CHAPTER 2 – THE NATIONAL TOOL (NT)

FEMA's National Tool (NT) software was developed to help catalog floodprone structures and to determine potentially appropriate mitigation measures. It is explained in detail in the *National Flood Mitigation Data Collection Tool Guide* (FEMA 497). This chapter provides an overview of how the National Tool works.

The ultimate goal of the NT is to provide a standardized, systematic approach to collecting and interpreting property data and mitigation project development. While the focus of the NT is on data collection for repetitive loss (RL) properties, it can also be used to gather information related to flood risk, building construction, and building value for any structure.

2.1 Starting Data

The NT is designed to encourage a comprehensive sweep for information pertinent to each structure. Data fields within the NT require information from a variety of sources, including the National Flood Insurance Program (NFIP) policy information; community building, tax, and historical flood records; and field reconnaissance. However, the NT can be used with cursory or limited data or with lots of detailed data, if available.

It is best to start using the NT already populated with readily available flood insurance data on each property. BureauNet is a database maintained by the NFIP's Bureau and Statistical Agent and access is available through FEMA. The community can ask the FEMA Regional Office (see Appendix F) or the NFIP State Coordinating Agency (see Appendix H) to provide "drill down" summaries of flood insurance and claims information. The drill downs contain such information as:

- Dates of claims
- Value of claims paid
- Property's insured status
- Property address
- Current policy holder's name
- Last claimant's name
- Mitigated status
- Mitigation actions and funding sources (where applicable)

This information can be used to identify general areas of repetitive flooding, locate clusters of floodprone structures, and determine which structures have incurred the most frequent or severe losses. These data can be used to prioritize further investigations and field data collection efforts.

The data will be provided in a Microsoft Excel spreadsheet format that can then be uploaded into the NT through the Utilities function. For additional information about how to import data into the NT, see the *National Flood Mitigation Data Collection Tool Guide* (FEMA 497).

2.2 NT Contents

The NT is initially populated with NFIP data. Data fields within the NT require supplemental information collected from several sources. The NT is organized into two basic sections:

- **Limited Data View** ("Limited Data"). This view enables the user to enter data from a brief visual inspection of the property; limited communication with the property owner, occupant, or neighbor; and basic flood risk data from the Flood Insurance Rate Map (FIRM) or Flood Insurance Study (FIS).
- **Detailed Data View** ("Detailed Data"). This view is suitable when a more thorough inspection of the property and its surroundings is conducted as well as when local or State officials are contacted for structure-specific information and coordination of on-site data collection efforts.

2.2.1 Limited Data View

The Limited Data View includes three main subsections or "tabs."

Address and Updates (Figure 2-1)

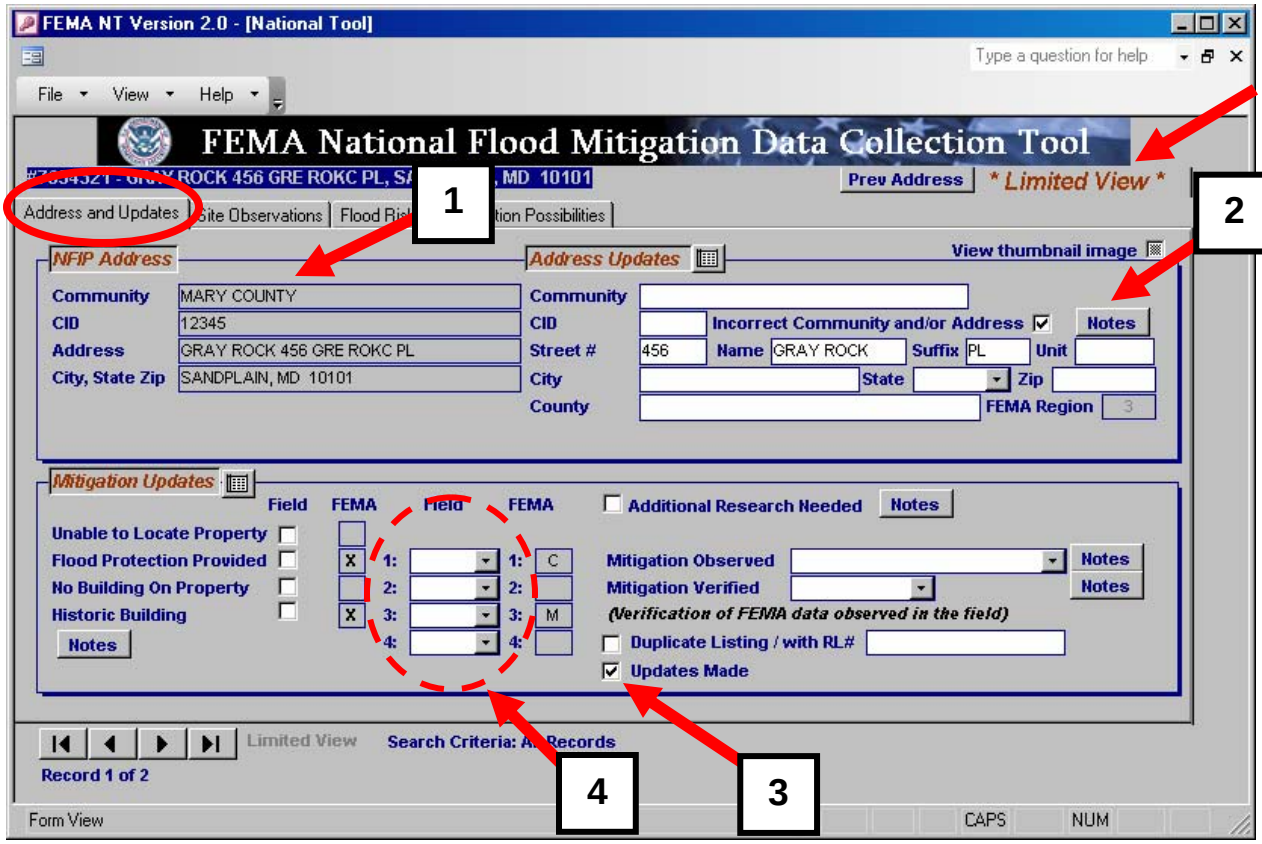

Figure 2-1. *Address and Updates* tab

1. The "grayed out" boxes for the *NFIP Address* are imported from the BureauNet Data and represent information that cannot be manipulated by the user. The correct location

information is important in writing and executing all legal documents, such as contracts and agreements.

2. Changes made to any part of the address (e.g., incorrect spelling) should be noted by checking the box for *Incorrect Community and/or Address*.
3. Updates of any nature are denoted by checking the *Updates Made* box.
4. Mitigation measures observed on the site can be recorded in the *Field* menus. A drop down menu lists potential options to choose from. Past mitigation efforts should be studied closely to determine what has or has not worked in the past. This will help in avoiding future inappropriate or ineffective mitigation approaches.

Site Observations (Figure 2-2)

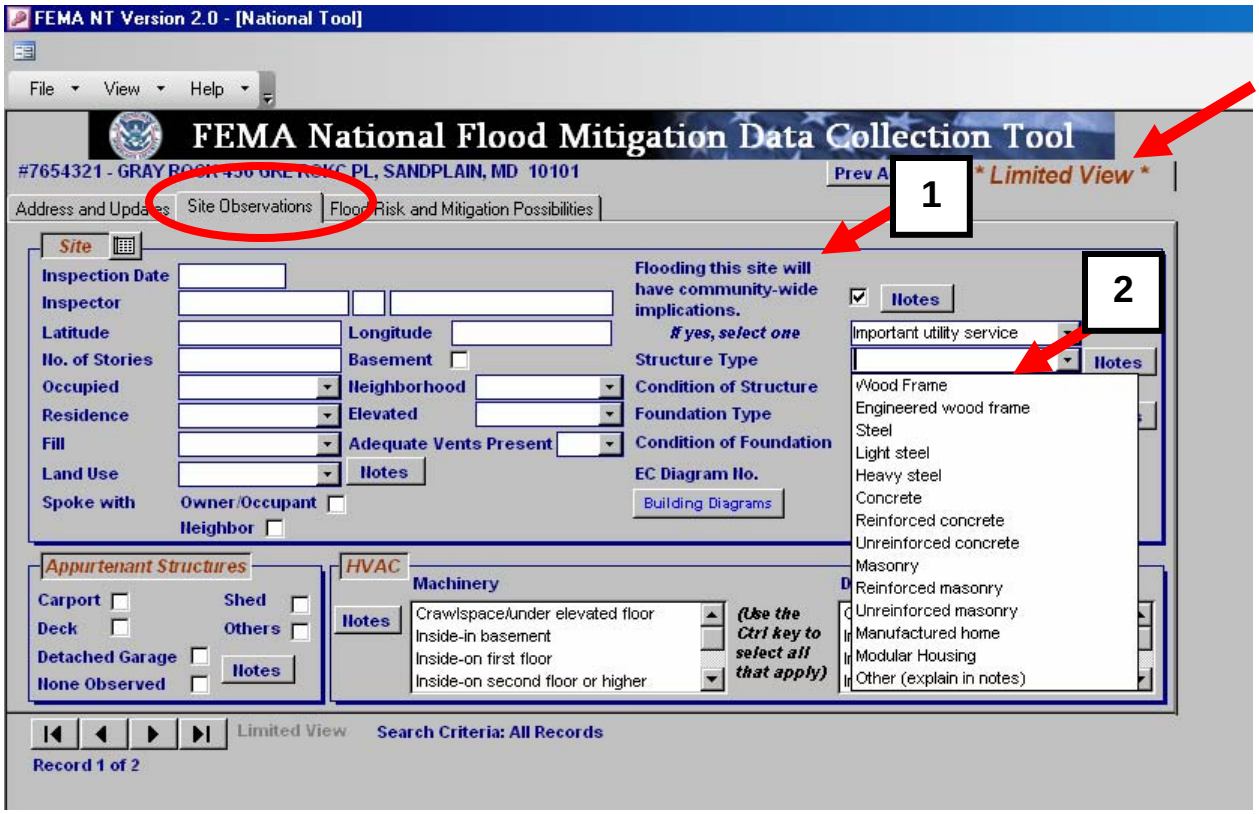

Figure 2-2. *Site Observations* tab

The *Site Observations* tab contains some of the information regarding the physical characteristics of the building to be mitigated. It may need to be supplemented by detailed investigation, but will greatly facilitate the initial decision-making process regarding suitability and type of mitigation measure to select.

1. Checking the *Flooding this site will have community-wide implications* box indicates whether or not flooding will have a critical impact on the community.

2. Additional drop down menus on the Site Observations tab include *Structure Type*, *Condition of Structure*, *Foundation Type*, and *Condition of Foundation*. The particular menu shown is for *Structure Type*.

Flood Risk and Mitigation Possibilities (Figure 2-3)

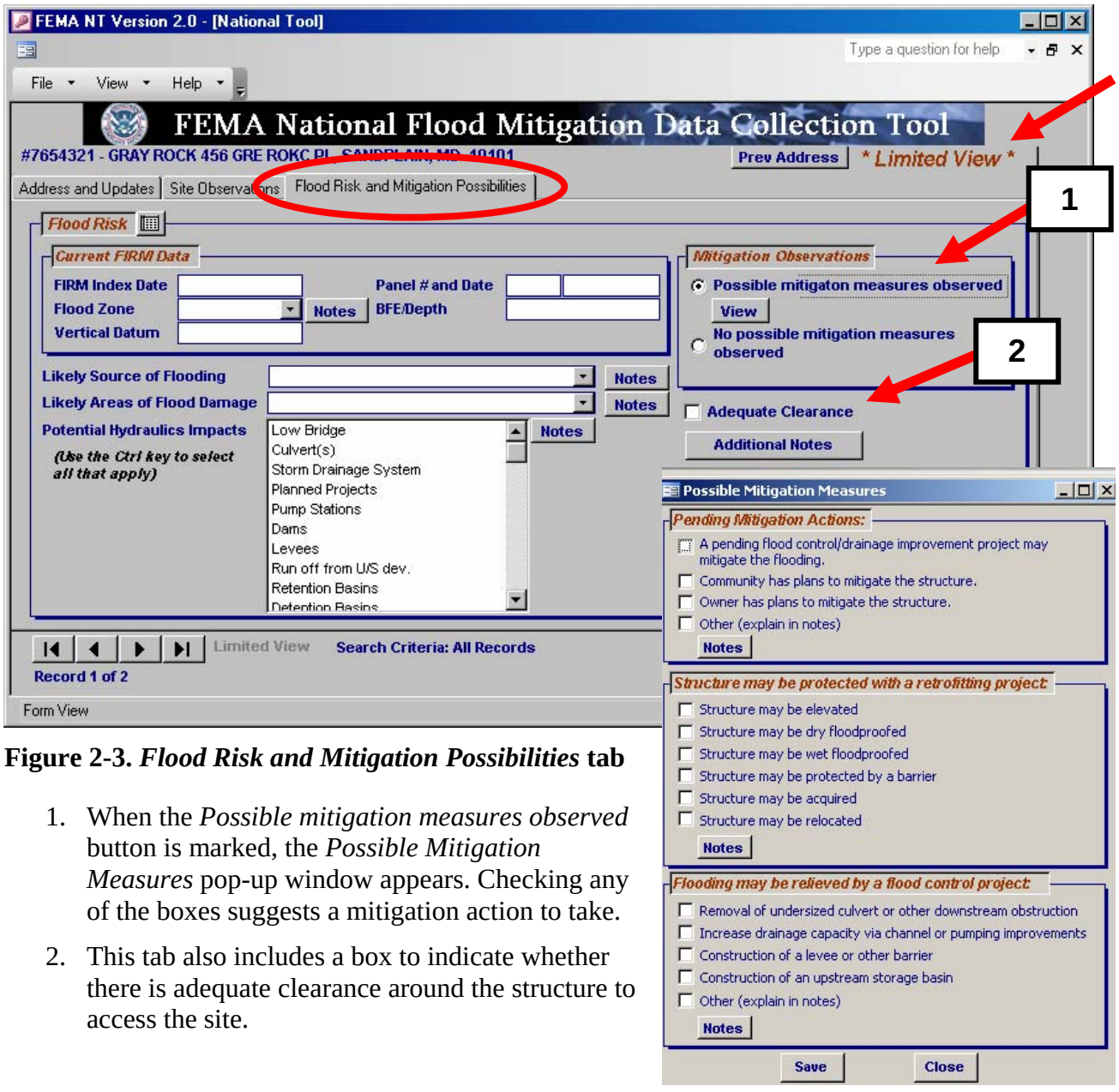

Figure 2-3. *Flood Risk and Mitigation Possibilities* tab

1. When the *Possible mitigation measures observed* button is marked, the *Possible Mitigation Measures* pop-up window appears. Checking any of the boxes suggests a mitigation action to take.
2. This tab also includes a box to indicate whether there is adequate clearance around the structure to access the site.

2.2.2 Detailed Data View

The Detailed Data View includes four main subsections or "tabs."

Additional Site Information (Figure 2-4)

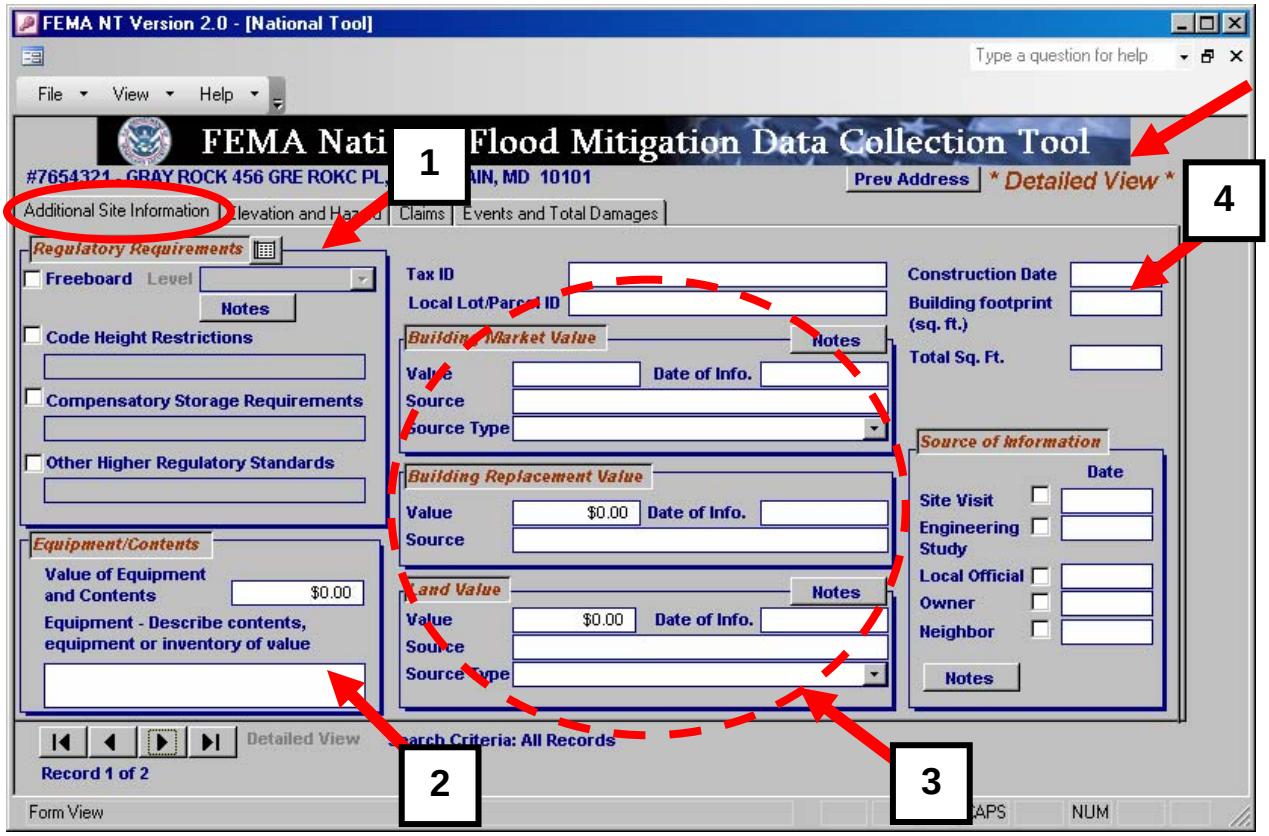

Figure 2-4. *Additional Site Information* tab

1. *Regulatory Requirements* has information on local regulatory requirements related to floodplain management. The local regulatory codes will include relevant requirements, including more restrictive requirements related to freeboard, height restrictions, or storage requirements.
2. *Equipment/Contents* is available if specialized equipment such as machinery or high dollar contents that might be found at a manufacturing or retail site are present. The information will accompany other costs in assessing the benefit/cost ratio (BCR) of a project.
3. *Building Market Value, Building Replacement Value*, and *Land Value* information is generally obtained from the county tax assessor. This information will be of primary importance in determining if substantial improvement requirements are applicable and is essential in the benefit/cost process.
4. *Building footprint*. This information will be useful in confirming property values and in indicating the potential mitigation alternatives.

Elevation and Hazard (Figure 2-5)

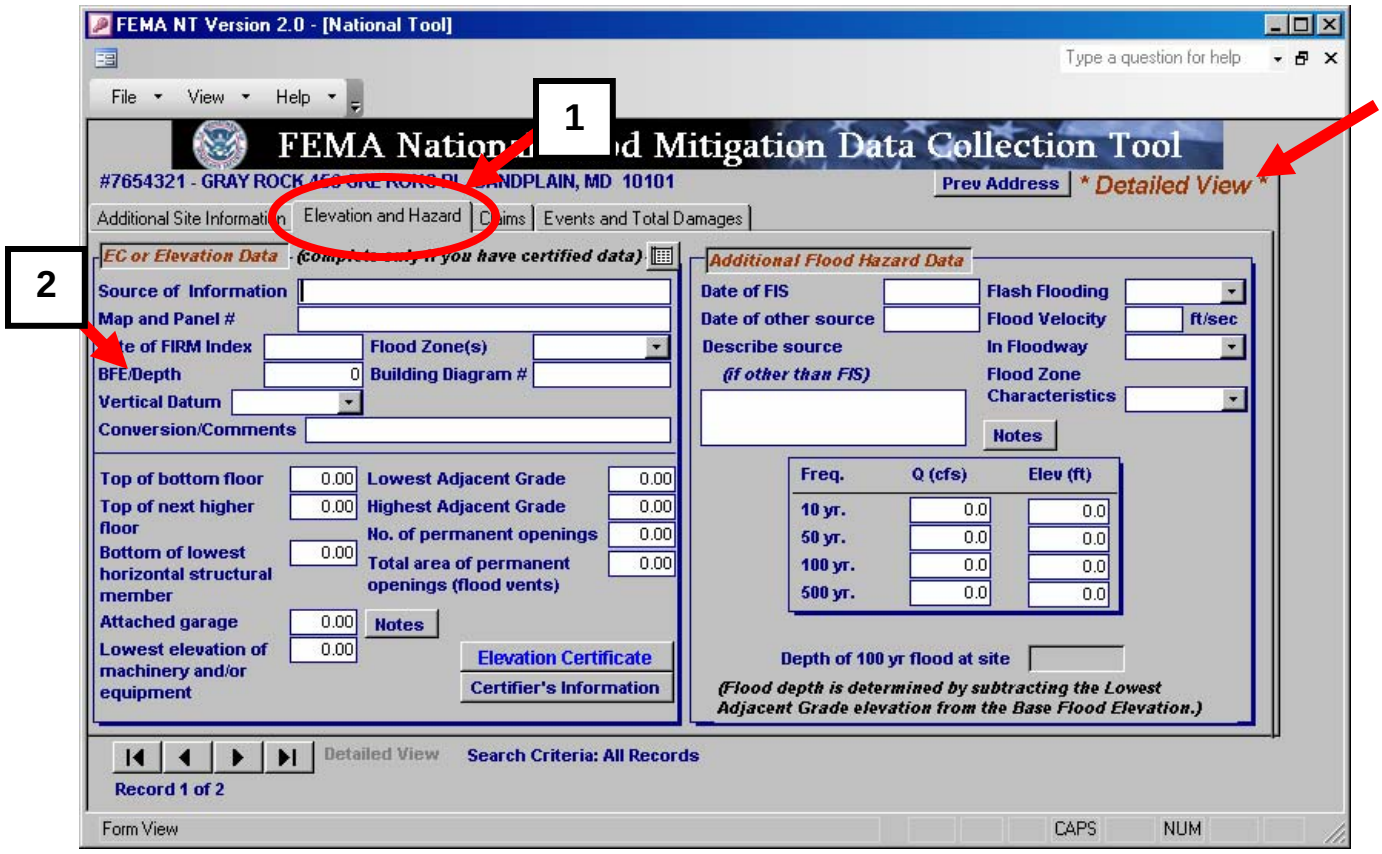

Figure 2-5. *Elevation and Hazard* tab

1. The *Elevation and Hazard* tab contains the required elevation data. The data listed for collection in the *EC or Elevation Data* section is the same information collected in Sections B and C of a FEMA Elevation Certificate. This section contains additional information that was previously collected by an engineer, surveyor, or qualified local official from the FIRM or FIS, as well as surveyed building elevations.
2. See Sections 2.3.1 through 2.3.4 for sources of base flood elevation data.

Claims (Figure 2-6)

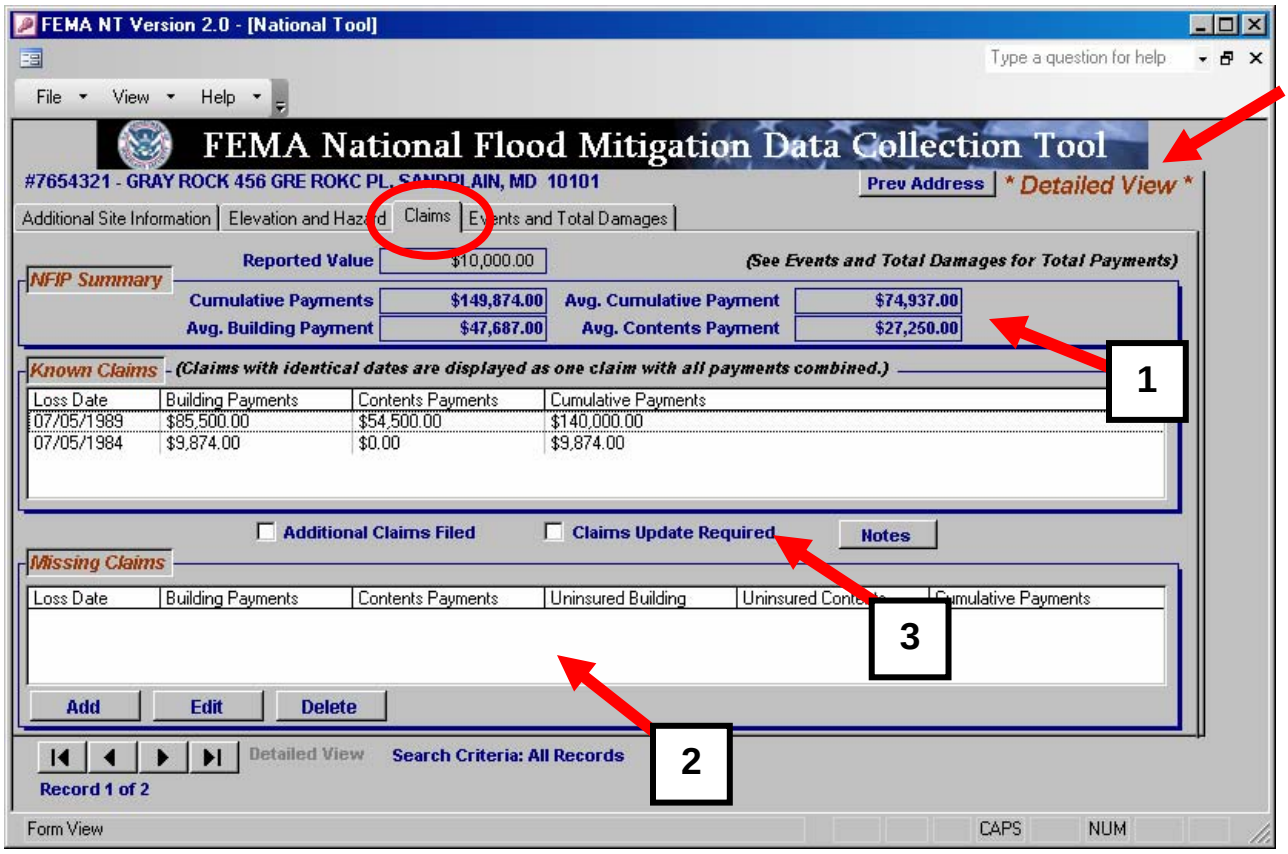

Figure 2-6. *Claims* tab

1. The *Known Claims* in the *NFIP Summary* section on the Claims tab includes a summary of past NFIP claims data on the structure.
2. The *Missing Claims* section provides an opportunity to add additional or missing claims.
3. Checking the *Claims Update Required* box signifies that added claims should be captured as part of the official record for the property.

Events and Total Damages (Figure 2-7)

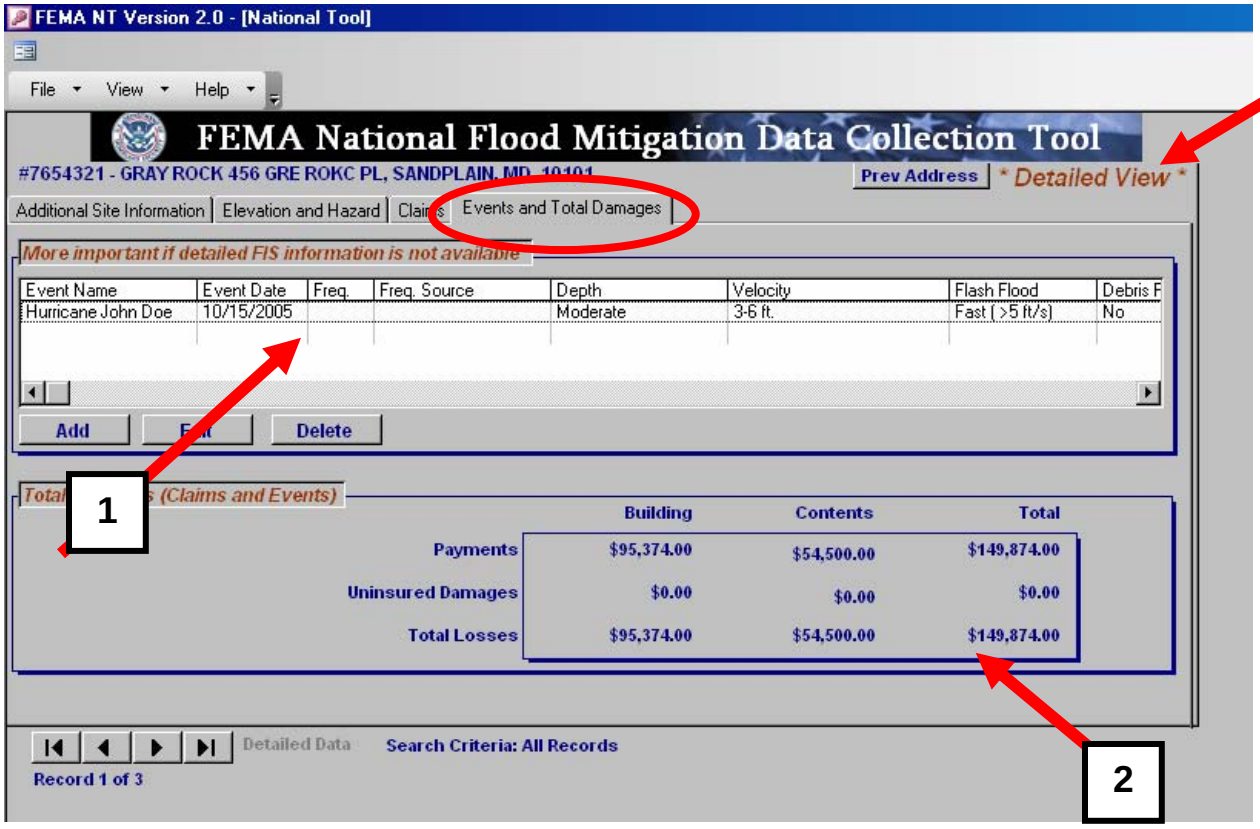

Figure 2-7. *Events and Total Damages* tab

1. Information about specific uninsured flood events by name and date, including data about frequency, source, depth, velocity, damages, etc., can be entered and viewed in the area designated.
2. The *Events and Total Damages* tab also contains the summary and totals for past events and claims made under the NFIP. The claims and damage information is used to assist in the development of benefit/cost ratios necessary to select the appropriate mitigation measures.

2.3 Additional Sources of Information

Other sources of information identified in this subsection are either related to obtaining BureauNet data or provide supplemental information to manually enter into the NT. The additional sources include the following:

- Flood Insurance Studies (FIS)
- Community Information System (CIS)
- FEMA Regional Offices
- Other Federal agencies
- State, regional, and local agencies

2.3.1 Flood Insurance Studies

A detailed FIS provides the data and maps needed for both the flood insurance and floodplain management aspects of the NFIP. The FIS presents compiled flood risk data for specific watercourses, lakes, and coastal flood-hazard areas within a community. It delineates flood-hazard areas, designates flood risk zones, and establishes Base Flood Elevations (BFEs). An FIS thereby serves as the basis for determining flood insurance rates, regulating floodplain development, and carrying out other floodplain management measures. FISs and FIRMs can be viewed and ordered online at http://store.msc.fema.gov.

The FIS consists of three components:

- The FIS report
- The Flood Insurance Rate Map (FIRM)
- The Flood Boundary and Floodway Map (FBFM, or Floodway Map, included in studies prepared before 1985)

The FIS report includes the following:

- A narrative that appraises the community's flood history, and describes the purpose of the study, historic floods, and the area and streams studied
- Maps of the study area often with photographs of historic floods
- Tables summarizing various study data
- Computed flood profiles of the 10-, 50-, 100-, and 500-year floods for the stream reaches studied

The FIRMs and FBFMs are essential parts of the FIS that portray the following:

- Floodplain boundaries
- BFE and cross-section locations (for detailed study areas)
- Delineation of floodways, where applicable
- Designation of flood risk zones such as A and V Zones

CAUTION

FIRMs may not provide flood elevations or a floodway designation for floodplains in undeveloped areas. If the data are not available from a community's FIS or FIRMs, the community may need to investigate the possible existence of more recent or more detailed flood studies conducted by other agencies. If no reasonable floodplain information is available, a qualified engineer should review available data and determine if a new study should be conducted. This is especially important if a history of flood problems is not reflected on the FIRM or if the site is in a small watershed that has experienced an increase of recent development.

Some communities' FIS and FIRMs can be several years old. They will not reflect recent developments and may have been generated using older, less accurate mapping techniques. Map modernization work is in progress, including the development of up-to-date flood hazard data for areas across the U.S. and the creation of maps and data in digital format such as the Digital Flood Insurance Rate Map (DFIRM).

2.3.2 FEMA Regional Offices

FEMA has divided the United States and outlying territories into 10 regions (see Appendix F for contact information or http://www.fema.gov/about/contact/regions.shtm). Each office serves several states and territories with regional staff who work directly with their constituents to plan for disasters, develop mitigation programs, and respond when major disasters occur. Each of the 10 FEMA regions has a Risk Insurance and Risk Reduction Branch to handle flood insurance and community mitigation issues. A designated RL Coordinator is available in each region to coordinate RL activities (see Appendix F).

2.3.3 Other Federal Agencies

Other Federal agencies that may have information about past flooding events, damages incurred, and areas of repetitive flooding include the following:

- U.S. Army Corps of Engineers (USACE) Floodplain Information Reports
- National Oceanographic and Atmospheric Administration (NOAA)
- U.S. Geological Survey (USGS) Water Resources Investigations
- Natural Resources Conservation Service (NRCS) Watershed Studies
- Federal Highway Administration (FHWA) Floodplain Studies
- Tennessee Valley Authority (TVA) Floodplain Studies

U.S. Army Corps of Engineers (USACE). The USACE focuses on public works and engineering missions, and works with FEMA and other Federal agencies to respond to disasters, including flooding. They also advise communities, industries, and property owners about protection measures, including flood damage prevention measures. The USACE has eight divisions composed of several district offices across the country

(http://www.usace.army.mil/divdistmap.html). The USACE can provide information on pending and completed flood protection projects, level of protection provided, and post completion flood events.

National Oceanographic and Atmospheric Administration (NOAA). The National Climatic Data Center (NCDC) keeps records of historic storm events, including flooding. The database can be accessed online at http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms. Data provided include the date and extent of the storm as well as the overall value of damage. A description of the storm is also sometimes available and can provide specific detail about damage. NOAA's Flooding Page (http://www.noaa.gov/floods.html) includes a link to NOAA's Hydrologic Information Center, which monitors not only river/stream flow conditions but also other conditions such as soil moisture, snow, and longer-term meteorological outlooks. The National Hurricane Center (NHC) Tropical Prediction Center website (http://www.nhc.noaa.gov/) has information from real-time updates to forecasts and historical background information on hurricane-related flooding.

United States Geological Survey (USGS). The USGS operates and maintains a network of approximately 7,000 stream gauges. Historical records and real-time data are available for many of these gauges, which are valuable tools in helping to quantify floods. The USGS uses this information to produce publications documenting flood events. Such publications include descriptions of the events and detail the cause of flooding, damage caused, storm frequency, and other pertinent information.

Natural Resources Conservation Service (NRCS). Under the Watershed Protection and Flood Prevention Act (Public Law [P.L.] 83-566), the NRCS conducts watershed plans, river basin surveys and studies, flood hazard analyses, and floodplain management assistance. As watershed boundary Geographic Information Systems (GIS) coverage is completed, statewide and national data layers will be made available publicly via the Geospatial Data Gateway at http://datagateway.nrcs.usda.gov/.

Federal Highway Administration (FHWA). The FHWA conducts hydraulics and hydrologic (H+H) research and analyses, develops H+H modeling software, and prepares environmental impact statements and environmental assessments for projects related to transportation, which can be accessed online at http://www.fhwa.dot.gov/engineering/hydraulics/index.cfm. The data from the FHWA are for areas near bridges.

Tennessee Valley Authority (TVA). The TVA divides the Tennessee River watershed into 12 divisions, each overseen by a TVA Watershed Team. Information about unregulated stream flows at sites across the Tennessee Valley, and watershed maps, environmental reviews, and environmental reports can be found at http://www.tva.gov. The TVA also maintains stream gauges and manages river forecasters who track storms, predict stream flows and flood heights, and calculate runoff amounts.

2.3.4 State, Regional, and Local Agencies

A number of State, regional, and local government agencies have information that can be used to supplement the data entries of NT (see Table 2-1). This information includes delineations of

specific areas and/or structures that have been flooded in the past and the extent of damage for each structure.

Table 2-1. State, Regional, and Local Sources for Information about Flood Events

State Agencies (Departments or Divisions)	Regional Agencies and Organizations	Local Agencies
▪ Emergency Management ▪ Environmental Conservation and Protection ▪ Floodplain Management ▪ Geologic Surveys ▪ Homeland Security ▪ Natural Resources ▪ Transportation ▪ Water Resources	▪ Emergency Management ▪ Flood Control Districts ▪ Levee Improvement Districts ▪ Regional Planning and/or Economic Development Commissions ▪ River Basin Commissions	▪ Emergency Management Agencies and Coordinators ▪ Local Planning Commissions ▪ Municipal Utilities ▪ Public Works