WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: Cameron–Creole Maintenance (CS–4a)

The WVA analysis for project CS–4a includes 4 areas: Area 1, which is an intermediate area; Area 2, which is an intermediate area predicted to convert to brackish after Target Year (TY) 10 under Future–Without–Project (FWOP) conditions; Area 3, which is a brackish area; and Area 4, which is a saline area.

Area 1 is assessed using the Fresh/Intermediate WVA model. Area 2 is assessed using the Fresh/Intermediate WVA model for FWP condition and TY's 0, 1, and 10 under FWOP condition; and using the Brackish WVA model for TY 20 under FWOP condition. Area 3 is assessed using the Brackish WVA model. Area 4 is assessed using the Saline WVA model. Total WVA benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summarized below:

Area	AAHU's
1	565.81
2	–37.56
3	–43.62
4	–30.38

TOTAL BENEFITS = 454 AAHU'S

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Cameron–Creole Maintenance (CS–4a)
Area 1
Condition: Future Without Project

Marsh type acres:
Fresh.....
Intermediate.. 15228

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	67	0.70
V2	% Aquatic	75	0.78	76	0.78	85	0.87
V3	Interspersion	%		%		%	
	Class 1	15	0.39	15	0.39	18	0.40
	Class 2	10		10		7	
	Class 3	15		15		15	
	Class 4	60		60		60	
	Class 5						
V4	%OW <= 1.5ft	70	0.89	71	0.90	80	1.00
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	2		2		2	
V6	Access Value	0.50	0.65	0.50	0.65	0.50	0.65
		HSI =	0.71	HSI =	0.71	HSI =	0.75

Project..... Cameron–Creole Maintenance (CS–4a)
FWOP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	63	0.67				
V2	% Aquatic	30	0.37				
V3	Interspersion	%		%		%	
	Class 1	15	0.39				
	Class 2	10					
	Class 3	15					
	Class 4	60					
	Class 5						
V4	%OW <= 1.5ft	65	0.83				
V5	Salinity (ppt)						
	fresh		0.80				
	intermediate	5					
V6	Access Value	1.00	1.00				
		HSI =	0.62	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Cameron–Creole Maintenance (CS–4a)
Area 1
Condition: Future With Project

Marsh type acres:
Fresh.....
Intermediate.. 15228

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	67	0.70
V2	% Aquatic	75	0.78	76	0.78	85	0.87
V3	Interspersion	%		%		%	
	Class 1	15	0.39	15	0.39	18	0.40
	Class 2	10		10		7	
	Class 3	15		15		15	
	Class 4	60		60		60	
	Class 5						
V4	%OW <= 1.5ft	70	0.89	71	0.90	80	1.00
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	2		2		2	
V6	Access Value	0.50	0.65	0.50	0.65	0.50	0.65
		HSI =	0.71	HSI =	0.71	HSI =	0.75

Project..... Cameron–Creole Maintenance (CS–4a)
FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	70	0.73				
V2	% Aquatic	85	0.87				
V3	Interspersion	%		%		%	
	Class 1	18	0.41				
	Class 2	7					
	Class 3	20					
	Class 4	55					
	Class 5						
V4	%OW <= 1.5ft	85	1.00				
V5	Salinity (ppt)						
	fresh		1.00				
	intermediate	2					
V6	Access Value	0.50	0.65				
		HSI =	0.76	HSI =		HSI =	

AAHU CALCULATION

Project: Cameron–Creole Maintenance (CS–4a)
Area 1

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	15228	0.71	10825.36	
1	15228	0.71	10862.42	10843.89
10	15228	0.75	11415.61	100251.16
20	15228	0.62	9375.62	103956.14
			AAHU's =	10752.56

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	15228	0.71	10825.36	
1	15228	0.71	10862.42	10843.89
10	15228	0.75	11415.61	100251.16
20	15228	0.76	11638.87	115272.40
			AAHU's	11318.37

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	11318.37
B. Future Without Project AAHU's =	10752.56
Net Change (FWP – FWOP) =	**565.81**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Cameron–Creole Maintenance (CS–4a)
Area 2 (to convert to brackish after TY10, FWOP)
Condition: Future Without Project

Marsh type acres:
Fresh.....
Intermediate.. 8900

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	66	0.69
V2	% Aquatic	50	0.55	50	0.55	55	0.60
V3	Interspersion	%		%		%	
	Class 1	50	0.73	50	0.73	52	0.74
	Class 2	25		25		23	
	Class 3	15		15		15	
	Class 4	10		10		10	
	Class 5						
V4	%OW <= 1.5ft	65	0.83	65	0.83	70	0.89
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	4		4		4	
V6	Access Value	0.50	0.65	0.50	0.65	0.50	0.65
		HSI =	0.69	HSI =	0.69	HSI =	0.71

Project..... Cameron–Creole Maintenance (CS–4a)
FWOP

Variable		TY 20 (see Brackish model)					
				Value	SI	Value	SI
V1	% Emergent						
V2	% Aquatic						
V3	Interspersion	%		%		%	
	Class 1						
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft						
V5	Salinity (ppt)						
	fresh						
	intermediate						
V6	Access Value						
		HSI =		HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Brackish Marsh

Project..... Cameron–Creole Maintenance (CS–4a) Marsh type acres..... 8900
Area 2 (to convert to brackish after TY10, FWOP)
Condition: Future Without Project

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	62	0.66				
V2	% Aquatic	40	0.58				
V3	Interspersion	%		%		%	
	Class 1	50	0.73				
	Class 2	25					
	Class 3	15					
	Class 4	10					
	Class 5						
V4	%OW <= 1.5ft	60	0.87				
V5	Salinity (ppt)	8	1.00				
V6	Access Value	1.00	1.00				
		HSI =	0.74	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Cameron–Creole Maintenance (CS–4a)
Area 2 (to convert to brackish after TY10, FWOP)
Condition: Future With Project

Marsh type acres:
Fresh.....
Intermediate.. 8900

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	66	0.69
V2	% Aquatic	50	0.55	50	0.55	55	0.60
V3	Interspersion	%		%		%	
	Class 1	50	0.73	50	0.73	52	0.74
	Class 2	25		25		23	
	Class 3	15		15		15	
	Class 4	10		10		10	
	Class 5						
V4	%OW <= 1.5ft	65	0.83	65	0.83	70	0.89
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	4		4		4	
V6	Access Value	0.50	0.65	0.50	0.65	0.50	0.65
		HSI =	0.69	HSI =	0.69	HSI =	0.71

Project..... Cameron–Creole Maintenance (CS–4a)
FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	67	0.70				
V2	% Aquatic	55	0.60				
V3	Interspersion	%		%		%	
	Class 1	52	0.74				
	Class 2	23					
	Class 3	16					
	Class 4	9					
	Class 5						
V4	%OW <= 1.5ft	75	0.94				
V5	Salinity (ppt)						
	fresh		1.00				
	intermediate	4					
V6	Access Value	0.50	0.65				
		HSI =	0.72	HSI =		HSI =	

AAHU CALCULATION

Project: Cameron–Creole Maintenance (CS–4a)
Area 2 (to convert to brackish after TY10, FWOP)

Future Without Project			Total	Cummulative	
TY	Acres	x HSI	HU's	HU's	
0	8900	0.69	6109.40		
1	8900	0.69	6109.40	6109.40	
10	8900	0.71	6317.72	55922.01	
20	8900	0.74	6544.23	64309.75	*
			AAHU's =	6317.06	

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	8900	0.69	6109.40	
1	8900	0.69	6109.40	6109.40
10	8900	0.71	6317.72	55922.01
20	8900	0.72	6394.00	63558.56
			AAHU's	6279.50

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	6279.50
B. Future Without Project AAHU's =	6317.06
Net Change (FWP – FWOP) =	**–37.56**

* HSI calculated using Brackish model

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project..... Cameron – Creole Maintenance (CS – 4a) Marsh type acres..... 26700
Area 3
Condition: Future Without Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	64	0.68
V2	% Aquatic	5	0.34	5	0.34	8	0.36
V3	Interspersion	%		%		%	
	Class 1	5	0.40	5	0.40	5	0.40
	Class 2	30		30		30	
	Class 3	20		20		20	
	Class 4	45		45		45	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	50	0.74
V5	Salinity (ppt)	6	1.00	6	1.00	6	1.00
V6	Access Value	0.50	0.55	0.50	0.55	0.50	0.55
		HSI =	0.60	HSI =	0.60	HSI =	0.60

Project..... Cameron – Creole Maintenance (CS – 4a)
FWOP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	60	0.64				
V2	% Aquatic	2	0.31				
V3	Interspersion	%		%		%	
	Class 1	5	0.39				
	Class 2	25					
	Class 3	23					
	Class 4	47					
	Class 5						
V4	%OW <= 1.5ft	40	0.61				
V5	Salinity (ppt)	11	0.85				
V6	Access Value	1.00	1.00				
		HSI =	0.61	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project..... Cameron–Creole Maintenance (CS–4a) Marsh type acres..... 26700
Area 3
Condition: Future With Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	64	0.68
V2	% Aquatic	5	0.34	5	0.34	8	0.36
V3	Interspersion	%		%		%	
	Class 1	5	0.40	5	0.40	5	0.40
	Class 2	30		30		30	
	Class 3	20		20		20	
	Class 4	45		45		45	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	50	0.74
V5	Salinity (ppt)	6	1.00	6	1.00	6	1.00
V6	Access Value	0.50	0.55	0.50	0.55	0.50	0.55
		HSI =	0.60	HSI =	0.60	HSI =	0.60

Project..... Cameron–Creole Maintenance (CS–4a)
FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68				
V2	% Aquatic	8	0.36				
V3	Interspersion	%		%		%	
	Class 1	5	0.40				
	Class 2	30					
	Class 3	20					
	Class 4	45					
	Class 5						
V4	%OW <= 1.5ft	50	0.74				
V5	Salinity (ppt)	6	1.00				
V6	Access Value	0.50	0.55				
		HSI =	0.60	HSI =		HSI =	

AAHU CALCULATION

Project: Cameron–Creole Maintenance (CS–4a)
Area 3

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	26700	0.60	15944.59	
1	26700	0.60	15944.59	15944.59
10	26700	0.60	16087.80	144145.77
20	26700	0.61	16262.30	161750.50
			AAHU's =	16092.04

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	26700	0.60	15944.59	
1	26700	0.60	15944.59	15944.59
10	26700	0.60	16087.80	144145.77
20	26700	0.60	16087.80	160878.05
			AAHU's	16048.42

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	16048.42
B. Future Without Project AAHU's =	16092.04
Net Change (FWP – FWOP) =	–43.62

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Saline Marsh

Project.....Cameron–Creole Maintenance (CS–4a) Marsh type acres..... 3248
Area 4
Condition: Future Without Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	64	0.68
V2	% Aquatic	50	0.65	50	0.65	60	0.72
V3	Interspersion	%	0.38	%	0.38	%	0.38
	Class 1						
	Class 2	30		30		30	
	Class 3	30		30		30	
	Class 4	40		40		40	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	50	0.74
V5	Salinity (ppt)	9	0.60	9	0.60	9	0.60
V6	Access Value	0.50	0.55	0.50	0.55	0.50	0.55
		HSI =	0.62	HSI =	0.62	HSI =	0.63

Project.....Cameron–Creole Maintenance (CS–4a)
FWOP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	60	0.64				
V2	% Aquatic	5	0.34				
V3	Interspersion	%	0.36	%		%	
	Class 1						
	Class 2	25					
	Class 3	30					
	Class 4	45					
	Class 5						
V4	%OW <= 1.5ft	40	0.61				
V5	Salinity (ppt)	13	1.00				
V6	Access Value	1.00	1.00				
		HSI =	0.67	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Saline Marsh

Project..... Cameron–Creole Maintenance (CS–4a) Area 4 — Marsh type acres..... 3248

Condition: Future With Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68	64	0.68	64	0.68
V2	% Aquatic	50	0.65	50	0.65	60	0.72
V3	Interspersion	%	0.38	%	0.38	%	0.38
	Class 1						
	Class 2	30		30		30	
	Class 3	30		30		30	
	Class 4	40		40		40	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	50	0.74
V5	Salinity (ppt)	9	0.60	9	0.60	9	0.60
V6	Access Value	0.50	0.55	0.50	0.55	0.50	0.55
		HSI =	0.62	HSI =	0.62	HSI =	0.63

Project..... Cameron–Creole Maintenance (CS–4a)

FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	64	0.68				
V2	% Aquatic	60	0.72				
V3	Interspersion	%	0.38	%		%	
	Class 1						
	Class 2	30					
	Class 3	30					
	Class 4	40					
	Class 5						
V4	%OW <= 1.5ft	50	0.74				
V5	Salinity (ppt)	9	0.60				
V6	Access Value	0.50	0.55				
		HSI =	0.63	HSI =		HSI =	

AAHU CALCULATION

Project: Cameron–Creole Maintenance (CS–4a)
Area 4

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3248	0.62	2027.19	
1	3248	0.62	2027.19	2027.19
10	3248	0.63	2044.84	18324.12
20	3248	0.67	2166.36	21056.00
			AAHU's =	2070.37

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3248	0.62	2027.19	
1	3248	0.62	2027.19	2027.19
10	3248	0.63	2044.84	18324.12
20	3248	0.63	2044.84	20448.39
			AAHU's	2039.98

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	2039.98
B. Future Without Project AAHU's =	2070.37
Net Change (FWP – FWOP) =	**–30.38**