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# Understanding the Levee Risk



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*Assistant Vice President*

*Manager Flood Underwriting / Engineering*

*FM Global*

# What is a levee?

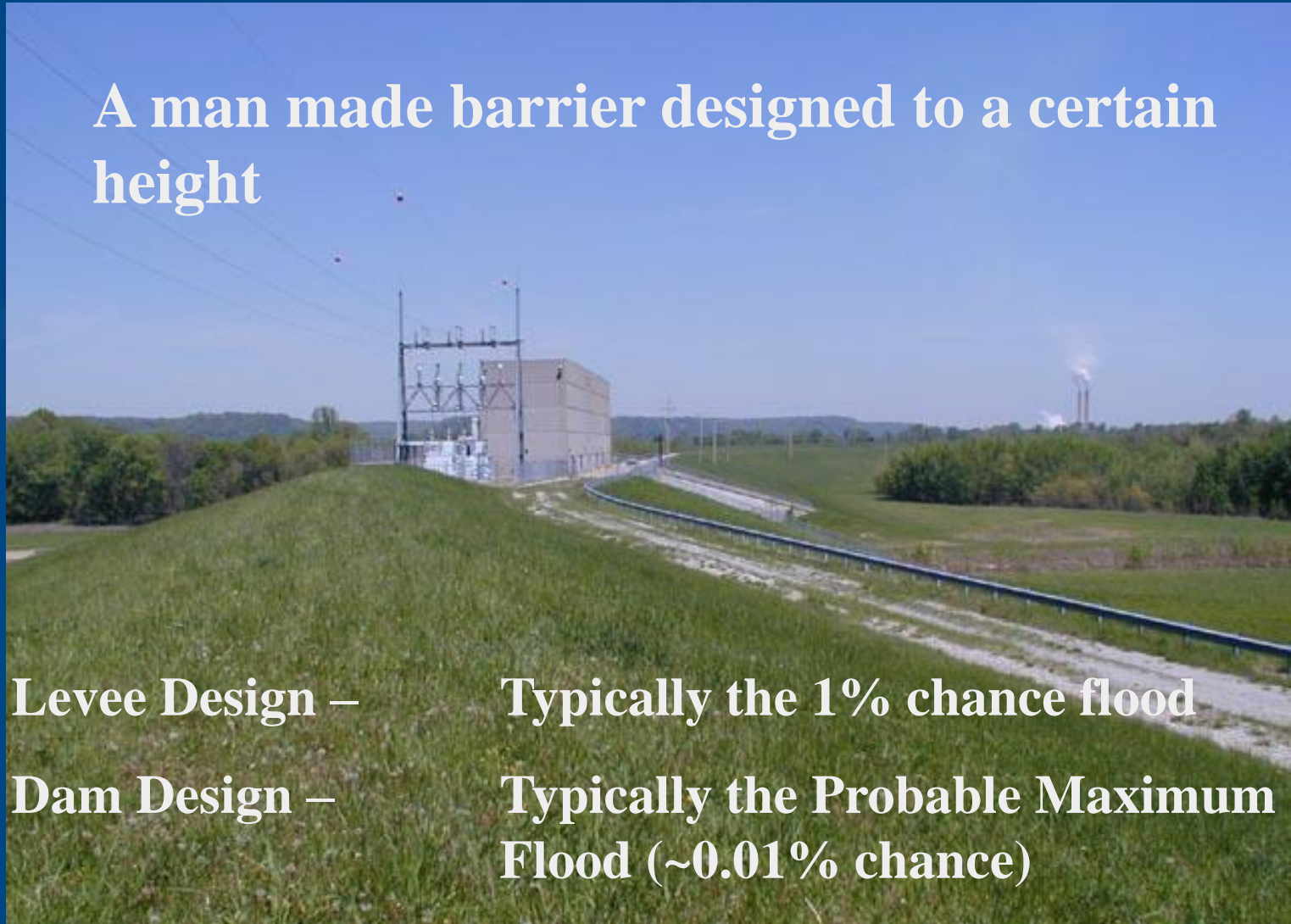
**A man made barrier designed to a certain height**

**Levee Design –**

**Typically the 1% chance flood**

**Dam Design –**

**Typically the Probable Maximum Flood (~0.01% chance)**



# What is a levee?

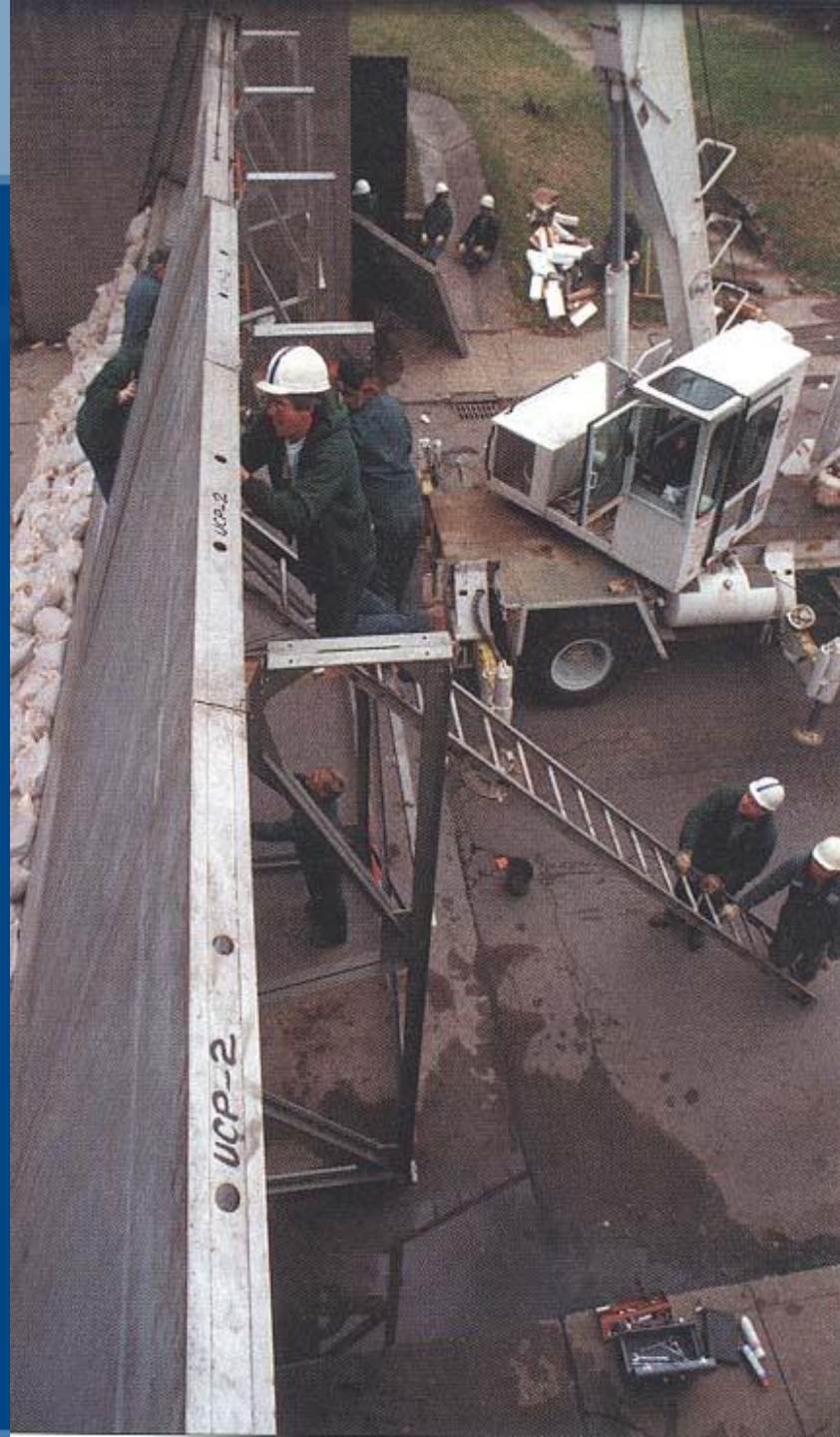




# What is a levee?



# What is a levee?





# What is a levee?



# What is a levee?





# What is a levee?

Respected.  
Responsive.  
Reliable.

At the heart of our efforts  
are soldiers, airmen, their  
families and the citizens  
of this great country.  
Whatever we do must  
make a positive impact  
on their lives. That's  
why we exist.



**US Army Corps  
of Engineers®**

# And then there is maintenance . . . . .





# And then there is maintenance . . . . .





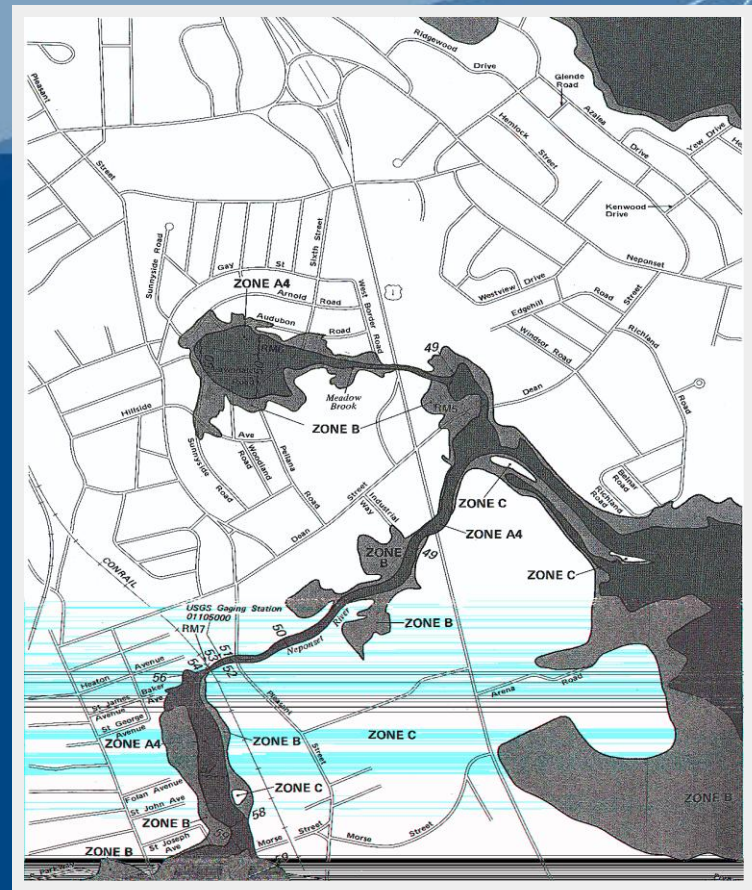
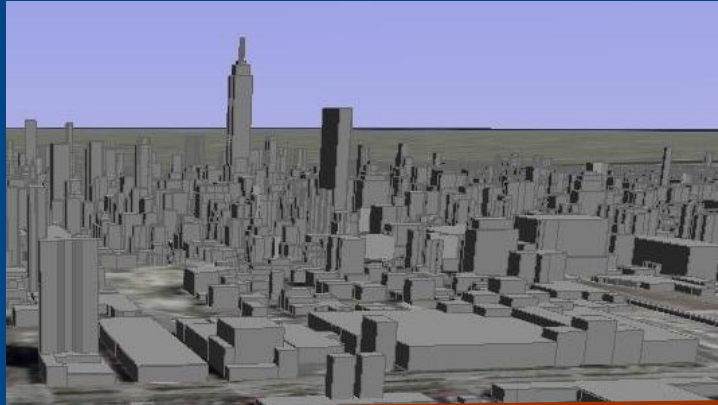
# Common Misunderstanding:

**Levee Systems are not static, they are live structures that must be:**

- *Adequately designed*
- *Complete*
- *Well maintained*
- *Managed during a flood fight*

# Understanding Levees

Flood Maps make it  
black and white!



River

# The Hidden Hazard

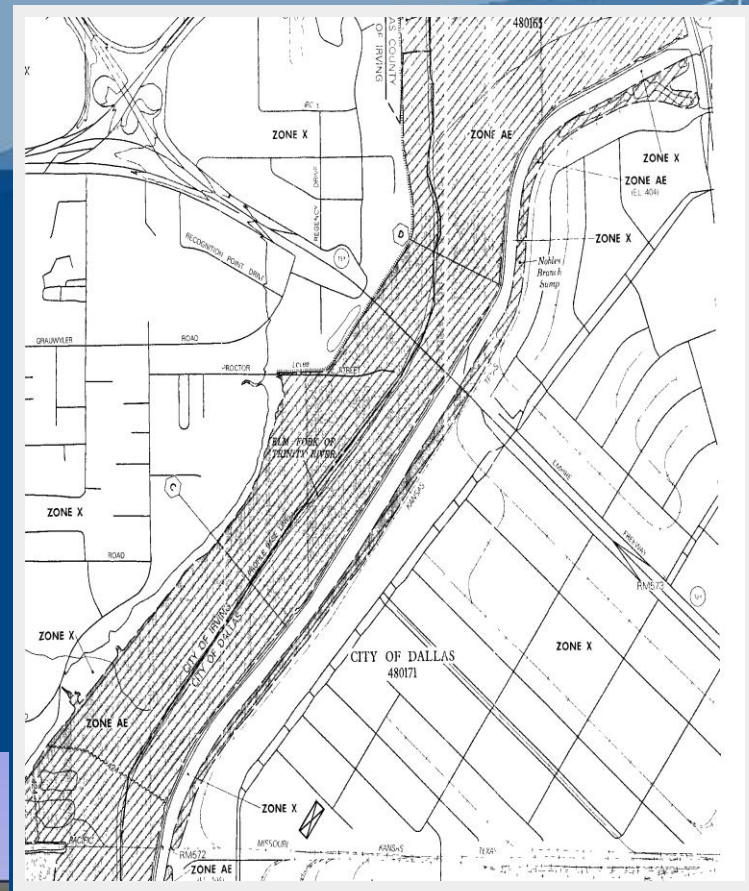
Does a levee eliminate  
the flood risk?

It does on the Flood  
map!!!!



Levee

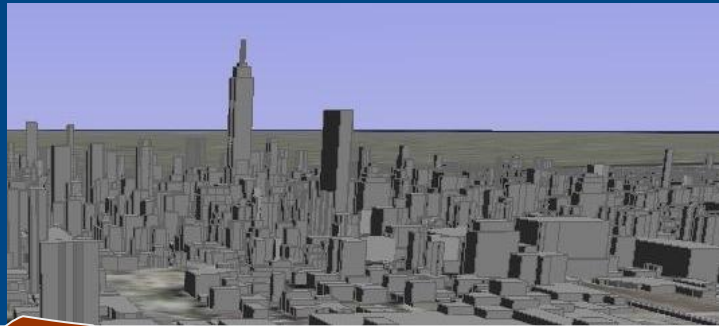
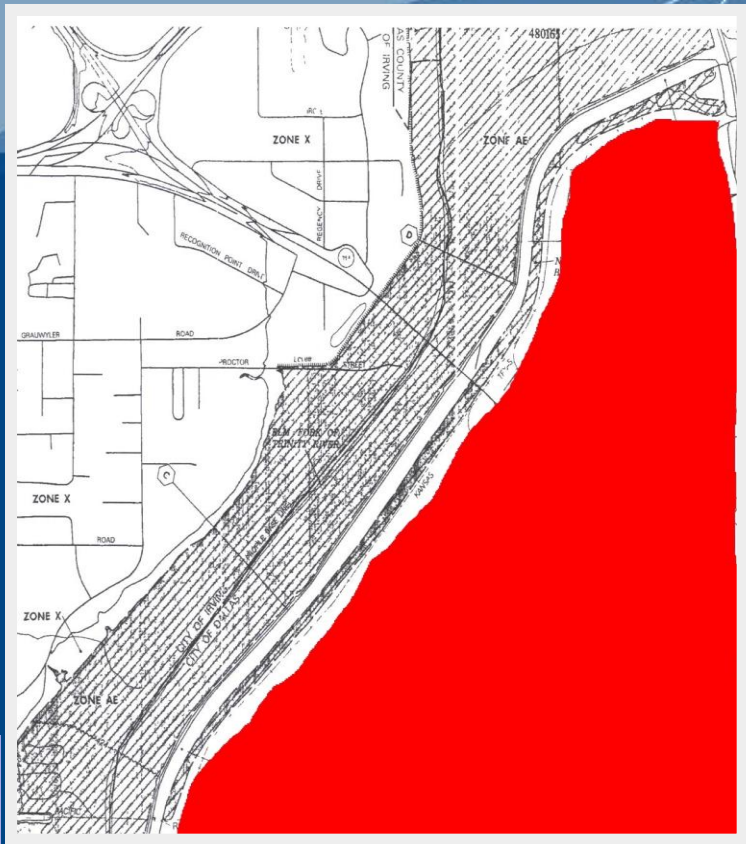
River





# The Hidden Hazard

And this can happen if  
someone is unable to  
shut one gate!



# Levee

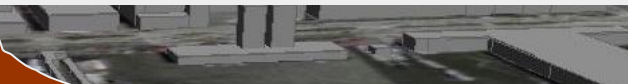
# River

# Levees are seen as...

- A familiar part of the landscape
- Designed and built by The US Army Corps of Engineers
- Taking you out of the “Special Flood Hazard Areas”



**“Just like being on top of a hill!”**



River

# The Hidden Hazard



**Question: Which is the greatest hazard?**

**Not understanding the limitations of a levee system  
or**

**Not knowing you are protected by a levee system**



# The Times-Picayune

Year No. 295

THURSDAY, NOVEMBER 14, 2002

NEW ORLEANS EDITION

This is not a new issue. . .

# The Times-Picayune

Year No. 295

THURSDAY, NOVEMBER 14, 2002

NEW ORLEANS EDITION

## In 2002 Goodwin Said. . . .

*“ It is time for a reassessment of the protection offered by levees ”*

*“ You have to be prepared that levee failure will one day happen ”*

*“ When it happens . . . . .devastation is going to be greater than expected ”*

*“ Very few communities are prepared ”*

*“ False sense of security in some of our major cities ”*

# Flood Risk Education Alliance (FREA)



“A unique collaborative effort between Federal, State and Local Agencies, insurers and the private sector to increase awareness of the inherent risks associated with levees”

The result of a combined industry meeting in October 2002  
Sponsored by FM Global / IBHS / USACE / FEMA

Additional members include; PERI & NAFSMA

Visit [www.ibhs.org](http://www.ibhs.org) for details



## Some of the Objectives:

### Short-term:

- Education / Awareness
- Best Practices
- Quick Wins through collaboration

### Long-term:

- Protected areas (Flood Maps)
- National Inventory of Levees
  - Evaluation findings
  - Hazard Classification
- Research

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