

STATE HAZARD ANALYSIS, RESOURCE AND PLANNING PORTAL

The State Hazard Analysis, Resource and Planning Portal (SHARPP) is the State of Ohio's web-based portal for mitigation information. SHARPP contains three broad categories of information: mitigation planning, mitigation projects, and web pages displaying general information on mitigation. SHARPP serves as a repository for state and local hazard mitigation plans and project information, helps the state to meet mitigation planning requirements outlined in 44 CFR 201, and helps promote the importance of mitigation to the public and decision makers. The information contained in SHARPP and some of the portal's functionality is outlined below. SHARPP can be accessed at: *Contact State Hazard Mitigation Officer for current test site address.*

Basic System Design

SHARPP has three levels of input and access to the information available in the web portal. These three tiers are used to control all access to the portal, including but not limited to: which pages are accessible, content on each page, data returned from queries, which data can be edited and ability to upload/download documents. The different tiers and their basic attributes are described below.

Tier 1 - Public

- View-only access to all local planning, project information, and web portal content.
- Ability to create and print reports of data viewable at Tier 1 level.

Tier 2 - County EMA Director/Local Mitigation Plan Keeper/Local Project Managers/Various State Agencies

- Can request a login account from Ohio EMA.
- Ability to upload local mitigation planning information including: mitigation plan documents in a *.pdf format, local HIRA summary, action item summary, vulnerability analysis summary, and plan Crosswalk.
- Ability to upload local mitigation project information for awarded projects including: project specific data, structure specific data, before- and after-project photos, deeds with open space restrictions, and the display of the location(s) of mitigation projects on the SHARPP mapping system.
- Ability to create and print reports of data viewable at Tier 2 level.

Tier 3 - Ohio EMA Administrator(s)

- Create/edit/delete new and existing user accounts and reset user passwords.
- Ability to enter, update, and delete local planning and project information for all communities.
- Review and approve submitted Tier 2 project and planning information prior to posting for Tier 1 access through SHARPP.

- Ability to create and print reports specifically designed for Tier 3 users.

Local Mitigation Plans

SHARPP is a repository for past, present, and future versions of all local natural hazard mitigation plans in the state. These documents are stored as *.pdf files and can be searched and retrieved by county and/or community. Providing easier public access to these documents will help inform citizens about local natural hazard risk and the actions that communities have planned to undertake that will reduce risk. All of the plans in SHARPP were entered by the contractor who developed the application. As local mitigation plans are updated they will be uploaded into SHARPP by local officials responsible for mitigation plan maintenance in their respective communities.

In addition to a digital copy of the plan, local officials provide a summary of their community's Hazard Identification and Risk Assessment (HIRA) as part of the mitigation plan upload process. There is no national or statewide standard methodology for conducting a HIRA. In order to standardize the local data collected, SHARPP utilizes the factors considered in the HIRA

Hazards	Frequency	Response	Onset	Impact	Business	Human	Property
Coastal Erosion	2	1	1	1	1	1	1
Dam/Levee Failure	1	1	1	1	1	1	1
Drought	2	1	1	1	1	1	1
Earthquake	3	1	1	1	1	1	1
Fire	1	1	1	1	1	1	1
Flooding	1	1	2	1	1	1	1
Invasive Species	1	1	1	2	1	1	1
Land Subsidence	1	1	1	1	1	1	1
Mud/Landslide	1	1	1	1	1	1	1
Severe Summer Storms	1	1	3	1	1	1	1
Tornado	1	1	1	1	1	1	1
Wildfire	1	1	1	1	1	1	1
Windstorms	1	1	1	1	1	1	1
Winter Storms	1	1	1	1	1	1	1
Other (Specify):	1	1	1	1	1	1	1
Other (Specify):	1	1	1	1	1	1	1
Other (Specify):	1	1	1	1	1	1	1

Figure 1 – Hazard Analysis Data Entry Screen in SHARPP

methodology used by the State of Ohio (see Appendix I). Local officials use information collected in their mitigation plans to complete the hazard analysis summary screen in SHARPP (see Figure 1). Local hazard analysis summary data are collected for hazards analyzed in the State Hazard Mitigation Plan (SHMP), with the option to provide information on any local hazards.

Since many of the plans currently in SHARPP were entered by the contractor who developed the application, many communities have not populated their initial HIRA summary. As the Mitigation Branch provides training to local officials on how to use SHARPP, and local mitigation plans are updated and uploaded, a HIRA summary will be completed for each plan in SHARPP.

FEMA requires that local natural hazard mitigation plans contain a description of the jurisdiction’s vulnerability to the hazards evaluated in the local hazard analysis. Many local plans contain information on the type and number of residential and commercial buildings and critical facilities affected by a particular hazard. Many local plans also contain estimates of the potential dollar losses to

Hazard	Structures At-Risk				Damage in Dollars			
	Residential	Commercial	Critical	Total	Residential	Commercial	Critical	Total
Coastal Erosion	0	0	0	0	0	0	0	0
Dam / Levee Failure	0	0	0	0	0	0	0	0
Drought	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0
Earthquake	0	0	0	0	0	0	0	0
Flooding	0	0	0	0	0	0	0	0
Invasive Species	0	0	0	0	0	0	0	0
Land Subsidence	0	0	0	0	0	0	0	0
Mud / Landslide	0	0	0	0	0	0	0	0
Severe Summer Storms	0	0	0	0	0	0	0	0
Tornado	0	0	0	0	0	0	0	0
Wildfire	0	0	0	0	0	0	0	0
Windstorms	0	0	0	0	0	0	0	0
Winter Storms	0	0	0	0	0	0	0	0

Figure 2 – Vulnerability Analysis Data Entry Screen

these vulnerable structures. Vulnerability analysis information can be entered into SHARPP as part of the local mitigation plan upload process (see Figure 2). Summarizing local HIRA information in a standardized format allows the state to analyze vulnerability and potential loss to structures based on local risk assessments.

Local officials enter information into SHARPP that summarizes the local mitigation action items identified in their jurisdiction’s mitigation plan. SHARPP captures basic information about the proposed mitigation action including: project lead, cost, potential funding sources, and estimated start and end dates (see Figure 3). SHARPP can generate a report that summarizes the locally proposed mitigation action items in each community. Action items that can be mapped are displayed in the SHARPP mapping system as Areas of Mitigation Interest. Local officials can update the status of these action items as they are implemented to help track progress.

SHARPP Mitigation Action Welcome: montgomery2 [Dashboard](#) [Log Out](#)

[Go Back to Plan](#)

Title:

Priority:

Status:

Estimated Cost:

Project Lead:

Start Date:

End Date:

Details:

Jurisdictions:

Funding Sources: Community Development Block Grant
 Clean Ohio Grant
 Flood Mitigation Assistance Grant
 Hazard Mitigation Grant Program
 Increased Cost of Compliance
 In-Kind (Work or Labor)
 Local Funds
 Pre-Disaster Mitigation Grant

Mitigation Actions: 5% Initiative
 Acquisition
 Dry Floodproofing
 Elevation
 Minor Localized Flood Reduction
 Other
 Planning
 Reconstruction

Figure 3 – Local Mitigation Action Item Data Entry Screen

Communities that are awarded HMA funds to update local natural hazard mitigation plans are required to update their community’s information in SHARPP as a condition of the grant agreement. In accordance with 44 CFR 201.4(c)(2), the State Hazard Mitigation Team also considers the local HIRA and vulnerability analysis information entered into SHARPP when deciding how to prioritize jurisdictions for receiving limited amounts of planning grant funds.

STATE HAZARD MITIGATION PLAN

SHARPP is the repository for past, present, and future versions of the SHMP. Storing *.pdf documents of previous versions of the SHMP will allow for easy retrieval and provide an historic context for past mitigation planning and policy decisions. Providing enhanced access to the current SHMP will help inform citizens about natural hazard risk and encourage local officials to utilize information in the SHMP when updating local

mitigation plans. The public can submit comments on the current version of the SHMP through SHARPP.

The state HIRA methodology considers the following factors when evaluating risk from a particular hazard: frequency, response duration, speed of onset, magnitude, impact on business, impact on humans, and impact on property. Numerical values and associated descriptions assigned to each factor allow hazards to be compared and prioritized. The Hazard Analysis screen in SHARPP is designed to capture local hazard analysis information based on the factors evaluated as part of the state HIRA methodology. Local HIRA and vulnerability analysis information entered into SHARPP can be searched and displayed in the portal. A report summarizing this information is one of the tools that the state uses to analyze and compare risk across the state.

MITIGATION PROJECTS

SHARPP captures and displays key information from awarded mitigation projects in the State of Ohio. The mitigation project information in SHARPP can be searched and reports can be generated on the website that displays queried results. Table 1 summarizes the mitigation project data fields in SHARPP. The data collected for each project may vary depending on the type of mitigation project and whether or not structures are mitigated as part of the project scope of work. The Ohio EMA Mitigation Branch is currently entering data into SHARPP for mitigation projects that have been implemented since 1992.

Table 1 – Summary of Mitigation Project Data Fields in SHARPP

Project Specific Data		Structure Specific Data	
Name	Point of Contact	Address	Parcel ID
Project type	Funding source(s)	Before/After Photo	FIPS Code
U.S. Congressional District	State Congressional District(s)	Structure Benefits/Costs	Building type
Federal/State/Local Share Awarded	Federal/State/Local Share Expended	Construction type	Foundation Type
Hazards mitigated	Project Description	Square Feet	Building Replacement Value
Watershed	Benefits/Costs	Contents Value	Flood Zone
Expected Annual Benefits	Project Closeout Date	Last Date of Inspection	Finished Floor Elevations (if applicable)

The location of mitigated structures is displayed in the SHARPP mapping system. SHARPP can search for the location of mitigated structures by county/community, address, latitude/longitude, or by browsing the interactive map. When viewing the map at the state level, project locations are displayed. Clicking a particular project icon on the map will zoom the viewer to a community/street level view. The location of individual structures in a particular project is displayed on the map in a community/street level view. By clicking on the icon for a particular structure, the public can view structure-specific information (see Table 1 for a partial list), including a copy of the deed restrictions for properties acquired with HMA funds.

Local mitigation projects can be linked to mitigation actions identified in local mitigation plans that have been entered into SHARPP. Linking mitigation projects to action items

identified in local mitigation plans is a requirement for HMA funding eligibility and helps to reinforce the importance of a comprehensive local mitigation strategy.

PROPERTY MONITORING AND REPORTING

The acquisition of flood-prone structures and the conversion of the land to open space is a priority mitigation activity in the State of Ohio. 44 CFR 80.19 outlines the land use and oversight criteria for properties acquired with HMA funds. Section 80.19(d) requires the subgrantee to submit a report to the FEMA Regional Administrator every three years certifying that the subgrantee has recently inspected the property and that the property continues to be maintained consistent with the open space deed restrictions. SHARPP assists subgrantees to meet this requirement.

As an acquisition project is completed and added to SHARPP, the closeout date of the project is entered into the database. SHARPP is designed to automatically send email reminders to the current County EMA director as the three year reporting deadline approaches. The email will request that the County EMA Director verify that the subject property(ies) is(are) being maintained according to the property deed restrictions by responding to the email. Upon receipt of the email from the County Director, Ohio EMA staff updates SHARPP to reflect the most recent inspection date.

REPETITIVE LOSS PROPERTY TRACKING

Repetitive loss properties are residential or non-residential properties that have received one or more National Flood Insurance Program (NFIP) claim payments. A severe repetitive loss property is a residential property that is covered under an NFIP flood insurance policy and:

- Has at least four NFIP claim payments over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or
- For which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.
- At least two of the referenced claims must have occurred within any ten year period, and must be greater than 10 days apart.

The State of Ohio targets these properties for mitigation through all of FEMA's HMA grants. The Ohio EMA tracks the mitigation of repetitive loss and severe repetitive loss properties through SHARPP.

LOSS AVOIDANCE

According to 44 CFR 201.5(b)(2)(iv), states with an Enhanced mitigation plan must document a system and strategy by which the State will conduct an assessment of completed mitigation actions and include a record of the effectiveness (actual cost avoidance) of each mitigation action. There are various strategies that could be

implemented to demonstrate the effectiveness of a mitigation project. One methodology for river flood mitigation projects is outlined in the FEMA December 2009 publication titled, *Loss Avoidance Study, Riverine Methodology Report*. Using this methodology, actual losses avoided are estimated by comparing damage that would likely have been caused by the same flood events without the mitigation project, with damage that actually occurred with the project completed. In order to estimate the actual losses avoided as the result of implementing a particular mitigation project, data are needed on the pre- and post-conditions of the subject property, in addition to other data collected throughout the project. All of the project-specific data required as input for a loss avoidance study are collected through SHARPP (see Table 2).

Table 2 - Data Required for Riverine Loss Avoidance Study Collected by SHARPP

Project Cost	First Floor Elevation(s)	Latitude/Longitude	Address
Parcel ID Number	Building Type	Building Construction	Number of Stories
Square Feet of Living Area	Foundation Type	Building Replacement Value	Building Contents Value
Basement Information (Finished/Unfinished & Square Footage)		Garage Information (Finished/Unfinished & Square Footage)	

SHARPP also quantifies losses avoided by calculating the aggregate dollar amount of losses avoided by implementing flood damage reduction projects in Ohio. This calculation is based on the expected annual benefits (i.e. losses avoided) for each mitigated structure as computed by FEMA benefit-cost analysis software at the time of project application. The expected annual benefits are multiplied by the number of years that the project has been closed (up to the “useful life” of the project) and then totaled for all structures to produce a dollar estimate of the losses avoided to date.

RISK MAP

As a Cooperating Technical Partner with FEMA, Ohio EMA is partnering with ODNR and STARR (FEMA’s contractor) to complete a pilot Risk MAP project in Columbiana County. This project involves the collection and identification of Areas of Mitigation Interest throughout the county. The partnership will leverage and help populate information already captured by SHARPP.

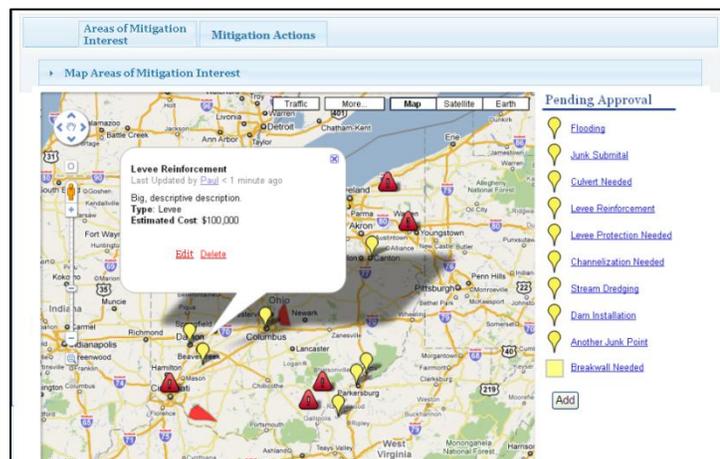


Figure 4 – AOMI Tool in SHARPP

An existing STARR Google map-based tool was refined to assist capturing this information in a standard format, and it will be incorporated into the SHARPP mapping tool. It is expected to improve the efficiency and effectiveness of soliciting these areas of mitigation interest and will be

delivered at the conclusion of this project for national consideration as a best practice model and approach.

Specific Areas of Mitigation Interest data sets that were evaluated include:

- Flow pinch points producing significant backwater
- Areas of repetitive flooding and flood losses outside and inside of the SFHA
- Locations of structure clusters that are suspected to be within the 10-year flood hazard
- Areas of proposed flood mitigation projects
- Locations where mitigation has successfully occurred
- Areas of significant erosion and/or deposition

Results were incorporated into a countywide Risk Map to highlight specific locations where flood risk reduction measures should be considered. The findings were summarized and communicated during the standard Open House meeting and messaged in a manner consistent with FEMA's flood risk outreach methodology. Final messaging included overviews of previous and current mitigation planning efforts and best practices for implementing risk reduction measures such as smart community planning, flood insurance, mitigation projects and Hazard Mitigation Assistance options.

The identification of these Areas of Mitigation Interest will help establish the link between planning and project development. Identification of these areas leads to mitigation planning and mitigation actions, which will lead to mitigation projects. Therefore, the collection and maintenance of these data are crucial to demonstrating the success of mitigation planning efforts.

SEARCHES AND REPORTS

All information in SHARPP can be searched and retrieved. Search results and reports are viewable on the website and in a printer-friendly format. The information in SHARPP can be searched by:

- Navigating through the web portal to "search" for documents and information using the interactive map and web browser,
- Searching for information using a drop-down filtering system, and
- Utilizing the search function that is part of most web pages that will allow the user to search by entering key words.

SHARPP was designed to generate reports that are frequently used by Mitigation Branch staff in a *.pdf format. Easy retrieval of this information allows Mitigation Branch staff to more efficiently respond to mitigation related inquiries.

As the local mitigation plan and project data in SHARPP increase, many of these reports will be integrated into future SHMP updates. Following is a summary of several of the formatted reports:

- Statewide local hazard mitigation plan status including: FEMA approval date, local adoption date, and plan expiration date.
- Statewide summary of mitigation actions proposed in local hazard mitigation plans sorted by county and community.
- Statewide summary of mitigated properties that can be organized by: funding source, county, jurisdiction, mitigation activity, or hazard type.
- Statewide summary of local hazard identification, risk assessment, and vulnerability information entered into SHARPP by local officials.
- Statewide summary of mitigated repetitive loss and severe repetitive loss properties sorted by funding source.
- Mitigation project report that can be sorted by county, community, mitigation action type, hazard type, or state/federal congressional district.
- Statewide summary of damages prevented (based on benefit cost analysis data) that can be sorted by county, community, or state/federal congressional district.
- Statewide summary of local, state and federal funds spent on mitigation that can be sorted by county, funding source, or state/federal congressional district.
- Total amount of mitigation funds spent statewide based on funding source.
- Total number and location of substantially damaged structures mitigated in the state.