# Agenda

| | |
|---|---|
| 10:00 – 10:10 | Introductions |
| 10:10 – 10:30 | MVP Program Overview |
| 10:30 – 11:00 | Identify Goals for MVP Plan & Top Four Hazards |
| 11:00 – 11:20 | Infrastructure – Identify Vulnerabilities |
| 11:20 – 11:40 | Infrastructure – Identify Strengths |
| 11:40 – 12:00 | Societal – Identify Vulnerabilities |
| 12:00 – 12:30 | Lunch |
| 12:30 – 12:50 | Societal – Identify Strengths |
| 12:50 – 1:10 | Environmental – Identify Vulnerabilities |
| 1:10 – 1:30 | Environmental – Identify Strengths |
| 1:30 – 2:00 | Questions/Discussion/Next Steps |

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# Introductions


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# Overview of MVP Program

- Governor Baker's E.O. No. 569: Establishing an Integrated Climate Change Strategy for the Commonwealth – 09/16/16
- E.O. 569 Created Assistant Secretary of Climate Change Position (appointed Katie Theoharides)
- E.O. 569 Created Municipal Vulnerability Preparedness (MVP) Program and grants for Town's to prepare plans based on EOEA (UMASS) Climate Change Projections
- Preparation of MVP Plan must follow CRB Framework

# Overview of MVP Program

Community Resilience Building Workshop Guide

www.CommunityResilienceBuilding.com

UMASS Climate Change Projections

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# Overview of MVP Program

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WORKSHOP GUIDE

www.CommunityResilienceBuilding.org

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# Overview of MVP Program



## Overview of the Process (Steps & Tasks)

DURING WORKSHOP

**A** Prepare for the Workshop
1. Establish a core team with goals.
2. Engage stakeholders.
3. Prepare materials for workshop.
4. Decide on participant arrangements.

**B** Characterize Hazards
1. Identify past, current, and future impacts.
2. Determine the highest-priority hazards.

**C** Identify Community Vulnerabilities and Strengths
1. Identify infrastructural vulnerabilities and strengths.
2. Identify societal vulnerabilities and strengths.
3. Identify environmental vulnerabilities and strengths.

**D** Identify and Prioritize Community Actions
1. Identify and prioritize infrastructural actions.
2. Identify and prioritize societal actions.
3. Identify and prioritize environmental actions.

**E** Determine the Overall Priority Actions
1. Identify highest-priority actions.
2. Further define urgency and timing.

**F** Put It All Together
1. Generate final workshop products.

**G** Move Forward
1. Continue community outreach and engagement.
2. Secure additional data and information.
3. Inform existing planning and project activities.

**Community Components**

Infrastructural

Societal

Environmental

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# Overview of MVP Program



## TAUNTON BASIN

**MUNICIPALITIES WITHIN TAUNTON BASIN:**
Abington, Attleboro, Avon, Berkley, Bridgewater, Brockton, Carver, Dighton, East Bridgewater, Easton, Fall River, Foxborough, Freetown, Halifax, Hanson, Holbrook, Kingston, Lakeville, Mansfield, Middleborough, New Bedford, North Attleborough, Norton, Pembroke, Plainville, Plymouth, Plympton, Raynham, Rehoboth, Rochester, Rockland, Sharon, Somerset, Stoughton, Swansea, Taunton, West Bridgewater, Whitman, and Wrentham


Many municipalities fall within more than one basin, so it is advised to use the climate projections for the basin that contains the majority of the land area of the municipality.





## TAUNTON BASIN

| Taunton Basin | | Observed Baseline 1971-2000 (°F) | Projected Change in 2030s (°F) | Mid-Century Projected Change in 2050s (°F) | Projected Change in 2070s (°F) | End of Century Projected Change in 2090s (°F) |
|---|---|---|---|---|---|---|
| Average Temperature | Annual | 49.9 | +2.0 to +3.8 | +2.7 to +5.9 | +3.1 to +8.6 | +3.4 to +10.5 |
| | Winter | 30.0 | +2.2 to +4.4 | +2.9 to +6.7 | +3.5 to +8.8 | +3.9 to +10.1 |
| | Spring | 47.3 | +1.7 to +3.4 | +2.4 to +5.4 | +2.6 to +7.5 | +3.1 to +9.2 |
| | Summer | 69.6 | +1.7 to +3.9 | +2.2 to +6.3 | +2.8 to +9.6 | +3.4 to +11.6 |
| | Fall | 52.1 | +2.1 to +4.5 | +3.4 to +6.3 | +3.2 to +9.0 | +3.7 to +11.2 |
| Maximum Temperature | Annual | 60.3 | +1.9 to +3.7 | +2.5 to +5.9 | +2.8 to +8.6 | +3.1 to +10.4 |
| | Winter | 39.5 | +1.8 to +4.2 | +2.5 to +6.2 | +3.0 to +8.1 | +3.4 to +9.4 |
| | Spring | 58.0 | +1.5 to +3.4 | +2.0 to +5.2 | +2.5 to +7.6 | +3.0 to +9.0 |
| | Summer | 80.5 | +1.6 to +3.8 | +2.1 to +6.2 | +2.7 to +9.7 | +3.1 to +11.6 |
| | Fall | 62.7 | +2.1 to +4.4 | +3.3 to +6.4 | +3.1 to +9.0 | +3.4 to +11.3 |
| Minimum Temperature | Annual | 39.4 | +2.1 to +3.9 | +2.9 to +6.1 | +3.4 to +8.6 | +3.8 to +10.6 |
| | Winter | 20.5 | +2.5 to +4.7 | +3.2 to +7.3 | +4.1 to +9.4 | +4.4 to +10.8 |
| | Spring | 36.7 | +1.8 to +3.5 | +2.7 to +5.7 | +2.7 to +7.4 | +3.2 to +9.1 |
| | Summer | 58.6 | +1.8 to +3.9 | +2.4 to +6.5 | +2.9 to +9.4 | +3.6 to +11.5 |
| | Fall | 41.6 | +2.1 to +4.7 | +3.5 to +6.3 | +3.3 to +9.0 | +4.0 to +11.1 |

- The Taunton basin is expected to experience increased average temperatures throughout the 21st century. Maximum and minimum temperatures are also expected to increase throughout the end of the century. These increased temperature trends are expected for annual and seasonal projections.
- Seasonally, maximum summer and fall temperatures are expected to see the highest projected increase throughout the 21st century.
  - Summer mid-century increase of 2.1 °F to 6.2 °F (3-8% increase); end of century increase of 3.1 °F to 11.6 °F (4-14% increase).
  - Fall mid-century increase of 3.3 °F to 6.4 °F (5-10% increase); end of century increase by and 3.4 °F to 11.3 °F (5-18% increase).
- Seasonally, minimum winter and fall temperatures are expected to see increases throughout the 21st century.
  - Winter mid-century increase of 3.2 °F to 7.3 °F (16-35% increase); end of century increase by 4.4 °F to 10.8 °F (21-52% increase).
  - Fall mid-century of 3.5 °F to 6.3 °F (8-15% increase); end of century increase of 4 °F to 11.1 °F (10-27% increase).



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# Overview of MVP Program



- Seasonally, summer historically exhibits the highest number of growing degree-days and is expected to see the largest decrease of any season, but the shoulder seasons of spring and fall are also expected to see an increase in growing degree-days.
  - The summer season is projected to increase by 11-32% (204 -580 degree-days) by mid-century, and by 17-59% (311 -1069 degree-days) by end of century.
  - Spring is expected to see an increase by 30-78% (89 -232 degree-days) by mid-century and 34-159% (101 -472 degree-days) by end of century.
  - Fall is expected to see an increase by 35-78% (182 -406 degree-days) by mid-century and 44-148% (226 -766 degree-days) by end of century.

**TAUNTON BASIN**

| Taunton Basin | | Observed Baseline 1971-2000 (Days) | Projected Change in 2030s (Days) | Mid-Century: Projected Change in 2050s (Days) | Projected Change in 2070s (Days) | End of Century: Projected Change in 2090s (Days) |
|---|---|---|---|---|---|---|
| Days with Precipitation Over 1" | Annual | 8 | +<1[95] to +2 | +1 to +3 | +1 to +3 | +1 to +4 |
| | Winter | 2 | +<1[95] to +1 | +<1[95] to +1 | +<1[95] to +1 | +<1[95] to +2 |
| | Spring | 2 | +<1[95] to +1 | +<1[95] to +1 | +<1[95] to +1 | +<1[95] to +2 |
| | Summer | 2 | -0 to +<1[95] | -0 to +1 | -0 to +1 | -0 to +1 |
| | Fall | 2 | -0 to +1 | -0 to +1 | -0 to +1 | -0 to +1 |
| Days with Precipitation Over 2" | Annual | 1 | -0 to +<1[95] | +<1[95] to +1 | +<1[95] to +1 | +<1[95] to +1 |
| | Winter | <1[95] | -0 to +<1[95] | +<1[95] to +<1[95] | +<1[95] to +<1[95] | -0 to +<1[95] |
| | Spring | <1[95] | -0 to +<1[95] | +<1[95] to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Summer | <1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Fall | <1[95] | -0 to +<1[95] | +<1[95] to +<1[95] | +<1[95] to +<1[95] | -0 to +<1[95] |
| Days with Precipitation Over 4" | Annual | <1[95] | -0 to +<1[95] | +<1[95] to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Winter | 0 | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Spring | 0 | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Summer | <1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |
| | Fall | <1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] | -0 to +<1[95] |

- The projections for expected number of days receiving precipitation over one inch are variable for the Taunton basin, fluctuating between loss and gain of days.
  - Seasonally, the winter season is generally expected to see the highest projected increase.
  - The winter season is expected to see an increase in days with precipitation over one inch of 0-1 days by mid-century, and an increase of 0-2 days by the end of century.
  - The spring season is expected to see an increase in days with precipitation over one inch of 0-1 days by mid-century, and of an increase of 0-1 days by the end of century.

[95] Over the observed period, there were some years with at least 1 day with seasonal precipitation over a certain threshold while in all the other years that threshold wasn't crossed seasonally at all.





**TAUNTON BASIN**

| Taunton Basin | | Observed Baseline 1971-2000 (Inches) | Projected Change in 2030s (Inches) | Mid-Century: Projected Change in 2050s (Inches) | Projected Change in 2070s (Inches) | End of Century: Projected Change in 2090s (Inches) |
|---|---|---|---|---|---|---|
| Total Precipitation | Annual | 47.5 | -0.1 to +4.1 | +0.3 to +5.4 | +0.9 to +6.6 | +0.4 to +7.3 |
| | Winter | 12.1 | -0.3 to +1.5 | +0.0 to +2.0 | +0.2 to +2.7 | +0.1 to +3.8 |
| | Spring | 11.9 | -0.1 to +1.8 | +0.0 to +2.0 | +0.1 to +2.4 | +0.2 to +2.6 |
| | Summer | 11.0 | -0.6 to +1.1 | -0.7 to +1.7 | -1.7 to +2.4 | -1.9 to +2.1 |
| | Fall | 12.4 | -0.8 to +1.1 | -0.9 to +1.5 | -1.5 to +1.7 | -1.7 to +1.4 |

- Similar to projections for number of days receiving precipitation over a specified threshold, seasonal projections for total precipitation are also variable for the Taunton basin.
  - The winter season is expected to experience the greatest change with an increase of 0-16% by mid-century, and of 1-32% by end of century.
  - Projections for the summer and fall seasons are more variable, and could see either a drop or increase in total precipitation throughout the 21st century.
    - The summer season projections for the Taunton or basin could see a decrease of 0.7 to an increase of 1.7 inches by mid-century (decrease of 6% to increase of 16%) and a decrease of 1.9 to an increase of 2.1 inches by the end of the century (decrease of 17% to increase of 19%).
    - The fall season projections for the Taunton basin could see a decrease of 0.9 to an increase of 1.5 inches by mid-century (decrease of 7% to increase of 12%) and a decrease of 1.7 to an increase of 1.4 inches by the end of the century (decrease of 14% to increase of 11%).

| Taunton Basin | | Observed Baseline 1971-2000 (Days) | Projected Change in 2030s (Days) | Mid-Century: Projected Change in 2050s (Days) | Projected Change in 2070s (Days) | End of Century: Projected Change in 2090s (Days) |
|---|---|---|---|---|---|---|
| Consecutive Dry Days | Annual | 17 | -0 to +1 | -0 to +3 | -1 to +3 | -0 to +4 |
| | Winter | 11 | -1 to +2 | -1 to +2 | -1 to +2 | -1 to +2 |
| | Spring | 12 | -1 to +1 | -1 to +1 | -1 to +1 | -1 to +1 |
| | Summer | 14 | -1 to +1 | -1 to +2 | -1 to +2 | -1 to +3 |
| | Fall | 13 | -0 to +2 | -0 to +3 | -0 to +3 | -0 to +3 |

- Annual and seasonal projections for consecutive dry days, or for a given period, the largest number of consecutive days with precipitation less than 1 mm (~0.04 inches), are variable throughout the 21st century.
  - For all the temporal parameters, the Taunton basin is expected to see a slight decrease to an increase in consecutive dry days throughout this century.
  - Seasonally, the fall and summer seasons are expected to continue to experience the highest number of consecutive dry days.
    - The summer season is expected to experience a decrease of 1 day to an increase of 3 days in consecutive dry days by the end of the century.



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# MVP Core Team

- Jennifer Burke - Town Planner
- Azu Etoniru - Town Engineer
- Steven Solari - Building Commissioner
- Kitty Doherty - Greenway/Taunton River Stewardship Council
- Harry Bailey - Conservation Commission/Taunton River Stewardship Council
- Paul Tappen - Columbia Gas
- Ron Ladue - Roadways Superintendent
- Carl MacDermott, III - Lt., Police Dept.
- Marilyn MacDonald – Chair, Conservation Commission
- Thomas Levy – Chief, Fire Dept.
- Michael Dutton – Town Manager

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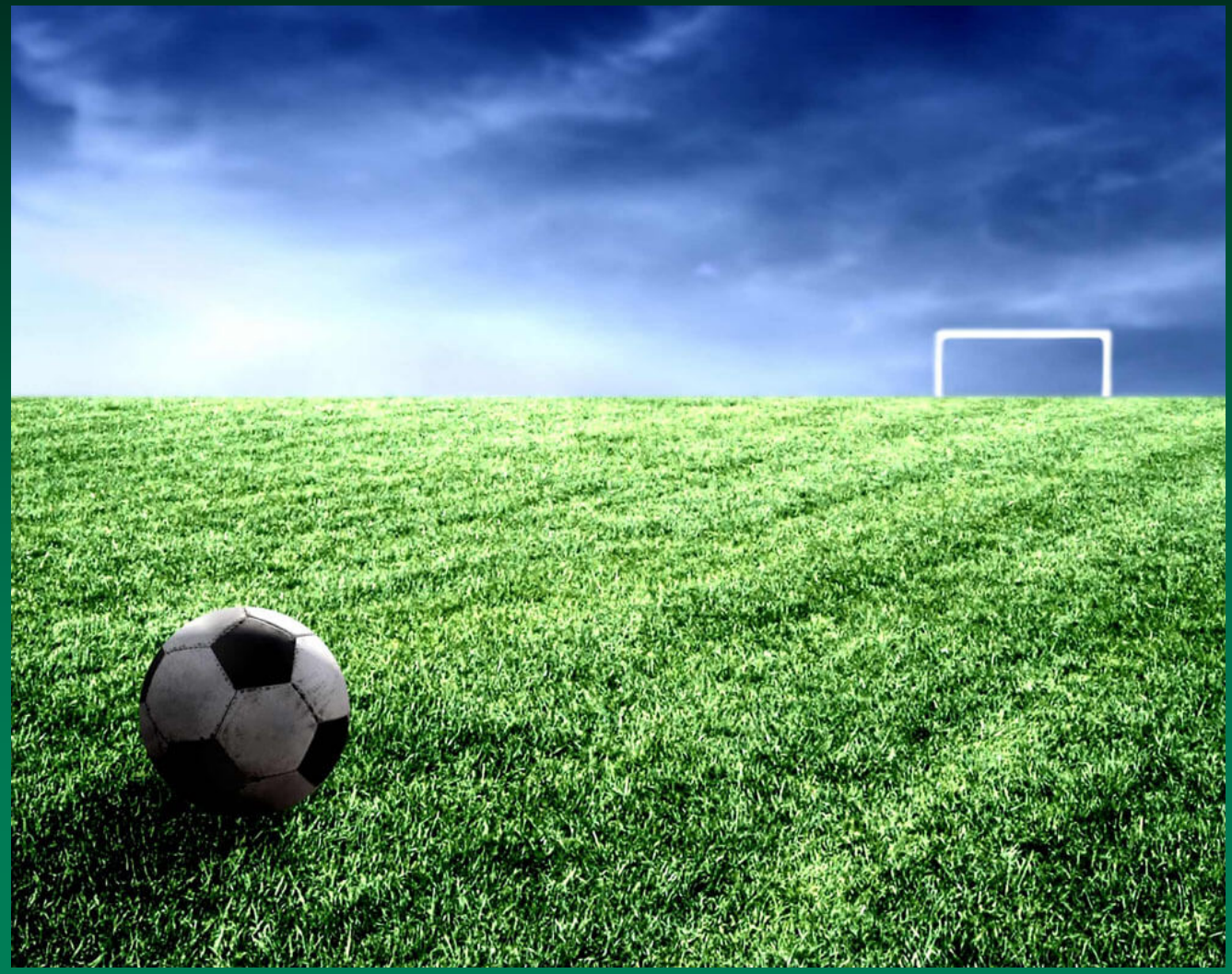
# Goals for the Town's MVP Plan

What are the Goals for The Town's MVP Plan?



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# Goals for the Town's MVP Plan

- **Goal No. 1:**
  - *Successful completion of the CRB process to become designated as a* ***"Municipal Vulnerability Preparedness Program Climate Community,"*** *or* ***"MVP Climate Community"*** *which may lead to increased standing in future funding opportunities and follow-on opportunities.*
- **Other Goals?**

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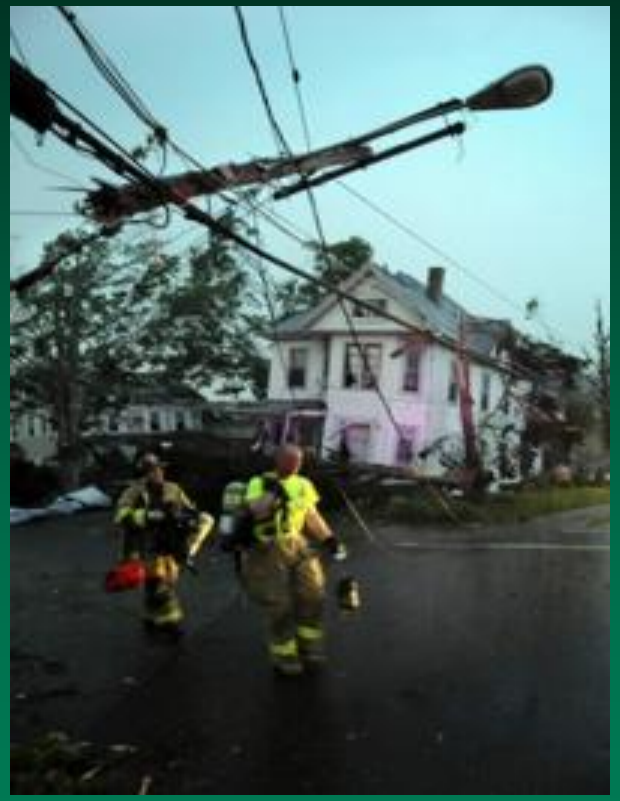
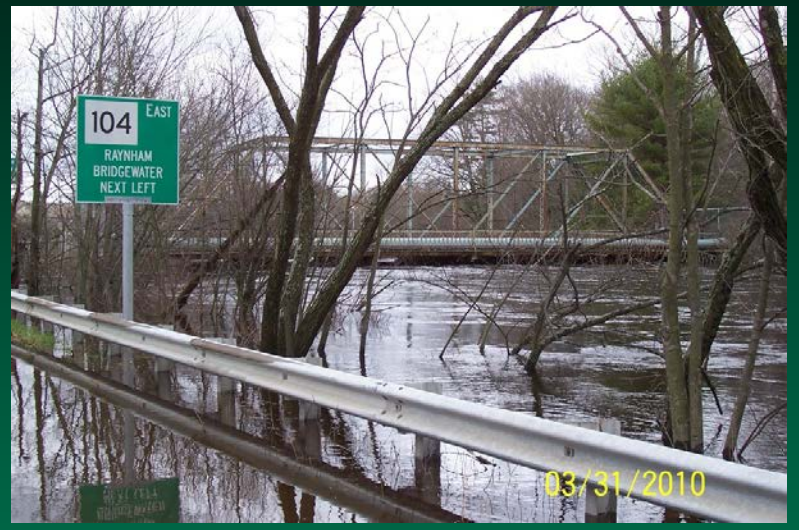
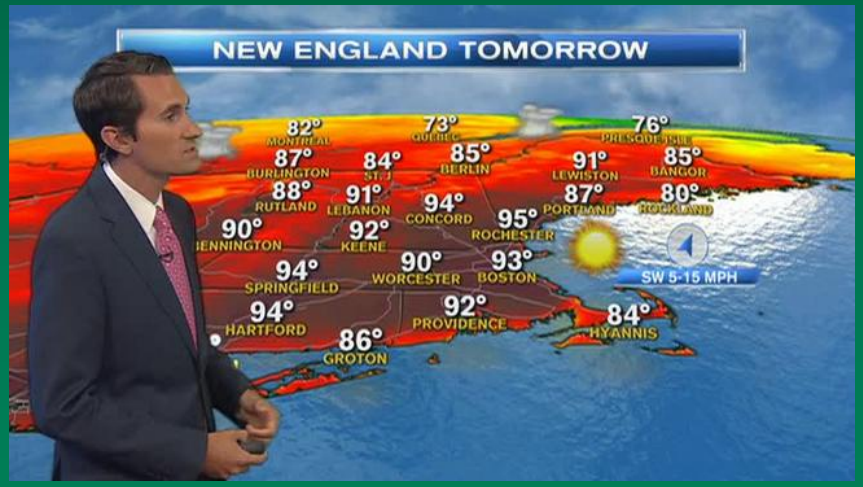
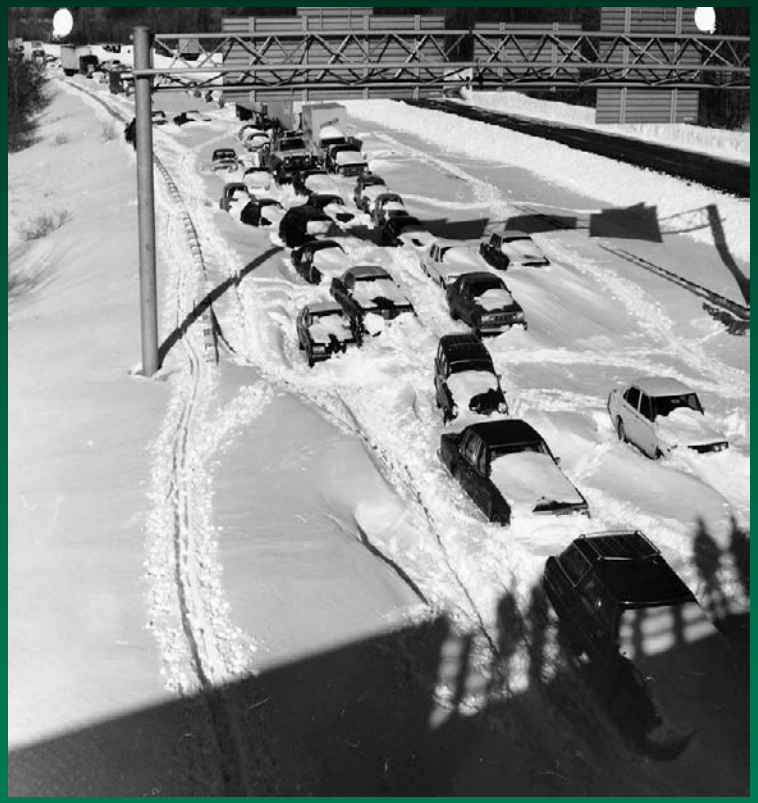
# Characterize Hazards





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