APPENDIX B: WVA FACT SHEETS

Fact Sheet for BA-1 East

Current Site Conditions
Land: 1.75 acres
Water: 72.2 acres
Total: 73.95 acres

Model
Fresh/Intermediate Marsh – Vegetation classifications from CRMS stations 4245 (to the north) and 4218 (to the south) were used to select this model for an intermediate site.

Land Loss
USGS data for the extended project boundary (Perot/Rigolettes - 40,220 acres) shows land loss in the project area estimated to be -0.32% per year for the period 1985 to 2016. The loss rate of the created marsh is assumed to be 50% of the background loss rate until the year that 10 inches of accretion occurs post construction. After that the loss rate used in our calculations reverts back to the actual background rate. An average accretion rate of 10 mm/year was used for this site (Jarvis et al. 2010, ERDC publication).

Sea Level Rise Effects
The background loss rate was adjusted by the projected effects of the medium relative sea level rise (RSLR) scenario for these analyses. The nearest water level gauge to the project area that is listed for use with the sea-level change curve calculator on the corpsclimate.us website is the Bayou Barataria at Barataria gauge. The estimated subsidence rate is 5.3 mm/yr. The Eustatic sea level rise was assumed to be 1.7 mm/yr.

Target Years
Standard target years 0, 1, 3, 5, 6, and 50 were used. An additional target year (TY32) was selected because that is the point at which 10 inches of soil accretion occurs post construction and the loss rates used in our calculations change.

Variable Inputs and Assumptions
V1. FWOP and FWP: Baseline data (% emergent) was provided by the consultant for Jefferson Parish. We used our land loss calculator (and information described above) for TY1 – TY50.

V2. FWOP: We used 95% (TY0 – TY6) based on site visit, and HSDRRS assumption of 30% of baseline for TY50. A linear relationship between TY6 and TY50 was assumed for TY32.
FWP: The HSDRRS assumptions were used for TY1-TY50 (TY1 0%, TY3 0%, TY5 baseline, TY6 increase baseline by 15%, TY32 increase baseline by 15%, and TY50 50% of baseline).

V3. FWOP: The HSDRRS assumptions were used (Class 5 for all target years).
FWP: The HSDRRS assumptions were used for TY1-TY6 (TY1 100% Class 5, TY3 100% Class 3, TY5 50% Class 3 and 50% Class1, TY6 100% Class 1), then USGS interspersion protocols were used for TY32 (>82% emergent = Class 1) and TY50 (>60% <= 82% emergent = Class 2).

V4. FWOP: We used survey data provided by the consultant for Jefferson Parish to determine the percentage of open water that is less than or equal to 1.5 feet deep. We used this percentage (78%) for TY0 – TY6. The HSDRRS assumption that 1/3 of SOW becomes deep by TY50 was used, and a linear relationship between TY6 and TY50 was assumed for the TY32 value.
FWP: The HSDRRS assumptions were used for TY1-TY6 (all marsh lost becomes shallow) and TY50 (1/6th of shallow open water becomes deep), with linear relationship between TY6 and TY50 assumed for the TY32 value.

V5: FWOP and FWP: BA-1 East is located about half way between CRMS stations 4245 (to the north) and 4218 (to the south). Mean salinity for CRMS-4245 from 5/2008 through 5/2018 was 1.24 ppt. Mean salinity for CRMS-4218 from 2/2008 through 5/2018 was 1.67 ppt. We used the average of those (1.46) across all years with and without project.

V6: FWOP and FWP: Project will have minimal or no containment so open system was selected for all target years.

Project Benefits
Acres of emergent marsh remaining at 50 years: 59.05 acres
Total benefits in AAHUs due to the project: 17.20 AAHUs

TOTAL BENEFITS IN AAHUs DUE TO PROJECT

A. Emergent Marsh Habitat Net AAHUs =	51.88
B. Open Water Habitat Net AAHUs =	-55.63
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**17.20**

Fact Sheet for BA-1 West

Current Site Conditions
Land: 1.59 acres
Water: 58.9 acres
Total: 60.49 acres

Model
Fresh/Intermediate Marsh – Vegetation classifications from CRMS stations 4245 (to the north) and 4218 (to the south) were used to select this model for an intermediate site.

Land Loss
USGS data for the extended project boundary (Perot/Rigolettes - 40,220 acres) shows land loss in the project area estimated to be -0.32% per year for the period 1985 to 2016. The loss rate of the created marsh is assumed to be 50% of the background loss rate until the year that 10 inches of accretion occurs post construction. After that the loss rate used in our calculations reverts back to the actual background rate. An average accretion rate of 10 mm/year was used for this site (Jarvis et al. 2010, ERDC publication).

Sea Level Rise Effects
The background loss rate was adjusted by the projected effects of the medium relative sea level rise (RSLR) scenario for these analyses. The nearest water level gauge to the project area that is listed for use with the sea-level change curve calculator on the corpsclimate.us website is the Bayou Barataria at Barataria gauge. The estimated subsidence rate is 5.3 mm/yr. The Eustatic sea level rise was assumed to be 1.7 mm/yr.

Target Years
Standard target years 0, 1, 3, 5, 6, and 50 were used. An additional target year (TY32) was selected because that is the point at which 10 inches of soil accretion occurs post construction and the loss rates used in our calculations change.

Variable Inputs and Assumptions
V1. FWOP and FWP: Baseline data (% emergent) was provided by the consultant for Jefferson Parish. We used our land loss calculator (and information described above) for TY1 – TY50.

V2. FWOP: We used 95% (TY0 – TY6) based on site visit for BA-1 East, and HSDRRS assumption of 30% of baseline for TY50. A linear relationship between TY6 and TY50 was assumed for TY32.
FWP: The HSDRRS assumptions were used for TY1-TY50 (TY1 0%, TY3 0%, TY5 baseline, TY6 increase baseline by 15%, TY32 increase baseline by 15%, and TY50 50% of baseline).

V3. FWOP: The HSDRRS assumptions were used (Class 5 for all target years).
FWP: The HSDRRS assumptions were used for TY1-TY6 (TY1 100% Class 5, TY3 100% Class 3, TY5 50% Class 3 and 50% Class1, TY6 100% Class 1), then USGS interspersion protocols were used for TY32 (>82% emergent = Class 1) and TY50 (>60% <= 82% emergent = Class 2).

V4. FWOP: We used survey data from BA-1 East that was provided by the consultant for Jefferson Parish to determine the percentage of open water that is less than or equal to 1.5 feet deep. We used this percentage (78%) for TY0 – TY6. The HSDRRS assumption that 1/3 of SOW becomes deep by TY50 was used, and a linear relationship between TY6 and TY50 was assumed for the TY32 value.

FWP: The HSDRRS assumptions were used for TY1-TY6 (all marsh lost becomes shallow) and TY50 (1/6th of shallow open water becomes deep), with linear relationship between TY6 and TY50 assumed for the TY32 value.

V5: FWOP and FWP: BA-1 West is located about half way between CRMS stations 4245 (to the north) and 4218 (to the south). Mean salinity for CRMS-4245 from 5/2008 through 5/2018 was 1.24 ppt. Mean salinity for CRMS-4218 from 2/2008 through 5/2018 was 1.67 ppt. We used the average of those (1.46) across all years with and without project.

V6: FWOP: An open system was selected for all target years.
FWP: We used the HSDRRS assumptions (closed system for TY1 and TY3, open system for all target years after that) for this project because it would require the construction of containment features.

Project Benefits
Acres of emergent marsh remaining at 50 years: 48.29 acres
Total benefits in AAHUs due to the project: 13.97 AAHUs

TOTAL BENEFITS IN AAHUs DUE TO PROJECT

A. Emergent Marsh Habitat Net AAHUs =	42.26
B. Open Water Habitat Net AAHUs =	-45.43
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**13.97**

Fact Sheet for BA-3

Current Site Conditions
Land: 0.1 acres
Water: 63.1 acres
Total: 63.2 acres

Model
Brackish Marsh – Vegetation classifications from CRMS station 3565 (located within the site) was used to select this model for a brackish site.

Land Loss
USGS data for the extended project boundary (Little Lake – 59,158 acres) shows land loss in the project area estimated to be -1.29% per year for the period 1985 to 2016. The loss rate of the created marsh is assumed to be 50% of the background loss rate until the year that 10 inches of accretion occurs post construction. After that the loss rate used in our calculations reverts back to the actual background rate. An average accretion rate of 9 mm/year was used for this site (Jarvis et al. 2010, ERDC publication).

Sea Level Rise Effects
The background loss rate was adjusted by the projected effects of the medium relative sea level rise (RSLR) scenario for these analyses. The nearest water level gauge to the project area that is listed for use with the sea-level change curve calculator on the corpsclimate.us website is the Bayou Barataria at Barataria gauge. The estimated subsidence rate is 5.3 mm/yr. The Eustatic sea level rise was assumed to be 1.7 mm/yr.

Target Years
Standard target years 0, 1, 3, 5, 6, and 50 were used. An additional target year (TY35) was selected because that is the point at which 10 inches of soil accretion occurs post construction and the loss rates used in our calculations change.

Variable Inputs and Assumptions
V1. FWOP and FWP: Baseline data (% emergent) was provided by the consultant for Jefferson Parish. We used our land loss calculator (and information described above) for TY1 – TY50.

V2. FWOP: We used 40% (TY0 – TY6) based on site visit, and HSDRRS assumption of 15% of baseline for TY50. A linear relationship between TY6 and TY50 was assumed for TY32.
FWP: The HSDRRS assumptions were used for TY1-TY50 (TY1 0%, TY3 0%, TY5 baseline, TY6 increase baseline by 10%, TY35 increase baseline by 10%, and TY50 25% of baseline).

V3. FWOP: The HSDRRS assumptions were used (Class 5 for all target years).
FWP: The HSDRRS assumptions were used for TY1-TY6 (TY1 100% Class 5, TY3 100% Class 3, TY5 50% Class 3 and 50% Class1, TY6 100% Class 1), then USGS interspersion protocols were used for TY35 (>60% <= 82% emergent = Class 2) and TY50 (>40% <= 60% emergent = Class 3).

V4. FWOP: We used survey data provided by the consultant for Jefferson Parish to determine the percentage of open water that is less than or equal to 1.5 feet deep. We used this percentage (76%) for TY0 – TY6. The HSDRRS assumption that 1/3 of SOW becomes deep by TY50 was used, and a linear relationship between TY6 and TY50 was assumed for the TY35 value.
FWP: The HSDRRS assumptions were used for TY1-TY6 (all marsh lost becomes shallow) and TY50 (1/6th of shallow open water becomes deep), with linear relationship between TY6 and TY50 assumed for the TY35 value.

V5: FWOP and FWP: CRMS 3565 is located within the site. We used mean salinity from that station from 1/2012 through 5/2018 (4.54 ppt) across all years with and without project.

V6: FWOP and FWP: Project will have minimal or no containment so open system was selected for all target years.

Project Benefits
Acres of emergent marsh remaining at 50 years: 30.92 acres
Total benefits in AAHUs due to the project: 19.33 AAHUs

TOTAL BENEFITS IN AAHUs DUE TO PROJECT

A. Emergent Marsh Habitat Net AAHUs =	36.56
B. Open Water Habitat Net AAHUs =	-25.47
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**19.33**