



# FEMA

## Levee Update: What's in your future

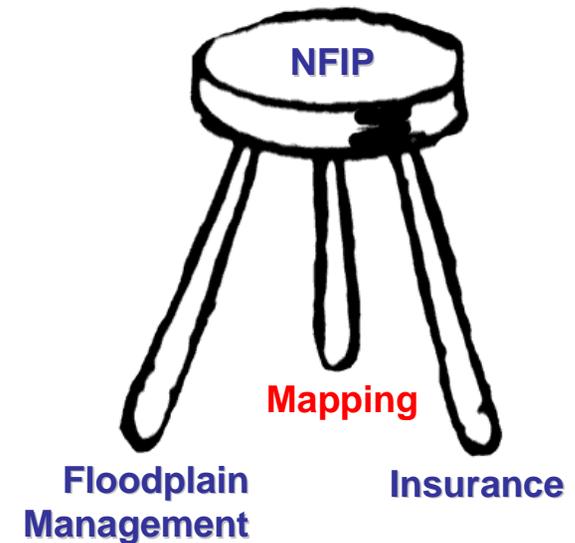
*APWA Conference*

*May 14, 2009*

- **NFIP is voluntary based on mutual agreement between the Federal government and a local community**
- **If a community adopts and enforces a floodplain management ordinance, Federally-backed flood insurance is available to property owners in the community**

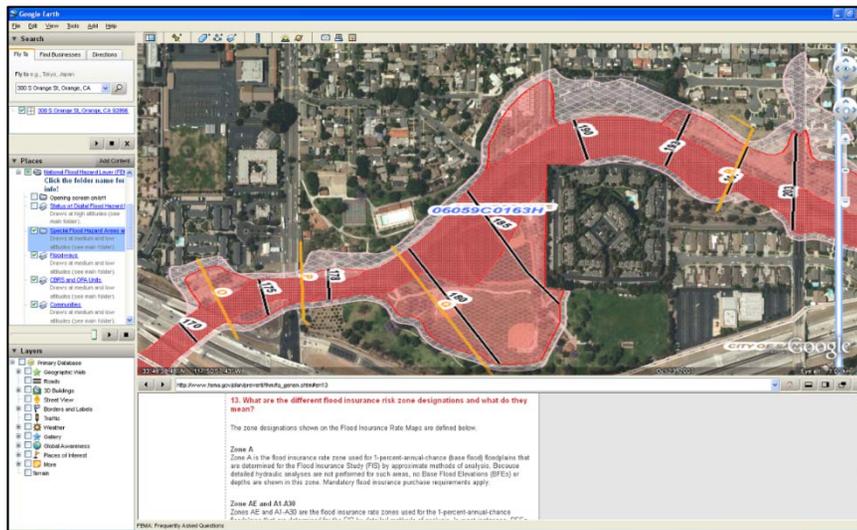
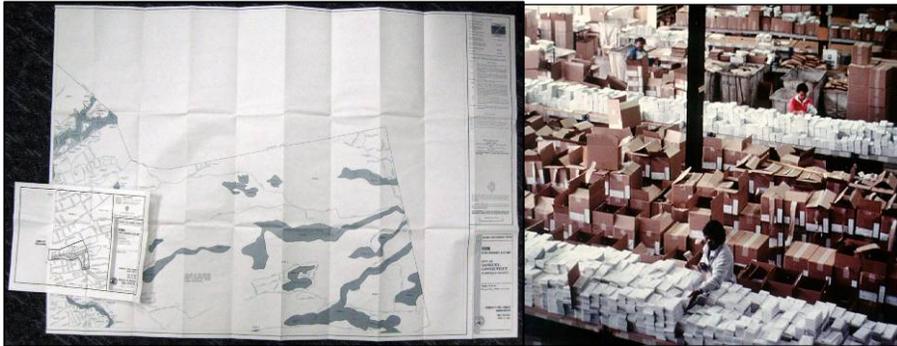
## The NFIP has 3 Main Parts

- **Mapping:** identification of flood hazards
  - **Floodplain Management:** building practices aimed at reducing flood damage
  - **Insurance:** reduce economic impacts
- 
- **Mapping:** Flood Insurance Rate Maps (FIRMs) identify areas with at least a 1-percent-annual chance of flooding



# What is Map Modernization?

Flood Map  
Modernization

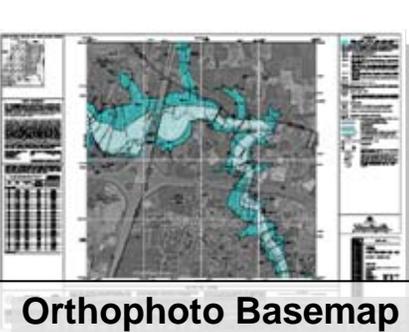
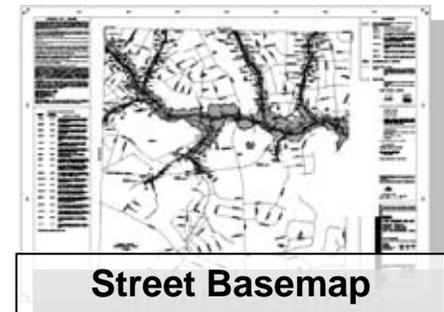
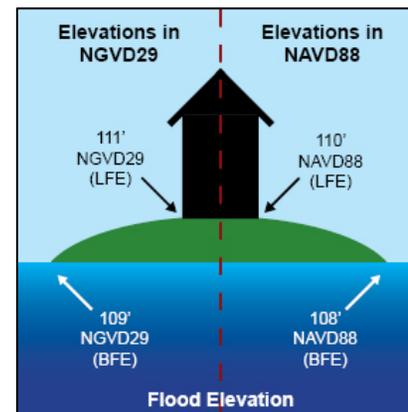


- **5-Year program to modernize FIRMs for:**
  - 92% of population nationwide
  - 65% of land area nationwide
- **Map Modernization was funded in Federal fiscal years 2004 – 2008**
- **FY2008 was the last funding year for Map Modernization**

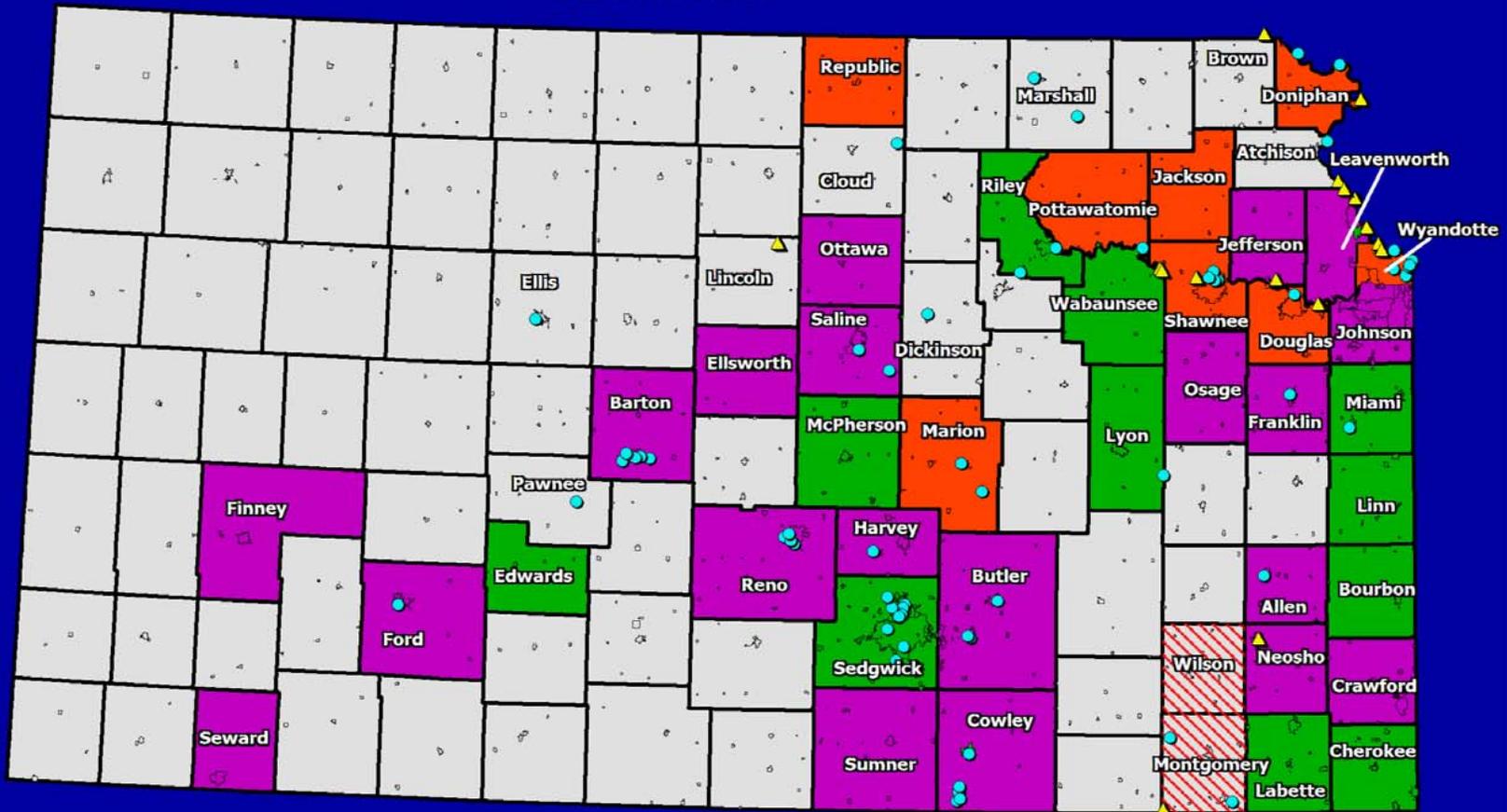
# What is Map Modernization?

Flood Map  
Modernization

- Upgrade paper FIRMs to new GIS-based DFIRM format
- Create 1 seamless countywide FIS report and DFIRM
- Refit the floodplain and floodway data to more current basemap
- Incorporate Letters of Map Revisions (LOMRs)
- Convert the vertical reference datum for flood elevation data (NGVD 29 to NAVD 88)



# KANSAS



## Known Levees

▲ Not Accredited (18) ● Accredited (66)

## Other Mapping

▨ Flood Recovery Map (2)

## DFIRM Production Status

### City Status

■ No Activity (319)	■ Preliminary FIS/FIRM (159)
■ Data Development (59)	■ Effective FIS/FIRM (90)

### County Status

■ No Activity (66)	■ Preliminary FIS/FIRM (20)
■ Data Development (8)	■ Effective FIS/FIRM (11)



U.S. Dept. of Homeland Security  
 FEMA - Region VII  
 Kansas levees.wor  
 May 14, 2009

- *Levee* means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.
- *Levee System* means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

Source - 44 CFR 59.1

- Certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied.
- Certification of data is a statement that the data is accurate to the best of the certifier's knowledge.
- Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices.
- Certification of structural works is a statement that the works are designed in accordance with sound engineering practices to provide protection from the base flood.
- Certification of "as built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning.

Source - 44 CFR 65.2

# Mapping of areas protected by levee systems

- Only recognize those levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards
- Information must be supplied to FEMA by the community or other party seeking recognition
  - at the time a flood risk study or restudy is conducted
  - when a map revision is sought based on a levee system
  - upon request by the Administrator during the review of previously recognized structures
- The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps
- Not a determination by FEMA as to how a structure or system will perform in a flood event

Source - 44 CFR 65.10(a)

- **Evidence that adequate design to provide reasonable assurance that protection exists**
  - Freeboard
  - Closures
  - Embankment protection
  - Embankment and foundation stability
  - Settlement
  - Interior drainage
  - Other design criteria

Source - 44 CFR 65.10(b)

- **Officially adopted manual**
- **Under jurisdiction of a Federal or State agency, agency created by Federal or State law, or an agency of a community in the NFIP**
- **Plan must address**
  - Closures
  - Interior drainage
  - Flood warning system
  - Other plans and criteria
  - Periodic inspections and operation

Source - 44 CFR 65.10(c)

- **Maintained in accordance with an officially adopted plan**
- **Under jurisdiction of a Federal or State agency, agency created by Federal or State law, or an agency of a community in the NFIP**
- **Plan must document procedures to ensure**
  - Stability
  - Height
  - Overall integrity of the system
  - Frequency
  - Person responsible for maintenance

Source - 44 CFR 65.10(d)

# PM 34 – Interim Guidance for Studies Including Levees

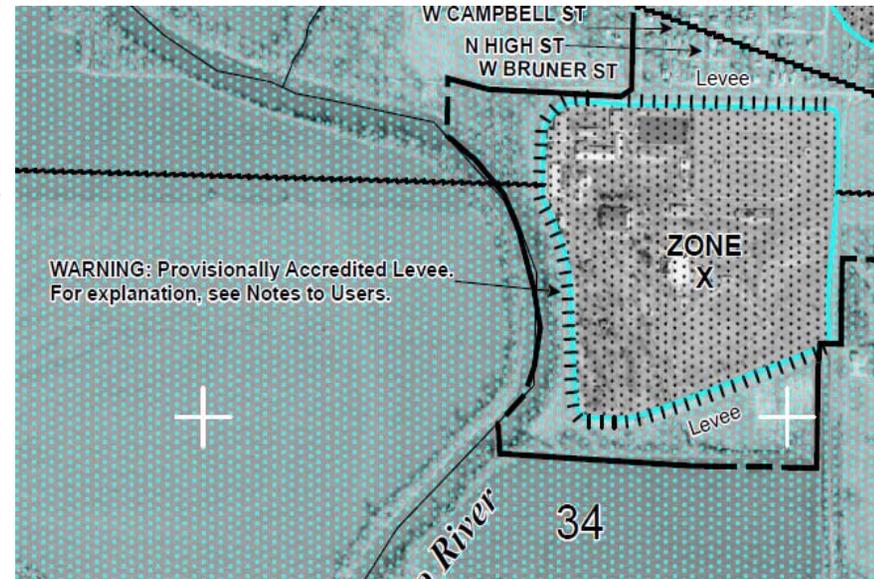
Flood Map  
Modernization

- **Issued August 22, 2005**
- **Information on location, structural integrity, and certification is outdated or missing**
- **Clarify responsibility of party seeking recognition of levee**
- **Protocol for unrevised H&H**
  - Document existing certification
  - Community notification of data requirements
  - Verify maintenance

# PM 43 – Guidelines for Provisionally Accredited Levees

Flood Map  
Modernization

- Issued September 25, 2006
- Minimize impact of levee on MapMod goals
- Specified timeframe to provide documentation
- Provisional accreditation while documents prepared
- Provisionally Accredited Levee note on FIRM
- Identified five scenarios for mapping
- Proceed in partnership with the USACE



- **Scenario A – Levees not in the USACE program that are shown as providing base flood protection**
  - Levee meets 65.10 requirements
  - May allow for a 1 year “maintenance deficiency correction period”
  - Signed agreement between community(ies), levee owner, and FEMA
- **FEMA will initiate remapping if**
  - Agreement not signed
  - Full documentation not provided after 24 months

- **Scenario B – Levees in the USACE program**
  - Accredited on effective FIRM
  - Available information indicates levee provides base flood protection
  - Acceptable inspection rating from the USACE
  - Signed agreement between community(ies), levee owner, and FEMA
- **FEMA will initiate remapping if**
  - Agreement not signed
  - Full documentation not provided after 24 months

# PM 43 – Guidelines for Provisionally Accredited Levees

Flood Map  
Modernization

- **Scenario C – Levees in the USACE program with known deficiencies that are shown as providing base flood protection**
- **Scenario D – Levees in the USACE program that are shown as not providing base flood protection**
- **Scenario E – Levees in the USACE program that do not meet an adequate level of protection, as determined by the USACE in coordination with FEMA, but are shown as providing base flood protection**

- **Issued April 24, 2009**
- **Engineering and mapping guidance**
  - Accredited and non-accredited levees
  - With and without levee analysis
    - Detailed, Limited detailed and Approximate procedure
    - FIRM will not reflect breaching scenarios
- **Notification process for de-accredited levee**

- **Issued April 24, 2009**
- **Extensions will not be granted**
- **Community notification 90- and 30-days**
- **Initiate a mapping project immediately**
  - Physical Map Revision used to revise FIRM
- **Data provided during map revision will be considered**
  - Prior to map adoption
  - 4 months prior to effective date

- **Certification efforts are underway in many communities**
- **No extensions for PAL agreements**
- **FEMA will initiate remapping**
- **Remapping 18-36 months**
- **Defined outreach process**



**FEMA**