Lessons Learned from the 2022 Niagara County Hazard Mitigation Planning Process:

A Guide for New York Counties

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NIAGARA COUNTY
EMERGENCY SERVICES

NEW YORK STATE | **Homeland Security and Emergency Services**

NIAGARA COUNTY
HAZARD MITIGATION PLAN

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1. INTRODUCTION

Hazard Mitigation Plans are the foundation of any community's hazard response and resilience. FEMA requires that Counties create multi-jurisdictional Hazard Mitigation Plans (HMP) every 5 years. Updating these plans is essential to properly address ever-changing hazard concerns. However, there is great potential to create efficiencies in the HMP process. This is why creating an interactive, online HMP is an exciting opportunity for planning teams.

Niagara County was one of the first counties in New York State (NYS) to use the Mitigate NY platform to develop their HMP. MitigateNY is the State's online hazard mitigation planning platform developed by New York State's Division of Homeland Security and Emergency Services (NYSDHSES) and the University at Albany's Visualization and Informatics Laboratory (AVAIL). Niagara County worked with local municipalities and the University at Buffalo Regional Institute to update its HMP. The process began in the Fall of 2021 and the draft plan was released to the public on June 9th 2022.

The planning team discovered numerous benefits of creating our HMP on the online platform. It's easier to keep plan content up-to-date and engage the public and stakeholders. The online format and interactive features make the plan more accessible and user-friendly. The ease of accessing plan sections and jurisdictional annexes via links at the top of the website is a major improvement over printed HMPs which were exceedingly long and hard to navigate. The planning team also leveraged technology to create efficiencies in the engagement process, for example by conducting meetings remotely during the pandemic.

HMPs give communities a way to work together across the county to lay out strategies since many of our communities share many common hazard risks. The online format of an HMP extends the ability for municipalities to cooperate on hazard mitigation. This document can help improve the HMP process and promote the use of online interactive plans for hazard mitigation and beyond. We hope this document can help guide others through the process and lead to further improvements in hazard mitigation planning to ultimately help protect communities across New York State.

1.1. ABOUT THIS DOCUMENT

This document provides guidance for hazard mitigation planning (HMP), focusing on engagement methods and the process of creating an HMP using New York State's online MitigateNY platform. This guide highlights key steps, lessons learned, tools, and resources to help others develop an HMP, particularly those built on MitigateNY. This guide can serve as a resource to other counties and communities across New York as they update their hazard mitigation plan using MitigateNY. It is also meant to offer recommendations on ways that DHSES and AVAIL can enhance the MitigateNY platform as they enter the next stage of site development.

The University at Buffalo Regional Institute (UBRI) created this resource document by reflecting on the process to develop the Niagara County 2022 Hazard Mitigation Plan. This was the first time the team at UBRI conducted a Hazard Mitigation Plan update. However, as HMPs are updated every five years, planning teams never need to start from scratch. It is essential to start with the pre-existing HMP and learn from local stakeholders, and State and County representatives with HMP experience.

This document applies this experience to offer further guidance to planning teams working on a multi-jurisdictional County HMP update. The document describes tools, techniques, resources, and organizational strategies used by UBRI to update the Niagara County HMP using the Mitigate NY tool. It shares recommendations on what worked

well and opportunities to improve the HMP process and outcomes. This document is meant to be a toolbox of resources that should be treated as recommended guidance and adapted to fit local context and meet FEMA HMP requirements.

Please note that the Niagara County 2022 HMP and this document are based on 2011 FEMA requirements of local mitigation plans which were superseded by new guidelines in April 2023, which can be viewed here and in the Appendix. The updated HMP requirements and process are largely consistent with the 2011 requirements, so the guidance in this document will still be useful.

2. PROCESS OVERVIEW

The planning process can be organized into five major work phases, from organizing the effort through plan adoption. Each work phase involves a series of meetings with various audiences engaged. The engagement and research efforts during each phase lead to outcomes that meet HMP requirements and develop necessary plan content. Figure 1 below provides an overview of the engagement, outcomes and plan content that resulted from each phase of the effort. Each work phase is detailed here in Section 2 while the engagement process is more fully described in Section 3 and Section 4 details the process for developing plan content on the MitigateNY site.

Work Phases	Audiences Engaged	Meetings	Outcomes	Plan Content
Organizing the Effort	Various stakeholders, including representatives from various county departments (emergency management, economic development, public works, etc.); local or state agencies; and representatives from local municipalities, and community members	· Niagara Co. - MAC Kick-off Meeting - Oct 2021 · Niagara Co. - MAC Meeting 2 - 01.18.2022 FINAL · Niagara Co. - MAC Meeting 3 - 05.02.2022	Niagara Co 2022 HMP Community Survey Results Summary. See Appendix	Planning Context
Hazard Risk and Vulnerability Assessment	Officials from every municipality in the County	· Niagara Co. HMP Jurisdictional Team Work Session Fall 2021	Stakeholder Feedback Map See Appendix	Hazards, Risk
Local Plan Integration	Officials from every municipality in the County	· Niagara Co. 2022 HMP Action Workshop Meetings Spring 2022	· Capability Assessment Form. See Appendix	Strategies - Capabilities Table
Mitigation Strategy and Action Development	Officials from every municipality in the County, as well as neighboring counties and tribal leaders	· Niagara Co. 2022 HMP Action Workshop Meetings Spring 2022	· 2016 Niagara Co. HMP Action Update Form · 2022 Niagara County HMP Action Proposal Form. See Appendix	Strategies
Implementation and Plan Adoption	Officials from every municipality in the County, Mitigation Advisory Committee, and community members	Community Plan Launch Meeting June 2022	· Disclaimer · Niagara Co 2022 HMP ·Community Survey Results Summary	About

			· Public Comment Survey. See Appendix	

Figure 1: An overview of the hazard mitigation planning process by work phase.

2.1.   APPLYING TO AN HMP GRANT

Before beginning the planning process, the first step of an HMP is applying to DHSES and FEMA for a grant to update the plan. This involves scoping out the plan, creating a project budget, organizing the planning team, and developing a list of contacts for the jurisdictional teams. Communicating with DHSES throughout the application process is critical to ensure the application is approved. Example applications from past HMPs or other Counties are a tremendous resource in this process. An example application is included in the Appendix.

2.2. ORGANIZING THE PLANNING EFFORT

The planning team first established a relationship with the County representative responsible for the HMP update and arranged to have internal meetings to begin organizing the effort. In Niagara County, this representative was the head of the Department of Emergency Services. With the guidance and assistance of the lead County representative, the planning team reached out to local officials to collaborate on the Plan and prepare for the process.

During this preliminary stage, a Mitigation Advisory Committee (MAC) was formed to guide the overall process and support outreach efforts. The County helped select MAC representatives from various county departments (emergency management, economic development, public works, etc.), local or state agencies, and local municipalities. The MAC held its first meeting in October 2021 and met quarterly at key touch points throughout the process. At the first meeting, the MAC members were asked to recommend other representatives to join the MAC.

Shortly after the first advisory committee meeting, a community kick-off meeting was held on October 27, 2021 to introduce the process to the community, collect feedback on hazard concerns, and launch a Community Survey. The MAC assisted with public outreach for the community kick-off meeting. The MAC also helped establish contact with jurisdictional teams who were invited to the community meeting and helped with outreach to their residents. Shortly after the Community Kick-off meeting the planning team organized a joint meeting of all jurisdictional teams to introduce the planning process and to help stakeholders prepare for the HMP update.

2.3.   CAPABILITY REVIEW

There are various different types of capability categories. These include: Planning and regulatory, Administrative and technical, Financial, and Education and outreach. Planning teams can also look into additional categories of capabilities related to mitigation planning. In the update process planning teams will need to conduct a review of all the existing plans, policies, studies, and programs that have been developed to further inform mitigation actions. This assessment will increase understanding of which capabilities can be used to aid disaster losses, but also which capabilities need to be introduced or enhanced to better address disaster losses. From this review, your team will better understand the mitigation resources and needs of each jurisdiction.

2.3.1. Data Collection Process

For the Niagara County 2022 HMP, the planning team reviewed existing capabilities primarily by using Google searches to find existing documents. The planning team was also able to find local capabilities by leveraging the team's work on previous planning projects and research efforts. A planning consultant with past experience in the County may be able to leverage similar work.

Conducting independent research to find local capabilities before reaching out to each municipality can help to lift some of the burden off local officials. Independent online research is a helpful first step to find local capabilities, but many documents may not be available online, so feedback from each municipality is essential for the capability assessment.

Using the independent research, the planning team developed an inventory of local capabilities for each municipality and shared this using a separate form foreach jurisdictional team. Municipalities then were tasked with reviewing the forms for accuracy and adding any capabilities that were missing from the planning team's initial review. Municipalities were contacted via email to ask for their review. To conclude the capability assessment, each jurisdictional team was then given a final opportunity to review the capability forms during the mitigation action workshops held by Zoom.

2.3.2. Follow-up tasks

Getting a response from each municipality requires regular follow up. Depending on the allotted timeline, a biweekly reminder could be beneficial to ensure you get timely responses from each jurisdiction. County and MAC representatives may also help ensure feedback is complete.

2.3.3. Best Practices & Adjustments

The capability assessment is a substantial undertaking of the hazard mitigation plan update. The planning team learned that starting this process as early as possible would be beneficial. A thorough capability review requires a significant time commitment and the data collection process should start early on, as there are a great number of capabilities to review. To ensure the capability assessment stays on track with the entire planning process, one individual on the planning team should dedicate at least one to two months to collect the data and prepare capability assessment forms for all municipalities.

Here is a list of resources that are helpful for the capability review:
National Mitigation Framework https://www.fema.gov/sites/default/files/2020-04/National_Mitigation_Framework2nd_june2016.pdf
National Risk and Capability Assessment https://www.fema.gov/emergency-managers/risk-management/risk-capability-assessment#:%7E:text=The%20National%20Risk%20and%20Capability,risks%2C%20capabilities%2C%20and%20gaps.

2.4. HAZARD RISK AND VULNERABILITY ASSESSMENT

To describe hazards, planning teams can use previous mitigation plans for the County, the State mitigation plan, FEMA resources, such as the National Risk Index (NRI), recent hazard events from the NOAA storm events database, as well as local stakeholder input.

2.4.1. Data Collection and Risk Assessment Process
There are four main steps in the risk assessment process: describing hazards, identifying community assets, analyzing risks, and summarizing vulnerability. For an in depth guide on each of these four steps, please refer to https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

Input from the County and jurisdictional teams was used to update the hazards of concern from the previous HMP based on the perceived changing frequency and severity of hazards. Public feedback on hazards of concern from the community survey can also be used to help determine hazards of concern.

Community assets can be identified using the inventory of critical assets loaded onto the website, which can be supplemented or updated using local parcel data, NYS databases of critical assets such as schools, hospitals, bridges, and FEMA's Homeland Infrastructure Foundation-Level Data (HIFLD). Critical infrastructure data can be overlaid with floodplains and other hazard prone areas to determine potential hazard vulnerabilities.

Land use and building footprint data can also be overlaid with floodplains to determine hazard vulnerabilities. This analysis has already been conducted across NYS by Columbia University's Center for International Earth Science Information Network (CIESIN). This data overlays building structure data from Microsoft Open Source Building Footprints (2018) with FEMA floodplains, elevation data, and property information. This data can be used to map hazard vulnerability, or the flood overlay process can be repeated for the local County in GIS by using County parcel data, building footprints, and FEMA floodplains.

The MitigateNY site provides a Social Vulnerability map which can be used as part of the risk assessment. The planning team analyzed data on social vulnerability indicators from the US Census Bureau's American Community Survey to produce a social vulnerability index at the census block group level, which was overlaid with floodplain data. The Niagara County 2022 HMP contains more details on the risk assessment process and a spreadsheet listing all the data sources used for the hazard risk assessment, which is also available in the Appendix.

2.4.2. Meeting Invitation & Scheduling
Organizing individual meetings for each municipality can seem overwhelming. The Niagara County plan involved two rounds of meetings with twenty jurisdictions and more. The planning team relied on an online meeting scheduling platform called Calendly to help us set up meetings. Although the subscription level required is not a free service, it can be worth the investment for this project. Calendly allows the planning team to determine the internal team's availability, and then each municipality was able to choose a time slot that worked best for them. The invitation to schedule the meeting was sent out via email, but the County representative also helped schedule meetings by calling town and village contacts. Some municipalities may have less technical capacity than others, so it is important to have a wide outreach strategy that will work for all jurisdictional teams and stakeholders. See the Appendix for an invitation example.

2.4.3. Jamboard Presentation
To conduct the hazard risk assessment with jurisdictional feedback, the planning team developed an interactive presentation using Google Jamboards. This presentation introduced the planning team, the outreach strategy, and the hazard mitigation planning process before presenting context information from a preliminary hazard risk assessment and asking for feedback.

Using Jamboards allowed the planning team to add "sticky" notes on feedback received from stakeholders directly into the presentation in real-time. It can also be used directly by stakeholders to add feedback. This interactive process encourages engagement and shows that the planning team is actively absorbing stakeholder input. Taking active notes on slides with background graphics, such as maps, charts, and discussion prompts can promote a variety of specific feedback on hazard concerns, vulnerable assets and populations, and more. See Appendix for Jamboard presentation examples.

2.4.4. Incorporating stakeholder feedback (Google MyMaps)

The planning team developed an interactive mapping exercise to gather stakeholder feedback. Using Google MyMaps, the planning team created interactive maps of flood-prone areas, hazard events, infrastructure, critical assets, natural areas, recent developments, and social vulnerability in Niagara County. These online interactive maps were used in the hazard risk assessment meetings to solicit feedback from jurisdictional teams based on the existing data on these topics. This proved to be an effective feedback tool, as the online maps showed geospatial data which could be verified or updated live by jurisdictional teams, and prompted discussions on each essential topic for the risk assessment.

Google MyMaps allows you to create and share maps for free with a Google account. Point data can be added to maps by uploading spreadsheets or csv files with latitude and longitude values. Polygon layers, such as floodplains, natural features, and municipal boundaries, must be uploaded to the site as a KML. Users can also draw custom points or lines on MyMaps, which can be used to record stakeholder feedback during meetings live. There are limitations to file size and the number of layers that can be stored on any map. It helps to have GIS experience to use Google MyMaps, but users without any GIS experience should still be able to leverage MyMaps for stakeholder engagement by using the guide and help articles provided by Google.

2.4.5. Follow-up tasks

As a follow up to this meeting, the planning team reached out by email to thank stakeholders for their participation and remind them of the next steps to anticipate. These next steps involved promoting the community survey, sharing additional feedback on hazard concerns, tracking effort on time sheets, and preparing to schedule the next meeting on mitigation strategy development.

2.4.6. Best Practices & Adjustments

Planning teams may not be familiar with the planning area of the HMP update, so it is important to familiarize yourself with the area as much as possible. This can be done by physically visiting the municipalities you will be working with, in addition to researching and "touring" the area online. Before conducting hazard risk and vulnerability assessment meetings, planning teams should be sure to familiarize themselves with each community they meet. Also, if a map-based engagement method is used, the planning team should familiarize themselves with the content shown in the map and be prepared to answer questions regarding the data. It is important to provide stakeholders with a variety of avenues to provide feedback, including written and verbal comments both during and after the meeting.

2.5. MITIGATION STRATEGY

Developing a mitigation strategy involves three main components: mitigation goals, mitigation actions, and an action plan for implementation. For a in depth guide of how to develop a mitigation strategy please reference: https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

2.5.1. Data Collection Process

The previous County HMP, feedback from jurisdictional teams, public feedback from the community survey, and quantitative data analyzed as part of the hazard risk assessment is all useful to the development of mitigation strategies. The HMP Goals and Objectives can be updated from the past plan with stakeholder and community feedback, and guidance from the State HMP. A suite of potential mitigation actions can be developed by the planning team based on the hazard risk assessment and the past plan's proposed actions. Presenting types of mitigation actions that could potentially be proposed was helpful to jurisdictional teams developing plan actions. The additional details on proposed mitigation actions can be fleshed out through discussions with jurisdictional teams, but planning teams may need to help jurisdictional teams fill in details on projected costs, timeline, and prioritization.

2.5.2. Analysis Methodology

The qualitative jurisdictional feedback and quantitative data compiled as part of the hazard risk and vulnerability assessment was used to create draft problem statements and potential mitigation actions for each jurisdiction. These draft problem statements were reviewed by jurisdictional teams during a second round of meetings and were used to develop new mitigation actions to propose for the 2022 HMP update. These meetings were also used to update the status of previous mitigation actions from the 2016 HMP, and to verify the inventory of local plans, capabilities, and resources. The draft plan goals and objectives were also presented and reviewed by jurisdictional teams at this meeting. All jurisdictional feedback was gathered during the meeting and as follow-up using online forms (described below).

2.5.3. Meeting Invitation & Scheduling

Like many of the other meetings, Calendly was used to schedule the mitigation action workshops. The planning team wanted to ensure there was adequate time to review material for each jurisdiction, so each meeting was allotted a two-hour time slot

2.5.4. Follow-up Tasks

These mitigation action workshops involved a number of follow-up tasks that were required from jurisdictional teams. This includes a form to update the status of previously proposed mitigation actions from the past HMP, a form to submit proposals of new mitigation actions for the updated HMP, and a form to verify and complete the inventory of local plans, capabilities and resources. These forms were made available to jurisdictional teams using Google Drive which allowed them to edit these forms live online so the planning team could track changes and assist jurisdictional representatives as needed.

2.5.5. Best Practices & Adjustments

The planning team would recommend collecting the status updates of previously proposed mitigation actions earlier on in the process, either during and immediately following the first round of meetings with jurisdictional teams. Collecting status updates of mitigation actions earlier on will help the planning team and jurisdictions focus on developing more effective, actionable and complete mitigation actions. The use of online working documents or spreadsheets to gather this information proved to be efficient.

2.6 PLAN DRAFT REVIEW, ADOPTION AND APPROVAL

Each work phase of the process was used to create required plan content. Section 4 of this document describes how the work was used to generate plan content and build the draft on the MitigateNY site. After the draft plan was

developed, it was reviewed by the County, the advisory committee, jurisdictional teams, stakeholders and the public, before being submitted to DHSES and FEMA for review and approval.

2.6.1 Stakeholder and Public Review of Draft Plan

The draft plan website was first shared by email with the MAC and jurisdictional teams to review and verify essential plan content prior to the public release of the draft plan. Then the website was presented to the public at a community meeting and an online form was shared to collect feedback on the draft plan content (using Google Forms). This form was promoted with advertisements online and in local papers, local municipal websites, press releases sent through the County, distributing flyers at town halls and community centers, and other outreach. Feedback from stakeholders and the public was integrated into the plan before submitting it to DHSES for review.

2.6.2 State (DHSES) and FEMA Review of Draft Plan

DHSES consulted with FEMA to complete an initial review of the plan. DHSES then shared feedback with the planning team by compiling a Word document with the required revisions and suggestions for improvement, along with an Excel sheet outlining required changes to the proposed mitigation actions of each municipality. The planning team reviewed the documents and outlined an approach to address each piece of feedback, in consultation with the County representative. The planning team then arranged a meeting with the DHSES reviewers to discuss the required revisions and lay out a strategy for addressing each required revision. Discussing the details of how to address DHSES' required revisions helped the planning team determine the most effective way to revise the plan and streamlined the revision process.

As required revisions to the draft plan involved changes to jurisdictional annexes, the planning team reached out to each jurisdictional team to review and verify changes to jurisdictional content. The planning team focused the jurisdictional teams on the required revisions to the proposed mitigation actions by compiling a separate Excel spreadsheet for each municipality that summarized all the changes to their proposed mitigation actions. These changes to the plan actions were sent by email to each jurisdictional team, with additional follow-up by phone from the County and planning team. As part of this outreach, the planning team also summarized the other required revisions to the plan, asked for additional feedback and instructed jurisdictional teams to begin preparing to pass resolutions adopting the plan.

After the required revisions were approved by jurisdictional teams, the planning team then sent the revised plan draft to DHSES who coordinated again with the planning team to make a few outstanding required edits to the plan. Then DHSES sent the plan to FEMA for a final review to formally approve the plan.

2.6.3 Local Jurisdictions Adoption of the Plan

While the last round of review at the State and FEMA level was being completed, the planning team reached out to local jurisdictions to pass resolutions to formally adopt the plan. First, the planning team developed draft resolutions for each municipality. To streamline this process, the team used a Mail Merge in MS Word and Excel. An Excel was compiled with information on the name and address of the adopting body (e.g., Town Board or City Council), and the names of the officials listed on each resolution (typically the executive and clerk). These fields were inserted as Mail Merge fields into the appropriate placeholder in the Word doc template resolution provided by DHSES, which is available here. The Appendix includes examples of the Excel-Word files used for this exercise. The Mail Merge was executed to generate separate PDFs of a draft resolution for each municipality.

The planning team sent the draft resolution to each municipality and set a deadline for them to respond. As many town boards and City councils meet on a monthly or bi-weekly basis, you will need to give municipalities advanced notice and allow time for them to pass the resolutions. The planning team used a spreadsheet to track the resolution process of each municipality. The County representative may be relied on to follow up with municipalities and ensure all resolutions are passed before the expiration date of the previous HMP.

3.   THE ENGAGEMENT PROCESS FOR HAZARD MITIGATION PLANNING

Any hazard mitigation plan requires a substantial amount of engagement with jurisdictional teams, County and State representatives and local stakeholders. The section below describes key engagement steps, outlining meetings, objectives, and outcomes. The section also provides key resources that the planning team for the Niagara County HMP found helpful or critical to the engagement process.

3.1. Distanced Engagement in the Wake of COVID-19

The pandemic forever changed the way community engagement is conducted. Although many of the restrictions that were once imposed on community gatherings have been lifted, remote engagement settings still offer many opportunities in terms of efficiency. Virtually all of the community and stakeholder engagement sessions for the Niagara County 2022 HMP were conducted online. However, at most meetings a representative attended in person to help guide participants through the process whenever possible. Facilitating meetings online offered greater flexibility in terms of schedules and resources. This section of the document outlines the community engagement process for the Niagara County 2022 HMP.

UBRI also developed a helpful resource for conducting online community engagement, the *Distanced Engagement Resource Guide*, which can offer insight into how to leverage online community engagement strategies for any HMP update. This resource guide was developed to help community partners think about ways to transition engagement to a remote setting. Focusing on common engagement approaches, it covers ways to deploy different types of community and stakeholder meetings online, how to get the most out of surveys, tips for engaging targeted groups or audiences, and how to leverage digital media to support outreach. For a more in-depth guide to approach distanced engagement check out the link below.

Link to the resource: https://regional-institute.buffalo.edu/wp-content/uploads/sites/155/2020/11/DistancedEngagementResourceGuide_MAY-2020.pdf.pdf

3.2. BUILDING THE PLANNING TEAM AND FIRST STEPS

Before beginning to engage the community and stakeholders, the first step is to organize the planning team. The planning team for the Niagara County 2022 HMP consisted of three planners from UBRI, a faculty member from the University at Buffalo's School of Architecture and planning, and two graduate student research assistants. There should be a minimum of three people on the core planning team to effectively complete an HMP update. Each member of the planning team should be assigned clear roles, responsibilities, and expectations at the start to keep everyone on the same page while always encouraging feedback.

With the planning team established, the HMP process should kick off with a series of meetings and work sessions. For the Niagara County 2022 HMP, these meetings should focus on establishing the purpose of the plan and the outreach strategy. Internal team meetings were held a minimum of once a week throughout the process to ensure the workflow was being maintained.

The planning team should also take time before engaging different audiences to study and review the pre-existing County HMP. Becoming familiar with the current plan ensures that the planning team understands the scope of work, community context, past mitigation efforts, local hazard concerns, and important contacts to engage. The planning team can also do supplemental research on major hazard events and mitigation actions that occurred since the last HMP update. From here, the engagement process, timeline and tasks can be refined and scheduling can begin.

3.3. AUDIENCES ENGAGED

Throughout the process, the planning team will engage many different groups. This includes representatives from the County and State, municipal officials who comprise jurisdictional teams, local stakeholders who will make up the advisory committee, and other community groups, agencies, or neighboring jurisdictions.

3.3.1. Community
One of the HMP requirements is to engage community members in the planning process. This can be done in a multitude of ways. For the Niagara County plan, the planning team approached community input through a community survey that was promoted online via social media and websites, printed flyers, and newspaper advertisements. These outreach materials are in the Appendix.

3.3.2. Stakeholders
Identifying local stakeholders is one of the first steps in the HMP update process. It is important to thoroughly research the representatives who would be an asset to the project and develop a spreadsheet with potential contacts. These contacts range from county officials, employees of each municipality, emergency responders, school districts, and more. It is important to have a wide range of contacts, as hazard mitigation is important to everyone in the county.

Core stakeholder contacts can be assembled to form an advisory committee. In the Niagara County 2022 HMP, this was referred to as the Mitigation Advisory Council (MAC), a group of core stakeholders to provide oversight of the process. When putting together an advisory committee, stakeholders to consider include: building code enforcement, emergency management, fire departments, floodplain administration, geographic information systems (GIS), parks and recreation, planning/community development, public information office, public works, stormwater management, transportation (highway departments), state emergency management office, regional planning agency, law enforcement, fire/rescue, and emergency services, public works agencies and utility companies, social service agencies and volunteer organizations (e.g., American Red Cross (ARC), Salvation Army, etc.), school districts and educational administrators.

3.3.3. The County
Developing a strong working relationship with a lead County representative at the start of the process is essential. County representatives often have a pre-established relationship with municipal officials, and can assist with the initial and continual engagement to jurisdictional teams and other stakeholders. Planning teams often run into issues contacting jurisdictional stakeholders, and a County representative can typically stimulate a quicker response from local stakeholders as they already have an established relationship.

3.3.4. The State
Throughout the process, it is inevitable that planning teams will have questions, and need tips or reminders about the HMP process. The State is a valuable resource to overcome these obstacles and all planning teams should

engage and rely upon State representatives from DHSES who have vast experience in hazard mitigation planning. Periodically checking in with contacts at the State who have substantial experience and valuable insight on the HMP process will ensure the planning team is on the right track. The planning team for the Niagara County HMP invited DHSES contacts to meetings with the advisory committee and the public, as well as separate meetings between DHSES and the planning team wherever possible to get guidance throughout the process. Establishing a relationship with contacts at the NYS DHSES through regular meetings, outreach emails, meeting invitations, process updates, and impromptu questions, can be tremendously helpful to planning teams.
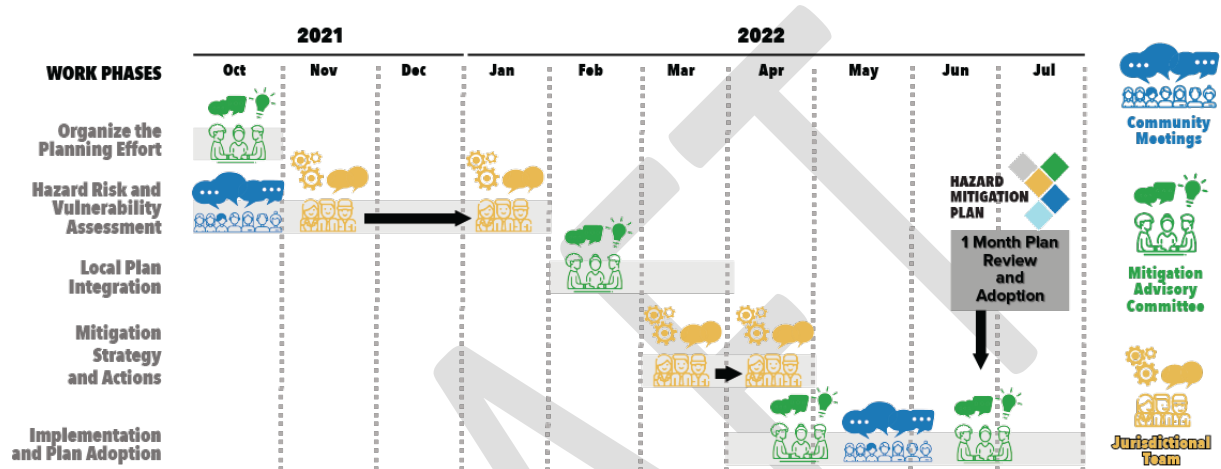
3.4. OVERVIEW OF ENGAGEMENT MEETINGS

Figure 2: The process timeline for the Niagara County 2022 Hazard Mitigation Plan. Each icon along the timeline represents a meeting/series of meetings with the community, jurisdictional teams, or the Mitigation Advisory Committee.

These various audiences were engaged in separate meetings throughout the process to gather feedback and meet plan requirements. The section below describes the objectives and outcomes of each meeting with the different audiences throughout the plan. The outreach materials, such as emails, feedback mechanisms, and Jamboards used to present at these meetings, are all provided in the Appendix.

3.4.1. MAC meetings

The Mitigation Advisory Committee (MAC) met quarterly to guide the overall process and support outreach to various stakeholders. The first MAC meeting was used to initiate the process, create the plan timeline, plan the community kick-off meeting, begin stakeholder outreach, and collect feedback from MAC members for the hazard and risk assessment. At the second MAC meeting, the planning team presented preliminary results of the hazard risk assessment, key points from stakeholder and community feedback, asked for feedback on the local plan integration, and shared an overview of the mitigation strategy development process. The third MAC meeting focused on the mitigation strategy and actions proposed by local jurisdictional teams, presenting a working draft of the plan, and preparing for the public launch of the draft plan. At the final MAC meeting after the public launch of the draft plan the MAC was asked for assistance in collecting community feedback on the plan, preparing for the plan review of the State and FEMA, and working with local jurisdictions to formally adopt the plan.

3.4.2. Meetings with Jurisdictional Teams

The planning team facilitated two rounds of meetings with each jurisdictional team: the hazard risk assessment workshops and the mitigation action workshops. The hazard risk assessment meetings were used to gather key

stakeholder input on hazard concerns, hazard events, flood prone areas, vulnerable communities, development, environmentally-sensitive areas, and more. This feedback was used to complete the hazard risk and vulnerability assessment and create potential mitigation action proposals. The mitigation action workshops were then used to collect information on the status of previously proposed mitigation actions, develop new mitigation action proposals, and prepare for the draft plan review and approval process.

3.4.3. Meetings with other stakeholders

Engaging a broad set of stakeholders beyond the required jurisdictional teams can be pivotal for the hazard risk assessment and the coordination of implementation of plan actions. These other stakeholder groups include fire, police, school districts, environmental groups, community-based organizations, neighboring jurisdictions, and more. Pre-scheduled meetings with the County and these groups were used to discuss the hazard mitigation plan and collect feedback. Other meetings were scheduled separately with emergency management personnel of neighboring counties and jurisdictions. These meetings took place primarily during the mitigation action planning phase of the process and were used to review shared hazard concerns and discuss opportunities for collaboration on mitigation actions.

3.4.4. Community meetings

Two separate community meetings were held throughout the process, the community kick-off meeting and the public plan launch. The community kick-off meeting presented the plan process, purpose and timeline while offering opportunities to collect feedback on hazard concerns, risks, and vulnerabilities. Feedback opportunities included answering poll questions and sharing written and verbal feedback during the online meeting as well as sharing the community survey. Feedback was essential to conduct the hazard risk assessment and develop plan content. At the public launch of the draft plan, the draft plan was presented to the community along with a summary of the process and key findings from stakeholder feedback and the community survey. The public was provided opportunities to share comments on the draft plan during the meeting and an online feedback form was also shared at the meeting and afterward.

3.5. RESOURCE AND TOOL RECOMMENDATIONS

Going through the HMP process, the planning team for the Niagara County HMP used an array of tools to stay organized and engage with stakeholders more effectively. Below is the list of tools used throughout the HMP engagement process. This list can help other planning teams get a sense of what resources to consider using in the HUMP update process. Links to each resource are provided below and examples of how these tools were applied are included in the Appendix.

3.5.1. Doodle Polls
The planning team used Doodle Polls to help establish the internal team's common availability. Planning teams often have busy schedules, so finding a time to meet can be a challenge. However, this free online resource can help navigate meeting schedules to stay organized. Doodle Polls can also be used to schedule meetings with the advisory committee and other select stakeholder groups. The tool also offers a paid subscription with added features.

Create Doodle Polls

3.5.2. Email

The planning team used Email as the main form of communication for this process. The first step was to gather Email and contact information of all jurisdictional teams, advisory committee members, and other stakeholders. Most contact information can be found on a County Roster of Officials, municipal websites, and additional contacts can be found with the help of County and State representatives. To help organize email outreach to different audiences, it was very helpful to create contact groups for different engagement audiences, such as jurisdictional stakeholders, the advisory committee, and the meeting participants. This can be done in MS Outlook or Gmail.

One of the first things the planning team did to get the Niagara County HMP update started was to create an email account specifically for the project in Gmail. Creating a Google account is simple, easy, and free. This helped us stay organized, while also giving the project authority. Establishing a dedicated project account was vital to organize planning and engagement efforts.

[Create a Gmail Account](#)

3.5.3. Google Drive and Box

To keep all working documents organized, the planning team set up a Google Drive using the Google account created for the project (see 3.5.2). This allowed the entire team to always have easy access to all the work. Organizing folders for each component of the plan building process helps keep the workflow streamlined and organized. Box is an alternative file-sharing system similar to Google Drive. Due to the live editing capabilities of Google, the planning team used Google Drive to organize internal files while Box was used to share resources with stakeholders and the public.

[Create a Google Drive](#)
[Create a BOX](#)

3.5.4. Google Forms

Google Forms is a free tool that can be used to create short surveys and questionnaires. The planning team used a Google Form to collect public comments on the online draft plan. This worked well due to the simple nature of the feedback form and the accessibility of Google Forms. However, more advanced surveys and tools, SurveyMonkey can be explored which is not a free tool but has a number of benefits over Google Forms (see 3.5.8. below).

[Create Google Forms](#)

3.5.5. Google Jamboard

Google Jamboard is a free online interactive whiteboard application the planning team used for remote meetings with stakeholders and community members. Meetings are meant to be interactive and engaging to collect feedback from attendees. Jamboard allows for real-time collaboration and makes it easy to take real-time notes of stakeholder feedback directly into the presentation.

To create the Jamboard presentation, the planning team first developed a presentation on MS PowerPoint, which was exported as a PDF and then each slide was converted to a PNG in Adobe Reader. These PNGs were uploaded as slide backgrounds to overlay on to the Jamboard presentation using the "Set Background" button in the top menu

of Google Jamboards. Slide backgrounds can be simple with a prompt question to leave room for notes, and others could show graphics such as maps where notes could be positioned to provide place-based feedback.

Create a Google Jamboard

3.5.6. Google Maps
Google Maps was a helpful tool for collecting geographic data from stakeholders during meetings. Google Maps is a free tool that allows you to create quick and simple custom maps that you can annotate. In the first round of stakeholder engagement meetings, the planning team set out to confirm or revise any potential areas of hazard within the county. Five interactive maps were developed: Flood-prone areas in Niagara County, Hazard Events, Infrastructure and Critical Assets, Natural Areas and Floodplains, Recent Developments, and Social Vulnerability.

Presenting hazard-related information on interactive maps allows stakeholders to visualize areas of interest, while the planning team can quickly add new points of interest directly onto the map during meetings. Seeing the data in a visual format is far more effective than laying out a list of addresses with notes. Also, this mapping exercise is helpful for instances when a stakeholder does not know an exact address for a point of interest, but can easily point out the area on the map.

Create Google MyMaps

3.5.7. Calendly
Scheduling all stakeholder meetings is no easy task. To make this process a bit less cumbersome the planning team utilized Calendly to eliminate the Hassle of Back-and-Forth Emails. Planning teams can simply set their availability and then let stakeholders choose the time that works for them. Although Calendly is a paid service, the planning team found it to be well worth its cost since it created valuable efficiencies in scheduling stakeholder meetings. Calendly offers plans ranging from $8 to $16 per month per user.

Sign up for Calendly

3.5.8. SurveyMonkey
The planning team utilized SurveyMonkey for the community outreach survey. SurveyMonkey provides additional data reporting, skip logic, question branching, and auto-generated summary reports of survey results. SurveyMonkey offers different subscription plans for individuals and teams with varying access to additional survey features and tools, ranging from $40 to $225 dollars a month. However, Google Forms may be a suitable survey tool for some planning teams.

Sign up for SurveyMonkey

3.5.9. Social Media
To promote the planning efforts and community survey, social media is an easy and effective way to reach the broader public. Graphic designers on the planning team developed collateral for municipalities to share on their social media streams like Facebook, Twitter, and Instagram. Simple graphics can be made quickly and easy to share with local municipalities to help them spread the word about meetings and surveys. Examples are provided in the Appendix.

Create an Instagram

[Create a Twitter](#)
[Create a Facebook](#)

3.5.10. Canva

Canva is an easy-to-use and free website that can help planning teams create material for social media posts, posters, and flyers. Canva is equipped with customizable templates for digital and printed needs.

[Create a Canva Account](#)

3.5.11. Bit.ly

In conjunction with social media collateral, the planning team used Bit.ly to help us shorten the URL links on graphics and posters. No one is going to type out a long URL to complete a survey, so it is important to make it quick and easy for people to access. With Bit.ly it is super easy to customize the URL to what makes the most sense for what you're trying to share. Bit.ly is a free service. The planning team used Bit.ly, but there are many similar websites. Some other resources to consider include Rebrandly, TinyURL, BL.INK, URL Shortener by Zapier, Short.io, and Sniply.

[Create a Bit.ly Link](#)

3.5.12. Printed Flyers

To spread the word about the community survey the planning team developed flyers with a survey link. These were distributed to all libraries, community centers, and the like. These flyers were shared via email, but the planning team also took the time to drop off flyers. It was an extra step, but it ensured that flyers were posted, and helped to establish community relationships.

3.5.13. Newspaper Ads

We decided to take out a couple of local county online newspaper advertisements in the month before the community survey closed. However, it did not seem that this was worth the time and resources as the planning team received very little engagement from these ads. A couple of hundred dollars were spent on these ads, but it did not seem to be worth the investment.

3.5.14. Mail Merge

Mail merge allows you to develop a batch of documents that are personalized for all recipients. For example, a form letter might be personalized to address each recipient by name. A data source, like a list, spreadsheet, or database, is associated with the document. Placeholders, or merge fields, indicate to Word where particular pieces of information from the data source should be included in the document. Using a mail merge can make it much faster to generate personalized outreach material for stakeholders, or plan content for each jurisdictional annex.

[How to Use Mail Merge](#)

4. BUILDING AN HMP ON MITIGATENY

The engagement process described in the last section is used to produce much of the required content for the plan. Additional research on local hazard concerns and previous mitigation efforts is also utilized to generate plan content. The process of incorporating this developed plan content into each section of the online MitigateNY platform is described below.

4.1. INTRO TO THE MITIGATENY PLATFORM

The MitigateNY tool is a transition from the traditionally static planning document. Typically, these planning documents are updated only once every five years, but with this new web-based tool, updates can be made continuously on an online platform. The MitigateNY site can be difficult to navigate at first, so below is some helpful guidance for you to navigate the site with ease.

The MitigateNY platform has an Administrative site for planning teams, and jurisdictional stakeholders to generate plan content for the public-facing site which represents the HMP. The public-facing site is organized into five separate chapters that can be accessed from the top panel (Home, Planning Process, Hazards, Risk, Strategies). A panel on the left of each page directs you to separate sections within each chapter of the plan. The site has a drop-down menu in the top right to navigate to each municipality's jurisdictional annex.
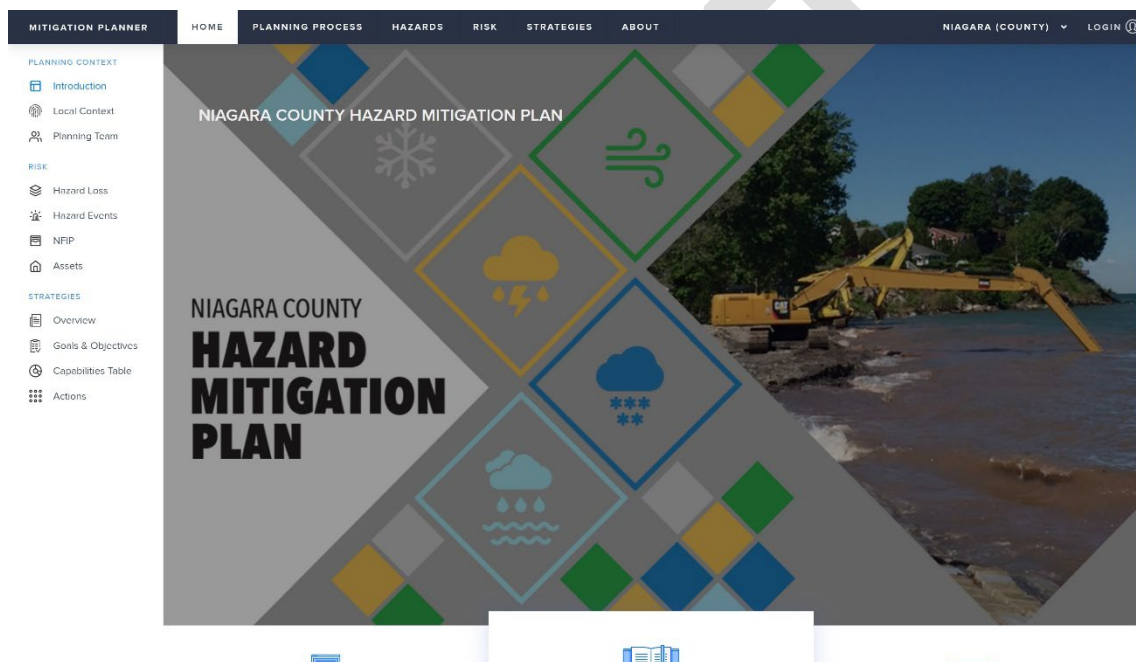
Figure 3: The public-facing home page. The Admin Site can be accessed by clicking the 'Login' Button on the top right. The public-facing home page

4.2. AN OVERVIEW OF THE ADMIN SITE TO BUILD PLAN CONTENT

The Administrative (Admin) site used to develop the plan can be accessed by contacting the site administrators to create an account username and password. The LOGIN tab to the far right of the top banner can then be used to access the Admin site and input plan content as it was being developed by the county and jurisdictional teams.

The Admin site is organized into separate pages to build plan narrative and tabular content which can be accessed through a panel on the left. This navigation panel is organized into these sections: Plan, Forms, Storm Events, Capabilities Overview, Assets, Municipalities, and Scenario Map. The site includes many figures, tables, and pieces of content which are pre-loaded onto the site and cannot be altered through the Admin site. However, all the required content for the HMP must be added through the Admin site.

Figure 4: This is the page you'll be directed to once you have logged in to the site. The navigation panel on the left outlines each section you will add your content to.

4.2.1. Overview of Plan and Forms Section to Develop Plan Content
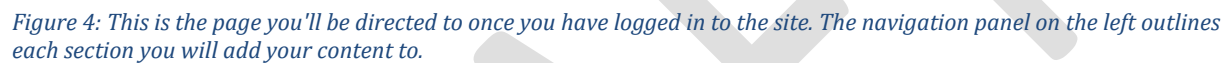
The Plan and Forms sections of the Admin website are where all plan content is developed, the other sections provide supplemental tools and resources. **The Plans section** is where all narrative Plan content is added to the website. **The Forms section** is used to input information used to populate required tabular plan content, such as the inventory of local capabilities, mitigation actions, and participation (meetings), roles (planning participants), Zones (of hazard concerns), Hazard IDs, and Files to upload to the site. The process for inputting pan content in the Plan and Forms section of the Admin site is described below under Section 4.4. The other sections of the Admin site providing supplemental resources and are described below.

Figure 5: The Plan section of the Admin site. Here you can see all of the drop-down options under 'Plan.'
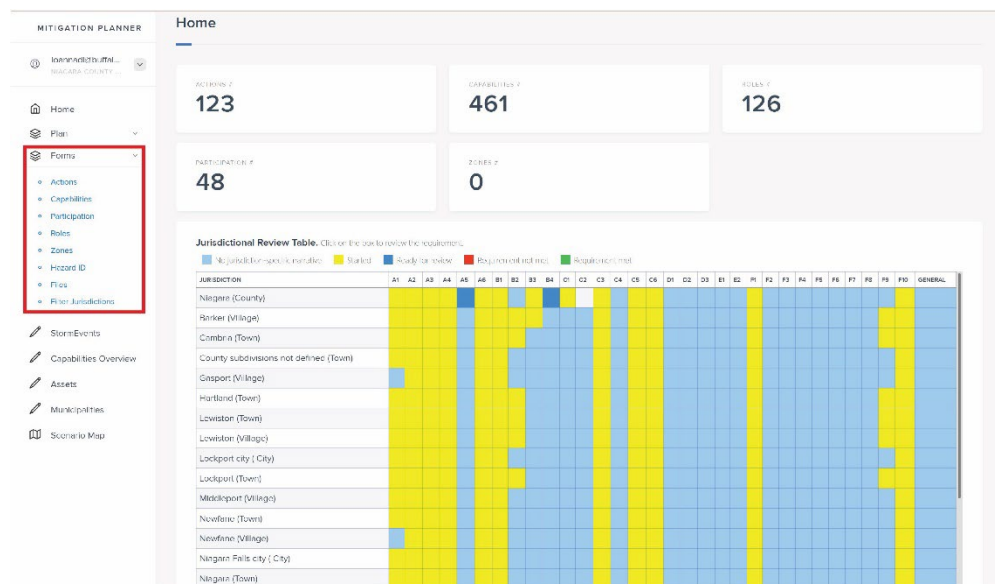
Figure 6: Here you can see all of the drop-down options for the 'forms' section. You will primarily focus on the first four, Actions, Capabilities, Participation, and Roles.

4.2.2. Storm Events

The Storm Events section lists a database of storm events in the County by jurisdiction that can be used during stakeholder engagement as part of the hazard risk and vulnerability assessment. <mark>These events are preloaded into the site.</mark>

Figure 7: The landing page for The Storm Events section

4.2.3. Capabilities Overview

The Capabilities Overview section provides a checklist where users can select which capabilities exist in each jurisdiction, but additional details on Capabilities must be added through the Capabilities form under the Forms dropdown of the navigation panel. Therefore, the Capabilities Overview tool can be used as a starting point to begin the process of entering in jurisdictional capabilities or resources, or as a way to double-check that the appropriate capabilities at the end of plan content development, but additional information must be added using the Capabilities form under the Forms dropdown.

Figure 8: The Capability Overview Landing page. Use boxes on the right to show and hide different capability types.

4.2.4. Assets

The Assets section provides a summary of the building stock in the county and each jurisdiction by owner type, land use, and an inventory of Critical Infrastructure which are shown in tables under the Risk section of the plan. This information can be useful as part of the Hazard and Risk Assessment and as discussion prompts during the stakeholder engagement to gather feedback on hazard risks and exposure of buildings and critical infrastructure.

The tables are pre-loaded onto the site but can be hidden from the public-facing site using the "Hidden/Visible" button at the top right. This information is compiled from AVAIL analysis of statewide databases of buildings, land use, and critical assets and infrastructure. These data summaries are suitable for plan content and stakeholder engagement, but updated information on land use, building values and infrastructure may be available from County parcel data.

For the Niagara County HMP, these tables were supplemented or replaced with information from alternative sources, including the Building Footprints with Flood Analysis project from Columbia University's Center for International Earth Science Information Network (CIESIN), and data from the HIFLD, the NYS GIS Clearinghouse, and various public agencies which can be mapped and overlaid with floodplain data using GIS.

4.2.5. Municipalities

The Municipalities section of the Admin site provides the Flood Insurance Rate Map (FIRM) dates for each jurisdiction and allows users to input details regarding other hazard mitigation related programs, such as the

Community Rating System, National Flood Insurance Program. This is a potentially useful system to track municipal level participation in these programs, however it was not implemented in the Niagara County HMP due to time/resource constraints and a lack of interest from jurisdictional teams to upkeep and utilize this system.

4.2.6. Scenario Map

The Scenario Map visualizes exposure of building stock and critical assets to flooding by showing building footprints overlaid with DFIRM data from FEMA. This tool is very useful during stakeholder engagement and hazard risk assessment.

For the Niagara County plan this tool was used by the planning team to investigate hazard exposure as part of the hazard risk assessment and to a limited extent during stakeholder engagement. However, these maps were supplemented with online maps created using Google MyMaps which has added flexibility to add layers independently to different maps and is widely familiar and accessible to public, planning teams, and jurisdictional stakeholders. These Google MyMaps were used to map building exposure to flooding, hazard events and concerns, assets and infrastructure, environmentally-sensitive areas, development sites, and mitigation actions. The maps prompted discussions around these topics with local stakeholders during the hazard risk assessment.
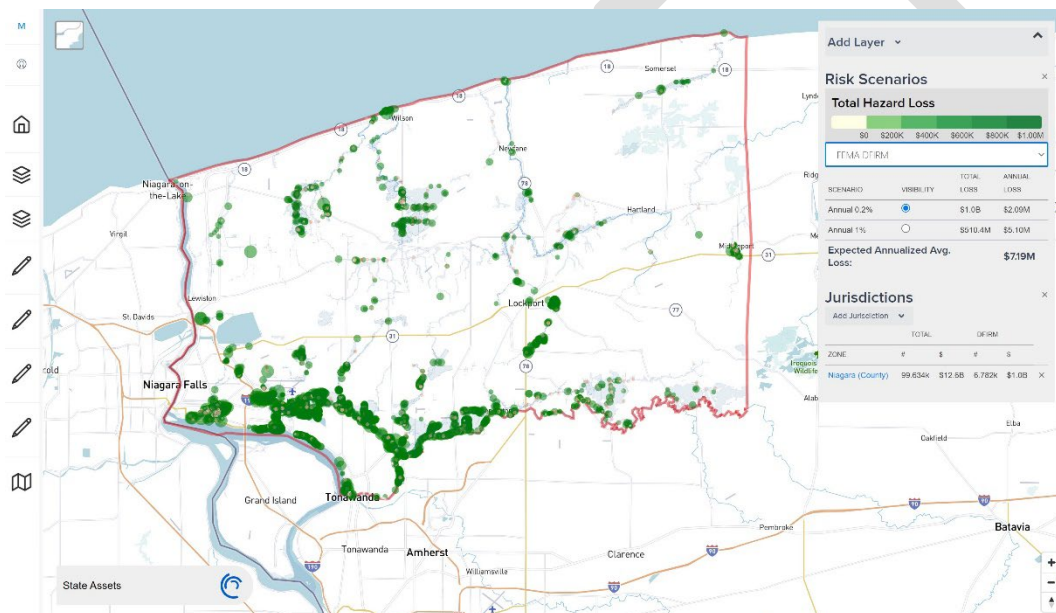

Figure 9: Scenario Map landing page on the Niagara County Admin site.

4.3 DEVELOPING PLAN CONTENT ON MITIGATENY

To develop and organize the required plan content, the planning team for the Niagara County HMP used an online spreadsheet (Google sheets) that matched the plan content to the appropriate section of the MitigateNY site. This was adapted from a Template developed by DHSES. The file is organized into separate tabs for each planning section, and a Key showing the overall plan structure. This sheet is provided as a resource in the Appendix that, along with the written text throughout Section 4, can be used as a reference guide when developing plan content for each section of the MitigateNY site.

4.3.1 ADDING FILES, LINKS AND IMAGES TO THE MITIGATENY SITE

The ability to add separate files, images, and external links within the site are valuable tools for building every section of the HMP on MitigateNY.

- Files can be added by navigating to the Files form under the Forms dropdown of the navigation panel, clicking to "Create New Files'', and then selecting a file from the local drive to upload. Once added, the Files menu will show a unique URL for each file added to the site which can be used to access the uploaded file.
- The URL links to these files, or to any external source, can be integrated into the text of the site using the Hyperlink icon in the text editor of the site. Highlight the text which should be hyperlinked, click the Hyperlink button, and paste the URL into the dialogue box when prompted.
- To add images to the site, users can simply drag and drop a PNG or JPEG file onto the text editor of any page of the site. A trial and error process is required to perfect the format and resolution of images added to the site.
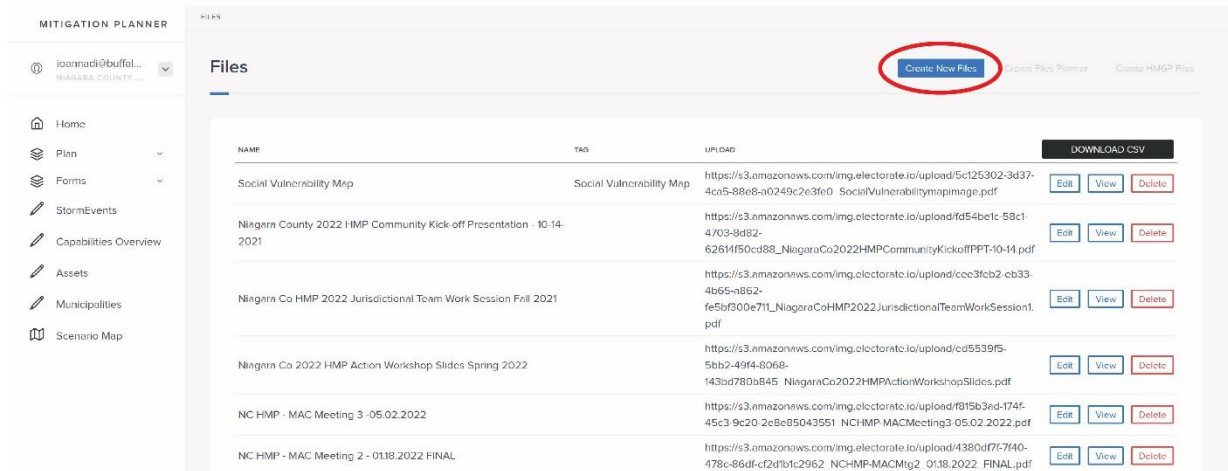

Figure 10: Create New Files to add separate files, images, and external links within the site.

4.4 THE HOME PAGE

The Home page provides an overview and executive summary of the plan. The page consists of data that is built-in to the site or brought in from user-generated content in other sections of the plan, but there is space for users to add site content on this page.

This page can be accessed under the Landing Page CMS section under the "Plan" dropdown in the navigation panel. The subsections include: Landing Image, Landing Quote, County Description, Roles, Strategy Text, Goals and Objectives Text, and Capabilities Overview.

The Niagara County HMP Home page includes a summary of the Plan goals and objectives, which is detailed in full under the strategy overview. The other sections of the Home page were left blank as they are shown elsewhere in the plan. The Landing Quote could be used to highlight a major point of feedback or headline. The County Description can be added here which could repeat or summarize the Local Orientation section of the Risk page. A Strategy Overview can be added from the introduction of that section. The Roles and Mitigation representatives, actions, capabilities are added automatically after these are generated by completing the corresponding forms (described below under the sections of the plan where they appear).
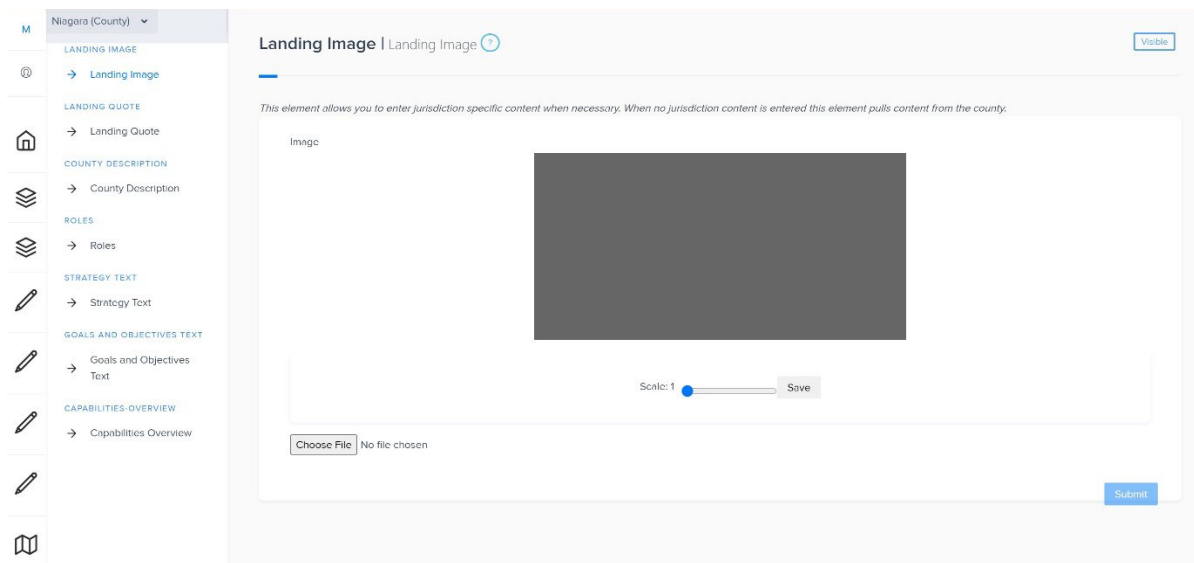
Figure 11: Follow the drop-down guide on the left to populate each section on the Homepage.

4.5 THE PLANNING PROCESS PAGE

The Planning Process page accessible under the Plan dropdown in the navigation panel includes the following subsections: Planning Context, Pre-Planning, Local Resources, Engagement, Plan Maintenance, and Process Assessment. This section also displays content that is developed on the following Forms: Mitigation Representatives, Planning Participants, Meetings, and Existing Resources/Capabilities.

4.5.1 Planning Context

The Planning Context begins with a Local Orientation to provide background on the purpose and objective of hazard mitigation plans. The planning process for the entire plan is also summarized in this section. This involves providing an overall project timeline, an overview of each phase of the effort, with all meetings and participants. Here, it can be helpful to create a timeline or other visuals to summarize the process and upload it to the site. Providing links to meeting overviews, engagement materials,

stakeholder feedback summaries, and other planning documents within the narrative of this section can also be helpful to the reader.

4.5.2. Pre-Planning

The Pre-Planning section introduces all the planning participants and provides an overview of the process for bringing together each group of audiences engaged in the plan: the Planning Teams, advisory committee, jurisdictional teams and federal, state, and county representatives. The list of planning participants, jurisdictional team representatives, can be added using the Roles form found under the Forms menu of the navigation panel. After navigating to the Roles form, users can click the button to "Create New Role" and then add the name, role, organization, and contact information of all planning participants. This information should be gathered by the planning team while the planning effort is being organized. The contact information will need to be confirmed by jurisdictional teams and other planning participants, which can be done during meetings with the planning participants and by email. The list of jurisdictional representatives and other stakeholders will need to be updated continuously throughout the process, as officials may transition into other roles or be replaced in the event of local elections.

4.5.3. Local Resources

The Local Resources provides a summary of the technical data used in the HMP and displays the table of Existing Resources which is developed using the Capabilities form under the Forms menu of the navigation panel. New Capabilities can be added to the Existing Resources table by clicking the "Create New Capabilities" button found on the Capabilities form and filling in the details in the additional prompts. This includes the date of adoption, status, description of the capability, how it is integrated in the HMP, and other information. As many details as possible should be provided, but at minimum, the capability should include a Title, Type, Description, Responsible Authority, and Municipality. This information can be gathered from local jurisdictional teams by using the Local Capabilities Worksheet document in the Appendix. These Capabilities Forms can be organized in spreadsheets or word documents and should ask for the same pieces of information presented in the Capabilities Form on the MitigateNY site.

Figure 13: After selecting the capabilities Tab under the forms section, to the right you will see, 'Create New Capabilities'.

Figure 123: After selecting 'Create New Capability', fill out each drop-down section to the best of your ability and press submit.

4.5.4. Engagement

The Engagement section summarizes the engagement process from pre-planning through plan review and adoption. This should provide an overview of all the planning participants involved, including the required jurisdictional teams, advisory committee, as well as other stakeholders. A broad base of stakeholders should be

included from neighboring jurisdictions, school, police, and fire districts, other agencies, and environmental or community-based organizations.

The participants can be added by navigating to the Roles form, and clicking the button to "Create New Role" (described above). Meetings can be added under the Participation form found under the Forms menu of the navigation panel. Here, users can click to "Create a New Participation Meeting" and then are prompted to enter in meeting details, including date/time, outreach methods, format, agenda, notes, outcomes, and participants. Participants must first be added using the Roles form of the website before they can be linked as meeting participants under the Participation form.

The Planning Team should maintain and organize all meeting information throughout the process so all these details for each meeting can be easily uploaded to the Plan site. For the Niagara County plan, the planning team used Google sheets to track meeting times and participants, while the Box file-sharing system was used to save and organize and share meeting agendas, presentations, and notes. These tools or similar cloud-sharing platforms can streamline the process to summarize meetings in the plan website.

Figure 14: After selecting the Roles Tab under the forms section, to the right, you will see, 'Create New Roles.'

Figure 15: After selecting 'Create New Roles', fill out each drop-down section to the best of your ability and press submit.

4.5.5. Plan Maintenance

The Plan Maintenance section should detail the process for keeping the plan up-to-date over its five-year horizon, including steps for continued public and stakeholder engagement and how the plan will be updated in five years. This process should be reviewed with the County and the advisory committee.

4.6 THE HAZARDS PAGE

The Hazards section includes an overview of all the Hazards impacting the County and pre-loaded data visualizations built off the NOAA NCEI Storm Events Dataset. The eighteen natural hazards represented on the site are all part of the FEMA's National Risk Index (NRI). The panel at the left hand of the public-facing site provides links to separate overviews of each of the eighteen hazards profiled. Each hazard overview includes a hazard characteristics section to define and describe the hazard and a local impacts section to detail the likely and potential hazard impacts on the planning area.

While the MitigateNY website focuses on the eighteen types of hazards laid out by FEMA's NRI, the hazard risk assessment should also gather data and feedback from stakeholders and the public related to man-made hazard concerns and more. These supplemental hazards can be detailed and described under the Other Hazards section of the page (visible in the left-hand navigation panel).

The process used to define hazards of concern, and the hazards of concern by jurisdiction should be included under the "All Hazards – Characteristics" section of the Hazards tab. A record of stakeholder and community feedback regarding hazard events and hazards of concern should also be included on this page.

Visuals such as charts and maps can be added to better communicate the public and stakeholder feedback on hazard events. The majority of content on this page is built into the site using data from the NOAA NCEI Storm Events Dataset. A description of this data source and how it is used on the MitigateNY site should be included in this section. The planning teams and participants should update this information with local knowledge and share that information where possible.

4.6.1. Developing Jurisdictional Annex Hazard Impacts Using Mail Merge in Microsoft Word and Excel

Each jurisdictional annex in the plan will need to provide unique Local Impacts sections for every type of hazard. To facilitate development of this content, the planning team for the Niagara County HMP used a Mail Merge process in Microsoft (MS) Word and Excel. The planning team organized information on past hazard events, exposure, risks, and vulnerabilities for each jurisdiction in an MS Excel sheet. Narrative text on the local impacts of each hazard was developed in MS Word document and placeholders were left where jurisdictional level content would be added from the Mail Merge.

As an example, the Excel sheet included separate columns showing the number of hazard events by jurisdiction and the total damages of past events. These hazard event data columns from Excel are added as Mail Merge fields into the Word doc and integrated into a sentence that presents this information. a Mail Merge is executed to produce separate jurisdictional annexes for each hazard type. The Mail merge fields can include numeric data, such as data collected from FEMA's National Risk Index or other sources, as well as narrative excerpts on jurisdictional information, for increased flexibility to cater each write-up to its corresponding jurisdiction. The planning team found that leveraging the Mail Merge tool created efficiencies in the narrative development for the hazards section. Please see the Mail Merge example in the Appendix and visit Microsoft's support page for more on how to use Mail Merge.

4.7 THE RISK PAGE

The Risk tab of the MitigateNY site includes sections on: Purpose, Vulnerability, Changes in Risk, Floodplain Management, and Dam Safety.

4.7.1. Purpose

The Purpose section provides an overview of the hazard risk assessment and defines terms used. This section includes a Local Orientation which includes geographic, socioeconomic, and historic context of each jurisdiction, focusing on important considerations for hazard mitigation planning. This information can be gathered from previous HMPs, updated to fit the new HMP, and verified by jurisdictional teams during meetings and as they review the plan.

4.7.2. Vulnerability

The Vulnerability section of the Risk tab covers social vulnerability, built environment, natural environment, and critical infrastructure. The Site pre-populates this section with visuals including a social vulnerability map, a built environment inventory, and a list of critical infrastructure and assets. This information is suitable for the plan, but more current, local data is often available.

For the Niagara County HMP, the planning team gathered and analyzed additional updated data on land use and socioeconomics to report in the plan. This includes new data from the US Census American Community Survey for the social vulnerability map, and County parcel data and other sources to update the tables on the built environment and critical infrastructure. Details on data sources and analyses used to generate this content can be found in the Plan.

The Vulnerability section can also summarize feedback on hazard risks from stakeholders and the public. This section on the Niagara County HMP includes charts showing the results from the community survey and maps summarizing stakeholder feedback on hazard concerns. These graphics were designed independently, but graphics can also be generated using other resources such as SurveyMonkey, which was used to distribute the online community survey, and Google MyMaps, which was used to develop maps for stakeholder engagement.

The Vulnerability section of the Risk page also includes the list of Problem Statements and Problem Areas. Problem Statements can be added to the site using the Actions form found under the Forms menu of the admin site's left-hand navigation panel (process described below under "Strategies"). These were collected from jurisdictional teams during the first round of stakeholder workshops focused on the Hazard Risk and Vulnerability Assessment. Jurisdictional teams should verify Problem statements during their final review of the draft plan. For the Niagara County HMP, the Problem Areas section was left hidden as the Problem Statements were not mapped to create resource efficiencies, however locations are described under the Problem Statements table.

4.7.3. Changes in Risk

The Changes in Risk section of the Risk tab covers what changed, open space statistics and the status of previous actions. The Open Space statistics are pre-loaded onto the site from state parcel level information, which is suitable but planning teams can look to update this information using more recent local parcel data.

The What Changed subsection should summarize the major changes in hazard concerns, vulnerabilities and risks across the County since the last HMP update was completed. This information can be gathered through independent research by the planning team while organizing the effort and conducting the vulnerability assessment, and by soliciting feedback from stakeholders and the public on hazard concerns compared to the last HMP via surveys, meetings, or facilitated discussions.

The Previous Actions table shows the status of mitigation actions from the previous HMP. This information was collected from Jurisdictional Teams using online forms as part of the Action workshops, and was loaded onto the

plan using the Actions form found under the Forms dropdown of the navigation panel (see Strategies>Implementation below for more details).

4.7.4. Floodplain Management

The Floodplain Management section should provide an overview of the National Flood Insurance Program (NFIP) and list which municipalities in the County participate in NFIP (a list of NFIP participation can be found under the Municipalities section of the Admin site). The NFIP Problem Areas should point out any locations beyond the designated floodplain where flooding is likely to occur based on the experiences and feedback of jurisdictional teams, the public, or other local stakeholders. This information can be gathered by surveys and through facilitated discussions.

For the Niagara County HMP, the planning team displayed an interactive map of the designated floodplains and asked jurisdictional teams to confirm If it was accurate based on their experience dealing with flooding in their community, and to point out any other areas that have been susceptible to flooding that lie outside of the floodplains. This feedback was collected during the meetings directly via the interactive maps and also recorded in meeting notes. Mapping the problem areas helped delineate where communities are at-risk of flooding and clarified the potential impacts.

4.7.5. Dam Safety

The Dam Safety section provides a list and description of the High Hazard Dams in the County by jurisdiction. The NYS Department of Environmental Conservation (NYSDEC) Dam Safety Program which monitors the structural condition and operational status of dams across the State is used to determine the High Hazard Dams in the County (i.e., listed as Hazard Code C). For the Niagara County HMP, the NYS DEC database of hazards was downloaded to create a static map of Niagara County dams by hazard rating which was uploaded to this section of the plan. The accompanying narrative describes the risks associated with these High Hazard Dams.

4.8 THE STRATEGIES PAGE

The Strategies page of the online HMP includes the following sections: Purpose, Objectives, Capabilities, Implementation, and Response.

4.8.1. Purpose

The Purpose section provides an overview of the plan strategies that describes the objective of plan strategies and how they were developed. There is also space to provide a local orientation behind the strategies for each jurisdiction. In the Niagara County HMP, the Local Orientation of the Strategies section was hidden because the same context to develop Strategies was applied in each jurisdiction, and local orientation is provided in other sections.

4.8.2. Objectives

The Objectives section shows the plan goals and objectives and outlines changes in HMP priorities. The planning team developed the plan Goals and Objectives by reviewing the previous plan, the most recent State HMP, HMPs of other counties, and feedback from the local community and Jurisdictional Teams. Jurisdictional Teams reviewed these Goals and Objectives as part of the Action Workshops and in the review of the draft plan.

4.8.3. Capabilities

The Capabilities section begins with an overview defining the different types of mitigation capabilities and how the inventory of local capabilities was developed. The section describes the County's capacity to address risk by

coordinating mitigation capabilities across jurisdictions, and summarizes the Environmental and Historic Preservation guidelines for hazard mitigation grant recipients. Most of the section is devoted to the Capabilities Table which can be built by accessing the Capabilities forms under the Forms dropdown of the navigation panel of the Admin site. New capabilities can be added using the process previously described under the Planning Process>Local Resources section.

4.8.4. Implementation

The Implementation section of the Strategies tab contains an overview of how mitigation actions were developed and a description of the prioritization criteria used to select mitigation actions. The section includes narrative on the NFIP compliance and repetitive loss strategy where the plan can summarize NFIP claims and repetitive loss properties as well as the process for maintaining compliance. The section also provides space to share implementation resources, such as the FEMA Mitigation Funding Resource Guidebook for NYS and links to mitigation grant programs from DHSES.

The majority of this section is devoted to the table of Proposed Mitigation Actions. Actions can be added to the table using the Actions form accessible under the Forms dropdown of the navigation panel. The "Create New Actions Planner" button opens a form with dialogue boxes and dropdown menus to input required informational fields for proposed actions. There are seven steps of entering action proposals in the MitigateNY form. The planning team for the Niagara County plan used the online form to fill in the required information fields (marked with a red asterisk) and provide General Information and Status Updates for each action (Steps 1 and 7).

For the Niagara County HMP, the planning team collected this information from the Jurisdictional Teams during the Action strategy workshops using online worksheets on Google Sheets. The Google Sheet forms organized required information on proposed actions into spreadsheet format which facilitated the planning team entering this information on the site through the Actions forms. The final copy of this spreadsheet on all the proposed actions was uploaded using the Files tool under the Forms dropdown, and linked within this section of the plan to provide additional information on prioritization, location, and supplemental details of each proposed action.

Figure 16: Create New Actions Planner to populate Proposed Mitigation Actions.

Figure 17: The Actions form to submit proposed mitigation actions and status updates. Under each step, fill out as much of the drop downs as possible. Go through each of the 7 steps before submitting.

4.8.5. Response

The Response section of the plan discusses strategies for evacuation and temporary housing of displaced residents. This includes a map and list of shelters which is built into the website using State data and should be verified and refined with local input from Jurisdictional teams and the County. For the Niagara County plan, a separate list of emergency shelters was compiled from various sources, including FEMA HFILD, State databases, Cunty parcel data, and local feedback, and a static map of emergency shelters was created and added to this section. The Evacuation Plans from the County and local jurisdictions should be summarized and linked to in this section as well. This information should be available from local emergency service departments.

4.9 THE ABOUT PAGE

The About Page of the plan provides a disclaimer, public participation survey, public comment, and appendices. The Disclaimer section was made to include instructions for the public on how to navigate and use the MitigateNY site. The Public Participation Survey subsection was used to promote the community survey while it was active during the planning process, and to summarize the survey process and results once the survey was complete. The Public Comment subsection was used to collect public feedback on the draft plan via a link to a Google Form soliciting feedback on plan contents. The Appendix provided a link to an online Box folder (data-sharing cloud platform) containing existing plans and other resources that were reviewed as part of the local plan integration.

5. Mitigate New York: Suggestions to Enhance the Online Platform

The following serves as a memorandum from UB Regional Institute to NYS Department of Homeland Security and Emergency Services to inform the next phase of website development for the MitigateNY platform (www.mitigateny.org).

5.1 MOST ESSENTIAL ENHANCEMENTS TO THE SITE

5.1.1. Enable users to download printable PDFs of the online plan.

While the online interactive format of the plan has a number of benefits, stakeholders and the public expressed a strong desire to have the option to download a printer-friendly PDF version of the plan. This could be done by adding a "Download Printer-friendly PDF Version" link at the top of each section. PDFs of the jurisdictional annexes and each section of the plan could also be made available by adding a PDF "Plan Download" page with links to download all the files.

5.1.2. Share instructive resources on how to use the site and develop plan content

Resources, tools, illustrated instructions, language and videos guiding site users on how to create content in the site, and navigate the site would be useful, particularly for the planning team and stakeholders who are responsible for building and maintaining the site. This could be accomplished with a separate "How-to" guide, resource document or webpage, or via hands-on learning sessions for stakeholders and planning teams to meet and learn from the site consultant, DHSES, or others with experience using the site.

5.1.3. Simplify login and streamline access for stakeholders to provide direct input

Developing an automated system to create an account username and password to log into the admin site is critical. The planning team needs quick access to explore the many features of the platform and develop plan content. Jurisdictional teams and stakeholders will most likely not use the platform if they do not have a quick and simple way to sign up and log in. A link to "Sign Up" to create a login to account could be added to the top of the page which would be open to all. Or, to keep the login exclusive to stakeholders and planning teams, a login link could be sent via email at the beginning of each County planning process. Planning teams could provide site administrators with a list of who should be sent the login link.

5.1.4. Enable way to upload spreadsheets of required content from jurisdictional teams

In the Niagara County HMP, local jurisdictional teams used spreadsheet forms to provide required plan content, namely the status updates and proposals for mitigation actions, and the inventory of jurisdictional capabilities and resources. The planning team also used spreadsheets to compile all the contact information of stakeholders engaged in the planning process, and to track meetings and participation. These forms and spreadsheets were an efficient way to collect and organize all the required and supplemental information on actions and capabilities, however this content must be entered manually into the site. A tool could be added for users to upload csv files or spreadsheets containing all the required information on capabilities and actions in order to populate the tables of capabilities and actions on the site. Template spreadsheets with detailed instructions could be provided to planning and jurisdictional teams during the process in order to simplify and accelerate plan development.

5.1.5. Edit the list of municipalities in the drop-down menu to select jurisdictional annexes.

The top-right drop-down to select the jurisdiction lists all the Census subdivisions in the County, including many hamlets and designated places which are not established municipalities and do not have local governments. The list of jurisdictions should be edited to include only municipalities with official governments which would be involved in the adoption of the plan, or the planning teams should have access to change which municipalities are in the drop-down.

5.2. OTHER SITE ENHANCEMENTS TO STRONGLY CONSIDER

5.2.1. Offer more flexibility on site development and formatting.

The site formatting is pre-established with limited flexibility which allows users of all technical capabilities to edit and add content on the plan. However, some added flexibility on the format and design of the site would be useful to planning teams and Counties looking to modify the site design to better match their organization or project brand. Users could also be given the option to have more control over site design, such as adjusting the size of the header images at the top of each page, the color themes of the site, the font size and colors. Providing guidance on the sizes/resolutions of images to upload on the site would be beneficial as the planning team noticed limitations and inconsistencies on uploaded images. Also, the ability to embed interactive maps or other tools directly on the site would be an improvement over providing external links to these tools. Lastly, pre-populated content can be openly accessible for planning teams to edit. For example, the text above the Meetings table on the Planning Process page cannot be edited.

5.2.2. Allow users to update data or incorporate annual data updates into site maintenance.

The pre-populated data on the site is a tremendous resource for the planning teams, jurisdictions, and stakeholders throughout the planning process and the duration of the plan. However, this data can quickly become dated. Allowing users to update this data and pointing them to the original sources used could help improve all sections of the plan and keep the plan current through its five-year duration. Alternatively, this data could be updated annually or semi-annually on the backend of the site as part of the regular site maintenance. This pertains to the data from NOAA's storm events database on the hazards page, the vulnerable demographics data maps on the Risk page, community context data on the Home page, and the land use data used to develop the built environment and open space tables on the Risk page.

5.2.3. Simplify organization and navigation of the Admin site with changes to the left-hand panel.

The left-hand panel can be re-organized and re-formatted to more closely align with the plan and streamline navigation of the Admin site. Currently the left-hand panel on the Admin site is organized into separate submenus for Plan sections, Forms, and resources (assets, capabilities). Re-organizing the left-hand panel to match the layout of the plan could simplify navigation (i.e., if the left-hand panel of the Admin site was the same as that of the public site with the Forms accessible in the same section they are located in the plan. Also, the panel currently features icons that all look the same which makes it difficult to navigate. Creating unique icons for each section would further improve navigation of the Admin site. Lastly, adding a back button within the Admin site could help users more quickly load content on the page. Currently the only way to return to the last page visited is to re-click the section on the navigation panel.

5.2.4. Streamline mapping features for simpler stakeholder access and input

The "Scenario Map" tool is an incredibly robust tool that could be very useful to local jurisdictions, the planning team, stakeholders, and the public throughout the HMP process. It could also be valuable for purposes beyond the HMP and to many additional audiences. Opening up access to this resource beyond the Admin site could enhance mitigation plans and the planning process to update and maintain plans. Simplifying the tool and/or providing instructions, how-to videos, or other guidance could promote the use of the valuable tool by stakeholders and planning teams during the HMP process and beyond.

5.2.5. Enable a way to apply the hidden/visible selection for a section at once.

The planning team may opt to hide sections of the plan and choose to address the content that was intended for that section elsewhere on the website. For example, the Development Zones map was turned off on the Niagara County site as this information was covered in a separate map that was uploaded in the Risk section. The option to hide a section of the plan needed to be selected for each jurisdiction separately. Adding an option to make a section Hidden or Visible for all jurisdictions at once would create efficiencies for the planning team.

5.3 SUGGESTED IMPROVEMENTS TO STAKEHOLDER AND PUBLIC ENGAGEMENT

5.3.1. Conduct meetings remotely

The entire planning process for the Niagara County HMP took place from 2021 to 2022 during the COVID-19 pandemic. Due to this, stakeholder and public meetings were conducted online via Zoom. This saved staff time and project costs by limiting travel. It also created resource efficiencies as the online nature of meetings provided opportunities to leverage technology and interactive tools to gather feedback and generate plan content during meetings and in follow-up. During interactive sessions, one member of the planning team facilitated the meeting by joining in-person with local stakeholders on-site. This helped the planning team collect additional feedback and keep stakeholders engaged, as some discussions and points raised can be missed in the remote meeting setting. In-person meetings are still useful to build trust and establish channels of communication, but planning teams should look to use remote meetings as much as possible for the benefits of cost saving and resource efficiencies.

5.3.2. Increasing efficiencies can reduce budgets and lead to other opportunities

The resource efficiencies gained by leveraging technology to conduct meetings remotely and build the site online can lower costs of developing County HMPs, or free up resources to be used elsewhere. For example, resources could be dedicated for more in-depth on-the-ground hazard vulnerability assessments, implementation of mitigation actions, or enhanced engagement practices.

5.3.3. Reach out to a diverse group of stakeholders early on and often.

The Niagara County HMP attempted to engage a broad-base of representations beyond the required jurisdictional teams, however it can be difficult to engage these additional stakeholders that are not responsible for developing plan content and approving the plan. This includes fire, police, school districts, environmental groups, community-based organizations, neighboring jurisdictions, and more. The planning team recommends engaging these additional stakeholder groups as soon as possible in the process– from the community kick-off meeting to initiate the planning process through the release of the draft plan. Getting feedback on hazard concerns, mitigation priorities, and proposed actions from a diverse set of stakeholders is essential to the plan, and early proactive outreach to these groups is essential to get their feedback. County emergency service departments, or other mitigation representatives, may already have standing meetings with some of these stakeholder groups, so these pre-scheduled meetings with additional stakeholders can be utilized to discuss the HMP and collect feedback. Separate direct outreach to these stakeholder groups via phone and email by the planning team and County representatives can help engage these groups.

5.3.4. Update status of previous mitigation actions during the first meeting with jurisdictional teams.

The planning team for the Niagara County HMP began collecting status updates on the mitigation actions proposed in each jurisdiction during the second round of meetings with local jurisdictional teams. This was the same meeting where new hazard mitigation actions were proposed by jurisdictional teams. This process ultimately worked, but in retrospect, the planning team would recommend that others collect the status updates of previously proposed mitigation actions earlier on in the process, either during and immediately following the first round of meetings with jurisdictional teams. Online working documents or spreadsheets can be used to gather this information. Collecting status updates of mitigation actions earlier on will keep the plan timeline on track while helping the planning team and jurisdictions propose more effective, actionable and complete mitigation actions.

6. Appendix/Resources

All Appendix materials are accessible here: https://buffalo.box.com/s/pc9b1xu5jqjl4x7jdm2ziqzjcgzdxbhq

The outer folder of the Appendix includes a file directory outlining all the contents. The appendix includes resources provided by DHSES as well as resources created by the Niagara County 2022 HMP planning team.