

## **Appendix A**

---

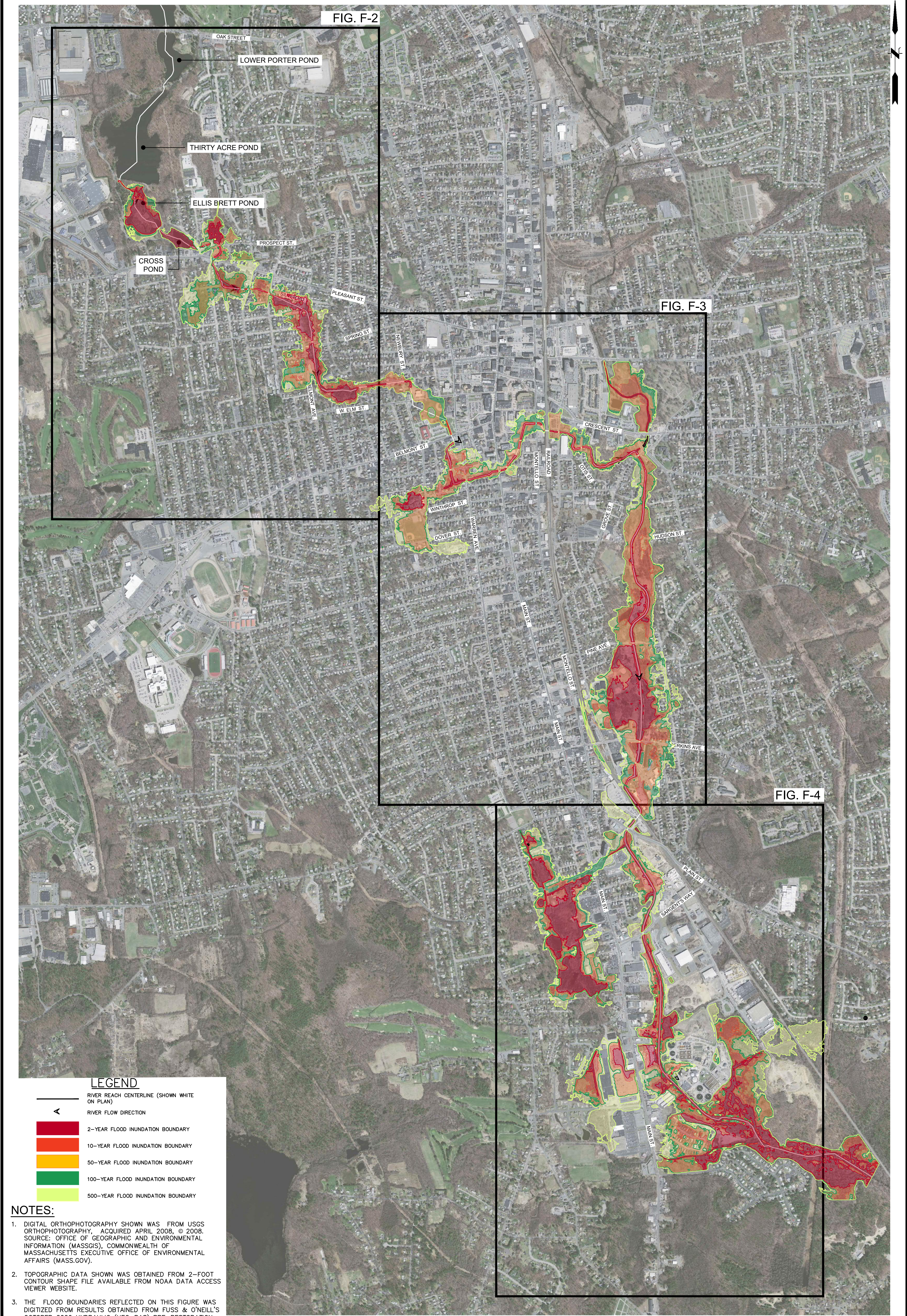
### Flood Inundation Mapping



# **Pre-Conditions Present Day Inundation Mapping**



File Path: J:\DWG\20170390\11\Civil\Figures\20170390\11\_TASK6\_FIG06\_FLBD\_PRE.dwg Layout: FIG 3A Plotted: Thu, October 22, 2020 - 2:33 PM User: samruda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: FO.STB LAYER STATE:



PROJ. No.: 20170390.J11  
DATE: OCTOBER 2020

**FIG. F-1**

CITY OF BROCKTON

INDEX MAP AND OVERALL PRE-RESTORATION FLOOD INUNDATION MAP

BROCKTON PLAN FOR CLIMATE RESILIENCY

BROCKTON MASSACHUSETTS

**FUSS & O'NEILL**

317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fundo.com

SCALE:		HORZ.: 1"= 800'		VERT.:	
DATUM:		HORZ.:		VERT.:	
GRAPHIC SCALE		1. No.		DATE	
				DESCRIPTION	
				XX/XX	
				DESIGNER	
				REVIEWER	



File Path: J:\DWG\20170390\11\Civil\Figures\20170390\11\_TASK6\_FLDG\_FLDG\_PRE.dwg Layout: FIG 3B Plotted: Thu, October 22, 2020 - 2:35 PM User: samruda  
MS VIEW: Layer State: Plotter: DWG TO PDF: PC3 CTB File: FO.STB



PROJ. No.: 20170390.J11  
DATE: OCTOBER 2020

CITY OF BROCKTON  
PRE-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS

**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fando.com

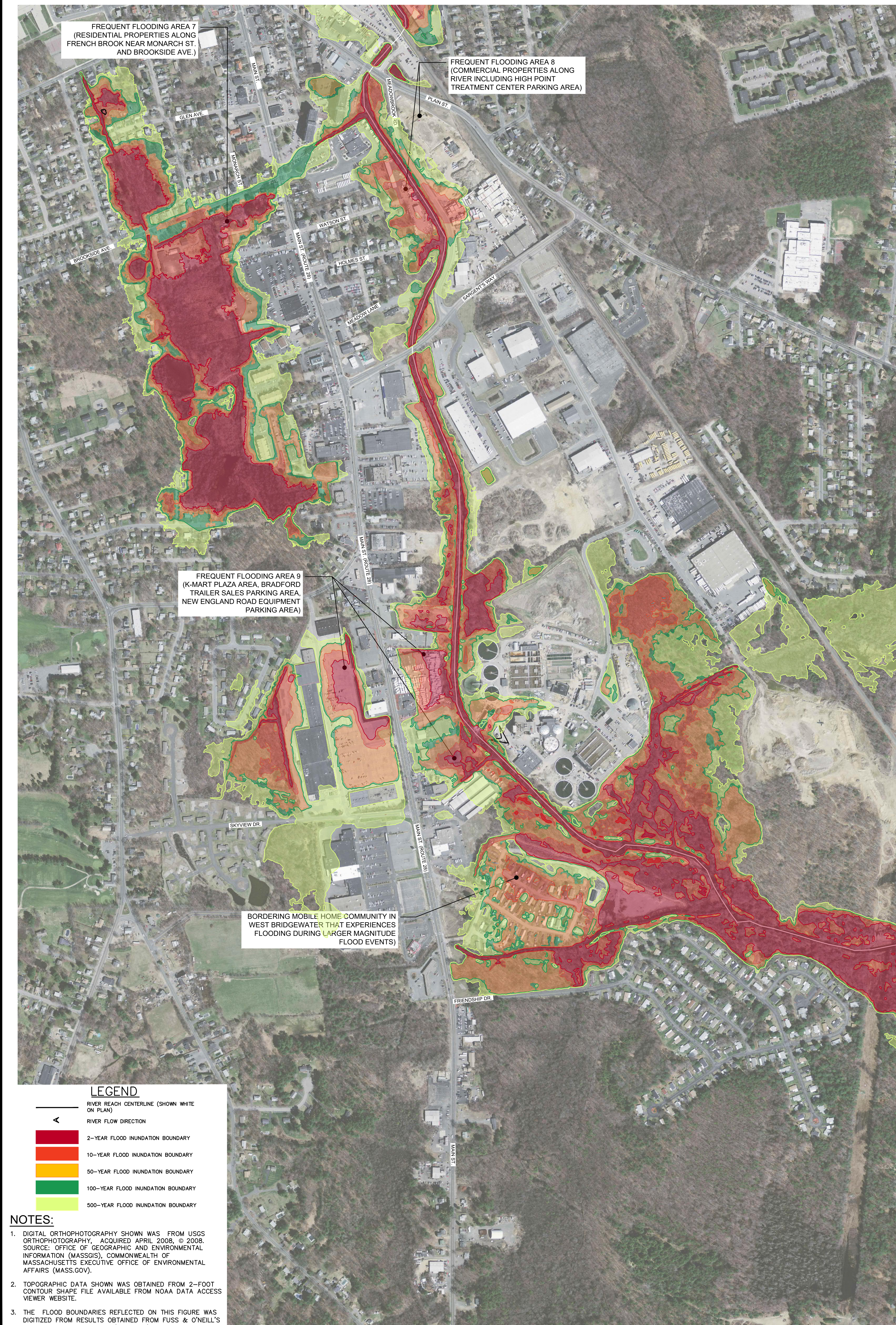
SCALE:		HORIZ.: 1"= 300'		VERT.:	
DATUM:		HORIZ.:		VERT.:	
300 150 0 300		GRAPHIC SCALE			
1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER







File Path: J:\DWG\20170330\J11\Civil\Figures\20170330\J11\_TASK6\_FLDG\_FIG06\_FLDG\_PRE.dwg Layout: FIG 3D Plotted: Thu, October 22, 2020 - 2:25 PM User: saruda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: FO.STB LAYER STATE:



LEGEND

- RIVER REACH CENTERLINE (SHOWN WHITE ON PLAN)  
▲ RIVER FLOW DIRECTION
- 2-YEAR FLOOD INUNDATION BOUNDARY  
10-YEAR FLOOD INUNDATION BOUNDARY  
50-YEAR FLOOD INUNDATION BOUNDARY  
100-YEAR FLOOD INUNDATION BOUNDARY  
500-YEAR FLOOD INUNDATION BOUNDARY

NOTES:

1. DIGITAL ORTHOPHOTOGRAPHY SHOWN WAS FROM USGS ORTHOPHOTOGRAPHY, ACQUIRED APRIL 2008, © 2008. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).
2. TOPOGRAPHIC DATA SHOWN WAS OBTAINED FROM 2-FOOT CONTOUR SHAPE FILE AVAILABLE FROM NOAA DATA ACCESS VIEWER WEBSITE.
3. THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WAS DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (HEC-RAS) PRE-RESTORATION ANALYSIS FOR PRESENT-DAY FLOODING.

FIG. F-4

CITY OF BROCKTON  
PRE-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS



SCALE:  
HORZ.: 1"= 300'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
300 150 0 300  
GRAPHIC SCALE

1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER



# **Post-Conditions Present Day Inundation Mapping**



File Path: J:\DWG\20170390\11\01\01\Figures\20170390\11\_TASK6\_FLD\_BD\_FIG06\_FLD\_BD\_POST.dwg Layout: FIG 3A Plotted: Thu, October 22, 2020 - 2:30 PM User: samruda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: F0.STB

LAYER STATE:

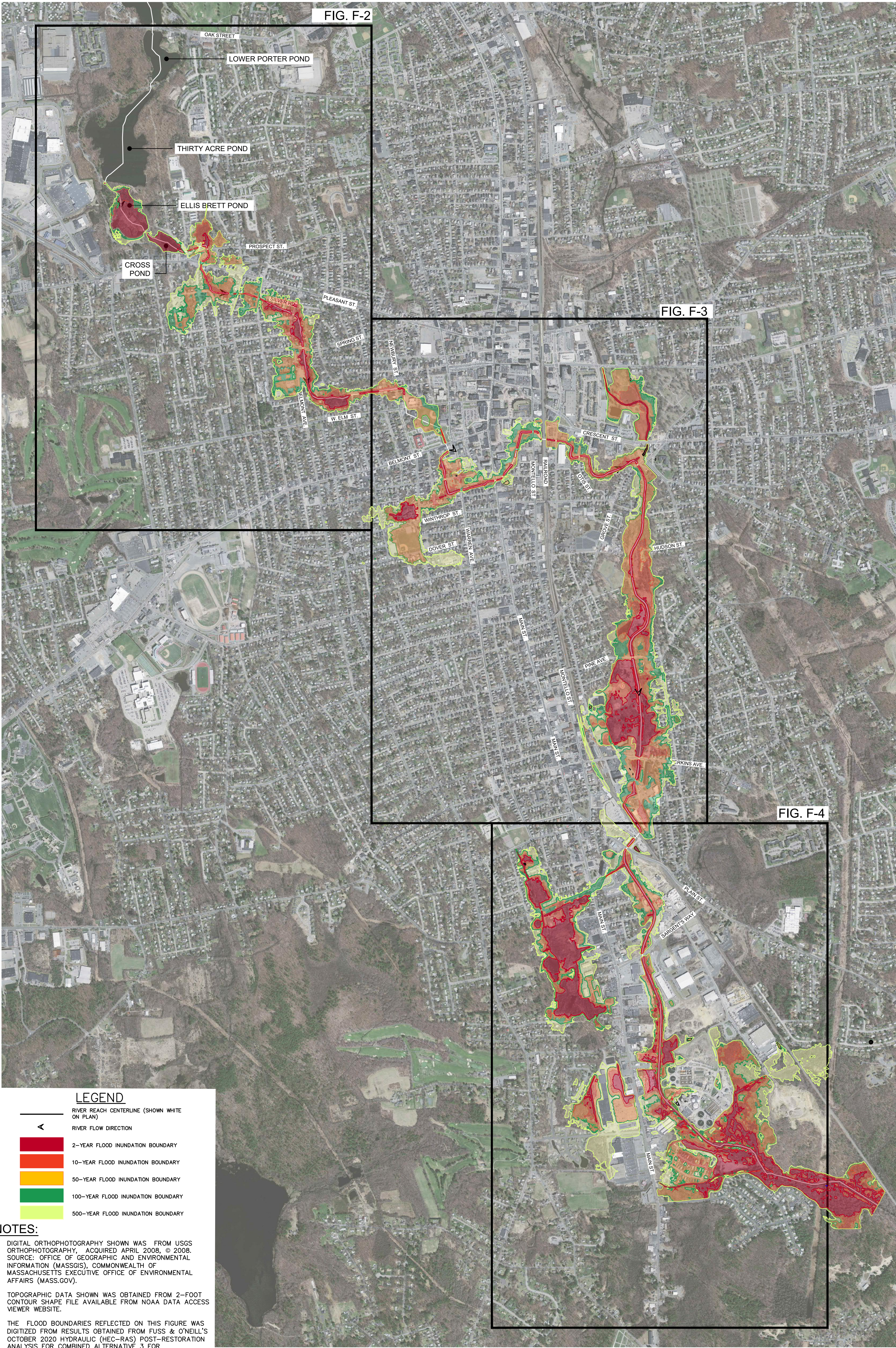


FIG. F-5

CITY OF BROCKTON  
INDEX MAP AND OVERALL  
POST-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY

BROCKTON MASSACHUSETTS



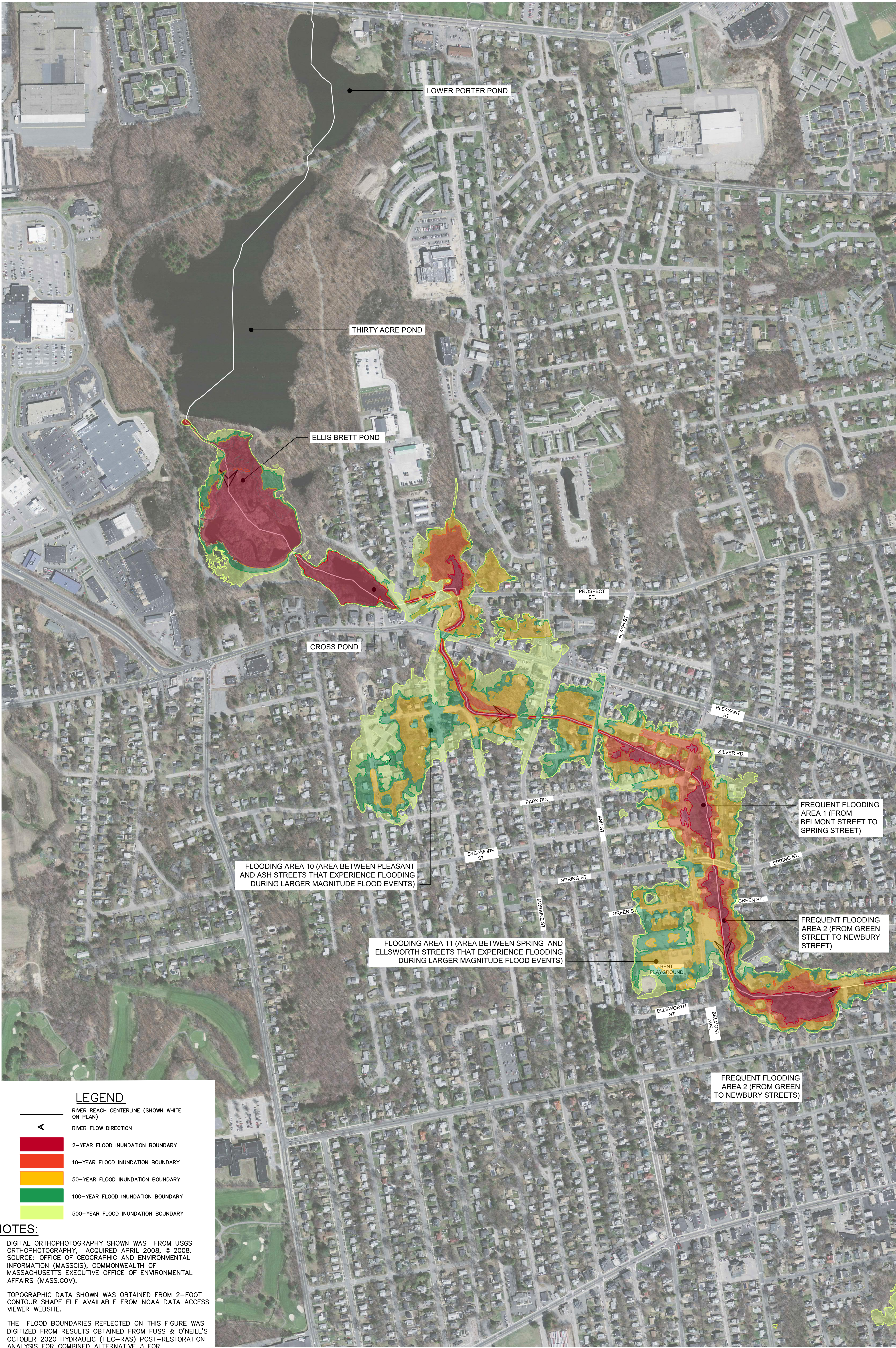
**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fando.com

SCALE:  
HORZ.: 1"= 800'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
800 400 0 800  
GRAPHIC SCALE

No.	DATE	DESCRIPTION	XX/XX	XX
1.			DESIGNER	REVIEWER



File Path: J:\DWG\20170390\11\01\01\Figures\20170390\11\_TASK6\_FLD\_BD\_FIG06\_FLD\_BD\_POST-RESTORATION FLOOD INUNDATION MAP.dwg Layout: FIG 3B Plotted: Thu, October 22, 2020 - 2:30 PM User: samruda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: F0.STB  
LAYER STATE:



LEGEND

- RIVER REACH CENTERLINE (SHOWN WHITE ON PLAN)
- RIVER FLOW DIRECTION
- 2-YEAR FLOOD INUNDATION BOUNDARY
- 10-YEAR FLOOD INUNDATION BOUNDARY
- 50-YEAR FLOOD INUNDATION BOUNDARY
- 100-YEAR FLOOD INUNDATION BOUNDARY
- 500-YEAR FLOOD INUNDATION BOUNDARY

NOTES:

- DIGITAL ORTHOPHOTOGRAPHY SHOWN WAS FROM USGS ORTHOPHOTOGRAPHY, ACQUIRED APRIL 2008, © 2008. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).
- TOPOGRAPHIC DATA SHOWN WAS OBTAINED FROM 2-FOOT CONTOUR SHAPE FILE AVAILABLE FROM NOAA DATA ACCESS VIEWER WEBSITE.
- THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WAS DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (HEC-RAS) POST-RESTORATION ANALYSIS FOR COMBINED ALTERNATIVE 3 FOR PRESENT-DAY FLOODING.

FIG. F-6

CITY OF BROCKTON  
POST-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS

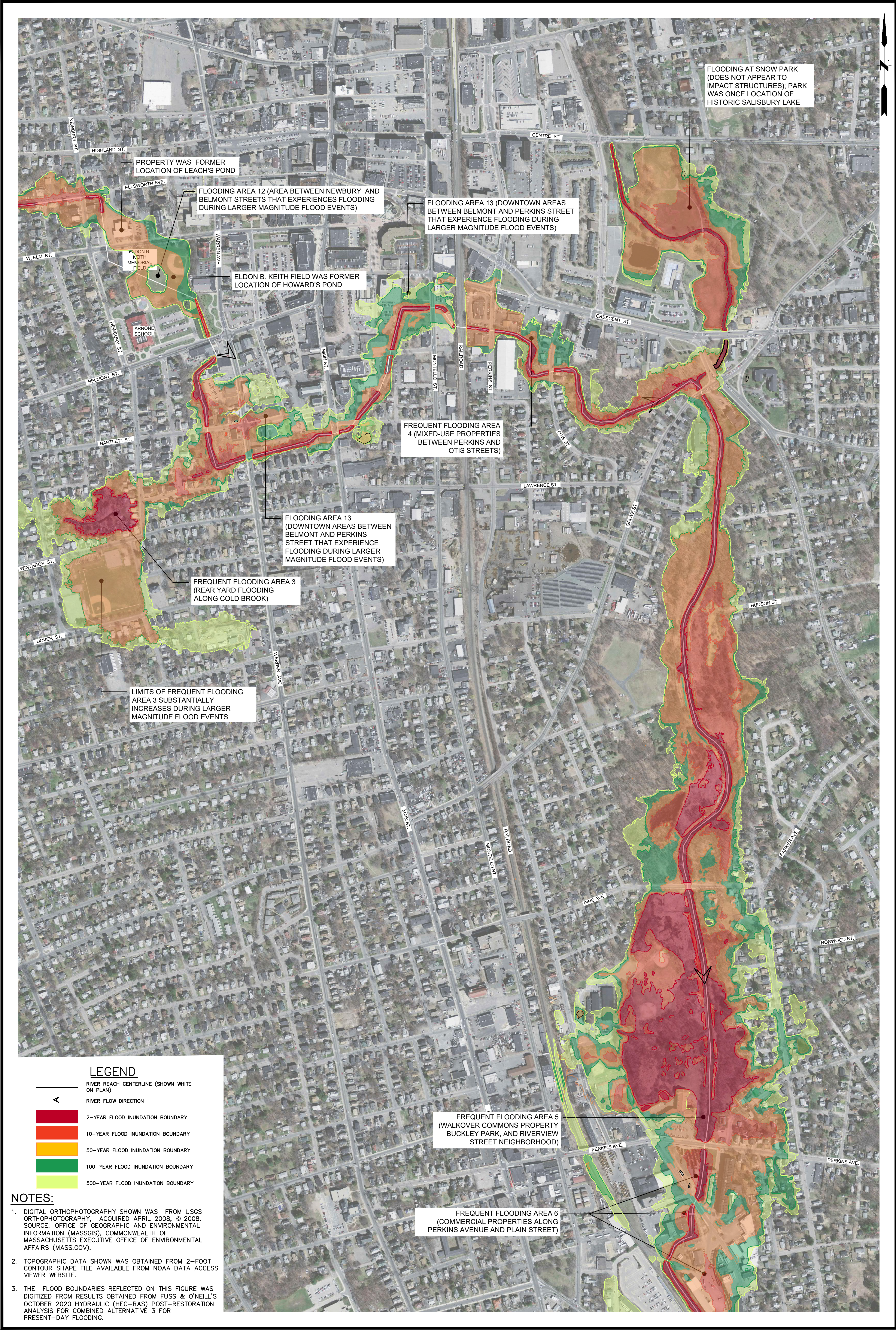
**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fando.com

SCALE:  
HORZ.: 1"= 300'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
300 150 0 300  
GRAPHIC SCALE

1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER



File Path: J:\DWG\20170330\11\11\11\Figures\20170330\11\_TASK6\_FLD\_P03.dwg Layout: FIG 3C Plotted: Thu, October 22, 2020 - 2:30 PM User: samrda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: FO.STB



LEGEND

- RIVER REACH CENTERLINE (SHOWN WHITE ON PLAN)
- RIVER FLOW DIRECTION
- 2-YEAR FLOOD INUNDATION BOUNDARY
- 10-YEAR FLOOD INUNDATION BOUNDARY
- 50-YEAR FLOOD INUNDATION BOUNDARY
- 100-YEAR FLOOD INUNDATION BOUNDARY
- 500-YEAR FLOOD INUNDATION BOUNDARY

NOTES:

- DIGITAL ORTHOPHOTOGRAPHY SHOWN WAS FROM USGS ORTHOPHOTOGRAPHY, ACQUIRED APRIL 2008, © 2008. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).
- TOPOGRAPHIC DATA SHOWN WAS OBTAINED FROM 2-FOOT CONTOUR SHAPE FILE AVAILABLE FROM NOAA DATA ACCESS VIEWER WEBSITE.
- THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WAS DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (HEC-RAS) POST-RESTORATION ANALYSIS FOR COMBINED ALTERNATIVE 3 FOR PRESENT-DAY FLOODING.

PROJ. No.: 20170330.J11  
DATE: OCTOBER 2020

FIG. F-7

CITY OF BROCKTON  
POST-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS



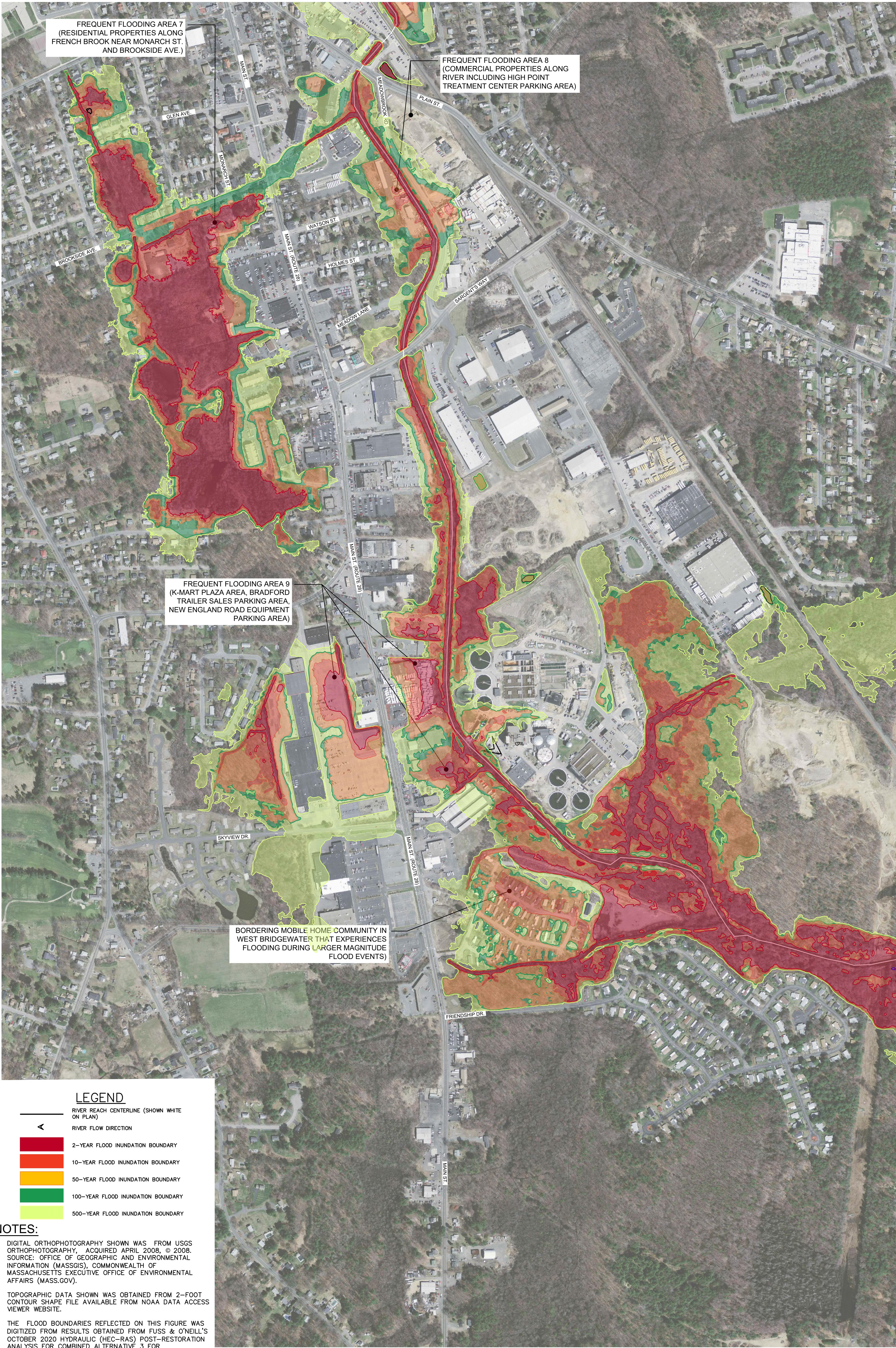
FUSS & O'NEILL  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fando.com

SCALE:  
HORZ.: 1"= 300'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
300 150 0 300  
GRAPHIC SCALE

No.	DATE	DESCRIPTION	XX/XX	XX
1.			DESIGNER	REVIEWER



File Path: J:\DWG\20170390\11\Civil\Figures\20170390\11\_TASK6\_FLD\_FIG06\_FLD\_POST.dwg Layout: FIG 3D Plotted: Thu, October 22, 2020 - 2:31 PM User: samruda  
MS VIEW: Plotter: DWG TO PDF: PC3 CTB File: F0.STB LAYER STATE:



LEGEND

- RIVER REACH CENTERLINE (SHOWN WHITE ON PLAN)
- ◀ RIVER FLOW DIRECTION
- 2-YEAR FLOOD INUNDATION BOUNDARY
- 10-YEAR FLOOD INUNDATION BOUNDARY
- 50-YEAR FLOOD INUNDATION BOUNDARY
- 100-YEAR FLOOD INUNDATION BOUNDARY
- 500-YEAR FLOOD INUNDATION BOUNDARY

NOTES:

1. DIGITAL ORTHOPHOTOGRAPHY SHOWN WAS FROM USGS ORTHOPHOTOGRAPHY, ACQUIRED APRIL 2008, © 2008. SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS (MASS.GOV).
2. TOPOGRAPHIC DATA SHOWN WAS OBTAINED FROM 2-FOOT CONTOUR SHAPE FILE AVAILABLE FROM NOAA DATA ACCESS VIEWER WEBSITE.
3. THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WAS DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (HEC-RAS) POST-RESTORATION ANALYSIS FOR COMBINED ALTERNATIVE 3 FOR PRESENT-DAY FLOODING.

PROJ. No.: 20170390.J11

DATE: OCTOBER 2020

FIG. F-8

CITY OF BROCKTON  
POST-RESTORATION FLOOD  
INUNDATION MAP  
BROCKTON PLAN FOR CLIMATE RESILIENCY

BROCKTON MASSACHUSETTS



FUSS & O'NEILL  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fando.com

SCALE:

HORIZ.: 1"= 300'

VERT.:

DATUM:

HORIZ.:

VERT.:

300 150 0 300

GRAPHIC SCALE

1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER

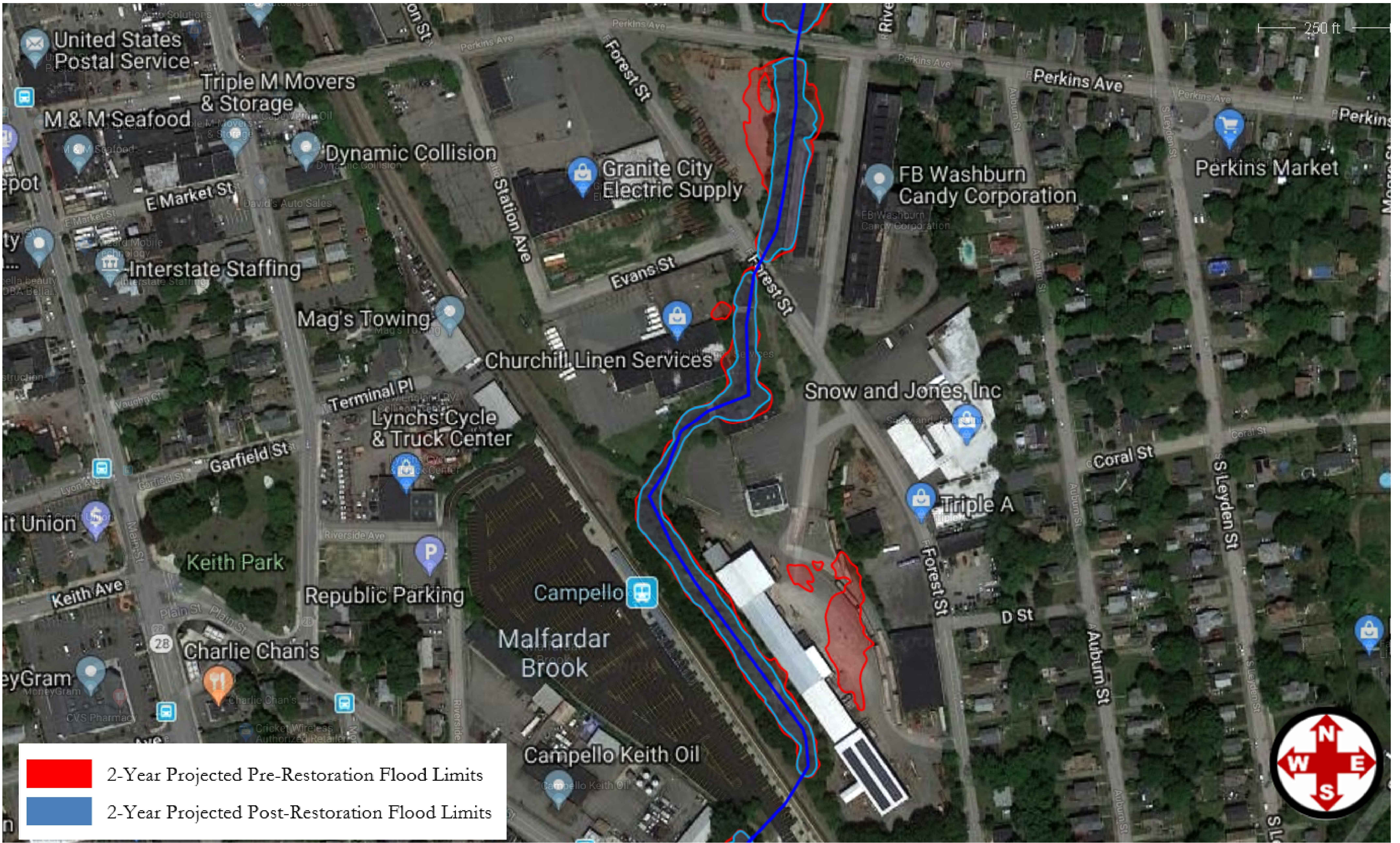


**Pre- Versus Post-Conditions Projected  
Inundation Mapping**





BELMONT AVENUE RESIDENTIAL NEIGHBORHOOD  
2-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE



PERKINS AVENUE AND PLAIN STREET COMMERCIAL NEIGHBORHOOD  
2-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE

NOTE:

THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WERE DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (GEO-RAS) ANALYSIS FOR PRESENT-DAY AND PROJECTED FLOODING.

FIG. G-1

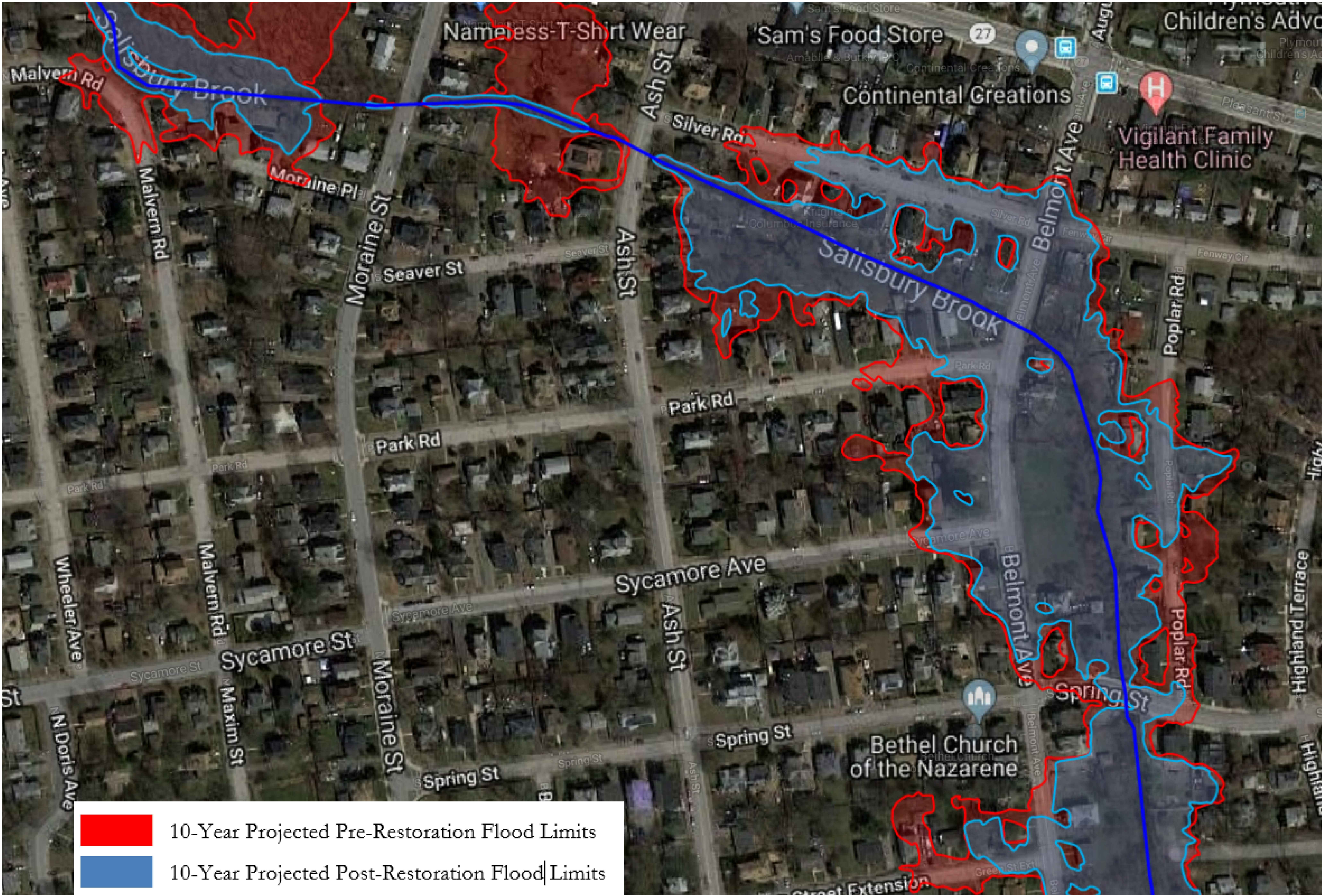
CITY OF BROCKTON  
PRESENT-DAY VERSUS PROJECTED  
FLOOD INUNDATION MAPPING  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS

**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fussandoneill.com

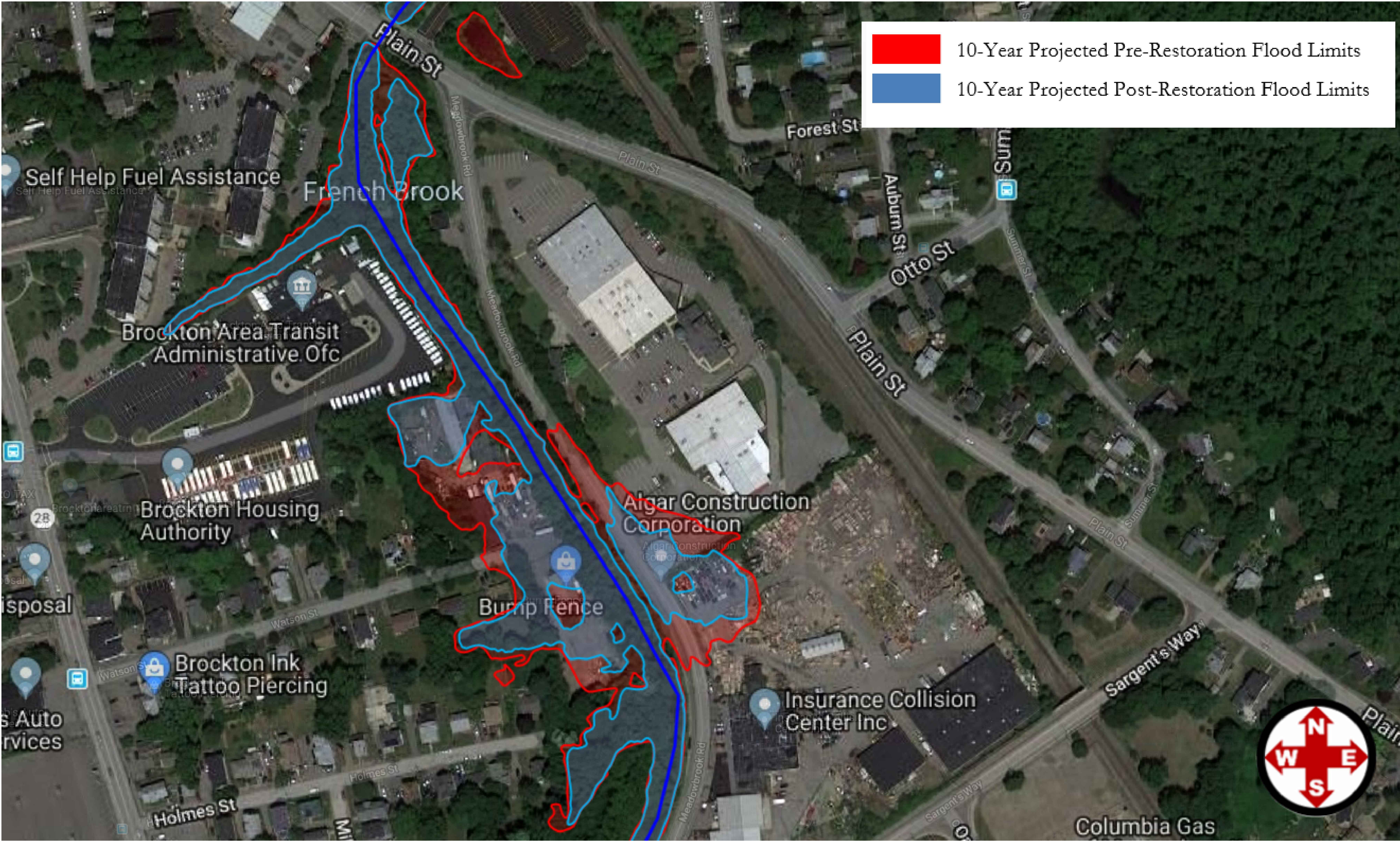
SCALE:  
HORZ.: 1"= 800'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
GRAPHIC SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX





BELMONT AVENUE RESIDENTIAL NEIGHBORHOOD  
10-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE



PLAIN STREET AND SARGENT'S WAY COMMERCIAL NEIGHBORHOOD  
10-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE

NOTE:  
THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WERE DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (GEO-RAS) ANALYSIS FOR PRESENT-DAY AND PROJECTED FLOODING.

FIG. G-2

CITY OF BROCKTON  
PRESENT-DAY VERSUS PROJECTED  
FLOOD INUNDATION MAPPING  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS

**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fandco.com

SCALE:  
HORZ.: 1"= 800'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
800 400 0 800  
GRAPHIC SCALE

No.	DATE	DESCRIPTION	XX/XX	XX
1.			DESIGNER	REVIEWER





BELMONT AVENUE RESIDENTIAL NEIGHBORHOOD  
50-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE



PLAIN STREET AND SARGENT'S WAY COMMERCIAL NEIGHBORHOOD  
50-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE

NOTE:  
THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WERE DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (GEO-RAS) ANALYSIS FOR PRESENT-DAY AND PROJECTED FLOODING.

FIG. G-3

CITY OF BROCKTON  
PRESENT-DAY VERSUS PROJECTED  
FLOOD INUNDATION MAPPING  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS

**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fandco.com

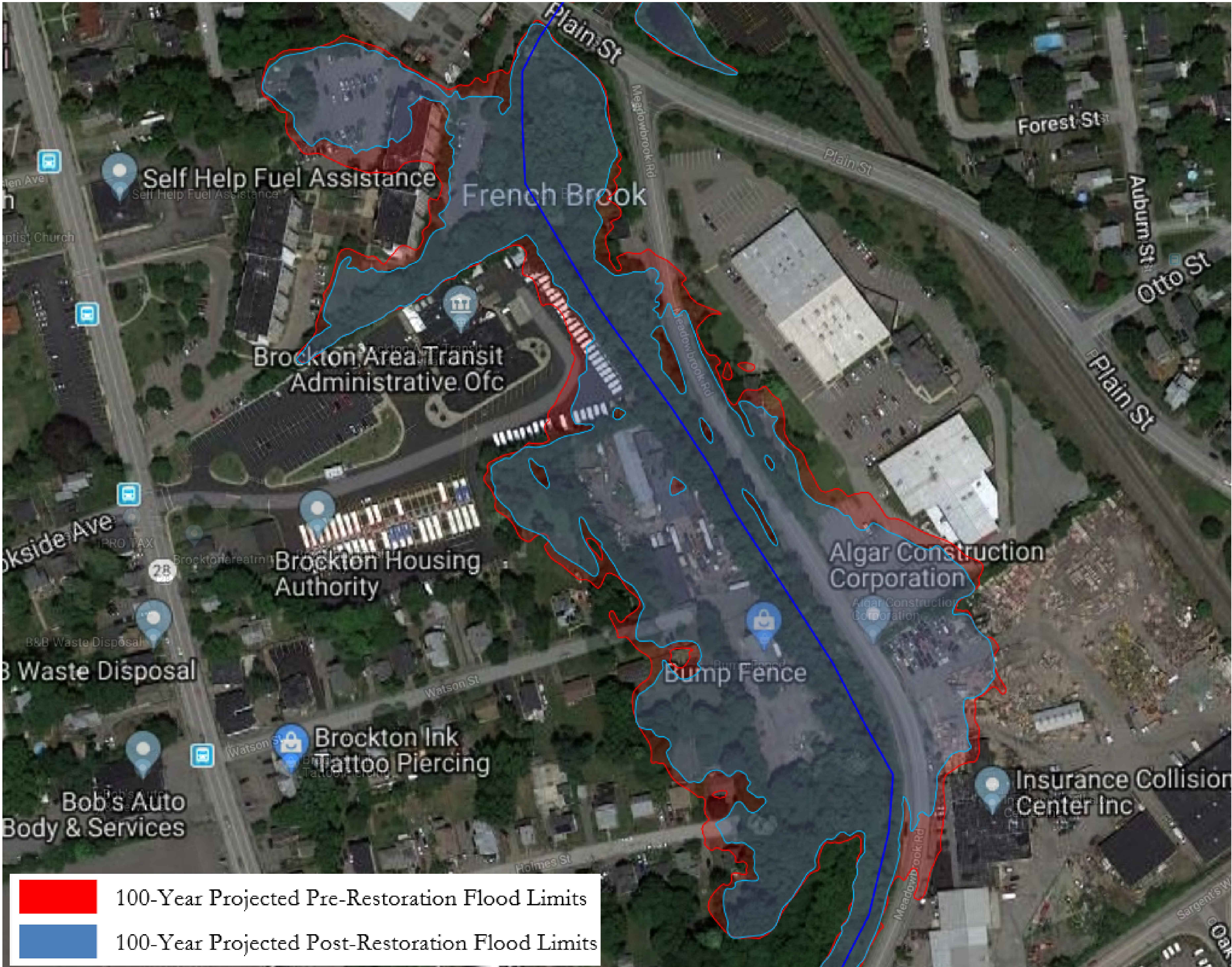
SCALE:  
HORZ.: 1"= 800'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
GRAPHIC SCALE

1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER





BELMONT AVENUE RESIDENTIAL NEIGHBORHOOD  
100-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE



PLAIN STREET AND SARGENT'S WAY COMMERCIAL NEIGHBORHOOD  
100-YEAR PRE- VERSUS POST-RESTORATION PROJECTED (2040) FLOODING  
NOT TO SCALE

NOTE:  
THE FLOOD BOUNDARIES REFLECTED ON THIS FIGURE WERE DIGITIZED FROM RESULTS OBTAINED FROM FUSS & O'NEILL'S OCTOBER 2020 HYDRAULIC (GEO-RAS) ANALYSIS FOR PRESENT-DAY AND PROJECTED FLOODING.

FIG. G-3

CITY OF BROCKTON  
PRESENT-DAY VERSUS PROJECTED  
FLOOD INUNDATION MAPPING  
BROCKTON PLAN FOR CLIMATE RESILIENCY  
BROCKTON MASSACHUSETTS



SCALE:  
HORZ.: 1"= 800'  
VERT.:  
DATUM:  
HORZ.:  
VERT.:  
GRAPHIC SCALE

1.	No.	DATE	DESCRIPTION	XX/XX	XX
				DESIGNER	REVIEWER





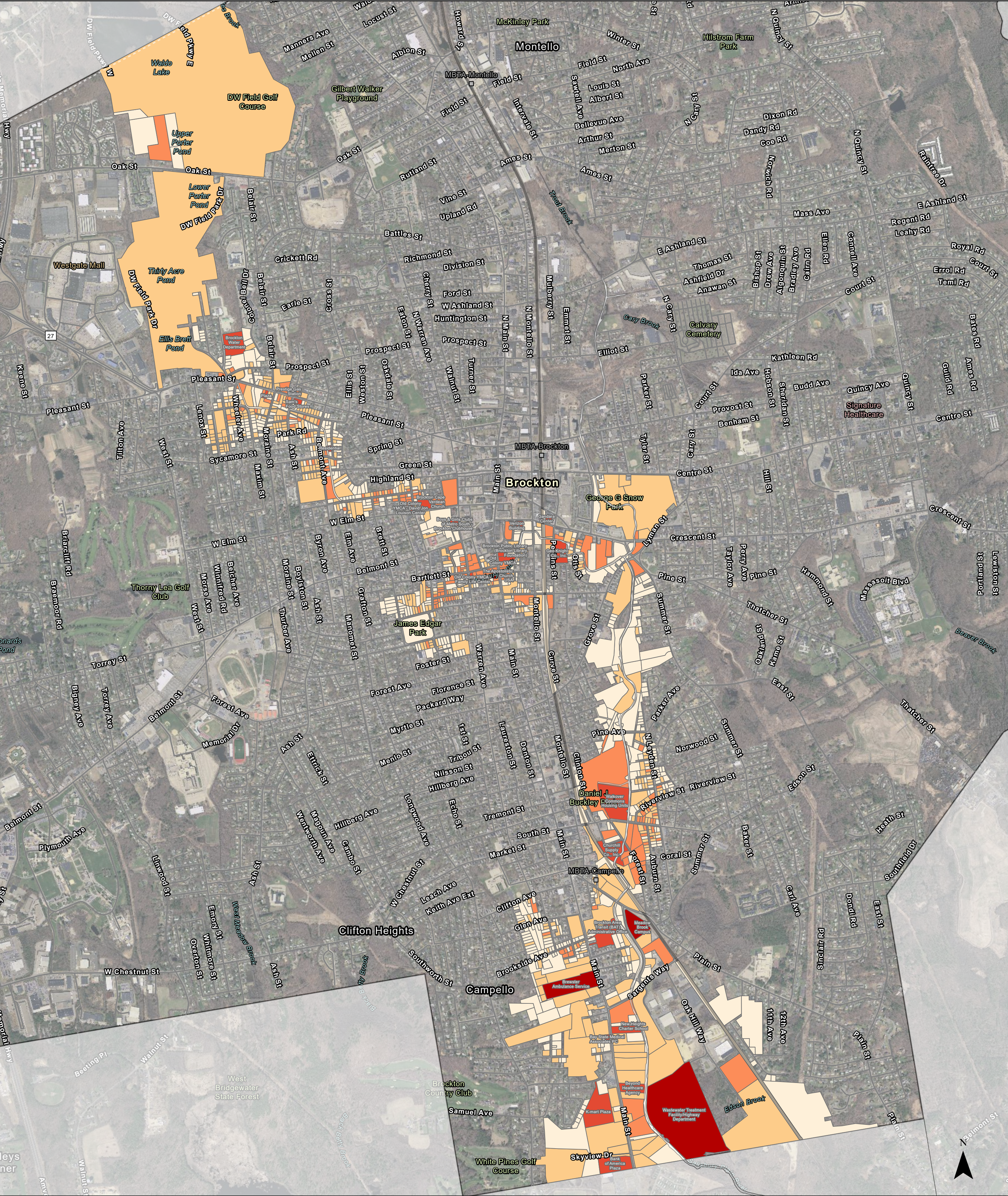


## **Appendix B**

---

### Prioritization Mapping





**PARCEL  
RISK SCORES  
BROCKTON, MA**

**Normalized Risk Score**

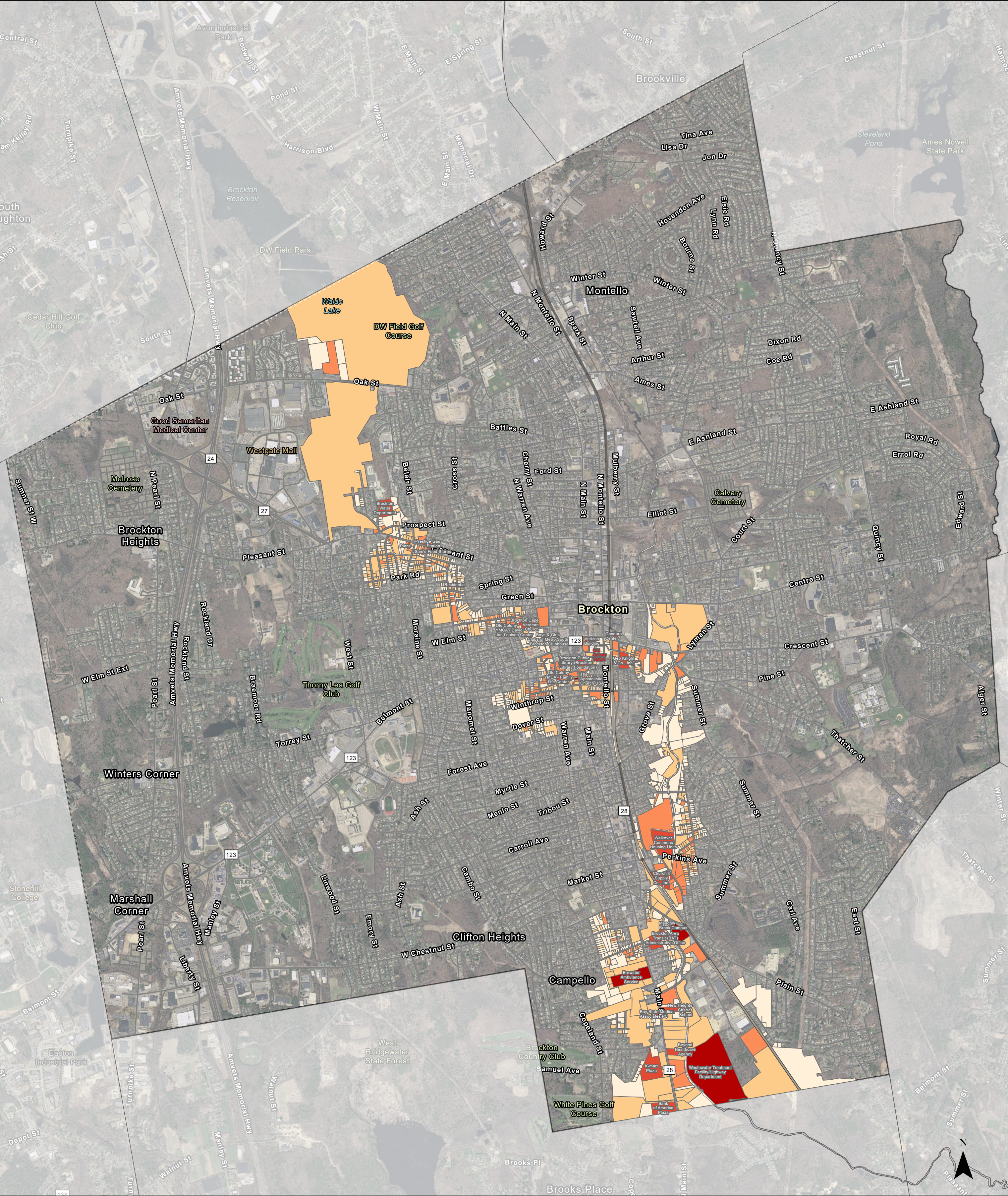
- Lowest
- 
- 
- 
- Highest

0 0.35 0.7 Miles

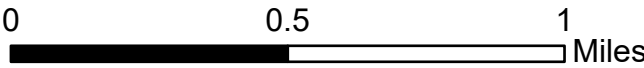


Data Sources:  
Base map: ESRI  
Administrative Boundaries: MassGIS



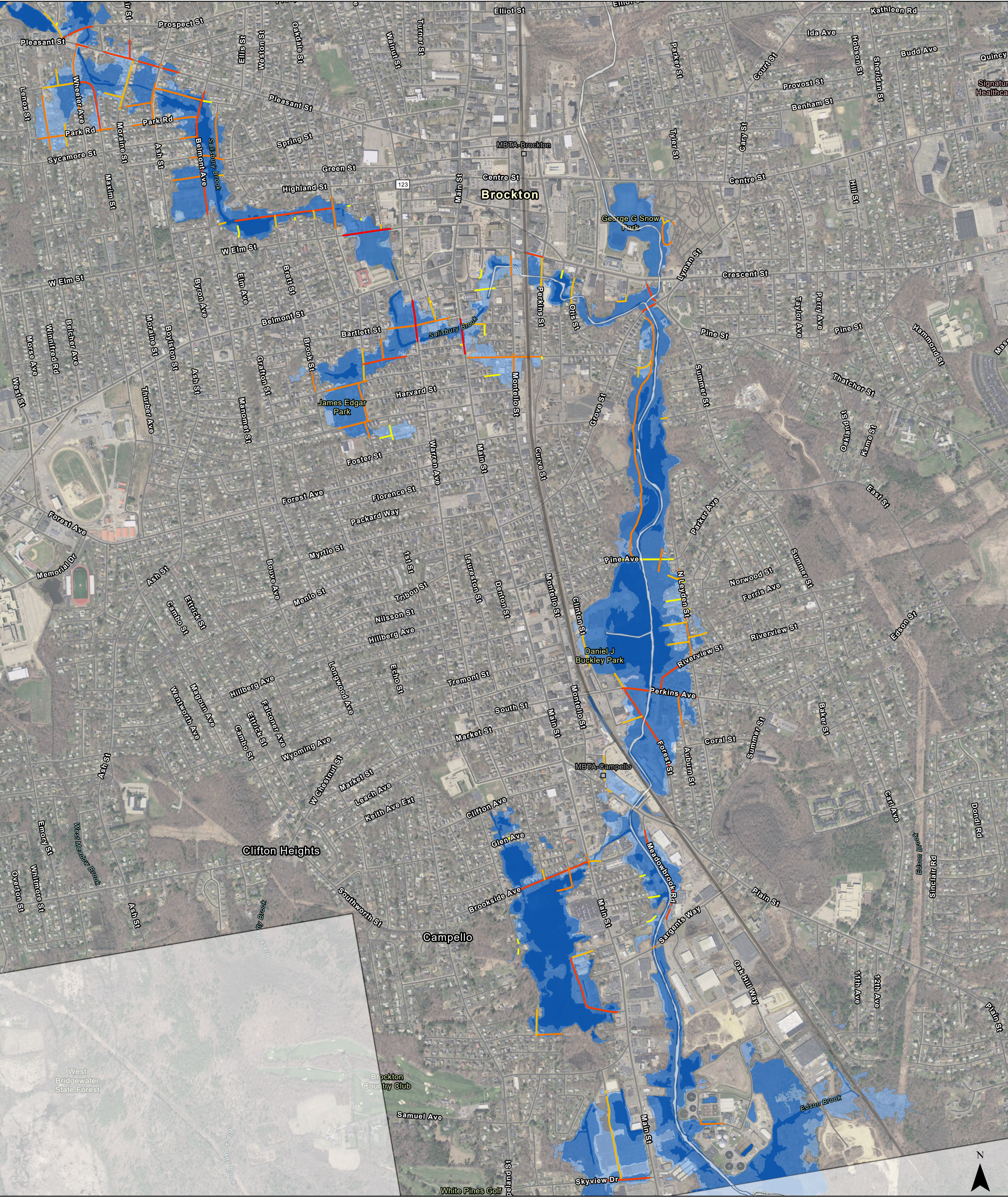


**PARCEL  
RISK SCORES**  
BROCKTON, MA

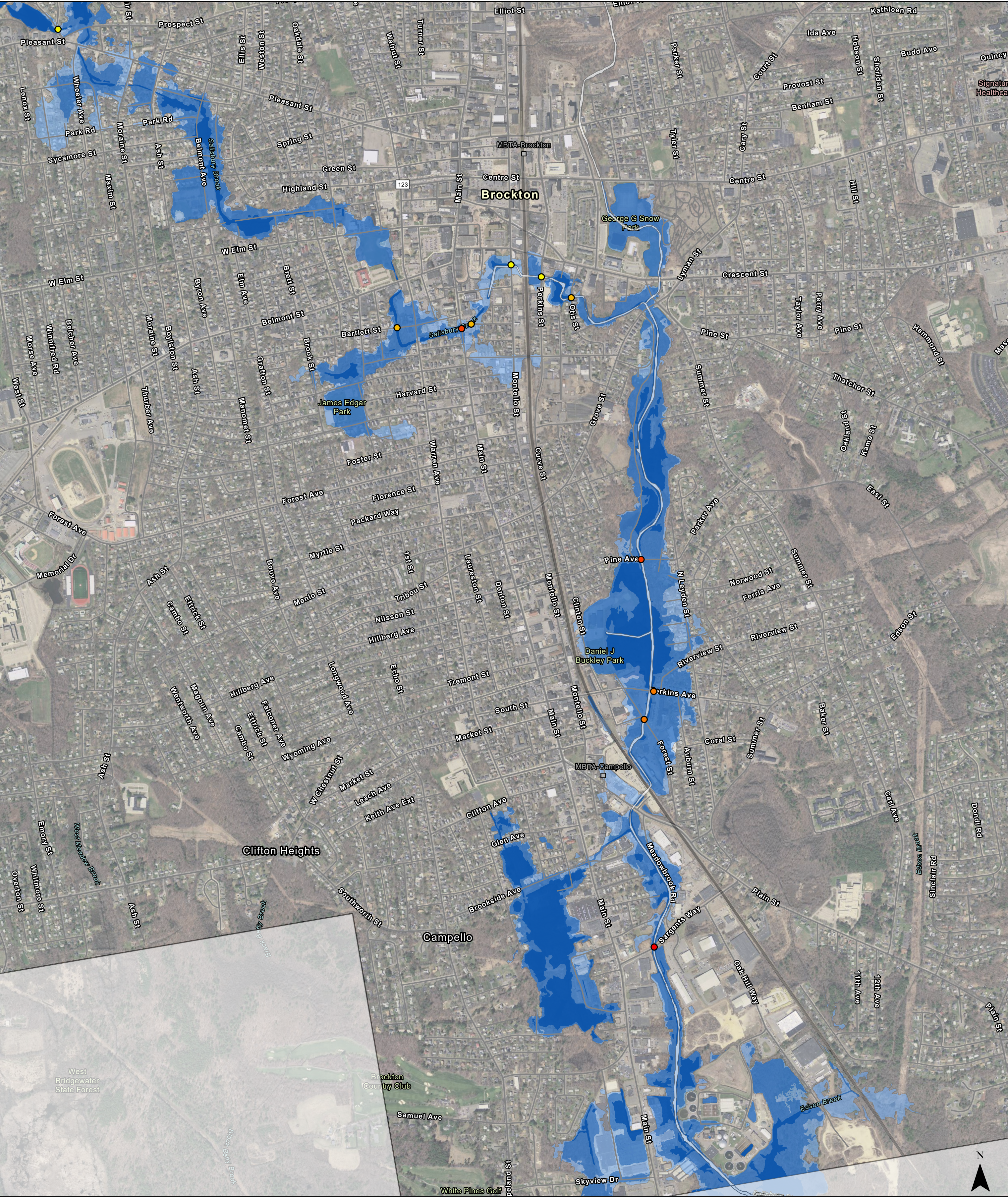


Data Sources:  
Base map: ESRI  
Administrative Boundaries: MassGIS











*Financial assistance was provided by the Executive Office of Energy & Environmental Affairs (EEA) under the FY19 Municipal Vulnerability Preparedness (MVP) Grant Program. The MVP Action Grant offers financial resources to municipalities that are seeking to advance priority climate adaptation actions to address climate change impacts resulting from extreme weather, sea level rise, inland and coastal flooding, severe heat, and other climate impacts.*



### **Consultant Team**

Fuss & O'Neill, Inc. – Julianne Busa, PhD; Sean Arruda, PE, CFM; Dean Audet, PE;  
Liz Isenstein, MSc, EIT; Nelson Tull, EIT; Sarah Hayden, MBA, MSc; Arnold  
Robinson, AICP

Document photos and graphics produced by Fuss & O'Neill unless otherwise noted.