

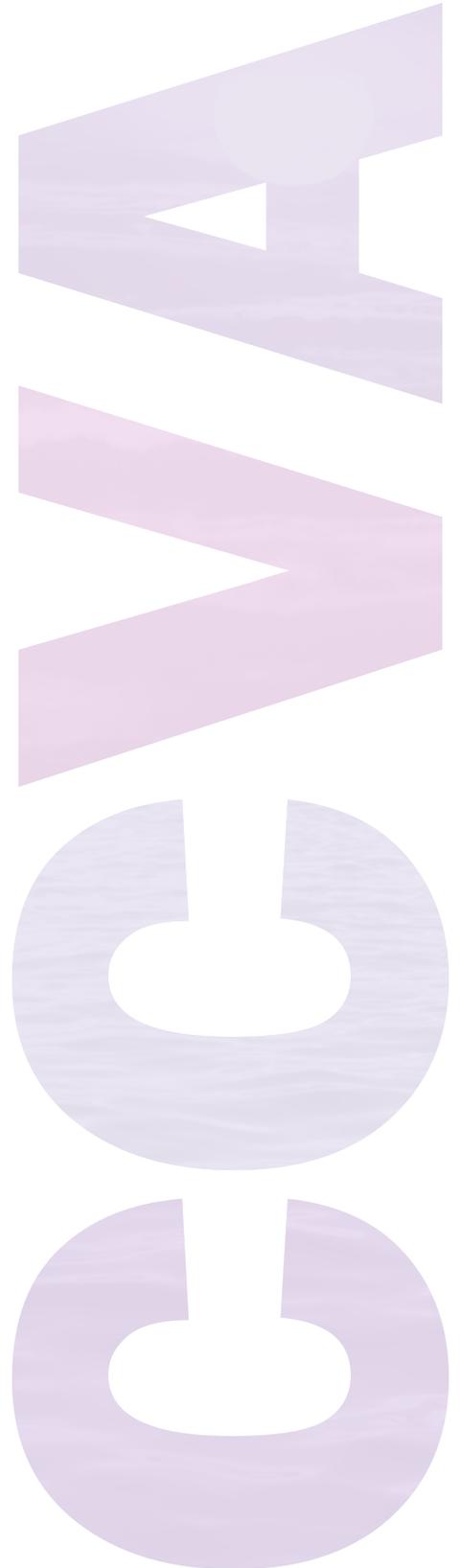
Appendix A

Heat Island and Flooding Maps

Climate Change Vulnerability Assessment

City of Cambridge, Massachusetts

November 2015



Heat Island and Flooding Maps

Heat Island

Ambient Air

- Map 1: Present conditions ambient air temperature variability on an 83°F day
- Map 2: 2030s scenarios ambient air temperature variability on a 90°F day
- Map 3: 2070s scenarios ambient air temperature variability on a 100°F day

Heat Index

- Map 4: Present conditions “feels-like” variability on a day when heat index is 83°F day
- Map 5: 2030s scenario “feels-like” variability on a day when heat index is 96°F
- Map 6: 2070s scenario “feels-like” variability on a day when heat index is 115°F

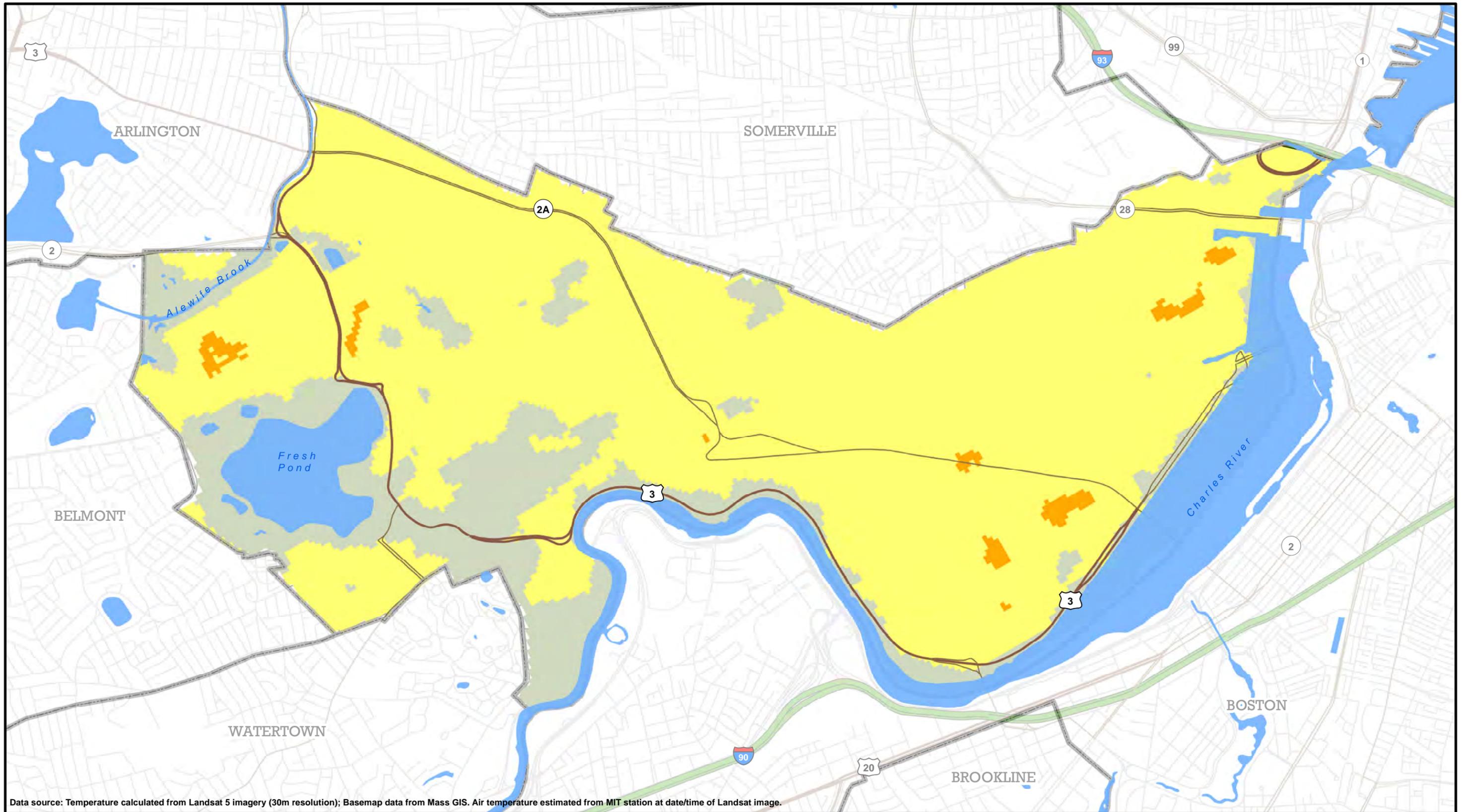
Flooding from Precipitation

10-year Storm

- Map 7: Present conditions precipitation flooding under the current 10-year 24-hour storm
- Map 8: Precipitation flooding scenario under the 10-year 24-hour storm by 2030s
- Map 9: Precipitation flooding scenario under the 10-year 24-hour storm by 2070s

100-year Storm

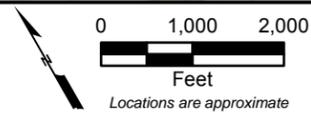
- Map 10: Present conditions precipitation flooding under the current 100-year 24-hour storm
- Map 11: Precipitation flooding scenario under the 100-year 24-hour storm by 2030s
- Map 12: Precipitation flooding scenario under the 100-year 24-hour storm by 2070s



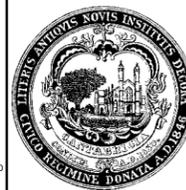
Data source: Temperature calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS. Air temperature estimated from MIT station at date/time of Landsat image.

LEGEND
Estimated Ambient Temperature (°F)

≤80	103 - 124
80 - 90	>124
90 - 103	



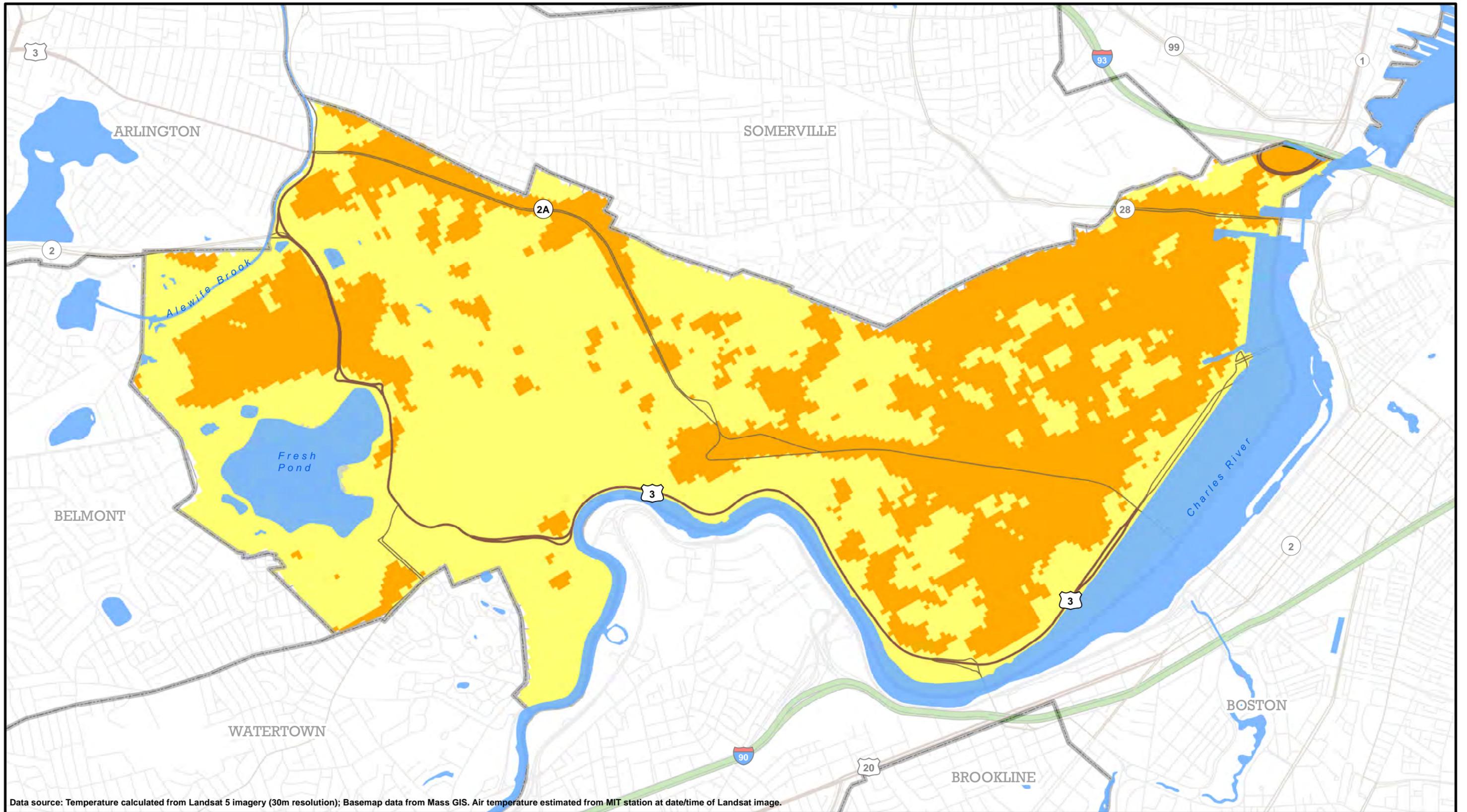
THIS MAP HAS BEEN PREPARED FOR THE CITY OF CAMBRIDGE CLIMATE CHANGE VULNERABILITY ASSESSMENT. IT IS BASED ON GIS DATA PROVIDED BY THE CITY (11/8/2012) AND FROM MASSGIS. USERS OF THIS MAP SHOULD CONSULT PRIMARY SOURCES FOR VERIFICATION OF THE INFORMATION CONTAINED ON THIS MAP. THE CITY OF CAMBRIDGE AND ITS MAPPING CONTRACTORS ASSUME NO LIABILITY FOR THE INFORMATION CONTAINED HEREIN.



PROJECT NO.	20100259
DRAWN:	04/04/2015
DRAWN BY:	AW
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FILE NAME:	Map 1-AmbientAir_2015.mxd

PRESENT CONDITIONS AMBIENT AIR (83°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts

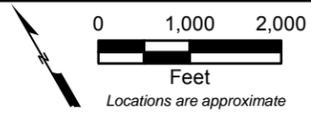
MAP
1



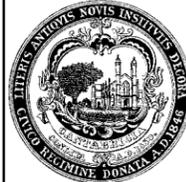
Data source: Temperature calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS. Air temperature estimated from MIT station at date/time of Landsat image.

LEGEND
Estimated Ambient Temperature (°F)

≤80	103 - 124
80 - 90	>124
90 - 103	

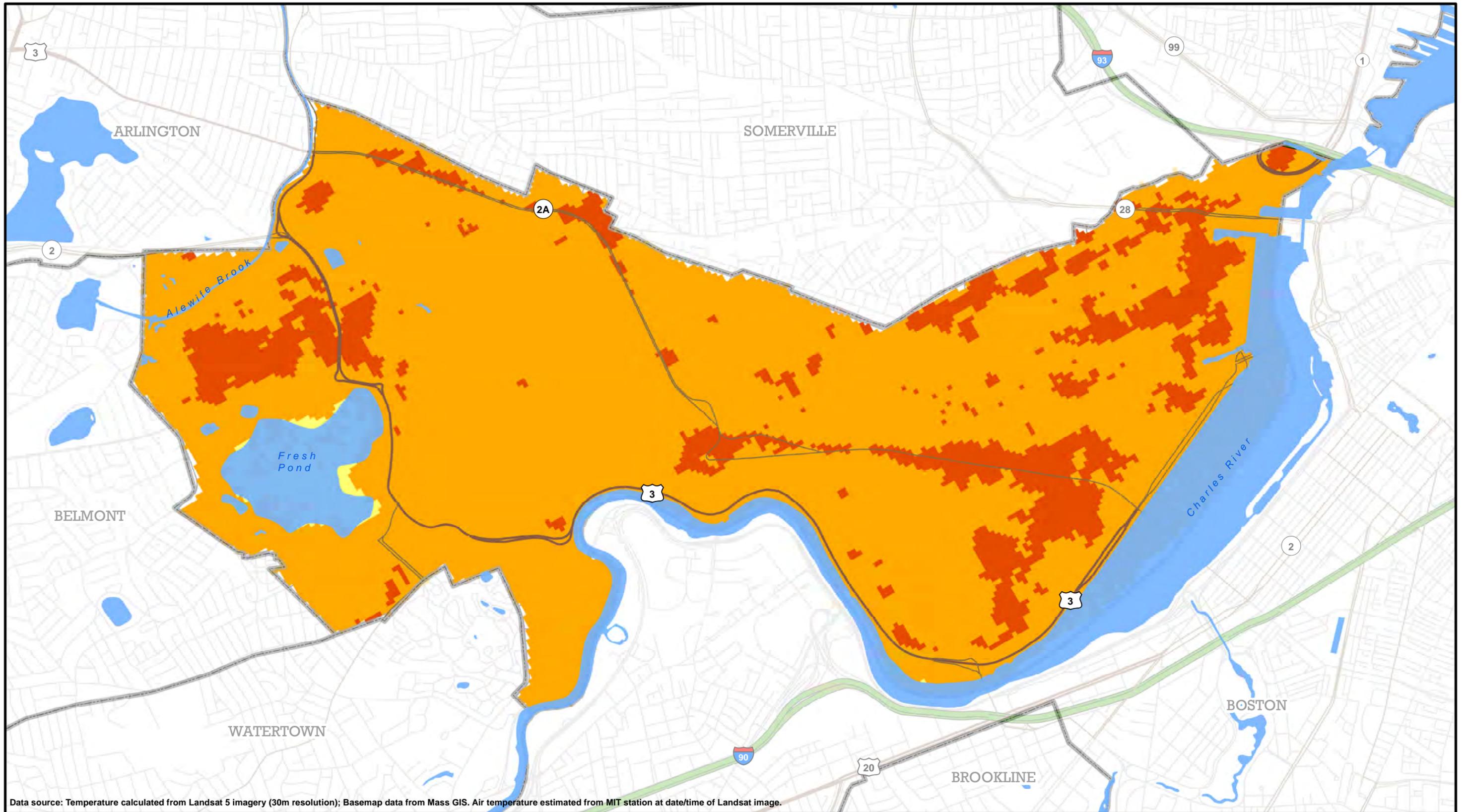


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PROJECT NO.	20100259
DRAWN:	04/04/2015
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FILE NAME:	Map 2-AmbientAir_2030.mxd

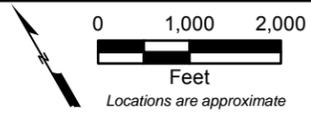
2030S SCENARIO AMBIENT AIR (90°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts



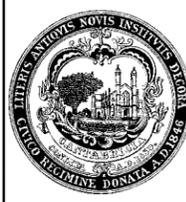
Data source: Temperature calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS. Air temperature estimated from MIT station at date/time of Landsat image.

LEGEND
Estimated Ambient Temperature (°F)

≤80	103 - 124
80 - 90	>124
90 - 103	

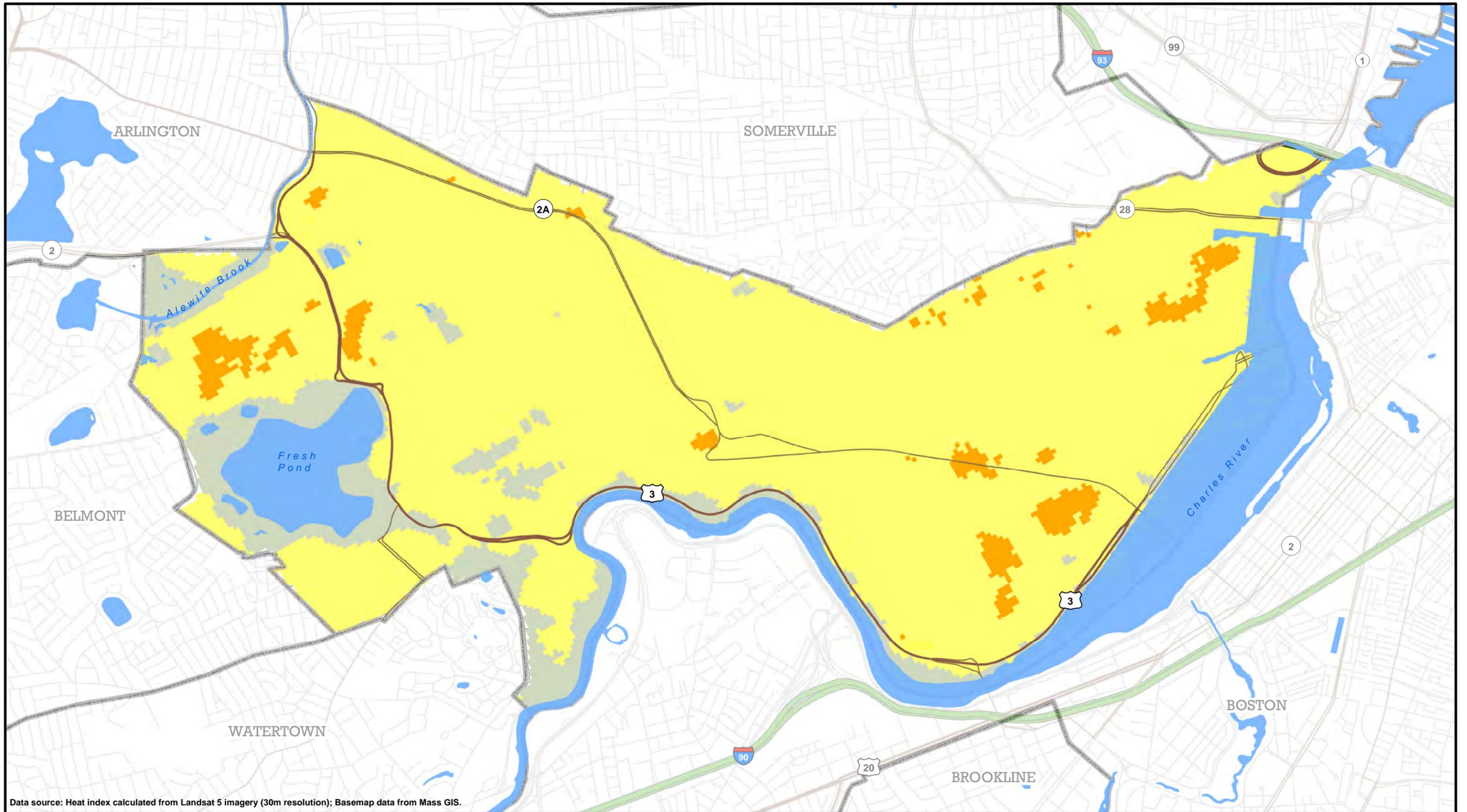


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FILE NAME:	Map 3-AmbientAir_2070.mxd

2070S SCENARIO AMBIENT AIR (100°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts

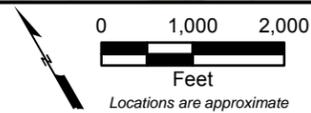


Data source: Heat index calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS.

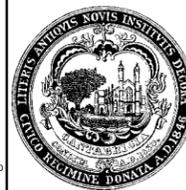
LEGEND

Heat Index (°F)

- ≤80
- [80 - 90]: Caution
- [90 - 103]: Extreme Caution
- [103 - 124]: Danger
- >124: Extreme Danger

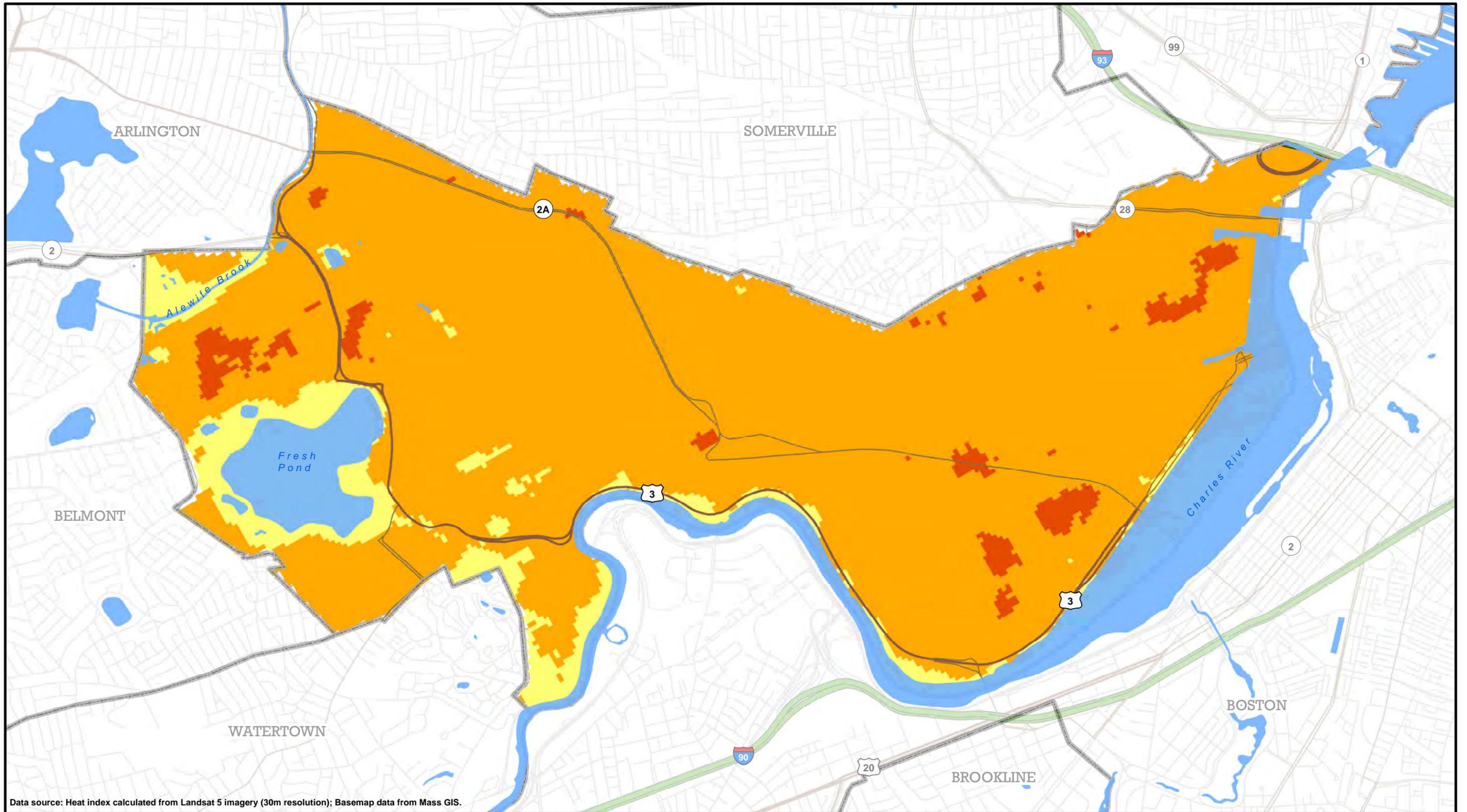


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PROJECT NO.	20100259
DRAWN:	04/05/2015
DRAWN BY:	AW
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FILE NAME:	Map 4-HeatIndex_2015.mxd

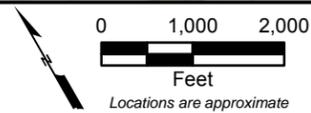
PRESENT CONDITIONS HEAT INDEX (83°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts



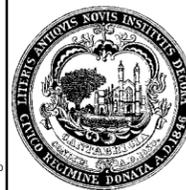
Data source: Heat index calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS.

LEGEND

- Heat Index (°F)
- ≤80
 - [80 - 90]: Caution
 - [90 - 103]: Extreme Caution
 - [103 - 124]: Danger
 - >124: Extreme Danger

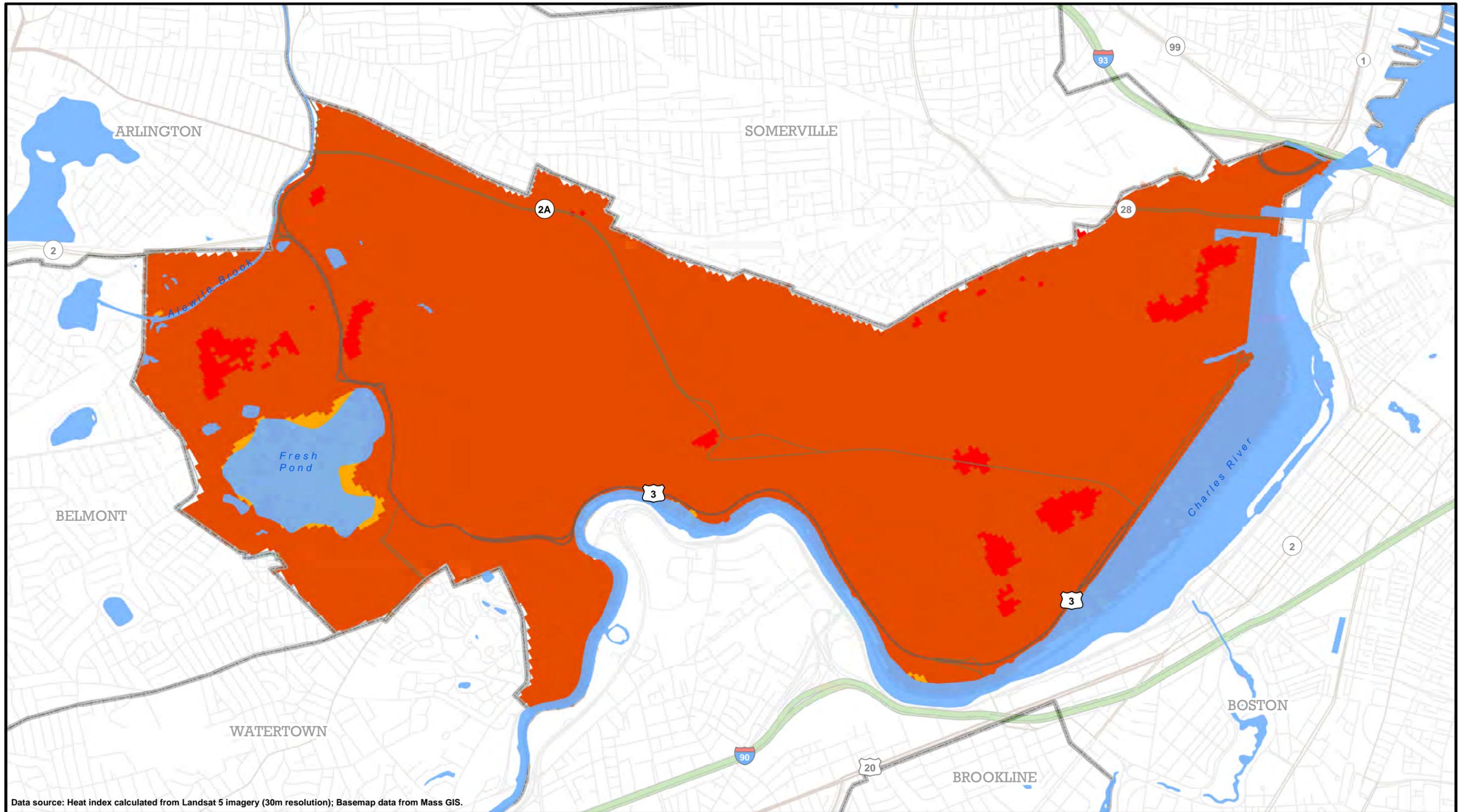


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FILE NAME:	Map 5-HeatIndex_2030.mxd

2030S SCENARIO HEAT INDEX (96°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts

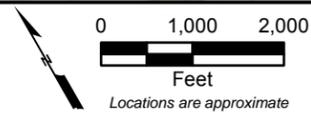


Data source: Heat index calculated from Landsat 5 imagery (30m resolution); Basemap data from Mass GIS.

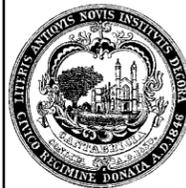
LEGEND

Heat Index (°F)

- ≤80
- [80 - 90]: Caution
- [90 - 103]: Extreme Caution
- [103 - 124]: Danger
- >124: Extreme Danger

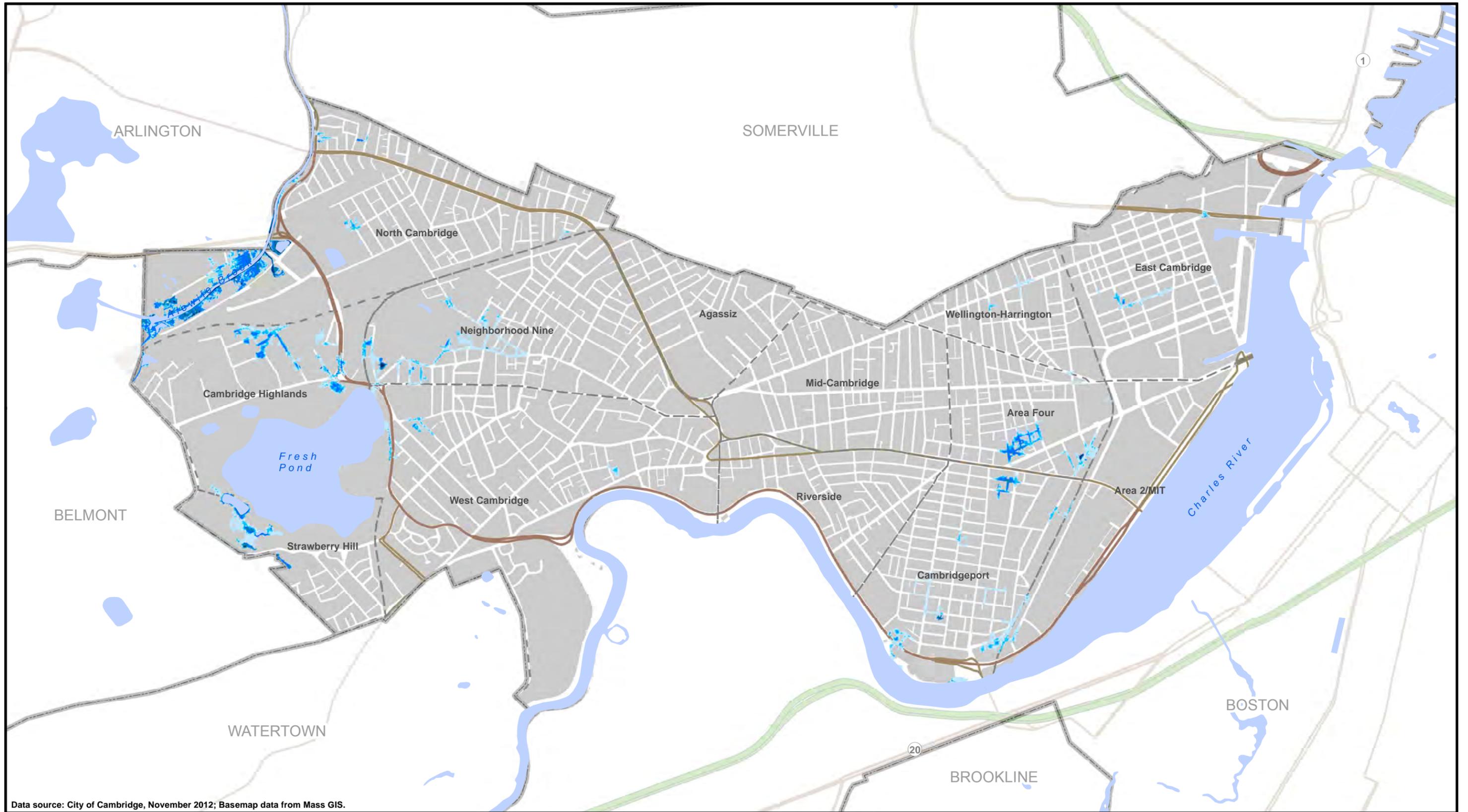


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FILE NAME:	Map 6-HeatIndex_2070.mxd

2070S SCENARIO HEAT INDEX (115°F)
Climate Change Vulnerability Assessment Cambridge, Massachusetts



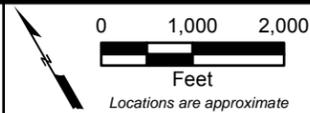
Data source: City of Cambridge, November 2012; Basemap data from Mass GIS.

Depth of flooding above ground (ft)

- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- > 3.0

LEGEND

- Water Body
- City of Cambridge Boundary
- Neighborhood Boundary
- Interstate
- US Highway
- State Route

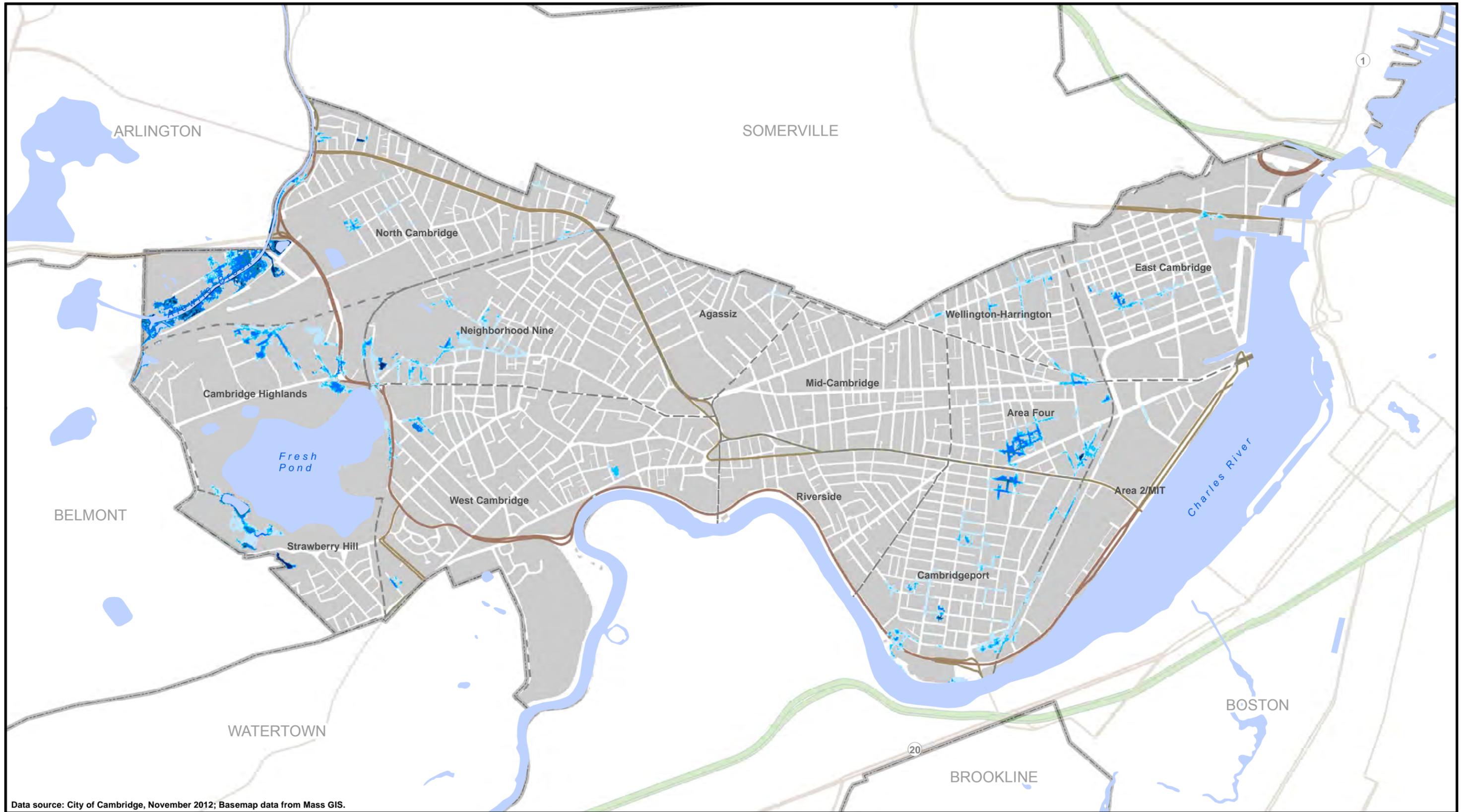


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PRESENT CONDITIONS 10 YEAR SCENARIO FLOODING FROM PRECIPITATION
Climate Change Vulnerability Assessment Cambridge, Massachusetts



Data source: City of Cambridge, November 2012; Basemap data from Mass GIS.

LEGEND

0 - 0.5	2.0 - 3.0	Water Body	Interstate
0.5 - 1.0	> 3.0	City of Cambridge Boundary	US Highway
1.0 - 2.0		Neighborhood Boundary	State Route

0 1,000 2,000
Feet
Locations are approximate

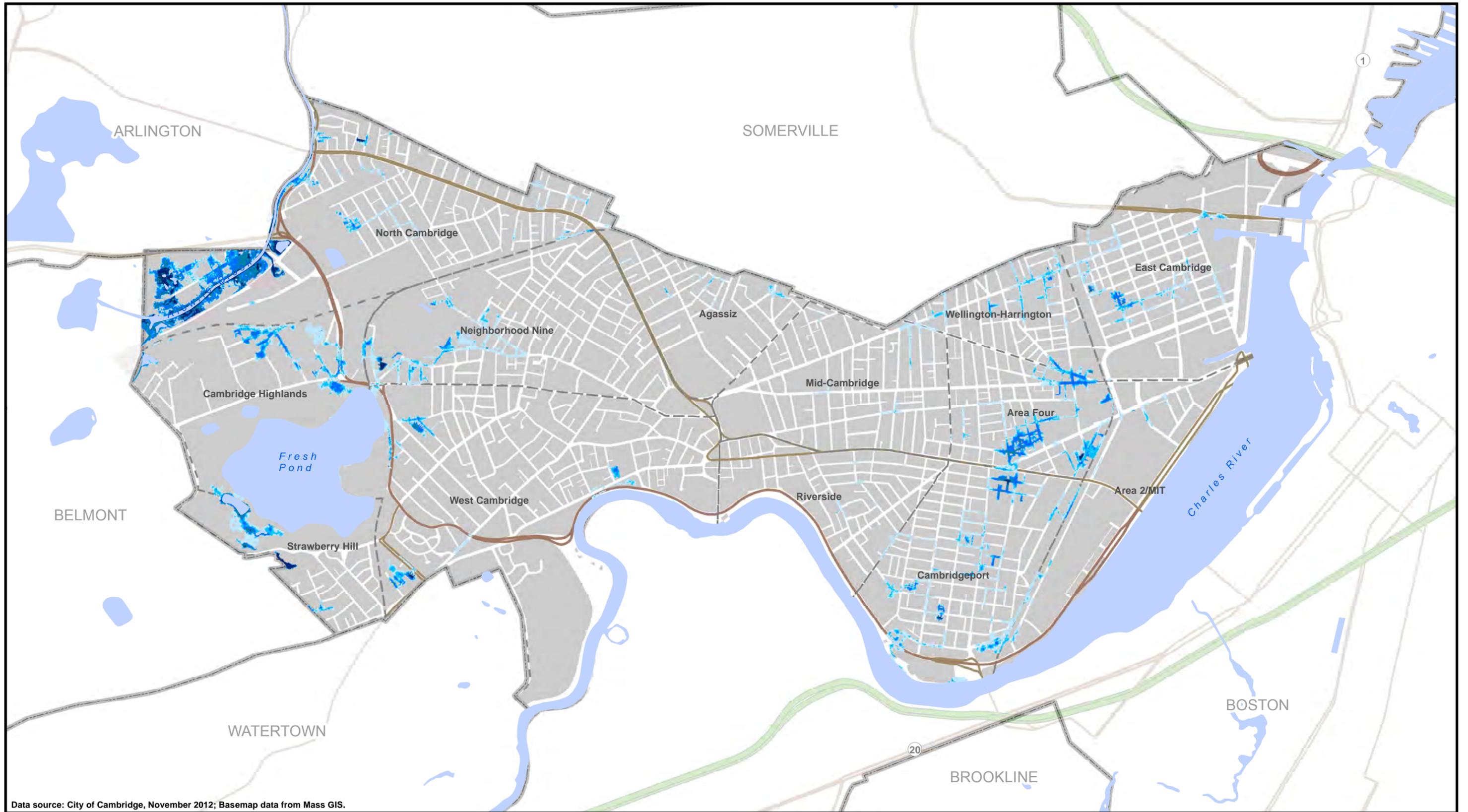
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**2030 CONDITIONS
10 YEAR SCENARIO
FLOODING FROM PRECIPITATION**

Climate Change Vulnerability Assessment
Cambridge, Massachusetts



Data source: City of Cambridge, November 2012; Basemap data from Mass GIS.

LEGEND

0 - 0.5	2.0 - 3.0	Water Body	Interstate
0.5 - 1.0	> 3.0	City of Cambridge Boundary	US Highway
1.0 - 2.0		Neighborhood Boundary	State Route

0 1,000 2,000
Feet
Locations are approximate

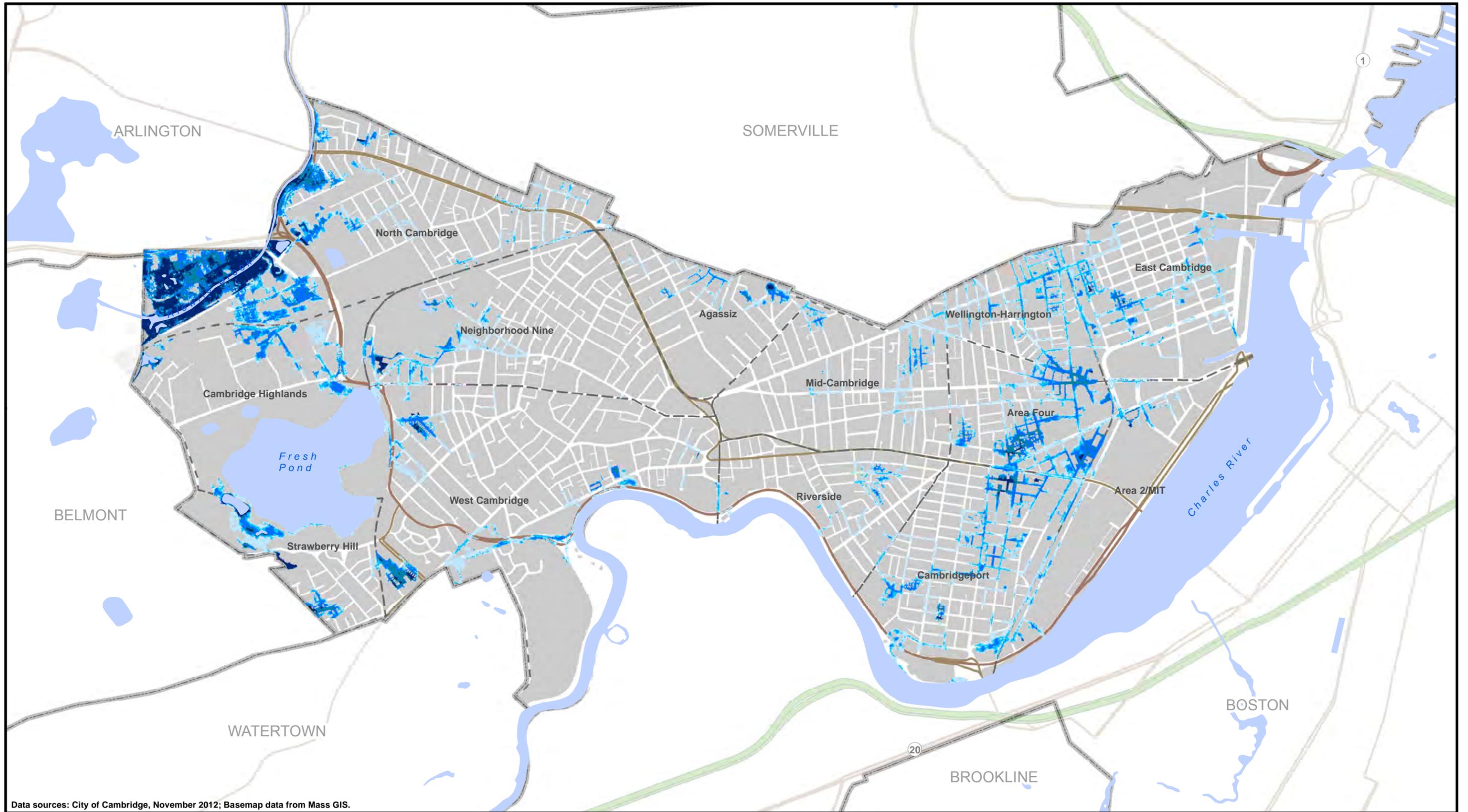
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FILE NAME:	10Year_2070.mxd

**2070 CONDITIONS
10 YEAR SCENARIO
FLOODING FROM PRECIPITATION**

Climate Change Vulnerability Assessment
Cambridge, Massachusetts



Data sources: City of Cambridge, November 2012; Basemap data from Mass GIS.

Depth of flooding above ground (ft)		LEGEND	
0 - 0.5	2.0 - 3.0	Water Body	Interstate
0.5 - 1.0	> 3.0	City of Cambridge Boundary	US Highway
1.0 - 2.0		Neighborhood Boundary	State Route

0 1,000 2,000
Feet
Locations are approximate

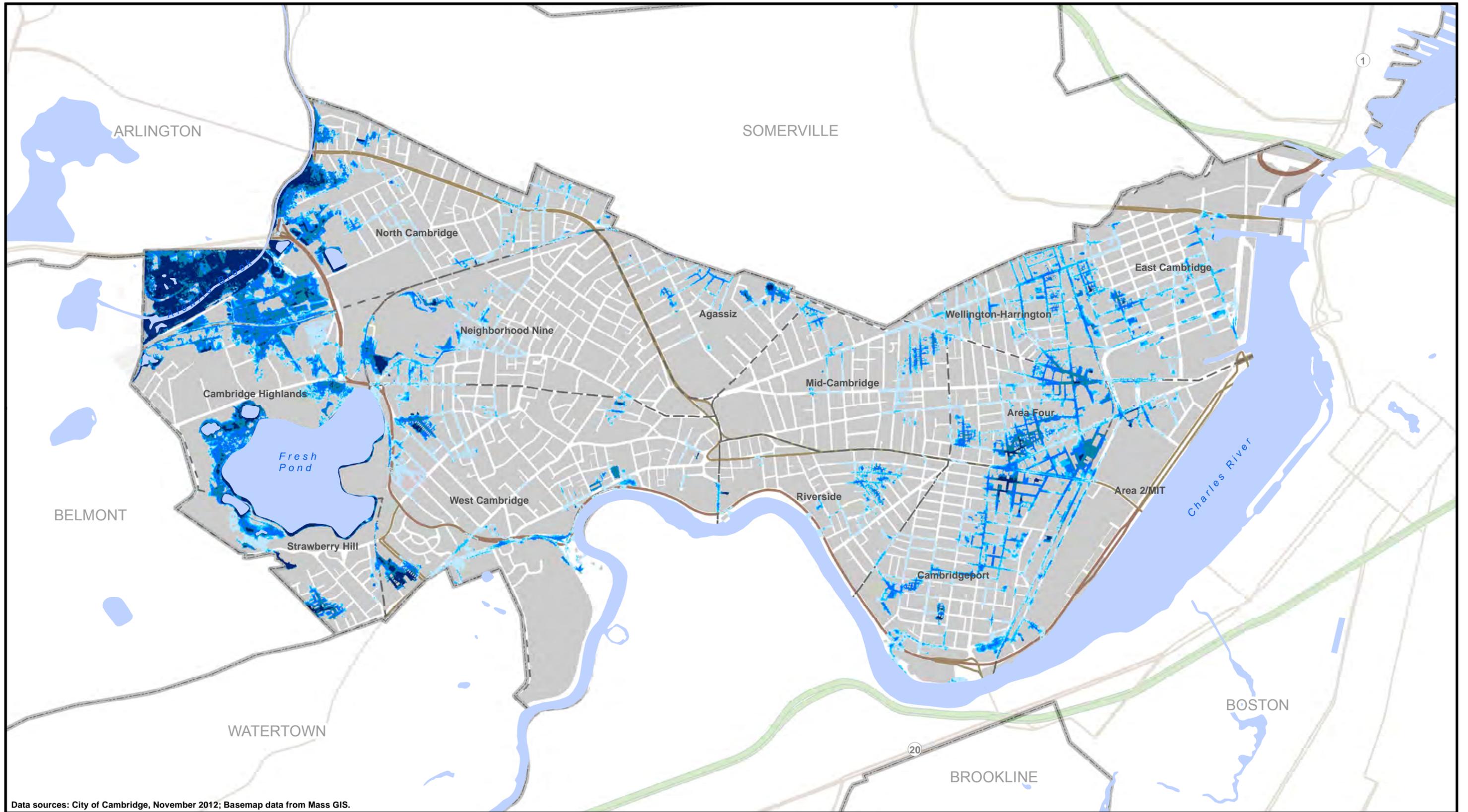
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**PRESENT CONDITIONS
100 YEAR SCENARIO
FLOODING FROM PRECIPITATION**

Climate Change Vulnerability Assessment
Cambridge, Massachusetts



Data sources: City of Cambridge, November 2012; Basemap data from Mass GIS.

LEGEND

0 - 0.5	2.0 - 3.0	Water Body	Interstate
0.5 - 1.0	> 3.0	City of Cambridge Boundary	US Highway
1.0 - 2.0		Neighborhood Boundary	State Route

0 1,000 2,000
Feet
Locations are approximate

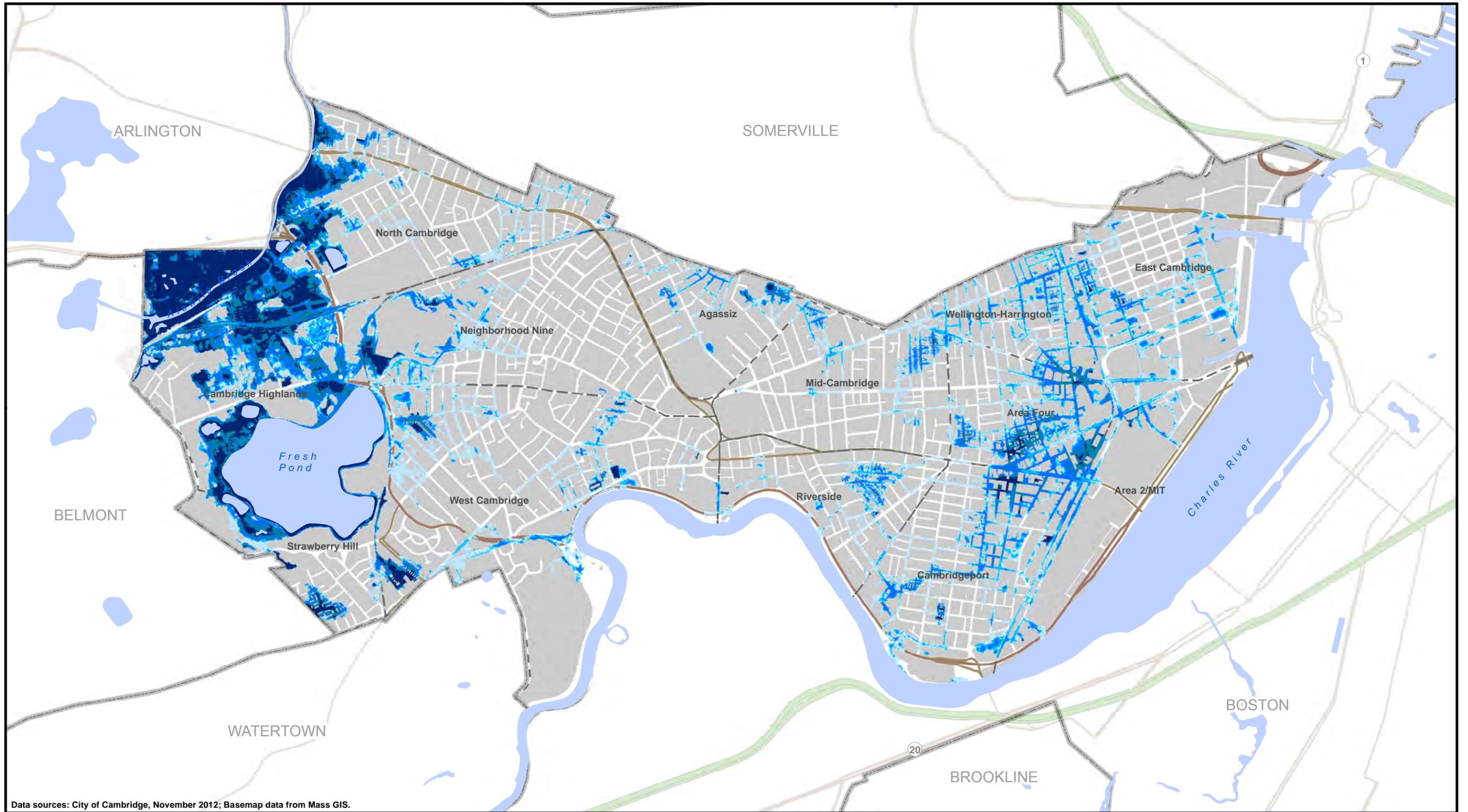
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FILE NAME:	100Year_2030.mxd

**2030 CONDITIONS
100 YEAR SCENARIO
FLOODING FROM PRECIPITATION**

Climate Change Vulnerability Assessment
Cambridge, Massachusetts



Data sources: City of Cambridge, November 2012; Basemap data from Mass GIS.

LEGEND			
Depth of flooding above ground (ft)		Water Body	Interstate
0 - 0.5	2.0 - 3.0	City of Cambridge Boundary	US Highway
0.5 - 1.0	> 3.0	Neighborhood Boundary	State Route
1.0 - 2.0			

0 1,000 2,000
Feet
Locations are approximate

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**2070 CONDITIONS
100 YEAR SCENARIO
FLOODING FROM PRECIPITATION**

Climate Change Vulnerability Assessment
Cambridge, Massachusetts