



Town of Winthrop, MA

Community Resiliency Building Workshop

Summary of Findings



June 2018

(Funding for this project was provided by EEA's Municipal Vulnerability Preparedness Planning Grant Program)

Submitted to:

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1. OVERVIEW

A coastal community, the Town of Winthrop, Massachusetts has a unique perspective on planning for climate change and preparing for a sustainable future. The evidence for the need to further address resiliency and adaptation to natural hazard events continues to become more evident each year. While several larger storm events have received much notoriety in recent years (Tropical Storm Irene, Tropical Storm Sandy, Nor'easter NEMO), in the first quarter of 2018 alone, two major coastal storm events pounded communities throughout Massachusetts causing coastal flooding, heavy-rain induced inland flooding, wind damage, power outages, coastal erosion and damage to property, including the Town of Winthrop.

Some areas where Winthrop has been particularly hard hit in recent years include:

- **Flooding at Jefferson Street/Putnam Street Intersection** – Flooding has occurred in this location on a frequent basis.
- **Ingleside Park/Walden Street** – This area of Winthrop floods when intense storm events coincide with rising tides.
- **Flooding Continues at the Winthrop Golf Course**
- **Morton Street, Pico Avenue, Washington Avenue and Shirley Street** - Significant flooding has occurred in these areas during recent storms.
- **Coughlin Park Shoreline** - Significant erosion continues to occur along this shoreline and the Town is working on a shoreline stabilization concept.

In June 2017, the Baker-Polito Administration announced over \$1 million in grant funding to 71 cities and towns throughout Massachusetts for the Municipal Vulnerability Preparedness (MVP) program. The MVP Planning Grant Program was designed to provide support for communities to plan for climate change resiliency and implement priority projects. Upon completion of the MVP program, communities can become certified as an MVP Community and become eligible for MVP Action Grant funding and other opportunities in the future. The Town of Winthrop applied for a MVP Planning grant and was successful. In April 2018, Winthrop undertook the Community Resiliency Building (CRB) Workshop process, a requirement of receiving MVP funding and this report serves as the Summary of Findings for that planning process.

The CRB workshop process is based on a risk matrix exercise while also utilizing current information regarding natural hazard events, understanding the latest climate change projections, evaluating information on Town efforts to address resiliency and reviewing recent action items and projects to address resiliency issues.

1.1 Workshop Core Team

The Winthrop Community Resiliency Building Workshop was led by a local Core Team which included the following individuals and Town departments:

- Joseph Domelowicz, Assistant Town Manager | Lead Project Manager for MVP/CRB
- Laurisa Wojcik, Administrative Secretary
- Kara Campbell, Conservation Agent
- Steve Calla, DPW Director
- Norman Hyett, Conservation Commission
- Chief Paul Flanagan, Fire Department
- Police Department

In addition to staff participants, the Core Team involved residents and local business owners who participated in both the MVP Kick-Off Meeting and the CRB Workshop. Sign in sheets for the kick off meeting and workshop have been included in **Appendix A**.

Together, Winthrop's Lead Project Manager and Woodard & Curran (MVP Technical Services provider) formed the project team responsible for the preparation work and execution associated with the CRB Workshop success.

1.2 Workshop Objectives

The Town of Winthrop held its Community Resiliency Building Workshop on April 6, 2018 at the Deer Island Wastewater Treatment Plant Training Room. Partners for the CRB Workshop included technical services provider Woodard & Curran, the Massachusetts Water Resource Authority (MWRA), The Nature Conservancy and MassAudubon. The workshop's central objectives were to:

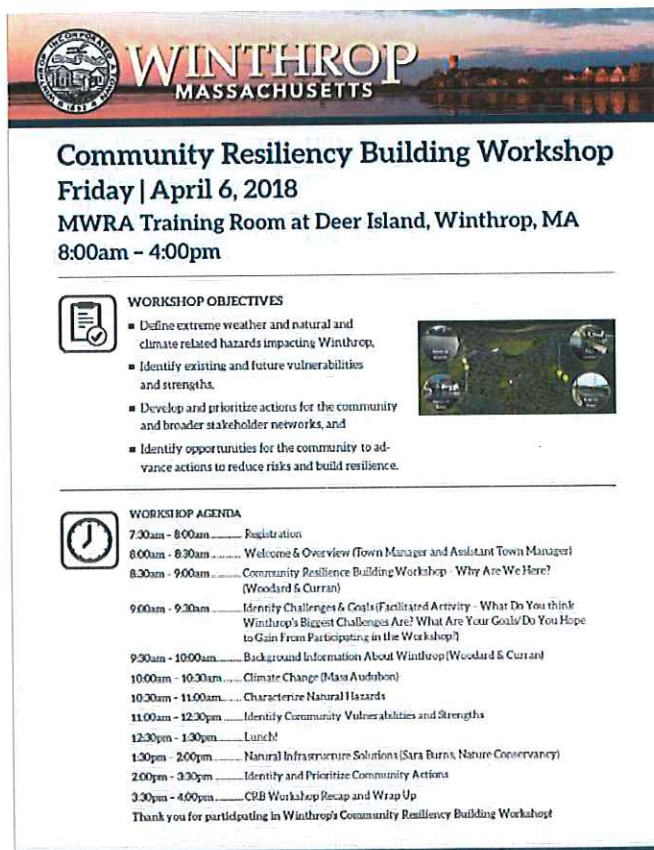
- Define extreme weather and natural and climate related hazards impacting Winthrop,
- Identify existing and future vulnerabilities and strengths,
- Develop and prioritize actions for the community and broader stakeholder networks, and
- Identify opportunities for the community to advance actions to reduce risks and build resilience.

The focus of the workshop was to educate participants and increase awareness of risks facing the Town of Winthrop from natural and climate-related hazards. Identifying vulnerabilities and strengths in Winthrop from an infrastructure, societal and environmental perspective would serve as the foundation for discussion. Prior to the workshop, outreach to key municipal staff, residents, businesses and organizations was conducted through the kick-off meeting.

1.3 Acknowledgements

The Winthrop Community Resiliency Building Workshop was led and managed by the municipal Core Team in partnership with Woodard & Curran. The Core Team guided the work throughout the project and numerous public officials and industry professionals provided leadership, technical expertise, ideas and insight during workshop planning and execution.

Special thanks to the MWRA, The Nature Conservancy and MassAudubon for their participation and support during Winthrop's CRB Workshop.



WINTHROP MASSACHUSETTS

Community Resiliency Building Workshop

Friday | April 6, 2018
 MWRA Training Room at Deer Island, Winthrop, MA
 8:00am - 4:00pm

WORKSHOP OBJECTIVES

- Define extreme weather and natural and climate related hazards impacting Winthrop,
- Identify existing and future vulnerabilities and strengths,
- Develop and prioritize actions for the community and broader stakeholder networks, and
- Identify opportunities for the community to advance actions to reduce risks and build resilience.

WORKSHOP AGENDA

- 7:30am - 8:00am Registration
- 8:00am - 8:30am Welcome & Overview (Town Manager and Assistant Town Manager)
- 8:30am - 9:00am Community Resiliency Building Workshop - Why Are We Here? (Woodard & Curran)
- 9:00am - 9:30am Identify Challenges & Goals (Facilitated Activity - What Do You think Winthrop's Biggest Challenges Are? What Are Your Goals/Do You Hope to Gain From Participating in the Workshop?)
- 9:30am - 10:00am Background Information About Winthrop (Woodard & Curran)
- 10:00am - 10:30am Climate Change (Mass Audubon)
- 10:30am - 11:00am Characterize Natural Hazards
- 11:00am - 12:30pm Identify Community Vulnerabilities and Strengths
- 12:30pm - 1:30pm Lunch!
- 1:30pm - 2:00pm Natural Infrastructure Solutions (Sara Burns, Nature Conservancy)
- 2:00pm - 3:30pm Identify and Prioritize Community Actions
- 3:30pm - 4:00pm CRB Workshop Recap and Wrap Up

Thank you for participating in Winthrop's Community Resiliency Building Workshop!

2. SUMMARY OF FINDINGS

The purpose of the Community Resiliency Building Workshop Summary of Findings is to develop a comprehensive summary of the event with the goal of Winthrop using this information to continue its focus on reducing vulnerabilities, reinforcing strengths and continuing on the path toward greater community resilience. Winthrop's CRB was held on Friday, April 6, 2018 at the Deer Island Wastewater Treatment Plant Training Room. In total, there were 53 attendees who were present for the daylong event. With the goal of the workshop being to listen and learn from attendees on how to meet the overall workshop objectives, prior to starting the formal CRB agenda, participants were asked to think about and write down on a note card answers to the following two questions:

- 1) What are Winthrop's biggest challenges? (think infrastructure, societal, environment)
- 2) What are your goals for the day and what do you hope to gain from your participation in the workshop?

Participants provided feedback for both of these questions which is summarized in **Appendix B**.

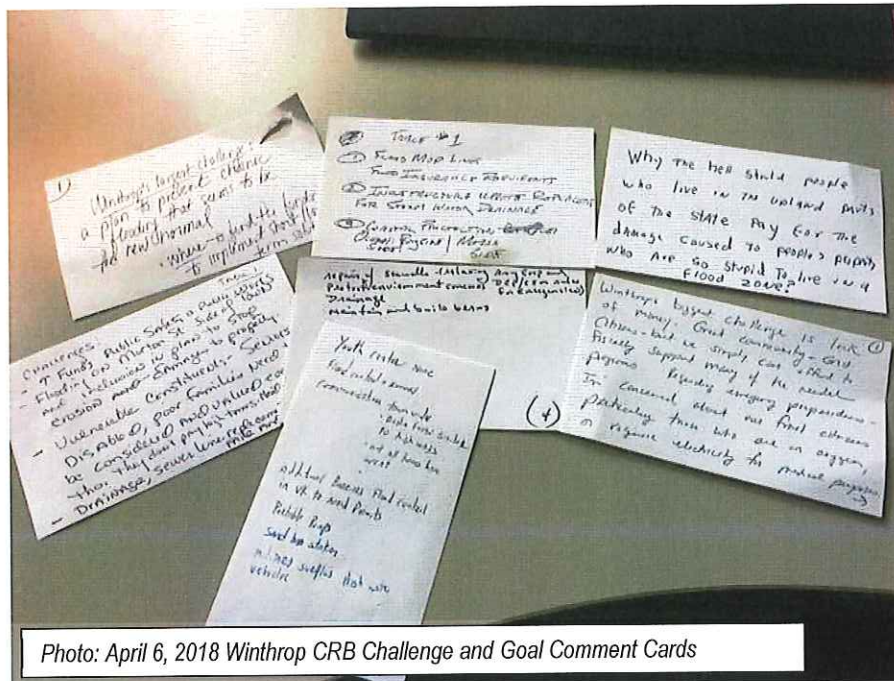


Photo: April 6, 2018 Winthrop CRB Challenge and Goal Comment Cards

2.1 Top Natural Hazards for Winthrop, MA

Prior to discussing the top natural hazards faced by Winthrop, participants in the CRB workshop listened to two presentations that included background information about Winthrop and up to date information regarding Climate Change and its impact to the community and surrounding area (see **Appendix C**). Upon completion of these two presentations, attendees were asked to work with the other participants at their table to define and characterize the top natural hazards being faced by Winthrop. In total, there were six separate tables working on this task and participants were encouraged to come up with their own list of natural hazards that they felt to be the most relevant and pressing to the community.

Winthrop is a densely developed coastal town with a population of approximately 18,000. Located on a peninsula (approximately 1.6 square miles) with a seven-mile shoreline, the majority of the flooding experienced by Winthrop is related to its coastal location due to impacts from coastal storms, waves, storm surge and sea level rise. The natural hazards facing Winthrop that were identified at the CRB workshop include:

- Sea Level Rise
- Flooding
- Hurricanes/Wind/Extreme Storms
- Wave Action/Storm Surge
- Extreme Heat
- Fire
- Erosion
- Increasing Precipitation
- Isolation

Sea level rise was identified by all of the tables as one of the top natural hazards while flooding was identified by five of the six tables. **Table 2-1** indicates the top natural hazards that were identified by each table of CRB participants.

Table 2-1: Natural Hazards Identified by CRB Participants

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
<ul style="list-style-type: none"> • Flooding • Wind/Storms • Wave Action • Sea Level Rise 	<ul style="list-style-type: none"> • Flooding • Sea Level Rise • Hurricane • Heat or Extreme Weather 	<ul style="list-style-type: none"> • Flooding • Sea Level Rise • Wind • Isolation 	<ul style="list-style-type: none"> • Flooding • Wind/Storms • Wave Action • Sea Level Rise 	<ul style="list-style-type: none"> • Flooding • Sea Level Rise • Heat Wave • Fire 	<ul style="list-style-type: none"> • Sea Level Rise • Increased Precipitation • Heat or Extreme Weather • Wind

2.2 Identified Vulnerable Areas in the Community

During the CRB process, the entire Town was highlighted as being vulnerable to natural hazard events due to its location and the fact that it is surrounded by the ocean – not just a specific neighborhood. There were specific areas mentioned by attendees at the workshop as being vulnerable and those include:

- **Neighborhoods:**
 - Morton Street/Belle Isle Marsh – Low lying area, coastal surge and flooding.
 - Pico Avenue/Fisherman's Bend – Experiences flooding during storm events.
 - Ingleside Park – Backup and flooding due to lack of stormwater storage capacity and undersized drains. Floods during coastal storm/precipitation events.
 - Point Shirley/Shirley Street – Low-lying street and adjacent seawall experience wave overtopping and flooding during storm events.

-
- Lewis Lake – Serves as a drainage area for part of the downtown area – lake overflows during storm events and causes localized flooding in adjacent areas.
 - Yirrell Beach – Coastal surge and flooding
 - Lower Nahant Avenue – Coastal surge, high tide and high precipitation events all cause backup in undersized drain lines and flooding within adjacent neighborhood.
 - Coughlin Park – Coastal erosion and flooding during coastal storms.
 - Bayou Street Neighborhood – Flooding due to undersized drainage line that backs up during high precipitation events.
- **Ecosystems:** Belle Isle Marsh, Coughlin Park, Yirrell Beach, Ingleside Park, Lewis Lake, Beaches
 - **Transportation:** Route 145 and Winthrop Parkway (also evacuation routes), Shore Drive, Morton Street, bridges, all roads in Town
 - **Infrastructure:** Drainage system, Water/Sewer Infrastructure, Pump Stations, Sea Walls, Utility Power, Public Safety Building, Culverts, MWRA Deer Island Treatment Plant, Municipal Services (police, fire, emergency, shelters), Existing Buildings, Proximity to MassPort/Logan International Airport

2.3 Current Concerns & Challenges Presented by Hazards

The Town of Winthrop faces numerous challenges and has major concerns related to the impacts of natural hazard weather events from the past and those that will occur in the future and be further exacerbated by climate change. In the first quarter of 2018 alone, Winthrop was severely impacted by two large coastal storm events in January and March which caused coastal flooding, heavy-rain induced inland flooding, wind damage, power outages, unpassable streets, coastal erosion and damage to residential homes and businesses.

In prior years, Winthrop has suffered from similar coastal storms in addition to Tropical Storm Irene (August 2011), Tropical Storm Sandy (October 2012) and a Nor'easter referred to as NEMO (February 2013). In general, Winthrop is subjected to three types of flooding – coastal, inland/riverine and urban. The FEMA Flood Insurance Rate Maps (FIRM) issued in 2016 for Winthrop indicate that approximately 45% of the town is within the 1% annual chance flood (also known as the 100-year storm).

The impacts from the 2018 storm events to date as well as previous storms have made the topic of natural hazards and climate change in Winthrop of high importance. Improving the community's ability to be resilient before, during and after a storm event was discussed in detail at the Community Resiliency Building workshop.



Photo: Pico Avenue, March 3, 2018

2.3.1 Road Network Vulnerability & Isolation

Access to the Town of Winthrop is primarily along Route 145, Winthrop Parkway or across the Belle Isle Bridge (Main Street). Winthrop Parkway connects the town to Revere along a narrow strip of land and this connection has been closed by the Town of Revere in the past due to storm conditions resulting in unsafe passage. With only two main roadways to access Winthrop, managing this infrastructure is critical for emergency evacuation and response. Or, if evacuation and response is not possible, managing isolation and sheltering in place becomes critical. Discussion included the town's preparedness to remain isolated for a period of time and successfully shelter in place. CRB attendees expressed their concern over the need to be better prepared for this type of situation.

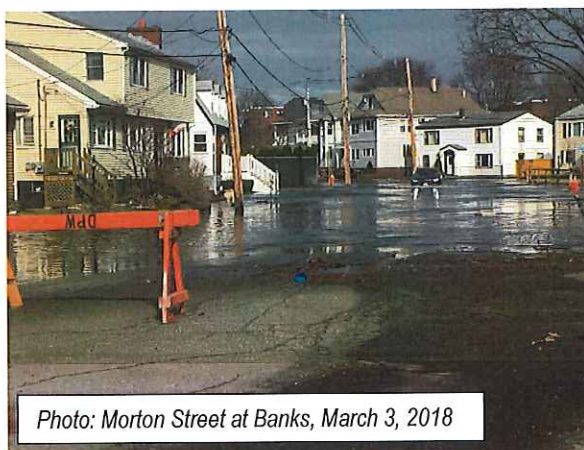


Photo: Morton Street at Banks, March 3, 2018

2.3.2 Proximity to MWRA Deer Island Treatment Plant & MassPort's Logan International Airport

The enormity of the road network vulnerability issue is raised even further since the primary travel route to MWRA's Deer Island Sewage Treatment Plant (which treats wastewater from 2.5 million people in Greater Boston) is located in Winthrop and can be compromised. In addition, concern was raised over the potential for a major incident to occur at the treatment plant or nearby Logan International Airport which could impact Winthrop and/or require the evacuation of the community.

2.3.3 Water, Wastewater & Drainage System

During a coastal storm or heavy precipitation event, Winthrop's drainage system can become overwhelmed and cause flooding at the street level. Future climate change impacts, sea level rise and more severe storms will continue to exacerbate the conditions that the community has seen repeatedly in the past. This combined with the age of the drainage system and changing underground conditions can cause additional damage – the magnitude which may currently be unknown.

The water and wastewater systems in Winthrop are owned by the Department of Public Works and the Massachusetts Water Resources Authority (MWRA). Sewer pump stations are located at

Revere Street, Pico Avenue and Pleasant Court. Winthrop's stormwater system has over 20 miles of underground piping, outfalls, catch basins and manholes. Approximately 115 outfalls are installed throughout Town in low-lying areas to help with some of the inland flooding during certain types of storm events. Many of these outfalls do not have check valves to prevent coastal flooding from entering the system.

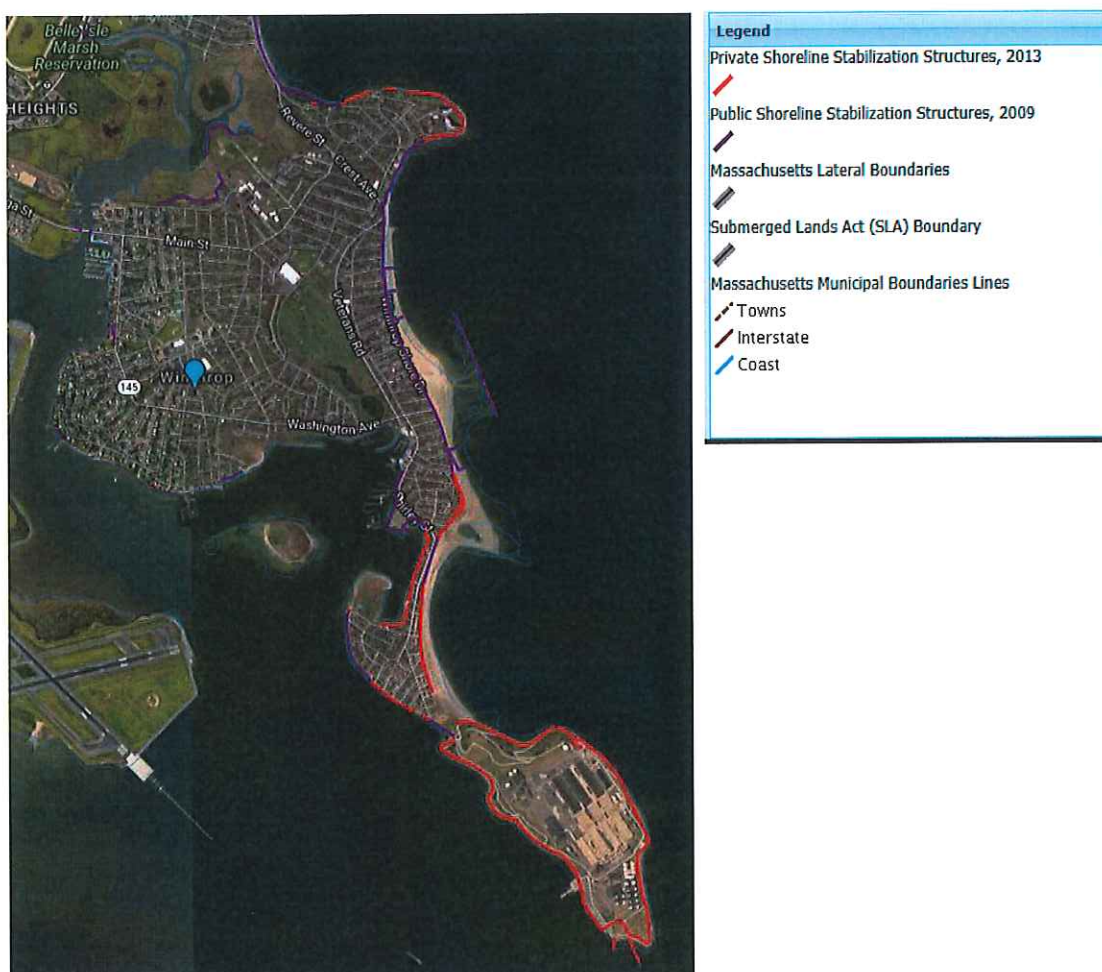
Workshop participants discussed the need for drainage system upgrades and cleaning and education about how the drainage system functions in Winthrop. Other suggestions include identifying a local staff person to work with DPW and other Town departments on increasing the visibility of this infrastructure and developing Low Impact Development/Green Infrastructure solutions that would improve their function and condition along with funding opportunities to pay for the projects. Starting programs such as adopt a drain, using artwork to better identify location and seeking out funding opportunities for upgrades are all suggestions for improving this critical infrastructure.

2.3.4 Shoreline Structures

The Town of Winthrop has a variety of shoreline structures in place that offer a barrier between the built environment and the ocean. Some of the infrastructure includes stone revetments, concrete seawalls, bulkheads and breakwaters. According to data managed by the Massachusetts Office of Coastal Zone Management (CZM) regarding coastal infrastructure, Winthrop has six structures owned by DCR and 27 town owned structures in varying condition. Half of the public shoreline structures need moderate to significant levels of repair (see **Figure 1**).



Figure 1: Winthrop, MA Shoreline Structures



At the CRB workshop, participants expressed the need to preserve and maintain existing and exposed seawalls so they continue to function and provide protection for the built environment. Suggestions included making the existing seawalls higher, expandable (or flexible) or investigate floating dams.

2.3.5 Local Capacity, Communication, Emergency Management

During the Community Resiliency Building process, the topic of local capacity, communication and emergency management was discussed. Concern was raised about the use of the Senior Center as a shelter and accepting residents who need to be evacuated from their homes during severe weather. Currently there is no back up power or generator at the Senior Center should a power outage occur during a storm event. Another issue identified by the Housing Authority was that in the past, some of their senior housing developments have lost power, but it is difficult to get their tenants to evacuate. More communication is needed about how to manage these types of situations in the community.

In addition, a more clear, defined means of communication was indicated as an area of improvement during emergencies. Currently information is shared via phone but continuing to use resources like Facebook and Twitter will be beneficial. There was also a discussion of creating a formal Emergency Manager position (even part time) who helps manage current emergencies including operations, but also the recovery. Documentation and photographs are all necessary to obtain and manage for proper recovery and reimbursement depending on the severity of the event. Currently, Winthrop does this on an as needed, informal basis. Having designated staff for residents and businesses to call would allow for other departments like Police, Fire and DPW to focus on their roles during an emergency event. An Emergency Manager could also oversee operations during an emergency, manage a command center, help deploy/manage town staff and work with other towns and regional dispatch to provide the best service possible.

The need for a consolidated, updated Public Safety Building was identified during the CRB workshop as one of Winthrop's biggest challenges.

2.3.6 Condition and Functioning of Natural Barriers

Winthrop is fortunate to have numerous beaches, conservation areas and places of recreation to offer residents and visitors in the community. They include:

- Winthrop Beach
- Yirrell Beach
- Donovan's Beach
- Pico Playground & Beach
- Fisherman's Bend
- Belle Isle Marsh
- Coughlin Park
- Lewis Lake/Winthrop Golf Club
- Ingleside Park

One of the key issues raised during the CRB was the need to preserve, maintain and enhance natural infrastructure in Winthrop so that it can continue to function as a natural barrier for the community. Ideas include dune enhancement, building additional trees to lessen heat island impact, add more natural vegetation where it is needed, develop an overall Town wide natural barrier enhancement plan and conducting feasibility studies to determine what types of enhancement will make sense and their anticipated impact. Additional education regarding the benefits and importance of natural resource areas including regulations was also identified as important so that the value in helping reduce risk and improve resilience is better understood.

2.4 Current Strengths & Assets

Winthrop has had the opportunity during recent storm events to see how the community functions and identify areas of strength. The presence of natural barriers for residential neighborhoods in Winthrop was recognized as beneficial to the community in addition to existing seawalls and other barriers.

Other strengths identified during the CRB include:

- The local conservation commission has been working with homeowners to provide information about natural resources, building code requirements and homeowner incentives.
- Wetland restoration, floodplain and open space and enhancement through various projects in the community were recognized as a strength and continuing to support these projects and find funding for next phases is critical – Coughlin Park is an example where the Town has been investigating the feasibility of mitigating

shoreline erosion using living shoreline techniques to increase coastal resiliency. A plan was prepared that quantified sea level rise for the location, assessed existing conditions, performed an alternatives analysis and identified an appropriate living shoreline project. CRB attendees expressed their support for the Town to continue doing this type of work (specifically this project) and reach the implementation phase.

- Winthrop has dedicated Police, Fire and DPW personnel who respond during natural hazard events.
- The existing reverse 911 system was recognized for the role it plays during emergency events and continuing to maintain and advertise the availability of this system will be key for future emergencies.
- Winthrop's existing water, wastewater and drainage infrastructure was identified as a strength. The need to keep this updated, maintained and managed was recognized. Recent upgrades to some of the sewer pumping stations such as elevating them, installing water resistant panels and emergency generators was recognized as a strength. Other recent infrastructure improvements include:
 - Sewer improvements on Putnam Street, Putnam Place and Walden Street.
 - Water main replacement on Jefferson Street and Fremont Street and upgrades to a section of the drainage system at the intersection of Jefferson Street and Putnam Street.
 - Sewer, water, drain and sidewalk improvements on Walden Street, Lincoln Street, Read Street, Walden Place and Jerald Street.
 - Water main, drain and sewer improvements on Bellevue Avenue, Prescott Street, Somerset Avenue, Nahant Avenue and Sewall Avenue.
 - Water main improvements with some sewer repairs on Plummer Avenue, Woodside Avenue, Woodside Park, Frances Street, Sunnyside Avenue, Pico Avenue, Corinha Beach Road and throughout the neighborhoods surrounding the water tower.
 - Sewer and water main improvements on Franklin Street and Harvard Street.
 - Lewis Lake Tide Gate project included replacement of existing failed automated tide gate with new automated tide gate.
 - Miller Field/Lewis Lake Drainage and Site Improvements included a complete renovation of Miller Field including site drainage improvements and improvements to swales along the Veterans Road and Cross Street at the Winthrop Golf Club.
- Supportive social services such as the local health center, Senior Center, Senior Housing and Housing Authority.
- Proximity to MWRA Deer Island Treatment Plant & MassPort's Logan International Airport was identified as a challenge but also a strength. The Town of Winthrop acts as a natural buffer to both of these key regional economic and environmental resources.

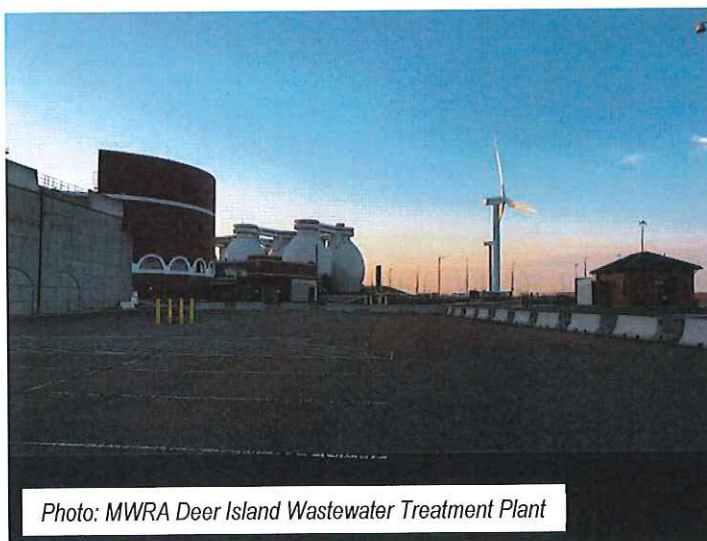


Photo: MWRA Deer Island Wastewater Treatment Plant

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Community Resilience Building Risk Matrix

Priority for action over the Short or Long term (and Ongoing)
 V = Vulnerability S = Strength

Top Priority Hazards (storms, floods, wildfire, hurricanes, earthquakes, drought, sea level rise, heat waves, etc.)

Features	Location	Ownership	V or S	Flooding	Extreme Storms	Sea Level Rise	Erosion	Priority	Time
								H or L	Short term Ongoing
Infrastructural									
Drainage/Catch basin	Wick St	Public	V/S	✓	✓			H	0
Homeowner Retrofitting (Hitting)	All	Private	S/V	✓	✓			H	L
Water + Sewer Lines	All	Town	V	✓	✓			H/L	0
2 Egress Roads	ends of Winthrop	Public	V	✓	✓			M	S/L/0
Proximity to Deer Island + Mass Port	All town	Public	V/S	✓	✓			M	0
Business Taxes/Industry (lack)	All town	Pub/priv	V/S	✓	✓			H	0
Displaced Residents/Financial Loss	Flood zone	Pub/priv	V	✓	✓			H/L	L
Political opposition w/in State	All town	Pub/priv	V	✓	✓			M	0/L
Evacuation Plan/Vulnerable Populations	Main St/Rescue	Pub (town)	V	✓	✓			H	0
Discourse/Community Support	All	priv/pub	S	✓	✓			M	0/S
Local Funding → Global Problem	All	priv/pub	V	✓	✓			H	0
Insurance System (beg. advocacy for consumers)	All	Pub	V	✓	✓			H	L/0
Environmental									
Contamination (water)	Low King Ave	Pub/priv	V	✓	✓			H	S/0
Location/Prox to Bottom DS	All	Pub/priv	S	✓	✓			M	0
Compromised Natural Resources	All town	Public	S/V	✓	✓			M	S/0
Street Trees/Green Space Change	All	priv/pub	V/S	✓	✓			M	S
Beaches/Parks/Rec. Businesses	All	Pub	S	✓	✓			H	0/0
SW Marsh	Low-lying	Pub	S/V	✓	✓			H	0/0

Photo: April 6, 2018 Winthrop CRB Workshop Matrix Board

3. RECOMMENDATIONS TO IMPROVE WINTHROP'S RESILIENCY

Improving Winthrop's resiliency was discussed by each individual group at the CRB based on the natural hazards, strengths, vulnerabilities and actions that they defined. At the end of the CRB workshop, each group presented their findings on key actions the community should focus on to improve overall resiliency and they were asked to identify their top three. Upon completion of each group's presentation, each attendee was given six dots to identify of all the key actions each group mentioned, which is the most critical/most important for the community. **Table 3-1** is a summary of the dot exercise.

Table 3-1: Top Six Recommendations to Improve Resiliency

Rank	Action	Notes
1	Sewer & Drainage Infrastructure	Clean, maintain and upgrade (particularly in the Town Center and low-lying areas) sewer and drainage infrastructure. Seek funding for repair and replacement, design additional storage capacity and modify bylaws and incentives that would support improved conditions for projects. Work would also include flood control projects.
2	Maintain, Replace, Upgrade Seawalls	Various existing infrastructure is in place throughout Winthrop and is in need of repair and upgrade.
3	Natural and Green Infrastructure Solutions, Low Impact Development	To support or enhance the functioning of seawalls and the shoreline as a barrier and for improved stormwater management. Work would also include flood control projects.
4	Develop or redevelop a new public safety building (police, fire, ambulance)	This includes finding a site, designing the building, securing funding and completing construction of a new facility.
5	Maintain and protect Belle Isle Marsh, Coughlin Park and beaches as assets to the community for both recreation and resiliency support.	Work for areas of the community that act as natural barriers includes dune enhancement, plantings, berms, etc.
6	Identify funding for projects to increase resilience	This includes further developing the tax base to increase revenue in the community and securing the money along with leveraging local resources and representatives to seek out and secure funding for Winthrop.

Resiliency actions that were in the top three for the groups when they reported out but did not receive the most votes include:

- Development of an Evacuation and/or Shelter In Place Plan to be better prepared for storm events. This would include consideration of food, a formal evacuation plan, multi-phase shelter strategy, emergency response and emergency communication.
- Development of a culvert ID owner and repair program where someone would be assigned to monitoring the functioning of culverts and informing the Town of any potential needed repairs.

The following are additional recommendations for the Town of Winthrop generated by the CRB Workshop participants organized from highest to lowest priority.

Highest Priority

- Develop and implement an Evacuation Plan and Shelter In Place Plan – this includes bridge and tunnel routes and coordinating with MWRA and Deer Island. This plan would include a discussion of where charging, warming and cooling stations in Winthrop are located. Reevaluate Winthrop's current emergency communication and improve the plan. Need to include emergency information in multiple languages. Consideration should be given to having Town Hall be reachable during an emergency. There is a need to publicize pet shelters and where to get emergency supplies.
- Evaluate emergency power during emergencies and make sure the Emergency Operations Center, Beach Fire Station and Council on Aging can all function.
- Evaluate back up power for elderly housing and confirm shelter in place plans for these locations.
- Update building codes so utilities are built above flooding levels and also encourage the planting of living trees and vegetation to support resiliency.
- Evaluate the need for stormwater pump stations at various locations throughout Town that would improve flooding conditions.
- Develop a Master Plan for the Town and incorporate building code and zoning.
- Complete the MVP Planning process and apply for MVP Action Grants.
- Define low lying areas of the Town that would benefit from mobile pumps during storm events and proactively position them.
- Evaluate manhole covers protecting underground utilities and floodproof if necessary.
- Support homeowners to retrofit their properties to better withstand storm events including flooding. Educate homeowners about potential funding support. This could include developing a website for people who have been displaced or do not have flood insurance. Monitor additional changes to FEMA Floodplain maps and proactively communicate about this. Offer incentives to homeowners who desire to make improvements either through community grants, low interest loans or tax incentives.
- Relocate key community functions out of floodplains and consider moving utilities or modifying utilities to better allow for their function during storm events.
- Increase and expand the Town's capacity to seek out and secure funding sources for projects and action item implementation.
- Seek to enhance and develop a better relationship with Deer Island Treatment Plant and MWRA. Participate in climate change and emergency planning discussions with these two organizations.
- Support the Conservation Commission and undertake more education and outreach to local homeowners to build their awareness for accountability of their property during storm events and flooding.
- Use message boards at key locations to inform people about the potential for flooding. Purchase or fund the purchase of these if needed.

- Develop a culvert program that identifies volunteer ownership of the structure and create a plan to decrease flooding.
- Designate neighborhood captains to know and understand who may need help in their designated area during an emergency. Where vulnerable people are identified, indicate any special needs they may have (medication, power for oxygen) and make sure they are prioritized for evacuation or storm assistance.
- To support Winthrop's business and help the community be more economically resilient, make the Town a tourist destination through marketing and attracting visitors. Support more mixed use and commercial development. Offer a shuttle from the public landing to the center of town.
- Concrete revetment on Deer Island that causes flooding needs attention from the MWRA.
- Need a seawall solution for Pico Avenue and elsewhere in Town that would improve existing conditions and help mitigate flood impacts and damage.
- Investigate the use of Yacht Clubs and Marinas during emergencies and ask them to open to non-members.
- Raise public awareness about electrical currents during flooding events and teach them how to shut off circuit breakers.

Moderate Priority

- At school and shelter locations, evaluate and maintain renewable power sources (solar, batteries) so that these community resources can function during emergencies or natural hazard events.
- Stockpile food and medical supplies like water and dry goods to support any shelter in place plans Winthrop develops should the community become isolated.
- Focus on smart Harbor Development and Management and include Low Impact Development techniques and environmentally friendly yacht clubs and marinas. Leverage Harbor Management Plan.
- Analyze past 911 data to pinpoint historic calls and more specifically how Winthrop will respond and where during storm events. Work will include proactive measures/advanced planning.
- Develop ability to mobilize a special marine rescue unit with necessary boats and equipment.
- Conduct regionalized service discussions for evacuation coordination and emergency response.
- Consider elevating Revere Street for boat passage.
- Investigate the potential of an underground tunnel for egress to allow people to evacuate Winthrop if needed.
- Address perceived politics of Winthrop not being a regional asset by having workshops and Town Hall style discussions to show Winthrop as the asset that it is. Use of social media and other outreach platforms could support this effort.
- Address community discourse by increasing local government resources and accessibility to staff and representatives.

- Research and understand the best type of salt water vegetation that would benefit the community and the existing natural resources and seek to incorporate this where it makes sense.
- Develop a hazardous waste collection program that would allow people to dispose of hazardous waste safely and more regularly.

Lower Priority

- Maintain and advertise the Reverse 911 system.
- Maintain, update and enforce the Town's regulations for property maintenance at Yacht Clubs and Marina Buildings.
- Maintain and support the local health center on Route 145 so that it can continue to provide services during natural hazard events.
- Plant trees and maintain condition of town parks, cemeteries and the golf course.
- Conduct an erosion feasibility study for the Water Tower location to determine any potential future issues.
- Engage youth in emergency management and have them help increase awareness and participation through training.

3.1 CRB Workshop Project Team: Organization and Role

Town of Winthrop, MA

Joseph Domelowicz, Assistant Town Manager | Lead Project Manager for MVP/CRB

Laurisa Wojcik | Support

Kara Campbell | Small Group Facilitator

Woodard & Curran

Mary McCrann, AICP | Lead Facilitator

Michael Hansen, PE, CFM | Small Group Facilitator

The Nature Conservancy

Sara Burns | Presenter & Small Group Facilitator

MassAudubon

Stefanie Covino | Presenter & Small Group Facilitator

Ariel Maiorano | Small Group Facilitator

APPENDIX A: EVENT ANNOUNCEMENT, AGENDA & SIGN-IN SHEETS



MUNICIPAL VULNERABILITY PREPAREDNESS
KICK-OFF MEETING
TOWN OF WINTHROP, MA
MARCH 6, 2018 | 10:00AM
SIGN IN SHEET

Name	Email
1. <u>Mary McCrann, Woodard+Curran</u>	<u>mmccrann@woodardcurran.com</u>
2. <u>Mike Hansen W+C</u>	<u>mhansen@woodardcurran.com</u>
3. <u>Jim Rivara W+C</u>	<u>jrivara@woodardcurran.com</u>
4. <u>Joe Domelowicz Winthrop</u>	<u>jdomelowicz@town.winthrop.ma.us</u>
5. <u>NORMAN Hyeft Winthrop ConCom</u>	<u>flyingfishchaeters@WHRC.com</u>
6. <u>JAMES Feeley WPA</u>	<u>JFeeley@town.winthrop.ma.us</u>
7. <u>Allyce TSD</u>	<u>Allyce@town.winthrop.ma.us</u>
8. <u>Steve Calla DPW</u>	<u>scalla@town.winthrop.ma.us</u>
9. <u>Kara Campbell ConCom</u>	<u>KCampbell@town.winthrop.ma.us</u>
10. <u>Sara Burns Me Nature</u>	<u>Sara.Burns@me.org</u>
11. <u>Frank Nitti Winthrop</u>	<u>FNitti@town.winthrop.ma.us</u>
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13. <u>Matt Podes</u>	<u>MPodes@town.winthrop.ma.us</u>
14. <u>Peg Lyons</u>	<u>peg.lyons@winthrophousing.com</u>
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17. <u>Scott Wiley</u>	<u>swiley@town.winthrop.ma.us</u>
18. <u>Paul E Flanagan</u>	<u>pflanagan@town.winthrop.ma.us</u>
19. <u>LARRY POWERS</u>	<u>LPOWERS@TOWN.WINTHROP.MA.US</u>
20. <u>Rin Vecchia</u>	<u>RVecchia@Town.Winthrop.MA.US</u>

Winthrop, MA



Community Resilience Building Workshop

When: Friday, April 6, 2018 | Time: 8am to 4pm

Where: MWRA Training Room on Deer Island

The Town of Winthrop received funding from the Executive Office of Energy and Environmental Affairs to complete a Community Resilience Building Workshop. Given previous and ongoing events like the January and March coastal storm events, like other Massachusetts communities, Winthrop now finds itself in a new era of more unpredictable and severe weather that can potentially cause more damage to our community. We are working on a Municipal Vulnerability Preparedness project that will involve an 8 hour workshop which must include input from community members. **Please consider participating!**

We will be providing breakfast and lunch to those who participate. If you are interested please contact the Town Manager's office at (617) 846-1705 or townmanageroffice@town.winthrop.ma.us by March 30th to pre-register or to receive more information on this program. **Space is limited so please sign up today!**



**Please contact Terence Delehanty, Town Manager
if you have any questions at
townmanageroffice@town.winthrop.ma.us**





WINTHROP MASSACHUSETTS



Community Resiliency Building Workshop Friday | April 6, 2018

MWRA Training Room at Deer Island, Winthrop, MA
8:00am – 4:00pm



WORKSHOP OBJECTIVES

- Define extreme weather and natural and climate related hazards impacting Winthrop,
- Identify existing and future vulnerabilities and strengths,
- Develop and prioritize actions for the community and broader stakeholder networks, and
- Identify opportunities for the community to advance actions to reduce risks and build resilience.



WORKSHOP AGENDA

- 7:30am – 8:00am..... Registration
- 8:00am – 8:30am..... Welcome & Overview (Town Manager and Assistant Town Manager)
- 8:30am – 9:00am.....Community Resilience Building Workshop – Why Are We Here? (Woodard & Curran)
- 9:00am – 9:30am.....Identify Challenges & Goals (Facilitated Activity – What Do You think Winthrop's Biggest Challenges Are? What Are Your Goals/Do You Hope to Gain From Participating in the Workshop?)
- 9:30am – 10:00am.....Background Information About Winthrop (Woodard & Curran)
- 10:00am – 10:30amClimate Change (Mass Audubon)
- 10:30am – 11:00am.....Characterize Natural Hazards
- 11:00am – 12:30pmIdentify Community Vulnerabilities and Strengths
- 12:30pm – 1:30pm.....Lunch!
- 1:30pm – 2:00pm.....Natural Infrastructure Solutions (Sara Burns, Nature Conservancy)
- 2:00pm – 3:30pmIdentify and Prioritize Community Actions
- 3:30pm – 4:00pmCRB Workshop Recap and Wrap Up

Thank you for participating in Winthrop's Community Resiliency Building Workshop!

Community Resilience Building Workshop
April 6th at the MWRA

53 total attendees!

	Name	Email
1	Ariel Maiorano ✓	amaiorano@massaudubon.org
2	Art Leventis ✓	aleventis@woodardcurran.com
3	Barbara Bishop ✓	barbarabishop200@comcast.net
4	Barbara Flockhart ✓	flockhart@verizon.net
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37	Michael Herbert ✓	wintherbert86@gmail.com
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42	Patricia Profetto ✓	pka.skin111@gmail.com
43	Paul Dejardins ✓	paddesigns@gmail.com

- | | | |
|----|--------------------------------|--|
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| 45 | Peg Lyons ✓ | peg.lyons@WinthropHousing.comcastbiz.net ✓ |
| 46 | Peter Gill ✓ | peter.gill2@verizon.net |
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| 50 | Sara Burns ✓ | sara.burns@TNC.org |
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| 53 | Stefanie Covino | scovino@massaudubon.org |
| 54 | Stephanie A. Survias-Lockel ✓ | saslocke@aol.com |
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| 57 | Suzanne Hitchcock ✓ | suzanne.hitchcockbryan@gmail.com |
| 58 | Tanji Cifuni | tcifuni@town.winthrop.ma.us |
| 59 | Tom Derderian ✓ | tom.derderian@comcast.net |
| 60 | Terence Delehanty ✓ | tdelehanty@town.winthrop.ma.us |

RICHARD Profetto

Patricia Kuschel

additional attendees!

Community Resilience Building Workshop
April 6th at the MWRA

Sign In

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~~Sean P...~~ John Dawo
Paul O'Connell - Town of Winthrop
Bill Harris
Rich Cifuni - Town of Winthrop
Fred Silke - Winth Housing Auth

APPENDIX B: COMMUNITY CHALLENGES & GOALS

MEMORANDUM



TO: Joe Domelowicz, Assistant Town Manager
FROM: Mary McCrann, AICP
DATE: April 27, 2018
RE: Winthrop CRB – Community Challenges & Goals

TABLE 1

What are Winthrop's biggest challenges?

- The community is in need of a plan to prevent chronic flooding which seems to be the new normal.
- Where to find the funding to implement short/long term solutions.
- Flood map lines and flood insurance requirements.
- Infrastructure update and replacement for stormwater drainage.
- Coastal protection on the ocean side and bayside of town.
- Increase funds for public safety and public works.
- Flooding on Morton Street side of town and inclusion in plan to stop erosion and damage to property.
- Vulnerable constituents – seniors, disabled, poor families need to be considered and valued even though they don't pay high taxes. They need a voice.
- Drainage, sewer line replacement to be fair and equitable.
- Question about why people who live in upland areas of the town/state pay for damage caused to people's property who live in a flood zone.
- Lack of money. Winthrop is a great community, great people, but it can't afford to fiscally support many of the needed programs. Regarding emergency preparedness... concern over frail citizens, particularly those who are on oxygen or require electricity for medical purposes. Concern with the limited ability to get around town during emergencies. People need to do a better job of clearing their own areas.
- Parking/getting cars off the street.
- Flooding!
- The Town does not have a youth center.
- Flood control and recovery.
- Communication – town-wide... radio frequency similar to highways, not all homes have WCAT
- Additional barriers are flood control and avoiding permits
- Portable pumps and a sand bag station
- Military surplus vehicles
- High water
- Funding, grants, loans
- Drainage
- Seawall in marsh – move our heat and light funding money to do this.
- Helping people get back in their homes and saving our own homes.
- Army Corps of Engineers
- Flooding on Morton Street at Belle Isle Marsh – Pleasant Park Road. 10 feet of soil on Morton Street eroded into the marsh and bay. Channels are clogged with mud, etc. Need for dredging? Deepening center of the bay off the marsh?



What are your goals for the day?

- To arrive at a more clear picture of how I would like to become more involved with action items toward solutions.
- Gather insight into concerns and proposed improvements from other Winthrop citizens.
- To be the voice of vulnerable seniors who feel irrelevant and not valued because of money or disability.
- Information gathering
- Triage in order of effectiveness.
- Can waterway by Belle Isle Marsh be dredged? Soil eroded in recent storms... mud flats.
- Find resources to get my community back to the way it was.

TABLE 2

What are Winthrop's biggest challenges?

- Engaging the community
- Science/education
- Understanding short and long term trade offs of nature based solutions.
- Create inclusive action plan.
- Winthrop is the #1 most vulnerable community in MA to sea level rise/flooding.
- Winthrop is broke.
- Winthrop is not perceived as a municipality of regional importance.
- Winthrop is geographically isolated and lacks political and municipal accountability. Can't afford even basic maintenance/state of repair.
- Infrastructure/streets and maintain/improve
- Safety and protection of waterfront properties
- **Emergency Evacuation Plan** for Point Shirley Residents
- Flooding throughout the town
- Police security 24/7 on Deer Island – prohibiting public use after sundown.
- Add sand dunes at Yerrill Beach
- Limited ability to come and go in and out of town
- Repeated flooding of some homes in big storms
- Airport pollution
- Most vulnerable community to storms
- Would like to see Senators support for federal funding. Get Senator Warren to visit Winthrop or Governor Baker!
- Use of natural stabilization for Coughlin Park erosion.
- Flooding and not enough resources (money, equipment)
- Evacuation routes – you can be stranded for hours in certain parts of town.
- Power outages
- Communication from officials
- Get state representative to exercise leadership (DeLeo) in the state house to address climate change mitigation and adaptation
- Coastal flooding

What are your goals for the day?



- Understand the community's understanding/knowledge of climate change and nature based solutions
- Understand work accomplished to date
- Share our communities strengths and weaknesses to better inform the action plan.
- Identify funding opportunities.
- Increase local political will and leadership.
- Community engagement
- Identify target priorities
- Better understanding of how to help with emergency preparedness
- Communicate concerns regarding flood insurance
- Communicate concerns regarding Grand View rip rap
- Communicate concerns over being cut off/pump outs/senior neighbor impacts from storm events
- Communicate concerns about the disconnect/inability to protect personal home and rip rap on property
- Assistance with seasonal berms – presently berms slowly erode and we need money and equipment to keep up.
- Seawall repair and building
- Natural dunes to minimize flooding
- Educated interpretation of future flood potential and ocean levels!
- Better understand how Winthrop is being affected by climate change
- Network with community members and leaders and connect with people who wish to take action to influence Representative DeLeo
- To gain knowledge and insight to help the community
- Want to understand and be able to communicate efforts to date to the community, funding partners and developers/businesses

TABLE 3

What are Winthrop's biggest challenges?

- Would like to see the storm drainage system updates, repaired and maintained
- Infrastructure
- Coastal flooding/erosion
- Implementing productive change
- Low lying land
- Surrounded by the ocean
- Winthrop is essentially an island with only two ways in or out
- On the coast with rest of the state less concerned than coastal communities about climate change
- Over development
- Infrastructure including drainage
- Upgrade the sewer system (street, storm drains) in the low lying areas of town with an upgrade of pumping stations in those areas

What are your goals for the day?

- To make the town aware of what actually happens during a storm... what I have personally done (built a seawall) and what needs to be done to further remedy the situation.
- To create a group of ideas that will lead to an actionable plan, allowing for funding to execute the plan.
- Learn about legislative actions and potential money



- Learn more about Winthrop's challenges
- Express concerns about severe impacts to Winthrop courtesy of climate change
- Better understand how to secure my property
- How the neighborhood can better partner in emergencies
- Better understand the future plans for our town.

TABLE 4

What are Winthrop's biggest challenges?

- Repair of seawalls – relaxing ACOE and DEP/CZM rules for emergencies
- Protect environmental concerns
- Drainage
- Maintain and build berms
- Looking at temperature change from a facilities standpoint
- The need for EMS systems and equipment – how can we better insulate our facilities to sustain preferred temperatures for longer periods. Change power sources or have multi fuel options
- Need for beach nourishment involving the movement of sand from Point Shirley
- Weather changes and flood mitigation
- Insurance coverage and affordability of premiums
- Funding to make building improvements to be better prepared for severe storms
- Drainage, infrastructure, erosion
- Figure out the future of homes in low lying areas
- Improving parks
- Improvement water, sewer and stormwater
- Education
- Investment in trees and their maintenance
- Funding, storm surge, flooding, aging infrastructure, drainage, sand
- Located on the ocean – limited to two egresses in and out of town
- Need for an evacuation plan from extreme weather or an incident at the airport or Deer Island
- Isolation of the community
- Funding
- Storm surge as sea level rises
- Seawall protection
- Flooding
- How does the community reduce carbon footprint and increase energy efficiency
- Public safety issue of coastal flooding and preparing for future storms now that we have seen the impacts three times in 2018
- Getting enough money for sand removal, wall building without overrides and burdening people
- Drainage (aged system, reliant on tide cycles, insufficient capacity)
- Water and sewer systems (funding upgrades, aged systems)
- Coastal resiliency (erosion, unable to extend seawalls, maintenance costs to existing)
- Rising sea levels
- Isolation during storms
- Aging infrastructure
- Limited budget



What are your goals for the day?

- Learn more about long term effects of extreme weather and the impact to Winthrop
- What improvements and funding solutions can be considered to protect Town buildings from severe weather conditions and costly repairs?
- Support the Governor's energy star home rating system
- Funding incentives for solar and efficiency
- Adding wave energy buoys and barriers
- Removal and relocation of sand on Yirrell Beach and reinforce walls along the harbor
- Save Coughlin Park
- Be given the ability to replace sand from private property back to where it came from
- To heighten awareness
- To contribute solutions

TABLE 5

What are Winthrop's biggest challenges?

- Please keep Winthrop a cute, small town and not an overcrowded City.
- Building coastal infrastructure to mitigate flooding, high tides and damage as a results of storms and rising tides.
- Improve drainage system to expedite flood recession, reduce ground table levels and minimize road/street damage.
- Implement a plan for future disaster readiness, awareness and safety.
- Fix remedy problem areas
- Need more help and collaboration with MWRA and Airport where Winthrop protects them.
- Repair erosion and maintain
- Isolation during storms – no help
- Building a seawall at Frances Street/Pico Area (wooden wall with slats as of now which stops nothing)
- Help in restoring homes that were affected in the Frances Street/Pico area.
- Better preparation in that area including sandbags, etc by the Town for future coastal storms until a wall is built.
- Better flow of the water when it comes over the walls/drainage.
- Actually putting these plans into action.
- Lack of education of importance of vegetation in retaining floodwater.
- Need more nature-based infrastructure solutions instead of hard seawalls and gray infrastructure.
- Flooding, wind
- Golf course sinking
- Business development
- Ingleside Park flooding
- Town Center development
- Recreation, youth, family, senior
- Harbor Walk
- Golf Club/Course sinking
- Fortify Winthrop Beach, but don't ruin use

What are your goals for the day?

- Learn about where flood zones are



- Learn about coastal resiliency – a good outcome is a decision to not build in flood zones (could new construction at Suffolk Downs cause more flooding in Winthrop Marsh?)
- Realistic report identifying Winthrop's MVP in order to obtain grant money to address coastal infrastructure
- To learn and grow.
- Grants, communication, have a community go to station identified and supplied.
- Advocate for seawall at Pico Beach and close up openings.
- To see funding for damage to our homes.
- Repair erosion areas and private property erosion areas.
- Take home ideas to implement
- Develop relationships with homeowners to help them with permitting process and development (pervious pavement, green infrastructure)

TABLE 6

What are Winthrop's biggest challenges?

- Flooding
- Groundwater (Lewis Lake, Ingleside Park)
- Coastal flooding (infrastructure, aging system)
- Funding
- Economic development and growth
- Smart development
- Winthrop Beach flood prevention and protection of beach neighbors
- Public safety response at all parts of Winthrop
- Plan for public education using Cable TV and Social Media
- Plan for sea wall protection
- Not enough is being done to address climate change
- Sea level rise, especially looking at Category 4 Hurricane near Deer Island on the map
- Need innovative trash solutions (ban plastic composting, paper solutions)
- Energy resilience – would like to increase battery storage capabilities for town to help longevity of emergency shelter locations for long term displacement or destruction of natural gas pipeline infrastructure.
- Resilient construction practices for new development being in building codes – equipment above groundwater levels, etc.
- More state assistance for residents to electrify their heating systems and implement battery storage

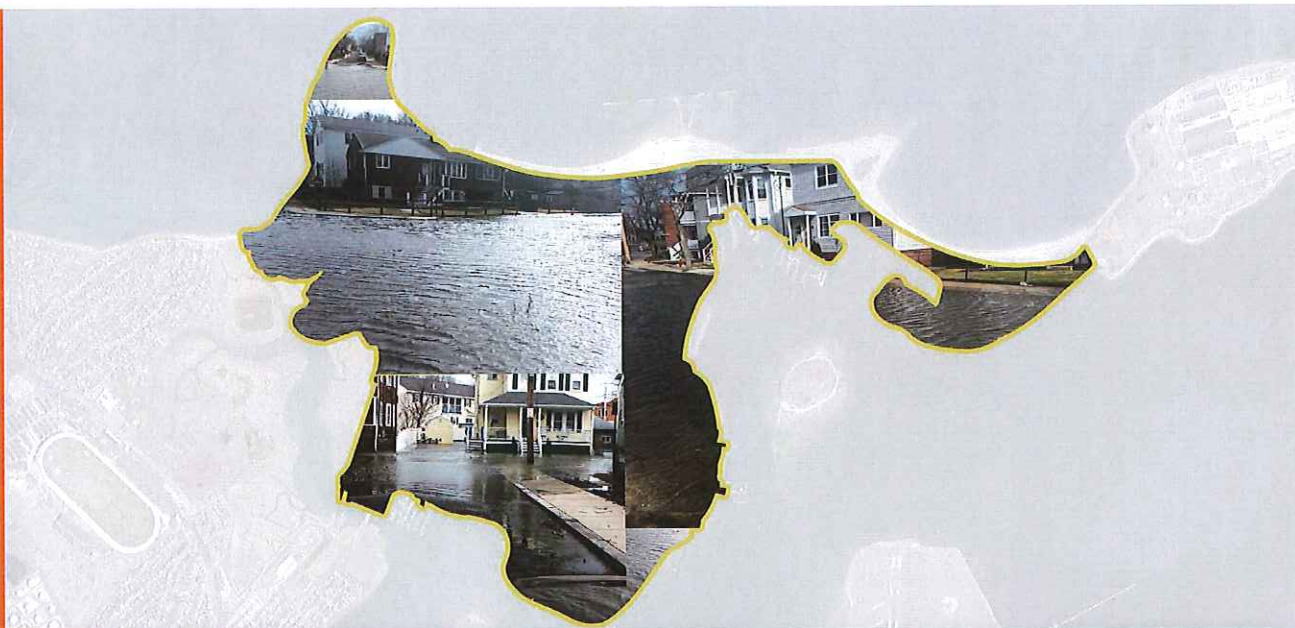
What are your goals for the day?

- Learn about what long term preventative changes can be set in place to ensure changed needed to be ready for future conditions.
- Gain better understanding of Winthrop's vulnerabilities
- To meet other neighbors
- Action plan
- Specific tasks ahead
- Hope to gather enough information to be a strong advocate and participate towards greater resiliency
- Better understand concerns and desires of residents and how they want the town to focus on climate mitigation.



- Push to electrify heating systems, this and residential electric battery storage capability can island homes and provide power when electric grid is down.
- Effective flood mitigation technologies for commercial buildings, pump stations, etc. A lining that rolls out over walls – can this be adapted and subsidized for homeowners to protect basements from flooding??
- New construction requirements – green/cool roofs, green space requirements/stormwater runoff maintenance/gray water reuse and rainwater collection.

APPENDIX C: COMMUNITY RESILIENCY BUILDING WORKSHOP PRESENTATIONS



Winthrop, MA

Recent Storm Event Photographs



2018

Ingleside Park



Winthrop Golf Course



Morton Street

