

Natural Floodplain Functions Alliance (NFFA)
BIMONTHLY WEBINAR SERIES PRESENTS:

Comprehensive Local Planning &
Programs: Charlotte-Mecklenburg's
Approach

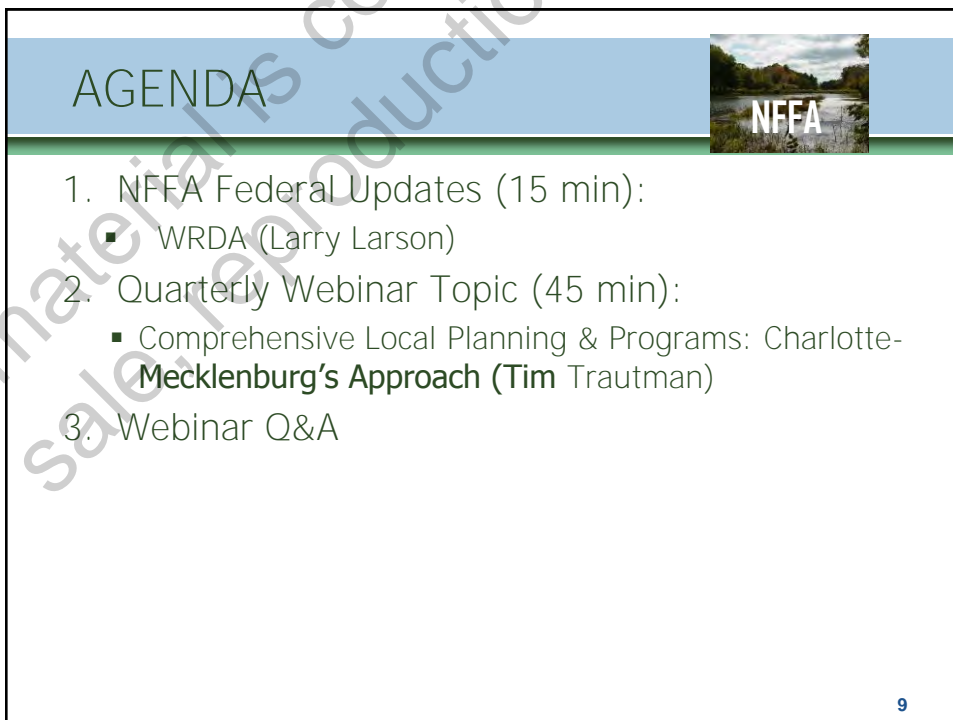
Photo courtesy of U.S. Fish & Wildlife Service

Tim Trautman, PE, CFM
Engineering & Mitigation Program Mgr.
Charlotte-Mecklenburg Stormwater Svcs.

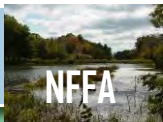
NFFA Webinars Hosted By

December 6, 2016
2:00pm - 3:30pm CT

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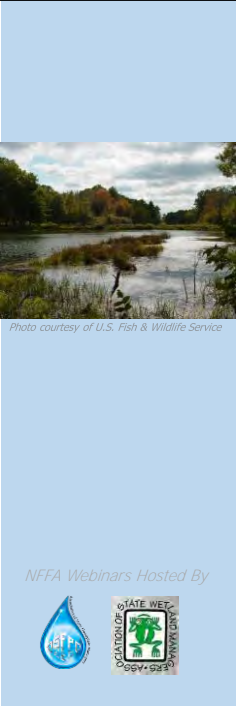


AGENDA



1. NFFA Federal Updates (15 min):
 - WRDA (Larry Larson)
2. Quarterly Webinar Topic (45 min):
 - Comprehensive Local Planning & Programs: Charlotte-Mecklenburg's Approach (Tim Trautman)
3. Webinar Q&A

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NFFA Federal Update:
Water Resource Development
Act (WRDA)

Larry Larson
Sr. Policy Advisor
Association of State Floodplain Managers
larry@floods.org

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Natural Floodplain Functions Alliance (NFFA)
BIMONTHLY WEBINAR SERIES PRESENTS:

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Comprehensive Local Planning & Programs: *Charlotte-Mecklenburg's Approach*


December 6, 2016

Learning Objectives

- Key components to flood resilience
 - How to gain political support
 - Ideas for local initiatives & funding
 - How to create Risk Reduction Plans
 - Ways to demonstrate results
- ✓ Shared Learning discussion questions

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Charlotte-Mecklenburg





- Mission: Protect Life and Property and restore the natural & beneficial floodplain functions
- 1993 Storm water utility
- FEMA Floodplains
- 1999 Guidance Document

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Community Vision

Floodplains are meant to flood

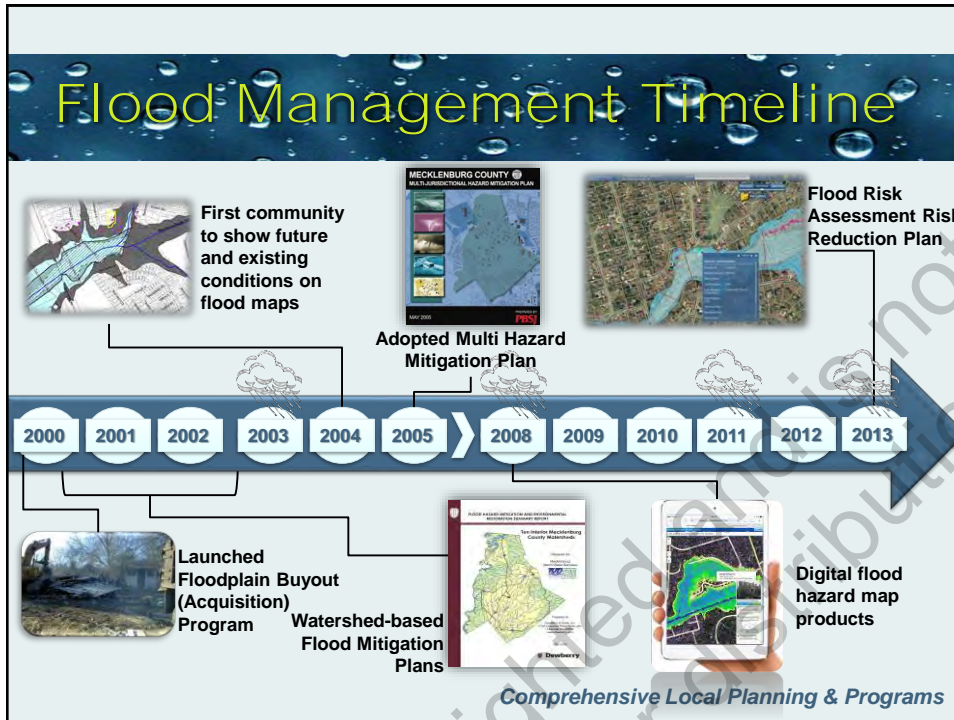


Value to Community:

- Reduce Loss of Life and Property
- Community Resilience
- Public Health & Safety

BEGIN WITH THE END IN MIND

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Floodplain Program

retroFIT
Floodproofing • Improvements • Together

MECKLENBURG COUNTY
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

DO YOU HAVE FLOOD INSURANCE?

STORMY WEATHER AHEAD

flins
Flood Information & Notification System

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Shared Learning

- Does your community have a vision for the function of its floodplains?
- What would your vision be?




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Floodplain Mapping Initiatives

Role of Local Government?

- Public Safety
- Public Health
- Protecting Life & Property



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Floodplain Mapping Uses

- Flood Insurance
- Regulatory
- Risk Communications
- Mitigation Plans
- Community Resilience

Local Investments in public safety and long term sustainability



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Floodplain Maps- History




3 Risk MAP Updates

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Future Floodplains

- Philosophy: Floodplain meant to flood
- Upland land for flood storage in new construction
- Account for future hydrologic changes to 1% event

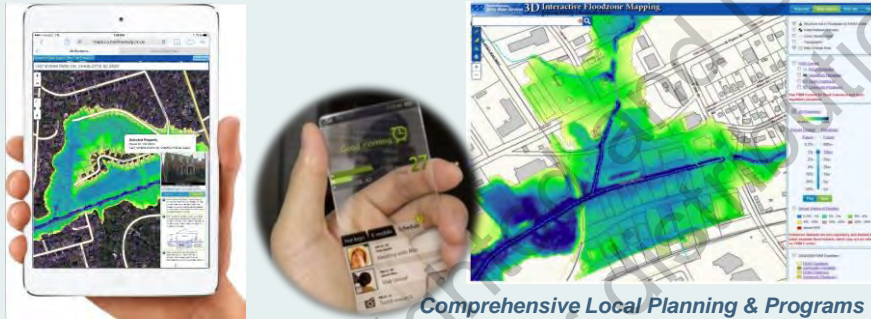


Lower future risk & Lower future flood insurance rates when maps increase!

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Shared Learning

- What does your community do to account for future changes to floodplains?
- How can flood risk information be better communicated to citizens?



Local Flood Mitigation

Flood Mitigation Program

			
FEMA Mitigation Grants (Buyouts, Elevation)	QuickBuy Program (post-flood)	Local Risk-Based Buyouts	Flood-proofing building retrofits
1999	2003, 2008, 2011	2012	 2015

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Protecting Life & Property

Since 1999

- Removed from Floodplain:
 - Over 320 buildings/homes
 - Over 550 families
- Floodplain restored:
 - 150 acres
- Actual Damage Avoided:
 - **100's buildings**
 - ~\$25M in losses avoided
- No Disaster funding



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Enhance Quality of Life

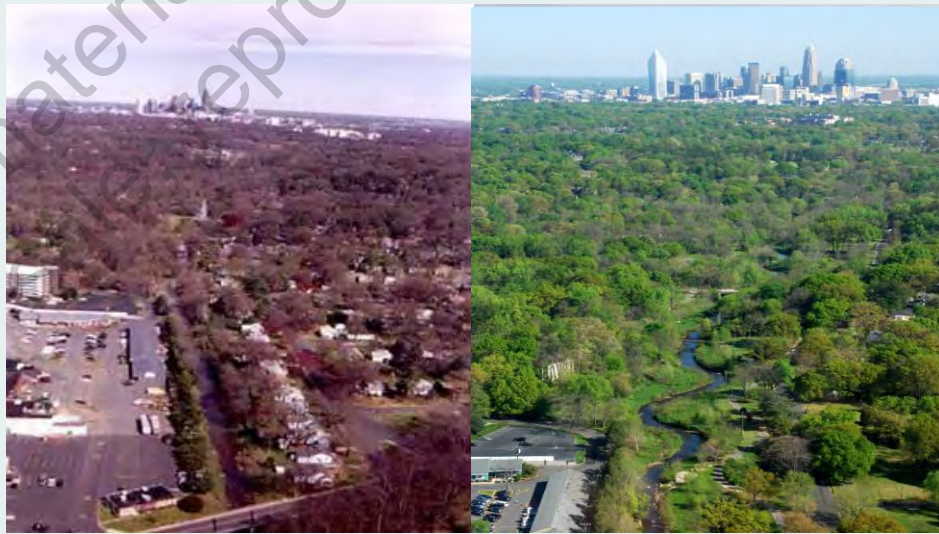
Since 1996

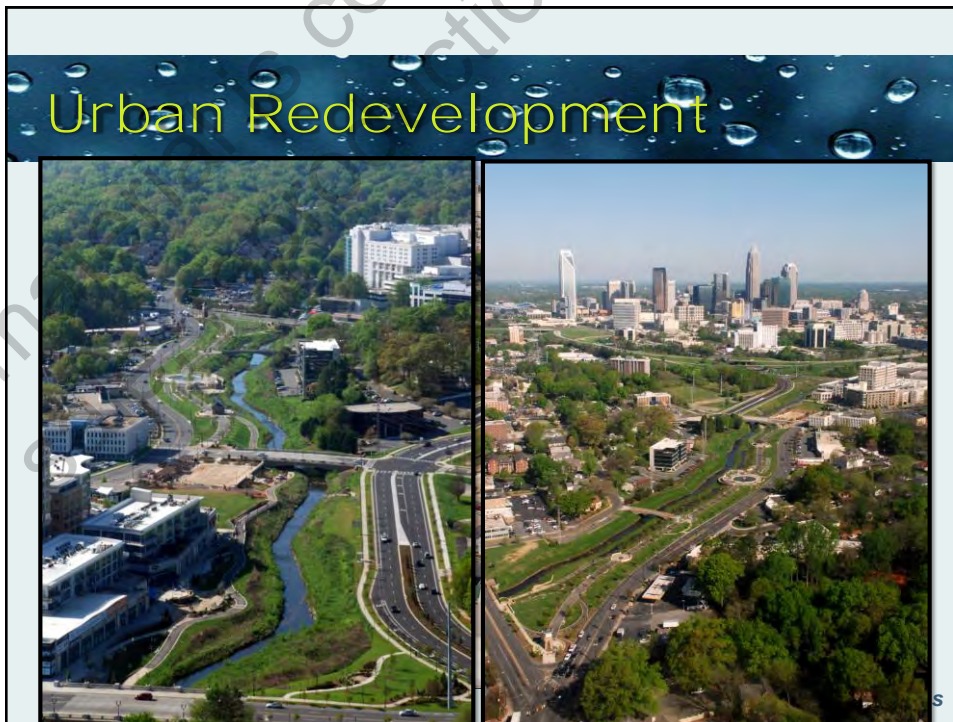
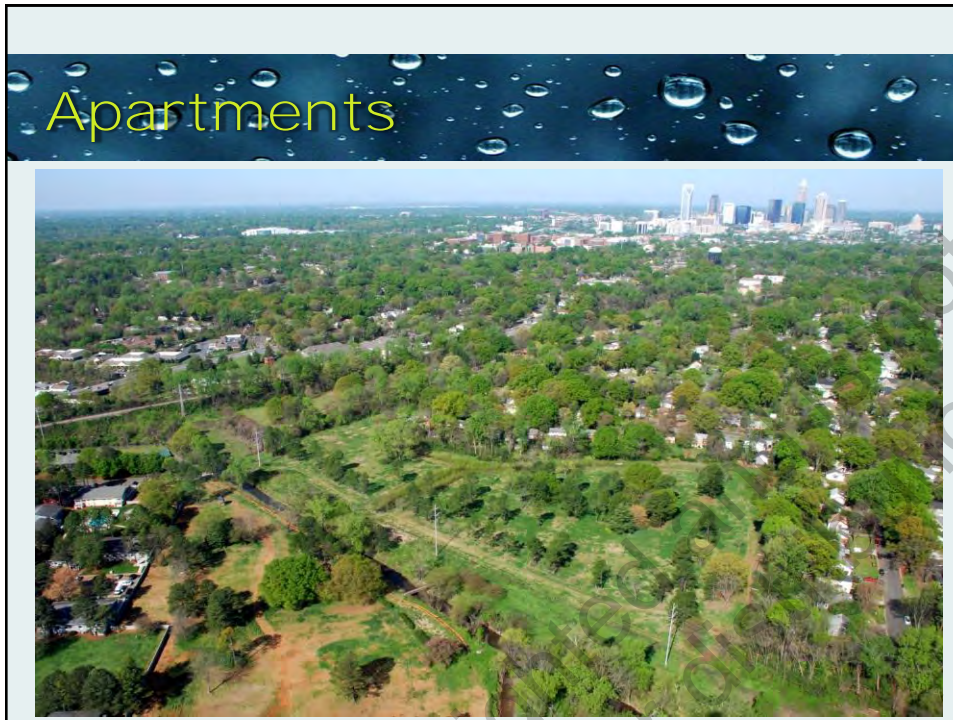
- Creek Use Policy
- CIP Projects
 - Over 20 Floodplain miles
 - Over 550 families
- Development Ordinances
 - Buffers
 - LID & Post-Construction Controls
- Stream Walks
 - 280 miles per year



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Residential Neighborhoods



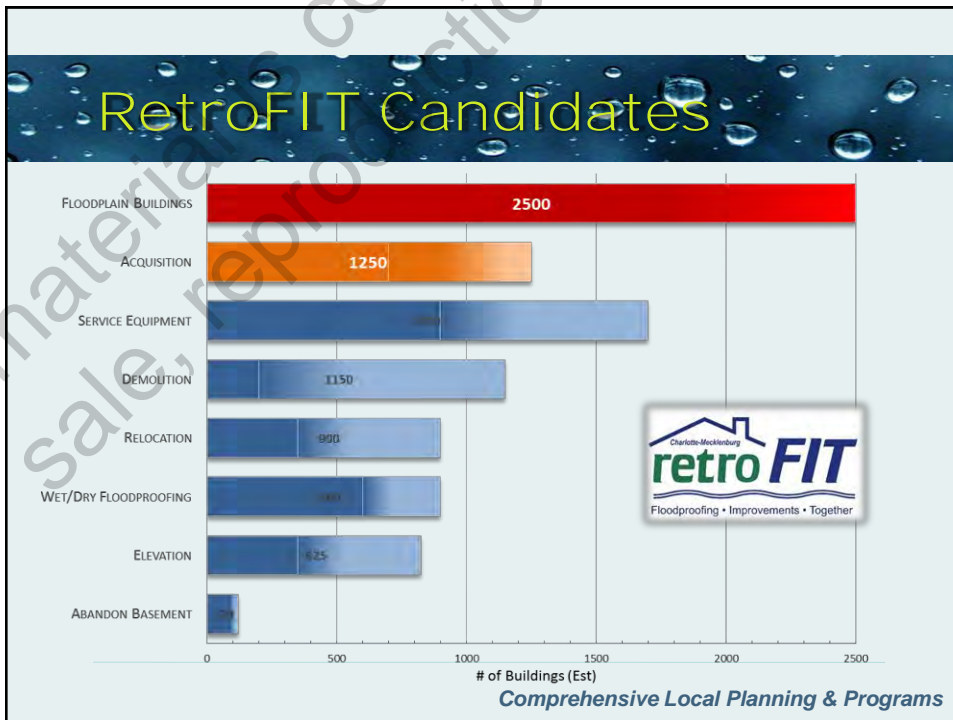


RetroFIT Program

- Incentivize private mitigation
- Floodplain property owners
- Financial & technical assistance
- Direct grant program
- FY16 - Pilot Year \$250,000



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Shared Learning

- How can you incentivize and implement mitigation locally?
- What are other community benefits to natural floodplain functions?



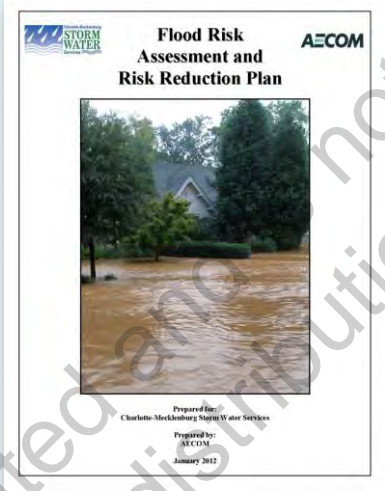
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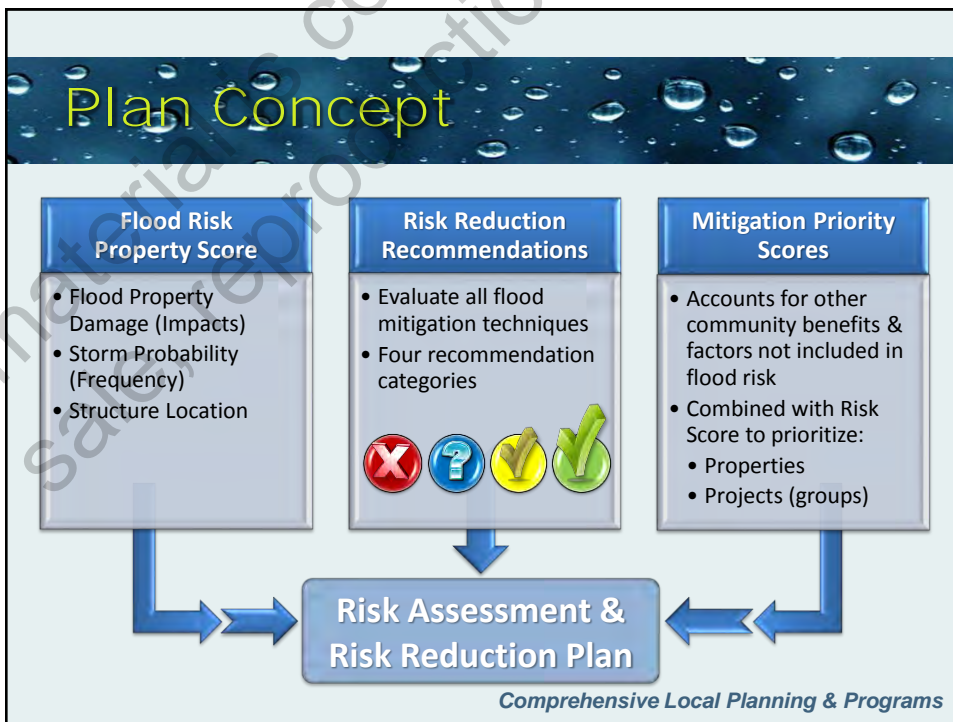
Risk Reduction Planning in Mecklenburg County

Purpose of the Plan

- Recommend specific flood mitigation techniques at a **building** level
- Assist in planning and **prioritizing** future mitigation projects
- Use a dynamic and **holistic, risk-based** approach



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Flood Risk Example

Criteria	Impact-based Factors	Storm Event	Points*
A	Flooding above the lowest finished floor of a building	N/A	0
B	Flooding of electrical and/or mechanical equipment	25-yr	48
C	Flood water is touching a portion of the building	10-yr	100
D	Property is completely surrounded by flood water	25-yr	44
E	Structure is completely surrounded by flood water	25-yr	20
F	Structure is completely surrounded by flood water and is a critical facility	N/A	0
G	Structure is completely surrounded by flood water and is multi-family residential	N/A	0
H	Flood water touching building with structural damage as a result of cumulative flooding	N/A	0
I1	Flooding of <i>significant</i> exterior property improvements	10-yr	60
I2	Flooding of <i>moderate</i> exterior property improvements	N/A	0
J	Flooding around area where single-family residential vehicles are typically parked	10-yr	60
K	Flooding of any yard (any portion of parcel)	2-yr	15
Total Impact-based Score			347

* Points are determined using the matrix provided in Appendix D.

Multiplier	Location-based Factors	
1.5	Building located in high danger depth-velocity zone	No
1.3	Building located in medium danger depth-velocity zone	Yes
1.3	Building located near area impacted by frequent storm drainage overflows	No
1.1	Building located in Community Encroachment Area	Yes

Flood Risk Property Score = 347 x 1.3 = 451

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Risk Reduction Recommendations

Technique	Recommendation	BCR
<input type="checkbox"/> 1. Buyout	Highly Effective	2.636314
<input type="checkbox"/> 2. Demo Rebuild	Further Evaluation Needed	
<input type="checkbox"/> 3. Relocation	Further Evaluation Needed	
<input type="checkbox"/> 4. Buyout Re-Sale	Highly Effective	4.111261
<input type="checkbox"/> 5. Elevation	Highly Effective	6.913485
<input type="checkbox"/> 6. Fill Basement	Highly Effective	
<input type="checkbox"/> 7. Dry Floodproofing	Further Evaluation Needed	
<input type="checkbox"/> 8. Wet Floodproofing	Not Recommended	
<input type="checkbox"/> 9. Audible Flood Warning	Highly Effective	
<input type="checkbox"/> 10. Storm Water Detention Facilities	Unknown	

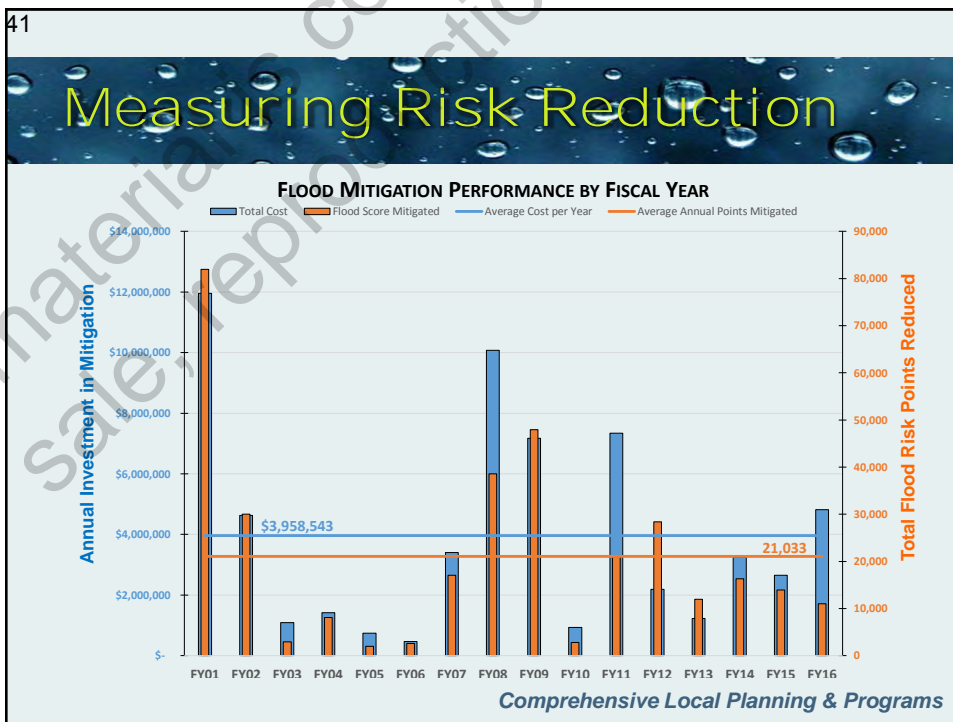
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Flood Mitigation Priority Score

Criteria	Priority Factors	Mitigation Techniques That Apply*	Points
1.	Life and human safety	1, 3, 4	150.00
2.	Cost Effectiveness (Benefit-Cost Ratio)	1, 3, 4, 5, 7, 8	0.00
3.	Proximity to other mitigation projects	1, 2, 3, 4, 5	50.00
4.	Property added to flood zone	Any	0.00
5.	Repetitive loss structure	Any	150.00
6.	Property adjacent to publicly owned land	1, 3, 4	50.00
7.	Property located on five-year planned greenway trail	1, 3, 4	0.00
8.	Property located on five-year planned sanitary sewer route	1, 3, 4	0.00
9.	Property intersects with major system water quality buffer (Buffer that is ≥ 100')	1, 3	0.00
10.	Property located in an Environmental Focus Area	1, 3	0.00
11.	Property covered by NFIP policy	Any	30.00
12.	Historic preservation and cultural asset protection	3, 5, 7, 8	0.00
13.	Other	Any	0.00
Total Flood Mitigation Priority Score			430

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Shared Learning

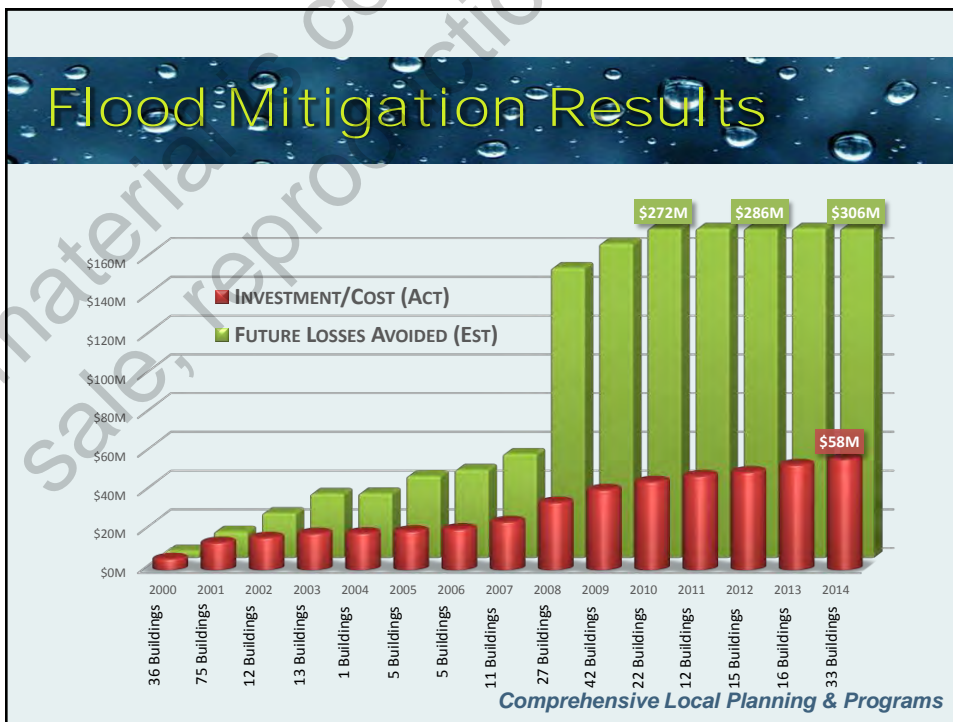
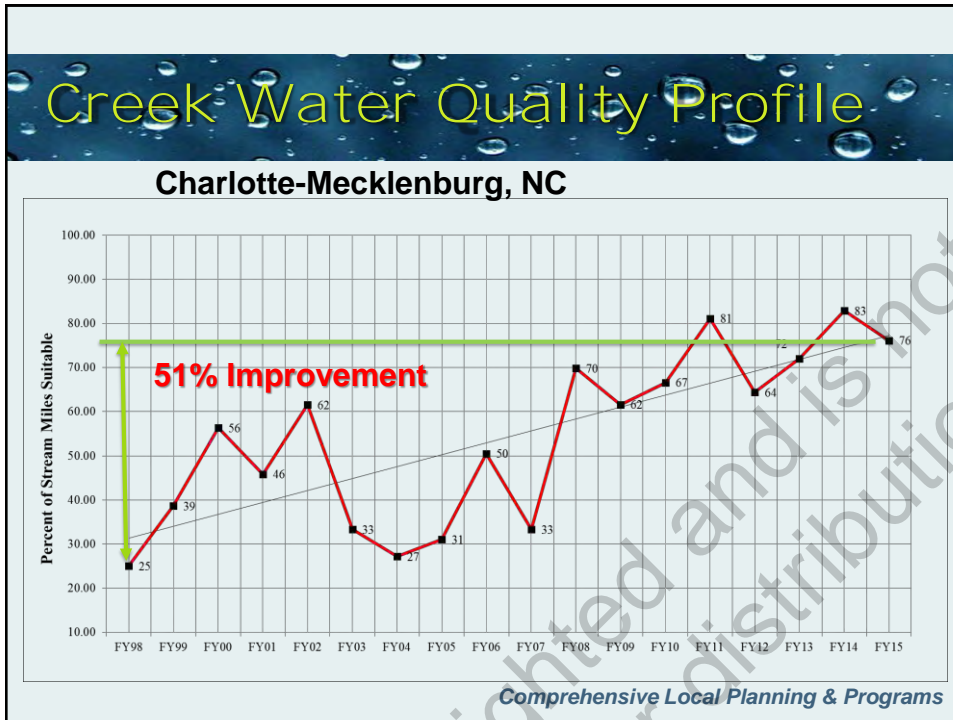
- How can you make your mitigation planning more useful?
- How should communities plan for acceptable “residual risk”?

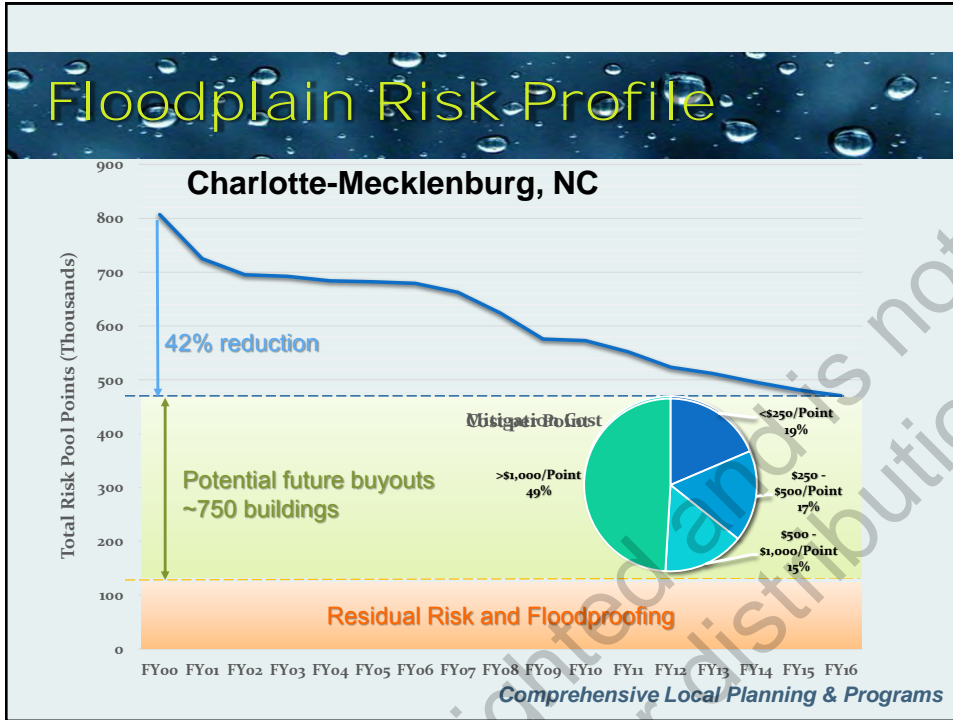


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Community Impacts: Moving the Needle





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Conclusions:

1. Have a community vision
2. Resilient Funding = Resilient Community
3. Show the benefits & demonstrate results

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Photo courtesy of U.S. Fish & Wildlife Service

Thanks to Our Presenter:



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<http://www.aswm.org/watersheds/natural-floodplain-function-alliance>

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<http://bit.ly/243JqTp>