*\*
- 49. Baja California, MX: 1.0 Bcfd, (Sempra & Shell)\*\*
- 50. Baja California - Offshore: 1.4 Bcfd, (Chevron Texaco)
- 51. Lazaro Cardenas, MX: 0.5 Bcfd (Tractebel/Repsol)
- 52. Puerto Libertad, MX: 1.3 Bcfd (Somora Pacific LNG)

## LNG Project Status - Approved Projects\*



**Applications Approved:**

- Sempra, Cameron LNG (CP02-374) #2
- AES, Ocean Express Pipeline (CP02-90) #3
- Tractebel, Calypso Pipeline (CP01-409) #4
- Freeport LNG (CP03-75) #5
- Trunkline, Lake Charles Expansion (CP02-60) #1
- Cheniere LNG - Sabine, LA (CP04-47) #6
- Southern LNG - Elba Island (CP02-380) #7

**Status of Construction**

- Underway,
- Pending Amendment
- Pending Amendment
- Pending
- Pending
- Underway,
- Service 4<sup>th</sup> Q '05
- Pending
- Underway

\* Status as of December 16, 2004

# Onshore LNG Project Status\*



## **Pre-Filing:**

- Sempra, Port Arthur (PF04-11) #19
- Dominion, Cove Point (PF04-15) #20
- Broadwater, LI Sound (PF05-04) #21

\* Status as of December 16, 2004

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# Onshore LNG Project Status\*



## **Applications Filed:**

- **Working on DEIS**
  - Sound Energy Solutions, Long Beach (PF03-6, CP04-58) #11
  - Exxon Mobil, Vista del Sol (PF04-3, CP04-409) #13
  - Exxon Mobil, Golden Pass (PF04-1, CP04-386) #14
  - BP, Crown Landing (PF04-2, CP04-411) #15
  - Ingleside/Occidental, Corpus Christi (CP05-11) #17

\* Status as of December 16, 2004

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## Onshore LNG Project Status\*



### Applications Filed:

- **Working on FEIS**
  - Weaver's Cove (PF03-4, CP04-36) #10
  - Cheniere, Corpus Christi (CP04-37) #12
  - Keyspan, Providence (CP04-223) #18

\* Status as of December 16, 2004

## LNG Project Status - Associated Pipelines\*



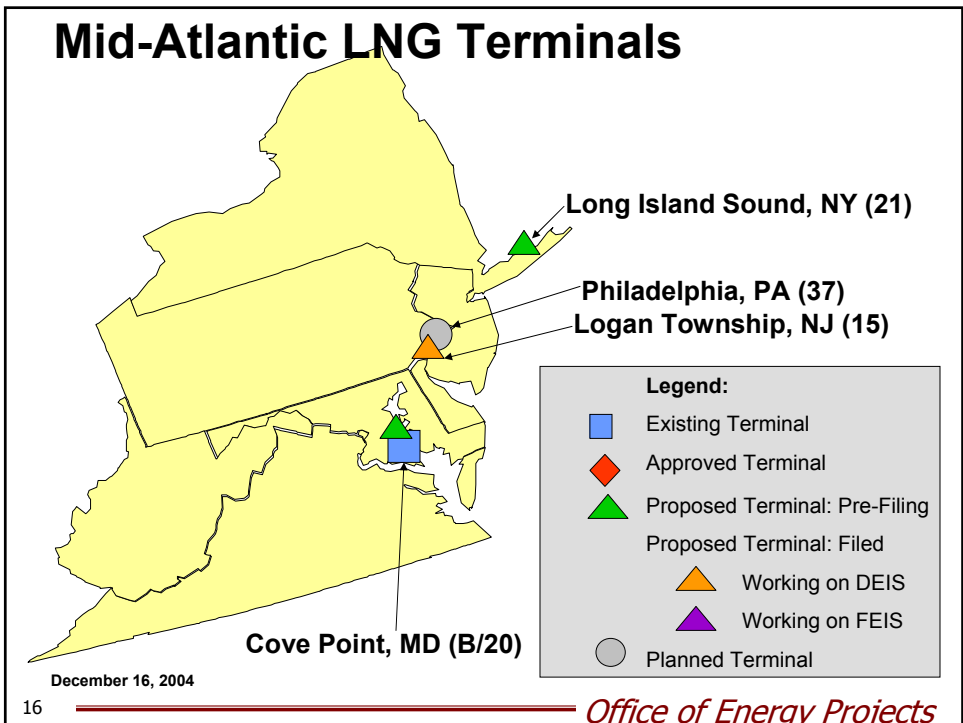
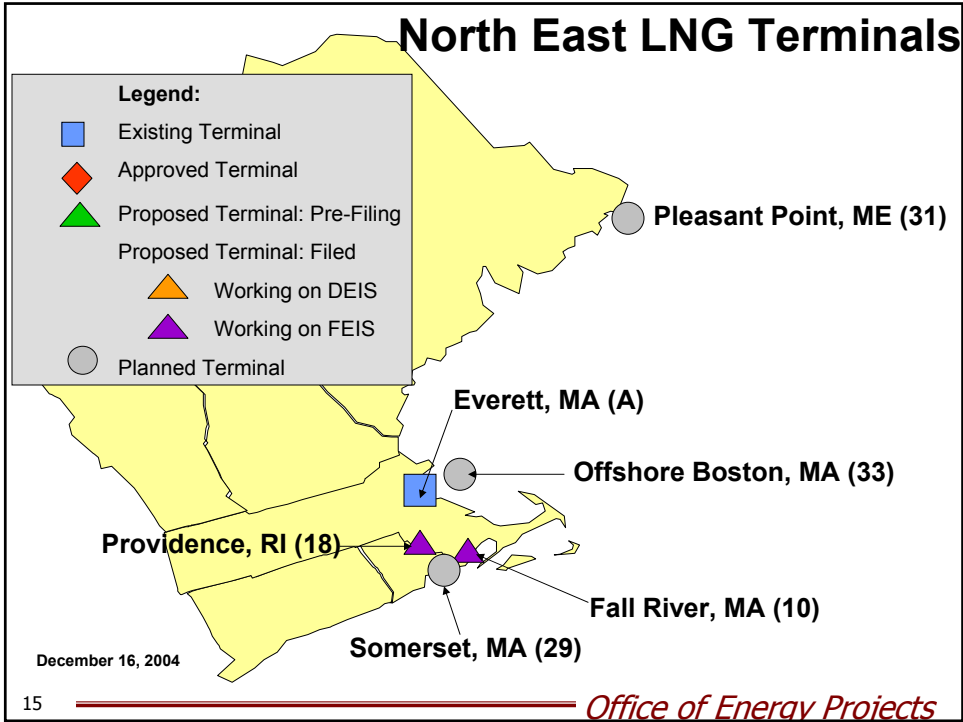
### Pre-Filing:

- El Paso, Seafarer (PF04-08) #16

### Applications Filed:

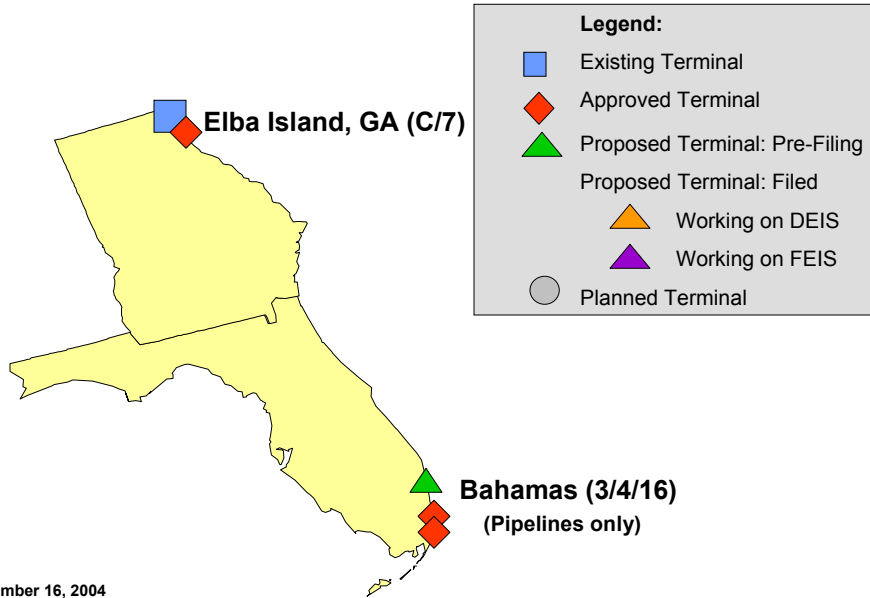
- **Working on DEIS with USCG**
  - Freeport-McMoran, Main Pass (CP04-68) #25
  - Conoco Phillips, Compass Port (CP04-114) #26
  - Exxon Mobil, Pearl Crossing (CP04-374) #27

\* Status as of December 16, 2004





# South East LNG Terminals

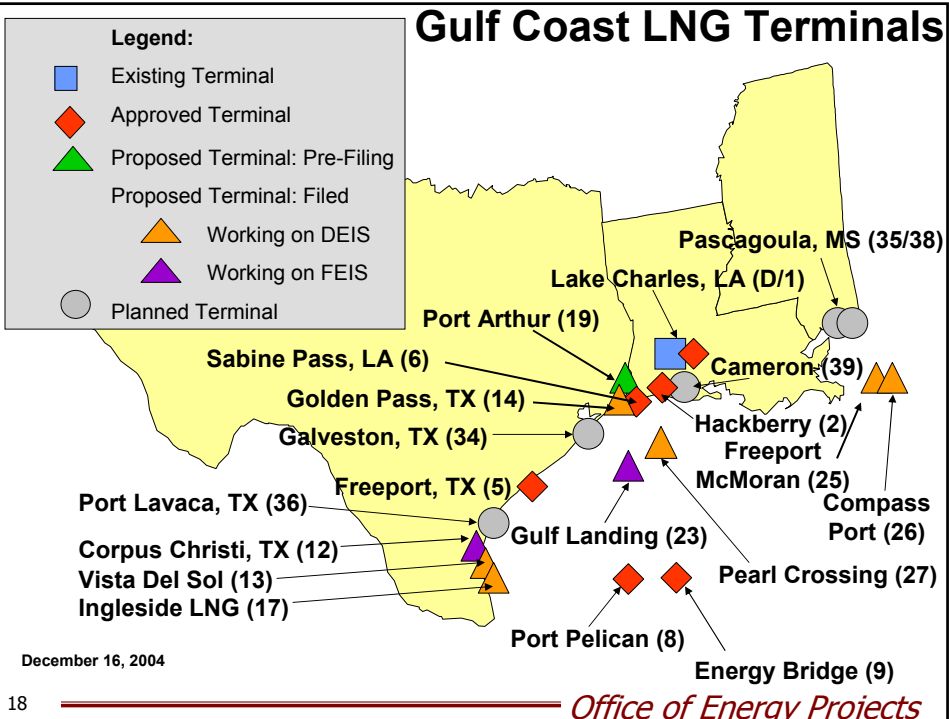


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# Gulf Coast LNG Terminals

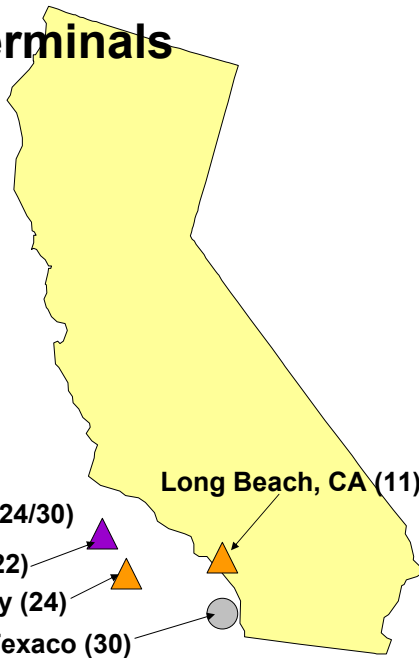
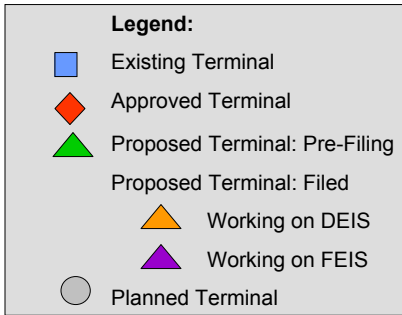


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# Southwest LNG Terminals



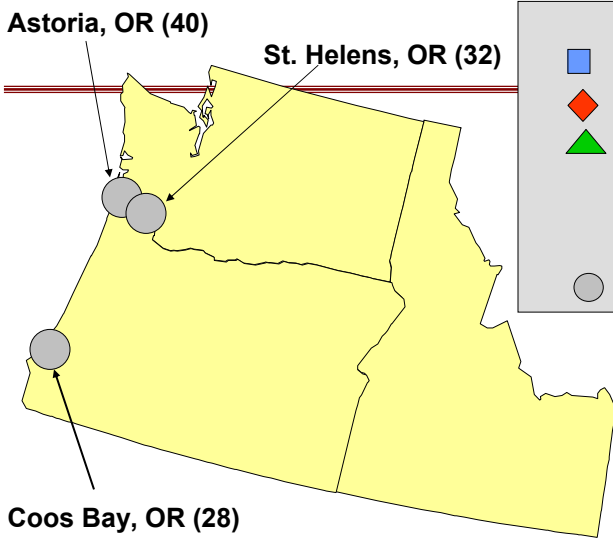
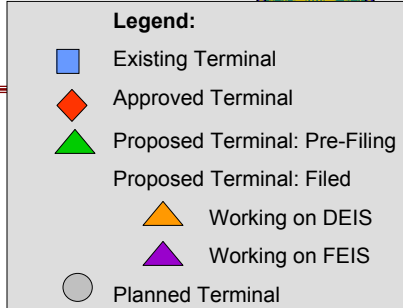
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# North West LNG Terminals



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# Environmental Report



- 18 CFR 380.12 establishes minimum filing requirements
- Guidance Manual for Environmental Report Preparation provides more information

# 13 Resource Reports



- |  |   |
|--|---|
| <b>1. General Project Description</b>    | <b>7. Soils</b>   |
| <b>2. Water Use and Quality</b>          | <b>8. Land Use, Recreation, and Aesthetics</b>              |
| <b>3. Fish, Wildlife, and Vegetation</b> | <b>9. Air and Noise Quality</b>                             |
| <b>4. Cultural Resources</b>             | <b>10. Alternatives</b>                                     |
| <b>5. Socioeconomics</b>                 | <b>11. Reliability and Safety</b>                           |
| <b>6. Geological Resources</b>           | <b>12. PCB Contamination</b>                                |
|  | <b>13. Additional Information Related to LNG Facilities</b> |

# Staff's Environmental Review



- Land Use, Recreation and Visual Resources
- Dredging and Spoil Disposal
- Socioeconomics and Cultural Resources
- Air and Noise Quality
- Geology and Soils
- Groundwater and Surface Water
- Wetlands
- Fish, Wildlife, and Endangered Species
- Alternatives

# Opportunities for Public Involvement



## The FERC Process:

- We Issue Notice of the Application
- Project Sponsor Sends Landowner Notification Package
- SCOPING = We Issue Notice of Intent to Prepare the NEPA Document
- Public Meeting(s)

## Public Input:

- File an Intervention
- Contact the project sponsor w/questions, concerns; contact FERC
- Send letters expressing concerns about environmental impact
- Attend scoping meetings

## Opportunities for Public Involvement



### The FERC Process:

- Issue Notice of Availability of the DEIS
- Public Meetings on DEIS
- Issue a Commission Order

### Public Input:

- File comments on the adequacy of DEIS
- Attend public meetings to give comments on DEIS
- Interveners can file a request for Rehearing of a Commission Order