MITIGATION PLAN

EXXONMOBIL BEAUMONT REFINERY
OLIN ROAD EXPANSION
JEFFERSON COUNTY

I. Project Information

Project Name: Olin Road Expansion
Permit Number: SWG-2018-00136
Project Location: The address of the site is Olin Road, Beaumont, Texas
The Global Positioning System (GPS) location is approximately 30.047439° Latitude and -94.068616° Longitude.
Mitigation Site Location: Pineywoods Mitigation Bank
Watershed: Sabine Lake – HUC # 12040201

II. Avoidance and Minimization

The project area is surrounded by wetlands. The project footprint has been minimized within the limits of practicability for the project purpose and need. Please see Attachment A for wetland impacts.

III. Compensatory Mitigation Plan

The project site is within the secondary service area of the Pineywoods Mitigation Bank. The applicant proposes to purchase credits from that bank for this project. The applicant will purchase credits at a 1.5:1 ratio.

1. Goals and Objectives: The goal of the mitigation is to ensure that compensation is accomplished in an efficient and beneficial manner through purchase of mitigation bank credits.

2. Site Selection: The applicant is negotiating a credit reservation with the Pineywoods Mitigation Bank.

3. Easements or Encumbrances: NA

4. Baseline Information: The Pineywoods Mitigation Bank baseline information is on file at the Galveston District USACE offices.

5. Mitigation Work Plan: NA

6. Determination of Credits: The proposed road expansion and construction of a new security fence will impact a total of 1.61 acres of herbaceous and scrub-shrub wetlands dominated by various sedges and rushes, *Baccharis halimifolia,* and *Salix nigra* (see Attachment A). On-site wetland characteristics were documented during the most recent jurisdictional delineation effort in February 2, 2018 by Horizon Environmental Services, Inc. Data sheets are included in Horizon's February 2018 Jurisdictional Delineation report. A Hydrogeomorphic Model (HGM)

analysis was completed for the wetland assessment area (WAA) being impacted in order to determine the number of functional capacity units (FCU)/credits needed to be purchased from the Pineywoods Mitigation Bank. The wetlands along the west side of Olin Road to be impacted by the expansion are nearly identical in characteristics; therefore, are combined into one WAA (WAA1). The Herbaceous/Shrub Riverine iHGM model was utilized for the analysis. The FCU's were calculated for three different riverine wetland functions including: Temporary Storage and Detention of Surface Water, Maintenance of Plant and Animal Communities, and Removal and Sequestration of Elements and Compounds (Attachment B). Since the project area is in the secondary service area of the Pineywoods Mitigation Bank, a 1.5:1 service area multiplier would apply. Results are shown in Table 1.

TABLE 1:

FCU IMPACTS AND CREDIT PURCHASE REQUIREMENTS

HERBACEOUS/SHRUB WETLANDS

FUNCTION	IMPACT (FCUs)	PMB CREDIT REQUIREMENT (Impact FCU x 1.5 Multiplier)
Temporary Storage (WAA1)	0.7	1.0
Maintenance of Plant and Animal Communities (WAA1 + WAA2)	0.8	1.2
Removal and Sequestration of Elements (WAA1 + WAA2)	0.7	1.0
TOTAL		3.2

The Pineywoods Mitigation Bank sells credits rounded off to the nearest 1/10 credit. Therefore, the total credits that will be purchased are 3.2 total credits.

7. Maintenance Plan: NA

8. Site Protection Instrument: NA

9. Performance Standards: NA

10. Monitoring Requirements: NA

11. Long-term Management Plan: NA

12. Adaptive Management Plan: NA

13. Financial Assurances: The permittee will purchase the total amount of FCUs/credits determined to be needed in Section 6 from the Pineywoods Mitigation Bank prior to the commencement of construction in jurisdictional areas.

HGM Class: Riverine Herbaceous
HGM subclass: LOW GRADIENT
Project: Olin Road Expansion **Area: WAA 1 (west Side)**

Acres: 1.61

Temporary Storage and Detention of Surface Water
Storage Coefficient (FCI) =
SQRT([SQRT(Vdur*Vfreq)]*[Vtopo+[(Vherb+Vmid)/2]]/2)

Storage Coefficient (FCI):
0.43
Acres:
1.61
Functional Unit (FCU) = Coefficient (FCI) * Acres:
0.685

Maintenance of Plant and Animal Communities
Maintenance Coefficient (FCI) =
(Vmid+Vherb+Vconnect)/3

Maintenance Coefficient (FCI):
0.50
Acres:
1.61
Functional Unit (FCU) = Coefficient (FCI) * Acres:
0.805

Removal and Sequestration of Elements and Compounds
Removal Coefficient (FCI) =
((Vwood+Vfreq+Vdur+[(Vtopo+Vherb+Vmid)/3)+[(Vdetritus+Vredox+Vsorpt)/3)])/5)

Removal Coefficient (FCI):
0.42
Acres:
1.61
Functional Unit (FCU) = Coefficient (FCI) * Acres:
0.671

Site Score	VARIABLES	Score	Criteria
0.25	Vdur (duration of flooding)	1.00	In average year, at least 80% of site either floods or ponds for at least 14 days
		0.75	In average year, at least 80% of site either floods or ponds for at least 7 days
		0.50	In average year, 50 to 79% of site floods or ponds for at least 7 days
		0.25	In average year, 25 to 50% of site floods or ponds for at least 7 days
		0.10	In average year, all or portions floods or ponds from 1 - 7 days
		0.00	The area is not subject to flooding or ponding
0.50	Vfrq (frequency of flooding)	1.00	Floods or ponds annually 5 out of 5 years
		0.75	Floods or ponds 3 of 5 years or 4 of 5 years
		0.50	Floods or ponds 2 of 5 years
		0.25	Floods or ponds less than 2 of 5 years
		0.00	The area is not subject to flooding or ponding
0.40	Vtopo (topography)	1.00	> 30% of the site is represented by rises, dips, hummocks, channel sloughs and other topographic features
		0.70	15 to 30% of the site is represented by rises, dips, hummocks, channel sloughs and other topographic features
		0.40	< 15%of the site is covered by rises, dips, hummocks, channel sloughs and other topographic features
		0.10	Smooth, flat, or very gently undulating with little or no topographic relief
0.75	Vherb (herbaceous layer)	1.00	Herbaceous cover averages >75
		0.75	Herbaceous cover averages between 50-75%
		0.50	Herbaceous cover averages between 25-50%
		0.25	Herbaceous cover averages between 1-25%
		0.10	Herbaceous cover is equal to or <1%
0.50	Vmid (midstory)	1.00	Midstory cover averages > 75%
		0.75	Midstory cover averages 50 to 75%
		0.50	Midstory cover averages 1 to 25%
		0.25	Midstory cover averages 25 to 50%
		0.10	The site is openland
0.25	Vconnect (connection to other habitat)	1.00	Wetland plus four habitats and/or surrounded by forested
		0.75	Wetland plus two or more habitat type (other than forested) OR three or more habitat types
		0.50	Wetalnd plus one other habitat types or two other habitat types
		0.25	One other habitat types other than urban habitat
		0.10	Surround by urban (homes, lawn, concrete, etc)
0.25	Vwood (woody vegetation)	1.00	> 90% of area is covered by woody vegetation
		0.75	67 to 89% of area is covered by woody vegetation
		0.50	34 to 66% of area is covered by woody vegetation
		0.25	11 to 33% of are is covered by woody vegetation
		0.10	1 to 10% of area is covered by woody vegetation
0.50	Vdetritus (detritus)	1.00	> 85% of the area possesses an O or A horizon
		0.50	From 11 to 84% of the area possesses an O or A horizon
		0.30	< 10% of the area possesses and O or A horizon
		0.10	Site is plowed
0.10	Vredox (redoximorphic processes)	1.00	Redox features represent >20% of the pedon within the top 4" of soil surface (mottles = many)
		0.10	Redox features < 20% (mottles = common or few)
1.00	Vsorp (sorptive soil properties)	1.00	Site is dominated by clays (clay, clay loam, silty clay loams) or highly organic (value=2/chroma=1; 2/2; 3/1)
		0.50	Site is dominated by loams (silt loams, very fine sandy loams, fine sandy loams, loams) OR non-montmorillonitic clays
		0.10	Site is dominated by sands (sands, loamy fine sands, loamy sands)

Olin Road Expansion — iHGM Summary

	Acres	Temp Stor	Biological	Chemical	Total	Credits x 1.5
WAA1	1.61	0.69	0.81	0.67		
TOTAL		0.69	0.81	0.67	2.16	3.2