

Public Version



Golden Pass Products LNG Export Project

Docket No. PF13-14-000

Resource Report No. 8 – Land Use, Recreation and Aesthetics

Draft

April 2014

Golden Pass LNG Export Project Resource Report No. 8 – Land Use, Recreation and Aesthetics

Resource Report No. 8 Filing Requirements ¹	
Information ²	Resource Report Location
<ol style="list-style-type: none"> 1. Classify and quantify land use affected by: (18 C.F.R. Section 380.12(j)(1)) <ol style="list-style-type: none"> a. Pipeline construction and permanent rights-of-way (18 C.F.R. Section 380.12(j)(1)); b. Extra work/staging areas (18 C.F.R. Section 380.12(j)(1)); c. Access roads (18 C.F.R. Section 380.12(j)(1)); d. Pipe and contractor yards (18 C.F.R. Section 380.12(j)(1)); and e. Aboveground facilities (18 C.F.R. Section 380.12(j)(1)). <ul style="list-style-type: none"> • For aboveground facilities provide the acreage affected by construction and operation, acreage leased or purchased, and describe the use of the land not required for operation. 	Section 8.1, Table 8.3-3, Table 8B-1, Table 8B-2
<ol style="list-style-type: none"> 2. Identify by milepost all locations where the pipeline right-of-way would at least partially coincide with existing right-of-way, where it would be adjacent to existing rights-of-way, and where it would be outside of existing right-of-way. (18 C.F.R. Section 380.12(j)(1)) <ul style="list-style-type: none"> • This applies to the offshore as well. 	Sections 8.1
<ol style="list-style-type: none"> 3. Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent rights-of-way and temporary construction rights-of-way. (18 C.F.R. Section 380.12(j)(1)) 	Resource Report No. 1 - Appendix 1F
<ol style="list-style-type: none"> 4. Summarize the total acreage of land affected by construction and operation of the project. (18 C.F.R. Section 380.12(j)(1)) <ul style="list-style-type: none"> • This applies to the offshore as well. 	Table 8.3-3, Table 8B-1, Table 8B-2
<ol style="list-style-type: none"> 5. Identify by milepost all planned residential or commercial/business development and the time frame for construction. (18 C.F.R. Section 380.12(j)(3)) <ul style="list-style-type: none"> • Identify all planned development crossed or within 0.25 mile of proposed facilities. 	Section 8.2.4
<ol style="list-style-type: none"> 6. Identify by milepost special land uses (e.g., maple sugar stands, specialty crops, natural areas, national and state forests, conservation land, etc.). (18 C.F.R. Section 380.12(j)(4)) <ul style="list-style-type: none"> • This applies to the offshore as well, where it may include oyster and other shellfish beds, special anchoring or lightering areas, and shipping lanes. 	Section 8.3.1, Section 8.3.2, Section 8.3.3
<ol style="list-style-type: none"> 7. Identify by beginning milepost and length of crossing all land administered by Federal, State, or local agencies, or private conservation organizations. (18 C.F.R. Section 380.12(j)(4)) <ul style="list-style-type: none"> • This applies to the offshore as well. 	Section 8.3.1, Section 8.3.2

¹ Per August 2002 FERC Guidance Manual for Environmental Report Preparation pg. 3-57 – available at: <http://www.ferc.gov/industries/gas/enviro/erpman.pdf>.

² See FERC Notice of Intent to Prepare an Environmental Assessment for the Planned Golden Pass LNG Export Project and Golden Pass Export Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting (September 19, 2013) to Golden Pass – available at: http://elibrary.ferc.gov/idmws/docket_sheet.asp.

Resource Report No. 8 Filing Requirements ¹	
Information ²	Resource Report Location
<p>8. Identify by milepost all natural, recreational, or scenic areas and all registered natural landmarks crossed by the project. (18 C.F.R. Section 380.12(j)(4&6))</p> <ul style="list-style-type: none"> This applies to the offshore as well. Identify areas within 0.25 mile of any proposed facility. 	Section 8.3.3
<p>9. Identify all facilities that would be within designated coastal zone management areas. Provide a consistency determination or evidence that a request for a consistency determination has been filed with the appropriate state agency. (18 C.F.R. Section 380.12(j)(4&7))</p>	Section 8.3.6
<p>10. Identify by milepost all residences that would be within 50 feet of the construction right-of-way or extra work area. (18 C.F.R. Section 380.12(j)(5))</p>	Section 8.2.2
<p>11. Identify all designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project. (18 C.F.R. Section 380.12(j)(6))</p>	Section 8.3.3.3
<p>12. Describe any measures to visually screen aboveground facilities, such as compressor stations. (18 C.F.R. Section 380.12(j)(11))</p>	Section 8.4.5
<p>13. Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with Federal land-managing agencies with jurisdiction over land that would be affected by the project. (18 C.F.R. Section 380.12(j)(12))</p>	Not Applicable

Resource Report No. 8 Filing Requirements	
Additional Information Often Missing and Resulting in Data Requests	Resource Report Location
Identify all buildings within 50 feet of the construction right-of-way or extra work areas.	Section 8.2.1, Section 8.2.2
Describe the management and use of all public lands that would be crossed.	Section 8.3.1, Section 8.3.2, Section 8.3.3, Section 8.3.5
Provide a list of landowners by milepost or tract number that corresponds to information on alignment sheets.	Resource Report No. 1 – Appendix 1D
Provide a site-specific construction plan for residences within 50 feet of construction.	Not Applicable

RESOURCE REPORT NO. 8 LAND USE, RECREATION AND AESTHETICS

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LIST OF ACRONYMS AND ABBREVIATIONS

ATWS	Additional Temporary Work Space
Bcfd	Billion cubic feet per day
BMP	Best Management Practice
Calcasieu Loop	24 inch diameter pipeline loop
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CMP	Coastal Management Program
CNRA	Coastal Natural Resource Area
CZMA	Coastal Zone Management Act
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FHA	Federal Highway Administration
Golden Pass	Collectively, GPP and GPPL
GPLNG	Golden Pass LNG Terminal LLC
GPLNG Terminal	Existing GPLNG LNG import terminal
GPP	Golden Pass Products LLC
GPPL	Golden Pass Pipeline LLC
GP Pipeline	Existing GPPL pipeline system
GPX Pipeline	Golden Pass Export Pipeline
GPX Project	Golden Pass Products LNG Export Project
GPX Terminal	Golden Pass Products LNG Export Terminal
HDD	Horizontal Directional Drill
hp	Horsepower
LA 12	Louisiana Highway 12
LNG	Liquefied natural gas
m ³	Cubic meters
MLV	Mainline Valve
MOF	Material Offloading Facility
MP	Mile Post
NAVD	North American Vertical Datum of 1988
NGA	Natural Gas Act
NGPL	Natural Gas Pipeline Company of America
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
PEM	Palustrine, emergent
PFO	Palustrine, forested
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
PSS	Palustrine scrub-shrub
PUB	Palustrine, unconsolidated bottom
ROW	Rights-of-Way

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LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

RRC	Railroad Commission of Texas
RV	Recreational Vehicle
SAV	Submerged Aquatic Vegetation
SH	State Highway
SNND	Sabine Neches Navigation District
SNWW	Sabine-Neches Waterway
SPCC	Spill Prevention Control and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
TCEQ	Texas Commission of Environmental Quality
Tennessee Gas	Tennessee Gas Pipeline Company, L.L.C.
TETCO	Texas Eastern Transmission, LP
Texas GLO	Texas General Land Office
Texoma	Texoma Pipeline Company
TLTC	Texas Land Trust Council
TPNWR	Texas Point National Wildlife Refuge
Transco	Transcontinental Gas Pipe Line Company, LLC
TPWD	Texas Parks and Wildlife Department
U.S.	United States of America
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Service
WMA	Wildlife Management Area

RESOURCE REPORT NO. 8 LAND USE, RECREATION AND AESTHETICS

8. INTRODUCTION

Golden Pass Products LLC ("GPP") and Golden Pass Pipeline LLC ("GPPL", collectively with GPP, referred to as "Golden Pass") are requesting authorization from the Federal Energy Regulatory Commission ("FERC") pursuant to Sections 3 and 7 of the Natural Gas Act ("NGA"), respectively, to site, construct and operate a liquefied natural gas ("LNG") export project ("GPX Project") along with associated new compression and loop pipeline facilities. The GPX Project consists of the following:

1. Liquefaction facilities ("GPX Terminal") to be constructed contiguous to and integrated with Golden Pass LNG Terminal LLC's ("GPLNG") existing import terminal site ("GPLNG Terminal") located onshore along the Sabine-Neches Waterway ("SNWW") in Jefferson County, Texas; and
2. Modification of GPPL's existing pipeline system ("GP Pipeline") by construction of approximately three (3) miles of new 24 inch pipeline loop, three (3) new compressor stations and necessary modifications to interconnections for bi-directional service (collectively, the "GPX Pipeline"). The GPX Pipeline includes the following initiatives:
 - Installation of approximately three (3) miles of new 24 inch diameter pipeline loop ("Calcasieu Loop") between surface facilities operated by Texas Eastern Transmission, LP ("TETCO") and Tennessee Gas Pipeline Company, L.L.C. ("Tennessee Gas") in Calcasieu Parish, Louisiana. The Calcasieu Loop will be installed parallel and adjacent to the GP Pipeline mainline between Mile Post ("MP") 63 and MP 66 in an area largely managed for timber production.
 - Installation of three (3) compressor stations (approximately 120,000 site-rated brake horsepower ["hp"] total) to facilitate the receipt and delivery of a maximum of 2.7 billion cubic feet per day ("Bcfd") of natural gas supply to the proposed GPX Terminal. These compressors will be installed at the following locations:
 - The MP 1 Compressor Station will be located near the interconnection with the Natural Gas Pipeline Company of America's ("NGPL") pipeline. The compressor station will be sited in an open land area previously used for oil and gas extraction adjacent to the existing GP Pipeline and situated in the southwest corner of the GPLNG Terminal site in Jefferson County, Texas.
 - The MP 33 Compressor Station will be located near the interconnection with the Texoma Pipeline Company's ("Texoma") pipeline. The MP 33 Compressor Station will be sited in an upland forested area of Orange County, Texas.
 - The MP 66 Compressor Station will be located near the interconnection with the TETCO's pipeline. The compressor station will be sited in a recently cleared area managed for silviculture (tree farming) in Calcasieu Parish, Louisiana.
 - Aboveground modifications and upgrades to existing interconnections will be required for bi-directional flow capabilities and increased throughput. Existing interconnections to be modified and upgraded are as follows:
 - NGPL interconnect (near MP 1), Jefferson County, Texas;

- Texoma interconnect (near MP 33), Orange County, Texas;
- Tennessee Gas interconnect (near MP 63), Calcasieu Parish, Louisiana;
- TETCO interconnect (near MP 66), Calcasieu Parish, Louisiana; and
- Transcontinental Gas Pipe Line Company, LLC ("Transco") interconnect (near MP 68), Calcasieu Parish, Louisiana.

The GPX Project will provide shippers the ability to deliver natural gas from domestic sources to the GPX Terminal via the GPX Pipeline. The GPX Terminal will convert natural gas to LNG, which will be stored and exported using GPLNG Terminal facilities. The GPX Project facilities will be constructed and operated contiguous to and integrated with the GPLNG Terminal and GP Pipeline.³ Golden Pass will be designed to optimize the existing import terminal and pipeline infrastructure. Through the GPX Project, Golden Pass and GPLNG will offer both import and export services (not simultaneously) for LNG from one (1) set of facilities, strategically located to access the Gulf Coast waters. A detailed description of the proposed GPX Project facilities is set forth in **Resource Report No. 1**.

The proposed GPX Project design will use existing import terminal and pipeline facilities to the maximum extent possible, locate new facilities adjacent to existing facilities, connect with third-party pipelines to optimize compression and thereby minimize the footprint of the new facilities. The GPX Project will be constructed and operated in a manner that minimizes potential adverse effects to the environment, local residents and communities.

As required by 18 Code of Federal Regulations ("C.F.R.") Section 380.12, Golden Pass has prepared this Resource Report No. 8 in support of its applications under Sections 3 and 7(c) of the NGA to construct and operate the GPX Terminal and GPX Pipeline facilities. The purpose of this draft Resource Report No. 8 is to:

1. Describe the existing land use, recreation and aesthetic resources located in the vicinity of the GPX Project area; and
2. Assess the potential adverse effects to these resources resulting from GPX Project construction and operation.

Specific areas addressed include:

1. Land use types;
2. Floodplains;
3. Coastal zone consistency;
4. Residential and commercial areas;
5. Natural, recreational or scenic areas;
6. Public or conservation lands;
7. Special land use; and

³ See FERC Docket No. CP04-386-000 for the GPLNG Terminal facilities and Docket Nos. CP04-400-000, CP04-401-000 and CP04-402-000 for the GP Pipeline facilities. *Golden Pass LNG Terminal LP and Golden Pass Pipeline LP*, 112 FERC ¶ 61,041 (2005), *amended*, *Golden Pass Pipeline LP*, 117 FERC ¶ 61,015, *further amended*, 117 FERC ¶ 61,332 (2006).

8. Aesthetic conditions.

This report also identifies mitigation measures that are proposed to avoid or minimize potential effects to land use, recreation and aesthetic resources in the vicinity of the GPX Project.

The following definitions were used when assessing the duration, significance and outcome of potential effects related to the GPX Project:

- **Duration:** Short-term effects are those that may occur only during a specific phase of the GPX Project, such as during construction or installation activities. Construction of some GPX Project components could require up to five (5) years. Such effects were considered short-term because the effects will end upon, or shortly after, completion of construction. Long-term effects are those that will occur over a longer duration, such as the lifetime of GPX Project operation.
- **Significance:** Minor effects are those that may be perceptible but are of very low intensity and may be too small to measure. Moderate effects are those that are more perceptible, and are typically are more amenable to quantification or measurement. Major effects are those that, in their context, and due to their intensity, have the potential to meet the “thresholds for significance” as set forth in Council on Environmental Quality (“CEQ”) regulations (40 C.F.R. Section 1508.27).
- **Beneficial or Adverse:** A beneficial effect may cause positive outcomes to the natural or human environment. In turn, an adverse effect may cause unfavorable or undesirable outcomes to the natural or human environment.

The data for this resource report were compiled based on a review of:

1. Engineering design and proposed construction plans;
2. United States (“U.S.”) Geological Survey (“USGS”) topographic maps;
3. Recent aerial photographs;
4. Comprehensive field surveys; and
5. Consultation with appropriate Federal, State and local agencies, and other stakeholder outreach activities.

Copies of agency correspondence are included in **Appendix 1B of Resource Report No. 1.**

8.1 LAND USE

Land use in the vicinity of the GPX Project facilities is described below. Land use was classified based on the following categories:

1. Agricultural land – Active cropland, orchards, vineyards or hay fields;
2. Forest – Tracts of upland forest or forested wetlands;
3. Herbaceous wetlands – Non-forested wetlands used for open space or pasture;
4. Industrial/commercial land – Electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities and roads;

5. Open land – Non-forested lands used for open space or pasture;
6. Open water – Water crossings greater than 100 feet;
7. Residential land – Residential yards, residential subdivisions and planned new residential developments;
8. Scrub-shrub wetlands – Scrub-shrub wetlands used for open space or pasture;
9. Unvegetated water bottom – Conveyances (e.g., ditches), river beds or sub-tidal areas free of vegetation (e.g., free of submerged aquatic vegetation [“SAV”]);
10. Vegetated water bottoms – Conveyances (e.g., ditches), river beds or sub-tidal areas with SAV; and
11. Other – Miscellaneous special use areas (e.g., schools, parks, places of worship, cemeteries, sports facilities, campgrounds, golf courses, ballfields).

These categories generally follow those provided in the FERC Guidance Manual for Environmental Report Preparation (FERC, 2002); however, wetland and water bottom habitat were distinguished separately in this resource report from open uplands.

Land in the vicinity of the GPX Project area was assigned to the individual land use categories based on predominant vegetative cover type or activity being conducted (FERC, 2002). Designations were assigned using aerial photography interpretation and the results of two (2) 2013 field surveys that were prepared for the GPX Project area (BES, 2013a; BES, 2013b). A copy of the field survey reports is provided in **Appendix 2C of Resource Report No. 2**.

8.1.1 Jefferson County, Texas

The GPX Project facilities will be constructed contiguous to, and integrated with, the GPLNG Terminal and GP Pipeline. The majority of the GPX Project facilities will be constructed primarily within the existing property boundary, which is bordered:

1. North: SNWW;
2. East: Open land and SNWW;
3. South: Open land and State Highway (“SH”) 87 ; and
4. West: Open land, SH 87 and Keith Lake.

The GPLNG Terminal property is located north (approximately two [2] miles) of the community of Sabine Pass, which was annexed by the City of Port Arthur in 1978 (TSHA, 2013). The GPLNG Terminal property is located approximately nine (9) miles southeast of the main city center (populated area).

Land use categories identified in the vicinity of the GPX Project area in Jefferson County are listed in **Table 8.1-1**. Mapping of land use in the GPX Project area is provided in **Figure 8.1-1**.

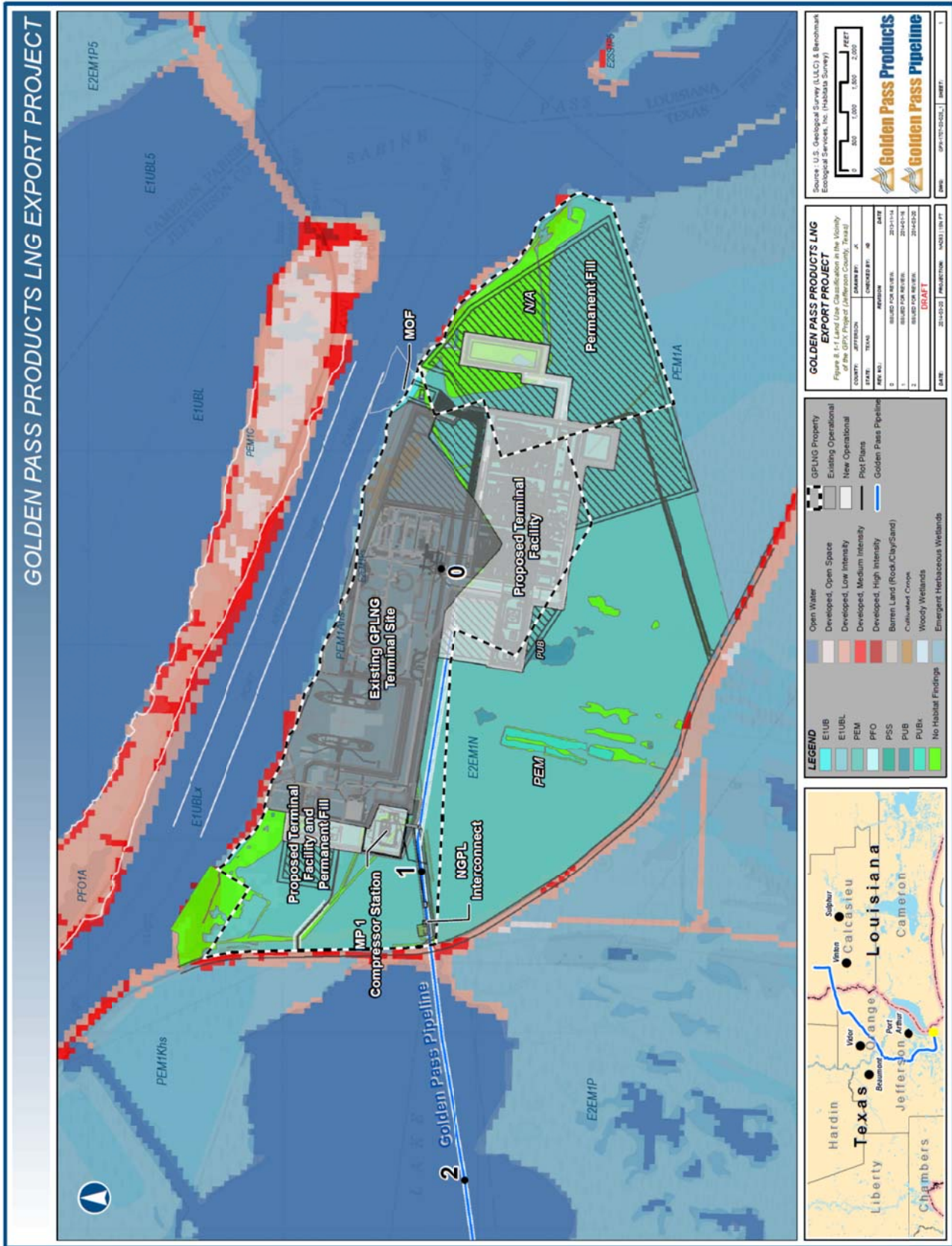
Table 8.1-1 Land Use in the Vicinity of the GPX Project		
Facility	Location	Land Use in the Vicinity of the Facility
GPX Terminal	Jefferson County, Texas	Forested upland and wetlands (Palustrine, Forested Wetland ["PFO"]); Herbaceous wetlands (tidal and non-tidal [Palustrine, Emergent, Wetlands ("PEM")]); Industrial/commercial land (e.g., GPLNG Terminal); Open land; Open water (SNWW); Scrub-shrub wetlands (Palustrine Scrub-Shrub ["PSS"]); and Unvegetated water bottom (Palustrine, Unconsolidated Bottom ["PUB"] and Estuarine, Subtidal, Unconsolidated bottom).
MP 1 Compressor Station		Industrial/commercial land (e.g., GPLNG Terminal and abandoned well pad); Open land; and Wetland (PEM).
Material Offloading Facility ("MOF")		Industrial/commercial land (GPLNG Terminal); Open land; Open water (SNWW); and Wetland (PEM).
MP 33 Compressor Station and Texoma Interconnect	Orange County, Texas	Forest (upland and PFO); Industrial/commercial land; Open land; Right-of-way (ROW); Scrub-shrub wetlands (PSS); Unvegetated water bottom (PUB); and Wetland (PEM [non-tidal]).
Tennessee Gas Interconnect (MP 63)	Calcasieu Parish, Louisiana	Industrial/commercial land; ROW; Timber land (Silviculture); and Wetland (PEM [non-tidal]).
MP 66 Compressor Station and TETCO Interconnect	Calcasieu Parish, Louisiana	Industrial/commercial land; Open land; PFO; ROW; Timber land (Silviculture); and Wetland (PEM [non-tidal]).
Transco Interconnect (MP 68)		Industrial/commercial land; ROW; Timber land (Silviculture); and Wetland (PEM [non-tidal]).

Table 8.1-1
Land Use in the Vicinity of the GPX Project

Facility	Location	Land Use in the Vicinity of the Facility
Calcasieu Loop		Agricultural land (including rice fields); Disturbed forest; Herbaceous wetlands (PEM); Industrial/commercial land; Open land; PFO; ROW; and Scrub-shrub wetlands (PSS).

Notes:

¹ Land use interpretations are based on field surveys and aerial imagery interpretation.



8.1.1.1 GPX Terminal

Outside of the GPLNG Terminal footprint, the GPX Project area is dominated by PEM wetlands. Additional details concerning the existing vegetation on the GPLNG Terminal property are provided in **Section 3.3 of Resource Report No. 3**. The immediate vicinity of the GPX Project area includes:

1. North: SNWW and residential, commercial and recreational uses on Pleasure Island;
2. East: Open land and SNWW;
3. South: Open land; and
4. West: Wetland and open water associated with Keith Lake, part of the J.D. Murphree Wildlife Management Area ("WMA") Salt Bayou Unit No. 783S (TPWD, 2013a), to the west across SH 87; and residential properties.

Other than the GPLNG Terminal, there are no existing, or planned, operations on the GPLNG Terminal property and the GPX Terminal site. A natural gas well and associated tank battery belonging to Noble Energy was previously active on the property, near the northwestern edge (approximately four [4] acres). However, the well was plugged and abandoned in 2009, and all surface facilities were removed from the well pad (RRC, 2013a). The well pad is intended to be used as the MP 1 Compressor Station site (see **Figure 6.2-1 of Resource Report No. 6**).

Material Offloading Facility

Golden Pass will construct a Material Offloading Facility ("MOF") during GPX Terminal construction to support the transfer of large equipment and material. It envisioned that the MOF will be used intermittently during operations. The MOF will be dredged out of the existing, unimproved shoreline, approximately 2,000 feet east of the GPLNG Terminal and within the GPLNG Terminal property boundary. The shoreline area, where dredging will occur for installation of the MOF, does not contain any SAV (e.g., seagrass).

8.1.1.2 GPX Pipeline Facilities

The MP 1 Compressor Station and NGPL interconnect will be constructed adjacent to, and west of, the GPLNG Terminal and proposed GPX Terminal. The compressor station will be approximately 1,700 feet east of SH 87. The previously disturbed area is dominated by PEM wetlands with a few upland areas; tree/shrub cover is present along the abandoned levee installed during previous dredged material placement. As noted above in Section 8.1.1.1, an abandoned well pad is located at the MP 1 Compressor Station site.

8.1.2 Orange County, Texas

8.1.2.1 MP 33 Compressor Station and Texoma Interconnect

The MP 33 Compressor Station and Texoma interconnect will be constructed adjacent to the:

1. GP Pipeline and facilities;
2. Texoma facilities; and

3. Other third-party pipeline aboveground facilities, such as compressor stations in the area.

The GP Pipeline right-of-way ("ROW") parallels multiple other pipeline ROWs in a pipeline corridor. The location is approximately five (5) miles south of the community of Vidor in an unincorporated, rural portion of Orange County (Orange County Appraisal District, 2013).

The area is predominantly undeveloped, forested land which is bisected by maintained pipeline ROW. The identified PUB consists of two (2) impoundments which both have an approximately four (4) foot levee surrounding them. Construction and operation of the MP 33 Compressor Station and Texoma interconnect will not directly affect the two (2) PUB areas.

Other than the third-party pipeline facilities, the immediate vicinity of the proposed MP 33 Compressor Station site includes:

1. North: Forested and open land;
2. East: Sparse residence and businesses along Church House Road;
3. South: Forested and open land; and
4. West: Forested and open land.

Land use categories identified in the vicinity of the GPX Project area in Orange County are listed in **Table 8.1-1**. Mapping of land use in the GPX Project area is provided in **Figure 8.1-2**.

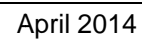
8.1.3 Calcasieu Parish, Louisiana

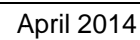
The GPX Pipeline facilities will be constructed adjacent to the GP Pipeline and third-party pipeline facilities in an unincorporated, rural part of Calcasieu Parish (Calcasieu Parish, 2013). The location is approximately 3.5 miles east of the Town of Starks.

Land use categories identified in the vicinity of the GPX Project area in Calcasieu Parish are listed in **Table 8.1-1**. Mapping of land use in the GPX Project area is provided in **Figure 8.1-3**.

8.1.3.1 Tennessee Gas Interconnect

The Tennessee Gas interconnect at MP 63 will be located west of the Tennessee Gas facilities adjacent to an existing ROW. Other than the third-party pipeline facilities, the immediate vicinity (within 0.25 mile) of the GPX Pipeline area is managed forested land (silviculture) in all directions.





8.1.3.2 MP 66 Compressor Station

The MP 66 Compressor Station and TETCO interconnect will be located north of the existing TETCO facilities. The area is predominantly a forested area managed for silviculture practices. Other than the third-party pipeline facilities, the immediate vicinity (within 0.25 mile) of the GPX Pipeline area is managed forested land (silviculture) in all directions.

8.1.3.3 Transco Interconnect

The Transco interconnect is located immediately adjacent to the east side of the existing Transco facilities at MP 68. Other than the third-party pipeline facilities, the immediate vicinity (within 0.25 mile) of the GPX Pipeline facilities is managed forested land (silviculture) in all directions.

8.1.3.4 Calcasieu Loop

The Calcasieu Loop ROW, which will parallel the existing maintained GP Pipeline ROW, will cross a rural area. Other than the third-party pipeline facilities, the immediate vicinity of the Calcasieu Loop is predominantly forested and open agricultural land. The Calcasieu Loop crosses wetland areas being used for rice cultivation, and forest areas being managed for silviculture practices. The Houston River, a perennial stream, is located approximately 0.25 mile north of the Calcasieu Loop and MP 66 Compressor Station. However, the Houston River will not be directly affected during GPX Pipeline construction or operation.

8.1.4 Land Requirements

Golden Pass has minimized land requirements by co-locating and integrating, to the maximum extent practicable, the GPX Project facilities with the GPLNG Terminal and GP Pipeline.

8.1.4.1 GPX Terminal

A portion of the GPLNG Terminal property remains undeveloped and is available for GPX Project construction and operation (**Figure 8.1-1**). GPLNG also maintains an easement south of the GPLNG Terminal property to support an access road.

Land will be necessary for GPX Terminal construction and operation (see **Resource Report No. 1**), including:

1. Access road;
2. Buildings/infrastructure;
3. Flares;
4. Liquefaction trains;
5. MOF;
6. Storm protection levee; and
7. Workspace.

Details concerning the anticipated land use requirements for GPX Terminal construction and

operation are provided in **Table 8A-1 in Appendix 8A**. Approximately 803 acres⁴ of land will be affected by GPX Terminal construction. All land used for the GPX Terminal facilities will be fenced and maintained for operation.

The GPLNG Terminal has five (5) existing full-containment (155,000 cubic meters [m^3]) LNG storage tanks. The ship unloading facilities consist of two (2) berths, each capable of accommodating LNG vessels with cargo capacities ranging from 125,000 m^3 to 266,000 m^3 . The GPX Terminal will utilize the existing storage tanks and marine berths at the GPLNG Terminal. No new tanks or berths will be required for the GPX Project.

Access Roads

There are two (2) existing access roads to the GPLNG Terminal (**Table 8.1-2**). The West (Main) Access road is situated due west of the ship slip and administration buildings. The West Access road will be relocated slightly to the north as depicted **Figure 8.1-4**. The South Access road will be improved and widened to support construction.

Material Offloading Facility

Land will be necessary for MOF construction and operation (see **Resource Report No. 1**), including:

1. Flood gate;
2. Heavy haul road;
3. Marine dolphin;
4. Relieving platform;
5. Staging areas; and
6. Steel sheet bulkhead.

Details concerning the anticipated land use requirements for MOF construction and operation are provided in **Table 8A-1** in Appendix 8A. Design dredge elevation at the front face of the MOF will be -20 feet North American Vertical Datum of 1988 ("NAVD 88"), resulting in the excavation of approximately 280,300 cubic yards of sediment. The approximate total area of the MOF is provided in **Table 8.1-3**.

8.1.4.2 GPX Pipeline Facilities

Land will be needed for the construction ROW, permanent ROW, aboveground facilities, Additional Temporary Work Space ("ATWS"), pipe storage/contractor yards and temporary and permanent access roads. A total of approximately 91 acres of land will be affected by the GPX Pipeline construction, of which approximately 66 acres will be permanently maintained during operation. Details concerning the anticipated land use requirements for GPX Pipeline construction and operation are provided in **Table 8A-2** in Appendix 8A.

⁴ Includes the area within the SNWW to be dredged for the MOF.

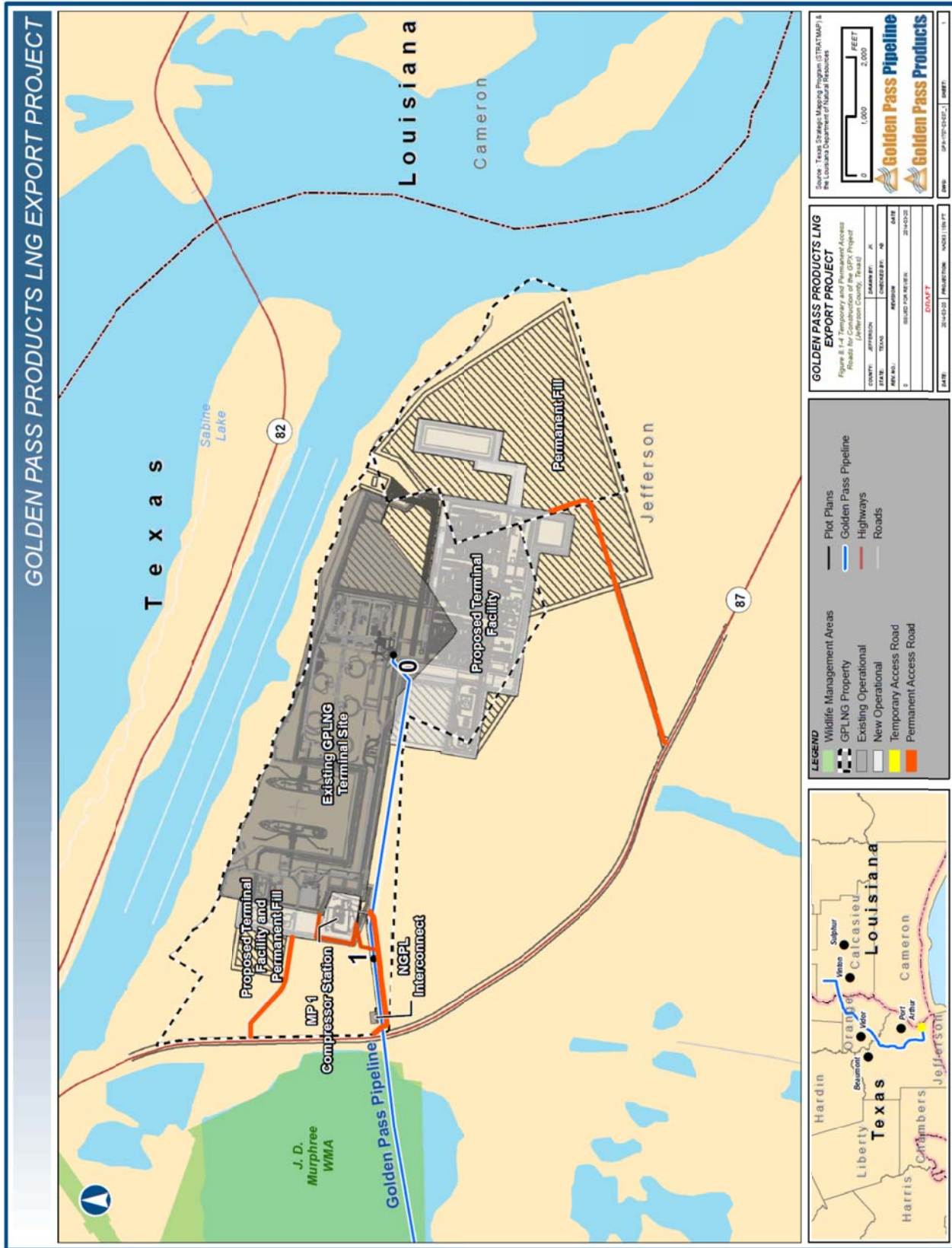


Table 8.1-3
Private Access Roads for the GPX Project¹

Location	Approximate MP ²	Existing or New	Description	Approximate Length (feet) ³	Temporary or Permanent	Existing Surface Type
GPX Terminal (Jefferson County, Texas)	0	Existing	West (Main) Access: GPLNG Terminal entrance off SH 87	1,975	Permanent	Paved
	0	Existing	South Access: GPLNG Terminal entrance off SH 87	4,950	Permanent	Gravel
MP 1 Compressor Station (Jefferson County, Texas)	0	Existing	Access to the abandoned drill pad	2,150	Permanent	Gravel
MP 33 Compressor Station (Orange County, Texas)	33	New	Access down existing ROW area off Church House Road	1,270	Permanent	To be constructed
Tennessee Gas Interconnect and Calcasieu Loop (Calcasieu Parish, Louisiana)	63	Existing	Access is from an unnamed public road off Rockeye Road	4,150 ⁴	Permanent	Paved
Calcasieu Loop	65	New	Temporary access to the Horizontal Directional Drill ("HDD") staging area off Starks Big Woods Road	230	Temporary	To be constructed
MP 66 Compressor Station and Calcasieu Loop	66	Existing	Unnamed private road off Starks Big Woods Road	4,700	Permanent	Gravel
MP 68 Transco Interconnect	68	Existing	Unnamed private road parallel to Oil Tank Road off LA 12	200	Permanent	Gravel

Notes

¹ Golden Pass will use private roads, extending from existing public roads to the construction. Details concerning the public access roads are provided in Resource Report No. 5.

² GP Pipeline MP.

³ Improvements to access roads for the GPX Project are discussed in Resource Report No. 1.

⁴ Includes improvements to Rockeye Road.

Table 8.1-3 Approximate Area (Acres) of the Material Offloading Facility	
Location	Approximate Area (Acres)
Land to be converted to water	3.58
In-water dredged area	11.00

Pipeline Facilities

Construction ROW and Permanent ROW

Golden Pass will use a 100-foot wide construction ROW (50 feet of permanent and 50 feet of temporary), except in wetlands, where the ROW will be reduced to 75 feet (consisting of 50 feet of permanent and 25 feet of temporary), as practicable. The GPX Pipeline will overlap in part with, and be parallel to the existing 42-inch GP Pipeline. Of the new 50-foot permanent ROW, 25 feet will overlap the existing 50-foot GP Pipeline ROW resulting in a total permanent 75-foot ROW (GPX Pipeline and GP Pipeline). A typical drawing of the GPX Pipeline and GP Pipeline permanent ROWs is provided in **Appendix 1F of Resource Report No. 1**.

Golden Pass will operate the GPX Pipeline facilities in compliance with the U.S. Department of Transportation ("DOT") regulations set forth in 49 C.F.R. Part 192. Periodic ground inspections by pipeline personnel will identify:

1. Soil erosion that may expose the pipe;
2. Dead or stressed vegetation that may indicate a leak in the line;
3. Conditions of the vegetative cover and erosion control measures;
4. Unauthorized encroachment on the ROW (e.g., buildings, fences and other substantial structures); and
5. Other conditions that could present a safety hazard, require preventative maintenance or repairs.

In addition, the pipeline cathodic protection system will be monitored and inspected periodically to ensure proper and adequate corrosion protection.

Golden Pass will maintain vegetation in an herbaceous state within the permanent ROW in upland areas by mowing, cutting and trimming, except in areas of actively cultivated cropland and in areas between the entry and exit points of Horizontal Directional Drill ("HDD"). Within the maintained permanent ROW, large brush and trees may be periodically removed. Golden Pass will limit vegetation maintenance within the permanent ROW in wetlands, or within riparian areas adjacent to waterbodies, to a 10-foot wide corridor centered on the pipeline in accordance with the Best Management Practices ("BMPs") listed in Section 8.3.7 (also see **Appendix 2D in Resource Report No. 2** and **Appendix 7A in Resource Report No. 7**). In addition, trees that are located within 15 feet of the pipeline, with root systems that could compromise the integrity of the pipeline coating, may be cut and removed. In upland areas, the entire permanent ROW will be maintained (e.g., mowed) on an annual basis.

ATWS

ATWS, adjacent to the construction ROW, will be required to facilitate pipe installation across public roads, most wetland crossings and at the HDD entry/exit sites. Following construction, ATWS will be restored and will not be used during GPX Pipeline operation.

Pipe Storage and Contractor Yards

Upland areas will be temporarily used for pipe storage and contractor staging areas. While, the areas may require some clearing and grading, following construction such areas will be allowed to return to pre-construction or similar condition.

The locations of the pipe storage and contractor yards are currently being determined. Golden Pass will provide additional information in a subsequent version of this resource report.

Access Roads

In general, existing access roads to the GP Pipeline ROW will be utilized to access GPX Pipeline facilities (see **Figures 5.1-4, 5.1-6 and 5.1-8 of Resource Report No. 5**). Golden Pass will also use private roads, extending from existing public roads to the construction ROW, to facilitate access for construction materials and vehicles (**Table 8.1-2; Figures 8.1-4, 8.1-5, 8.1-6, 8.1-7 and 8.1-8**). Modifications or improvements may be required on some access roads (e.g., grading, widening, reinforcement, culvert replacement, tree trimming) to support construction equipment and traffic.

One (1) temporary access road will be needed to connect the ATWS associated with the HDD entrance to Starks Big Woods Road. The length of the temporary access road is approximately 0.04 mile and it will be located along an existing farm road (**Figure 8.1-6**). Modifications or improvements may be required (e.g., grading, reinforcement) to support construction equipment.

Aboveground Facilities

As shown in **Table 1.2-3 of Resource Report No. 1**, aboveground facilities associated with the GPX Pipeline consist of three (3) new compressor stations, two (2) new pig traps, one (1) new mainline block valve ("MLV") and two (2) new tee and tap valve. In addition, modifications along the existing GP Pipeline system will be made to five (5) interconnect facilities and two (2) pig traps. The MLV (approximately 0.06 acres), launchers and receivers will be located within the permanent GPX ROW or within the new compressor station or interconnect sites. The interconnects will be located within the permanent GPX Pipeline ROW, GP Pipeline ROW or industrial land associated with the third-party tie-in facilities.

All land used for the compressor stations and other aboveground facilities will be fenced and maintained for operation. Land not occupied by station facilities, but within the fence line, will be stabilized and maintained in herbaceous cover. Temporarily disturbed areas, outside the fence line will be allowed to revegetate after completion of construction. The MP 1 Compressor Station will be within the area fenced for the GPX Terminal, described above.

Access Roads

In general, existing access roads to the GP Pipeline ROW will be utilized to access the GPX Pipeline aboveground facilities. Golden Pass will also use private roads, extending from existing public roads to the construction ROW, to facilitate access for construction materials and vehicles (**Table 8.1-2**;

Figures 8.1-4, 8.1-5, 8.1-6, 8.1-7 and 8.1-8). These private roads will be approximately 20 feet in width, and will be maintained for permanent access (e.g., MP 66 Compressor Station). Modifications or improvements may be required on some access roads (e.g., grading, widening, reinforcement, culvert replacement, tree trimming) to support construction equipment and traffic. All of the roads will be used for permanent access following construction.

8.1.4.3 Facility Abandonment

No existing structures or facilities will be abandoned as part of the GPX Project.

8.2 RESIDENTIAL AND COMMERCIAL AREAS

The GPX Project is located in rural and sparsely populated areas. Areas immediately adjacent to the GPX Project facilities include industrial facilities (i.e., GPLNG Terminal or pipeline infrastructure), agricultural/silviculture, open land (including wetlands) and rural residential land.

8.2.1 Existing Residential Areas

Based on aerial imagery interpretation and site surveys, no residences are located within 50 feet of the GPX Project facilities.

8.2.1.1 Jefferson County, Texas

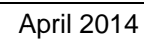
No residences are present on the GPLNG Terminal property. The surrounding area is sparsely populated. Residential areas in the vicinity include the following:

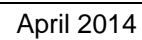
1. Across from the GPLNG Terminal property, on the west side of SH 87, two (2) houses border Keith Lake;
2. Pleasure Island, which is located along the SNWW across from the GPLNG Terminal property, has some residential properties;
3. Backridge Road is a small, local road which has approximately 10 houses scattered along it, before it dead-ends. Backridge Road is located off SH 87, approximately 0.33 mile to the southwest of the main entrance to the GPLNG Terminal property; and
4. The community of Sabine Pass is located approximately two (2) miles south of the GPLNG Terminal property boundary. The U.S. Census Bureau's *2007-2011 American Community Survey 5-Year Estimates* indicates a population of 1,757 for the community (U.S. Census Bureau, 2013).

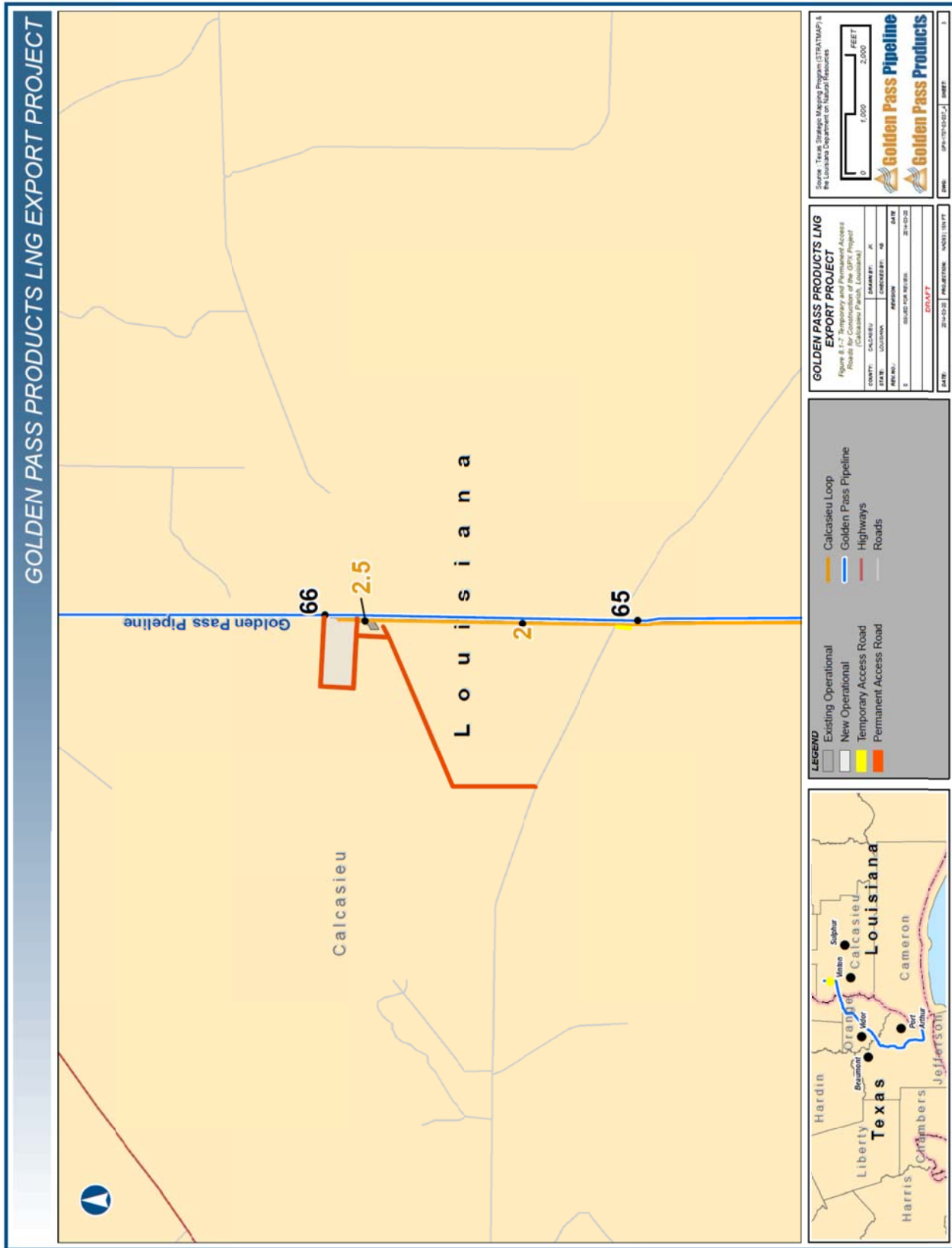
The two (2) residences that border Keith Lake are separated from the GPLNG Terminal property by SH 87 and are over 50 feet away. Other than the GPLNG Terminal, there are no buildings within 50 feet of the proposed GPX Project facilities.

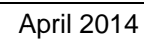
8.2.1.2 Orange County, Texas

The nearest residence to the GPX Project facilities is located along Church House Road to the east, over 50 feet away.









8.2.1.3 Calcasieu Parish, Louisiana

The nearest residence or farm buildings to the GPX Pipeline facilities are located over 50 feet away.

8.2.2 Existing Commercial Areas

Based on aerial imagery interpretation, no businesses, other than those directly related to the GPX Project (e.g., GPLNG Terminal, Transco interconnection site), are located within 50 feet of the GPX Project facilities.

8.2.2.1 Jefferson County, Texas

There are no businesses located on the GPLNG Terminal property, or within 50 feet of the GPX Project facilities. The closest business property is located adjacent to the northwest corner of the GPLNG Terminal property. Currently, the site is not actively used. However, it is possible that a third-party could lease the site.

8.2.2.2 Orange County, Texas

Natural gas transmission facilities are located in the vicinity of the GPX Pipeline facilities. However, there are no commercial buildings, unassociated with the interconnect site, located within 50 feet of the GPX Pipeline facilities.

8.2.2.3 Calcasieu Parish, Louisiana

The nearest businesses to the GPX Pipeline facilities are farms (silviculture, rice cultivation and other agriculture) and natural gas transmission facilities. No commercial buildings are located within 50 feet of the GPX Pipeline facilities.

8.2.3 Local Planning and Zoning

8.2.3.1 Jefferson County, Texas

The GPLNG Terminal property was de-annexed in 2005 from the City of Port Arthur⁵. Adjacent land to be used by the GPX Terminal has been zoned industrial or agricultural by the City of Port Arthur since 1989 (City of Port Arthur, 1989).

8.2.3.2 Orange County, Texas

The GPX Pipeline area is outside of any municipality in Orange County, Texas, and thus, there are no zoning laws. The area around the MP 33 Compressor Station is classified as residential and/or agricultural (Orange County, 2013a).

⁵ An approximate total of 901.6 acres, which constitutes Golden Pass property, was de-annexed from City of Port Arthur (Ordinance 05-31) on April 4 and April 26, 2005 (City of Port Arthur, 2013).

8.2.3.3 Calcasieu Parish, Louisiana

The vast majority of land in the vicinity of the GPX Pipeline area is zoned agricultural. Two (2) areas zoned heavy/industrial are:

1. A portion of the Tennessee Gas facilities near MP 63; and
2. An area adjacent to Starks Big Woods Road near MP 65 (see Section 8.2.4.3) (Calcasieu Parish, 2013).

8.2.4 Planned Residential and Commercial Areas

8.2.4.1 Jefferson County, Texas

There are no planned developments within 0.25 mile of the GPLNG Terminal property (City of Port Arthur, 2013; Jefferson County, 2013).

8.2.4.2 Orange County, Texas

There are no planned developments within 0.25 mile of the GPX Pipeline area near the proposed MP 33 Compressor Station (Orange County, 2013b).

8.2.4.3 Calcasieu Parish, Louisiana

There are no planned developments within 0.25 mile of the GPX Pipeline area (Calcasieu Parish Police Jury, 2013). Starks Gas Storage, LLC received certificate authorization from the FERC in 2005 to construct and operate a salt dome natural gas storage facility and associated header in the vicinity of the GPX Project facilities. However, on October 4, 2012, the FERC granted Starks Gas Storage, LLC's motion to vacate the authorization, in Docket Nos. CP05-8-000, et al., 141 FERC ¶ 61,014 (2012)."

8.3 PUBLIC LANDS, RECREATION AND OTHER DESIGNATED AREAS

Other than the SNWW, the GPX Project facilities will not cross lands or waters administered by Federal, State or local agencies, or private conservation organizations.

8.3.1 Public Lands

8.3.1.1 Jefferson County, Texas

Six (6) public lands have been identified in the vicinity (approximately two [2] miles or less) from the GPLNG Terminal property (**Figure 8.3-1**):

1. SNWW – The GPLNG Terminal berths and associated GPLNG Terminal and GPX Terminal are located on the SNWW. The Sabine Neches Navigation District ("SNND") manages the SNWW navigational channel (SNND, 2013), which has undergone several modifications since the 1890s to increase commercial shipping access to Beaumont and other ports (TSHA, 2013). Industrial activity is typical of the SNWW, including the transit of LNG vessels and very large crude carriers;

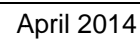
2. Keith Lake – Keith Lake is located to the west of SH 87, approximately 0.25 mile from the GPLNG Terminal property. Keith Lake is part of the J.D. Murphree WMA, which is managed by Texas Parks and Wildlife Department (“TPWD”). The J.D. Murphree WMA consists of 24,250 acres of fresh, intermediate and brackish wetlands, and is a principal stop-over and staging area for migrating birds using the Central Flyway (see **Section 3.2.1.3 of Resource Report No. 3**). Recreational use of the area includes regular waterfowl hunts, permitted alligator hunts (September season) and sport fishing. Commercial crabbing is also permitted in Keith Lake (TPWD, 2013b);
3. Walter Umphrey State Park – Walter Umphrey State Park is located on the south end of Pleasure Island at Mesquite Point, approximately 0.35 mile from the GPLNG Terminal property. The park is located across the SNWW from the GPX Project area and has a fishing pier, boat launch, recreational vehicle (“RV”) park, tent camping area and picnic area (Pleasure Island Commission, 2013a). The community park is owned by the State of Texas, managed by Jefferson County and operated by SGS Bait and Tackle (Pleasure Island Commission, 2013b);
4. Keith Lake SH 87 Bridge – A recreational area exists beside the SH 87 Bridge over the Keith Lake Water Exchange Pass (also referred to as the Keith Lake Cut). The Keith Lake Cut, located approximately 0.4 mile north of the GPLNG Terminal property, was established in September 1977 to provide direct access for Gulf larval and juvenile fish and crustaceans into marsh nursery grounds (TDWR, 1981; additional details in **Section 3.1.1.2 of Resource Report No. 3**);
5. Texas Point National Wildlife Refuge (“TPNWR”) – The TPNWR is located south of the community of Sabine Pass and over two (2) miles south-southeast of the GPLNG Terminal property. The refuge consists of 8,900 acres of fresh, brackish and salt marsh, with some wooded uplands and prairie ridges (USFWS, 2013a); and
6. Sabine Pass Battleground State Park and Historic Site – The Sabine Pass Battleground State Park and Historic Site is located 1.75 miles southeast of the GPLNG Terminal property. It is a 58 acre site open to the public and has a monument, interpretive pavilion, boat ramp, picnic area and fishing (Texas Historical Commission, 2013).

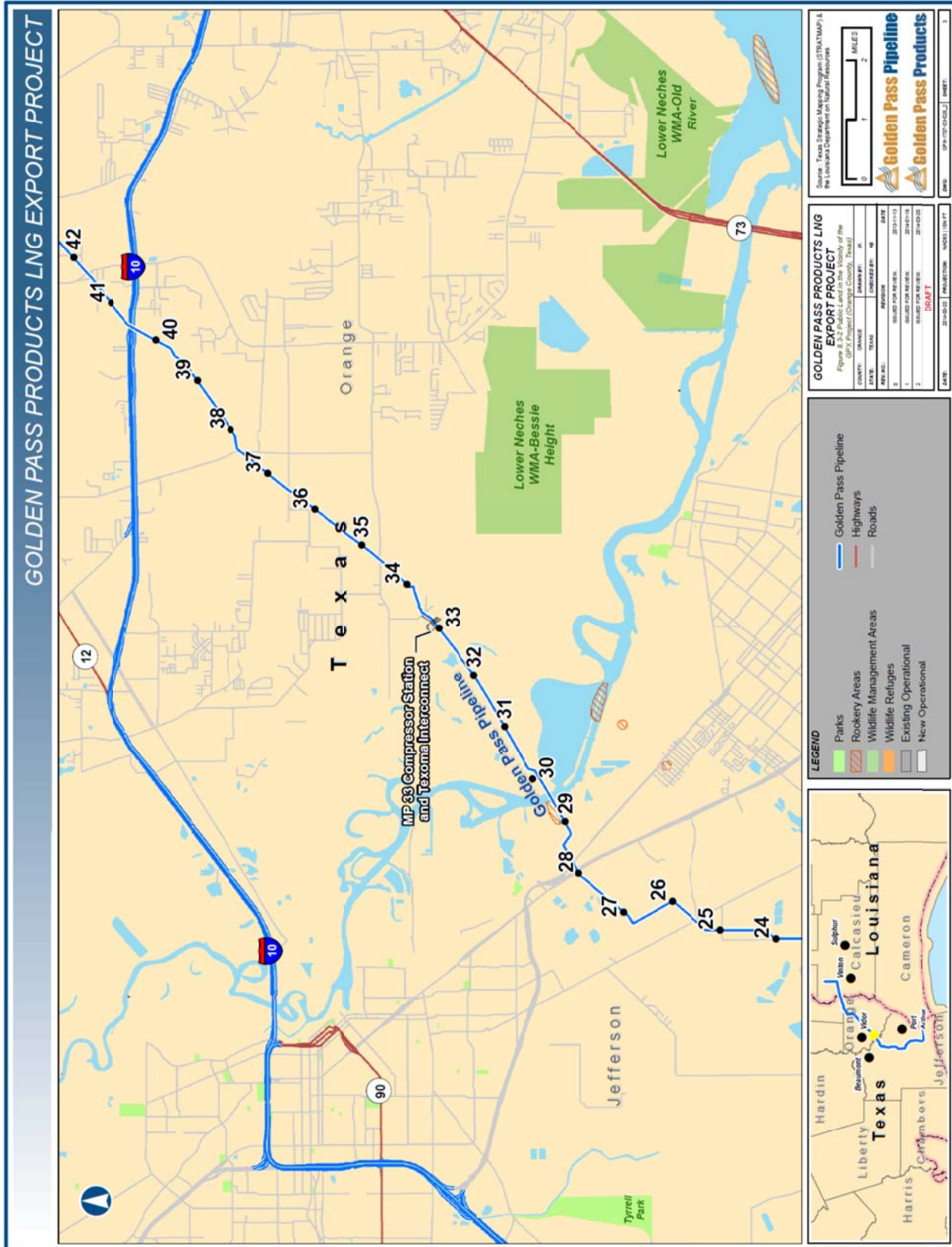
The Sabine Woods Sanctuary Bird Refuge (formerly known as Grim’s Woods) lies approximately 4.5 miles south-southwest of the GPLNG Terminal property and slightly north of the western boundary of TPNWR (Port Arthur Convention and Visitors Bureau, 2013). The Sabine Woods Sanctuary Bird Refuge is managed by the Texas Ornithological Society.

Several other developed recreational facilities are located on Pleasure Island. However, these facilities are concentrated in the central portion of Pleasure Island, close to the Martin Luther King Jr. Memorial Bridge (SH 82) and over five (5) miles north of the GPLNG Terminal property. These recreation areas and facilities include the Jared N. Logan Park, Lakefront Park, Pleasure Island RV Park, The Palms Golf Course and Pleasure Island Marina (Pleasure Island Commission, 2013a).

8.3.1.2 Orange County, Texas

No public lands have been identified in the vicinity (approximately two [2] miles or less) of the GPX Pipeline facilities (TGLO, 2013a) (see **Figure 8.3-2**).





8.3.1.3 Calcasieu Parish, Louisiana

No public lands have been identified in the vicinity (approximately two [2] miles or less) of the GPX Pipeline facilities (Calcasieu Parish, 2013) (see **Figure 8.3-3**).

8.3.2 Conservation Land

8.3.2.1 Jefferson County, Texas

According to the Texas Land Trust Council ("TLTC"), Jefferson County, Texas, has approximately 53,348 acres of conservation land and conservation easements held by land trust organizations (TLTC Council, 2013). No conservation lands exist on the GPLNG Terminal property (NCED, 2013).

8.3.2.2 Orange County, Texas

According to the TLTC, Orange County, Texas, has approximately 1,236 acres of conservation land and conservation easements held by land trust organizations (TLTC Council, 2013). No conservation lands have been identified which will be crossed by the GPX Pipeline facilities (NCED, 2013).

8.3.2.3 Calcasieu Parish, Louisiana

No conservation lands have been identified which will be crossed by the GPX Pipeline facilities (NCED, 2013).

8.3.3 Natural, Recreational or Scenic Areas

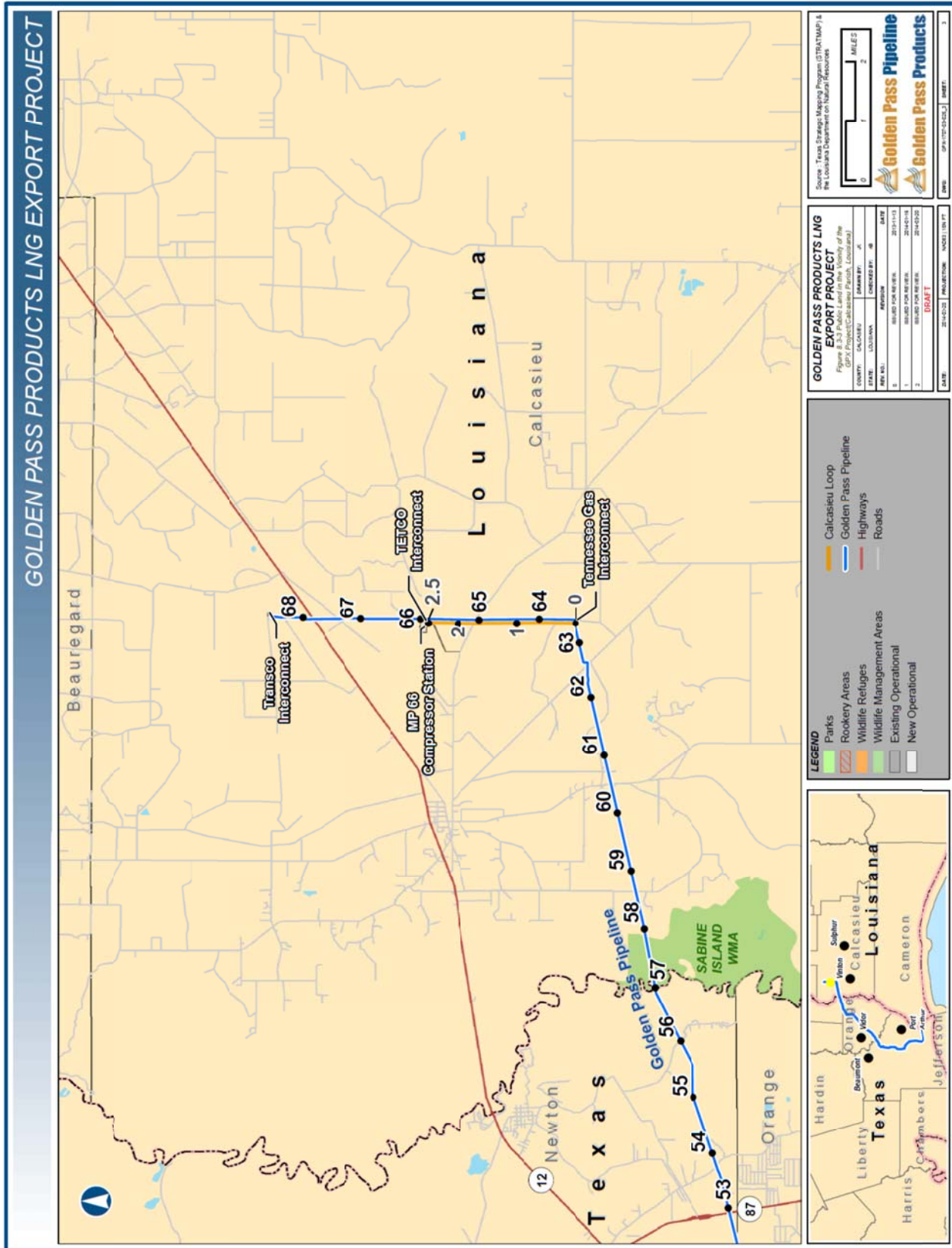
The GPX Project neither crosses nor is within the proximity (0.25 mile) of any:

1. Trails which are part of the National Trails System (NPS, 2010);
2. National Battlefields (NPS, 2010);
3. Designated or proposed candidate National Wild and Scenic Rivers (USFWS, 2013b);
4. State of Louisiana designated Natural and Scenic Rivers (LDWF, 2013);
5. State of Texas designated Significant Stream Segments (TPWD, 2013c); or
6. Department of Transportation Federal Highway Administration ("FHA") designated America Byways which include National Scenic Byways and All-American Roads (DOT FHA, 2013).

8.3.3.1 Sabine-Neches Waterway

Vessel traffic for the GPX Terminal and MOF will use the SNWW. While the SNWW is primarily used for commercial traffic, it does provide recreational opportunities for boating and fishing. However, the section of the SNWW adjacent to the GPX Terminal is not prime fish habitat. The SNWW is the fourth largest waterway in the nation for total tonnage, and one of the top crude oil channels (SNND, 2013). The SNWW supports:

1. A large percentage of the U.S. refining and petrochemical capacity (refineries along the ship channel produce 60 percent of nation's commercial jet fuel and the majority of U.S. military jet fuel) (SNND, 2013);



2. Two (2) LNG facilities (USACE, 2012);
3. A large commercial military outload port (SNND, 2013); and
4. Fifty-five (55) percent of the U.S. strategic oil reserves (SNND, 2013).

Details concerning recreational fishing and essential fish habitat in the SNWW are provided in **Section 3.1.4 of Resource Report No. 3.**

8.3.3.2 Other Designated Areas

Areas Designated as Critical Habitat

The GPX Project area does not cross any areas designated by the U.S. Fish and Wildlife Service or National Oceanographic and Atmospheric Administrations' National Marine Fisheries Service ("NMFS") as Critical Habitat for any Threatened or Endangered species (NOAA, 2013a; USFWS, 2013c; USFWS, 2013d). The GPX Project area also does not cross any NMFS designated Habitat Areas of Particular Concern (NOAA, 2013b). Additional details concerning protected species are provided in **Resource Report No. 3.**

Areas of Local Historical or Cultural Significance

The GPX Project does not cross any known historical structures or areas of cultural significance. Additional details concerning cultural resources are provided in **Resource Report No. 4.**

Landfills or Hazardous Waste Sites

State of Texas

A search of the Texas Commission of Environmental Quality ("TCEQ") and U.S. Environmental Protection Agency ("EPA") websites was conducted to identify possible hazardous waste sites located within approximately 0.25 mile of the GPX Project facilities in Texas (TCEQ, 2013; EPA, 2013a). No potential hazardous waste sites were identified in Jefferson or Orange counties.

State of Louisiana

A search of the EPA and Nationwide Environmental Title Research websites was conducted to identify possible hazardous waste sites located within 0.25 mile of the GPX Pipeline facilities in Louisiana (NETR, 2013; EPA, 2013a). No regulated entities were identified where enforcement activities were listed.

Quarries or Mines

The GPX Project area neither crosses nor is within proximity (0.25 mile) of any active quarries or mines (National Atlas, 2013; Texas GLO, 2013a). A discussion of the abandoned borrow pits near the GPLNG Terminal property is provided in **Resource Report No. 6.**

Dredged Material Placement Areas

A portion of the GPLNG Terminal property was previously used as a dredged material placement area. A discussion of disposal areas is provided in **Resource Report No. 7.**

Rights-of-Way

The GPX Project will cross multiple ROWs, including roads and pipelines. The pipeline segment of the Calcasieu Loop from MP 1.6 to MP 2.6 (corresponding to MP 65.0 to 66.0 of the GP Pipeline) will be installed underground using HDD technology. Use of HDD technology is designed to avoid or minimize effects to the surface of the areas crossed. Other areas will use standard (open cut) trench construction for pipeline installation.

Roads

The Calcasieu Loop parallels one unnamed road off Rockeye Road from approximate MP 0.00 to MP 0.23. The road is used to access the existing Tennessee Gas facilities and GP Pipeline ROW. The road is paved from approximate MP 0.00 to MP 0.16. Other than agricultural roads, the GPX Pipeline route also crosses three (3) roads prior to its termination at the MP 66 compressor station location (**Table 8.3-1**):

- An unnamed and unpaved road (approximate MP 1.28);
- Starks Big Woods Road (MP 1.70), a two (2) lane, paved road; and
- An unnamed and unpaved road, which will be used to access the MP 66 Compressor Station.

The only public road is Starks Big Woods Road, which will be crossed by HDD. Based on aerial imagery interpretation, other roads crossed include one (1) abandoned road and roads that are intermittently used for agricultural field access (farm roads) (**Table 8.3-1**).

Table 8.3-1 Calcasieu Loop Road ROW Crossings			
Name	Approximate Mile Post ¹	Crossing Method	Description
Public Unnamed Road	0.00 – 0.16	Open Cut	Public, unpaved road that connects with Rockeye Road and Road No. 7 and is used to access the Tennessee Interconnect Facility (MP 63). The Calcasieu Loop parallels this road.
Private Unnamed Road ²	0.13	Open Cut	Private, paved road to apparent abandoned facility.
Private Unnamed Road	1.28	Open Cut	Private, unpaved road heading west from Starks Big Woods Road.
Agricultural Road ²	1.30	Open Cut	Private agricultural road.
Agricultural Road ²	1.42	Open Cut	Private agricultural road.
Agricultural Road ²	1.44	Open Cut	Private agricultural road.
Agricultural Road ²	1.57	Open Cut	Private agricultural road.
Starks Big Woods Road	1.70	HDD	Public, two lane, paved road which provides access to the community of Starks.
Agricultural Road ²	1.73 1.75 1.94 2.09	HDD	Private agricultural road.
Private Unnamed Road	2.46	HDD	Private, unpaved access road to the MP 66 Compressor

Table 8.3-1
Calcasieu Loop Road ROW Crossings

Name	Approximate Mile Post ¹	Crossing Method	Description
			Station.
Source: U.S. Census Bureau TIGER/Line files (2006); aerial imagery interpretation.			
Notes:			
¹ Mile Posting of the Calcasieu Loop.			
² Based on aerial interpretation, intermittently used for agricultural field access.			

Pipelines

The GPX Pipeline has been co-located, to the extent practicable, with the GP Pipeline ROW. Other than the GP Pipeline, multiple third-party pipelines either cross or are within 0.25 mile of the GPX Project area (RRC, 2013b). A description of the various pipelines is provided in Appendix 8B.

Railroads

The GPX Project facilities will not cross any railroads.

Other Special Use Areas

The Calcasieu Loop will cross special use areas associated with active rice (*Oryza sativa*) cultivation and silviculture in Calcasieu Parish, Louisiana (**Table 8.3-2**). In addition, construction and operation of the GPX Pipeline aboveground facilities in Calcasieu Parish will also affect silviculture areas.

Table 8.3-2
Calcasieu Loop Crossings of Rice Cultivation and Silviculture Areas in Calcasieu Parish, Louisiana

Facility	Cultivation	Approximate Mile Post	Crossing Method
Calcasieu Loop	Rice	1.30 – 1.42	Open Cut
		1.44 - 1.57	Open Cut
		1.73 – 1.75	HDD
		1.94 – 2.09	HDD
	Silviculture	0.00 – 1.85	Open Cut
		1.90 – 2.60	HDD
Source: BES 2013b; aerial imagery interpretation. Notes: ¹ Mile Posting of the Calcasieu Loop.			

Rice Cultivation

In southwestern Louisiana, clearing of freshwater and wooded wetlands has occurred to create agricultural wetlands for the cultivation of soybeans (*Glycine max*), rice, crawfish (e.g., *Procambarus* spp.) and finfish (e.g., catfish [*Ictalurus* spp.]) (Huner et al., 2008). GPX Pipeline disturbance to actively cultivated areas will be temporary.

Golden Pass anticipates requesting that these landowners refrain from flooding fields crossed by the GPX Pipeline for a period before construction commences to allow sufficient time for the fields to dry and, therefore, to enable the use of conventional construction methods.

Silviculture

The areas in the vicinity of the GPX Pipeline actively used for silviculture consist of planted pine (*Pinus* spp.). Silviculture of pine has been a long-term source of revenue for the Louisiana economy (LSU, 2012). GPX Pipeline facility construction will not result in any more tree removal than is part of routine silviculture practices in temporarily disturbed areas.

8.3.4 Agency Landowner Consultation

The majority of the proposed facilities will be constructed and operated within the GPLNG Terminal property and GP Pipeline ROW. However, some adjacent additional land will be required for siting the new aboveground facilities. Golden Pass has identified and consulted with Federal, State and local agencies that have jurisdiction over land management within the GPX Project area. Copies of all agency correspondence are included in **Appendix 1B in Resource Report No. 1**. As required by 18 C.F.R. Section 157.6(d), all affected landowners have been notified of the GPX Project.

8.3.5 Coastal Management Program

8.3.5.1 State of Texas

The GPX Project facilities, in Jefferson and Orange counties, are within the State of Texas coastal zone and are subject to the requirements of the Texas Coastal Management Program ("CMP") (Texas GLO, 2013b), which incorporates the requirements of the Federal Coastal Zone Management Act ("CZMA"). The Texas CMP is intended to ensure efficient coordination of State and local actions that could affect coastal resources, and to more effectively manage these resources. The Texas CMP was finalized in 1997 and accepted into the Coastal Zone Management Program by the National Oceanographic and Atmospheric Administration after the Texas legislature passed the Coastal Coordination Act in 1991. Approval of the CMP gave Texas the authority to review proposed federal actions and activities that are located in or may affect land and water resources in the Texas coastal zone. The Texas General Land Office ("Texas GLO") is the lead agency for the CMP (RRC, 2013c); for oil and gas related projects, the Railroad Commission ("RRC") usually administers the Texas CMP.

A key requirement of the CMP is a Federal Consistency Review. The Texas GLO and/or RRC carries out Federal Consistency Reviews of actions taken or authorized by Federal or State agencies that may potentially affect the coastal zone. This review is to ensure that the action is consistent with the goals and policies of the CMP (Texas GLO, 2013c). The GPX Project in Texas will be subject to a Federal Consistency Review. Golden Pass will submit an administratively complete Consistency Certification application to the RRC.

The Federal Consistency Review is designed to manage Coastal Natural Resource Areas ("CNRAs"). The CNRAs listed in the *Combined Coastal Management Program and Final Environmental Impact Statement for the State of Texas* (NOAA, 1996) include: waters of the open Gulf; waters under tidal influence; submerged lands; coastal wetlands; SAV (e.g., seagrass); tidal sand and mudflats; oyster beds; hard substrate reefs; coastal barriers; coastal shore areas; Gulf beaches; critical dune areas;

special hazard areas; critical erosion areas; coastal historic areas; and coastal preserves. Of the 16 CNRAs, the following seven (7) have been identified to occur within the GPX Project area in Jefferson County:

1. Waters under tidal influence;
2. Submerged lands;
3. Coastal wetlands;
4. Tidal sand and mudflats;
5. Coastal shore areas;
6. Special hazard areas (flood zone); and
7. Critical erosion areas.⁶

Resource Report Nos. 2 and 3 describe potential construction and operation effects on these resources. No CNRAs have been identified within the GPX Project area in Orange County.

8.3.5.2 State of Louisiana

The GPX Project facilities in Calcasieu Parish will be outside the Louisiana coastal zone (LDNR, 2012).

8.3.6 Potential Effects on Land Use, Residential and Commercial Areas, Public Lands and Other Designated Areas

8.3.6.1 Land Use

Land required for each of the GPX Project facilities is listed in **Table 8.3-3**. Acreage for each type of land use that will be affected by GPX Project construction and operation is provided in Appendix 8A and summarized in **Table 8.3-4**. The GPX Project facilities have been co-located and integrated with the GPLNG Terminal and GP Pipeline, to the extent practicable, to avoid or minimize effects to current land use.

Table 8.3-3 Summary of Land Requirements for GPX Project Construction and Operation				
Facility	Construction (Acres)	Operations (Acres)		
		Existing	New	Total
GPX Terminal	803.21 ^{1,2,3,4}	314.51 ²	488.70	803.21 ^{1,2,3,4}
MP 1 Compressor Station, NGPL interconnect and suction line	15.91	0.92	12.87	13.79
MP 33 Compressor Station and Texoma Interconnect	10.71	0.71	10.00	10.71
Calcasieu Loop	23.54	5.03	7.78	12.81 ⁵

⁶ As defined by Texas GLO, 2013d; Texas Natural Resources Code Section 33.601(4).

Table 8.3-3 Summary of Land Requirements for GPX Project Construction and Operation				
Facility	Construction (Acres)	Operations (Acres)		
		Existing	New	Total
Tennessee Interconnect (MP 63)	1.08	1.08	0.00	1.08
MP 66 Compressor Station and TETCO Interconnect	15.81	0.82	14.99	15.81
Transco Interconnect (MP 68)	3.01	2.19	0.82	3.01
ATWS ⁶	11.18	0.00	0.00	0.00
Access Roads ^{6,7}	9.33	0.00	9.20	9.20
TOTAL	893.78	325.26	544.36	869.62 ^{1,2,3,5}
¹ Includes 11.00 acres of the SNWW, dredged for the MOF. ² All areas, including construction laydown areas, will be graveled or otherwise stabilized to prevent erosion. These areas will remain in a graveled state following construction. The permanent footprint within the operational boundary of the GPX Terminal will be gravel or asphalt. ³ Includes 55.26 acres of existing ship slip for the GPLNG Terminal. No new ship slips are proposed as part of the GPX Project. The existing ship slip will be used during GPX Project operations. ⁴ Includes Access Roads. ⁵ Includes 2.77 acres associated with the HDD ROW. ⁶ Additional Temporary Workspace ("ATWS") and Access Roads associated with the GPX Pipeline Facilities. ⁷ Only one Access Road will be temporary.				

Table 8.3-4 Summary of Land Use Affected during GPX Project Construction and Operation				
Land Use ¹		Acres Affected		
		Construction ^{2,3}	Operation ^{2,3}	
			Existing	Total
Agriculture (Includes Rice Fields)		10.21	2.32	4.99
Forested Upland (Includes Silviculture)		79.20	0.00	71.52
Commercial / Industrial		272.08	259.42	268.60
Open Land (Uplands)		36.65	2.29	35.38
Open Water	Estuarine	66.26	55.26	66.26 ³
	Freshwater	1.32	0.00	1.32
ROW	GP Pipeline	8.02	2.22	5.61
	Third-Party Pipelines	0.02	0.00	0.02
Wetland	PEM	418.15 ⁴	3.66 ⁵	414.24 ^{5,6,7}
	PFO ⁷	0.66	0.09	0.56
	PSS	1.21	0.00	1.13

Table 8.3-4 Summary of Land Use Affected during GPX Project Construction and Operation				
Land Use ¹	Acres Affected			
	Construction ^{2,3}	Operation ^{2,3}		
		Existing	New	Total
Total⁴	893.78	325.26	544.36	869.62 ^{2,3}
¹ Based on aerial interpretation and field surveys. ² All areas, including construction laydown areas associated with the GPX Terminal, will be graveled or otherwise stabilized to prevent erosion. These areas will remain in a graveled state following construction. This acreage is not included in the new and existing operations summary. ³ Includes 55.26 acres of existing ship slip for the GPLNG Terminal. No new ship slips are proposed as part of the GPX Project. The existing ship slip will be used during GPX Project operations. ⁴ Includes PEMx (does not include 4.23 acres of PEM wetlands used for rice fields). ⁵ Includes PEMx (does not include 0.80 acres of PEM wetlands used for rice fields). ⁶ Includes PEMx (does not include 1.23 acres of PEM wetlands used for rice fields). ⁷ Includes 1.51 acres of PEM wetlands within the HDD permanent ROW. ⁸ Includes PFOx.				

GPX Terminal

Construction

The GPX Terminal facilities will be placed on:

1. Disturbed land previously used as a dredged material placement area;
2. Industrial land related to the GPLNG Terminal; and
3. Coastal marsh.

The majority of the land use that is not already part of the GPLNG Terminal footprint consists of PEM wetlands used as open space or pasture. Direct effects to land use, related to GPX Terminal construction, will be primarily limited to the filling of wetland and low-lying upland areas to construct the liquefaction trains and associated facilities.

Wetland and water resources on the GPLNG Terminal property and its vicinity have undergone modification and alteration pre-dating installation of the GPLNG Terminal. These alterations are highlighted in **Figure 2.2-2 of Resource Report No. 2** and include:

1. Initial dredging of the SNWW;
2. Widening and deepening of the SNWW;
3. Dredged fill placement;
4. Changes in the direction of water flow from south to north into flow from north to south;
5. Installation and abandonment of a railroad grade;
6. Excavation of service material in borrow pits in the area; and
7. Installation of pipelines.

These changes have altered the hydrology and overall quality of the existing coastal marsh. Compensatory mitigation for wetland loss is discussed in **Resource Report No. 2**.

Material Offloading Facility

Construction of the MOF will disturb tidal shoreline and unvegetated, bottom sediments in the SNWW. The affected shoreline will be permanently converted to industrial land to prevent erosion to disturbed areas (see Operation section below). Bathymetry of the southside of the SNWW adjacent to the MOF will be altered during construction. However, land use will remain as a commercial ship channel that consists of unvegetated, unconsolidated sediments.

Measures to minimize shoreline erosion during use of the MOF will include installation of a concrete pillow-block, cable-linked revetment system along the slopes of the facility and armoring the shoreline slopes of the marine basin. Shoreline armoring will remain post-construction, resulting in a permanent conversion of the disturbed shoreline to industrial land. Effects to the shoreline are anticipated to be minor and long-term.

Operation

Areas within the GPX Terminal permanent footprint will either remain industrial land or be permanently converted to industrial land. The proposed facilities have been sited to be co-located with the GPLNG Terminal to minimize effects on land use. The permanent conversion of land use is anticipated to be a minor and long-term.

It is anticipated that LNG vessel transits for the GPX Terminal and GPLNG Terminal combined will not exceed the number already approved (approximately 200 transits per year), with LNG vessels piloted from the Sabine Pass sea buoy (in the Gulf) up the SNWW to the GPLNG ship slips. The GPX Terminal is not anticipated to have any additional effects on the SNWW.

GPX Pipeline Facilities

Construction

Pipeline Facilities

GPX Pipeline construction may affect the following six (6) land uses:

1. Agricultural land, including rice fields;
2. Disturbed forested land, including silviculture;
3. Industrial land, including existing ROWs;
4. Open land;
5. Open water (PUB); and
6. Wetlands.

Land in the construction ROW will be cleared of vegetation and then graded, where necessary, to create a level and safe working surface for construction equipment. Landowners will be equitably compensated for use of land during construction and for lost production and crop damages resulting from pipeline installation. Following construction, contours in ATWS will be restored and allowed to

revegetate. The temporary ROW and ATWS will be allowed to revert to their prior use.

Effects to individual land use types include:

1. Agricultural Land – Effects to agricultural lands are anticipated to be limited to the growing season during which construction occurs. During construction, topsoil will be segregated in cultivated or rotated agricultural lands and managed pastures unless otherwise approved in writing from the landowner prior to the commencement of grading activities. After the pipeline has been lowered into the ditch, the subsoil will be used for backfilling, and the segregated topsoil will then be spread across the graded ROW. Soil compaction will be treated, as necessary, in accordance with the BMPs in Section 8.3.7. Following construction, all agricultural land used for temporary construction areas will be allowed to revert to prior use, and agriculture will be permitted within the permanent easement, in accordance with applicable easement agreements. Golden Pass will conduct post-construction monitoring in accordance with the FERC's 2013 Upland Erosion Control, Revegetation, and Maintenance Plan ("Plan") to evaluate restoration within affected agricultural areas. Restoration will be considered successful, in agricultural areas, if crop yields within the restored construction areas are similar to adjacent undisturbed portions of the same field. For lands that are terraced and routinely flooded for rice production, Golden Pass will work with landowners to minimize effects to irrigation. GPX Pipeline construction is anticipated to have short-term and minor effects to agricultural lands.
2. Forested Land – Forested lands, including PFO wetlands, within temporarily disturbed areas will be allowed to revegetate. However, the areas may take several years to return to pre-construction conditions. GPX Pipeline construction will not result in any more tree removal than is part of routine silviculture practices, and is anticipated to have long-term but minor effects to forested lands.
3. Industrial Land – All of the industrial lands which will be affected by GPX Pipeline construction are currently being used for similar purposes. Following construction, temporarily disturbed areas will be allowed to return to pre-construction conditions. No effects to industrial land are anticipated.
4. Open Upland – Effects to open uplands are anticipated to be limited to the growing season during which construction occurs. Following construction, temporarily disturbed areas will be returned to pre-construction conditions and allowed to revegetate. GPX Pipeline construction is anticipated to have short-term and minor effects to open uplands.
5. Wetlands – Effects to herbaceous wetlands are anticipated to be primarily limited to the growing season during which construction occurs. The BMPs that will be adhered to in order to avoid or minimize effects to wetlands are described in **Sections 2.2.2 and 2.2.3 of Resource Report No. 2**. GPX Pipeline construction is anticipated to have short-term and minor effects to herbaceous wetlands. As discussed above, effects to PFO are anticipated to be long-term but minor.

Soils in the GPX Pipeline area are currently well-vegetated, and none are predicted to have a low revegetation potential following construction (see **Resource Report No. 7**). Golden Pass will implement the BMPs listed in Section 8.3.7 for revegetation of disturbed lands following construction. Except for forested land, GPX Pipeline construction is anticipated to have only short-term, minor effects on current land use. GPX Pipeline facility construction is anticipated to have long-term but

minor effects on forested land, due to co-location with existing infrastructure.

Aboveground Facilities

GPX Pipeline aboveground facility construction will primarily affect forested and industrial lands. However, other land uses that will be encountered include open land, open water and wetlands. Effects to individual land use types will be similar to those described above for the GPX Pipeline.

During GPX Pipeline aboveground facility construction, current land use will be altered, as the entire construction area will be cleared of vegetation and then graded, where necessary, to create a level and safe working surface for construction equipment. Landowners will be equitably compensated for use of land during construction and operations including the loss of silviculture production related to installation of the aboveground facilities. Following construction, ATWS will be allowed to revegetate.

Soils in the area of the GPX Pipeline aboveground facilities are currently well-vegetated, and none are predicted to have a low revegetation potential following construction (See **Resource Report No. 7**). Golden Pass will implement the BMPs listed in Section 8.3.7 for revegetation of disturbed lands following construction. Except for forested land, GPX Pipeline aboveground facility construction is anticipated to have only short-term, minor effects on current land use. GPX Pipeline aboveground facility construction is anticipated to have long-term but minor effects on forested land.

Pipe Storage and Contractor Yards

During use of the temporary yards, Golden Pass will implement the BMPs listed in Section 8.3.7 to avoid or minimize erosion and the potential for spills. Following construction, the pipe storage and contractor yards will be restored in accordance with applicable easement agreements. Effects to land use are anticipated to be short-term and minor.

Access Roads

With one (1) exception, existing access roads will be utilized to access the Calcasieu Loop to support construction equipment and traffic. One (1) temporary access road will be needed to connect the ATWS associated with the HDD entrance to Starks Big Woods Road. The temporary access road will be located along an existing farm road (**Figure 8.1-4**). Modifications or improvements may be required on some access roads (e.g., grading, widening, reinforcement, culvert replacement, tree trimming); however, any effects to land use are anticipated to be minor.

In general, existing access roads to the GP Pipeline ROW will be utilized to access the GPX Pipeline aboveground facilities. Golden Pass will also use private roads, extending from existing public roads for facility access. These private roads will be maintained for permanent access (e.g., MP 66 Compressor Station). New access roads have been sited to minimize effects to sensitive land use (e.g., forested land, wetlands) as detailed in **Resource Report No. 10**. Any effects to land use are anticipated to be minor.

Operation

Pipeline Facilities

The GPX Pipeline will be parallel to the existing 42-inch GP Pipeline and will be offset 25 feet from the existing GP Pipeline, where feasible. Of the new 50-foot permanent ROW, 25 feet will overlap the existing 50-foot GP Pipeline ROW, resulting in a total permanent 75-foot ROW (GPX Pipeline and GP

Pipeline). Long-term effects to forested land use are expected from maintenance mowing, or manual removal, of woody vegetation along the permanent ROW to allow for routine inspection of the pipeline in accordance with DOT regulations. Vegetation removal will be conducted using the BMPs discussed in Section 8.3.7. Long-term effects of GPX Pipeline operation to current land use will also occur as a result of restrictions on future use along the ROW (e.g., construction of buildings). Golden Pass will obtain easements from landowners to construct and operate the pipeline and associated facilities. The easements will give Golden Pass the right to construct, operate and maintain the pipeline, and establish a permanent ROW. Easement agreements between Golden Pass and landowners will typically specify compensation for loss of use during construction, loss of non-renewable or other resources and allowable uses and restrictions after construction. Due to the co-location of the GPX Pipeline with the GP Pipeline, the additional ROW maintenance and restrictions are only anticipated to have minor effects to land use.

Any effects to land use related to GPX Pipeline repair, if necessary, will be less than those described for construction.

Aboveground Facilities

Areas within the permanent footprint of the GPX Pipeline aboveground facilities will either remain industrial land or be permanently converted to industrial land. The aboveground facility sites will be maintained free of woody vegetation for the life of the facilities. Golden Pass will implement the BMPs listed in Section 8.3.7 to maintain the facility and to help avoid or minimize the potential for, and respond to, spills. Therefore, the permanent conversion of the previously disturbed lands is anticipated to be a minor, long-term effect to land use.

8.3.6.2 Residential and Commercial Areas

There are no residences or businesses within 50 feet of the GPX Project area, and no planned developments were identified within 0.25 mile. GPX Project construction and operation is not anticipated to affect residential or commercial areas.

8.3.6.3 Public or Conservation Lands

GPX Project construction and operation is not anticipated to affect any:

1. National or State forests;
2. Refuges;
3. Management areas;
4. Parks; or
5. Conservation land.

The only public lands within 0.5 mile of the GPX Project are Walter Umphrey State Park (on Pleasure Island), J.D. Murphree WMA and Jefferson County lands adjacent to the Keith Lake Cut.

The proposed liquefaction facilities will utilize the existing marine berths at the GPLNG Terminal. It is anticipated that LNG vessel transits for the GPX Terminal and GPLNG Terminal combined will not exceed the number already approved for the GPLNG Terminal (approximately 200 transits per year). The GPLNG Terminal was designed to minimize shoreline erosion with installation of a revetment system along the slopes of the vessel berth and armoring the shoreline slopes of the marine basin

(bank armoring). Any additional effects to public use of the SNWW as a result of GPX Terminal construction and operation are anticipated to short-term and minor.

Golden Pass will construct an approximate 400-foot by 240-foot barge slip (MOF) to support transfer of large equipment and bulk materials to the GPX Terminal. The MOF will be dredged out of the existing, unimproved shoreline, approximately one (1) mile east (downstream) of the GPLNG Terminal berths and within the GPLNG Terminal property boundary. Use of the MOF will be to support construction. Any additional effects to public use of the SNWW as a result of GPX Terminal construction and operation are anticipated to short-term and minor.

8.3.6.4 Natural, Recreational or Scenic Areas

The GPX Project neither crosses nor is within proximity (0.25 mile) of any natural, recreational or scenic areas. GPX Project construction and operation is not anticipated to affect any natural or scenic areas.

Many of the GPX Project facilities in Jefferson County, Texas, are within the GPLNG Terminal area, which is already subject to safety and exclusion zones that limit recreational activity. However, hunting and fishing activities occur in the vicinity of the GPX Pipeline facilities in Orange County, Texas, and Calcasieu Parish, Louisiana. Installation of the pipeline facilities could affect recreation, primarily during construction. The presence and movement of construction equipment, materials and workers may temporarily disrupt recreation. However, because the majority of the area is remote, with limited access, the number of potential visitors to the area, and thus the potential for effects on recreational activity, would be limited. Any direct or indirect effects to recreational resources are anticipated to be short-term and minor.

8.3.6.5 Coastal Zone

The Railroad Commission ("RRC") of Texas reviewed the proposed action of construction and operation of the GPLNG Terminal and GP Pipeline for consistency with the CMP goals and policies, in accordance with the regulations of the CMP. On July 11, 2005, the RRC found *the proposed action will have only a limited and insignificant impact on coastal natural resource areas and the proposed action is consistent with the applicable goals and policies of the CMP, conditioned on compliance with the conditions* listed in the July 11, 2005, document. A copy of the consistency determination and full text of the conditions is provided in Appendix 8C.

The GPX Terminal, MP 1 Compressor Station, NGPL interconnect, MP 33 Compressor Station and Texoma interconnect are located in the Texas coastal zone. Since the GPX Project facilities will be constructed contiguous to, and integrated with, the GPLNG Terminal and GP Pipeline, and will utilize the existing storage tanks and marine berths, it is anticipated that GPX Project construction and operation will be determined to be consistent with applicable CMP goals and policies.

8.3.7 Protection and Mitigation Measures

8.3.7.1 Construction

Golden Pass proposed to adopt FERC's Plan provided in **Appendix 7A of Resource Report No. 7** and FERC's 2013 Wetland and Waterbody Construction Procedures ("Procedures") provided in **Appendix 2D of Resource Report No. 2**, with site-specific alternative measures. The Plan and Procedures contain BMPs for erosion control and revegetation during GPX Project facility

construction. In addition, a Spill Prevention, Control and Countermeasure Plan(s) ("SPCC Plan") (40 C.F.R. Section 112) has been developed to protect against and respond to direct spills of petroleum or other toxic products which could affect land use, depending on the type, quantity and concentration of the spill (see **Resource Report No. 2, Appendix 2B**). The measures include that stationary equipment which could release hydrocarbons will be installed within independent curb or barrier areas. Therefore, any effects to land use, as a result of erosion, run-off or spills during GPX Project construction, are anticipated to be short-term and minor with adherence to the BMPs in the Plan, Procedures and SPCC Plan(s).

Land use adjacent to the GPX Project area will also be protected by effective management of stormwater. Golden Pass will comply with all applicable stormwater regulations and permitting requirements for both Texas and Louisiana. Detailed Storm Water Pollution Prevention Plans ("SWPPPs") will be developed and maintained, as required.

8.3.7.2 Operation

The following measures will be implemented to avoid or minimize potential effects to adjacent land use during GPX Terminal and GPX Pipeline operation:

1. All stormwater leaving the site will be directed to outfalls for the GPX Terminal to account for the additional impervious surface, in accordance with the applicable permit(s) for discharges;
2. For the aboveground facilities in Orange County and Calcasieu Parish, stormwater management systems will be designed, as necessary, and SWPPPs developed, under applicable Texas and Louisiana Multi-Sector General Permits associated with Industrial Activities; and
3. An SPCC Plan for GPX Terminal operation will be developed before the facilities are placed in-service.

Where appropriate, spill plans will be developed for the GPX Pipeline facilities.

8.3.7.3 Mitigation

Other than the long-term and minor effects related to the GPX Project permanent footprint, effects of GPX Project operation to land use are anticipated to be minor. Golden Pass will mitigate for wetland losses, as specified under a Wetland Mitigation Plan, as submitted with the U.S. Army Corps of Engineers ("USACE") Permit application for the GPX Terminal and MP1 Compressor Station.

8.4 VISUAL RESOURCES

The degree of visual impact that may result from a proposed project typically is determined by considering the general character of the existing landscape and the visually prominent features of the proposed facilities (FERC, 2005).

8.4.1 Existing Visual Appearance of the Project Area

All of the GPX Project aboveground facilities will be installed adjacent to existing infrastructure (e.g., GPLNG Terminal, third-party compressor stations and meter stations).

8.4.1.1 Jefferson County, Texas

The GPLNG Terminal facility component with the largest visual impact on the surrounding areas is the storage tank farm. The storage tank farm contains five (5) 170 feet tall (256 feet wide) LNG storage tanks. The GPLNG Property and surrounding areas are relatively flat, and these major structures are visible from many locations for distances of at least five (5) miles away (FERC, 2005). The tanks are not a unique feature in the area. The Sabine Pass LNG terminal is located southeast of Pleasure Island, along the eastern shoreline of the SNWW in the vicinity of the GPLNG Terminal. The Sabine Pass LNG terminal also currently has five (5) LNG storage tanks. Another dominant visual feature of the area in the immediate vicinity of the GPLNG Terminal is a group of offshore oil and gas platforms/rigs in the SNWW. Ships transiting the SNWW are also a frequent occurrence.

8.4.1.2 Orange County, Texas

At the MP 33 Compressor Station and Texoma interconnect, two (2) aboveground natural gas facilities are located within an approximate 0.5 mile of the GP Pipeline ROW:

1. Texoma Pipeline Company Compressor Station is located immediately across the GP Pipeline ROW; and
2. Spectra Energy Texas Eastern Transmission Vidor Compressor Station is located to the north of the GP Pipeline ROW..

8.4.1.3 Calcasieu Parish, Louisiana

All of the GPX Pipeline aboveground facilities will be located adjacent to existing interconnection facilities. Each location is isolated, and the surrounding landscape is dominated by timberland (pine forest).

8.4.2 Visual Components of the GPX Project

8.4.2.1 GPX Terminal

The GPX Terminal will be constructed contiguous to, and integrated with, the GPLNG Terminal, and the majority of the proposed GPX Terminal will be constructed within the GPLNG Terminal property. An artistic rendition of an aerial view of the proposed liquefaction facilities is provided in **Figure 8.4-1**. The GPX Terminal's prominent visual features will be:

1. The three (3) liquefaction trains, process area and utilities to be located immediately south and adjacent to the existing LNG tank farm. The turbine stack height will be approximately 210 feet;
2. The MOF will be located along, and excavated into, the shoreline of the SNWW, with one (1) marine dolphin extending out into the waterway. The MOF is not anticipated to contain any high profile structures;
3. New buildings and infrastructure constructed at the northwestern perimeter of the GPLNG Terminal property; and
4. One (1) ground flare complex constructed in the eastern portion of the GPLNG Terminal property.

Figure 8.4-1 Artistic Rendition of GPX Terminal Facilities (Aerial View) (Draft)



Due to their overall size, none of the proposed liquefaction facilities will have a visual profile which is greater than the GPLNG Terminal tank farm (170 feet tall and 256 feet wide per tank) during the daytime. At night, the GPX Terminal infrastructure will contain additional lighting, and the new ground flare may be visible if in use. However, the flare will not be used during normal operations (see **Resource Report No. 1**). The GPLNG Terminal facility lighting was developed during prior agency consultation. Golden Pass will continue consultation with agencies regarding lighting designs to avoid or minimize potential effects to visual and other sensitive resources, but still meet safety and security requirements.

Sabine-Neches Waterway

As noted above, LNG vessel transits for the GPX Terminal and GPLNG Terminal combined are not anticipated to exceed the number already approved for the GPLNG Terminal, and the vessels will travel the same route. No additional prominent features (i.e., transiting vessels) are anticipated in the SNWW.

Construction barge traffic associated with the MOF will be similar to vessel traffic common in the SNWW and is not anticipated to add a distinctive visual component.

8.4.2.2 GPX Pipeline Facilities

The interconnect facilities, pig traps and the MLV will be located within or immediately adjacent to the GPX Pipeline ROW, GPX Pipeline aboveground facilities and third-party facilities, and will be similar to other pipeline facilities located in the area. Therefore, while additional aboveground facilities would be added to the visual environment, these facilities would be small and similar in nature to existing pipeline infrastructure. The GPX Pipeline's prominent visual features will be the compressor stations. The largest feature, in terms of vertical profile, will be the compressor building at each of the stations. Approximate compressor building dimensions are 45 feet wide by 175 feet long and 35 feet tall. In addition, each station will have a control room (approximately 50 feet wide by 100 feet long and 15 feet tall) and utility building (approximately 35 feet wide by 95 feet long and 15 feet tall). At night, the stations will be lighted for security and safety purposes. Golden Pass will continue consultation with agencies regarding lighting designs to avoid or minimize potential effects to visual and other sensitive resources.

8.4.3 Visual Observation Points

8.4.3.1 Jefferson County, Texas

Key observation points to the GPX Project facilities will be the same as those evaluated in FERC (2005) for the GPLNG Terminal project. The nearby viewing areas of the GPX Terminal components include:

- **Pleasure Island** – The GPLNG Terminal and proposed GPX Project will be in direct view from houses on Pleasure Island and vessels in the SNWW. A portion of the new liquefaction facilities will be obscured by the GPLNG Terminal tank farm;
- **SH Bridges** – Views of the proposed GPX Project from the Intracoastal Waterway Bridge on SH 87 and the Martin Luther King Jr. Bridge on SH 82 would be limited to drivers and passengers within vehicles. The GPLNG Terminal and proposed GPX Project facilities will be part of the

distant viewshed;

- SH 87 – The GPLNG Terminal and proposed GPX Project will be in direct view from cars traveling on SH 87, the houses along SH 87 fronting Keith Lake and houses farther down Backridge Road;
- SNWW – The GPLNG Terminal and proposed GPX Project will be in direct view from the SNWW. The GPLNG Terminal tank farm could block the view of the GPX Project facilities.
- Community of Sabine Pass – Views of the proposed GPX Project from the community of Sabine Pass would be partially obscured by existing trees and vegetation located throughout the community, as well as by houses. The GPLNG Terminal and proposed GPX Project will be visible in the background; and
- Walter Umphrey State Park – The liquefaction facilities will be visible from the Walter Umphrey State Park.

To assess the expected changes from visual observation points resulting from GPX Project construction, Golden Pass prepared simulated views of the proposed liquefaction facilities from several of these viewpoints (**Figure 8.4-2**). Current views (pre-construction) and simulated views (post-construction) are presented in **Figures 8.4-3** through **8.4-8** and described in **Table 8.4-1**. The simulated facility images are approximations of the anticipated general appearances. Actual appearances will depend on final GPX Project design.

Table 8.4-1 Visual Simulations of the GPX Terminal Facilities			
Description	View	Figure Number	Approximate Distance from GPLNG Terminal Property (feet) ¹
View from SH 87 Intracoastal Waterway Bridge	Pre-Construction	8.4-3	22,400
	Simulated Post-Construction	8.4-4	
View from SH 82 on Pleasure Island	Pre-Construction	8.4-5	2,000
	Simulated Post-Construction	8.4-6	
View from Walter Umphrey State Park Grounds Along Walkway Near Channel	Pre-Construction	8.4-7	3,750
	Simulated Post-Construction	8.4-8	
Notes: ¹ Approximate straight-line distance.			

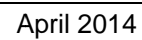


Figure 8.4-3 Current view from SH 87 Intracoastal Waterway Bridge (Pre-Construction) (Draft)



Figure 8.4-4 View from SH 87 Intracoastal Waterway Bridge (Simulated Post-Construction) (Draft)



Figure 8.4-5 Current view from SH 82 on Pleasure Island (Pre-Construction) (Draft)



Figure 8.4-6 View from SH 82 on Pleasure Island (Simulated Post-Construction) (Draft)



Figure 8.4-7 Current view from Walter Umphrey State Park Grounds Along Walkway Near Channel (Pre-Construction) (Draft)



Figure 8.4-8 View from Walter Umphrey State Park Grounds Along Walkway Near Channel (Simulated Post-Construction) (Draft)



8.4.3.2 Orange County, Texas

There are no key observation points of the GPX Pipeline facilities in Orange County, Texas. The MP 33 Compressor Station will be set back from Church House Road, and views from the limited number of residences in the vicinity will be obstructed by trees.

8.4.3.3 Calcasieu Parish, Louisiana

There are no key observation points of the GPX Pipeline facilities in Calcasieu Parish, Louisiana. The facilities are set back from the roads and obscured by trees.

8.4.4 Potential Effects on Aesthetics

8.4.4.1 Construction

GPX Project construction will result in temporary effects to the visual quality for viewers in the vicinity of the construction sites due to the presence of work crews, construction equipment and construction activities. These effects will be most prevalent at the GPX Terminal. Effects at the GPX Pipeline facility location will be shorter in duration and most visible at public road crossings (e.g., Church House Road). Construction activities will represent a short-term and localized alteration to visual resources in the GPX Project area.

Jefferson County, Texas

Industrial activity is already present at the GPLNG Terminal property. GPX Project construction will result in a moderate but temporary increase in construction equipment on the GPLNG Terminal property. Although construction will span several years, construction will be phased.

Orange County, Texas

Industrial activity is already present at the GPX Pipeline facilities location. GPX Project construction will result in an increase in construction equipment. However, construction activity will be located off a dead-end roadway, and will likely be entirely obstructed by forested areas. Visual effects are anticipated to be short-term and minor.

Calcasieu Parish, Louisiana

Industrial activity is already present at the GPX Pipeline facility locations in Calcasieu Parish, Louisiana. GPX Pipeline aboveground facility construction will result in an increase in construction equipment. However, construction activity will be set back from any major roads, and will be obscured by forested land. Visual effects from GPX Pipeline aboveground facility construction are anticipated to be short-term and minor.

8.4.4.2 Operation

Aesthetic effects associated with GPX Project operation will include the presence of permanent structures within the viewshed.

Jefferson County, Texas

Port Arthur is a center for the oil, refining and petrochemical industries, and is home to numerous large refineries, chemical complexes, tank yards and related uses. The GPLNG Terminal property is less than two (2) miles from another facility with a similar visual profile, the Sabine Pass LNG terminal.

The GPX Terminal and MP1 Compressor Station will further alter the visual character of the GPLNG Property and create minor and long-term effects. Visual effects are anticipated to be less than those for the GPLNG Terminal, which was placed in an undeveloped site. The GPX Terminal will be constructed contiguous to, and integrated with, the existing facility and will utilize the existing LNG storage tanks and marine berths at the GPLNG Terminal. No new LNG storage tanks or LNG vessel berths will be constructed, and LNG vessel traffic will remain at the currently approved number of transits following construction. Similar to what was concluded in FERC (2005) for the GPLNG Terminal project, the most significant visual impacts of the GPX Project facilities will be limited to a small cluster of residential dwellings located within one (1) mile of the proposed facilities.

Orange County, Texas

The GPX Pipeline facilities will be:

1. Placed in proximity to an existing pipeline facility;
2. Located off a dead-end road; and
3. Likely entirely obscured by forested land.

While the new compressor station and associated facilities will add new elements to the landscape, the visual effects are anticipated to be minor due to surrounding forest.

Calcasieu Parish, Louisiana

The GPX Pipeline facilities will be:

1. Placed adjacent to existing pipeline facilities;
2. Located away from any high use roads; and
3. Obscured from residences by forested land.

The MP 66 Compressor Station and other aboveground facilities are anticipated to have long-term, but minor visual effects due to the surrounding forest.

8.4.5 Protection and Mitigation Measures

Similar to what was concluded in FERC (2005) for the GPLNG Terminal project, due to the size of the GPX Project facilities, no measures can be taken to visually screen the major aboveground facilities in Jefferson County, Texas. Based on the flat terrain and limited potential for screening, visual impacts associated with the GPX Terminal will be unavoidable in that area, and no mitigation is proposed.

GPX Project facilities in Orange County, Texas, and Calcasieu Parish, Louisiana, will likely be entirely obscured from residences by existing forested land, and they are also located away from high use roads. No mitigation is needed to visually shield the GPX Project facilities in these areas.

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Appendix 8A
Land Use Statistics for the GPX Project

DRAFT

Table 8A-1
Land Use Affected during GPX Terminal Construction and Operation¹

Land Use	Facility	Acres Affected		
		Construction	Operation	
		Existing GPLNG Terminal Property	Existing	New
Industrial/Commercial Land	Access Road	3.12	3.12	0.00
	Building/Infrastructure	234.03	234.03	0.00
	Flares	0.00	0.00	0.00
	Liquefaction Trains	11.36	11.36	0.00
	Workspace	2.23	2.23	0.00
	MOF	2.91	2.91	0.00
	<i>Subtotal</i>	253.65	253.65	0.00
Forested Upland	Access Road	0.00	0.00	0.00
	Building/Infrastructure	2.74	0.00	2.74
	Flares	7.88	0.00	7.88
	Liquefaction Trains	0.88	0.00	0.88
	Workspace	33.09	0.00	33.09
	MOF	0.31	0.00	0.31
	<i>Subtotal</i>	44.90	0.00	44.90
Open Land (Uplands)	Access Road	0.03	0.03	0.00
	Building/Infrastructure	2.18	0.55	1.63
	Flares	9.28	0.00	9.28
	Liquefaction Trains	3.79	1.52	2.27
	Workspace	18.10	0.00	18.10
	MOF	1.02	0.08	0.94
	<i>Subtotal</i>	34.40	2.18	32.22
Open Water	SNWW (Includes Ship Slip ²)	55.26 ²	55.26 ²	0.00

Table 8A-1
Land Use Affected during GPX Terminal Construction and Operation¹

Land Use		Facility	Acres Affected		
			Construction	Operation	
			Existing GPLNG Terminal Property	Existing	New
	Intertidal)	MOF	11.00	0.00	11.00
		<i>Subtotal</i>	66.26	55.26 ^{2,3}	11.00
	PUB	Building/Infrastructure	0.30	0.00	0.30
		Workspace	1.00	0.00	1.00
	<i>Subtotal</i>		1.30	0.00	1.30
Wetland	Forested (PFO)	Access Road	0.00	0.00	0.00
		Building/Infrastructure	0.00	0.00	0.00
		Flares	0.02	0.00	0.02
		Liquefaction Trains	0.00	0.00	0.00
		Workspace	0.37	0.00	0.37
		MOF	0.00	0.00	0.00
		<i>Subtotal</i>	0.39	0.00	0.39
	Scrub-shrub (PSS)	Access Road	0.00	0.00	0.00
		Building/Infrastructure	0.00	0.00	0.00
		Flares	0.00	0.00	0.00
		Liquefaction Trains	0.00	0.00	0.00
		Workspace	1.13	0.00	1.13
		MOF	0.00	0.00	0.00
		<i>Subtotal</i>	1.13	0.00	1.13
	Herbaceous (PEM)	Access Road	3.23	2.65	0.58
		Building/Infrastructure	44.13	0.59	43.54
		Flares	1.81	0.00	1.81

Table 8A-1
Land Use Affected during GPX Terminal Construction and Operation¹

Land Use		Facility	Acres Affected		
			Construction	Operation	
			Existing GPLNG Terminal Property	Existing	New
		Liquefaction Trains	114.24	0.17	114.07
		Workspace	230.74	0.00	230.74
		MOF	7.03	0.01	7.02
		<i>Subtotal</i>	401.18	3.42	397.76
Total			803.21 ³	314.51	488.70

¹ Based on aerial interpretation and field surveys.

² No new ship slips are proposed as part of the GPX Project. The existing ship slip will be used during GPX Project operations.

³ All areas, including construction laydown areas, will be graveled or otherwise stabilized to prevent erosion. These areas will remain in a graveled state following construction. The permanent footprint within the operational boundary of the GPX Terminal will be gravel or asphalt.

Table 8A-2 Land Use Affected during GPX Pipeline Construction and Operation ¹				
Land Use	Facility	Acres Affected		
		Construction ²	Operation ³	
			Existing	New
Agriculture (Includes Rice Fields)	MP 1 Compressor Station and NGPL Interconnect	0.00	0.00	0.00
	MP 33 Compressor Station and Texoma Interconnect	0.00	0.00	0.00
	Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
	MP 66 Compressor Station and TETCO Interconnect	0.00	0.00	0.00
	Transco interconnect (MP 68)	0.00	0.00	0.00
	Calcasieu Loop	10.21	2.32	2.67
	ATWS	0.00	0.00	0.00
	Access Road	0.00	0.00	0.00
	<i>Subtotal</i>	10.21 ⁴	2.32 ⁵	2.67 ⁶
Forested Upland (Non-Silviculture)	MP 1 Compressor Station and NGPL Interconnect	1.03	0.00	0.98
	MP 33 Compressor Station and Texoma Interconnect	6.78	0.00	6.78
	Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
	MP 66 Compressor Station and TETCO Interconnect	0.00	0.00	0.00
	Transco interconnect (MP 68)	0.00	0.00	0.00
	Calcasieu Loop	1.82	0.00	0.31
	ATWS	0.50	0.00	0.00
	Access Road	1.67	0.00	1.68
	<i>Subtotal</i>	11.80	0.00	9.75
Industrial/Commercial Land	MP 1 Compressor Station and NGPL Interconnect	2.60	0.90	1.64
	MP 33 Compressor Station and Texoma Interconnect	2.97	0.71	2.26
	Tennessee Gas interconnect (MP 63)	1.08	1.08	0.00
	MP 66 Compressor Station and TETCO Interconnect	0.91	0.82	0.09
	Transco interconnect (MP 68)	2.99	2.19	0.80
	Calcasieu Loop	0.36	0.07	0.18
	ATWS	3.33	0.00	0.00
	Access Road	4.19	0.00	4.19
	<i>Subtotal</i>	18.43	5.77	9.16
Open Land (Uplands)	MP 1 Compressor Station and NGPL Interconnect	<0.01	0.00	0.00
	MP 33 Compressor Station and Texoma Interconnect	0.00	0.00	0.00
	Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
	MP 66 Compressor Station and TETCO Interconnect	0.00	0.00	0.00
	Transco interconnect (MP 68)	0.00	0.00	0.00

Table 8A-2 Land Use Affected during GPX Pipeline Construction and Operation ¹					
Land Use		Facility	Acres Affected		
			Construction ²	Operation ³	
		Existing		New	
		Calcasieu Loop	2.03	0.11	0.77
		ATWS	<0.01	0.00	0.00
		Access Road	0.22	0.00	0.09
		Subtotal	2.25	0.11	0.87
Open Water / Unvegetated Water Bottom (PUB)		MP 1 Compressor Station and NGPL Interconnect	0.00	0.00	0.00
		MP 33 Compressor Station and Texoma Interconnect	0.00	0.00	0.00
		Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	0.02	0.00	0.00
		Transco interconnect (MP 68)	0.00	0.00	0.00
		Calcasieu Loop	0.00	0.00	0.00
		ATWS	0.00	0.00	0.00
		Access Road	0.02	0.00	0.02
		Subtotal	0.02	0.00	0.02
ROW	GP Pipeline ¹	MP 1 Compressor Station and NGPL Interconnect	0.00	0.00	0.00
		MP 33 Compressor Station and Texoma Interconnect	0.58	0.00	0.58
		Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	<0.01	0.00	<0.00
		Transco interconnect (MP 68)	0.00	0.00	0.00
		Calcasieu Loop	6.93	2.22	2.30
		ATWS	0.00	0.00	0.00
		Access Road	0.51	0.00	0.51
		Subtotal	8.02	2.22	3.39
	Third-Party Pipelines	MP 1 Compressor Station and NGPL Interconnect	0.00	0.00	0.00
		MP 33 Compressor Station and Texoma Interconnect	0.02	0.00	0.00
		Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	0.00	0.00	0.00
		Transco interconnect (MP 68)	0.00	0.00	0.00
		Calcasieu Loop	0.00	0.00	0.00
		ATWS	0.00	0.00	0.00
		Access Road	0.02	0.00	0.02
		Subtotal	0.02	0.00	0.02
Silviculture		MP 1 Compressor Station and NGPL Interconnect	0.00	0.00	0.00

Table 8A-2 Land Use Affected during GPX Pipeline Construction and Operation ¹				
Land Use	Facility	Acres Affected		
		Construction ²	Operation ³	
			Existing	New
(Pine Plantation)	MP 33 Compressor Station and Texoma Interconnect	0.00	0.00	0.00
	Tennessee Gas interconnect (MP 63)	0.00	0.00	0.00
	MP 66 Compressor Station and TETCO Interconnect	14.72	0.00	14.72
	Transco interconnect (MP 68)	0.02	0.00	0.02
	Calcasieu Loop	0.21	0.00	0.21
	ATWS	5.63	0.00	0.00
	Access Road	1.92	0.00	1.92
	<i>Subtotal</i>	22.50	0.00	16.87
Wetland	Forested (PFO)	MP 1 Compressor Station and NGPL Interconnect	0.00	0.00
		MP 33 Compressor Station and Texoma Interconnect	0.01	0.01
		Tennessee Gas interconnect (MP 63)	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	0.00	0.00
		Transco interconnect (MP 68)	0.00	0.00
		Calcasieu Loop	0.26	0.09
		ATWS	0.00	0.00
		Access Road	0.00	0.00
		<i>Subtotal</i>	0.27	0.09
	Scrub-shrub (PSS)	MP 1 Compressor Station and NGPL Interconnect	0.00	0.00
		MP 33 Compressor Station and Texoma Interconnect	0.00	0.00
		Tennessee Gas interconnect (MP 63)	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	0.00	0.00
		Transco interconnect (MP 68)	0.00	0.00
		Calcasieu Loop	0.08	0.00
		ATWS	0.00	0.00
		Access Road	0.00	0.00
		<i>Subtotal</i>	0.08	0.00
	Herbaceous (PEM)	MP 1 Compressor Station and NGPL Interconnect	12.28	0.02
		MP 33 Compressor Station and Texoma Interconnect	0.37	0.00
		Tennessee Gas interconnect (MP 63)	0.00	0.00
		MP 66 Compressor Station and TETCO Interconnect	0.18	0.00
		Transco interconnect (MP 68)	0.00	0.00
		Calcasieu Loop	1.64	0.22

Table 8A-2 Land Use Affected during GPX Pipeline Construction and Operation ¹					
Land Use		Facility	Acres Affected		
			Construction ²	Operation ³	
				Existing	New
		ATWS	1.72	0.00	0.00
		Access Road	0.78	0.00	0.78
		<i>Subtotal</i>	16.97	0.24	12.82
Total			90.57	10.75	55.66
¹ Based on aerial interpretation and field surveys. ² Pipe Storage & Contractor Yards to be determined at a later date. ³ Includes 2.77 acres within the HDD permanent ROW. ⁴ Includes 4.22 acres of PEM wetlands used for rice fields. ⁵ Includes 0.80 acres of PEM wetlands used for rice fields. ⁶ Includes 1.23 acres of PEM wetlands used for rice fields.					

Appendix 8B

Pipelines in the Vicinity of the GPX Project Area

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Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
Jefferson County, Texas					
GPX Terminal	Golden Pass Pipeline	Golden Pass Pipeline LLC	Natural Gas	0.00	Pipeline runs longitudinally into the GPX Terminal
	Lousiana Pipeline #1	Natural Gas P/L CO of America, LLC	Natural Gas	0.00	Pipeline runs longitudinally to the south of the GPX Terminal
	Sabine Pass	Buckeye Dev. & Logistics, LLC	Natural Gas	0.00	Pipeline runs latitudinally through the GPX Terminal
	CIPCO (BM-27)	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs latitudinally through the GPX Terminal
	CIPCO (PA-19-EX)	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs latitudinally through the GPX terminal
	Cameron Highway (CHOPS)-0S620	Enterprise Products Operations, LLC	Crude Oil	0.00	Pipeline runs latitudinally through the GPX terminal
	High Island 16"	Panther Interstate PL Energy, LLC	Natural Gas	0.03	Pipeline runs latitudinally to the south of the GPX Terminal
	Lousiana Pipeline #2	Natural Gas P/L CO of America, LLC	Natural Gas	0.00	Pipeline runs longitudinally across the GPX Terminal
	High Island 20"	Panther Interstate PL Energy, LLC	Natural Gas	0.21	Pipeline runs latitudinally southeast of the GPX terminal
	Sabine Pass Trunk Line	Texas Gas Service Co	Natural Gas	0.02	Pipeline runs latitudinally to the east of the GPX Terminal
MP 1 Compressor Station and NGPL interconnect	Cameron Highway (CHOPS)-0S620	Enterprise Products Operations, LLC	Crude Oil	0.00	Pipeline runs longitudinally to the east of the MP 1 Compressor Station
	Golden Pass Pipeline	Golden Pass Pipeline LLC	Natural Gas	0.00	Pipeline runs latitudinally through the south of the MP 1 Compressor Station

Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
	Louisiana Pipeline #1	Natural Gas P/L CO of America, LLC	Natural Gas	0.22	Pipeline runs latitudinally to the south of the MP 1 Compressor Station
	CIPCO (BM-27)	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 1 Compressor Station
	Lousiana Pipeline #2	Natural Gas P/L CO of America, LLC	Natural Gas	0.01	Pipeline runs latitudinally to the south of the MP 1 Compressor Station
	Sabine Pass Trunk Line	Texas Gas Service Co	Natural Gas	0.11	Pipeline runs latitudinally west of the MP 1 Compressor Station
	Sabine Pass	Buckeye Dev. & Logistics, LLC	Natural Gas	0.00	Pipeline runs longitudinally east of the MP 1 Compressor Station
	CIPCO (PA-19-EX)	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 1 Compressor Station
Orange County, Texas					
MP 33 Compressor Station and Texoma interconnect	Green Pipeline	Denbury Green Pipeline - Texas, LLC	Carbon Dioxide	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	TGPL Neches (Acadian) - 354-200	Kinder Morgan Tejas Pipeline LLC	Natural Gas	0.00	Pipeline runs latitudinally through the MP 33 Compressor Station
	GTS Mainline 1 - Class 1	Golden Triangle Storage, INC.	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	GTS Mainline 2 - Class 1	Golden Triangle Storage, INC.	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	GTS ETC Lateral - Class 1	Golden Triangle Storage, INC.	Natural Gas	0.00	Pipeline runs latitudinally through the MP 33 Compressor Station
	Centennial Pipeline System	Marathon Pipeline LLC	Gasoline / Naptha / Raffinate/ Jet Fuel / Oil	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station

Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
	Golden Pass Pipeline	Golden Pass Pipeline LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	GTS ETC Crossover - Class 1	Golden Triangle Storage, INC.	Natural Gas	0.02	Pipeline runs latitudinally to the east of the MP 33 Compressor Station
	CIPCO - BM-31	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	MBEL-VIDO	Texas Eastern Transmission, LP	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	CIPCO - BM-28	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	Beaumot-Louisiana State Line	Enterprise Products Operations, LLC	EP Mix	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	Beaumot-Louisiana State Line	Enterprise Products Operations, LLC	EP Mix	0.15	Pipeline runs longitudinally to the east of the MP 33 Compressor Station
	CIPCO - BM-33	Centana Intrastate Pipeline, LLC	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	20071100 Golden Pass Texoma	Houston Pipeline Company LP	Natural Gas	0.00	Pipeline runs longitudinally into the east side of the MP 33 Compressor Station
	20071101 Golden Pass-FGT	Houston Pipeline Company LP	Natural Gas	0.00	Pipeline runs latitudinally into the east side of the MP 33 Compressor Station
	Orange T.E.T. 8" Main Line	Kinder Morgan Tejas Pipeline LLC	Natural Gas	0.11	Pipeline runs longitudinally through the east side of MP 33 Compressor Station
	Sabine Gas Transmission System	PB Energy Storage Services, INC.	Natural Gas	0.00	Pipeline runs longitudinally through the MP 33 Compressor Station
	CIPCO - BM-31-8	Centana Intrastate Pipeline, LLC	Natural Gas	0.07	Pipeline runs latitudinally to the east of the MP 33 Compressor Station

Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
	TGPL Neches (Acadian) - 354-203	Kinder Morgan Tejas Pipeline LLC	Natural Gas	0.17	Pipeline runs longitudinally through the east of the MP 1 Compressor Station
	FGT 24"	Florida Gas Transmission Co. LLC	Natural Gas	0.01	Pipeline runs longitudinally to the south of the MP 33 Compressor Station
	Loutex NGL 12"	Enterprise Products Operations, LLC	Natural Gas Liquids	0.02	Pipeline runs longitudinally to the south of the MP 33 Compressor Station
	Neale Gathering System	Enerfin Field Services, LLC	Natural Gas	0.18	Pipeline runs longitudinally to the east of the MP 33 Compressor Station
	Loutex Propylene 10"	Enterprise Products Operations, LLC	Propylene	0.03	Pipeline runs longitudinally to the south of the MP 33 Compressor Station
	3004 Texoma-Florida Interconnect	Houston Pipeline Company LP	Natural Gas	0.03	Pipeline runs latitudinally to the east of the MP 33 Compressor Station
	Texas-Louisiana Ethylene	Shell Pipeline Company LP	Ethylene	0.07	Pipeline runs longitudinally to the east of the MP 33 Compressor Station
	4828 Vidor Tetco Interconnect	Houston Pipeline Company LP	Natural Gas	0.16	Pipeline runs latitudinally to the east of the MP 33 Compressor Station
Calcasieu Parish, Louisiana					
MP 66 Compressor Station and TETCO interconnect	Vidor (Line 14)	Texas Eastern Transmission (Duke)	Natural Gas	0.00	Pipeline runs latitudinally through MP 66 Compressor Station
	Transco - LA. West Lat. A	William Gas - Transco	Natural Gas	0.01	Pipeline runs longitudinally to the east of the MP 66 Compressor Station
	Transco - LA West Lat. B	William Gas - Transco	Natural Gas	0.02	Pipeline runs longitudinally to the east of the MP 66 Compressor Station
	Transco - LA West Lat. C	William Gas - Transco	Natural Gas	0.02	Pipeline runs longitudinally to the east of the MP 66 Compressor Station
Tennessee Gas interconnect (MP	Transco - LA. West Lat. A	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the east of the MP 63 Compressor Station

Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
63)	Transco - LA West Lat. B	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the east of the MP 63 Compressor Station
	Transco - LA West Lat. C	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the east of the MP 63 Compressor Station
	800-1	Tennessee Gas Co	Natural Gas	0.06	Pipeline runs latitudinally to the northeast of MP 63
Transco interconnect (MP 68)	Transco	Williams Gas - Talco System	Natural Gas	0.00	Pipeline runs Latitudinally through the MP 68 Compressor Station
	Transco – LA West Lat. C	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally to the west of the MP 68 Compressor Station
	Mainline B	William Gas - Transco	Natural Gas	0.00	Pipeline runs latitudinally to the north of the MP 68 Compressor Station
	Mainline A	William Gas - Transco	Natural Gas	0.01	Pipeline runs latitudinally to the north of the MP 68 Compressor Station
	Mainline C	William Gas - Transco	Natural Gas	0.01	Pipeline runs latitudinally to the north of the MP 68 Compressor Station
	Transco – LA West Lat. B	William Gas - Transco	Natural Gas	0.02	Pipeline runs longitudinally to the west of the MP 68 Compressor Station
	Transco – LA West Lat. C	William Gas - Transco	Natural Gas	0.03	Pipeline runs longitudinally to the west of the MP 68 Compressor Station
Calcasieu Loop	Talco	Golden Pass Pipeline LLC	Natural Gas	0.00	Pipeline runs latitudinally through the Calcasieu Loop ROW
	Vidor (Line 14)	Texas Eastern Transmission (Duke)	Natural Gas	0.00	Pipeline runs longitudinally through the Calcasieu Loop ROW
	Transco - LA. West Lat. A	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the Calcasieu Loop ROW

Table 8B-1
Pipelines within 0.25 mile of the GPX Project Facilities¹

Facility	Pipeline	Listed Operator	Commodity	Approximate Distance from GPX Project Area (Miles)	Description
	Transco - LA. West Lat. B	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the Calcasieu Loop ROW
	Transco - LA. West Lat. C	William Gas - Transco	Natural Gas	0.00	Pipeline runs longitudinally through the Calcasieu Loop ROW
	800-1	Tennessee Gas Co	Natural Gas	0.06	Pipeline runs latitudinally to the East of the Calcasieu Loop ROW

Source: Railroad Commission Pipeline Data from the (RRC, 2013b); ExxonMobil data

¹Does not include GP Pipeline.

Appendix 8C

Coastal Zone Consistency Determination for the GPLNG Terminal and GP Pipeline (July 11, 2005)

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