

**CONCEPTUAL MITIGATION PLAN FOR THE PROPOSED
PASADENA TERMINAL PROJECT
Harris County, Texas**

Submitted To:
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Submitted For:
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MAGELLAN TERMINALS HOLDINGS, L.P.

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ACRONYMS AND ABBREVIATIONS

AJD	Approved Jurisdictional Determination
BMP	Best Management Practices
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FCU	Functional Capacity Units
iHGM	Hydrogeomorphic
HSC	Houston Ship Channel
IP	Individual Permit
NWP	Nationwide Permit
PFO	Palustrine forested
TNW	Traditionally Navigable Waterbody
USACE	U.S. Army Corps of Engineers

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1.0 BASELINE INFORMATION

1.1 PROJECT DESCRIPTION

Magellan Terminals Holdings L.P. (Magellan) is applying for Individual Permit (IP) authorization from the U.S. Army Corps of Engineers (USACE) for the proposed Pasadena Terminal Project (Project) pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Magellan is submitting the following mitigation plan in accordance with the IP Conditions for mitigation of unavoidable impacts to waters of the U.S., including wetlands, associated with construction of the proposed Project.

Magellan proposes to construct a 188 acre petroleum hydrocarbon bulk storage marine terminal along the Houston Ship Channel (HSC) in Pasadena, Harris County, Texas. Specifically, Magellan proposes to construct up to 86 bulk storage tanks totaling approximately 10.5 million barrels of capacity with associated pumps, piping, pipe racks, manifolds, federally mandated secondary containment structures, roads, and other necessary infrastructure. Proposed waterside improvements include dredging the HSC and abutting upland area for development of an approximate 2,083 foot long by 1,026-foot wide by 45+2-foot deep ship berthing area that includes:

- Four berths capable of accommodating ships
- One berth capable of accommodating barges
- 4,000 linear feet of bulkheading and shoreline protection
- breasting and mooring dolphins
- Two 80-foot by 140-foot dock platforms and support tiers
- One 1,350-foot pipe and approach trestles and support piers outfitted with pipe racks, marine loading arms and docking fenders.

Project plan views and cross sections are located in IP package Attachment G. Representative Photographs are available in IP package Attachment C.

1.2 IMPACTS

A previously documented Approved Jurisdictional Determination (AJD) exists for the entire project area. AJD SWG-2013-00868 was approved March 26, 2014 and indicates 18.7 acres of jurisdictional wetlands (WETLAND 1, 2 and 5) and 28.7 acres of non-jurisdictional wetlands (WETLAND 3 and 4) on site. Since non-jurisdictional wetlands fall outside of the purview of

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USACE regulation they will not be included in permitting or mitigation discussions. ^{17.5} ~~All 18.7~~ acres of jurisdictional wetlands will be permanently impacted by the proposed Project.

Since there can be no net loss of wetland acreage as a result of the proposed Project, this mitigation plan will focus on proposed mitigation for unavoidable impacts. Please see the Impact Table in Attachment E of the IP package for a summary of wetland and waterbody impacts within the proposed Project Area.

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2.0 AVOIDANCE AND MINIMIZATION OF IMPACTS

Location and construction methods are limited due to Project constraints including property size, and practicability; the proposed Project has been designed to avoid and minimize adverse effects to waters of the U.S. (including wetlands) to the maximum extent practicable. Attachment E of the IP package (Alternatives Analysis) provides details into alternative locations and Project configurations that were considered for the proposed Project.

Best management practices (BMP's) will be utilized during all stages of construction to control off-site sedimentation and negative effects to water quality. These BMP's would include filter berms and socks for water discharges and diversion dikes, silt fencing and hay bales for stormwater control. Construction areas adjacent to wetlands and waterbodies not impacted by construction would have BMP's installed where effective and appropriate.

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3.0 MITIGATION PROPOSAL OPTIONS

3.1 RATIONALE FOR WETLAND MITIGATION

Under the Clean Water Act Section 404(b)(1) Guidelines (codified at 40 CFR 230) and the USACE regulations (codified at 33 CFR 320.4(r)), the USACE is obligated to require mitigation (i.e., compensation) for any unavoidable impacts to a wetland as a condition of permit approval. In compliance with these regulations, Magellan is proposing mitigation for the permanent impacts to 18.7 acres of PFO wetlands. No other waters of the U.S. are impacted by the proposed project. The remainder of this document focuses on Magellan's proposed mitigation strategy.

3.2 WETLANDS MITIGATION

18.7 acres of jurisdictional wetlands will be permanently impacted by the proposed Project. Using 40 CFR 230 as guidance, given the complexity of the required design of on-site mitigation, the likelihood of success, and the few acres of wetlands that could be created, it was determined that investing in a mitigation bank or trust would be more beneficial to the aquatic environment than created, on-site wetlands. Given that all wetland impacts are located within the Buffalo Bayou - San Jacinto River watershed, the Gin City Mitigation Bank ("Gin City") provides the most likely alternative to on-site mitigation when considering the location of wetland impacts to the aquatic environment, the proximity of other mitigation banks, and credit purchase required.

3.2.1 Proposed Mitigation Site

The proposed Project is located within Gin City's secondary service area. Gin City's wetland community is similar in plant and wildlife habitat to the wetlands that will be impacted by the proposed Project. Thus, the potential for restoring aquatic resource functions and values of impacted wetlands within this watershed is readily accomplished by utilizing the Gin City. Purchasing mitigation bank credits at the Gin City is considered the preferred and most likely mitigation option at this time. If Magellan identifies alternate mitigation options preferable to the Gin City mitigation bank option before final project approval, Magellan will provide an alternate conceptual mitigation plan to the USACE.

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4.0 CREDIT PURCHASE

Gin City establishes functional capacity units ("FCU") to derive credits necessary to offset Project impacts. Gin City lists the three major FCU's as: (1) temporary storage and detention of surface water; (2) maintenance of plant and animal community; and (3) removal and sequestration of elements and compounds. Using the iHGM assessment tool and the location of the project area within the secondary service area of Gin City (which requires an additional 1.5 secondary service area multiplier), approximately ~~56.4~~^{35.2} FCU's will be required to offset the wetland impacts of the proposed project. The total FCU amount required will be determined by the USACE prior to permit approval. Please See Appendix A of this document for detailed tables of the proposed impacts and iHGM assessments.

Gin City currently has credits available and these credits are available to the permittee (Magellan). Upon conceptual approval of this IP, Magellan will provide proof of mitigation credit purchase to the USACE Galveston before final approval. Additionally, if Magellan identifies alternate mitigation options preferable to the Gin City mitigation bank option before final project approval, Magellan will provide an alternate conceptual mitigation plan to the USACE.

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5.0 MITIGATION SUMMARY

Based on all proposed Project factors and available mitigation options, Magellan is proposing to implement this proposed mitigation plan with Gin City. The proposed mitigation includes a combination of purchasing mitigation credits to assist Gin City with wetland preservation and improvement, coupled with on-site avoidance and minimization, which provides an equitable mitigation package to compensate for unavoidable impacts to jurisdictional wetlands. Additionally, the proposed mitigation meets the proposed Project goals and objectives as well as the proposed Project economics.

Upon conceptual approval of this IP, Magellan will provide proof of mitigation credit purchase to the USACE Galveston before final approval. Additionally, if Magellan identifies alternate mitigation preferable to the Gin City mitigation bank option before final project approval, Magellan will provide an alternate conceptual mitigation plan to the USACE.

While mitigation banking through Gin City is the preferred mitigation option at this time, alternative mitigation options are still being evaluated. If a preferred alternative mitigation plan is identified by Magellan before the finalization of the permit process, then a new conceptual mitigation plan would be provided to the USACE for their approval.

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iHGM Plot Scores					
iHGM 1 (WETLAND 1)		iHGM 2 (WETLAND 2)		iHGM 3 (WETLAND 5)	
Category	Score	Category	Score	Category	Score
Vdur	1.00	Vdur	1.00	Vdur	1.00
Vfreq	0.50	Vfreq	0.50	Vfreq	0.50
Vtopo	1.00	Vtopo	0.10	Vtopo	0.40
VCwd	0.50	VCwd	0.50	VCwd	0.50
Vwood	0.50	Vwood	0.75	Vwood	0.50
Vtree	0.30	Vtree	0.30	Vtree	0.30
Vrich	0.60	Vrich	0.80	Vrich	0.60
Vbasal	1.00	Vbasal	1.00	Vbasal	0.60
Vdensity	0.60	Vdensity	0.60	Vdensity	0.60
Vmid	0.50	Vmid	0.25	Vmid	0.50
Vherb	0.30	Vherb	0.30	Vherb	0.50
Vdetritus	0.50	Vdetritus	0.50	Vdetritus	0.50
Vredox	1.00	Vredox	1.00	Vredox	0.10
Vsorbit	1.00	Vsorbit	1.00	Vsorbit	1.00
Vconnect	0.50	Vconnect	0.75	Vconnect	0.50

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Wetland Impacts and iHGM Assessments					
Name	Wetland Type	Impact Acreage	Temporary Storage & Detention of Storage Water Score (TSSW)	Maintain Plant and Animal Community Score (MPAC)	Removal & Sequestration of Elements & Compounds Score (RSEC)
WETLAND 1	Forested	0.5	0.68	0.52	0.70
WETLAND 2	Forested	17.0	0.56	0.60	0.71
Sub Wetland Acreage		17.5			

FCU Calculations				
Name	TSSW * Acreage * 1.5 (Service Area Multiplier)	MPAC * Acreage * 1.5 (Service Area Multiplier)	RSEC * Acreage * 1.5 (Service Area Multiplier)	Total FCUs
WETLAND 1	0.51	0.39	0.53	
WETLAND 2	14.28	15.30	18.11	
Subtotal	14.79	15.69	18.64	
Total Expected FCU's Required From Gin City	18.64	18.64	18.64	55.92