Urban Flooding in Illinois
The Changing Face of Floods

Chicago
Albany Park Neighborhood
June 2008

National Academies of Science
Chicago, IL
September 19, 2017
Welcome to Illinois
Floods? Really?
Illinois

“Where our Governors Make License Plates”

• 1st in the number of jailed Governors (5).
• 1st in the number of indicted state officials (1,000+).
• 1st in poor fiscal policy – the most broke state in the union.
• 1st in the most underfunded pension program.
• 1st in murders (765 in Chicago alone last year).
ILLINOIS
We Suck At
EVERYTHING

EXCEPT
FLOOD PLAIN MANAGEMENT
The largest inland system of rivers, lakes, and streams in the entire nation!

Declared Disasters
1994 - 2017
Going Above and Beyond in Illinois

- Restrictive 0.1’ floodway. Appropriate uses only. No buildings!
- Compensatory storage required (1 : 1.5).
- Cumulative Substantial damage regulations.
- Freeboard – one foot minimum.
- Stormwater regulations (detention/retention).
- Local regulatory maps.
- Critical facilities.
- Countywide ordinances.
- Strict compliance - fines!
The feathers in our cap...

Illinois is ranked #1 in the nation for:

1. Overall % reduction of Rep Loss properties.
2. Fewest % of flood insurance claims on post-FIRM (newer) structures.
3. The most NFIP suspensions for compliance (75% of the nation’s total)!
Our success is measured in silence.....
The Old Enemy....

The New Enemy....
Urban Flood Awareness Act

Effective August 3, 2014
Partners Listed in the Act

- Other State, regional, and local storm water management agencies, thought leaders, and interested parties as the Director of Natural Resources deems appropriate.
Definition: Urban Flooding

- Working Definition:
  - In a Built up area, not undeveloped or Ag land
  - Repetitive, costly, and systematic
  - Not tied to formal floodplains
  - Root Causes:
    - Wet soil
    - Inadequate Infrastructure
    - Overbank flooding
    - Impervious surfaces
    - Inadequate site drainage
    - Climate uncertainty

Definition: Urban

- **US Census Bureau** =
  - >2,500 people & 1,000 people per sq. mi.
  - Illinois = 7.1% Urban Area & 88% of pop.
  - 12% of municipalities included

- **Working Definition** =
  - Density requirement only
  - Illinois = 7.8% Urban Area
  - 91% of municipalities included
Data Collection

- Illinois Department of Insurance
  - Basement and sewer backup claims (past 7 years)

- Federal Emergency Management Agency
  - Disaster Assistance
  - National Flood Insurance claims

- Urban Flooding Survey
  - 120 municipalities responded

- Urban Flooding Symposium
  - Professional judgement

- Other data collection
  - Stakeholder information
Sections of the Report – Total Claims

- Past, Current, and Future
  - Prevalence, cost, and trends
  - Impacts of climate change
    - Review technology to evaluate risk
- Effectiveness of Projects, Programs and Policies
- Strategies for Reducing Urban Flood Damages
Between 2007-2014 there have been a total of 1972 urban flood damage claims within Rock Island County. Roughly three fourths (71.3%) of the claims occurred outside the mapped floodplain.
Analysis of Flood Damage Claims

In Illinois,...
92% of flood damages now occur outside of the floodplain!
Wow!

Sewer backup vs Flood insurance

NFIP losses are pocket change!
Sections of the Report – Climate Change

- Past, Current, and Future
  - Prevalence, cost, and trends
  - Impacts of climate change
    - Review technology to evaluate risk

[Graph showing Illinois precipitation trends from 1900 to 2010 with a blue line indicating trend over the century.]

[Map showing heavy precipitation areas in the Midwest with a legend indicating the difference in number of days of heavy precipitation.]
Sections of the Report – Review Technology

- Past, Current, and Future
  - Prevalence, cost, and trends
  - Impacts of climate change
    - Review technology to evaluate risk

- Effectiveness of Projects, Programs and Policies

- Strategies for Reducing Urban Flood Damages
Sections of the Report – Programs and Policies

- Past, Current, and Future
- Effectiveness of Projects, Programs and Policies
  - Impact of county stormwater programs
  - Evaluation of stormwater policies
  - Consistency of criteria for state funding
- Strategies for Reducing Urban Flood Damages
Sections of the Report - Strategies

- Past, Current, and Future
- Effectiveness of Projects, Programs and Policies
- Strategies for Reducing Urban Flood Damages
  - Strategies for flood insurance and basement backup insurance
  - Strategies for NFIP and CRS
  - Strategies to minimize damages
## Flood Insurance vs Basement Coverage

### Flood Coverage
- Mostly NFIP coverage (some private sector)
- Triggered by a “flood”
  - Overland flow
  - 2 adjacent lots or 2 acres
- Structural and contents coverage sold separately
- Limited basement coverage
- Can’t be cancelled
- Premiums don’t increase based on claims history.

### Basement Coverage
- Private sector coverage
- Sold as a rider on homeowner’s policy
- Covers flood caused by stormwater or sewer backup.
- Sump failure usually included
- Usually fairly cheap
- Claims could increase premiums
- Read the small print
Sections of the Report - Strategies

- Past, Current, and Future
- Effectiveness of Projects, Programs and Policies
- Strategies for Reducing Urban Flood Damages
  - Strategies for flood insurance and basement backup insurance
  - Strategies for NFIP and CRS
  - Strategies to minimize damages

![Diagram of urban flood management strategies]
Chicago Deep Tunnel Project
Top 10 Recommendations

1. Authority to generate stormwater fees.
2. Stormwater management authority.
3. Insurance agent education.
4. Update rainfall frequency distribution information.
5. Create a state model stormwater ordinance.
6. Continue funding data collection.
7. IDNR/IEPA should expand state revolving fund.
8. Urban flood awareness campaign.
10. Fund mitigation programs to better leverage Federal funds.
• Local communitywide regulation is the most efficient way to address urban flooding.

• Mapping of urban flood areas is not feasible and should remain at a local level and not become an unfunded mandate.
Summary of Action Items

1. Encourage incentives to incorporate green infrastructure and low impact development at a state or local level.
2. Provide best practices to communicate urban flood risk to the public.
3. Support development of model storm water ordinance with design standards or best practices for evaluation of existing facilities, redevelopment that includes green infrastructure and maintenance issues.
4. Counties and non-home rule communities should be given the power to establish stormwater utility fees.
5. Support legislation to require flood risk communication when transferring property and in rental agreements.
7. Review grant funding opportunities to evaluate how to encourage and prioritize their use to support innovative practices or for planning and assessment efforts that result in stronger and more self-reliant communities.
Local Efforts Work. Trust!
The Most effective strategy is the least scientific strategy
All The Best Communities:

- Take ownership!
- Don’t rely on FEMA/State.
- Have a local champion.
- Increase outreach. It’s not all about fancy “products”.
- Have strong regs and enforce them....STRICTLY!
- Take advantage of programs and incentives.
- Make friends (and trust their friends).
A great View!
Look at all that GREEN in Grafton!

THANK YOU