

Levee Lift Planning considerations

- Current Levee Surveys
- USACE Settlement Curves
 - Linear look at settlement from construction completion to today
 - Difference between current elevations and future design elevations
- Achievement of 500 Year Protection
 - Movement of SLFPA-E toward its charter mission
 - Maximum protection for citizens within the preview of SLFPA-E
- Life of the USACE Armoring Program
 - Maximize the useful life of the HPTRM
 - Minimize future costs of levee lifts
- FEMA Levee Certification in 2023
 - Assure levees will be certified through 2035

Levee Lift criteria

- Safety provided to the public
 - Which levee reaches protect the largest population centers
 - What elevations are need to assure levee accreditations
- Meet USACE design elevations for 2025
 - Which levee reaches project as most deficient for USACE /FEMA 2025 elevations
 - What elevation must be achieved in 2016 to meet USACE/FEMA required 2025 elevation
- Meet USACE acceptable overtopping rates
 - Will Levees meet the 1% overtopping rate in 2025 if not lifted today.
 - What elevation is required in 2025 to met acceptable overtopping rates
- Meet FEMA freeboard requirements for certification of coastal levees
 - What elevation is required to achieve accreditation in 2023 considering overtopping and freeboard
- Level of design required to lift levees
 - What level of effort will USACE require for 408 permitting

Where we are today

Project/Sub-reach	Meets HSDDRS OT Req 2025	Meets FEMA Freebrd Req 2025	Predicted C/L Settlement from Construction to 2025 (feet)	Predicted C/L Grade in 2025 (feet)	Required Hydraulic Grade in 2025 (feet)	Predicted Amount Deficient (-) in 2025 (feet)	Current Survey Elevation	Current Freeboard 2014 Survey	Projected 100 Yr Freeboard 2025	Projected 100 Yr Freeboard with wave 2025	Projected 500 Yr Freeboard 2025	Projected 500 Yr Freeboard with wave 2025
LPV-00.2 Section #1	N	Y	1.5	15.00	16.25	-1.25	15.8552	6.7	5.8	0.6	3.8	-2.2
LPV-00.2 Section #2	N	Y	1.2	15.30	16.25	-0.95	16.0189	6.8	6.1	0.9	4.1	-1.9
LPV-00.2 Section #3	N	Y	1.2	15.30	16.25	-0.95	15.8975	6.7	6.1	0.9	4.1	-1.9
LPV-00.2 Section #4	N	Y	0.8	15.70	16.25	-0.55	16.1418	6.9	6.5	1.3	4.5	-1.5
LPV-01.1 Section #1	Y	Y	1.05	15.75	16.25	-0.50	16.1534	7.0	6.6	1.4	4.6	-1.5
LPV-01.1 Section #2	N	Y	1.05	15.75	16.25	-0.50	16.4237	7.2	6.6	1.4	4.6	-1.5
LPV-01.1 Section #3	N	Y	1.12	15.60	16.25	-0.65	16.2502	7.1	6.4	1.2	4.4	-1.6
LPV-01.1 Section #4	N	Y	0.98	15.60	16.25	-0.65	16.0850	6.9	6.4	1.2	4.4	-1.6
LPV-01.1 Section #5	N	Y	1.12	15.60	16.25	-0.65	16.0779	6.9	6.4	1.2	4.4	-1.6
LPV-2.2	N	Y	0.75	15.75	16.25	-0.50	16.2312	7.0	6.6	1.4	4.6	-1.5
LPV-19.2 Section #1	N	Y	1.2	15.50	16.25	-0.75	15.8225	6.6	6.3	1.1	4.3	-1.7
LPV-19.2 Section #1a	N	Y	1.5	15.50	16.25	-0.75	16.0235	6.8	6.3	1.1	4.3	-1.7
LPV-19.2 Section #2	N	Y	1.26	15.50	16.25	-0.75	16.0638	6.9	6.3	1.1	4.3	-1.7
LPV-19.2 Section #2a	N	Y	1.17	15.50	16.25	-0.75	15.9207	6.7	6.3	1.1	4.3	-1.7
LPV-19.2 Section #3	N	Y	1	15.50	16.25	-0.75	16.1116	6.9	6.3	1.1	4.3	-1.7
LPV-20.1 Section #1	N	Y	1.39	15.40	16.25	-0.85	16.1770	7.0	6.2	1.0	4.2	-1.8
LPV-20.1 Section #2	N	Y	1.24	15.30	16.25	-0.95	16.1108	6.9	6.1	0.9	4.1	-1.9
LPV-109 Section NE10A	Y	Y	3.5	15.50	17.36	-1.86	17.0400	7.8	6.3	1.6	3.8	-1.9
LPV-109 Section NE10B	Y	Y	3.5	15.50	17.36	-1.86	17.9600	8.3	5.8	1.1	3.0	-2.8
LPV-109 Section NE10C	Y	Y	1.2	17.80	17.72	0.08	18.4400	8.6	8.0	3.0	5.0	-1.1
LPV-109 Section NE11A	Y	Y	3.1	21.90	22.54	-0.64	24.0714	13.3	11.1	5.8	8.4	2.0
LPV-111.01 Rch #12B sch1	N	Y	0.6	27.90	28.4	-0.50	28.9800	11.5	10.4	2.3	7.0	-2.3
LPV-111.01 Rch #12B sch2	N	Y	1.3	27.20	28.4	-1.20	28.2800	9.8	8.7	0.2	5.1	-4.7
LPV-111.01 Rch #12A	N	Y	0.6	27.80	27.9	-0.10	27.9500	11.7	11.5	4.0	8.1	-0.4
LPV-111.01 Rch #11B	N	Y	0.6	24.70	25.26	-0.56	24.8300	8.5	8.4	0.8	5.0	-3.9

HSDRRS Priorities for Second Lifts then Armoring

LPV Projects

Reach	Polder Area	Q 90 Overtopping Yr 2025	Reach Length (Feet)	Residential Density	1% Deficient
1) LPV 20.1	East Jeff, Causeway to 17 th St	0.18	2,450	Extreme	2017
		0.21	6,250	Extreme	2017
2) LPV 19.2	East Jeff, Suburban Canal to Causeway	0.12	1,173	Extreme	2020
		0.35	407	Extreme	2020
		0.14	3,412	Extreme	2020
		0.11	305	Extreme	2020
		0.12	2,401	Extreme	2020
3) LPV 4.2a	St Charles Almedia to Cross Bayou	1.02	3,100	Moderate	2016
		1.01	2,160	Moderate	2016



HSDRRS Priorities for Second Lifts then Armoring

WBV Projects

Reach	Polder Area	Q 90 Overtopping Yr 2025	Reach Length (Feet)	Residential Density	1% Deficient
1) WBV 16.2	West Jeff, Westwego to Bayou Segnette	1.82	745	Moderate/ Extreme	2015
2) WBV 15a.2	West Jeff,	0.32	17,631	Moderate	2014
	Bayou Segnette	1.44	1,221	Moderate	2014
	to Lake Cataouatche Pump Station	0.25	1,000	Moderate	2014



Future Risks

- Increased overtopping potential in some densely populated areas
- Potential levee certification issues in the future

Conclusions

- With state assistance we have determined that USACE settlement curves appear reasonable
- Overtopping rates in the most densely populated areas are projected to be above acceptable USACE/FEMA standards for accreditation
- Sections of East Jefferson may be at greater risk if the levees are not raised prior to USACE armoring