

# Wisconsin - Substantial Damage Implementation Plan



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## Introduction

Local communities must make substantial damage (SD) determinations part of their routine responsibilities as members of the National Flood Insurance Program (NFIP). The State NFIP Coordinator is responsible for developing an implementation plan to ensure that local officials complete damage inspections following a flood and follow through, as necessary, with written substantial damage determinations and enforcement. Uniform implementation of the plan will increase accuracy of assessments and consistency between communities.

Damage estimates are a critical tool in reducing flood losses in our state. In 2018, over 1,300 residents of the state received direct financial assistance from FEMA for damages they suffered during flood events. Wisconsin communities that have suffered extensive and frequent flooding have used substantial damage determinations to mitigate losses. Additionally, communities have chosen to regulate to higher standards than the Federal and State minimums to reduce flood losses and the effects of extreme weather events within their communities.

This implementation plan will address the WDNR annual outreach program, including state guidance documents, damage assessment training, post-flood actions, and coordination with FEMA during disaster declarations.

Two FEMA documents provide additional guidance to complete the implementation of this plan:

- [\*Substantial Improvement /Substantial Damage Desk Reference, FEMA P-758, May 2010\*](#)
- [\*Substantial Damage Estimator \(SDE\) User Manual and Field Workbook, FEMA P-784, August 2017\*](#)

## Roles and Responsibilities

The State NFIP Coordinator provides technical assistance and monitors community performance of duties performed regarding substantial damage. Specifically, the State NFIP Coordinator:

- Identifies communities affected by flood events
- Maintains communication and provides technical assistance to local floodplain managers
- Provides an annual damage assessment training workshop at the Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) conference
- Provides outreach training to local floodplain administrators regarding their responsibilities and training opportunities
- Contacts local floodplain administrators immediately following flood events and provides the Flood Damage Assessment Packet (Appendix A)
- Coordinates community requests for training for post-flood estimates in the field post-flood
- Coordinates with the WDNR staff to flooded communities to coordinate damage estimates training
- Coordinates with the State Hazard Mitigation Officer for disaster declaration, damage assessments and mitigation opportunities.

Local community floodplain managers are responsible for regulating development in the floodplain, issuing permits and enforcing their SD and substantial improvement (SI) regulations. Their duties include to:

- Identify and train staff to conduct damage assessments

- Conduct damage inspections of structures within the floodplain
- Establish damage estimates for each impacted structure
- Establish market value for each damaged structure
- Make SD determinations
- Make SI determinations
- Issue damage determination letters
- Issue permits for repairs and enforce mitigation compliance

## Pre-Flood Preparedness

WDNR will help local communities gain an understanding of the damage assessment and substantial damage determination process prior to a flood. Local communities must be encouraged to determine what methods they will employ for estimating damages and calculating the present equalized assessed value of buildings prior to experiencing a flood event. WDNR will implement an outreach program and provide SD training to increase compliance and statewide uniform compliance to FEMA and State substantial damage standards across the state.

### Annual Outreach and Training

The State NFIP Coordinator shall conduct an annual outreach program under the FEMA CAP-SSSE Grant. The training will address damage assessment tools including the state's preference for the use of FEMA's Substantial Damage Estimator software. Community officials will be encouraged to take the FEMA Independent Study Courses, IS-284. A [Using the Substantial Damage Estimator 3.0 Tool](#) and IS-285 [Substantial Damage Estimation for Floodplain Administrators](#).

The Flood Damage Assessment Packet and the Substantial Damage/Substantial Improvement Permit Packet will also be distributed at the training.

The planned outreach and training include:

1. Articles in the WDNR Floodplain/Shoreland quarterly newsletter sent
2. Articles in the Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) Quarterly newsletter sent to members
3. Presentations at the annual WAFSCM conference in addition to conducting WDNR training workshops
4. Presentations to county floodplain committees and municipal engineers
5. Presentations at building official's at conferences

The State NFIP Coordinator and other WDNR employees should complete the following FEMA online courses as preparation:

- IS- 284a [Using the Substantial Damage Estimator 3.0 Tool](#)
- IS-285 [Substantial Damage Estimation for Floodplain Administrators](#)

## Post-Flood Damage Assessments

Damage assessment are required for all buildings located in a community's mapped floodplain.in order to determine which buildings are substantially damaged. A building is substantially damaged when the cost to repair is equal to or greater than 50% of the building's equalized assessed value prior to the event.

There are four steps to the substantial damage determination process:

1. Determine cost to repair damages
2. Determine and calculate equalized assessed value of the building prior to the damage
3. Determine percent damage and issue a written SD determination for all damaged structures
4. Require permits to complete repairs, and/or mitigation if substantially damaged

To complete item #3, the local community must send a written SD determination letter explaining the outcome of the determination. If the structure is substantially damaged, the letter should explain that the building must be brought into compliance with local floodplain regulations. Compliance can include elevation of the building, demolition, relocation outside of the floodplain or floodproofing for non-residential structures. If the structure is not substantially damaged, the letter should explain the need for floodplain permits for any flood damage repairs or other improvements to the structure.

### Windshield Surveys and Mapping

Immediately following a flood, communities should identify high water marks and damaged areas. Local community floodplain managers and emergency managers should assign staff to photograph and document high water marks and map the areas which have impacted buildings. Public Works staff and Community Service Officers can often fill this role. Staff on light or modified duty may be available to do this survey. Highwater marks can be identified on topographic maps to better define the area with damaged buildings.

During any major flood event, the WDNR Floodplain Mapping Section may also be in the field surveying high water marks. Local officials can contact WDNR to determine if the DNR survey was done locally and if so, obtain this data.

Once the impacted area has been mapped, a windshield survey can be completed to conduct a quick assessment. Buildings that are severely damaged can be “tagged” if they are deemed unsafe to enter. This mapping will also be used to identify any detailed assessment follow up that is needed.

### Door-To-Door Assessments

The WDNR recommends the use of FEMA’s damage estimating software, SDE Version 3.0 and the associated worksheets to determine the extent of damage. It saves valuable time during a flooding crisis if communities prepare in advance of a flood by creating files for each floodplain property and prepopulating the database with information including address, size and type of building, base flood elevation, etc.

Next, the local community determines how they wish to conduct a damage assessment. Flooding that impacts a small number of structures may be handled by the local floodplain manager and/or building inspector using estimates by a qualified contractor, a flood insurance adjustor, or a construction cost estimator. They can work with the individual property owners to complete the assessments and damage determinations. The Flood Damage Assessment Packet includes an example SD determination letter.

For widespread flooding, the community may need assistance to complete their assessments. In most cases, the State NFIP Coordinator will have already contacted the local official and may be assisting with damage assessments. The community can also work with other communities and request help from other local inspectors and staff to help complete the damage inspections.

## Damage Assessments

### Wisconsin Flood Damage Assessment Packet

WDNR Flood Damage Assessment Packet included in this plan, is distributed to communities as part of our annual outreach and training and is part of our disaster response. The packet includes:

- 5 step damage assessment process
- Damage assessment inspection form
- Simplified damage assessment based on flood depth
- Recommendation for use of SDE software
- Sample notices for inspected buildings
- Sample press release
- Sample substantial damage determination letter

### FEMA's SDE Tool

The FEMA Substantial Damage Estimator (SDE) version 3.0 computer program is the state recommended method for completing damage assessments. The Flood Damage Assessment Packet provides details on locating the program and the recommended online guides listed below.

- [SDE Read Me – SDE 3.0 Tool Installation Guide.pdf](#)
- [FEMA P-784, Substantial Damage Estimator \(SDE\) User Manual and Field Workbook: Using the SDE Tool to Perform Substantial Damage Determinations](#) (August 2017)
- [FEMA Substantial Damage Estimator Best Practices](#) (August 2017)

### Market Value Determination

The market value should be determined on the present equalized assessed value of the structure. The city, village, township or county tax assessor should be consulted to determine the chosen multiplier. The owner may appeal their real estate assessments to the local community through the Board of Review process.

## Disaster Response Coordination

### DNR, WEM and FEMA

Over 255 river gages can be checked on a daily basis looking for flood stage predictions. Rainfall is monitored throughout the state on a daily basis as well.

The following websites are monitored:

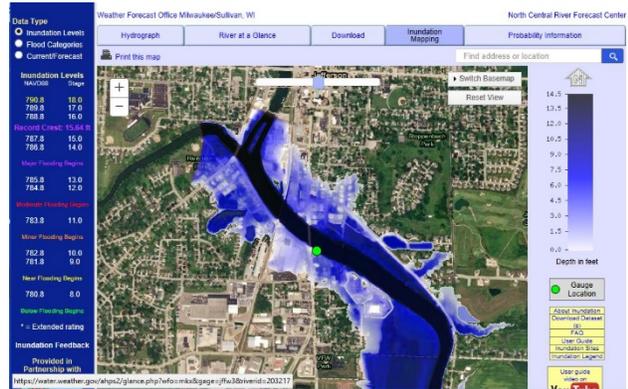
- [NOAA/ National Weather Service, River Observations/ River Forecasts](#)
- [USACE -Rivergages.com](#)
- [Advanced Hydrologic Prediction Service Precipitation Analysis](#)

During major flood events, WDNR provides specific data to Wisconsin Emergency Management (WEM) on structures, including dams and levees, or populations at risk. This forecast data is used to allocate state resources for flood warning, flood fighting, and public safety. When WEM has opened the Emergency Operation Center, WDNR has representation and participates in the state-wide response. During extreme flooding events, WDNR staff go into the field to monitor and report on flood situations at areas of concern, such as levees and dams and to ground truth floodplain maps.

If a federal flood declaration is enacted, WDNR and WEM are active members of the Federal Hazard Mitigation Strategy. This strategy effort involves close coordination with FEMA and all of the state and federal partners to establish and implement the state's disaster recovery strategy.

### Structures at Flood Risk

WDNR will continue to coordinate with the National Weather Service (NWS) to develop flood inundation map for communities. The NWS Inundation Mapping Interface is a web-based tool that provides flood inundation maps that show where flooding may occur over a range of flood events and are connected to real-time and forecasted river levels at stream gages. The maps display the extent of flooding and the predicted flood depth; indicating when roadways, streets, buildings, airports, etc. are likely to be impacted by floodwaters. The interactive maps are a user friendly visual tool which enables local officials and property owners to make informed decisions to mitigate the flood risk, provide an adequate and timely response during a flood, and promote preparedness. This improve tool can be used to protective measures and evacuation options prior to floods, as well as, assist in identifying cost-effective mitigation measures, thus lowering future response, repair and recovery costs.



[NOAA NWS Link to inundation mapping tool: https://water.weather.gov/ahps/inundation.php](https://water.weather.gov/ahps/inundation.php)

There are currently 10 gages in Wisconsin with published Flood Inundation Maps (FIMs). FIMs are currently available for 5 gages on the Rock River, 3 gages on the Upper (Illinois) Fox River, 1 gage on Cedar Creek, and 1 gage on the Milwaukee River. The WDNR is currently developing FIMs for the gage on the Wisconsin River near Portage and will to continue working with the National Weather Service to develop additional maps in the future.

### Administration and Enforcement

WDNR will maintain communication impacted communities to ensure damage assessments, substantial damage determinations and required mitigation are completed. Flood insurance claims can be reviewed for evidence of potential substantial damage. The WDNR will contact communities to discuss the insurance data. The State NFIP Coordinator will assist with completing damage assessments and substantial damage determinations, as needed.

In the event of large-scale flooding, the State NFIP Coordinator and other WDNR staff will participate, as requested, in public meetings to explain the NFIP requirements.

The State NFIP Coordinator will distribute the Substantial Improvement/Substantial Damage Permit Packet Template and Tracking Spreadsheet (Appendix C) to local communities. The packet can be used to simplify the permitting process. The packet contains an explanation of SI and SD, costs to includes and excludes, cost estimate worksheets, and affidavits for the building owners and contractors.

## Local Substantial Damage Plan Template

WDNR has developed the Local Substantial Damage Plan Template (Appendix D) to help communities plan in advance to complete flood damage assessments. Each Flood is unique, but local leaders and/or staff generally know where the flood risk in the community. Staff can be trained, maps can be prepared, and files on structures can be created, all in advance of a flood. The template includes the use of the state's Flood Damage Assessment Packet and Substantial Improvement/Substantial Damage Permit Packet.

[Appendix A: State of Wisconsin Flood Damage Assessment Packet, 2020](#)

[Appendix B: Substantial Improvement/Substantial Damage Permit Packet Template and Tracking Spreadsheet](#)

[Appendix C: Local Substantial Damage Plan Template](#)