

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?



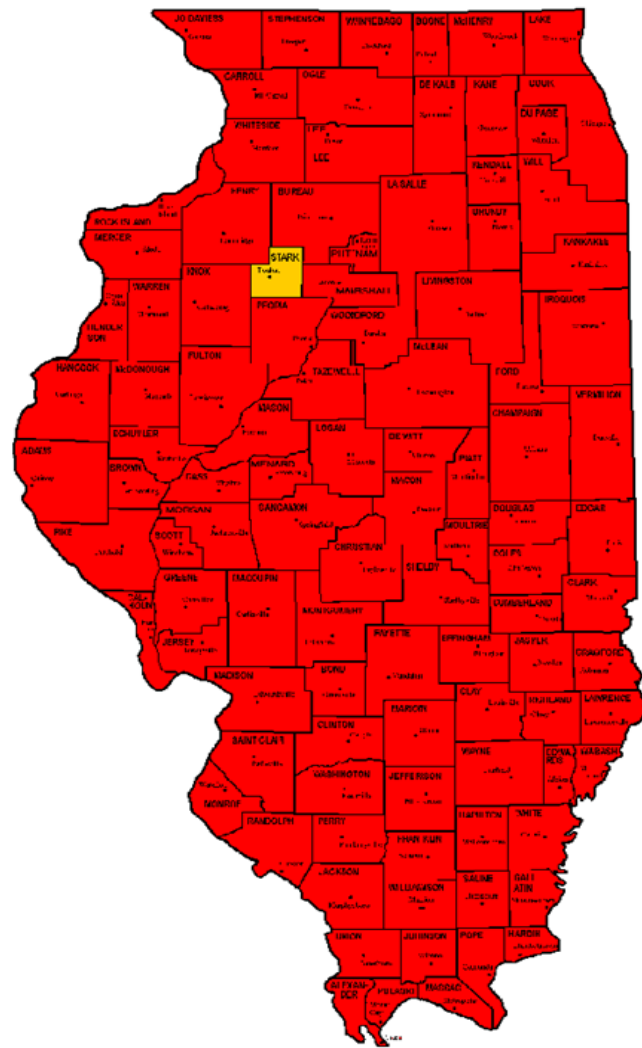
Illinois

“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).







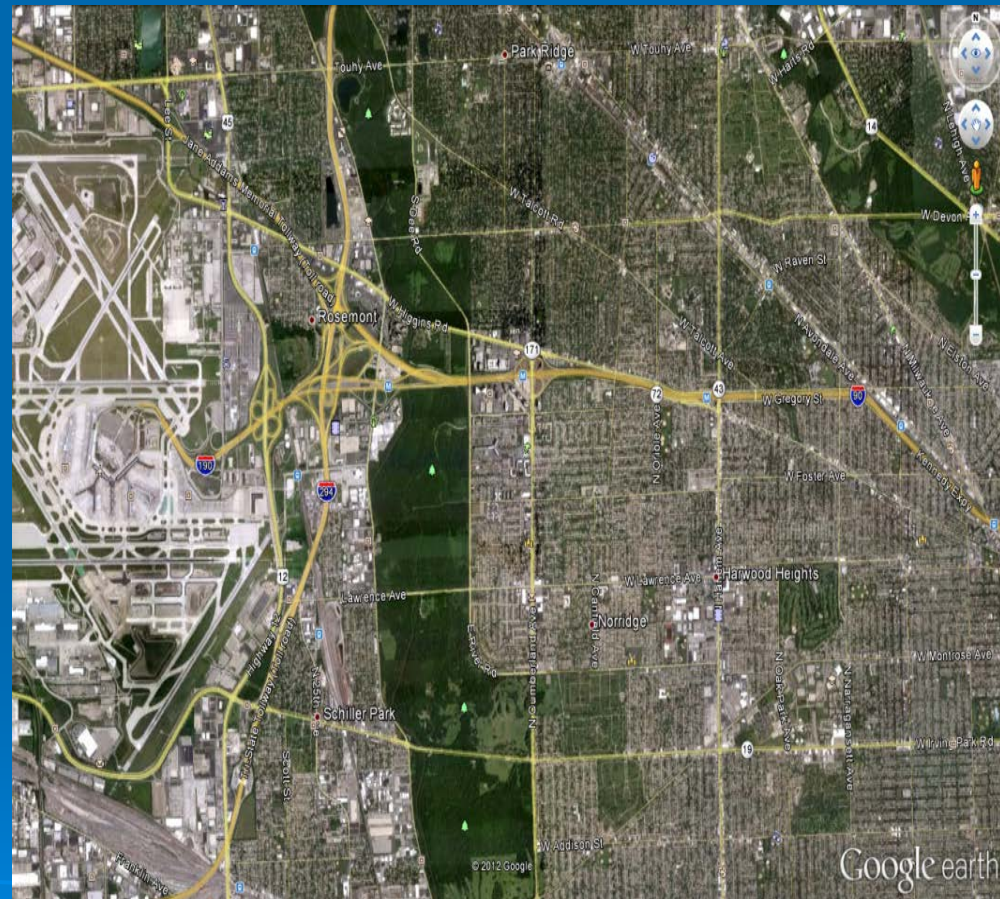
**Declared
Disasters
1994 - 2017**

**The largest inland
system of rivers,
lakes, and streams
in the entire nation!**



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:

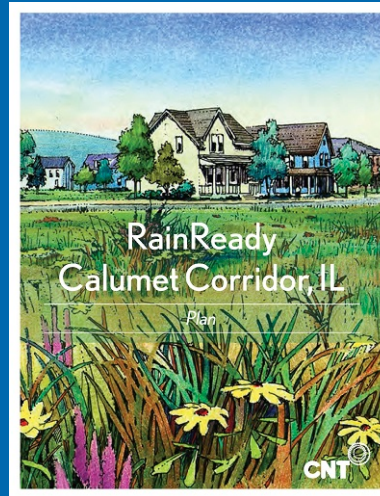
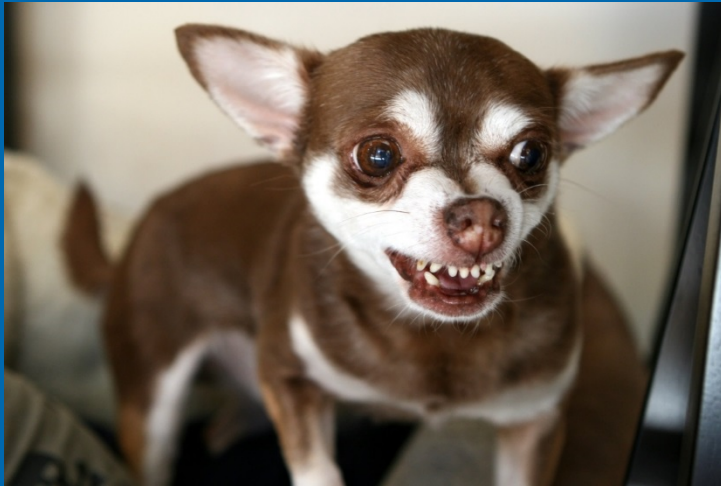
- 1. Overall % reduction of Rep Loss properties.**
- 2. Fewest % of flood insurance claims on post-FIRM (newer) structures.**
- 3. The most NFIP suspensions for compliance (75% of the nation's total)!**



Our success is measured in silence....



Harriet Festing and Center for Neighborhood Technology





The Old Enemy....

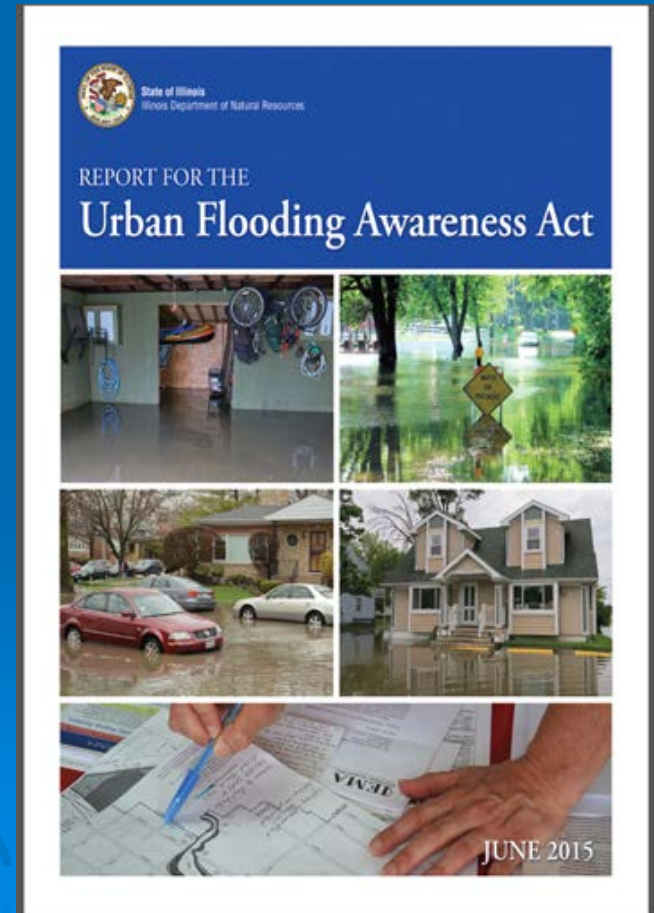


The New Enemy....



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

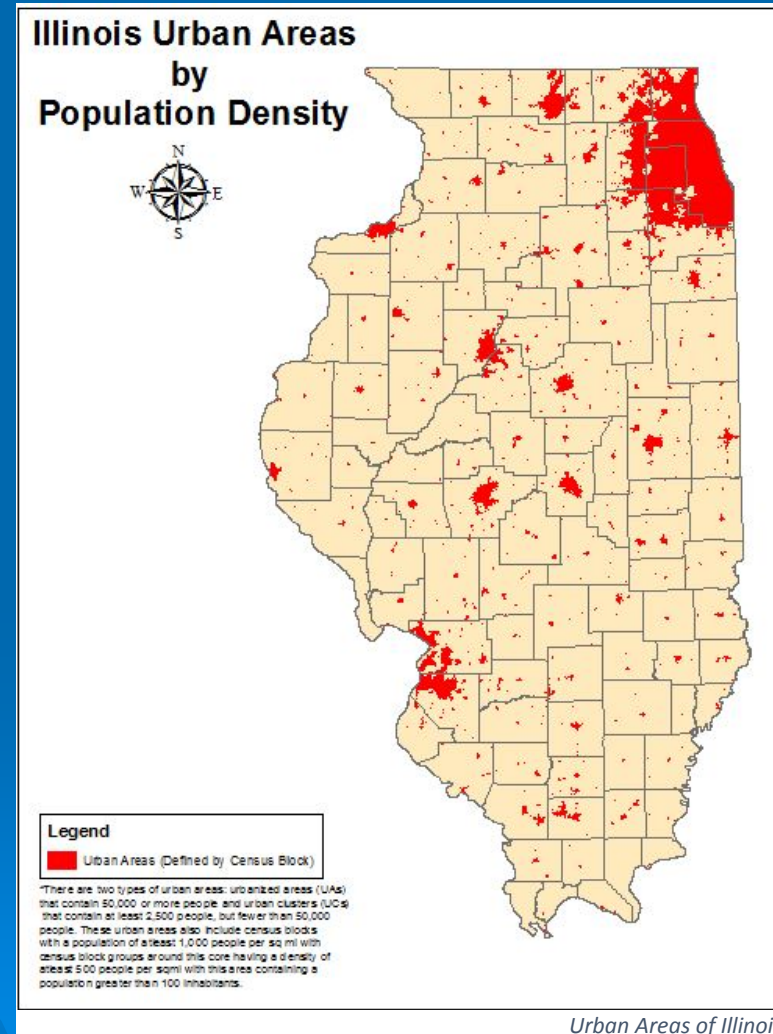
➤ Working Definition:

- 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



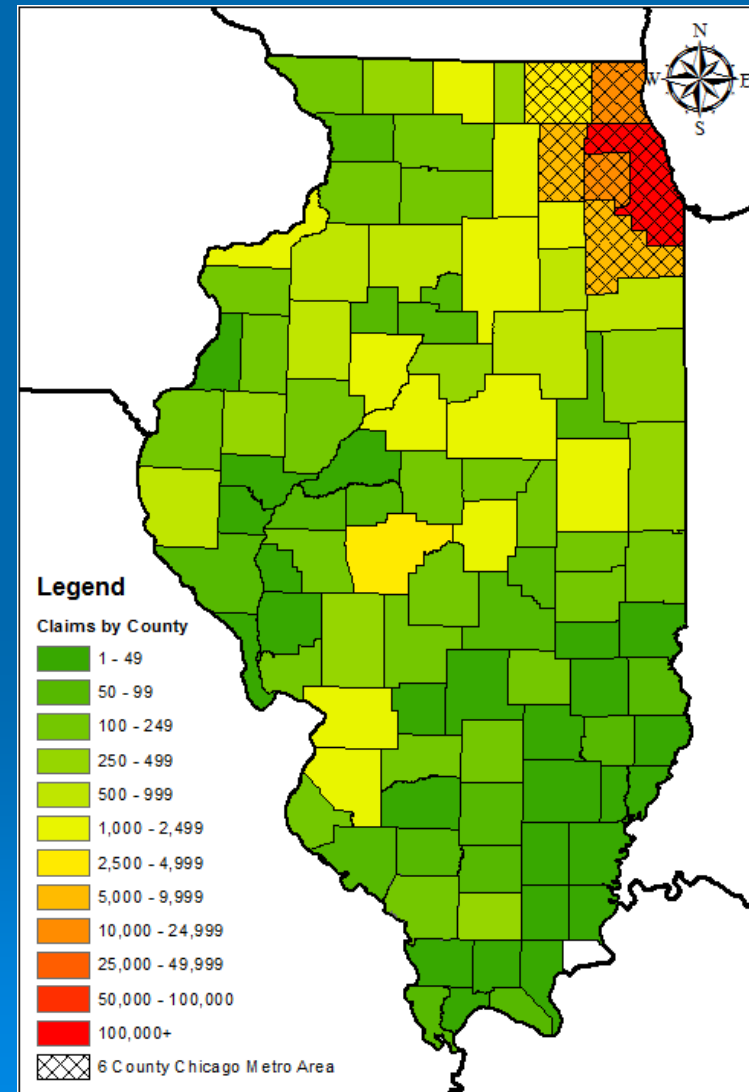
Data Collection

- 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



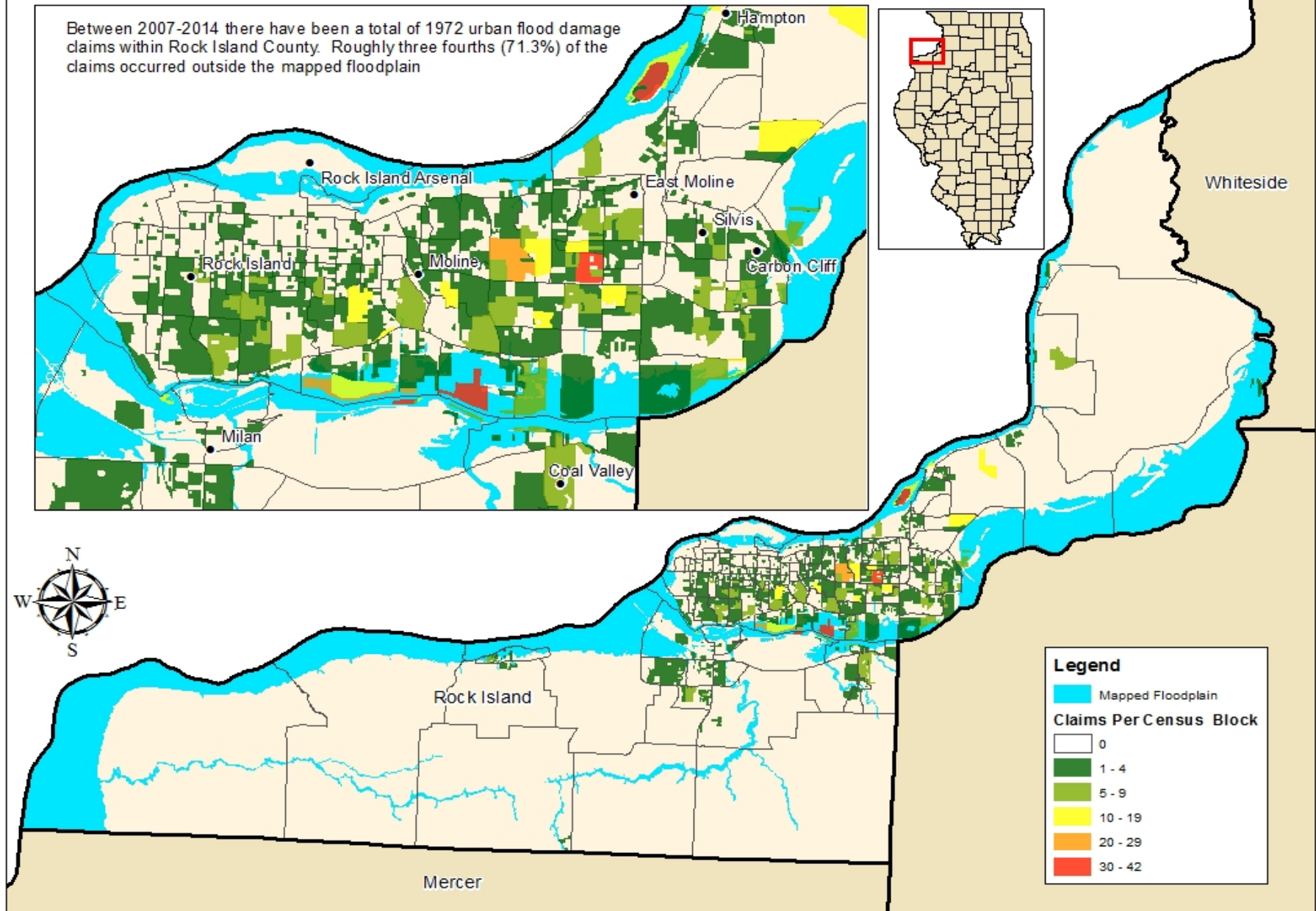
Sections of the Report – Total Claims

- 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



Rock Island County NFIP & Private Flooding Insurance Claims by Census Block 2007-2014

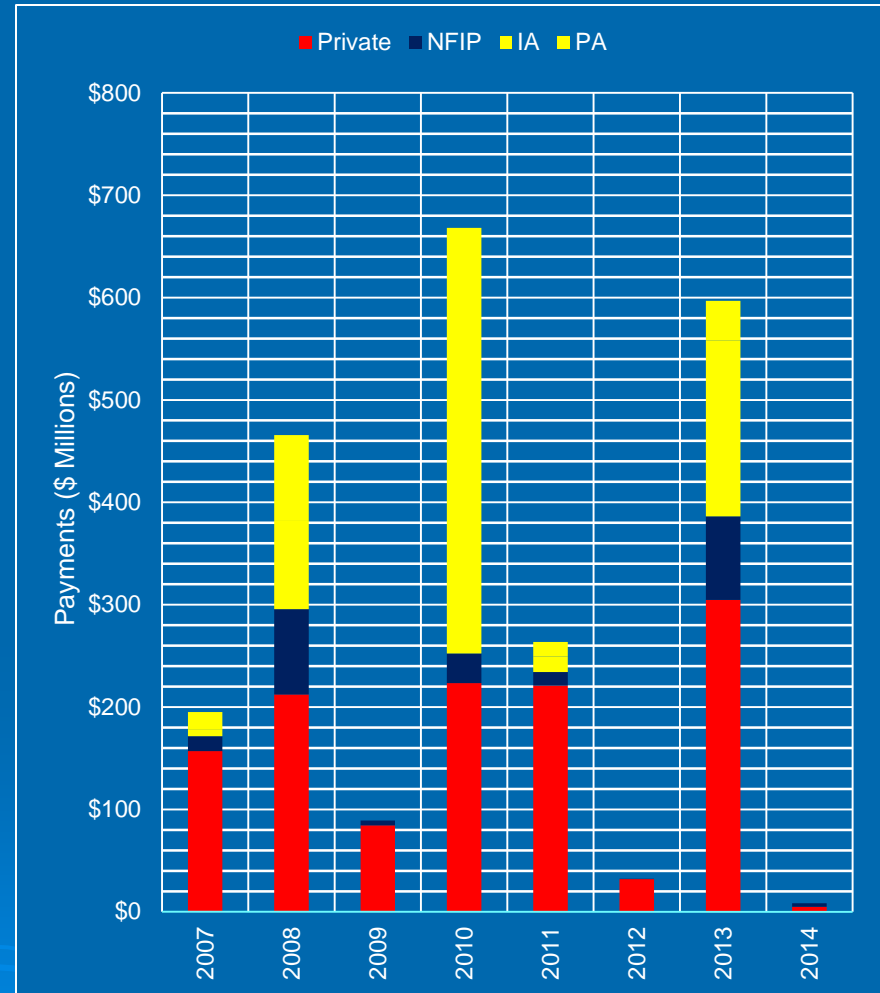
Between 2007-2014 there have been a total of 1972 urban flood damage claims within Rock Island County. Roughly three fourths (71.3%) of the claims occurred outside the mapped floodplain



Analysis of Flood Damage Claims

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

Sewer backup
vs
Flood insurance



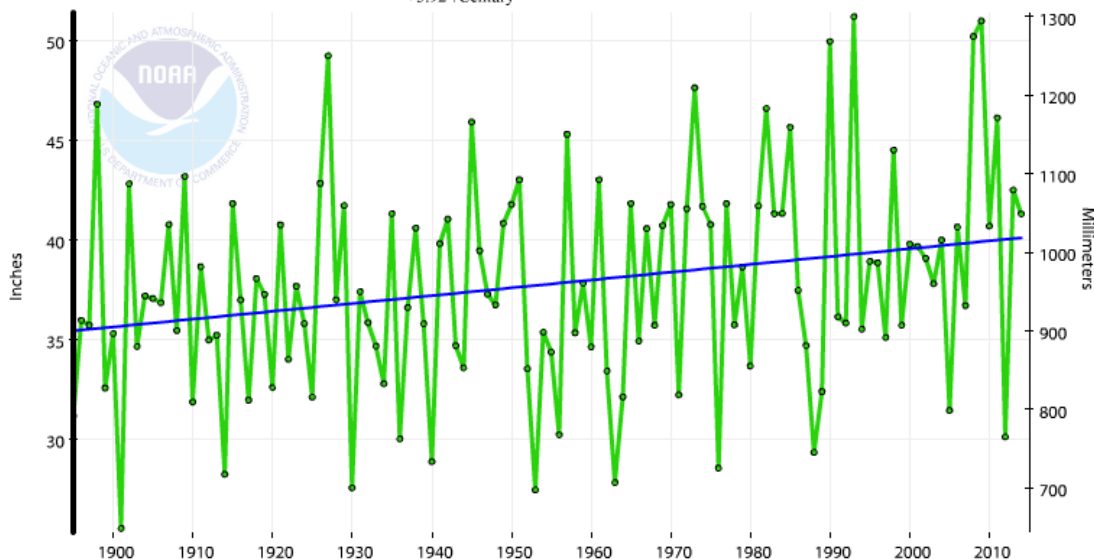
NFIP losses are pocket change!

Sections of the Report – Climate Change

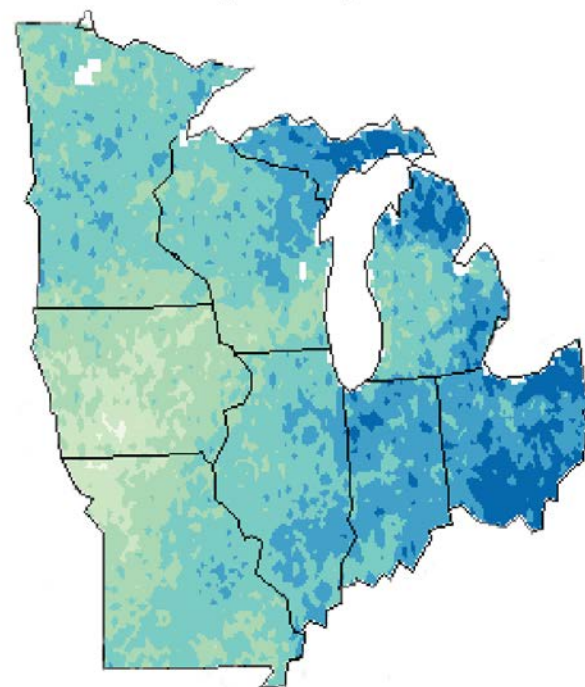
- Past, Current, and Future
 - Prevalence, cost, and trends
 - **Impacts of climate change**
 - Review technology to evaluate risk

Illinois, Precipitation, January-December

— 1895-2014 Trend +3.92"/Century — Precip



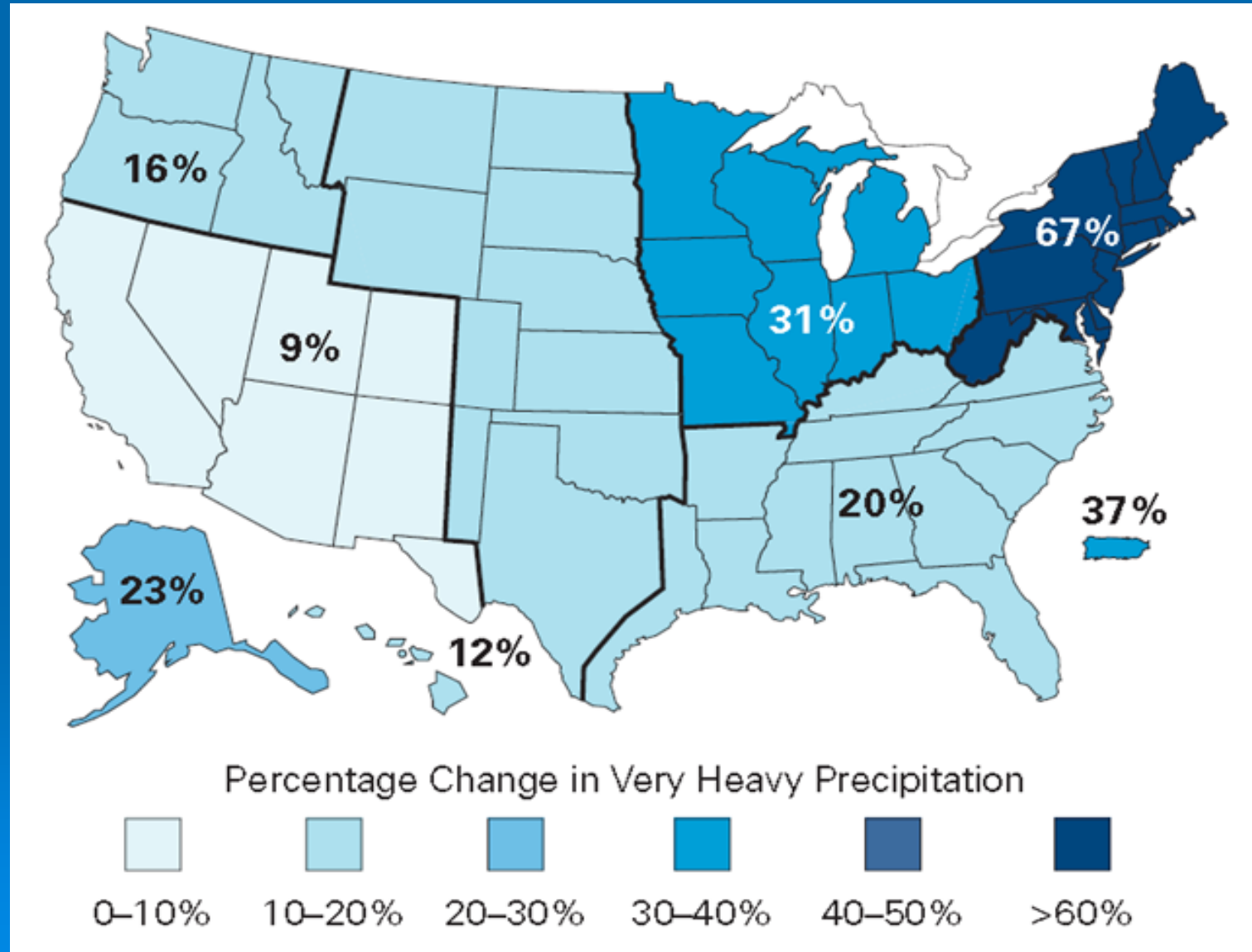
Heavy Precipitation



Difference in Number of Days

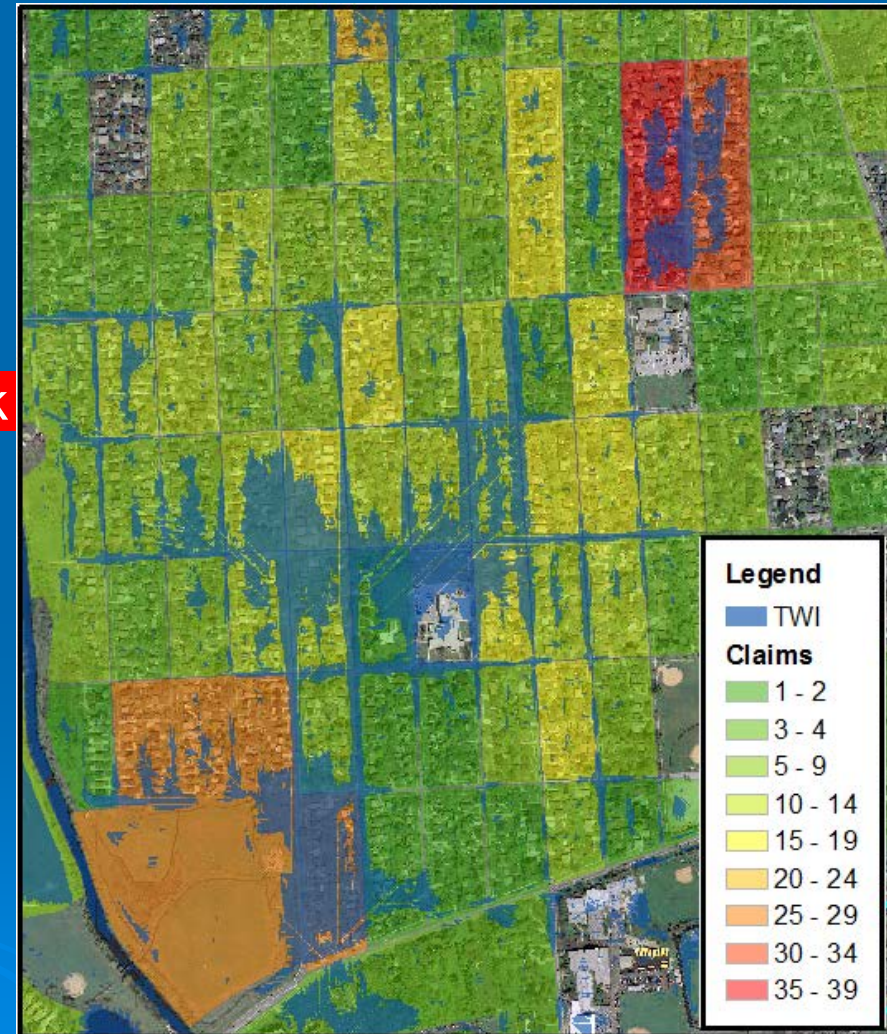


National Climate Data Center Analyses of Flood-Causing Precipitation



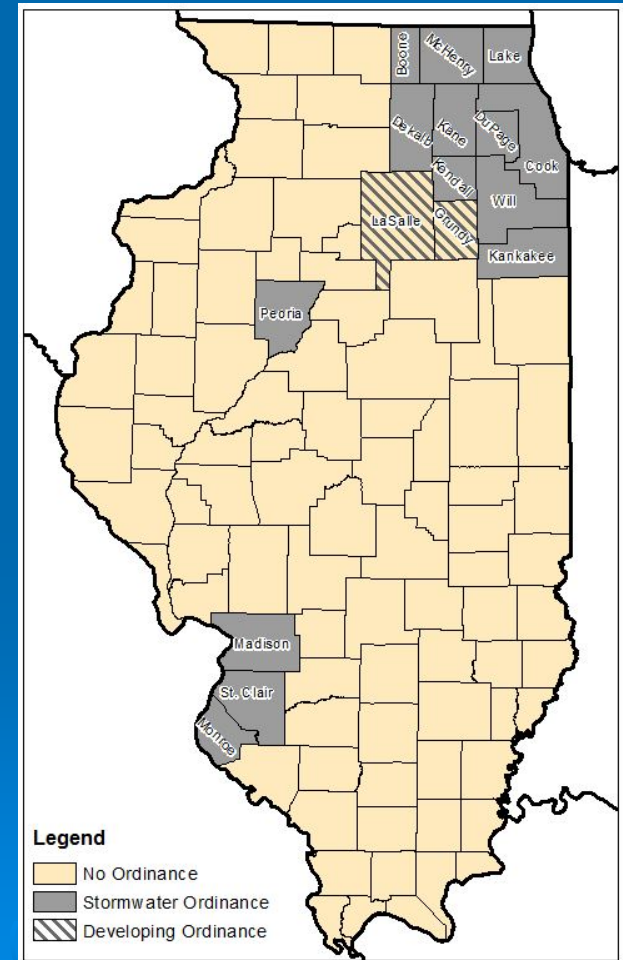
Sections of the Report – Review Technology

- 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



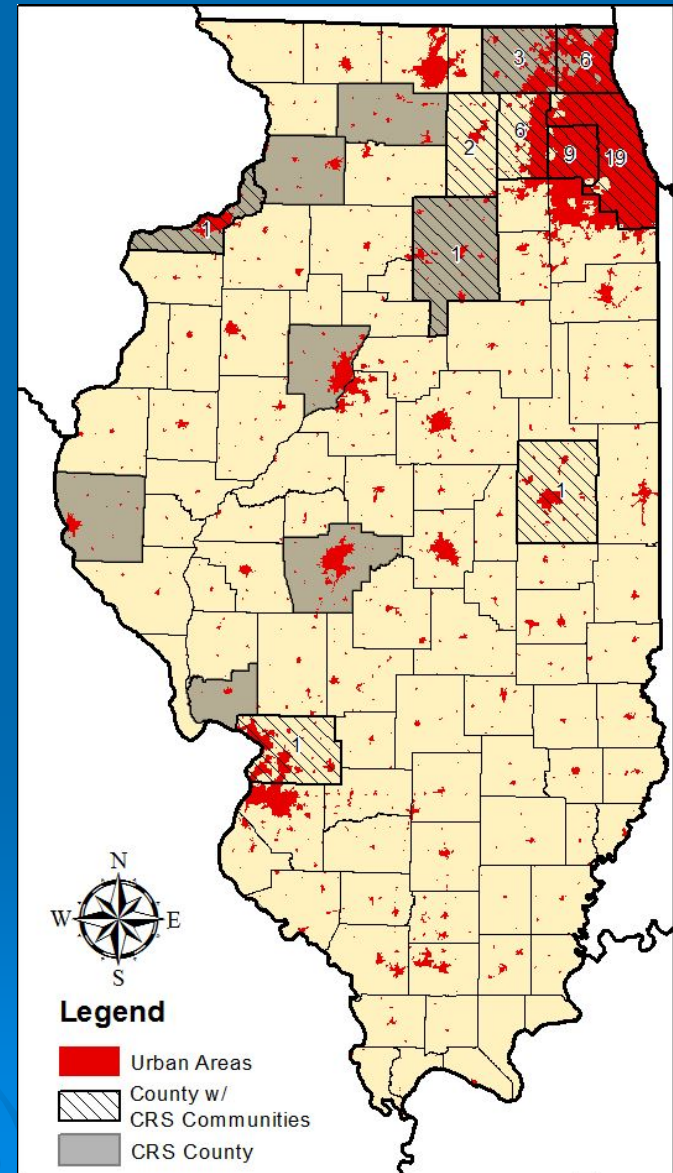
Sections of the Report – Programs and Policies

- 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

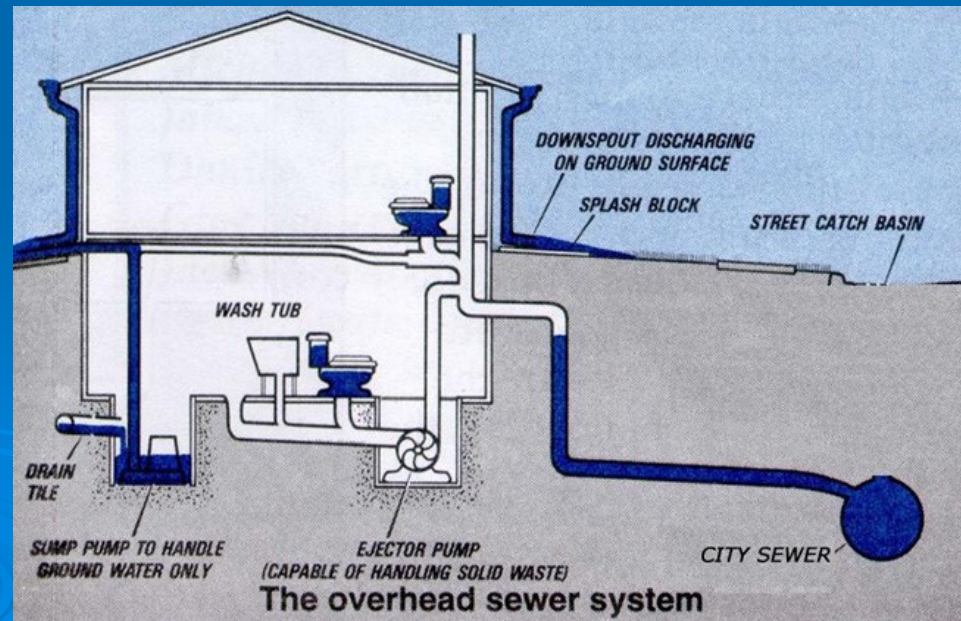
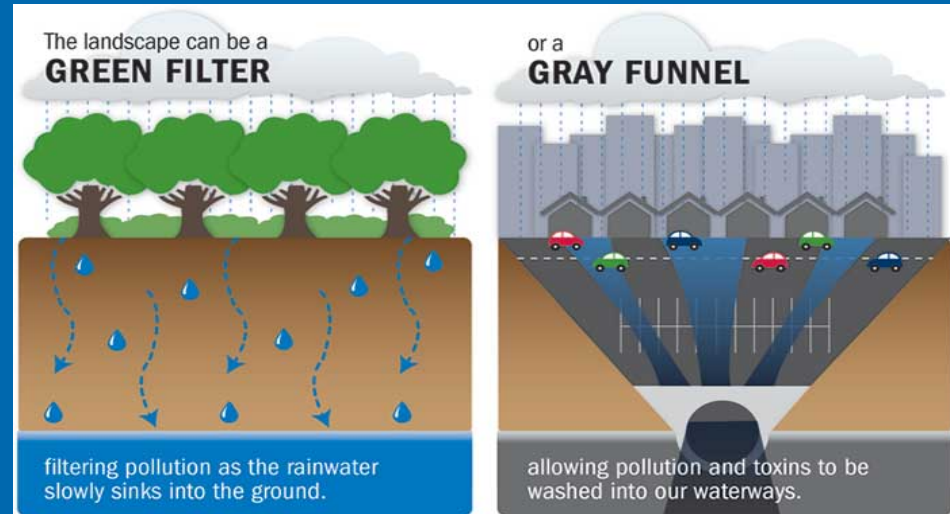
- Mostly NFIP coverage (some private sector)
- Triggered by a “flood”
 - ✓ Overland flow
 - ✓ 2 adjacent lots or 2 acres
- Structural and contents coverage sold separately
- Limited basement coverage
- Can't be cancelled
- Premiums don't increase based on claims history.

BASEMENT COVERAGE

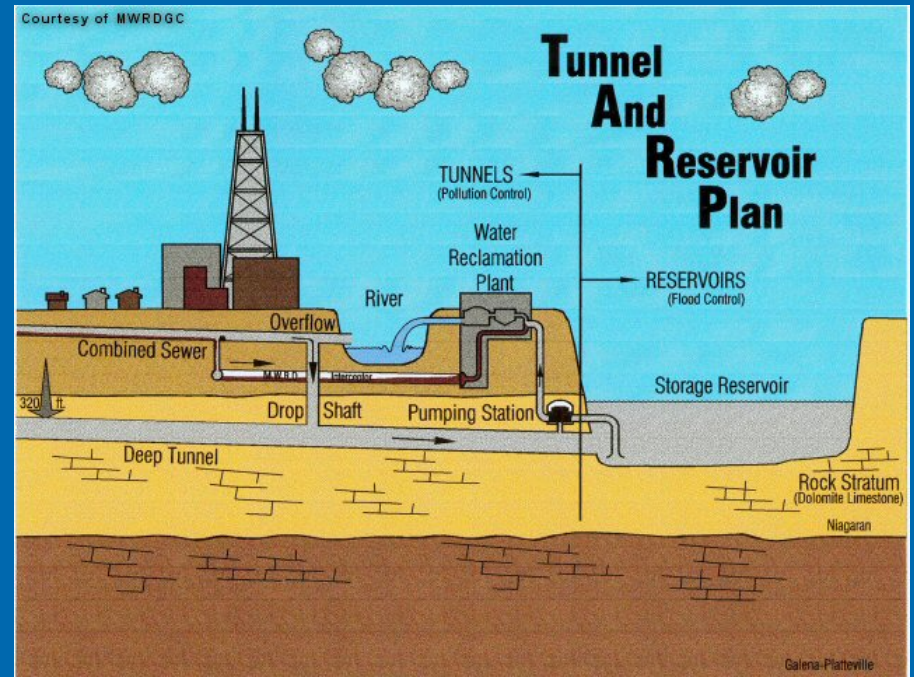
- Private sector coverage
- Sold as a rider on homeowner's policy
- Covers flood caused by stormwater or sewer backup.
- Sump failure usually included
- Usually fairly cheap
- Claims could increase premiums
- Read the small print

Sections of the Report - Strategies

- Past, Current, and Future
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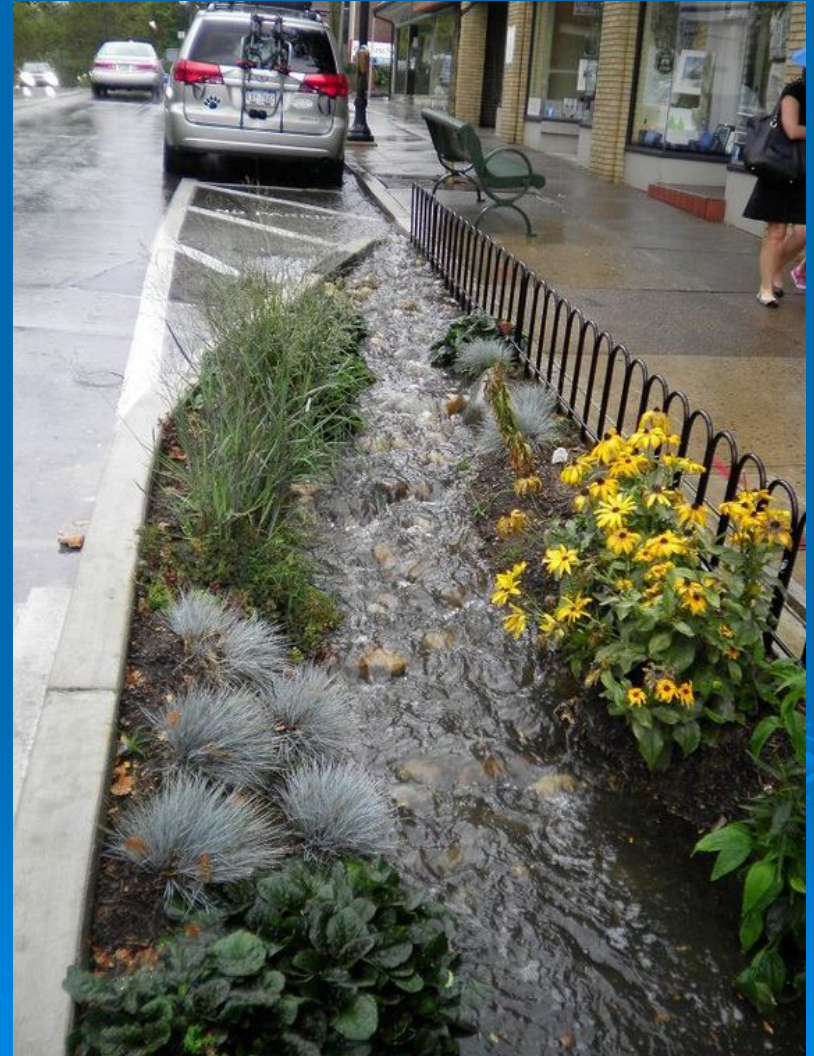


Chicago Deep Tunnel Project



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.
9. Annual funding for repetitive flood loss in/out of floodplain.
10. Fund mitigation programs to better leverage Federal funds



ASFPM

Urban Flood Risk Symposium

Chicago February 2015



- 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, re-development 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.
6. Support community's assessment of stormwater utility programs with training and documentation of best practices.
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