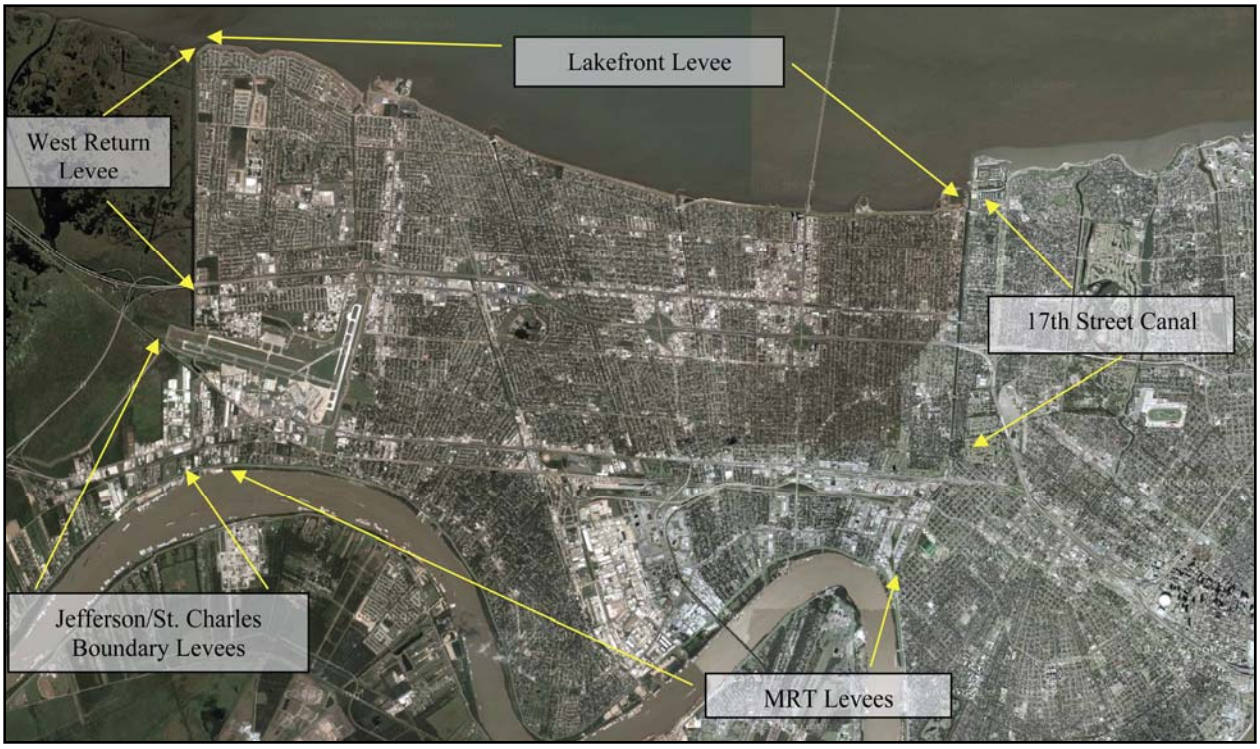
Appendix 3
Jefferson Basin

Field Reconnaissance and Definition of Reaches in Jefferson East Bank Basin

The basin for Jefferson East Bank has been broken down into five distinct sections to develop both reaches and features definitions for the risk model. These sections are based on General Design Memorandum (GDMs) published by the New Orleans District, USACE and updated by field reconnaissance by IPET Team 10. The Jefferson East Bank Basin has been defined by the following sections shown in the figure below:

1. West Return Levee
2. Lakefront Levee
3. 17th Street Canal
4. Mississippi River Levees
5. Jefferson/St. Charles Boundary Levees



Overview of Jefferson Parish Basins

Elevations

All vertical elevations in this report are defined in **NAVD88 2004.65** datum unless otherwise noted within the text. All horizontal datums are defined in State Plane Coordinates NAD83 – 1702 Louisiana South, UTM NAD83 Zone 15, and GCS NAD83.

Section 1: Kenner (West) Return Levee

References

The descriptions of the levees/floodwalls, stationing around the circumference of the polder, and terminology for associated features are referenced to the following document:

> DEPARTMENT OF THE ARMY, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, "Jefferson / St. Charles Parish Return Levee", Design Memorandum No. 17a – General Design, New Orleans, LA, July 1987.

Narrative

The Kenner (West) Return Levee has a T-wall structure for the entire length along the St. Charles Parish border. This section begins at the northerly end of the runway for the New Orleans International Airport and ends at the Lake Ponchatrain levee. This section has been broken down into four subsections of incrementally increasing wall height. Reach 1 is from

station 0+00 W/L to 29+50 W/L is a T-wall section with an design elevation of 12.8. The elevation changes from station 29+50 W/L to 31+75 W/L, where the T-Wall crosses under I-10 and the design elevation changes to 12.3 feet. The elevation of the T-wall changes back to design elevation 12.8 feet from station 31+75 W/L to 65+20.40 W/L. Reach 2 has a transition zone in the wall from station 65+20.40 W/L to 66+02.90 W/L where the T-wall design elevation increases to 13.3 feet. Reach 2 remains at the same elevation until station 130+70.00 W/L. At station 130+70.00 W/L, Reach 4 starts with another transition in the wall up to design elevation 13.8 feet. The T-wall remains at elevation 13.8 feet until station 173+04.70 W/L. At station 173+04.70 W/L, Reach 4 has a transition to design elevation 19.3 feet and continues until it connects with the Jefferson Lakefront Levee.

The major damage in this section from Hurricane Katrina was scour at the base of the floodwalls and flood side slope protection, displacement of stone protection and slight movement and rotation of the T-walls. There were no failures in this section during the hurricane. The minor repairs to this section should be completed prior to 1 June 2006 however the repairs are not under the direction of Task Force Guardian.

Typical T-Wall Transition in the Floodwall in Kenner Return Levee

Section 1 – West return Levee – Summary of Reaches and Features								
Section	**Start**	**End**	**Structure**	**EL**	**Section / Point**	**Length (feet)**	**GDM Average Height (NVGD)**	
1	00+00	0+55.0	T-Wall Transition	El 13 – El 13.5	S	55	13.25	
2	0+55.0	29+50.0	T-Wall	El 13.5	S	2895	13.5	
3	29+50.0	31+75.0	Interstate 10 Crossing	El 11.5	P	225	11.5	
4	31+75.0	46+73.20	T-Wall	El 13.5	S	1498	13.5	
5	46+73.20	47+09.20	T-Wall Transition	El 13.5 – El 14.0	P	36	13.75	
6	47+09.20	47+51.20	T-Wall at Pump Station	El 14.0	P	42	14	
7	47+51.20	47+87.20	T-Wall Transition	El 14.0 – El 13.5	P	36	13.75	
8	47+87.20	65+20.40	T-Wall	El 13.5	S	1733	13.5	Reach 1
9	65+20.40	66+02.90	T-Wall Transition	El 13.5 – El 14.0	P	83	13.75	
10	66+02.90	130+70.00	T-Wall	El 14.0	S	6467	14	Reach 2
11	130+70.00	131+20.00	T-Wall Transition	El 14.0 – El 14.5	S	50	14.25	
12	131+20.00	173+04.70	T-Wall	El 14.5	S	4235	14.5	Reach 3
13	173+04.70	178+54.70	T-Wall Transition	El 14.5 – El 20	P	549	17.25	
14	178+54.70	180+69.70	T-Wall	El 20	S	215	20	
15	180+69.70	180+74.70	T-Wall	El 20.5	S	5	20.5	Reach 4
Points				**Width**	**Elevation**			
1		I-10 Crossing		147	11.5			
2		Parish Line Pump Station		114	14			
3		Gate W-7 West Esplanade		6	14			
4		Gate W8 Vintage Street		6	14			

Section 1 – West Return Levee - Summary Coordinates for Defined Reaches							
		State Plane NAD83 1702 - LA South				**UTM NAD 83**	
		Northing	**Easting**	**Graphical Latitude**	**Longitude**	**Zone 15 Northing**	**Easting**
Return Levee							
Reach 1	START	546407.659	3614397.566	29 59 53.87687	90 16 46.29803	2501430.19	10897988.09
Reach 1	END	552907.875	3614407.909	30 00 58.22085	90 16 45.50041	2501345.82	10904491.17
Reach 2	START						
Reach 2	END	558810.683	3614388.995	30 01 56.65366	90 16 45.09787	2501240.83	10910396.17
Reach 3	START						
Reach 3	END	563727.833	3614373.814	30 02 45.32911	90 16 44.75590	2501153.88	10915315.15
Reach 4	START						
Reach 4	END	564277.527	3614378.32	30 02 50.77003	90 16 44.64708	2501150.37	10915865.14

Definition of reaches

Reach 1 – This reach consists of T-wall at average elevation 10.9 feet with a length of approximately 6,520 feet. There are two features in this reach. The features are the I-10 floodwall at elevation 10.4 feet and the Parish Line Pumping Station at elevation 11.75 feet.

I-10 Floodwall

Parish Line Pump Station (Note: Pump discharge through T-wall)

Reach 2 – This reach consists of T-wall at average elevation 11.0 feet with a length of approximately 6,550 feet. The only feature in this reach is Gate W7, West Esplanade Ave. The swing gate is 6 feet wide and 8 feet high with a sill elevation of 4.3 feet.

Gate W-7 West Esplanade

Reach 3 – This reach consists of T-wall at average elevation 12.6 feet with a length of approximately 4,285 feet. There is only one feature in this reach at Gate W8, Vintage Ave. The swing gate is 6 feet wide and 8 feet high with a sill elevation of 4.3 feet.

Gate W8 Vintage Street

Typical T-wall and slope protection on floodside in Reach 3

Reach 4 – This reach consists of T-wall at average elevation 15.7 feet with a length of approximately 769 feet. There are no features in this reach but there is a sheet pile transition into the Lakefront levee.

Section 2: Jefferson Parish Lakefront Levee

References

Descriptions of the levees/floodwalls, stationing around the circumference of the polder, and terminology for associated features are referenced to the following documents:

> DEPARTMENT OF THE ARMY, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, "Jefferson Parish Lakefront Levee", Design Memorandum No. 17 – General Design, Volumes I and II, New Orleans, LA, November 1987.

Narrative

The Jefferson Parish Lakefront Levee consists primarily of levee sections intermingled with four pump stations, two boat launch facilities and the Pontchartrain Causeway. This section has been broken down into four subsections (Reaches 5 to 8) defined on changes in levee elevation and the location of the pumping stations. Reach 5 is an earthen levee from station 0+00 B/L to 128+00.00 B/L with a crest elevation originally constructed at 17.3 feet, a 10-foot crest width, and 1 on 3 vegetated side slopes. Pump Station 4 (Duncan Canal PS) is located between stations 115+00.00 B/L and station 128+00.00 B/L. The original pump station has been taken out of service and replaced by a new pump station that is situated just west of the old station. T-walls have been reconfigured around the old and new pump stations and transition into the levee sections on both sides. The design elevation of the original Pump Station 4 is at elevation 21.7 feet. It appears that the walls surrounding the new pump station are at the same elevation of the old pump station.

There was no visible damage from Hurricane Katrina in this reach. Most damage was to the foreshore protection but little or no damage occurred to the levee or at the pump station walls. There will be only minor repairs that need to be completed prior to 1 June 2006.

Foreground: Original Pump Station and old masonary wall (not in Service)
Background: Duncan Pump Station with new T-walls

Reach 6 runs from Pumping Station No. 4 at station 128+00 B/L to Pumping Station No. 3 at station 210+00 B/L. The earthen levee cross section is similar to that in Reach 5 from station 128+00 to 141+00 B/L. From station 141+50 B/L to 145+50 B/L, the crest changes to design elevation of 15.8 to provide access to the Williams Boulevard Boat Launch. The elevation of the ramp over the levee is at elevation 13.8. From station 146+00 B/L to 184+50 B/L, the levee cross section is again typical to that on the other side of the boat launch. From station 185+50 B/L to Pumping Station No. 3 (Elmwood Canal) at station 210+00 B/L, the levee crest was originally designed to elevation 15.3 feet. Cantilever sheeting forms the transition from the levee to both sides of the pumping station. Along the lakefront, damage to the foreshore concrete slab protection was evident. It is noted that Pumping Station No. 3 consists of original construction on the western side and a later expansion on the eastern side that appears to have been built in the 2001 time frame.

There was no visible damage from Hurricane Katrina in this reach. Most damage was to the foreshore protection but little or no damage occurred to the levee or at the pump station walls. There will be only minor repairs that need to be completed prior to 1 June 2006.

Reach 7 runs from Pumping Station No.3 at station 221+45 to Pumping Station No.1 at station 464+50 B/L. The levee cross section is typical throughout the reach with a crest elevation originally constructed to elevation 15.3 feet and vegetated side slopes. Cantilever sheeting forms the transition from the levee to Pumping Station No. 2. It is noted that Pumping Station No. 2 consists of original construction on the western side and a later expansion on the eastern side that appears to have been built in the 2001 time frame. On the west side of this pumping station, the crest at the access road is approximately two feet low to facilitate passage of vehicles and the top elevation of the transition sheeting is lower than the crest of the levee. A portion of this reach was being re-constructed at the time of this reconnaissance inspection. Reference contract number W912P8-05-C-0014 for specific details. At the time of the inspection, there was a 200-foot gap in the levee near Pumping Station No. 2 that the contractor was using for access. This gap needs to be filled and vegetation needs to be established in order to restore the integrity of this reach. It is noted that the Lake Pontchartrain Causeway Boulevard intersects Reach 7 between station 434+80 B/L to 438+40 B/L. Existing details at the causeway are shown on the original design memorandum, which indicates two bottom roller gates to close the line of protection with the causeway below the crest of the levee. This section has changed and the causeway now passes over the protection structures, and the floodwalls form the transition from the causeway to the levee.

There was no visible damage from Hurricane Katrina in this reach. Most damage was to the foreshore protection but little or no damage occurred to the levee or at the pump station or Causeway walls. There will be only minor repairs that need to be completed prior to 1 June 2006.

Reconstruction of a Portion of Reach 7 Lakefront Levee

Reach 8 runs from Pumping Station No. 1 at station 479+95 B/L to its junction with the 17th Street Outfall Canal at station 550+22 B/L. From station 479+95 B/L to 485+00 B/L, the levee was originally constructed to elevation 15.7 feet. The access road to the Bonnabel Boat

Launch Area intersects the levee between stations 485+00 B/L to 486+50 B/L. The net grade for the access road is elevation 13.8 feet, and two swing gates are installed to maintain the level of protection. The top of the swing gates appears to be six inches lower than the top of the levee. After the access road to the boat launch, the levee transition from elevation 15.7 feet at station 486+50 to elevation 15.3 feet at station 487+50 and continues at this elevation to the limit of work at station 550+22.

There was no visible damage from Hurricane Katrina in this reach. Most damage was to the foreshore protection but little or no damage occurred to the levee or at the pump station walls. There will be only minor repairs that need to be completed prior to 1 June 2006.

Section 2 – Jefferson lakefront levee - Summary of Reaches and Features

Section	Start	End	Structure	EL	Section/ Point	Length	GDM Average Height	
1	0+85	1+45	Levee Transition	El 13.0 - El 16.0	S	60	15.5	
2	1+45	115+00	Levee	El 16	S	11005	16	
3	115+00	128+00	I-Wall/T-Wall for Pump Station #4	El 17.0 - El 22.5	P	1300	18.25	Reach 5
4	128+00	141+00	Levee	El 16	S	1300	16	
5	141+00	141+50	Levee Transition	El 16 - El 14.5	P	50	17.25	
6	141+50	145+50	Levee - William Blvd Boat Launch	El 14.5	P	400	14.5	
7	145+50	146+00	Levee Transition	El 14.5 - El 16.0	P	50	15.25	
8	146+00	208+00	Levee	El 16	S	6200	16	Reach 6
9	208+00	223+00	I-Wall for Pump Station #3	El 16.5	P	1500	16.5	
10	223+00	343+00	Levee	El 16	S	12000	16	
11	343+00	355+00	I-Wall for Pump Station #2	EL 16.5	P	1200	16.5	
12	355+00	434+80	Levee	EL 16	S	7980	16	
13	434+80	438+40	Causeway Blvd	El 16.5	P	360	16.5	
14	438+40	464+50	Levee	El 16	S	2610	16	Reach 7
15	464+50	479+95	I-Wall/T-Wall for Pump Station #1	El 16.5 - El 22.5	P	1540	19.5	
16	479+95	487+50	Levee - Bonnabel Boat Launch	El 14.5	P	760	14.5	
17	487+50	550+22	Levee	El 16	S	6270	16	Reach 8

Points			Width	Elevation
1	1+00	Gate L1 Floodwall	20	17
2	104+22	Gate L3 Duncan Canal	22	17
3	145+13	Gate L4 Williams Blvd	60	14.5
4	402+04	Gate 2 - Causeway SB (no longer used)	45	14.5
5	402+45	Gate 3 - Causeway NB (no longer used)	45	14.5
6	475+54	Gate L9A Bonnabel Blvd South	22	16
7	475+54	Gate L9B Bonnabel Blvd North	22	16

Section 2 – Jefferson Lakefront Levee - Summary Coordinates for Defined Reaches							
		State Plane NAD83 1702 - LA South		Graphical Latitude	Longitude	UTM NAD 83	
		Northing	Easting			Zone 15 Northing	Easting
Lakefront Levee							
Reach 5	START	564277.527	3614378.32	30 02 50.77003	90 16 44.64708	2501150.37	10915865.14
Reach 5	END	561991.187	3625823.549	30 02 27.07773	90 14 34.66901	2512633.87	10913744.89
Reach 6	START						
Reach 6	END	559141.211	3633246.774	30 01 58.15966	90 13 10.52729	2520102.00	10911001.96
Reach 7	START						
Reach 7	END	554468.982	3656812.867	30 01 09.56725	90 08 42.98123	2543747.54	10906671.25
Reach 8	START						
Reach 8	END	555079.333	3664232.118	30 01 14.83996	90 07 18.51511	2551161.68	10907390.11

Definition of Reaches

Reach 5 – This reach consists of a levee at average elevation 15.8 feet with a length of approximately 12,365 feet. There are two features in this reach. The first is Gate L1 at the start of the Lakefront Levee near the West Return Levee. Gate L1 is 20 feet in width and has a sill elevation of 10.0 feet. The second feature is the Duncan Canal Pumping Station at wall elevation 20.0 feet. There is a T-wall section around the new pump station which is approximately 2,236 feet in length. There is a swing gate at station 104+22 near the pump station, Gate L3, which is 22 feet wide and has a sill elevation at 10.0 feet.

Gate L1 – Lakefront Levee

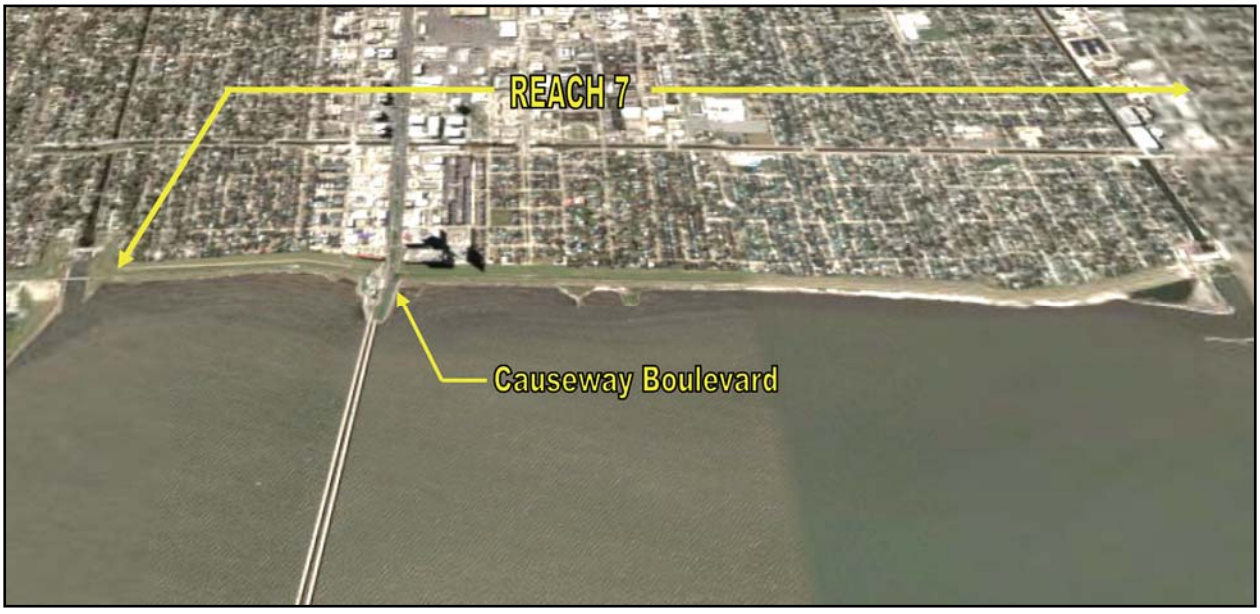
Gate L3 – Duncan Canal Pump Station

Duncan Canal Pump Station

Reach 6 – This reach consists of Levee at average elevation 14.1 feet with a length of approximately 8,000 feet. There one feature in this reach which is the William Blvd Boat Launch at with a ramp at elevation 13.8 feet. The ramp also has a gate at station 145+13 which is 60 feet in width and a sill elevation at 9.25 feet.

Reach 7 – This reach consists of a levee at an average elevation 14.3 feet and length of approximately 25,650 feet. There two features contained in this reach. The first feature is

Pump Station #3 - Elmwood Canal at elevation 18.0 feet. The pump station has an uncapped sheet pile wall of about 750 feet in total length. The second feature in this reach is Pump Station #2 - Suburban Canal at elevation 18.0 feet. This pump station has an uncapped sheet pile wall of about 864 feet in total length. The Pontchartrain Causeway Boulevard is not considered a feature since the lanes have been raised above the protection walls and levees.



Pump Station #3 – Elmwood Canal Pump Station

Pump Station #2 – Suburban Canal Pump Station

Reach 8 – This reach consists of levee at average elevation 14.4 feet with a length of approximately 8,570 feet. There two features contained in this reach. The first is the Pump Station #1- Bonnabel Canal at elevation of 18.0 feet. This pump station has a sheet pile transition wall into a I-wall/T-wall of about 1,052 feet in total length. The second feature is Bonnabel Boat Launch which has an elevation 15.3 feet. The boat launch has two gates, L9A and L9B, which have a width of 22 feet and a sill elevation of 11.8 feet.

Pump Station #1 – Bonnabel Canal Pump Station

Bonnabel Boat Launch Ramp and Gate

Section 3: 17th Street Outfall Canal

References

Descriptions of the levees/floodwalls, stationing around the circumference of the polder, and terminology for associated features are referenced to the following documents:

> DEPARTMENT OF THE ARMY, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS, "Orleans Parish, Jefferson Parish, 17th Street Outfall Canal (Metairie Relief) Design Memorandum No. 20 – General Design, Volumes I and II, New Orleans, LA, March 1990.

Narrative

The west line of the 17th Street Outfall Canal runs from station 0+00 at its junction with the Lakefront Levee to station 119+95 at Pumping Station No. 6. This section is constructed primarily of I-wall sections on top of earthen levees. The west line of the 17th Street Canal has been broken out into three reaches based on elevation changes along the canal. Reach 9 has a design elevation 13.3 feet from stations 0+00 to 75+70 at the Veterans Highway Bridge. Reach 10 has a design elevation 13.8 feet from stations 77+70 to 92+50. Reach 11 has a design

elevation of 14.3 feet from stations 93+50 to 119+95. At the junction of the Lakefront Levee and the west wall of the 17th Street Outfall Canal north of Hammond Highway, construction work was ongoing under contract number W912P8-06-C-0008, titled "17th Street Canal Interim Closure Structure." Interstate Highway 10, which passes over the I-wall in the vicinity of stations 90+00 to 92+50, has no effect on the integrity of the hurricane protection. There is a gate structure in the west wall just to the north of Pumping Station No.6 through which the CSX railroad line passes. The area was littered with sandbags indicating that the swing gate may not seal tightly. No storm related damage was observed along the west wall.

Section 3 – 17th Street Outfall Canal - Summary of Reaches and Features

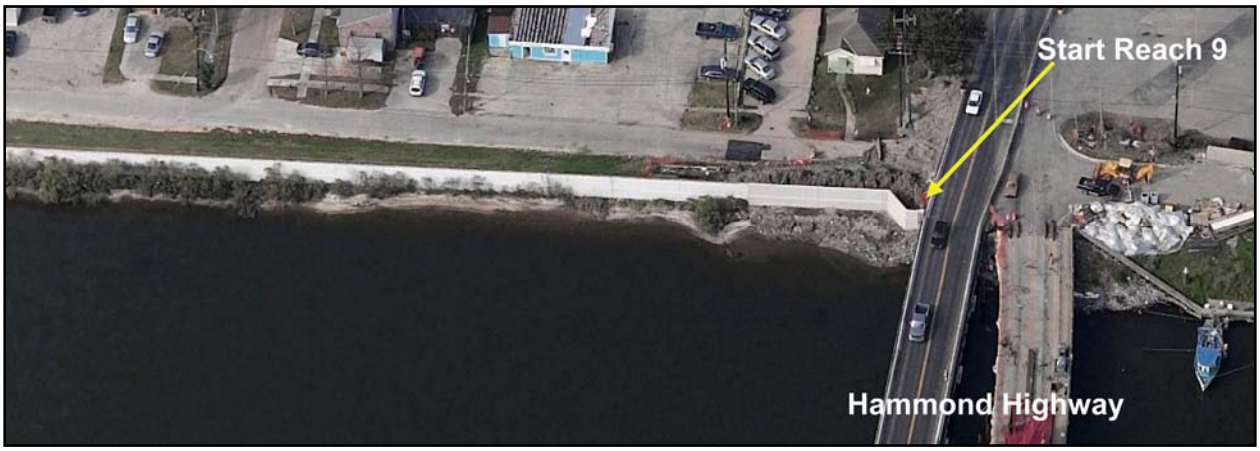
Section	Start	End	Structure	EL	Section / Point	Length	GDM Average Height	
1	0+00	0+10	Floodwall	16.5	P	10	16.5	
2	0+10	0+43.60	Floodwall Transition	El 16.5 – El 14.0	S	34	15.25	
3	0+43.60	2+75.10	I-Wall	El 14.0	S	231	14	
4	2+75.10	2+81.0	T-Wall	El 14.0	P	6	14	
5	2+81.0	3+05.10	Gate No. 1	El 14.0	P	24	14	
6	3+05.10	3+11.0	T-Wall	El 14.0	P	6	14	
7	3+11.0	3+40.50	I-Wall	El 14.0	S	29	14	
8	3+40.50	3+47.00	T-Wall	El 14.0	P	7	14	
9	3+47.00	4+09.00	Gate No. 2	El 14.0	P	62	14	
10	4+09.00	4+15.50	T-Wall	El 14.0	P	7	14	
11	4+15.50	75+70.00	I-Wall	El 14.0	S	7154	14	Reach 9
12	75+70.00	76+00.00	I-Wall Transition	El 14.0 – El 14.5	S	30	14.25	
13	76+00.00	76+10.04	I-Wall	El 14.5	P	10	14.5	
14	76+10.04	77+22.04	Veterans Hwy	El 14.5	S	112	14.5	
15	77+22.04	92+50.0	I-Wall	El 14.5	S	1528	14.5	Reach 10
16	92+50.0	93+50.0	I-Wall Transition	El 14.5 – El 15.0	S	100	14.75	
17	93+50.0	119+95.49	I-Wall	El 15.0	S	2645	15	Reach 11

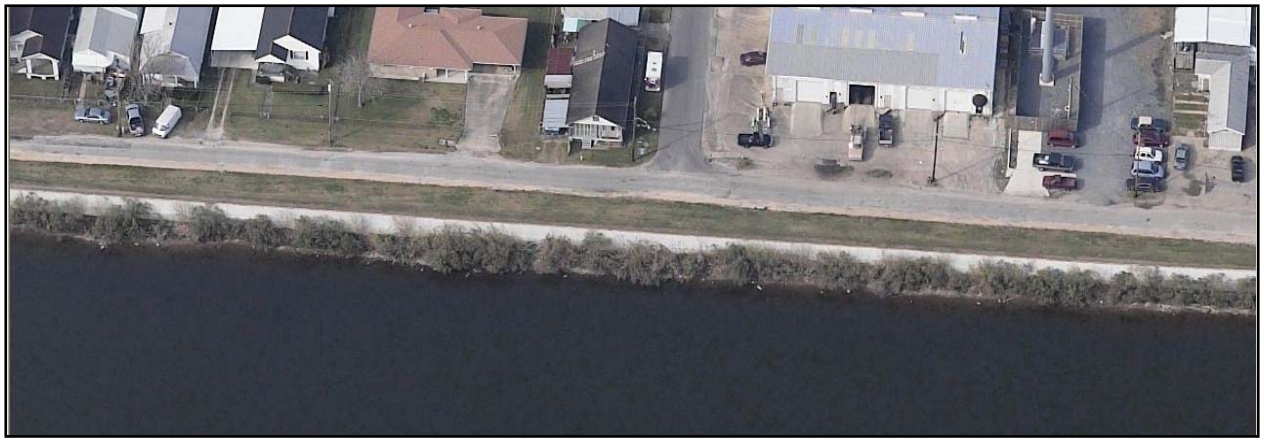
Points		Width	Elevation
1	Gate L 10 Orpheum Ave - 58 ft gap (under construction)	58	9.5
2	Old Hammond Hwy Bridge - 47 ft gap (under construction)	47	10
3	Gate E4 - Veterans Blvd.	8	14.5
4	Gate E5 - Veterans Blvd	8	14.5
5	Gate E8 - Canal Street	10	15
6	Gate E9 - Southern RR	22	15
7	Pump Station #6	150	14.5

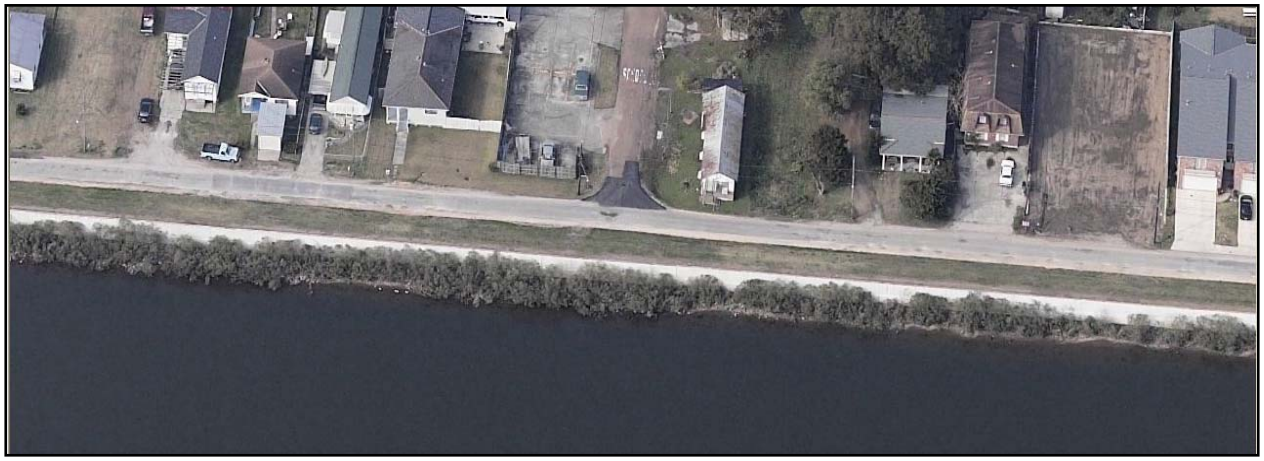
Section 3 – 17th Street Outfall Canal - Summary of Coordinates for Defined Reaches							
		State Plane NAD83 1702 - LA South		Graphical Latitude	Longitude	UTM NAD 83	
		Northing	Easting			Zone 15 Northing	Easting
17th St. Canal Levee							
Reach 9	START	555079.333	3664232.118	30 01 14.83996	90 07 18.51511	2551161.68	10907390.11
Reach 9	END	547700.195	3663758.46	30 00 01.84526	90 07 24.78918	2550795.34	10900000.24
Reach 10	START						
Reach 10	END	545946.804	3663664.746	29 59 44.49864	90 07 26.06543	2550727.12	10898244.58
Reach 11	START						
Reach 11	END	542850.391	3663595.224	29 59 13.85519	90 07 27.22762	2550702.65	10895145.55

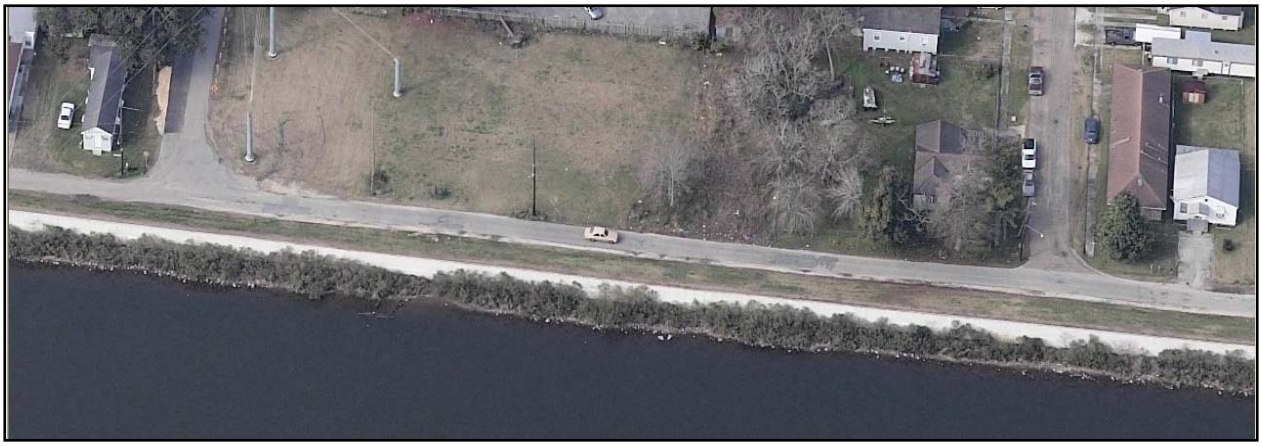
Definition of Reaches

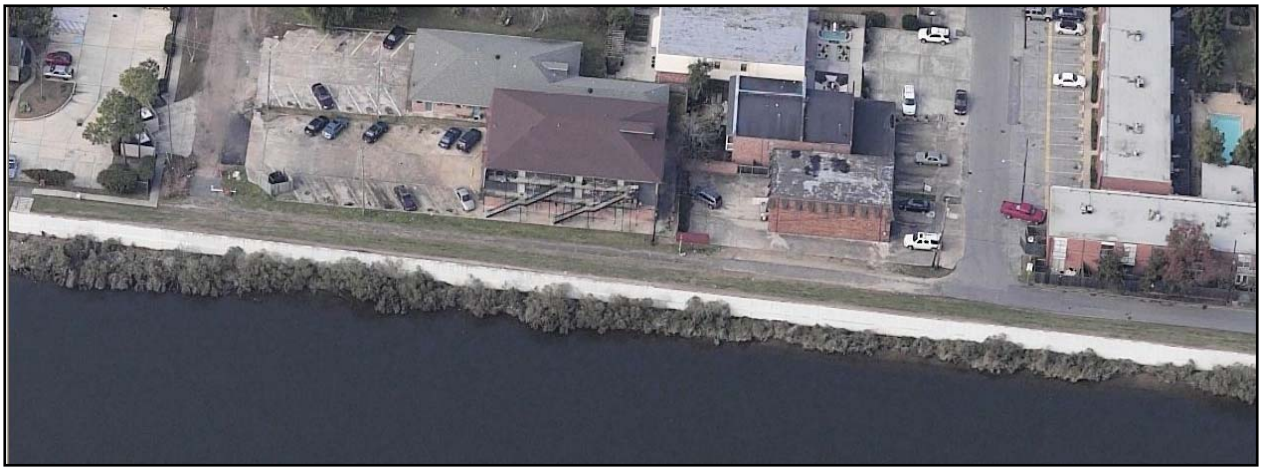
Reach 9 – This reach consists of an I-wall in levee section at an average elevation of 12.5 feet with a length of approximately 7,570 feet. The reach actually starts at the Lakefront levee however this area was under construction for flood proofing of the Hammond Highway Bridge and was not accessible for inspection. There are two main features in this reach, Gate 1 at elevation 14.0 feet and Gate 2 is at elevation 14.0 feet. However, these gates have been removed for the construction work at the Hammond Highway. The sequence of pictures below defines the linear west line of Reach 9 (Note: These pictures are pre-Katrina).

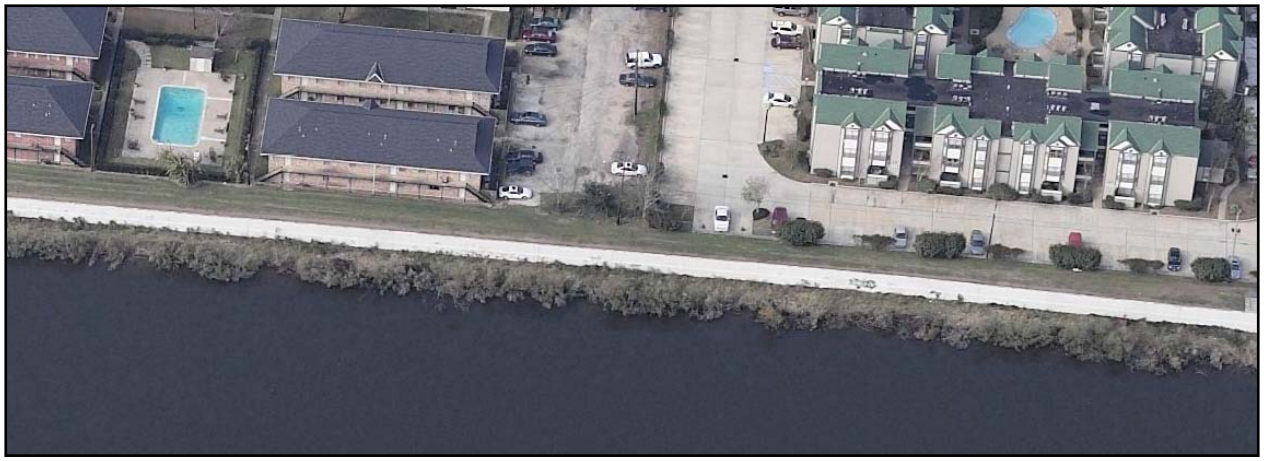


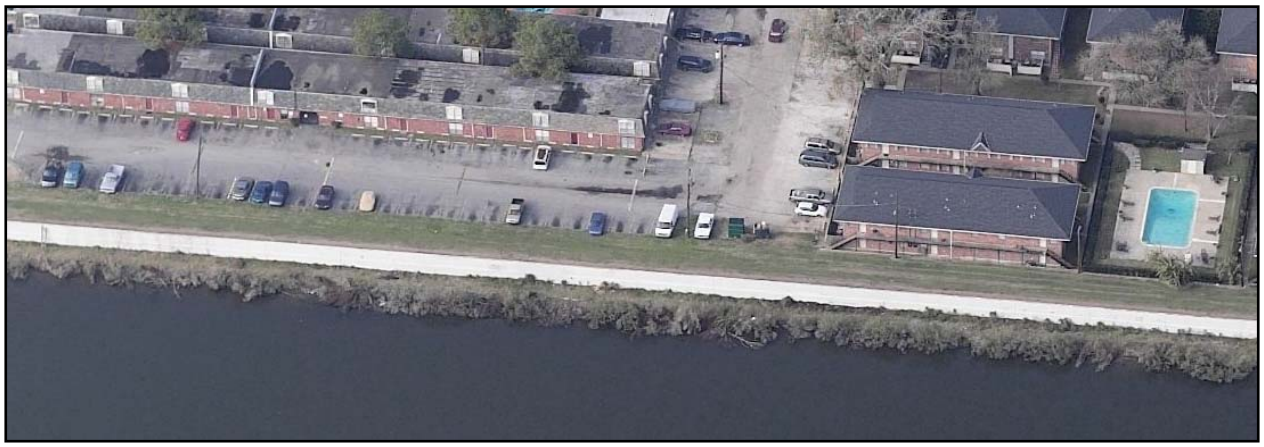


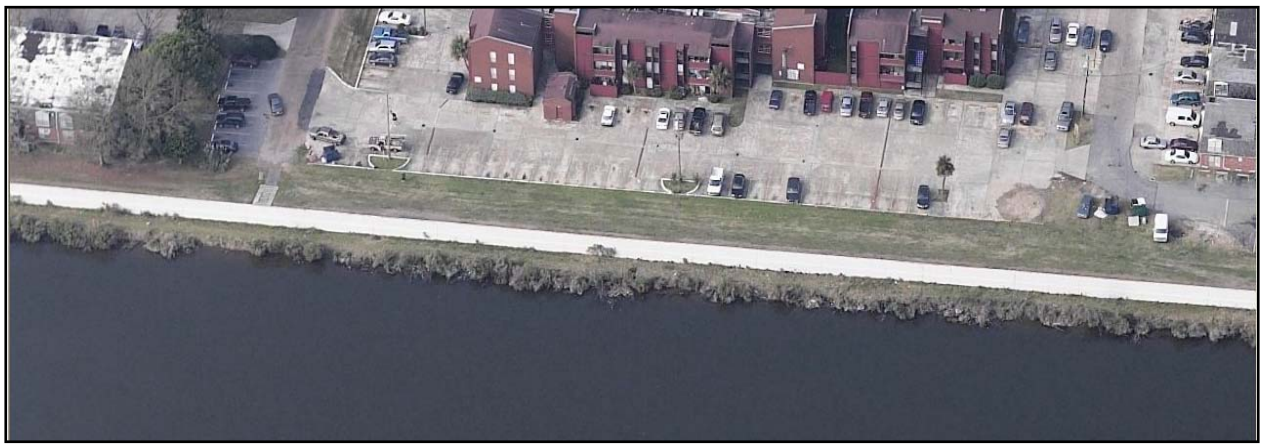


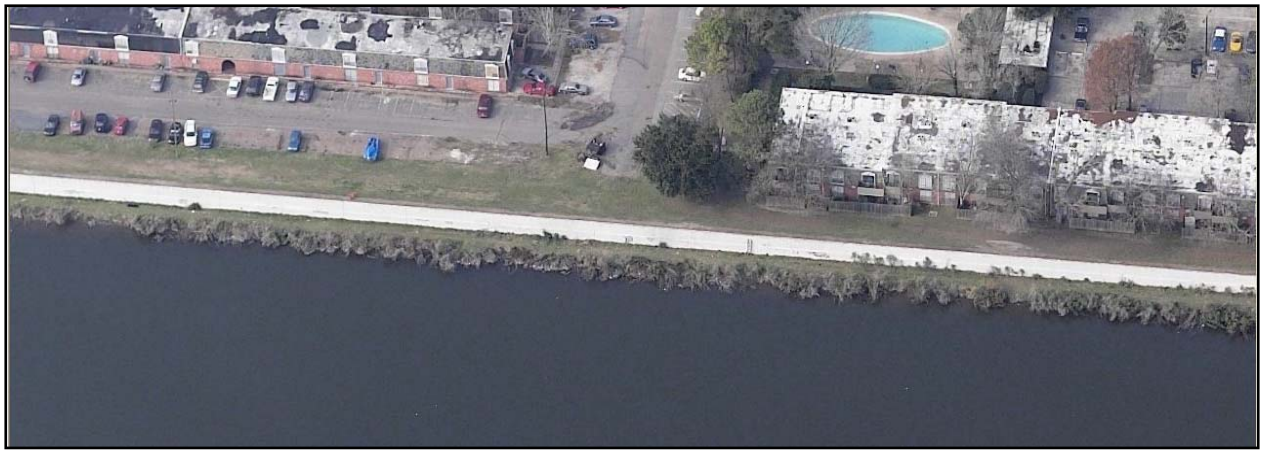


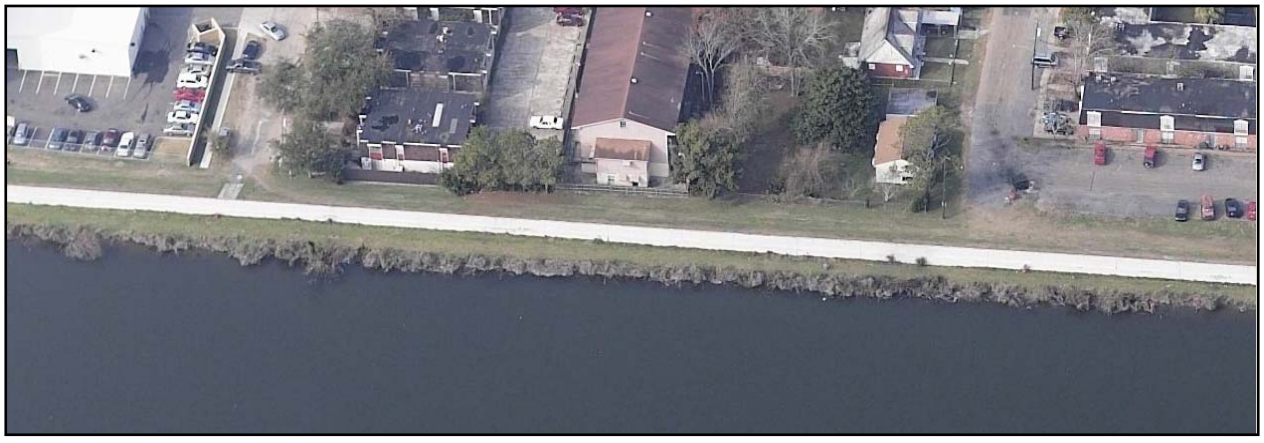




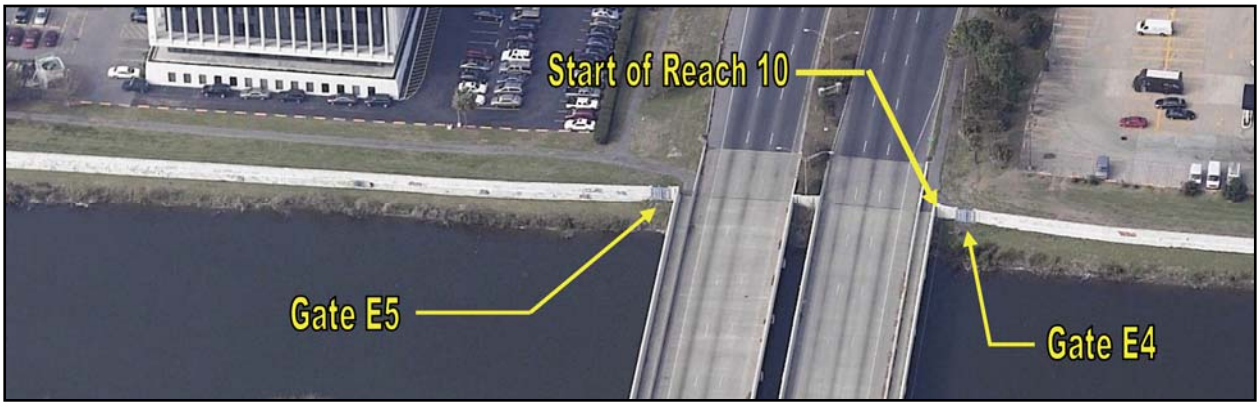


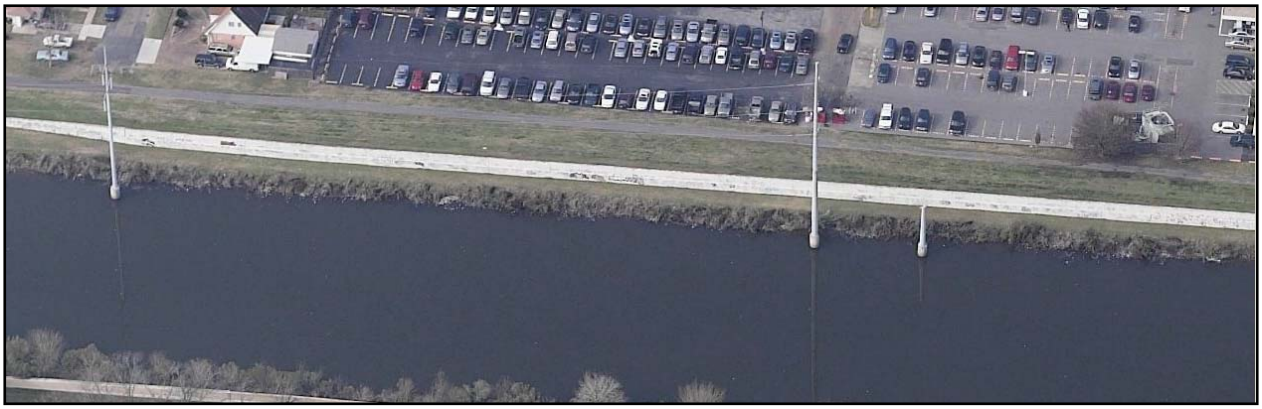




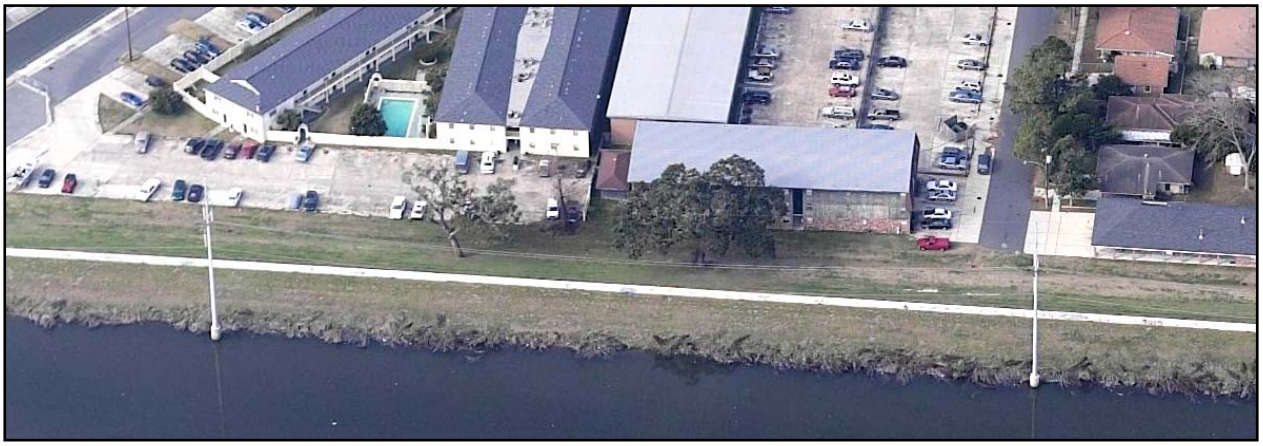


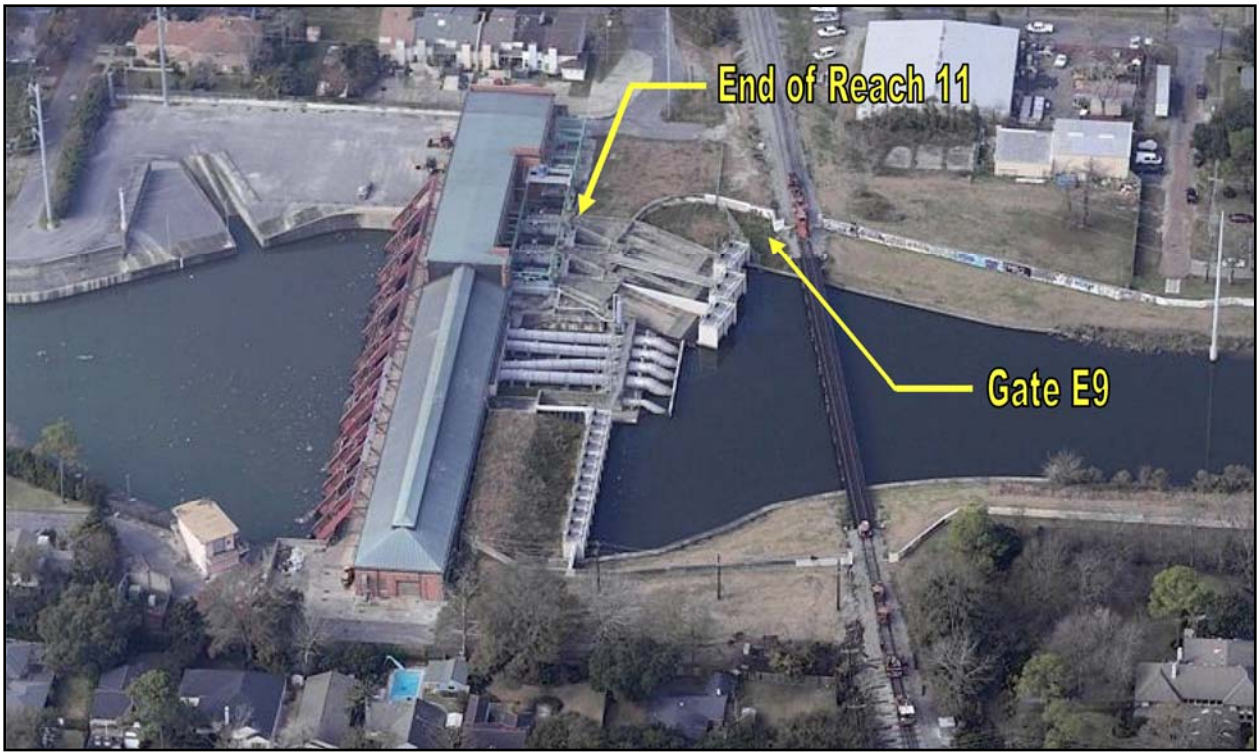
Reach 10 – This reach consists of an I-wall in a levee at an average elevation of 12.9 feet with a length of approximately 1,680 feet. This reach goes from Veterans Boulevard to just south of the I-10 overpass. There are two features in this reach, Gate E4 and Gate E5 with an elevation of 12.9 feet and a sill elevation of 6.5 feet. The Veterans Boulevard and I-10 overpass bridges have been floodproofed with tie-in parapet walls higher than the canal I-walls and are not considered features.





Reach 11 – This reach consists of I-wall in a levee at an average elevation of 13.4 feet with a length of approximately 2,745 feet. This reach goes from the I-10 overpass to Pump Station #6. There three features in this reach. The first is Canal Street Gate E8 which is at elevation of 12.0 feet. The second feature is the Canal Street Pump Station at elevation 13.5 feet. The final feature is the Southern Railroad Swing Gate E9 at elevation 10.3 feet.





Pump Station #6

Gate E9 CSX Railroad

Section 4: Mississippi River Levees

References

General design information was not available for the MRT levees within Jefferson Parish at the time of the report. Information was gathered from discussion with the East Jefferson Parish Levee Board and from the field recon.

Narrative

The MRT levees are earth structures with a 10-foot crown and side slopes of varying grades. About half of the levees along this section of the river have concrete scour protection on the flood side. There is no scour protection on the protected side of the levees. The levees are also well maintained with both an asphalt road and mowed grass slopes on both sides. The crown of the levee is extensively used by the public as a bike and walking path. There are a number of pipeline crossings and access ramps that were defined for his section. However none of these structure greatly interfered with the integrity of the levees so they were not include into the risk assessment.

This section as been broken down into three reaches defined on the change in elevation of the levees. Reach 12 starts at the Orleans East Parish line and goes along the river from station 0+00 to 388+17.51. Most of this reach was unprotected by the concrete scour protection. Reach 13 starts at station 388+17.51 and continues to station 538+17.51. This reach has concrete scour protection on about two-thirds of the flood side banks. Reach 14 starts at station 538+17.51 and runs to the St. Charles Parish border just southwest of the international airport. Most of this reach has concrete scour protection on the flood side banks.

Flood side of MRT in East Jefferson Parish
(Note: Concrete scour protection and asphalt roadway on crown)

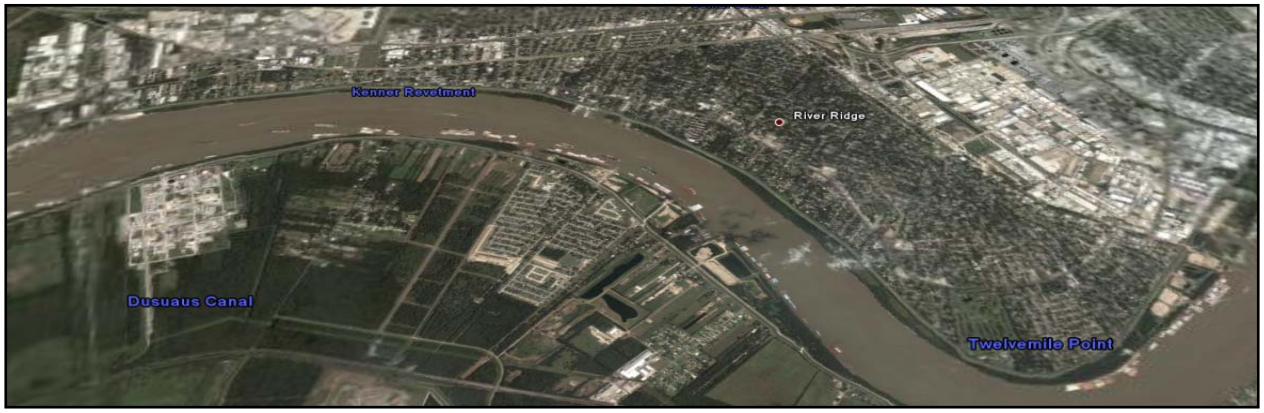
Section 4 – Mississippi River Levees - Summary of Reaches and Features								
MRT Levees								
1	0+00	388+17.51	Levee	26.6	S	38818	26.6	Reach 12
2	388+17.51	538+17.51	Levee	25	S	15000	25	Reach 13
3	538+17.51	608+12.06	Levee	24	S	6995	24	Reach 14

Section 4 – Mississippi River Levees - Summary of Coordinates for Defined Reaches							
		State Plane NAD83 1702 - LA South		**Graphical Latitude**	**Longitude**	**UTM NAD 83**	
		Northing	**Easting**			**Zone 15 Northing**	**Easting**
Mississippi Levee							
Reach 12	START	530021.436	3659583.755	29 57 07.28044	90 08 14.36542	2546875.73	10882251.64
Reach 12	END	532634.821	3653607.193	29 57 33.76261	90 09 21.99695	2540858.17	10884779.48
Reach 13	START						
Reach 13	END	523758.1	3642759.654	29 56 06.97997	90 11 26.31882	2530134.31	10875740.84
Reach 14	START						
Reach 14	END	537504.405	3614269.527	29 58 25.75591	90 16 48.68478	2501431.68	10889079.25

Reach 12

Reach 13

Reach 14



Section 5: Jefferson/St. Charles Parish Border Interior Levees

References

General design information was not available for the MRT levees within Jefferson Parish at the time of the report. Information was gathered from discussion with the East Jefferson Parish Levee Board and from the field recon.

Narrative

The MRT levees are earth structures with a 10-foot crown and side slopes of varying grades. About half of the levees along this section of the river have concrete scour protection on the flood side. There is no scour protection on the protected side of the levees. The levees are also well maintained with both an asphalt road and mowed grass slopes on both sides. The crown of the levee is extensively used by the public as a bike and walking path. There are a number of pipeline crossings and access ramps that were defined for his section. However none of these structure greatly interfered with the integrity of the levees so they were not include into the risk assessment.

This section as been broken down into three reaches defined on the change in elevation of the levees. Reach 12 starts at the Orleans East Parish line and goes along the river from station 0+00 to 388+17.51. Most of this reach was unprotected by the concrete scour protection. Reach 13 starts at station 388+17.51 and continues to station 538+17.51. This reach has concrete scour protection on about two-thirds of the flood side banks. Reach 14 starts at station 538+17.51 and runs to the St. Charles Parish border just southwest of the international airport. Most of this reach has concrete scour protection on the flood side banks.

Section 5 – Jefferson/St. Charles Parish Border Interior Levee - Summary of Reaches and Features

Levee from Airport to MRT			Not Needed Since St Charles Has New Levee To Tie To Airport Runway Extension					
1	0	1000	Gap in levee	5	S	1000	5	
2	1000	1485	Sheet pile wall	10	S	485	10	
3	1485	1735	Gap in levee	3.5	S	250	3.5	Reach 15
4	0+00	32+89	Levee	10	S	3289	10	
5	32+89	42+69.9	Sheet pile wall - 42 ft gap @ 5.9 ft at RR	10.8	S	980	10.8	Reach 16
6	42+69.9	57+00	Sheet pile wall	10.5	S	1431	10.5	Reach 17
7	57+00	74+00	Levee	13	S	1700	13	Reach 18

Section 5 – Jefferson/St. Charles Parish Border Interior Levee - Summary of Coordinates for Defined Reaches							
		State Plane NAD83 1702 - LA South		Graphical		UTM NAD 83 Zone 15	
		Northing	Easting	Latitude	Longitude	Northing	Easting
Return Levee							
Reach 15	START	537504.405	3614269.527	29 58 25.75591	90 16 48.68478	2501431.68	10889079.25
Reach 15	END	539488.473	3614278.54	29 58 45.39526	90 16 48.37495	2501411.83	10891064.28
Reach 16	START						
Reach 16	END	543565.735	3614781.939	29 59 25.70992	90 16 42.22427	2501856.10	10895150.57
Reach 17	START						
Reach 17	END	544766.352	3614391.643	29 59 37.63026	90 16 46.53705	2501448.16	10896346.01
Reach 18	START						
Reach 18	END	546407.659	3614397.566	29 59 53.87687	90 16 46.29803	2501430.19	10897988.09

Reach 15

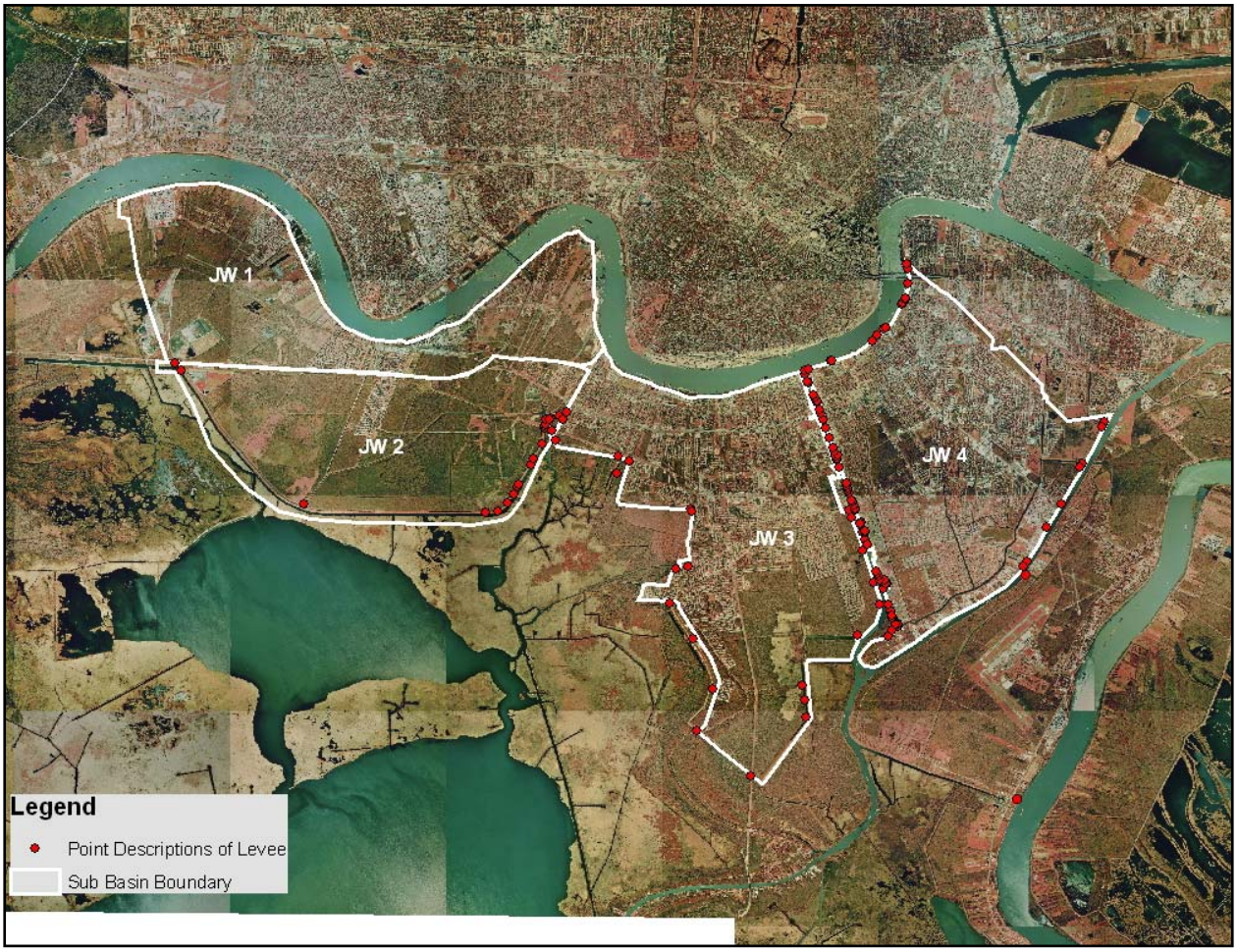
Reach 16

Reach 17

Reach 18

Jefferson West Bank Area

The West Bank Basin is composed of four sub-basins that are designed as three projects. These are 1) Cataouatche, 2) Westwego to Harvey Canal, and 3) Harvey Canal to Algiers Canal.



Cataouatche – JW1 and JW2

This area is located in Jefferson Parish and is generally bounded by the Mississippi River and its alluvial ridge to the north and the Lake Cataouatche levee to the west, south and east. The topography is flat with ground elevations ranging from +7.5 feet NGVD on the alluvial ridges along the Mississippi River to –5 feet NGVD in the interior of the area. Approximately 40 percent of the area is below sea level. The surface area is 22.6 square miles. The area is protected by 25.4 miles of levees, natural ridges and floodwalls.

Segment 1 extends from the main line Mississippi River levee (MRL) at the Jefferson Parrish boundary southward to the Texas and Pacific railroad tracks. There are no levees or dikes in this area. The natural contour of the area provides the protection, but this segment is listed since it is possible for storm surges to flank the Segment 2 levee reach and cause flooding.

Segment 2 is the proposed levee that follows the crushed stone roadway southward from the Texas and Pacific railroad tracks (that becomes an asphalt roadway which is used by the land fill operators in the area) to US 90.

Texas and Pacific railroad

Local levee along site of proposed HPS levee

Segment 3 is a short, small dike built parallel to Hwy 90. Hwy 90 is a 4-lane road with a raised median in the center. The median provides the higher level of protection. The road rises as a low relief ramp at the beginning of Segment 4.

Segment 4 is an earthen levee extending southward from Hwy 90 to the Cataouatche Pumping Station. The discharge lines of the first pumping station pass over the levee. The discharge lines of the second pump station (immediately adjacent to the first station) pass through a sheetpile wall.

Levee begins at Hwy 90

Typical levee in this area

Pump station near Hwy 90 with pipe crossing over levee

Segment 5 is an all clay levee that extends eastward from the Cataouatche Pumping Station to the I-Wall in the Segnette State Park.

Cataouatche Pump Station

Sheetpile wall transition to concrete capped I-wall at the Segnette State Park

Segment 6 is a concrete I-Wall atop a clay levee. The controlling grade listed for this area is the preconstruction levee grade. The area has two vehicular gates.

Concrete capped I-wall at the Segnette State Park

Swing in the concrete capped I-wall at the Segnette State Park where wall ends at the Segnette Pump Station

Segment 7 is completed floodwalls that lie between the Segnette Pump Station and the Old Westwego Pump Station.

Segnette Pump Station

Segment 8 extends from the floodwall at the head of Company Canal (closest line of flood protection to the Mississippi River) to the MRL. The natural contour of the area provides the protection.

Segment 9 is the West Jefferson Levee District Mississippi River levee. This all clay levee closes the north end of the sub-basin and extends from Westwego to the St. Charles Parish line.

Segment 10 is the interior drainage separator, which begins at the end of Segment 3. It proceeds along US 90 to the east until it intersects the Texas and Pacific railroad tracks just north of the Westbank Expressway. It then continues to the east along the railroad until it intersects Segment 8 and then turns north to the MRL. JW1 is to the north of the Segment 10 interior levee and JW2 is to the south.

There are a total of five vehicular floodgates (double swing) and two pedestrian (single swing) floodgates in the protection system. The sill elevations of these floodgates are at or above the current controlling elevation so these gates are not a factor in draining the area.

There are four pumping stations that drain the protected area.

Westwego to Harvey Canal – JW3

This area is located in Jefferson Parish and is generally bounded by the Mississippi River and its alluvial ridges on the north, the Harvey Canal on the east and marshes/wetlands on the south and west. The topography is flat with ground elevations ranging from +7.5 feet NGVD on the alluvial ridges along the Mississippi River to –4 feet NGVD in the interior of the area. Approximately 40 percent of the area is below sea level. The surface area is 21.4 square miles. The area is protected by 27.5 miles of levees and floodwalls.

Segment 1 is a floodwall stretching between the Old and New Westwego Pumping Stations and connects the Cataouatche sub-basin to Westwego to Harvey Canal sub-basin. The segregation of these two sub-basins is not very pronounced. The general contour tie to the Mississippi River levee is described in Segment 8 the JW1 Cataouatche sub-basin.

Segment 2 is the Westwego Levee that is a geosynthetic reinforced, clay levee running parallel to Mayronne Canal between the New Westwego Pumping Station and Dugues Canal-Westwego Seaplane Airport. A 400-ft canal closure was constructed at the head of the Dugues Canal.

Segment 3 runs between Dugues Canal and the New Westminster Pump Station and the North-South Levee. This levee is all clay.

Segment 4 is the Westminster Levee, which parallels the Grand Cross Canal, stretches between New Westminster Pumping Station and Orleans Village Pumping Station (out of service). This clay levee is geosynthetically reinforced.

New Westminster Pump Station

Segment 5 is the Orleans Village levee, which is all clay and paralleling Glasco Canal, between Orleans Village Pumping Station (out of service) and Oak Cove Pumping Station. Along this reach is the Ames and Mount Kennedy Pumping Stations connected by floodwall.

Ames Pump Station

Segment 6 consists of the Oak Cove and Hwy 45 clay levees running between Oak Cove Pumping Station and the Hwy 45 crossing. Also found along this length are areas of T-wall, I-wall, and one vehicular floodgate at Hwy 45.

Sheet pile transition at the LA Hwy 45

Double Swing gate at the LA Hwy 45 closure in the V-Line levee

Segment 7 is the V-Line Levee which is an I-wall between LA Hwy 45 and Hwy 3134.

V-line levee continues south of LA Hwy 45 closure

Southern tip of V-line levee

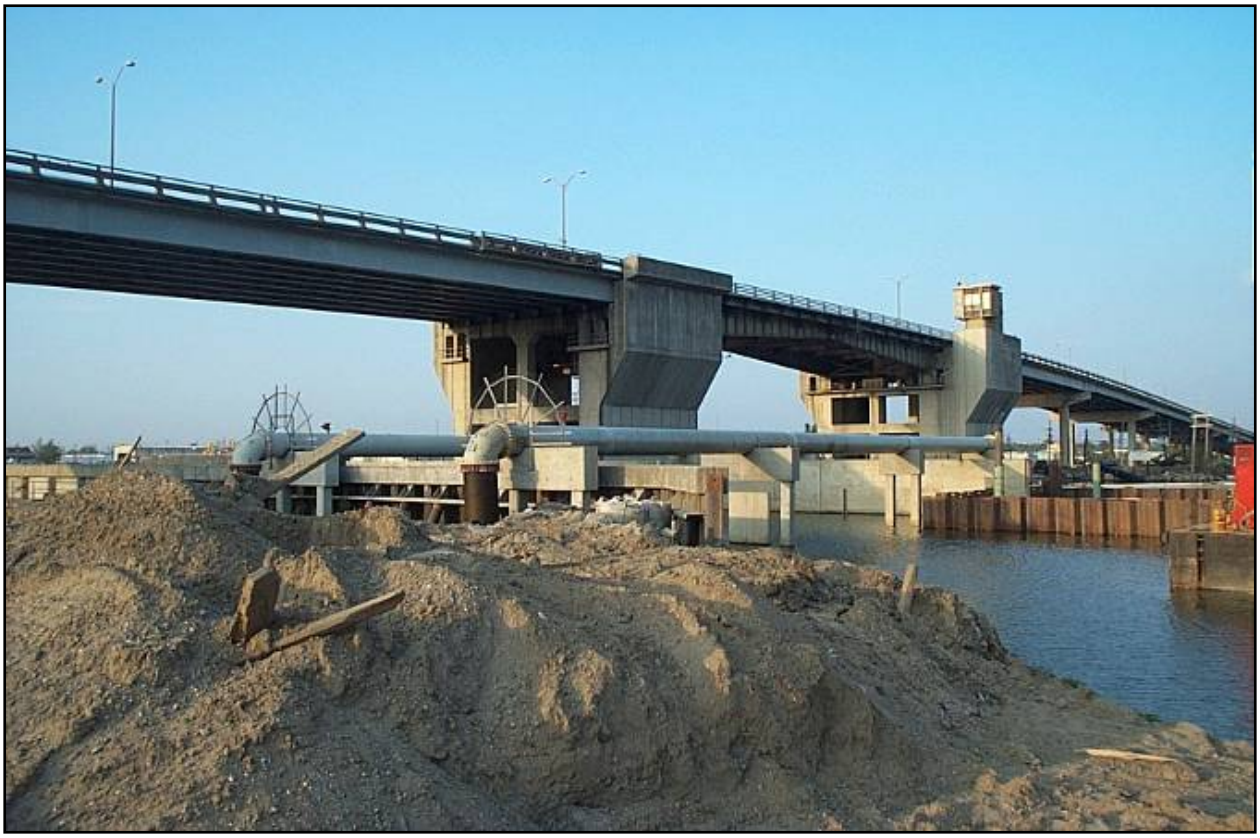
Segment 8 stretches from the V-Line Levee floodwall to the Old Estelle Pumping Station and is an all clay levee with one main road crossing.

Segment 9 is an all clay levee running parallel along the North bank of the Old Estelle Pumping Station Outfall Canal. It runs to the Harvey Canal.

Segment 10 is the West Bank Harvey Canal Levee. It consists of a clay levee running from the mouth of the Harvey Canal to the LaPalco bridge. Along this segment is the New Estelle Pumping Station, a floodwall at the Bridgeline pipeline, and three areas of sheetpile closure required because of unstable earthen levee sections.

Sheetpile closures

New Estelle Pump Station



Lapalo Bridge Overpass construction of sector gate under way

Segment 11 stretches from LaPalco Bridge to the Harvey Lock, paralleling the Harvey Canal. This floodwall includes the Harvey and Cousins Pumping Stations, a vehicular gate and ties the Westwego and Harvey Canal sub-basin back into the Mississippi River Main Line levee.

Industrial area along Harvey Canal

US 90 Bridge over Harvey Canal near Harvey Lock

Looking south down Harvey Canal from Hwy 45 Bridge near Harvey Lock

Harvey Lock

Harvey Lock exit toward MS River

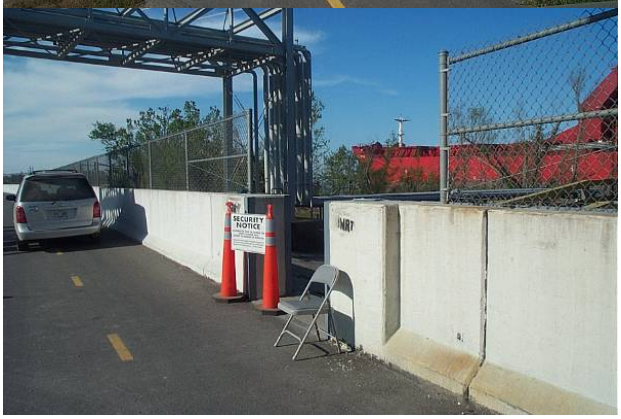
MS River Levee at exit of Harvey Canal

Harvey Pump Station and surrounding walls

Segment 12 is the West Jefferson Levee District Mississippi River levee. It encloses the north side of the sub-basin between Westwego and Harvey Canal and is an all clay levee.

Typical MRL. Paved 10 foot crown. Armor on flood side

MRL in vicinity of Northrup-Grumman Plant



Typical closure gate (vehicle and pedestrian) along MRL

There are 10 pedestrian floodgates (swing) and two roadway floodgates (one swing and one miter).

There are 11 pumping stations that drain the protected area.

Harvey Canal to Algiers Canal – JW4

This area is located in Jefferson and Plaquemines Parish and is generally bounded by the Mississippi River on the north, the Jefferson, Plaquemines & Orleans Parish lines on the east, the Algiers Canal on the south, and the Harvey Canal on the west. The topography is flat with ground elevations ranging from +15 feet NGVD on the alluvial ridges along the Mississippi River to -5 feet NGVD in the interior of the area. Approximately 40 percent of the area is below sea level. The surface area is 18.8 square miles. The area is protected by 21.3 miles of levees and floodwalls.

Segment 1 extends from the Harvey Canal Lock at the Mississippi River down the East bank of the Harvey Canal to the Hero Pumping Station where the pumping station discharge lines pass through a T-wall. This clay levee is a local levee in a heavily industrialized area.

Segment 2 extends from the South end of the Hero Pumping Station around the bend where it ties into the Algiers Canal levee. The clay levee is also a local levee in a heavily industrialized area.

Segment 3 picks up where segment 2 ended and continues along the West bank of the Algiers Canal. The clay levee is interrupted by floodwall segments that cross over the Belle Chasse tunnel and in front of Planters Pumping Station. It ends at the tie-in of the local levee separating Plaquemines and Orleans Parishes. A railroad track crosses over the top of the existing levee. A future floodgate is planned for the area.

Segment 4 is an all clay levee that runs along the length of the Orleans Parish line between Algiers Canal and the Mississippi River levee at the Greater New Orleans Bridge.

Segment 5 is the West Jefferson Levee District Mississippi River Levee stretching between the Harvey Canal and the Orleans Parish line beneath the Greater New Orleans Bridge. This levee consists of all clay levees with short reaches of concrete I-Wall atop clay levees with railroad and vehicular gates.

There are no floodgates, control structures, or drainage structures in the protection system.

There are two pumping stations that drain the protected area.

Risk Model Idealization

The Jefferson West Bank Basin was descretized into four sub-basins (JW 1, JW 2, JW 3, and JW 4) as shown in Figure 1. The sub-basins were defined to correspond to the known interior drainage areas. This reach idealization follows from the basin description information presented above which was collected from project documents and field inspections. Figure 2 shows the elevations for the Jefferson West Bank HPS: **PreKatrina**- in place when Katrina occurred and **Current**-as of 1 June 2007.

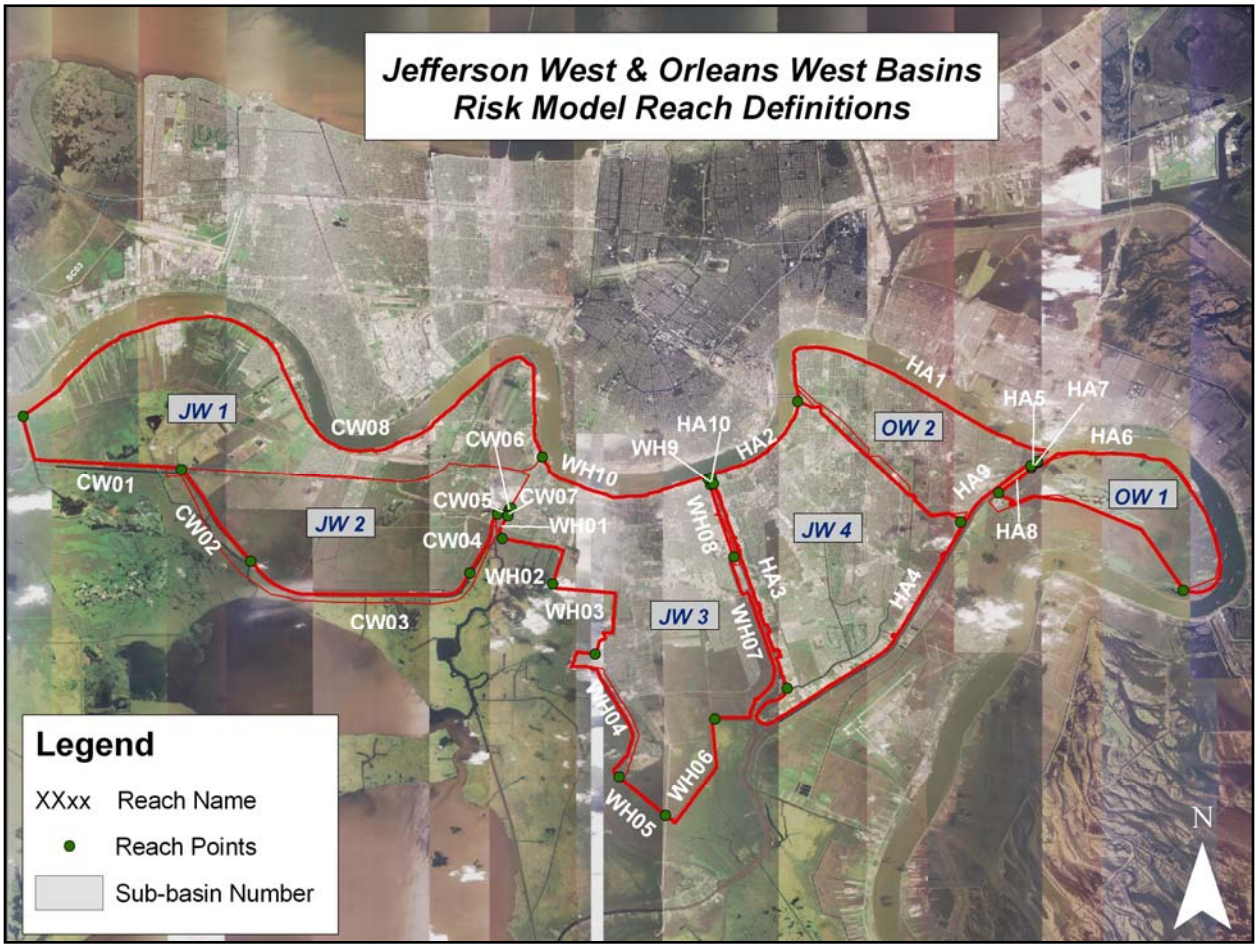


Figure 1. Jefferson West bank Basin reaches (CW01-CW08, WH01-WH10, HA2, HA3, HA4, and HA10) and sub-basins (JW 1 – JW 4) definition for use in the risk model.

Figure 2. Elevations for the Jefferson West Bank Basin for Pre-Katrina (in place when Katrina occurred) and Current (as of 1 June 2007).