

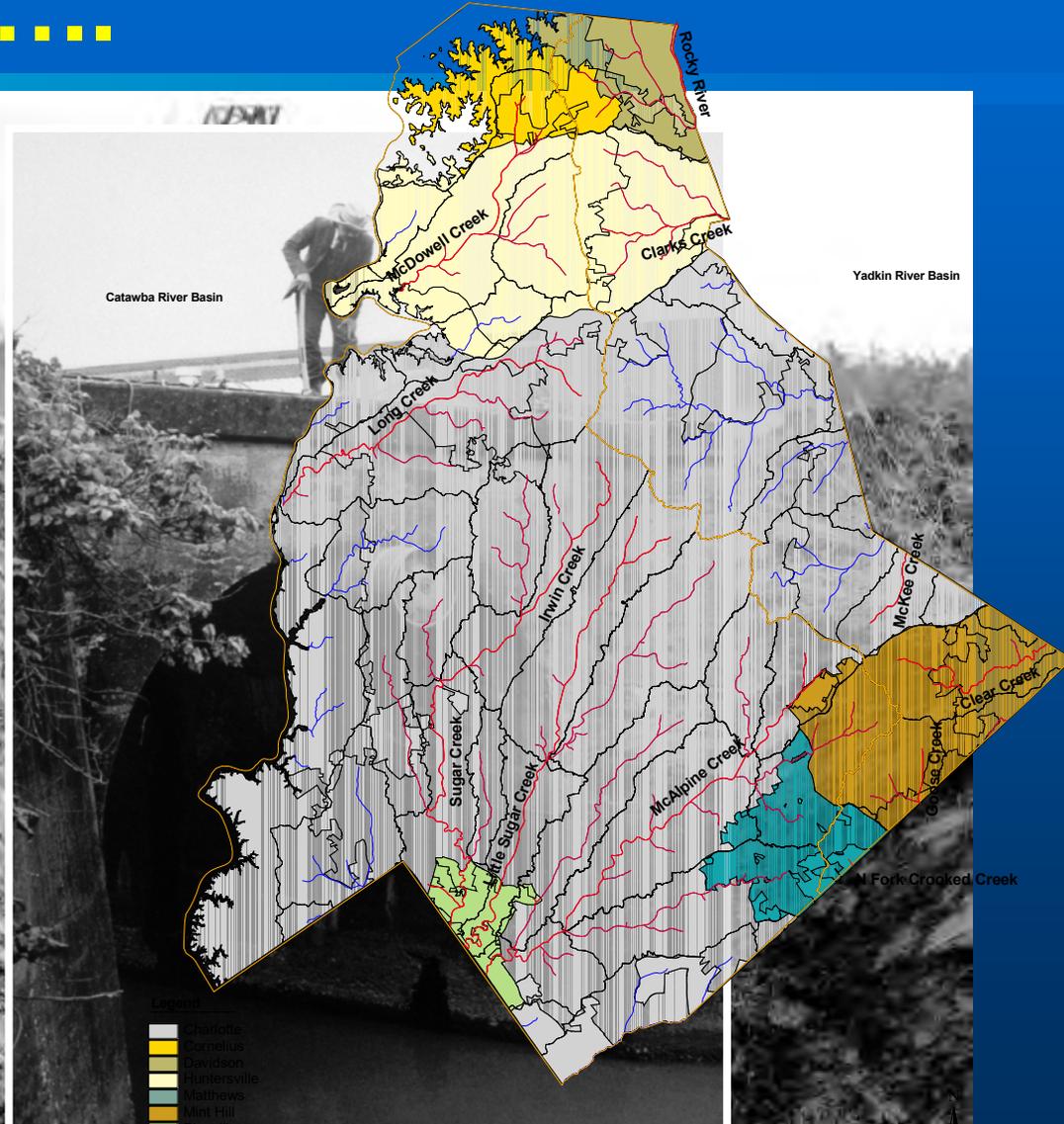
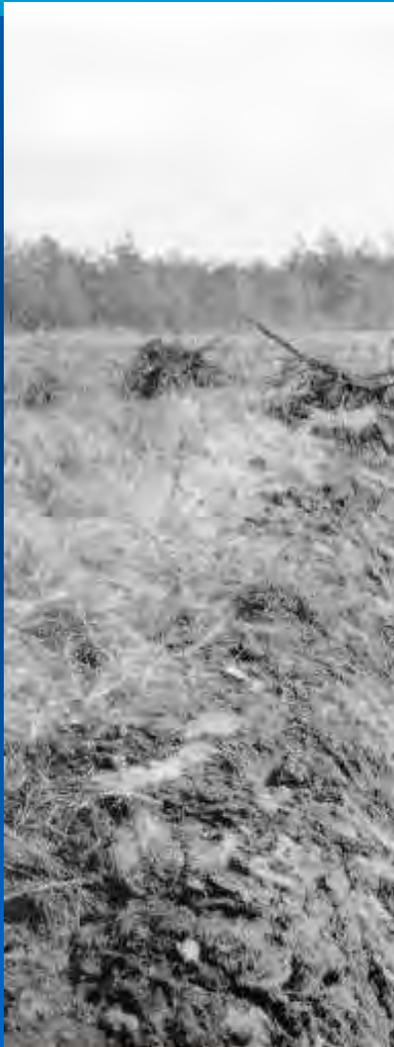


Decision Model used to Reform Charlotte-Mecklenburg's Floodplain Management Program

2017 Annual Conference



In the beginning, creeks were.....



- Legend
- Charlotte
- Cornelius
- Davidson
- Huntersville
- Matthews
- Mid Hill
- Trinityville
- Streams Listed on NC 303(d) List
- River Basin Drainage Divide



Flood History - 1995



💧 \$20M in losses (est.)





Flood History - 1997

- 💧 \$60M in losses (est.)
- 💧 Flooding outside floodplain
- 💧 Majority of homes flooded, again





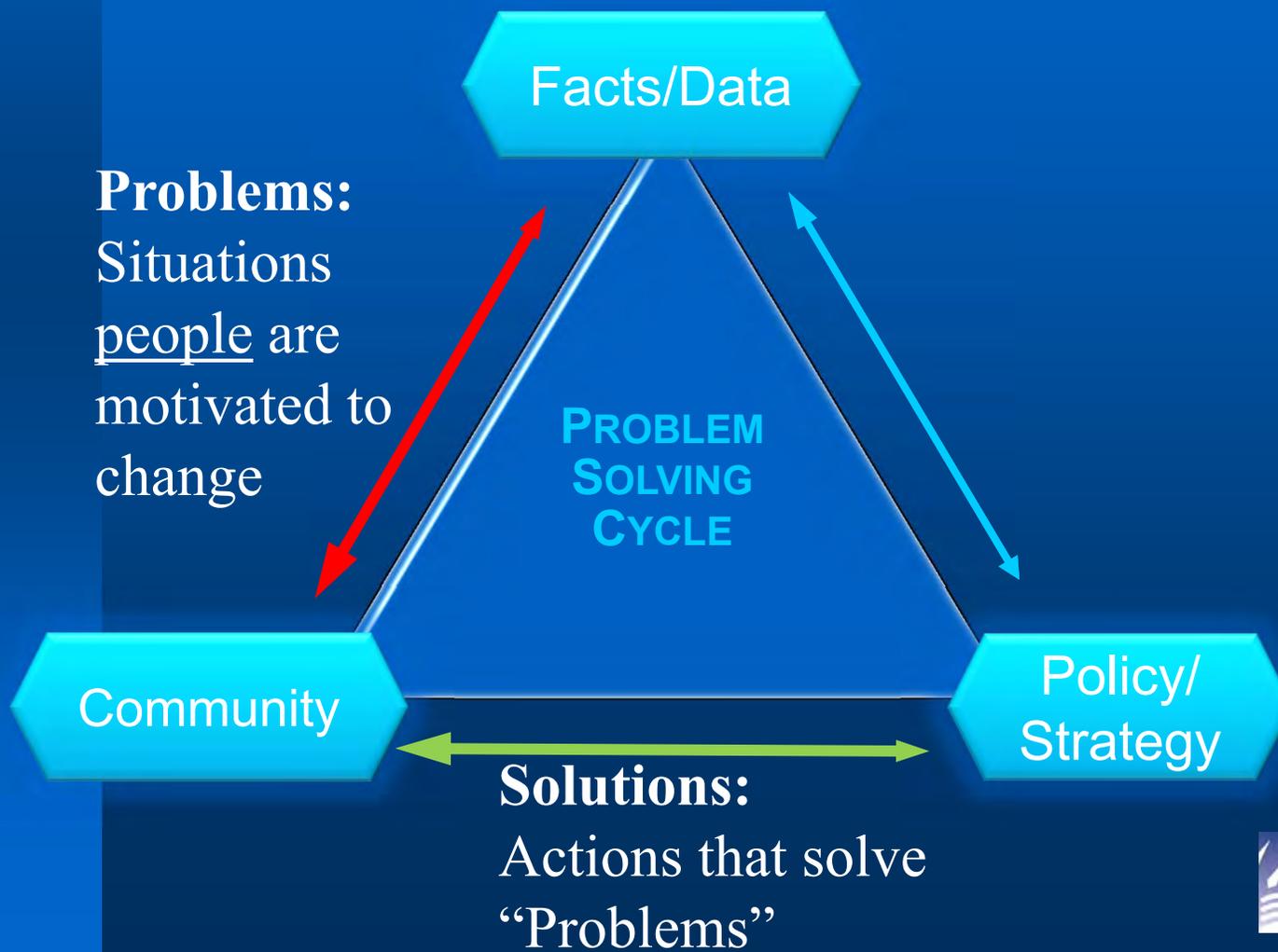
Level of Service

- 💧 **Go buy flood insurance**
- 💧 **CRS 8, 10% discount – you are welcome!!**
- 💧 **We will put you “on the list”**
- 💧 **Unsustainable**





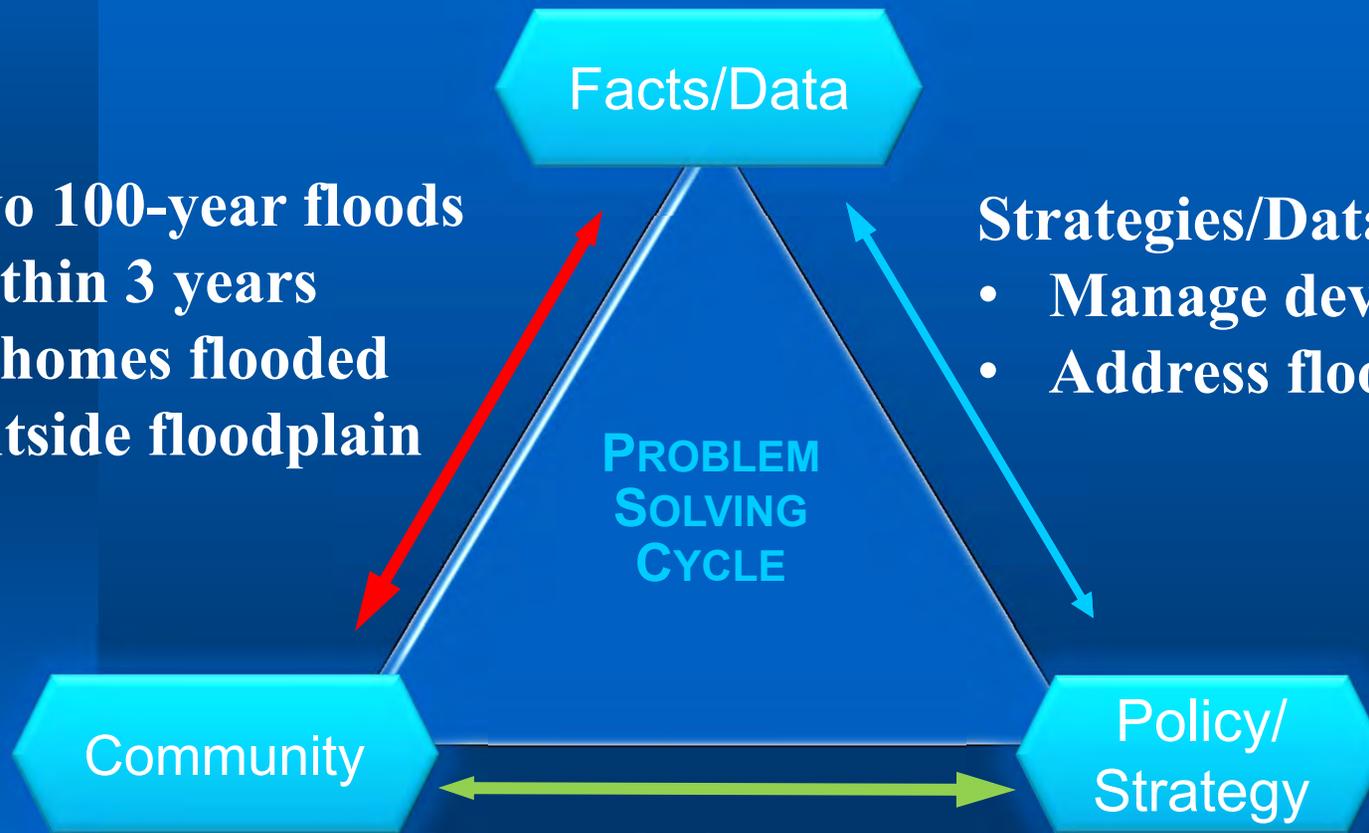
Storm Water Management Decision Model



Never let a good crisis go to waste Sir Winston Churchill



- Two 100-year floods
- Within 3 years
- 17 homes flooded
- Outside floodplain



- Strategies/Data Needs
- Manage development
 - Address flooding

Goals - Guidance Doc.

- Prevent losses
- Natural/beneficial functions





Facts/Data

Facts are stubborn things; and whatever may be our wishes, our inclinations, or the dictates of our passion, they cannot alter the state of facts and evidence.

John Adams

Community

Policy/
Strategy

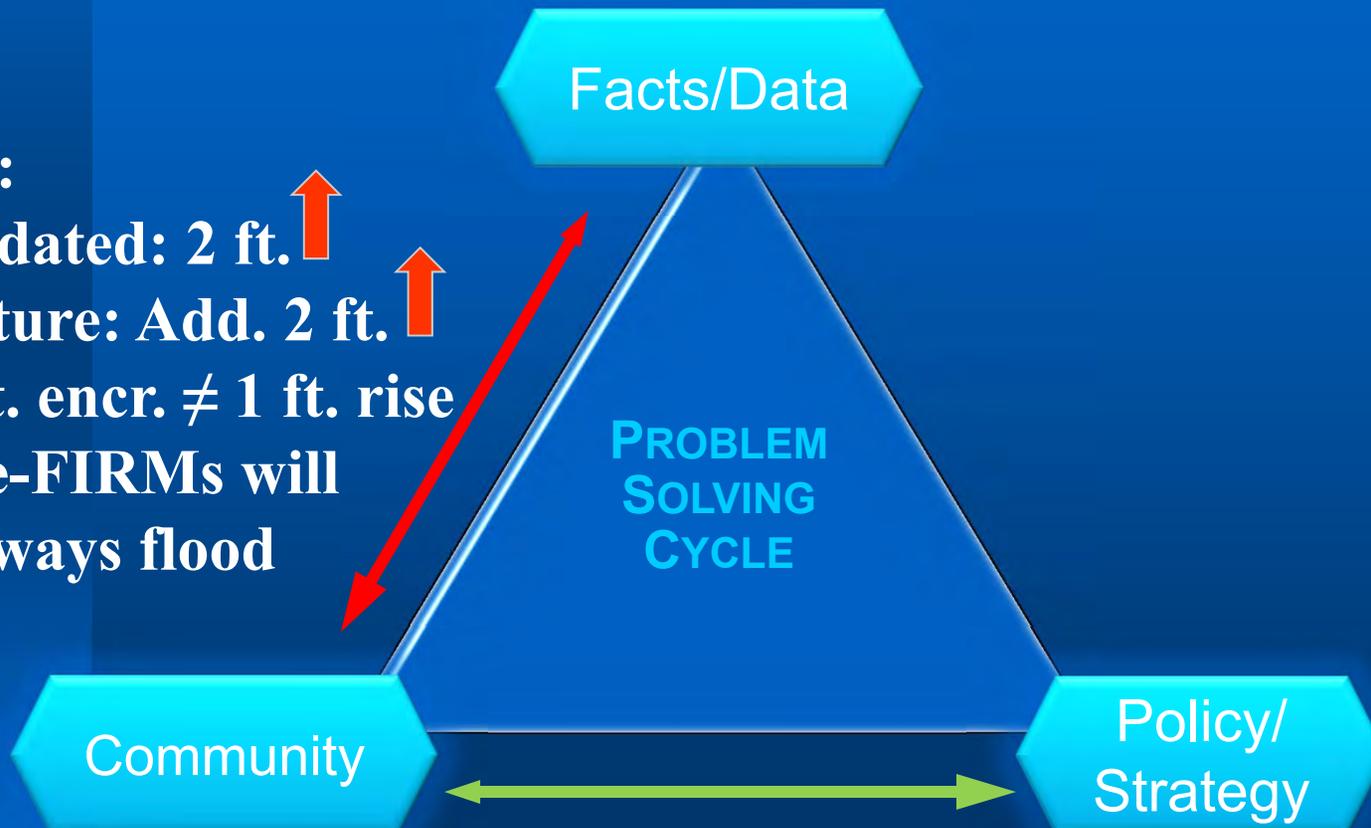




Facts are stubborn things..... they cannot alter.... evidence. John Adams

Maps:

- Updated: 2 ft. 
- Future: Add. 2 ft. 
- 1 ft. encr. \neq 1 ft. rise
- Pre-FIRMs will always flood

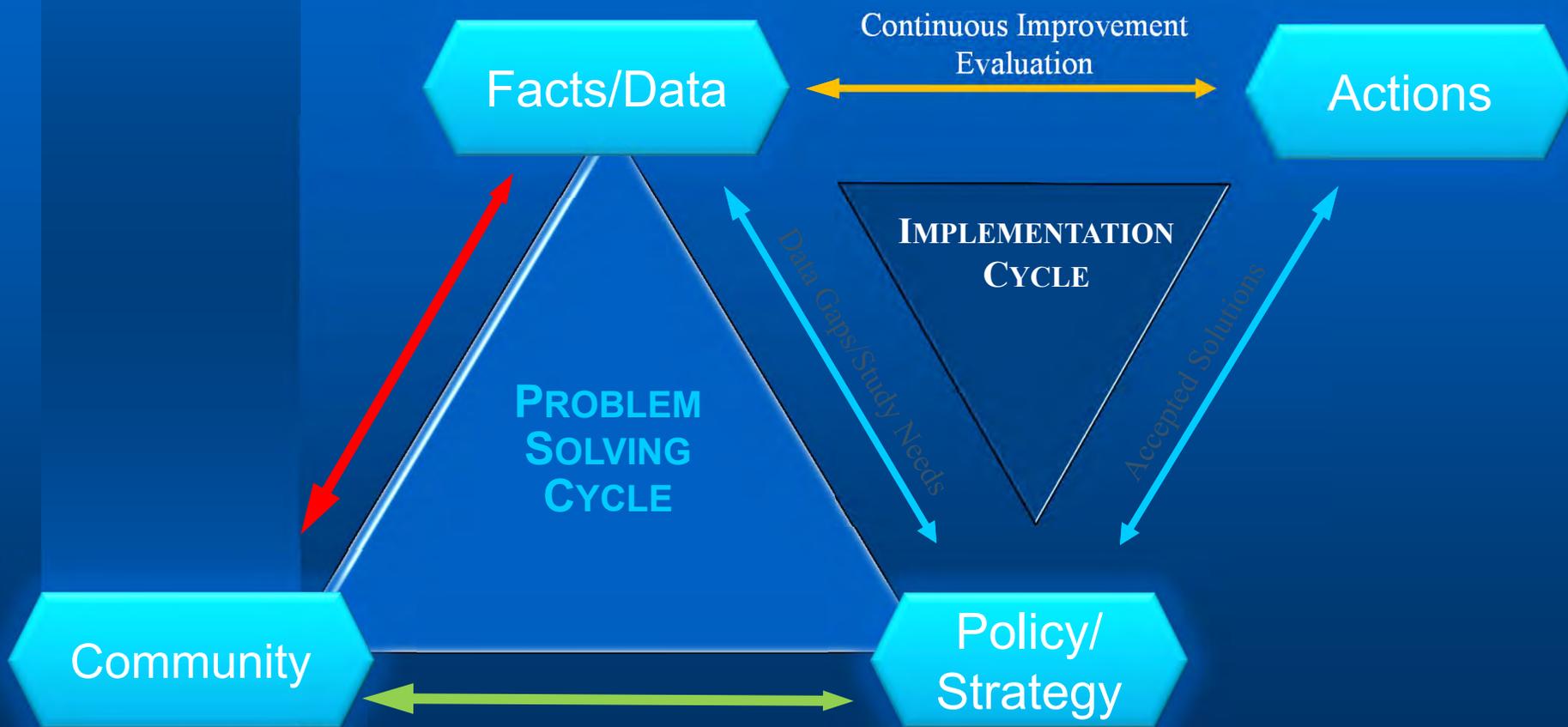


- Local mapping program
- Future conditions/0.1 ft. encr.
- Buyout program





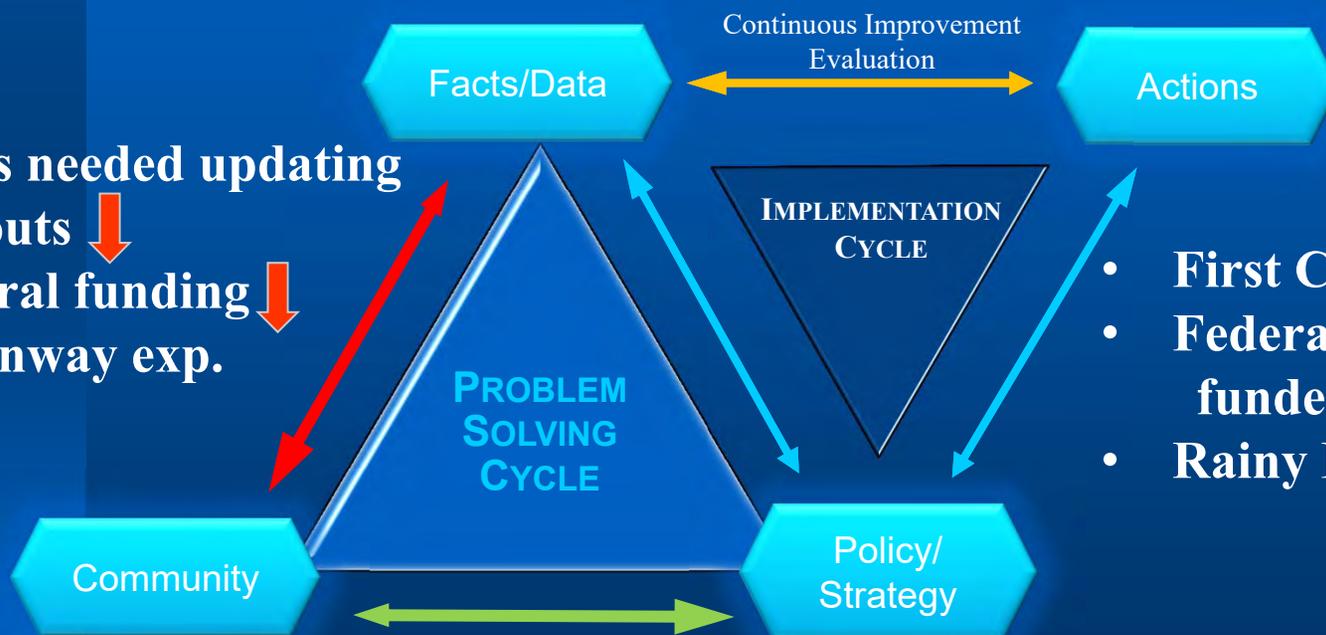
Storm Water Management Decision Model





Continuous improvement is better than delayed perfection – Mark Twain

- Maps needed updating
- Buyouts ↓
- Federal funding ↓
- Greenway exp.



- **First CTP**
- **Federal/local funded buyouts**
- **Rainy Day fund**

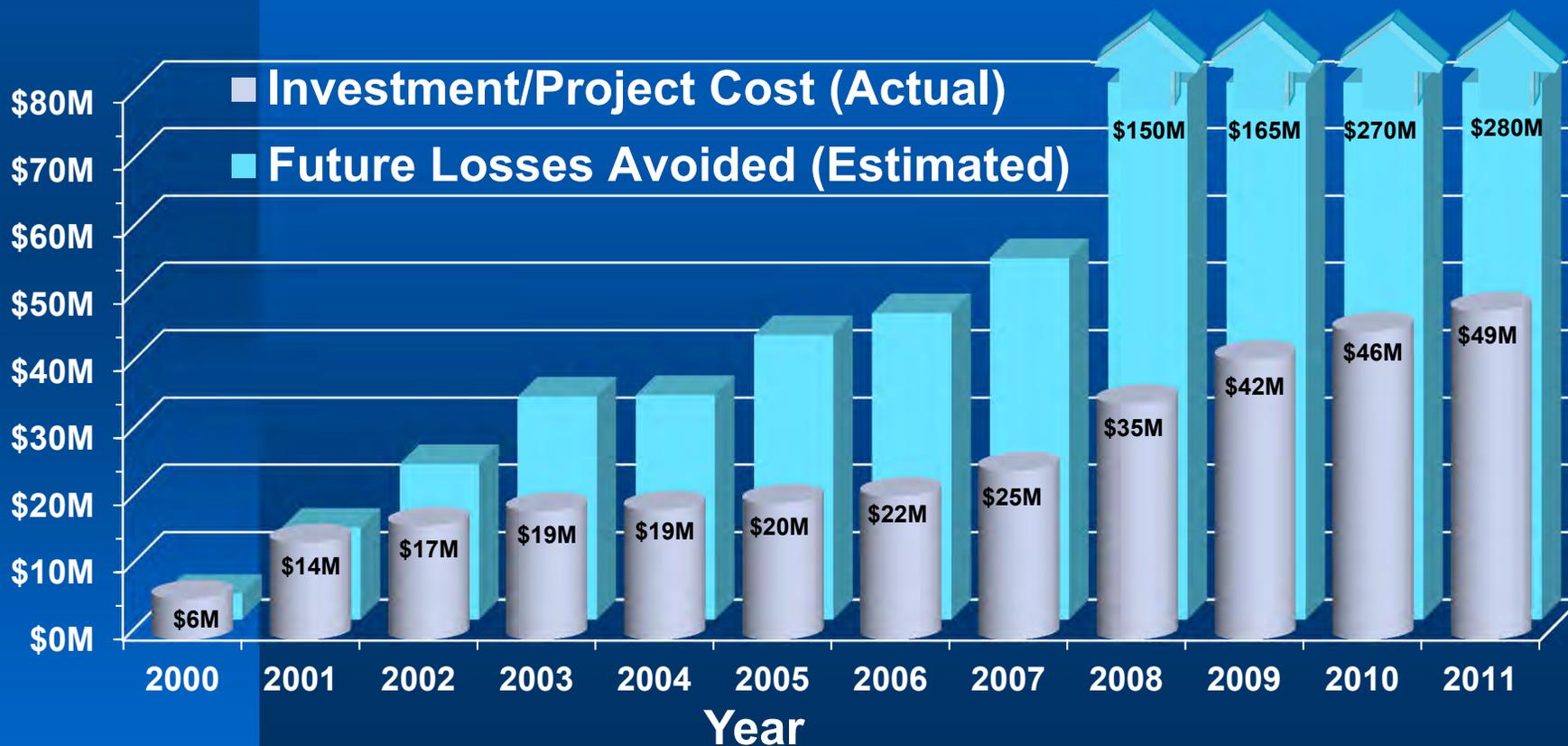
- **Land use assumptions**
- **Risk Assessment/Risk Reduction**
- **retroFIT**



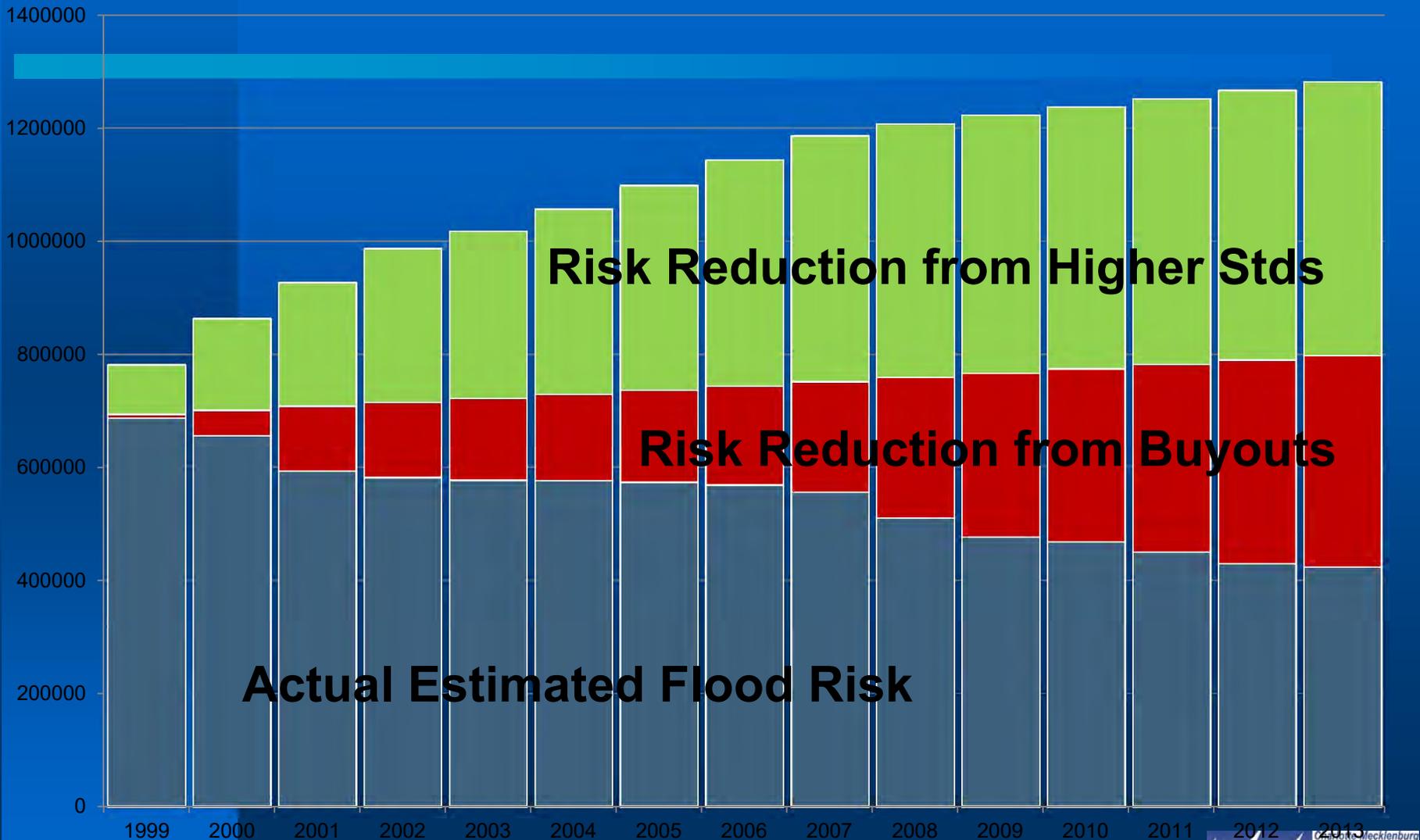


The End Game - Resilience

Cumulative Investment & Benefits in Mitigation



The End Game - Resilience



Actual Estimated Flood Risk

Risk Reduction from Higher Stds

Risk Reduction from Buyouts



The End Game - Resilience

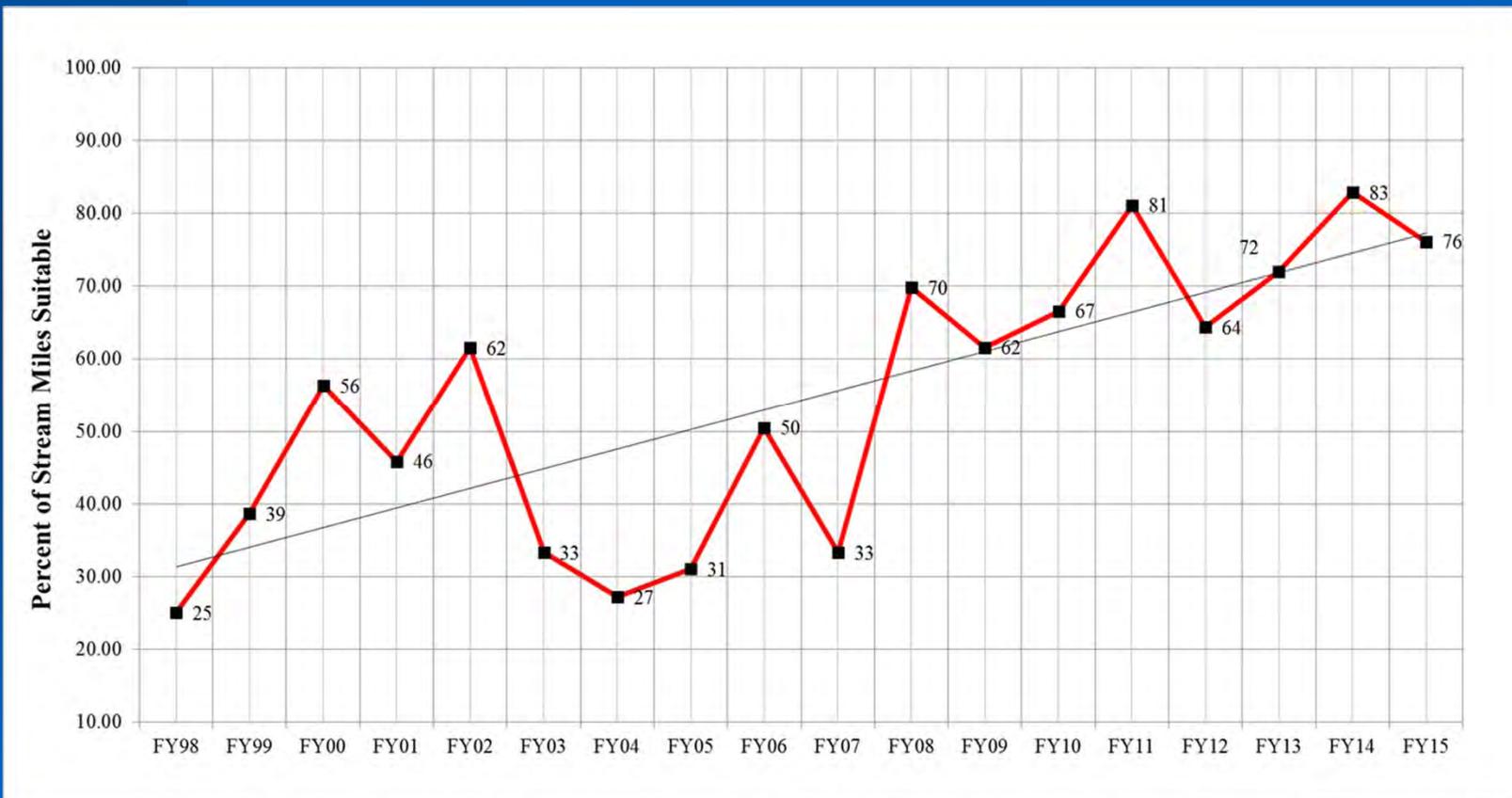


- 💧 433 buildings demolished
- 💧 155 floodplain acres reclaimed
- 💧 Funding - 58% federal, 42% local
- 💧 Water quality is improving

The End Game - Habitat



Percent streams fishable, swimmable



Questions??

