LCR & COMPANY, LLC

HYDROLOGIC & HYDRAULIC REPORT

PROJECT NUMBER: 25-015

PROJECT NAME: Acadiana High School Improvements

PROJECT LOCATION: 315 Rue du Belier
Lafayette, LA 70506

PROJECT OWNER: LAFAYETTE PARISH SCHOOL SYSTEM
Attn: Francis Touchet

REVISION NO.: REV. 1

PREPARED FOR: Lafayette Parish School System
202 Rue Iberville
Lafayette, LA 70508

STATE OF LOUISIANA
CHESTER BEX III
License No. 49071
PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
Chester Bex III
10/10/2025

CREATED BY: TREY BEX

DATE CREATED: 10/10/2025

Table of Contents

HYDROLOGIC & HYDRAULIC REPORT

INTRODUCTION, SITE & PROJECT OVERVIEW

The Lafayette Parish School System (LPSS) is proposing additions and improvements to the existing Acadiana High School located at 315 Rue du Belier in Lafayette, LA. The site is located between Rue du Belier and N. Domingue Ave., just South of Dulles Dr., as seen on the below ***Figure 1 – Vicinity Map.*** The site has existing ground elevations ranging from EL +/- 28 to EL +/- 31 (NAVD88) and is currently developed and used for educational purposes (Acadiana High School). The existing site primarily drains via sheet flow into a network of internal storm drain inlets, which convey runoff through a system of underground piping. Stormwater discharge occurs at two key outfall points: one on the west side of the site into Coulee Ile Des Cannes Lateral 3, and another on the east side into an existing detention pond. This pond further discharges into a coulee located on the eastern boundary of the site. These drainage patterns are illustrated in ***Figure 2 – Elevation Map*** and ***Exhibit 1 – Pre-Development Drainage Area Map***.

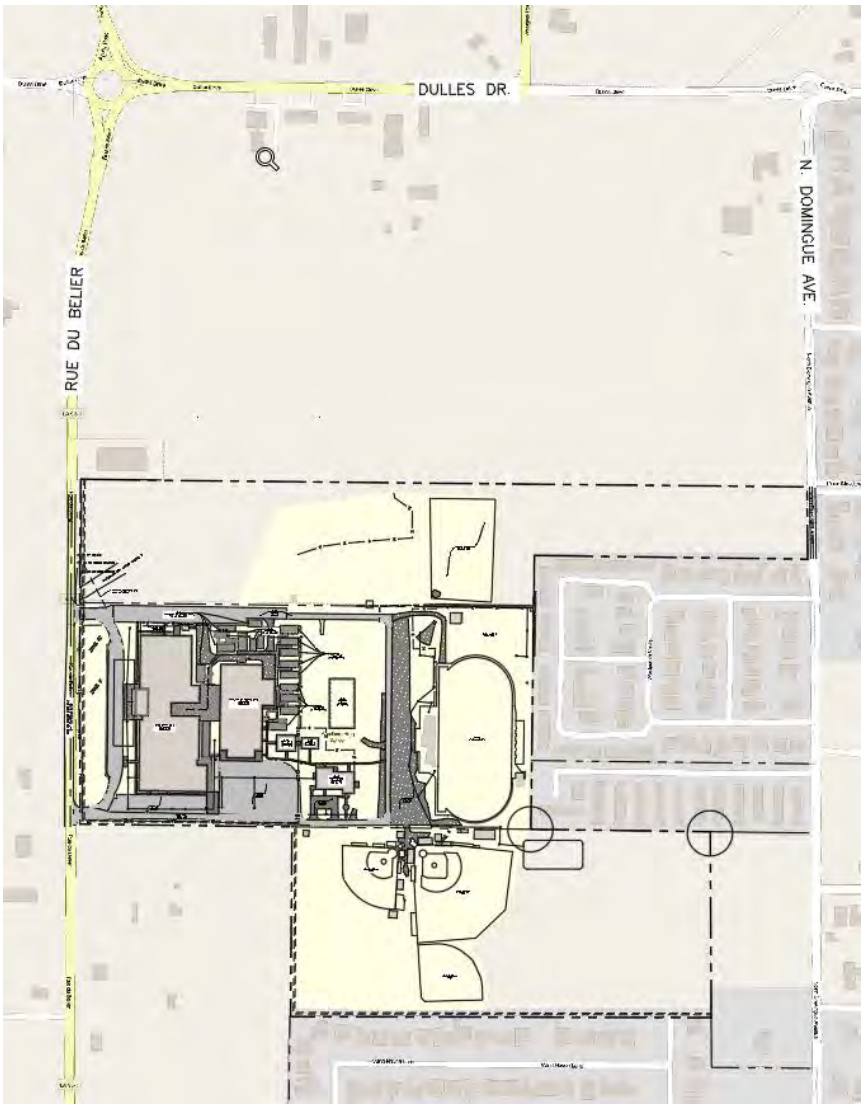


Figure 1: Vicinity Map

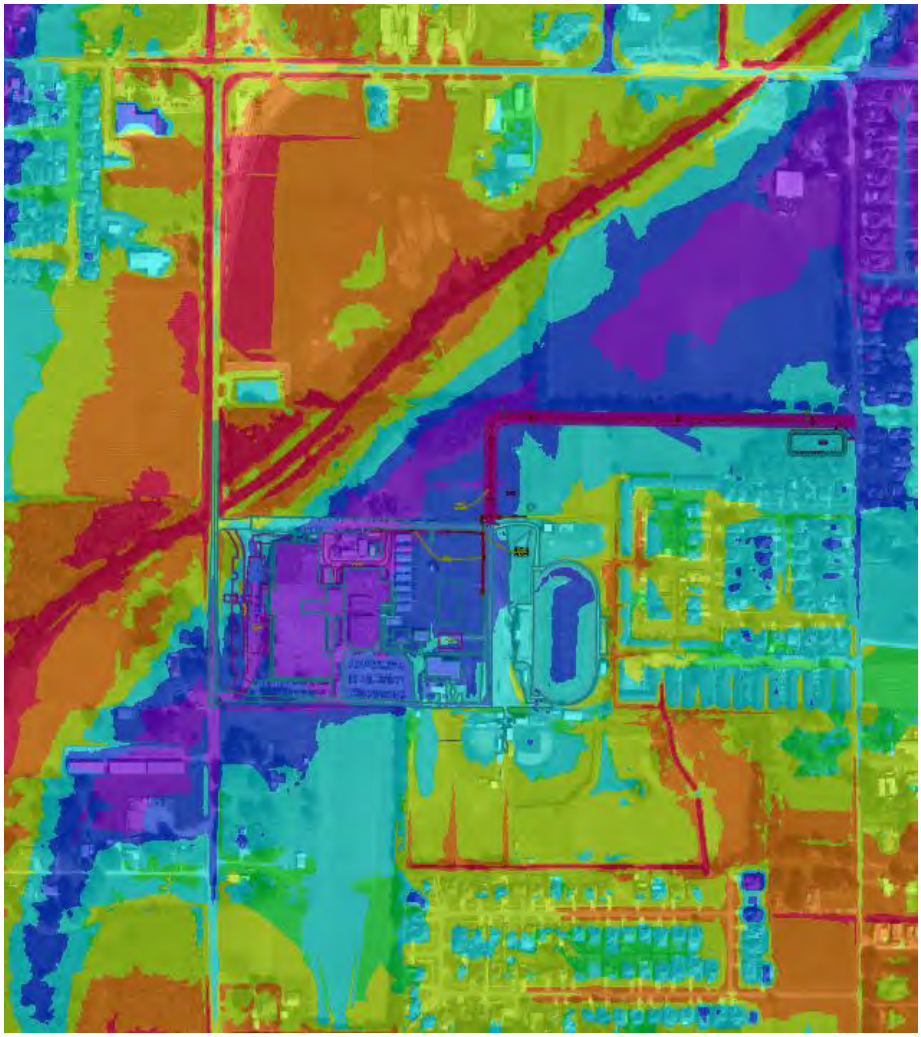


Figure 2: Elevation Heat Map

As shown in ***Apprendix C, FIRM Map (FIRM #22055C0155J),*** the site is <u>partially</u> located within a Flood Hazard Zone or Floodway.

Proposed improvements and additions to the site under this project include the following:

- Demolition and removal of existing driveway.
- Removal of portable classroom buildings
- Proposed 27,060 sf new school building.
- Proposed 7,664 sf of new covered sidewalks
- Proposed 4,324 sf new weight training building
- Proposed 31,828 sf new driveway and parking
- Proposed 1,869 lf new access drive from N. Domingue Drive.
- Proposed 88,530 sf gravel parking lot (final size TBD)
- Proposed 68,100 sf proposed detention (final size TBD)

METHOD OF ANALYSIS & MODELING STRATEGIES

The hydrologic analysis for this site utilized the Rational Method (Q = CiA) as required by the City of Scott and Lafayette Consolidated Government (LCG). The Rational Method was used to determine peak runoff values and time of concentration for the *pre-development* and *post-development* conditions

Rainfall intensities were obtained from the **NOAA Atlas 14 online database** (inches per hour) for the appropriate storm frequencies. **Weighted runoff coefficients** were determined based on the existing and proposed land cover conditions within each drainage area. Each drainage area was analyzed using its **respective time of concentration (Tc)** to establish the corresponding rainfall intensity and peak discharge. This methodology provides accurate and representative runoff estimates for both pre- and post-development conditions.

10-, 25-, 50-, and 100-year storm events were analyzed to assess the performance of the drainage system. Storm hydrographs and peak runoff calculations were generated using Storm and Sanitary Analysis (SSA) within AutoCAD Civil 3D 2024.

This hydrologic and hydraulic report was prepared for permitting and design purposes and follows the applicable requirements of the City of Scott and Lafayette Consolidated Government drainage impact analysis standards. A summary of these requirements includes:

- Drainage analysis must address the 10-, 25-, 50-, and 100-year storm events.
- Storm sewer systems must be designed for the 10-year event.
- Stormwater storage facilities must be designed for the 25-year event.
- Any development that fills or modifies a special flood hazard area must mitigate that development activity volumetrically.

EXISTING CONDITIONS

As mentioned previously, the proposed project area is currently utilized by Acadiana High School, and stormwater runoff generated on the site generally sheet-flows into series of drain inlets and stormwater piping throughout the school where it is then discharged into either Coulee Ile Des Cannes for the western portion of the site or into the existing detention pond that outfalls into a ditch for the Eastern portion of the site. Only the roadside ditches along Rue Du Belier that convey stormwater for **the western portion of the site** are both located with LADOTD right of way, as shown in ***Exhibit 1 – Pre-Development Drainage Area Map.***

Further illustrations of the Existing Drainage Areas are provided in ***Exhibit 1 – Pre-Development Drainage Area Map*** of this report. An overview of the existing drainage area's characteristics are as follows:

Table 1
Existing Drainage Area Details

Outfall Location	Drainage Areas	Area (Ac)	Land Use	Runoff Coefficient	Time Of Concentraion (Min)
Coulee Ile Des Cannes	E-DA1	13.68	School & Paving	0.72	19.68
Detention Pond → East Ditch	E-DA2	15.10	School & Footabll Field	0.50	31.59
East Ditch	E-DA3	32.43	Pasture & Townhomes	0.42	50.64
N. Domingue Roadside Ditch	E-DA4	12.10	Pasture & Woods	0.29	68.08

PROPOSED CONDITIONS

The proposed site plan, drainage areas, flow patterns, hydrologic data, and analysis inputs are provided in **Exhibit 2 – Post-Development Drainage Area Map** of this report. Stormwater runoff from the proposed improvements will be collected, conveyed, and detained before being released at controlled rates into the roadside ditches along Rue de Belier and N. Domingue Avenue. Additionally, portions of the system will tie into the existing subsurface drainage network, which ultimately outfalls into Coulee Ile Des Cannes on the West side of the site and the existing pond on the East side of the site.

New School Addition and Drive (West): Runoff generated from the proposed building addition will be collected in roof drains surrounding the building footprint and then conveyed into new subsurface piping. Pavement will be graded to sheet flow into the roadside ditch along Rue Du Belier, which reflects existing drainage conditions, or into catch basins located between the proposed drive and building, then conveyed via sub-surface piping that will tie-into the existing subsurface drainage network. This stormwater will be discharged through the existing outfall, which was recently upgraded as part of the *LA 93: Coulee Ile Des Cannes Bridge* project. The improvements rerouted the outfall pipe and driveway culvert through box culverts before discharging into the coulee.

Temporary Student Pickup Area Improvements (North of Campus): Runoff generated from the proposed pickup drive improvements north of the school will generally follow existing drainage patterns. Stormwater from the northwestern portion of the improvements will sheet flow into existing catch basins and the existing subsurface drainage system, which ultimately discharges into Coulee Ile Des Cannes via the same network described previously. Runoff from the northeastern portion of the drive will flow through a series of existing swales and culverts that convey stormwater to Existing Stormwater Detention Pond 1 (E-Stor1 & P-Stor1), where it will be released through the existing outfall control structure into the ditch along the southeast side of the football field.

New Access Drive and Parking Lot at N. Domingue Avenue (Northeast): Runoff generated from the proposed access drive will sheet flow into roadside swales, which will convey stormwater to two proposed detention areas. One proposed detention area is located near N. Domingue Avenue on the eastern side of the site, while the other proposed detention area is situated along the northern portion of the existing ditch and northwest of the adjacent apartment complex. Additionally, the western portion of the access drive includes a proposed crushed limestone parking lot, which will drain into the western detention area. This detention area will be discharged at a controlled rate into the ditch located between the football field and the apartment complex. Overall, stormwater collected within these detention areas will be released at controlled rates into the respective receiving ditches, the N. Domingue Avenue roadside ditch and the perimeter ditch along the football field, in accordance with post-development discharge requirements.

Removal of Existing Buildings and Pavement: It should be noted, due to the removal of significant amounts of existing buildings and pavement, changes in surface runoff coefficients for respective drainage areas are subtle.

An overview of the proposed drainage area details are as follows:

Table 2
Proposed Drainage Area Details (Refer to Exhibit 2)

Outfall Location	Drainage Areas	Area (Ac)	Land Use	Runoff Coefficient	Time Of Concentration (Min)
Coulee Ile Des Cannes	P-DA1	13.71	School & Paving	0.73	19.71
Existing Pond	P-DA2	15.13	School & Football Field	0.50	30.80
Existing Ditch	P-DA3	24.30	Access Rd. & Apartments	0.50	42.08
Proposed Pond	P-DA4	13.63	Access Rd. & Pasture	0.33	57.35
N. Domingue Ave Roadside Ditch	P-DA5	6.39	Pasture & Woods	0.32	57.03

ANALYSIS RESULTS

Based on the hydrologic analysis performed, it has been determined that the proposed improvements result in only a minimal increase in runoff—less than 1.6%—at the Coulee Ile Des Cannes outfall. This slight increase is considered conservative, as the analysis did not account for additional on-site storage provided by various site features, including storage within the storm drainage piping system.

Overall, runoff coefficients for the campus portion of the site were not significantly increased. This is primarily due to the removal of substantial impervious surfaces, including portable school buildings, concrete pavement, canopies, and other existing structures. These removals offset much of the impervious areas added by the proposed building additions and site improvements, resulting in only a negligible change in overall runoff conditions.

The existing detention pond located southeast of the football stadium, which serves drainage areas E-DA2 and P-DA2, was originally designed with ample capacity to accommodate additional runoff. Even after the proposed improvements, no modifications to the pond are required, as it continues to provide sufficient storage volume.

Additionally, the proposed access drive along N. Domingue Avenue will sheet flow into roughly 3,116 linear feet of roadside swales, providing an estimated 12,400 cubic feet of unaccounted-for storage before discharging into the proposed detention areas. The proposed pond near N. Domingue Avenue will then outfall into the N. Domingue Avenue roadside ditch. Because these roadside swales were not included in the storage calculations, the analysis represents a conservative approach, likely overstating post-development peak discharge values. The same applies to the western portion of the access drive, where the roadside swales and a proposed 19,200-square-foot detention area will provide further storage not reflected in this analysis. This detention area was excluded because peak discharge values for its drainage area were not significantly

increased due to a reduction in drainage area size and an increase in time of concentration. The proposed drainage system in this area will be constructed to collect and convey stormwater runoff, and detention will be provided as necessary to control discharge upon completion of the design.

Pre-construction and post-construction peak discharge differentials are summarized in the tables provided in this report.

NO-NET-FILL ANALYSIS RESULTS

The Base Flood Elevation (BFE) for this site, as shown on FEMA Flood Insurance Rate Map (FIRM) Panel #22055C0155J, is 29.6 feet near Rue Du Belier and 29.9 feet near N. Domingue Avenue (NAVD88, GEOID99). When converted to GEOID18, the vertical conversion factor at these locations is approximately 1.0 foot, resulting in adjusted BFEs of 28.6 feet and 28.9 feet, respectively.

In accordance with Lafayette Development Code (LDC) Article 3, Section 89-42(g): “Development within a Special Flood Hazard Area,” any fill material placed below the BFE must be mitigated volumetrically within the same drainage area to ensure no net loss of flood storage capacity.

Exhibit 5 provides a summary of the Fill Volume Mitigation (No-Net-Fill) Analysis for the portions of the site located within the Special Flood Hazard Area. Spot elevations and contours shown in this exhibit represent elevations as of July 2025.

Based on the no-net-fill analysis, elevations near the proposed driveway along Rue Du Belier (western portion of the site) indicate that only a small portion of the area lies below the BFE, resulting in a limited amount of fill requiring mitigation. Conversely, along N. Domingue Avenue (northeast portion of the site), the majority of the proposed access drive and parking area lies below the BFE, resulting in a larger volume of fill requiring mitigation. However, the proposed detention areas and roadside ditches within this portion of the site provide sufficient compensatory cut below the BFE to fully offset the fill volume, thereby satisfying the no-net-fill requirement for the project.

DESIGN COMPUTATIONS

PRE-DEVELOPMENT CALCULATIONS

1. Point of Interest #1: Existing Outfall 1 – Existing 36" RCP (Coulee Ile Des Cannes)

Table 3 Peak Runoff – E-Outf1	
Rainfall Event	Peak Runoff (cfs)
10 – Year	**53.90**
25 – Year	**62.22**
50 – Year	**68.55**
100 – Year	**74.67**

2. Point of Interest #2: Existing Outfall 2 (Existing Pond and East Ditch)

a. Point of Interest #2: Existing Detention Pond (E-Stor1)

Top Bank Elevation (ft)	28.50
Bottom Elevation (ft)	22.78
Discharge	36" Corrugated Metal Pipe (Qty. 1)

Table 4
Pond Data Existing Detention Pond (E-Stor1)

Rainfall Event	Water Surface (ft)	Pond Free Board (ft)	Peak Pond Inflows (cfs)	Post-Detained Discharge (cfs)
10 – Year	24.64	3.86	34.39	18.66
25 – Year	24.84	3.66	39.78	22.15
50 – Year	24.98	3.52	43.85	24.79
100 – Year	25.11	3.39	47.78	27.32

b. Point of Interest #2: Peak Runoff of Existing Drainage Area #3 (E-DA3)

Table 5
Peak Runoff (E-DA3)

Rainfall Event	Peak Runoff (cfs)
10 – Year	47.74
25 – Year	55.66
50 – Year	61.67
100 – Year	67.73

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

c. Point of Interest #2: Peak Runoff at Outfall 2 (Pond Discharge and E-DA3 Runoff)

Table 6
Peak Runoff (E-Outf2)

Rainfall Event	Peak Runoff (cfs)
10 – Year	**65.92**
25 – Year	**77.14**
50 – Year	**85.61**
100 – Year	**94.07**

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

3. Point of Interest #3: Existing Outfall 3 (N. Domingue Ave. Roadside Ditch)

Table 7 Peak Runoff – E-Outf3	
Rainfall Event	Peak Runoff (cfs)
10 – Year	**10.30**
25 – Year	**12.05**
50 – Year	**13.39**
100 – Year	**14.76**

1. Point of Interest #1: Proposed Outfall 1 – Existing 36" RCP (Coulee Ile Des Cannes)

Table 8 Peak Runoff – P-Outf1	
Rainfall Event	Peak Runoff (cfs)
10 – Year	**54.75**
25 – Year	**63.20**
50 – Year	**69.63**
100 – Year	**75.85**

2. Point of Interest #2: Proposed Outfall 2 (Existing Pond and East Ditch)

a. Point of Interest #2: Existing Detention Pond – No Modifications (P-Stor1)

Top Bank Elevation (ft)	28.50
Bottom Elevation (ft)	22.78
Discharge	36" Corrugated Metal Pipe (Qty. 1)

Table 9
Pond Data Existing Detention Pond (P-Stor1)

Rainfall Event	Water Surface (ft)	Pond Free Board (ft)	Peak Pond Inflows (cfs)	Post-Detained Discharge (cfs)
10 – Year	24.64	3.86	34.96	18.70
25 – Year	24.84	3.66	40.42	22.20
50 – Year	24.98	3.52	44.53	24.84
100 – Year	25.12	3.38	48.51	27.37

b. Point of Interest #2: Peak Runoff of Proposed Drainage Area #3 (P-DA3)

Table 10
Peak Runoff (P-DA3)

Rainfall Event	Peak Runoff (cfs)
10 – Year	47.20
25 – Year	54.86
50 – Year	60.66
100 – Year	66.42

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

c. Point of Interest #2: Peak Runoff at Outfall 2 (Pond Discharge and P-DA3 Runoff)

Table 11
Peak Runoff (P-Outf2)

Rainfall Event	Peak Runoff (cfs)
10 – Year	**65.61**
25 – Year	**76.80**
50 – Year	**85.25**
100 – Year	**93.56**

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

3. Point of Interest #3: Proposed Outfall 3 (Proposed Pond & N. Domingue Ave. Roadside Ditch)

a. Point of Interest #3: Proposed Detention Pond (P-Stor3)

Top Bank Elevation (ft)	28.0
Bottom Elevation (ft)	26.75
Discharge	15" Pipe (Qty. 1) w/12" circular orifice and 24"x24" overflow weir @ outfall structure

Table 12
Pond Data POI #3

Rainfall Event	Water Surface (ft)	Pond Free Board (ft)	Peak Pond Inflows (cfs)	Post-Detained Discharge (cfs)
10 – Year	27.84	0.16	14.71	2.36
25 – Year	27.99	0.01	17.19	2.64
50 – Year	28.00	0.00	19.07	2.66
100 – Year	28.00	0.00	20.98	2.66

b. Point of Interest #3: Peak Runoff of Proposed Drainage Area #5 (P-DA5)

Table 13
Peak Runoff (P-DA5)

Rainfall Event	Peak Runoff (cfs)
10 – Year	6.71
25 – Year	7.84
50 – Year	8.70
100 – Year	9.57

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

c. Point of Interest #3: Peak Runoff at Outfall 3 (Pond Discharge and P-DA5 Runoff)

Table 14
Total Runoff (P-Outf3)

Rainfall Event	Peak Runoff (cfs)
10 – Year	**7.83**
25 – Year	**9.19**
50 – Year	**10.22**
100 – Year	**11.29**

**Total post-development runoff is taken from the systems hydrograph from each respective rainstorm event.*

SUMMARY

POI #1 TOTAL PRE & POST DISCHARGE (Coulee Ile Des Cannes)

Table 15 POI #1 Summary				
Rainfall Event	Total Pre-Discharge (cfs)	Total Post Discharge (cfs)	Difference (cfs)	% Change
10 – Year	53.90	54.75	**0.85**	**1.58%**
25 – Year	62.22	63.20	**0.98**	**1.58%**
50 – Year	68.55	69.63	**1.08**	**1.58%**
100 – Year	74.67	75.85	**1.18**	**1.58%**

POI #2 TOTAL PRE & POST DISCHARGE (East Ditch)

Table 16 POI #2 Summary				
Rainfall Event	Total Pre-Discharge (cfs)	Total Post Discharge (cfs)	Difference (cfs)	% Change
10 – Year	65.92	65.61	**-0.31**	**-0.47%**
25 – Year	77.14	76.80	**-0.34**	**-0.44%**
50 – Year	85.61	85.25	**-0.36**	**-0.42%**
100 – Year	94.07	93.56	**-0.51**	**-0.54%**

POI #3 TOTAL PRE & POST DISCHARGE (N. Domingue Ave. Roadside Ditch)

Table 17 POI #3 Summary				
Rainfall Event	Total Pre-Discharge (cfs)	Total Post Discharge (cfs)	Difference (cfs)	% Change
10 – Year	10.30	7.83	**-2.47**	**-23.98%**
25 – Year	12.05	9.19	**-2.86**	**-23.73%**
50 – Year	13.39	10.22	**-3.17**	**-23.67%**
100 – Year	14.76	11.29	**-3.47**	**-23.51%**

STORMWATER POLLUTION PREVENTION REQUIRMENTS

Prior to the start of any proposed improvements, the Contractor shall implement adequate erosion control measures, including but not limited to, silt fencing around the perimeter of the proposed improvements and sediment check dams in swales, ditches, and at all outfalls, riprap protection at orifice inlets and outfalls, and seeding on pond slopes. All state and local stormwater pollution prevention requirements shall be followed during construction.

CONCLUSION

Based on the analysis presented in this report and its supporting documentation, it has been determined that the proposed improvements for Acadiana High School comply with all City of Scott and LCG drainage impact and flood mitigation requirements. While the project results in a minor increase in runoff to Coulee Ile Des Cannes (less than 1.6%), this increase is minimal and somewhat overstated, as potential on-site storage was not accounted for in the analysis. Furthermore, the proposed improvements for the East ditch outfall and the N. Domingue Avenue roadside ditch do not increase peak runoff rates at their respective outfalls. Therefore, the project is not expected to cause any adverse impacts to adjacent or downstream properties.

EXHIBITS

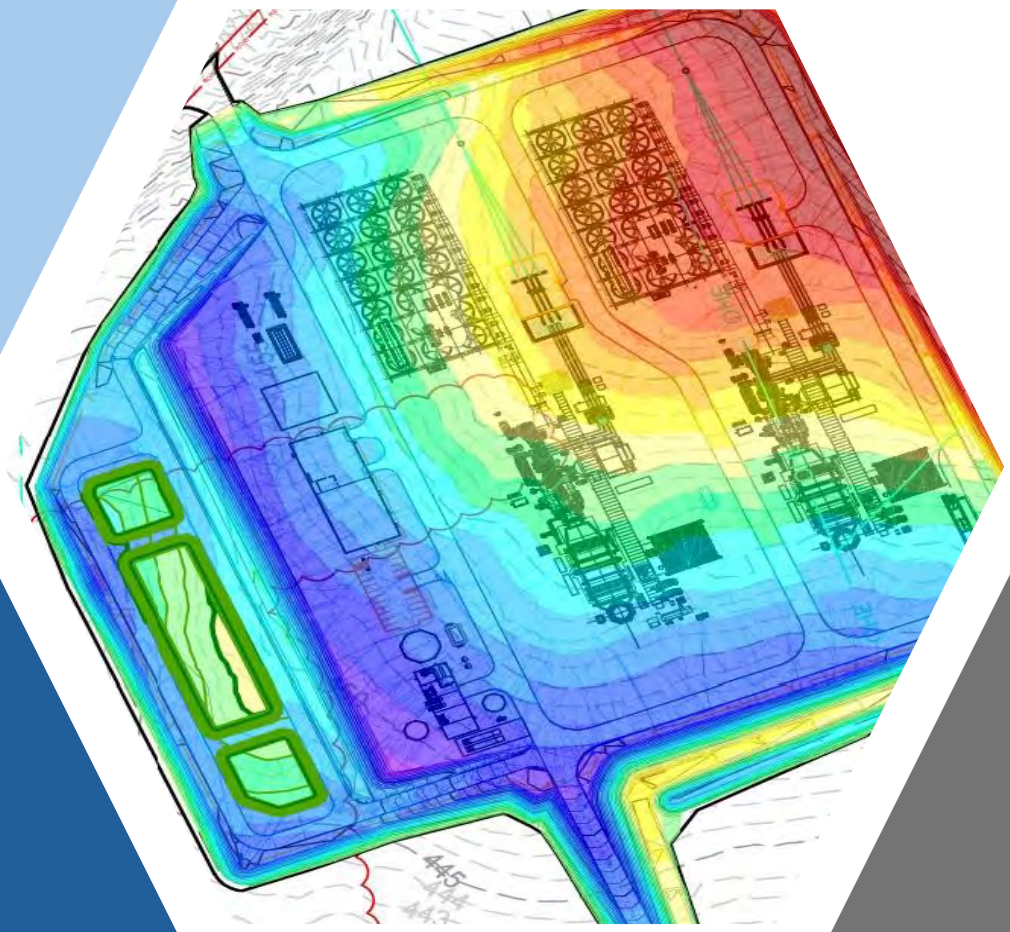
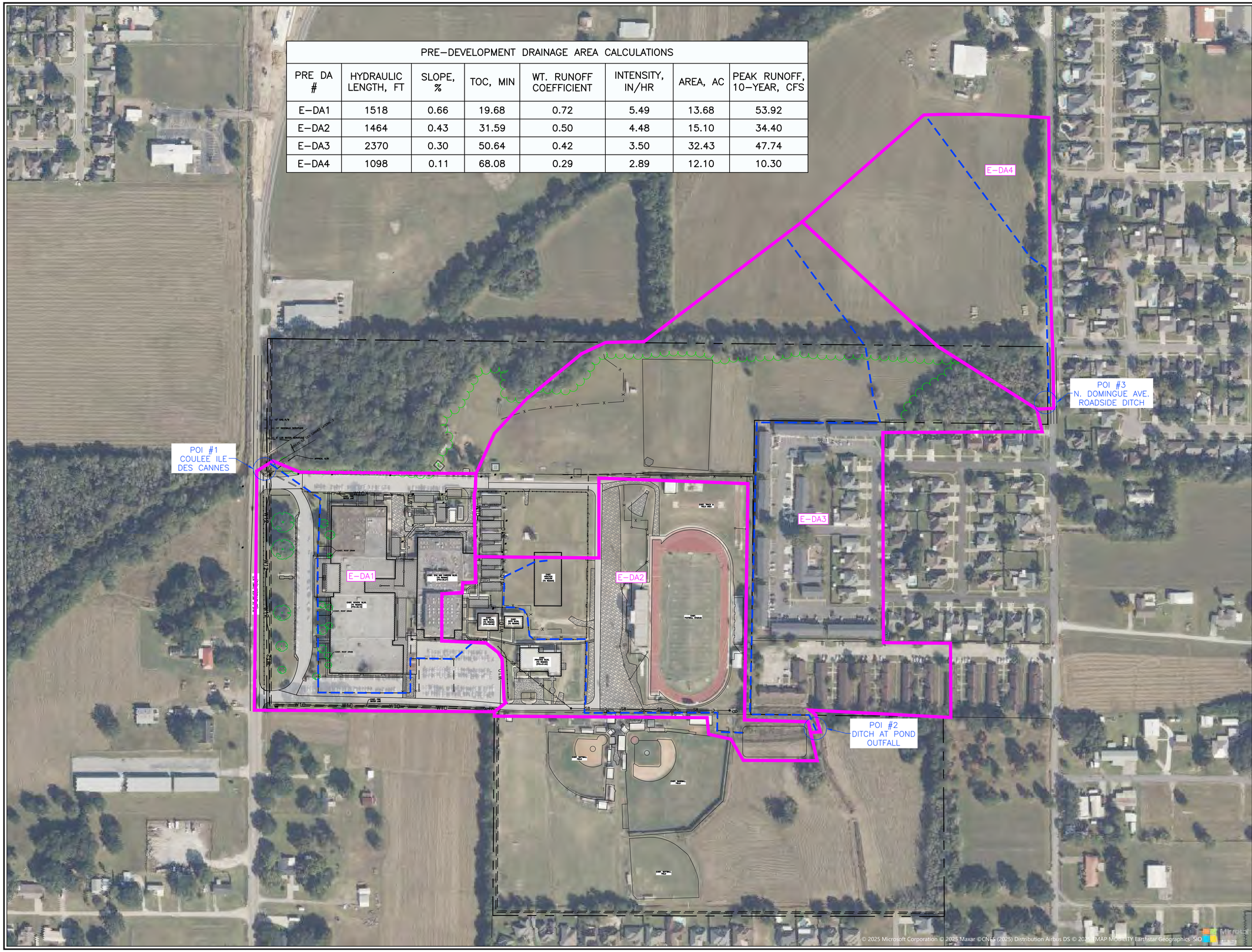


EXHIBIT 1 – PRE-DEVELOPMENT DRAINAGE AREA MAP

PRE–DEVELOPMENT DRAINAGE AREA CALCULATIONS

PRE DA #	HYDRAULIC LENGTH, FT	SLOPE, %	TOC, MIN	WT. RUNOFF COEFFICIENT	INTENSITY, IN/HR	AREA, AC	PEAK RUNOFF, 10–YEAR, CFS
E–DA1	1518	0.66	19.68	0.72	5.49	13.68	53.92
E–DA2	1464	0.43	31.59	0.50	4.48	15.10	34.40
E–DA3	2370	0.30	50.64	0.42	3.50	32.43	47.74
E–DA4	1098	0.11	68.08	0.29	2.89	12.10	10.30



LEGEND:

EXISTING DRAINAGE AREA

HYDRAULIC LENGTH

0 150 300 Feet

LCR & COMPANY, LLC

318 Belle Grove Blvd
Lafayette, LA 70503
(337) 207–3761

PRE–DEVELOPMENT DRAINAGE AREA EXHIBIT

ACADIANA HIGH SCHOOL
315 LA 93
LAFAYETTE, LA

PRELIMINARY

STAMP:

SIGNATURE:

DATE: 10/9/25

NO.	DATE	REVISION DESCRIPTION	BY

DRAWN BY: T. BEX

CHECKED BY: L. ROBICHAUX

ENGINEER: L. ROBICHAUX

FILE: SEE LEFT

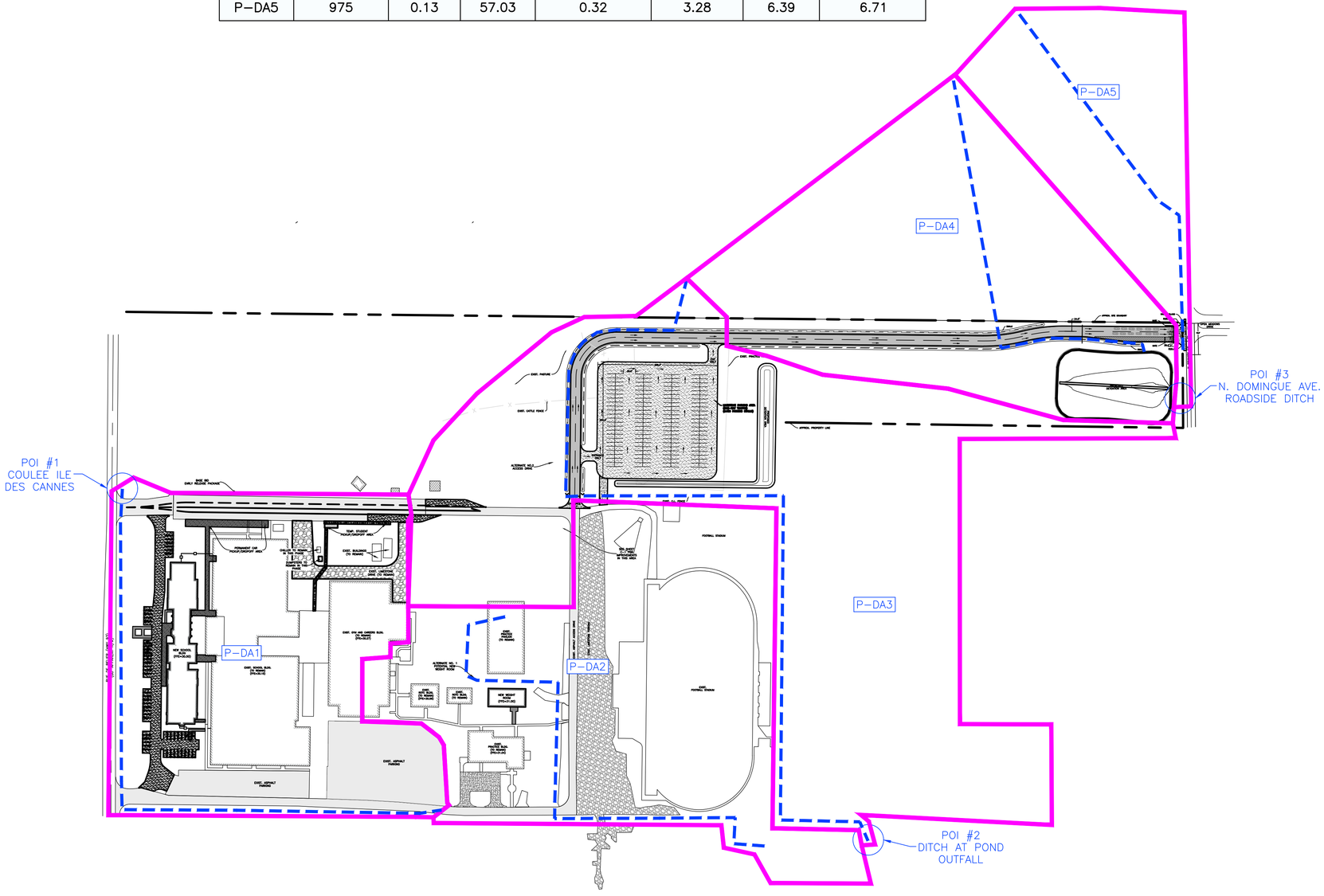
LCR PROJ # 25–015

DATE: 10/9/2025

EXHIBIT 1

EXHIBIT 2 – POST DEVELOPMENT DRAINAGE AREA MAP

POST–DEVELOPMENT DRAINAGE AREA CALCULATIONS							
POST DA #	HYDRAULIC LENGTH, FT	SLOPE, %	TOC, MIN	WT. RUNOFF COEFFICIENT	INTENSITY, IN/HR	AREA, AC	PEAK RUNOFF, 10–YEAR, CFS
P–DA1	1591	0.63	19.71	0.73	5.47	13.71	54.77
P–DA2	1380	0.45	30.80	0.50	4.62	15.13	34.97
P–DA3	2372	0.27	42.08	0.50	3.89	24.30	47.20
P–DA4	1049	0.12	57.35	0.33	3.27	13.63	14.71
P–DA5	975	0.13	57.03	0.32	3.28	6.39	6.71



LEGEND:

PROPOSED DRAINAGE AREA

HYDRAULIC LENGTH

0 150 300 Feet

LCR & COMPANY, LLC
318 Belle Grove Blvd
Lafayette, LA 70503
(337) 207–3761

POST–DEVELOPMENT DRAINAGE AREA EXHIBIT

ACADIANA HIGH SCHOOL
315 LA 93
LAFAYETTE, LA

PRELIMINARY

STAMP:

SIGNATURE:

10/10/25

DATE:

NO.	DATE	REVISION DESCRIPTION	BY

DRAWN BY: T. BEX

CHECKED BY: L. ROBICHAUX

ENGINEER: L. ROBICHAUX

FILE: SEE LEFT

LCR PROJ # 25–015

DATE: 10/10/2025

EXHIBIT 2

C:\Users\Trey Bex\LCR & Company, LLC Dropbox\LCR & Company, LLC Team Folder\Z. Projects\Engineering\25-015 Acadiana Highschool DA\3. CAD\25-015 C-DA-POST.dwg Trey Bex October 10, 2025 – 11:40am

EXHIBIT 3A –10 YR SSA RUNOFF CALCULATIONS & HYDROGRAPH (RATIONAL METHOD)

****
Project Description
****
File Name ..... Post-Development - NOAA.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... User-Defined
Return Period..... 10 years
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-24-2025 00:00:00
Ending Date JUL-25-2025 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 9
Number of nodes 10
Number of links 4

****
Subbasin Summary
****

Subbasin ID	Total Area acres
E-DA1	13.68
E-DA2	15.10
E-DA3	32.43
E-DA4	12.10
P-DA1	13.71
P-DA2	15.13
P-DA3	24.30
P-DA4	13.63
P-DA5	6.39

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
P-OCS3	JUNCTION	26.75	28.00	0.00	
E-Outf1	OUTFALL	20.00	20.00	0.00	
E-Outf2	OUTFALL	22.70	25.71	0.00	
E-Outf3	OUTFALL	29.00	29.00	0.00	
P-Outf1	OUTFALL	20.00	20.00	0.00	
P-Outf2	OUTFALL	22.70	25.71	0.00	
P-Outf3	OUTFALL	26.50	27.75	0.00	
E-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor3	STORAGE	26.75	28.00	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
E-Link1	E-Stor1	E-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link1	P-Stor1	P-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link3	P-OCS3	P-Outf3	CONDUIT	40.0	0.6250	0.0130
P-Or1	P-Stor3	P-OCS3	ORIFICE			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
E-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link3	CIRCULAR	1.25	1.25	1	1.23	0.31	5.11

********** Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	32.188	2.637
Continuity Error (%)	0.545	

********** Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	14.610	4.761
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.036	0.012
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin E-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.68	-	0.72
Composite Area & Weighted Runoff Coeff.	13.68		0.72

Subbasin E-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.10	-	0.50
Composite Area & Weighted Runoff Coeff.	15.10		0.50

Subbasin E-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	32.43	-	0.42
Composite Area & Weighted Runoff Coeff.	32.43		0.42

Subbasin E-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	12.10	-	0.29
Composite Area & Weighted Runoff Coeff.	12.10		0.29

Subbasin P-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.71	-	0.73
Composite Area & Weighted Runoff Coeff.	13.71		0.73

Subbasin P-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.13	-	0.50
Composite Area & Weighted Runoff Coeff.	15.13		0.50

Subbasin P-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	24.30	-	0.50
Composite Area & Weighted Runoff Coeff.	24.30		0.50

Subbasin P-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.63	-	0.33
Composite Area & Weighted Runoff Coeff.	13.63		0.33

Subbasin P-DA5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	6.39	-	0.32
Composite Area & Weighted Runoff Coeff.	6.39		0.32

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
E-DA1	1.79	5.48	1.29	53.92	0.720	0	00:19:40
E-DA2	2.41	4.56	1.20	34.40	0.500	0	00:31:35
E-DA3	2.96	3.51	1.24	47.74	0.420	0	00:50:38
E-DA4	3.33	2.94	0.96	10.30	0.290	0	01:08:04
P-DA1	1.79	5.47	1.31	54.77	0.730	0	00:19:42
P-DA2	2.38	4.62	1.19	34.97	0.500	0	00:30:48
P-DA3	2.72	3.89	1.36	47.20	0.500	0	00:42:04
P-DA4	3.13	3.27	1.03	14.71	0.330	0	00:57:21
P-DA5	3.12	3.28	1.00	6.71	0.320	0	00:57:01

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
P-OCS3	0.28	0.72	27.47	0	01:45	0	0	0:00:00
E-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
E-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
E-Outf3	0.00	0.00	29.00	0	00:00	0	0	0:00:00
P-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
P-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
P-Outf3	0.26	0.60	27.10	0	01:45	0	0	0:00:00

E-Stor1	0.19	1.86	24.64	0	00:46	0	0	0:00:00
P-Stor1	0.18	1.86	24.64	0	00:45	0	0	0:00:00
P-Stor3	0.40	1.09	27.84	0	01:45	0	0	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Occurrence days	Time of Peak Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
P-OCS3	JUNCTION	0.00	2.36	0	01:45	0.00		
E-Outf1	OUTFALL	53.90	53.90	0	00:19	0.00		
E-Outf2	OUTFALL	47.74	65.92	0	00:50	0.00		
E-Outf3	OUTFALL	10.30	10.30	0	01:08	0.00		
P-Outf1	OUTFALL	54.75	54.75	0	00:19	0.00		
P-Outf2	OUTFALL	47.19	65.61	0	00:42	0.00		
P-Outf3	OUTFALL	6.71	7.83	0	00:57	0.00		
E-Stor1	STORAGE	34.39	34.39	0	00:31	0.00		
P-Stor1	STORAGE	34.96	34.96	0	00:30	0.00		
P-Stor3	STORAGE	14.71	14.71	0	00:57	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
E-Stor1	35.230	25	0	00:46	3.045	2	18.66	0.00	0:00:00	0.000
P-Stor1	35.284	25	0	00:45	3.028	2	18.70	0.00	0:00:00	0.000
P-Stor3	42.892	85	0	01:45	11.380	22	2.36	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
E-Outf1	2.73	26.96	53.90
E-Outf2	99.99	2.43	65.92
E-Outf3	9.44	5.15	10.30
P-Outf1	2.73	27.39	54.75
P-Outf2	99.99	2.12	65.61
P-Outf3	99.99	0.85	7.83
System	52.48	64.89	161.16

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days	Time of Peak Flow Occurrence hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
E-Link1	CONDUIT	0	00:46	4.78	1.00	18.66	27.90	0.67	0.54	0	Calculated
P-Link1	CONDUIT	0	00:45	4.79	1.00	18.70	27.90	0.67	0.54	0	Calculated
P-Link3	CONDUIT	0	01:45	3.62	1.00	2.36	5.11	0.46	0.53	0	Calculated
P-Or1	ORIFICE	0	01:45			2.36			1.00		

****
Highest Flow Instability Indexes
****
All links are stable.

Analysis began on: Thu Oct 9 14:26:52 2025
Analysis ended on: Thu Oct 9 14:26:55 2025
Total elapsed time: 00:00:03

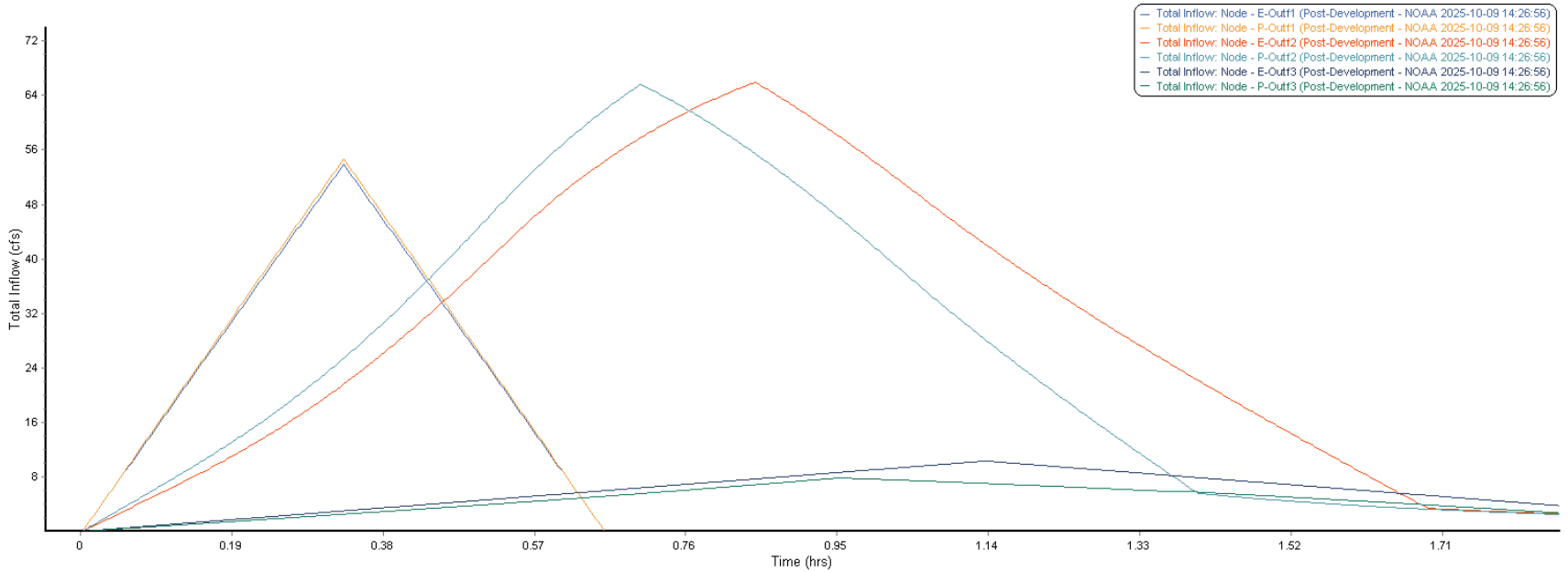

Total Inflow: Node - E-Outf1 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow: Node - P-Outf1 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow: Node - E-Outf2 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow: Node - P-Outf2 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow: Node - E-Outf3 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow: Node - P-Outf3 (Post-Development - NOAA 2025-10-09 14:26:56)
Total Inflow (cfs)
72
64
56
48
40
32
24
16
8
0
0.19
0.38
0.57
0.76
0.95
1.14
1.33
1.52
1.71
Time (hrs)

EXHIBIT 3B –25 YR SSA RUNOFF CALCULATIONS & HYDROGRAPH (RATIONAL METHOD)

****
Project Description
****
File Name ..... Post-Development - NOAA.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... User-Defined
Return Period..... 25 years
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-24-2025 00:00:00
Ending Date JUL-25-2025 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 9
Number of nodes 10
Number of links 4

****
Subbasin Summary
****

Subbasin ID	Total Area acres
E-DA1	13.68
E-DA2	15.10
E-DA3	32.43
E-DA4	12.10
P-DA1	13.71
P-DA2	15.13
P-DA3	24.30
P-DA4	13.63
P-DA5	6.39

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
P-OCS3	JUNCTION	26.75	28.00	0.00	
E-Outf1	OUTFALL	20.00	20.00	0.00	
E-Outf2	OUTFALL	22.70	25.71	0.00	
E-Outf3	OUTFALL	29.00	29.00	0.00	
P-Outf1	OUTFALL	20.00	20.00	0.00	
P-Outf2	OUTFALL	22.70	25.71	0.00	
P-Outf3	OUTFALL	26.50	27.75	0.00	
E-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor3	STORAGE	26.75	28.00	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
E-Link1	E-Stor1	E-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link1	P-Stor1	P-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link3	P-OCS3	P-Outf3	CONDUIT	40.0	0.6250	0.0130
P-Or1	P-Stor3	P-OCS3	ORIFICE			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
E-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link3	CIRCULAR	1.25	1.25	1	1.23	0.31	5.11

********** Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	37.430	3.067
Continuity Error (%)	0.545	

********** Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	16.973	5.531
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.039	0.013
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin E-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.68	-	0.72
Composite Area & Weighted Runoff Coeff.	13.68		0.72

Subbasin E-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.10	-	0.50
Composite Area & Weighted Runoff Coeff.	15.10		0.50

Subbasin E-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	32.43	-	0.42
Composite Area & Weighted Runoff Coeff.	32.43		0.42

Subbasin E-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	12.10	-	0.29
Composite Area & Weighted Runoff Coeff.	12.10		0.29

Subbasin P-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.71	-	0.73
Composite Area & Weighted Runoff Coeff.	13.71		0.73

Subbasin P-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.13	-	0.50
Composite Area & Weighted Runoff Coeff.	15.13		0.50

Subbasin P-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	24.30	-	0.50
Composite Area & Weighted Runoff Coeff.	24.30		0.50

Subbasin P-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.63	-	0.33
Composite Area & Weighted Runoff Coeff.	13.63		0.33

Subbasin P-DA5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	6.39	-	0.32
Composite Area & Weighted Runoff Coeff.	6.39		0.32

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
E-DA1	2.07	6.32	1.49	62.25	0.720	0	00:19:40
E-DA2	2.78	5.27	1.39	39.79	0.500	0	00:31:35
E-DA3	3.45	4.09	1.45	55.66	0.420	0	00:50:38
E-DA4	3.89	3.43	1.13	12.05	0.290	0	01:08:04
P-DA1	2.07	6.32	1.51	63.23	0.730	0	00:19:42
P-DA2	2.75	5.34	1.37	40.43	0.500	0	00:30:48
P-DA3	3.16	4.52	1.58	54.86	0.500	0	00:42:04
P-DA4	3.65	3.82	1.21	17.19	0.330	0	00:57:21
P-DA5	3.64	3.83	1.17	7.84	0.320	0	00:57:01

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
P-OCS3	0.31	0.77	27.52	0	01:46	0	0	0:00:00
E-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
E-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
E-Outf3	0.00	0.00	29.00	0	00:00	0	0	0:00:00
P-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
P-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
P-Outf3	0.28	0.64	27.14	0	01:46	0	0	0:00:00

E-Stor1	0.19	2.06	24.84	0	00:45	0	0	0:00:00
P-Stor1	0.19	2.06	24.84	0	00:44	0	0	0:00:00
P-Stor3	0.45	1.24	27.99	0	01:46	0	0	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	hh:mm
P-OCS3	JUNCTION	0.00	2.64	0	01:46	0.00		
E-Outf1	OUTFALL	62.22	62.22	0	00:19	0.00		
E-Outf2	OUTFALL	55.66	77.14	0	00:50	0.00		
E-Outf3	OUTFALL	12.05	12.05	0	01:08	0.00		
P-Outf1	OUTFALL	63.20	63.20	0	00:19	0.00		
P-Outf2	OUTFALL	54.85	76.80	0	00:42	0.00		
P-Outf3	OUTFALL	7.84	9.19	0	00:57	0.00		
E-Stor1	STORAGE	39.78	39.78	0	00:31	0.00		
P-Stor1	STORAGE	40.42	40.42	0	00:30	0.00		
P-Stor3	STORAGE	17.19	17.19	0	00:57	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
E-Stor1	39.612	28	0	00:45	3.231	2	22.15	0.00	0:00:00	0.000
P-Stor1	39.673	28	0	00:44	3.212	2	22.20	0.00	0:00:00	0.000
P-Stor3	50.153	99	0	01:46	13.223	26	2.64	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
E-Outf1	2.73	31.12	62.22
E-Outf2	99.99	2.83	77.14
E-Outf3	9.44	6.03	12.05
P-Outf1	2.73	31.62	63.20
P-Outf2	99.99	2.46	76.80
P-Outf3	99.99	0.99	9.19
System	52.48	75.04	187.26

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days	hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
E-Link1	CONDUIT	0	00:45	5.06	1.00	22.15	27.90	0.79	0.59	0	Calculated
P-Link1	CONDUIT	0	00:44	5.06	1.00	22.20	27.90	0.80	0.60	0	Calculated
P-Link3	CONDUIT	0	01:46	3.70	1.00	2.64	5.11	0.52	0.56	0	Calculated
P-Or1	ORIFICE	0	01:46			2.64			1.00		

****
Highest Flow Instability Indexes
****
All links are stable.

Analysis began on: Thu Oct 9 14:51:45 2025
Analysis ended on: Thu Oct 9 14:51:48 2025
Total elapsed time: 00:00:03

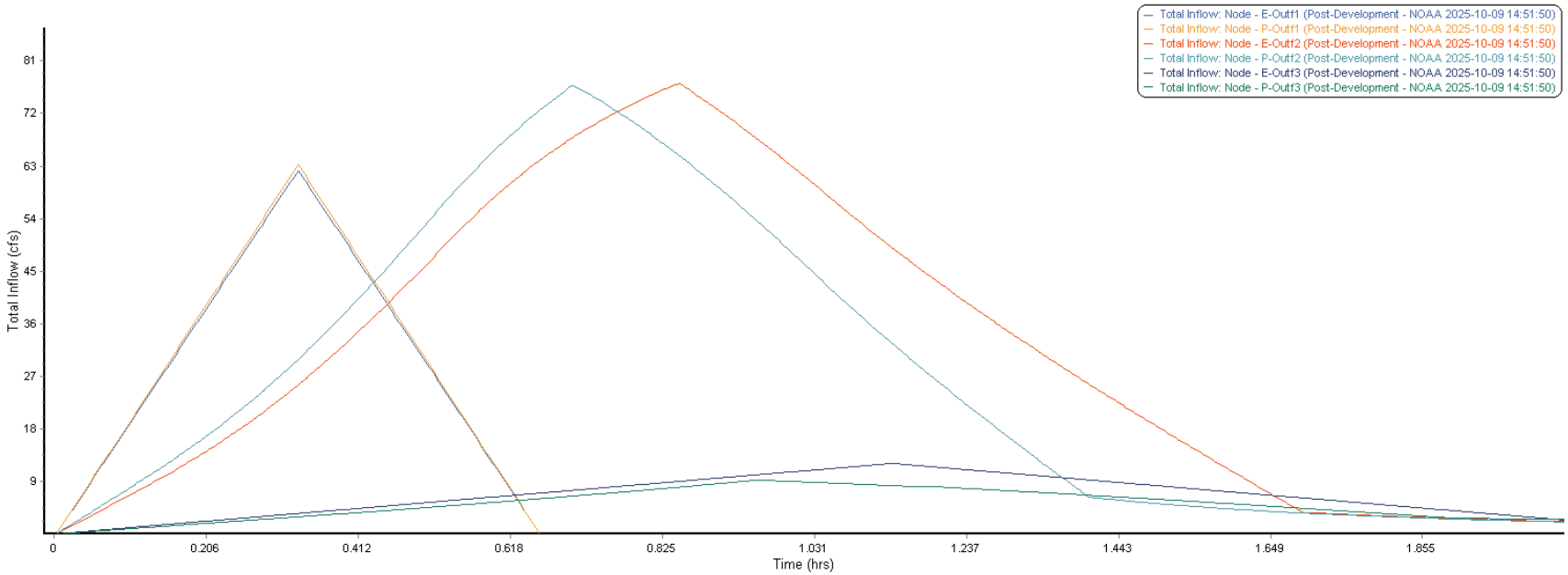

Total Inflow: Node - E-Outf1 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow: Node - P-Outf1 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow: Node - E-Outf2 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow: Node - P-Outf2 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow: Node - E-Outf3 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow: Node - P-Outf3 (Post-Development - NOAA 2025-10-09 14:51:50)
Total Inflow (cfs)
81
72
63
54
45
36
27
18
9
0
0.206
0.412
0.618
0.825
1.031
1.237
1.443
1.649
1.855
Time (hrs)

EXHIBIT 3C – 50 YR SSA RUNOFF CALCULATIONS & HYDROGRAPH (RATIONAL METHOD)

****
Project Description
****
File Name ..... Post-Development - NOAA.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... User-Defined
Return Period..... 50 years
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-24-2025 00:00:00
Ending Date JUL-25-2025 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 9
Number of nodes 10
Number of links 4

****
Subbasin Summary
****

Subbasin ID	Total Area acres
E-DA1	13.68
E-DA2	15.10
E-DA3	32.43
E-DA4	12.10
P-DA1	13.71
P-DA2	15.13
P-DA3	24.30
P-DA4	13.63
P-DA5	6.39

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
P-OCS3	JUNCTION	26.75	28.00	0.00	
E-Outf1	OUTFALL	20.00	20.00	0.00	
E-Outf2	OUTFALL	22.70	25.71	0.00	
E-Outf3	OUTFALL	29.00	29.00	0.00	
P-Outf1	OUTFALL	20.00	20.00	0.00	
P-Outf2	OUTFALL	22.70	25.71	0.00	
P-Outf3	OUTFALL	26.50	27.75	0.00	
E-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor3	STORAGE	26.75	28.00	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
E-Link1	E-Stor1	E-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link1	P-Stor1	P-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link3	P-OCS3	P-Outf3	CONDUIT	40.0	0.6250	0.0130
P-Or1	P-Stor3	P-OCS3	ORIFICE			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
E-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link3	CIRCULAR	1.25	1.25	1	1.23	0.31	5.11

********** Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	41.405	3.392
Continuity Error (%)	0.546	

********** Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	18.646	6.076
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.039	0.013
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin E-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.68	-	0.72
Composite Area & Weighted Runoff Coeff.	13.68		0.72

Subbasin E-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.10	-	0.50
Composite Area & Weighted Runoff Coeff.	15.10		0.50

Subbasin E-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	32.43	-	0.42
Composite Area & Weighted Runoff Coeff.	32.43		0.42

Subbasin E-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	12.10	-	0.29
Composite Area & Weighted Runoff Coeff.	12.10		0.29

Subbasin P-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.71	-	0.73
Composite Area & Weighted Runoff Coeff.	13.71		0.73

Subbasin P-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.13	-	0.50
Composite Area & Weighted Runoff Coeff.	15.13		0.50

Subbasin P-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	24.30	-	0.50
Composite Area & Weighted Runoff Coeff.	24.30		0.50

Subbasin P-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.63	-	0.33
Composite Area & Weighted Runoff Coeff.	13.63		0.33

Subbasin P-DA5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	6.39	-	0.32
Composite Area & Weighted Runoff Coeff.	6.39		0.32

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
E-DA1	2.28	6.96	1.64	68.58	0.720	0	00:19:40
E-DA2	3.07	5.81	1.53	43.86	0.500	0	00:31:35
E-DA3	3.82	4.53	1.61	61.67	0.420	0	00:50:38
E-DA4	4.33	3.82	1.25	13.40	0.290	0	01:08:04
P-DA1	2.28	6.96	1.67	69.66	0.730	0	00:19:42
P-DA2	3.03	5.89	1.51	44.55	0.500	0	00:30:48
P-DA3	3.50	4.99	1.75	60.66	0.500	0	00:42:04
P-DA4	4.05	4.24	1.34	19.07	0.330	0	00:57:21
P-DA5	4.04	4.25	1.29	8.70	0.320	0	00:57:01

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
P-OCS3	0.31	0.78	27.53	0	01:24	0	0	0:00:00
E-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
E-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
E-Outf3	0.00	0.00	29.00	0	00:00	0	0	0:00:00
P-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
P-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
P-Outf3	0.28	0.64	27.14	0	01:24	0	0	0:00:00

E-Stor1	0.20	2.20	24.98	0	00:45	0	0	0:00:00
P-Stor1	0.20	2.20	24.98	0	00:44	0	0	0:00:00
P-Stor3	0.45	1.25	28.00	0	01:24	1.43	23	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
P-OCS3	JUNCTION	0.00	2.66	0	01:24	0.00		
E-Outf1	OUTFALL	68.55	68.55	0	00:19	0.00		
E-Outf2	OUTFALL	61.66	85.61	0	00:50	0.00		
E-Outf3	OUTFALL	13.39	13.39	0	01:08	0.00		
P-Outf1	OUTFALL	69.63	69.63	0	00:19	0.00		
P-Outf2	OUTFALL	60.65	85.25	0	00:42	0.00		
P-Outf3	OUTFALL	8.69	10.22	0	00:57	0.00		
E-Stor1	STORAGE	43.85	43.85	0	00:31	0.00		
P-Stor1	STORAGE	44.53	44.53	0	00:30	0.00		
P-Stor3	STORAGE	19.07	19.07	0	00:57	7.60	0	01:24

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
E-Stor1	42.866	30	0	00:45	3.366	2	24.79	0.00	0:00:00	0.000
P-Stor1	42.932	30	0	00:44	3.345	2	24.84	0.00	0:00:00	0.000
P-Stor3	50.709	100	0	01:24	13.509	27	2.66	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
E-Outf1	2.73	34.29	68.55
E-Outf2	99.99	3.13	85.61
E-Outf3	9.44	6.70	13.39
P-Outf1	2.73	34.83	69.63
P-Outf2	99.99	2.71	85.25
P-Outf3	99.99	1.04	10.22
System	52.48	82.70	207.15

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days	Time of Peak Flow Occurrence hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
E-Link1	CONDUIT	0	00:45	5.25	1.00	24.79	27.90	0.89	0.63	0	Calculated
P-Link1	CONDUIT	0	00:44	5.25	1.00	24.84	27.90	0.89	0.63	0	Calculated
P-Link3	CONDUIT	0	01:24	3.71	1.00	2.66	5.11	0.52	0.57	0	Calculated
P-Or1	ORIFICE	0	01:24			2.66			1.00		

****
Highest Flow Instability Indexes
****
All links are stable.

Analysis began on: Thu Oct 9 14:57:56 2025
Analysis ended on: Thu Oct 9 14:57:59 2025
Total elapsed time: 00:00:03

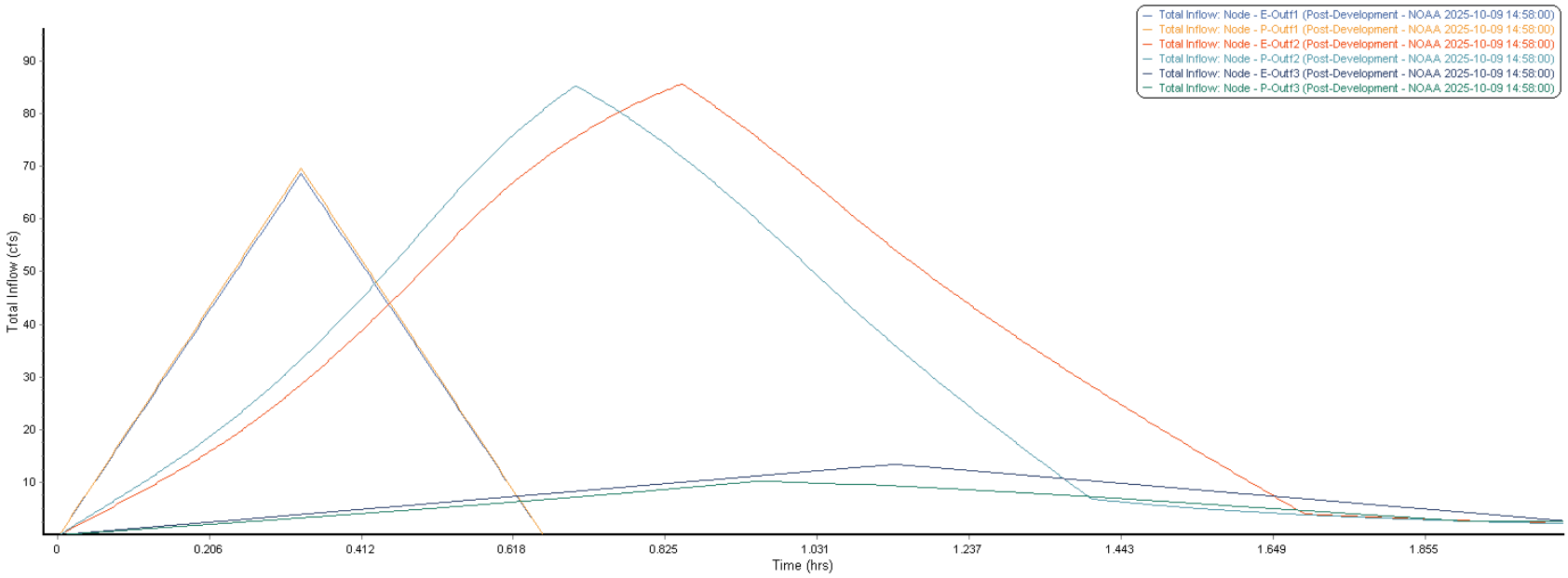

Total Inflow: Node - E-Outf1 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow: Node - P-Outf1 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow: Node - E-Outf2 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow: Node - P-Outf2 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow: Node - E-Outf3 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow: Node - P-Outf3 (Post-Development - NOAA 2025-10-09 14:58:00)
Total Inflow (cfs)
90
80
70
60
50
40
30
20
10
0
0.206
0.412
0.618
0.825
1.031
1.237
1.443
1.649
1.855
Time (hrs)

EXHIBIT 3D –100 YR SSA RUNOFF CALCULATIONS & HYDROGRAPH (RATIONAL METHOD)

****
Project Description
****
File Name ..... Post-Development - NOAA.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... User-Defined
Return Period..... 100 years
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date JUL-24-2025 00:00:00
Ending Date JUL-25-2025 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 9
Number of nodes 10
Number of links 4

****
Subbasin Summary
****

Subbasin ID	Total Area acres
E-DA1	13.68
E-DA2	15.10
E-DA3	32.43
E-DA4	12.10
P-DA1	13.71
P-DA2	15.13
P-DA3	24.30
P-DA4	13.63
P-DA5	6.39

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
P-OCS3	JUNCTION	26.75	28.00	0.00	
E-Outf1	OUTFALL	20.00	20.00	0.00	
E-Outf2	OUTFALL	22.70	25.71	0.00	
E-Outf3	OUTFALL	29.00	29.00	0.00	
P-Outf1	OUTFALL	20.00	20.00	0.00	
P-Outf2	OUTFALL	22.70	25.71	0.00	
P-Outf3	OUTFALL	26.50	27.75	0.00	
E-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor1	STORAGE	22.78	28.50	0.00	
P-Stor3	STORAGE	26.75	28.00	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
E-Link1	E-Stor1	E-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link1	P-Stor1	P-Outf2	CONDUIT	40.0	0.1750	0.0130
P-Link3	P-OCS3	P-Outf3	CONDUIT	40.0	0.6250	0.0130
P-Or1	P-Stor3	P-OCS3	ORIFICE			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
E-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link1	CIRCULAR	3.00	3.00	1	7.07	0.75	27.90
P-Link3	CIRCULAR	1.25	1.25	1	1.23	0.31	5.11

********** Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	45.370	3.717
Continuity Error (%)	0.546	

********** Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	20.286	6.611
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.039	0.013
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin E-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.68	-	0.72
Composite Area & Weighted Runoff Coeff.	13.68		0.72

Subbasin E-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.10	-	0.50
Composite Area & Weighted Runoff Coeff.	15.10		0.50

Subbasin E-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	32.43	-	0.42
Composite Area & Weighted Runoff Coeff.	32.43		0.42

Subbasin E-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	12.10	-	0.29
Composite Area & Weighted Runoff Coeff.	12.10		0.29

Subbasin P-DA1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.71	-	0.73
Composite Area & Weighted Runoff Coeff.	13.71		0.73

Subbasin P-DA2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	15.13	-	0.50
Composite Area & Weighted Runoff Coeff.	15.13		0.50

Subbasin P-DA3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	24.30	-	0.50
Composite Area & Weighted Runoff Coeff.	24.30		0.50

Subbasin P-DA4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	13.63	-	0.33
Composite Area & Weighted Runoff Coeff.	13.63		0.33

Subbasin P-DA5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	6.39	-	0.32
Composite Area & Weighted Runoff Coeff.	6.39		0.32

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
E-DA1	2.49	7.59	1.79	74.70	0.720	0	00:19:40
E-DA2	3.34	6.33	1.67	47.79	0.500	0	00:31:35
E-DA3	4.20	4.97	1.76	67.73	0.420	0	00:50:38
E-DA4	4.77	4.21	1.38	14.77	0.290	0	01:08:04
P-DA1	2.49	7.58	1.81	75.88	0.730	0	00:19:42
P-DA2	3.30	6.41	1.65	48.52	0.500	0	00:30:48
P-DA3	3.83	5.47	1.91	66.42	0.500	0	00:42:04
P-DA4	4.46	4.67	1.47	20.99	0.330	0	00:57:21
P-DA5	4.45	4.68	1.42	9.57	0.320	0	00:57:01

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
P-OCS3	0.31	0.78	27.53	0	01:15	0	0	0:00:00
E-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
E-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
E-Outf3	0.00	0.00	29.00	0	00:00	0	0	0:00:00
P-Outf1	0.00	0.00	20.00	0	00:00	0	0	0:00:00
P-Outf2	0.00	0.00	22.70	0	00:00	0	0	0:00:00
P-Outf3	0.28	0.64	27.14	0	01:15	0	0	0:00:00

E-Stor1	0.21	2.33	25.11	0	00:45	0	0	0:00:00
P-Stor1	0.21	2.34	25.12	0	00:44	0	0	0:00:00
P-Stor3	0.45	1.25	28.00	0	01:15	3.11	32	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
P-OCS3	JUNCTION	0.00	2.66	0	01:15	0.00		
E-Outf1	OUTFALL	74.67	74.67	0	00:19	0.00		
E-Outf2	OUTFALL	67.72	94.07	0	00:50	0.00		
E-Outf3	OUTFALL	14.76	14.76	0	01:08	0.00		
P-Outf1	OUTFALL	75.85	75.85	0	00:19	0.00		
P-Outf2	OUTFALL	66.40	93.56	0	00:42	0.00		
P-Outf3	OUTFALL	9.57	11.29	0	00:57	0.00		
E-Stor1	STORAGE	47.78	47.78	0	00:31	0.00		
P-Stor1	STORAGE	48.51	48.51	0	00:30	0.00		
P-Stor3	STORAGE	20.98	20.98	0	00:57	11.73	0	01:15

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
E-Stor1	45.991	32	0	00:45	3.494	2	27.32	0.00	0:00:00	0.000
P-Stor1	46.054	32	0	00:44	3.471	2	27.37	0.00	0:00:00	0.000
P-Stor3	50.709	100	0	01:15	13.625	27	2.66	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
E-Outf1	2.73	37.35	74.67
E-Outf2	99.99	3.43	94.07
E-Outf3	9.44	7.38	14.76
P-Outf1	2.73	37.94	75.85
P-Outf2	99.99	2.97	93.56
P-Outf3	99.99	1.08	11.29
System	52.48	90.15	226.65

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days	Time of Peak Flow Occurrence hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
E-Link1	CONDUIT	0	00:45	5.42	1.00	27.32	27.90	0.98	0.67	0	Calculated
P-Link1	CONDUIT	0	00:44	5.43	1.00	27.37	27.90	0.98	0.67	0	Calculated
P-Link3	CONDUIT	0	01:15	3.71	1.00	2.66	5.11	0.52	0.57	0	Calculated
P-Or1	ORIFICE	0	01:15			2.66			1.00		

****
Highest Flow Instability Indexes
****
All links are stable.

Analysis began on: Thu Oct 9 15:05:06 2025
Analysis ended on: Thu Oct 9 15:05:10 2025
Total elapsed time: 00:00:04

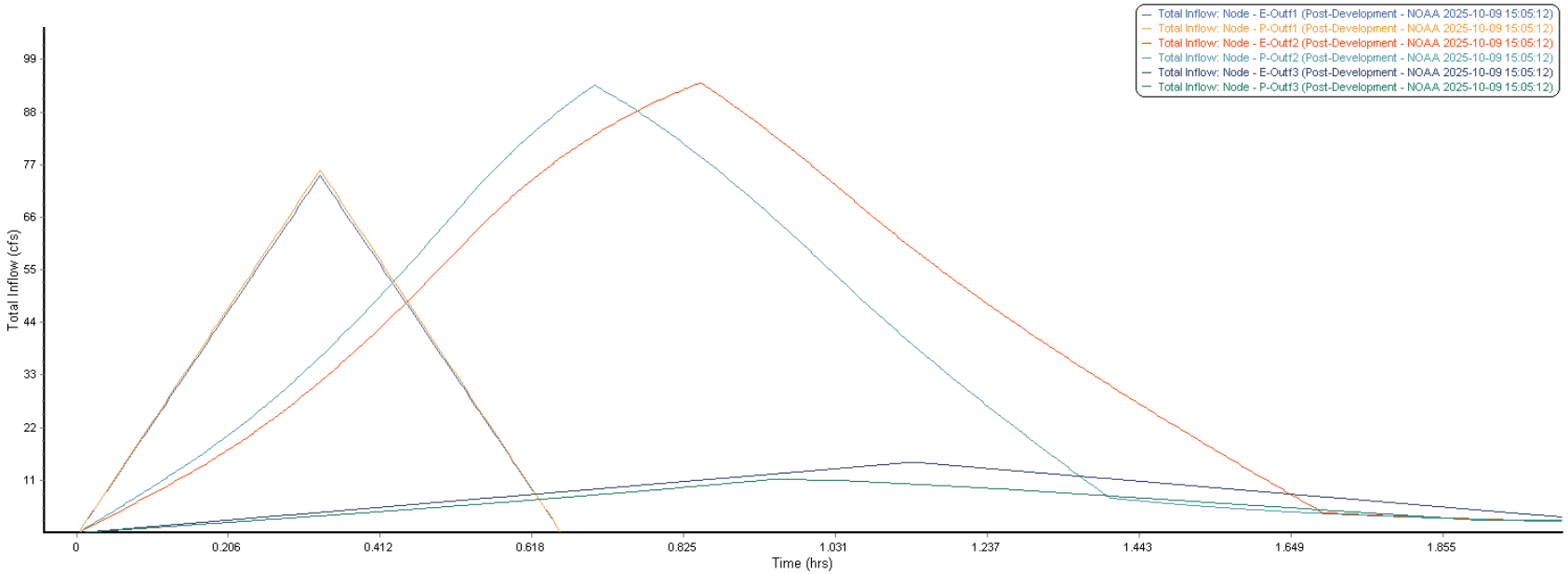

Total Inflow: Node - E-Outf1 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow: Node - P-Outf1 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow: Node - E-Outf2 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow: Node - P-Outf2 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow: Node - E-Outf3 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow: Node - P-Outf3 (Post-Development - NOAA 2025-10-09 15:05:12)
Total Inflow (cfs)
99
88
77
66
55
44
33
22
11
0
0.206
0.412
0.618
0.825
1.031
1.237
1.443
1.649
1.855
Time (hrs)

EXHIBIT 4 – WEIGHTED RUNOFF COEFFICIENT CALCULATIONS (PRE & POST-DEVELOPMENT)

Drainage Area Time of Concentration Report

Drainage Area ID	HL (ft)	Slope (%)	Area Data	Total Area (acres)	Weighted C	TC (min)
E-DA1	1518.00	0.66	Land Type / C Value / Area (acres) Buildings/Canopies / 0.85 / 4.7672 Asphalt Paving / 0.95 / 4.2295 Concrete Paving / 0.95 / 0.2882 Gravel / 0.60 / 0.3960 Grass / 0.30 / 3.9960	13.6769	0.72	19.68
E-DA2	1464.00	0.43	Land Type / C Value / Area (acres) Buildings/Canopies / 0.85 / 1.6554 Asphalt Paving / 0.95 / 0.4615 Concrete Paving / 0.95 / 0.8478 Gravel / 0.60 / 1.9018 Track & Field / 0.80 / 1.1926 Turf / 0.35 / 2.1671 Grass / 0.30 / 6.8724	15.0986	0.50	31.59

<table>
<tr>
<td>E-DA3</td>
<td>2370.00</td>
<td>0.30</td>
<td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Buildings/Canopies</td><td>0.85</td><td>3.2023</td></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>2.9118</td></tr>
<tr><td>Concrete Paving</td><td>0.95</td><td>0.8363</td></tr>
<tr><td>Woods</td><td>0.15</td><td>3.0102</td></tr>
<tr><td>Grass</td><td>0.30</td><td>22.4670</td></tr>
</table>
</td>
<td>32.4275</td>
<td>0.42</td>
<td>50.64</td>
</tr>
<tr>
<td>E-DA4</td>
<td>1098.00</td>
<td>0.11</td>
<td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>0.2808</td></tr>
<tr><td>Gravel</td><td>0.60</td><td>0.0304</td></tr>
<tr><td>Woods</td><td>0.15</td><td>1.9040</td></tr>
<tr><td>Grass</td><td>0.30</td><td>9.8882</td></tr>
</table>
</td>
<td>12.1034</td>
<td>0.29</td>
<td>68.08</td>
</tr>
</table>

Drainage Area Time of Concentration Report

<table>
<tr><th>Drainage Area ID</th><th>HL (ft)</th><th>Slope (%)</th><th>Area Data</th><th>Total Area (acres)</th><th>Weighted C</th><th>TC (min)</th></tr>
<tr><td>P-DA1</td><td>1591.00</td><td>0.63</td><td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Buildings/Canopies</td><td>0.85</td><td>5.1201</td></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>3.3938</td></tr>
<tr><td>Concrete Paving</td><td>0.95</td><td>1.3080</td></tr>
<tr><td>Gravel</td><td>0.60</td><td>0.1624</td></tr>
<tr><td>Grass</td><td>0.30</td><td>3.7255</td></tr>
</table>
</td><td>13.7098</td><td>0.73</td><td>19.71</td></tr>
<tr><td>P-DA2</td><td>1380.00</td><td>0.45</td><td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Buildings/Canopies</td><td>0.85</td><td>1.5761</td></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>0.4750</td></tr>
<tr><td>Concrete Paving</td><td>0.95</td><td>0.8404</td></tr>
<tr><td>Gravel</td><td>0.60</td><td>1.9018</td></tr>
<tr><td>Track & Field</td><td>0.80</td><td>1.1926</td></tr>
<tr><td>Turf</td><td>0.35</td><td>2.1671</td></tr>
<tr><td>Grass</td><td>0.30</td><td>6.9789</td></tr>
</table>
</td><td>15.1318</td><td>0.50</td><td>30.80</td></tr>
</table>

<table>
<tr>
<td>P-DA3</td>
<td>2372.00</td>
<td>0.27</td>
<td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Buildings/Canopies</td><td>0.85</td><td>2.8234</td></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>3.4090</td></tr>
<tr><td>Concrete Paving</td><td>0.95</td><td>0.8363</td></tr>
<tr><td>Woods</td><td>0.15</td><td>0.6733</td></tr>
<tr><td>Grass</td><td>0.30</td><td>14.4924</td></tr>
<tr><td>Gravel</td><td>0.60</td><td>2.0620</td></tr>
</table>
</td>
<td>24.2965</td>
<td>0.50</td>
<td>42.08</td>
</tr>
<tr>
<td>P-DA4</td>
<td>1049.00</td>
<td>0.12</td>
<td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>0.7013</td></tr>
<tr><td>Woods</td><td>0.15</td><td>0.3412</td></tr>
<tr><td>Grass</td><td>0.30</td><td>12.5855</td></tr>
</table>
</td>
<td>13.6280</td>
<td>0.33</td>
<td>57.35</td>
</tr>
<tr>
<td>P-DA5</td>
<td>975.00</td>
<td>0.13</td>
<td>
<table>
<tr><th>Land Type</th><th>C Value</th><th>Area (acres)</th></tr>
<tr><td>Asphalt Paving</td><td>0.95</td><td>0.3093</td></tr>
<tr><td>Gravel</td><td>0.60</td><td>0.0304</td></tr>
<tr><td>Woods</td><td>0.15</td><td>0.6122</td></tr>
<tr><td>Grass</td><td>0.30</td><td>5.4385</td></tr>
</table>
</td>
<td>6.3905</td>
<td>0.32</td>
<td>57.03</td>
</tr>
</table>

EXHIBIT 5 – NO-NET-FILL ANALYSIS

0 100 200 FEET

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	−3.55	0.00	(pink)
2	0.00	1.98	(green)

LEGEND:

- HD CONCRETE PAVING
- HD ASPHALT PAVING
- FEMA FLOOD ZONES A, AE
- AREAS BELOW BFE 29.00'
- NATURAL GROUND ELEVATIONS (× 29.2)

NOTES:

1. THE BASE FLOOD ELEVATION (BFE) FOR THIS SITE HAS BEEN DETERMINED TO BE AT EL 28.60' CLOSER TO RUE DU BELIER AND AT EL 28.90' CLOSER TO N. DOMINGUE AVE. (NAVD88, GEOID 18) PER FIRM MAP #22055C0155J.
2. IN ACCORDANCE WITH LDC ARTICLE 3, 89–42(G) "DEVELOPMENT WITHIN A SPECIAL FLOOD HAZARD AREA", ANY FILL MATERIAL PLACED ON THIS SITE BELOW THE BFE WILL BE MITIGATED VOLUMETRICALLY WITHIN THE SAME DRAINAGE AREA.
3. THE TABLE TO THE RIGHT PROVIDES A SUMMARY OF THE "FILL VOLUME MITIGATION" ANALYSIS FOR SPECIAL FLOOD HAZARD AREAS.
4. SPOT ELEVATIONS AND CONTOURS SHOWN REPRESENT ELEVATIONS AS OF JULY 2025.
5. BASED ON THE NO-NET-FILL ANALYSIS, SPOT ELEVATIONS NEAR THE PROPOSED DRIVEWAY ALONG RUE DU BELIER INDICATE THAT ONLY A SMALL PORTION OF THE AREA LIES BELOW THE BASE FLOOD ELEVATION (BFE), RESULTING IN A LIMITED AMOUNT OF FILL REQUIRING MITIGATION. ALONG NORTH DOMINGUE, THE MAJORITY OF THE SITE WITHIN THE PROPOSED ACCESS DRIVE AND PARKING AREA LIES BELOW THE BFE, RESULTING IN A MORE SUBSTANTIAL VOLUME OF FILL BELOW THIS ELEVATION. HOWEVER, PROPOSED DETENTION AREAS AND ROADSIDE DITCHES WITHIN THE DESIGN PROVIDE SUFFICIENT CUT BELOW THE BFE TO OFFSET ALL FILL, THEREBY SATISFYING THE NO-NET-FILL REQUIREMENT FOR THE SITE.

FILL VOLUME MITIGATION SUMMARY				
AREA	RUE DU BELIER (BFE 28.60')	N. DOMINGUE AVE. (BFE 28.90')	TOTAL	
FILL BELOW BFE (TO BE MITIGATED)	33	1,934	1,967	CY
CUT BELOW BFE (MITIGATED)	0	2,231	2,231	CY
NET MITIGATED DIFFERENCE	33	−297	−264	CY

LCR & COMPANY, LLC
318 Belle Grove Blvd
Lafayette, LA 70503
(337) 207–3761

NO–NET–FILL ANALYSIS

ACADIANA HIGH SCHOOL
315 RUE DU BELIER
LAFAYETTE, LOUISIANA

PRELIMINARY NOT FOR CONSTRUCTION

STAMP:

SIGNATURE:

10/9/25
DATE:

NO.	DATE	REVISION DESCRIPTION	BY

DRAWN BY: T. BEX
CHECKED BY: L. ROBICHAUX
ENGINEER: T. BEX
FILE: SEE LEFT
LCR PROJ # 25–015
DATE: 10/9/2025

EXHIBIT 5

EXHIBIT 6 – CURRENT FIRM PANEL

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 15. The **horizontal datum** was NAD 83. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format from the Army Corps of Engineers, New Orleans District, 2004.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

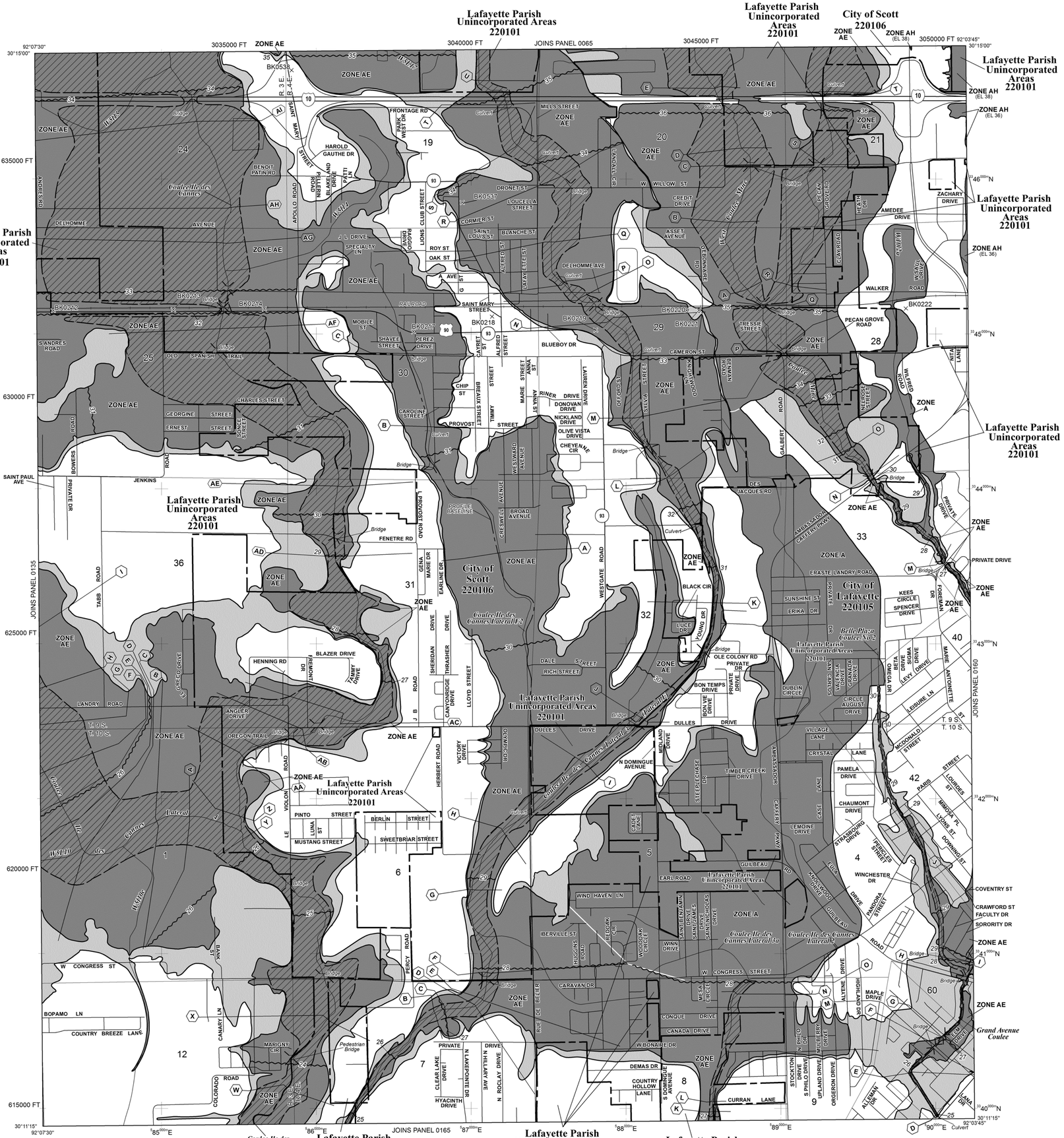
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information eXchange** at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

All base flood elevations computed in the Flood Insurance Study and indicated on the Flood Insurance Rate Map panels are derived using the NAVD 88 and referenced to the 1999 GEOID.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Limit of Moderate Wave Action
- 513 (EL 987) — Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross section Line
- (23)—(23) Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 3776000mN — 1000-meter Universal Transverse Mercator grid values, zone 15N
- 600000 FT — 5000-foot grid values: Louisiana State Plane coordinate system, South zone (FIPSZONE 1702), Lambert Conformal Conic projection
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 19, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 20, 1999
December 21, 2018

SEE NOTICE TO FLOOD INSURANCE USERS IN THE FIS REPORT FOR REASON OF REVISION

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0155J

FIRM
FLOOD INSURANCE RATE MAP

LAFAYETTE PARISH, LOUISIANA
AND INCORPORATED AREAS

PANEL 155 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LAFAYETTE PARISH	220101	0155	J
LAFAYETTE, CITY OF	220105	0155	J
SCOTT, CITY OF	220106	0155	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
22055C0155J

MAP REVISED
DECEMBER 21, 2018

Federal Emergency Management Agency

EXHIBIT 7 – NOAA ATLAS 14 RAINFALL INTENSITY DATA

NOAA Atlas 14, Volume 9, Version 2
Location name: Lafayette, Louisiana, USA*
Latitude: 30.2046°, Longitude: -92.0882°
Elevation: 29 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	6.68 (5.64-7.99)	7.58 (6.38-9.06)	9.01 (7.56-10.8)	10.2 (8.48-12.2)	11.7 (9.42-14.4)	12.9 (10.1-16.0)	14.1 (10.7-17.8)	15.2 (11.0-19.6)	16.7 (11.6-22.0)	17.8 (12.1-23.8)
10-min	4.90 (4.13-5.86)	5.55 (4.67-6.64)	6.59 (5.53-7.90)	7.45 (6.21-8.95)	8.59 (6.90-10.5)	9.46 (7.42-11.7)	10.3 (7.80-13.0)	11.1 (8.08-14.4)	12.2 (8.51-16.1)	13.0 (8.84-17.4)
15-min	3.98 (3.36-4.76)	4.51 (3.80-5.40)	5.36 (4.50-6.43)	6.05 (5.05-7.28)	6.98 (5.61-8.56)	7.69 (6.03-9.52)	8.38 (6.34-10.6)	9.06 (6.57-11.7)	9.94 (6.92-13.1)	10.6 (7.19-14.2)
30-min	3.06 (2.58-3.66)	3.48 (2.93-4.16)	4.15 (3.48-4.97)	4.69 (3.91-5.64)	5.42 (4.35-6.64)	5.97 (4.68-7.39)	6.50 (4.92-8.20)	7.03 (5.10-9.06)	7.71 (5.37-10.1)	8.20 (5.57-11.0)
60-min	2.05 (1.72-2.45)	2.33 (1.96-2.79)	2.80 (2.35-3.36)	3.19 (2.66-3.84)	3.73 (3.00-4.58)	4.14 (3.26-5.15)	4.56 (3.46-5.77)	4.98 (3.62-6.43)	5.54 (3.86-7.30)	5.96 (4.04-7.96)
2-hr	1.28 (1.09-1.52)	1.46 (1.24-1.74)	1.77 (1.49-2.10)	2.02 (1.70-2.41)	2.37 (1.93-2.90)	2.65 (2.10-3.28)	2.93 (2.24-3.69)	3.22 (2.36-4.14)	3.61 (2.53-4.74)	3.90 (2.67-5.19)
3-hr	0.951 (0.811-1.12)	1.09 (0.927-1.29)	1.32 (1.12-1.56)	1.52 (1.28-1.81)	1.81 (1.48-2.21)	2.04 (1.63-2.52)	2.28 (1.75-2.87)	2.53 (1.86-3.25)	2.87 (2.03-3.77)	3.14 (2.16-4.16)
6-hr	0.562 (0.482-0.658)	0.645 (0.554-0.757)	0.794 (0.679-0.933)	0.927 (0.788-1.09)	1.13 (0.932-1.38)	1.29 (1.04-1.59)	1.47 (1.14-1.84)	1.66 (1.23-2.12)	1.93 (1.37-2.52)	2.14 (1.48-2.82)
12-hr	0.323 (0.280-0.376)	0.373 (0.323-0.434)	0.465 (0.401-0.542)	0.551 (0.472-0.645)	0.684 (0.572-0.836)	0.797 (0.648-0.980)	0.921 (0.721-1.15)	1.06 (0.791-1.35)	1.25 (0.898-1.63)	1.41 (0.979-1.84)
24-hr	0.185 (0.162-0.214)	0.216 (0.188-0.249)	0.272 (0.237-0.315)	0.326 (0.282-0.379)	0.411 (0.347-0.500)	0.484 (0.397-0.592)	0.564 (0.445-0.703)	0.652 (0.493-0.829)	0.780 (0.565-1.01)	0.886 (0.620-1.15)
2-day	0.106 (0.093-0.121)	0.123 (0.108-0.141)	0.157 (0.137-0.180)	0.189 (0.164-0.217)	0.238 (0.203-0.288)	0.281 (0.232-0.342)	0.329 (0.261-0.407)	0.381 (0.289-0.481)	0.456 (0.332-0.587)	0.518 (0.365-0.668)
3-day	0.077 (0.068-0.087)	0.089 (0.079-0.102)	0.113 (0.099-0.129)	0.135 (0.118-0.155)	0.170 (0.145-0.204)	0.200 (0.166-0.242)	0.233 (0.186-0.287)	0.270 (0.206-0.339)	0.322 (0.236-0.413)	0.366 (0.259-0.470)
4-day	0.061 (0.054-0.070)	0.071 (0.063-0.081)	0.089 (0.079-0.102)	0.106 (0.093-0.122)	0.133 (0.114-0.160)	0.156 (0.130-0.189)	0.182 (0.146-0.223)	0.210 (0.160-0.263)	0.250 (0.183-0.320)	0.283 (0.201-0.363)
7-day	0.040 (0.036-0.046)	0.047 (0.041-0.053)	0.058 (0.051-0.065)	0.068 (0.060-0.078)	0.084 (0.073-0.100)	0.098 (0.082-0.117)	0.113 (0.091-0.138)	0.129 (0.099-0.161)	0.153 (0.113-0.194)	0.172 (0.122-0.219)
10-day	0.032 (0.028-0.036)	0.036 (0.032-0.041)	0.045 (0.040-0.050)	0.052 (0.046-0.059)	0.064 (0.055-0.075)	0.074 (0.062-0.088)	0.084 (0.068-0.102)	0.096 (0.074-0.119)	0.112 (0.083-0.142)	0.126 (0.090-0.159)
20-day	0.021 (0.019-0.023)	0.023 (0.021-0.026)	0.028 (0.025-0.031)	0.032 (0.029-0.036)	0.038 (0.033-0.045)	0.044 (0.037-0.051)	0.049 (0.040-0.059)	0.055 (0.043-0.067)	0.063 (0.047-0.079)	0.070 (0.050-0.088)
30-day	0.017 (0.015-0.018)	0.019 (0.017-0.021)	0.022 (0.020-0.025)	0.025 (0.022-0.028)	0.030 (0.026-0.034)	0.033 (0.028-0.039)	0.037 (0.030-0.044)	0.041 (0.032-0.050)	0.046 (0.035-0.058)	0.051 (0.037-0.064)
45-day	0.013 (0.012-0.015)	0.015 (0.014-0.017)	0.018 (0.016-0.020)	0.020 (0.018-0.022)	0.023 (0.020-0.027)	0.026 (0.022-0.030)	0.029 (0.023-0.034)	0.031 (0.024-0.038)	0.035 (0.026-0.043)	0.038 (0.027-0.048)
60-day	0.012 (0.011-0.013)	0.013 (0.012-0.015)	0.016 (0.014-0.017)	0.017 (0.016-0.019)	0.020 (0.017-0.023)	0.022 (0.019-0.026)	0.024 (0.020-0.029)	0.026 (0.021-0.032)	0.029 (0.022-0.036)	0.031 (0.023-0.039)

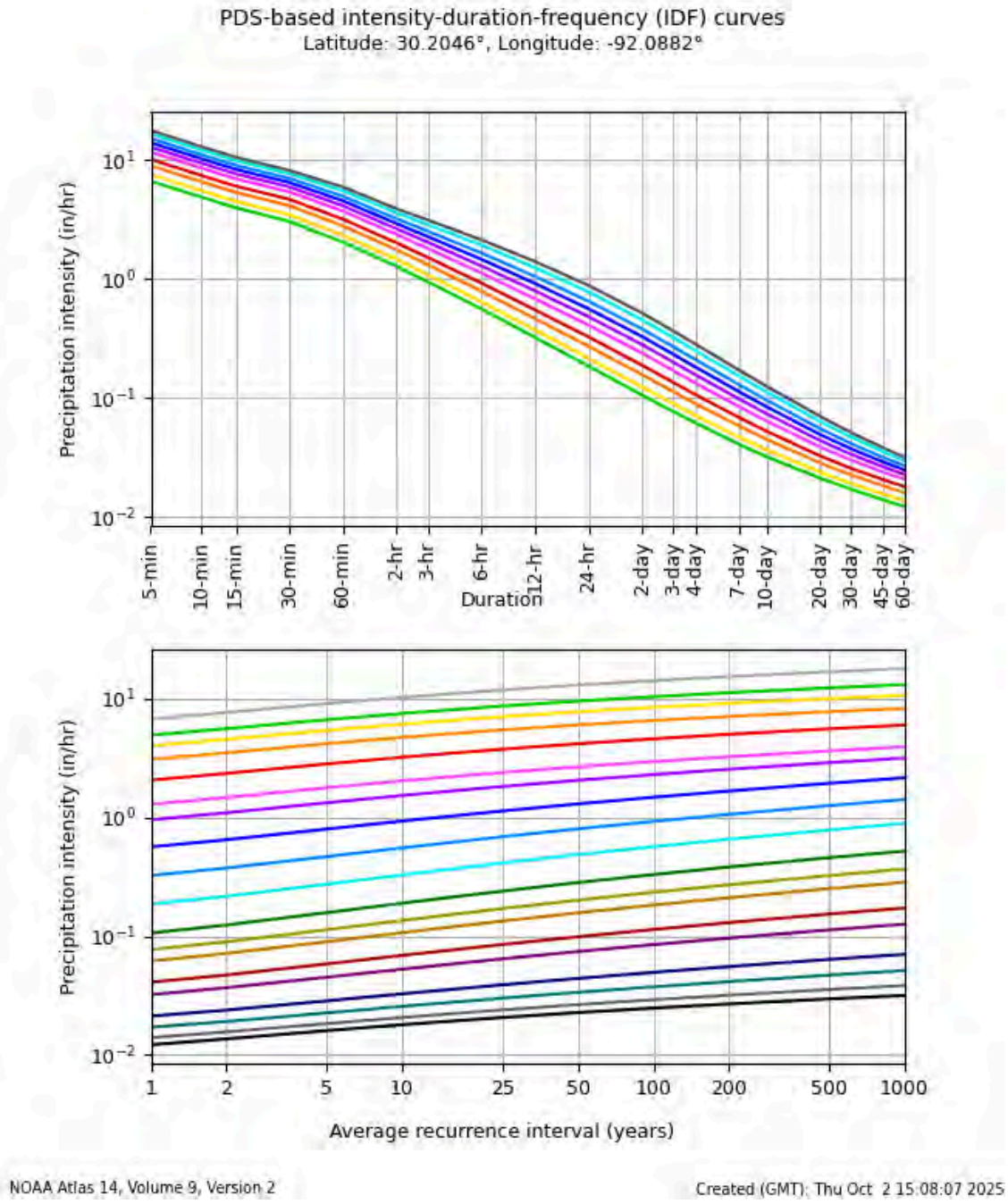
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

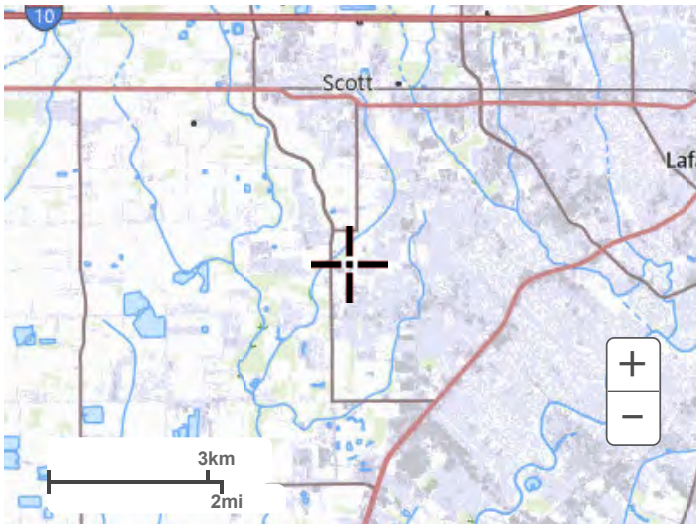
PF graphical



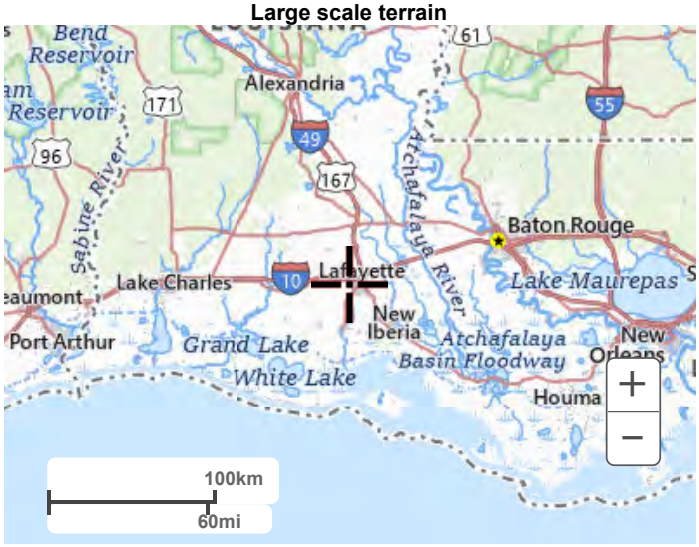
Back to Top

Maps & aerials

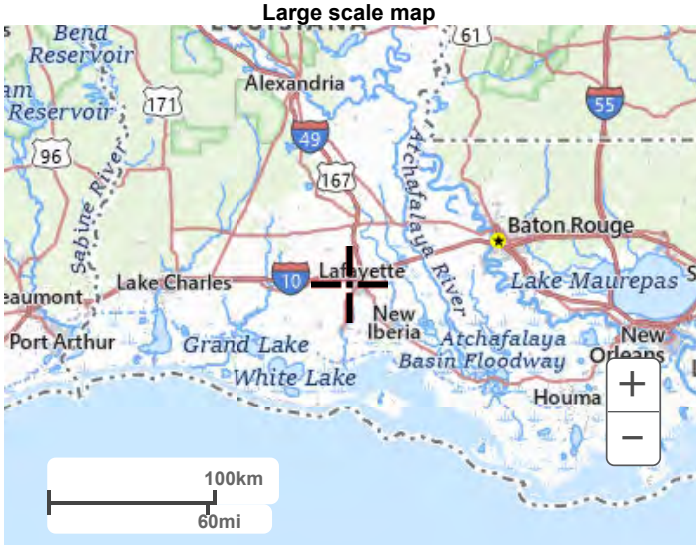
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov