

Mecklenburg County

HAZUS Project



ASFPM 25th Annual Conference



Guidance Document

- **Business Plan**

- **Initiated Dec '94 - adopted Dec' 97**

- **Objectives:**

- ◆ **Prevent or reduce loss of life and damage caused by floods**

- ◆ **Preserve the natural and beneficial functions of floodplains**

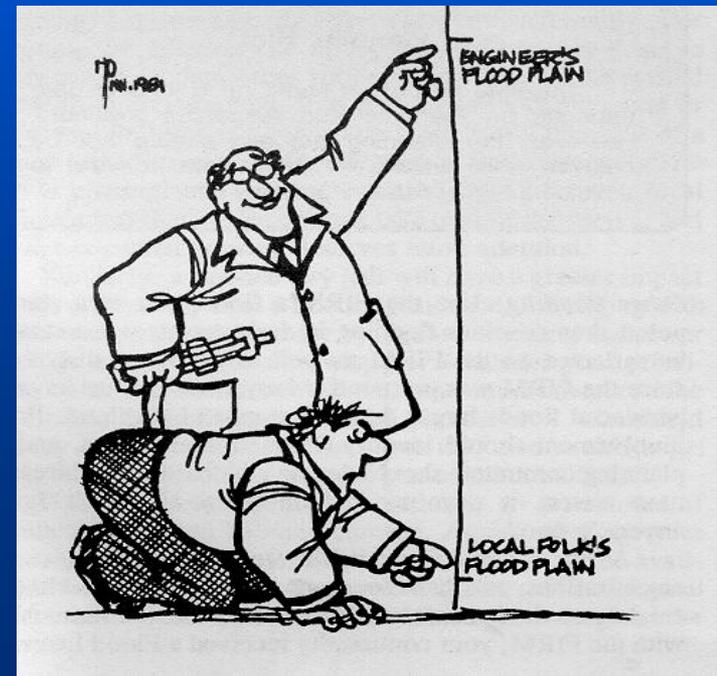
I. New Development.....

Floodplain Regulations

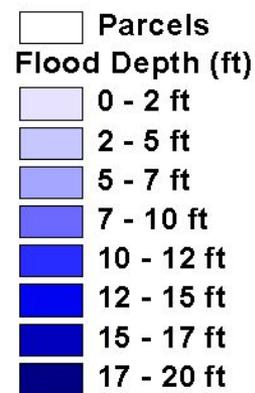
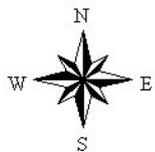
- **Determine the extent maps are out of date**
- **Benefits to mapping future landuse conditions**
- **What are the real impacts of filling in the floodplain**

Compared to Old FEMA maps:

- **FEMA Floodplain (1999 landuse)**
 - Average change: +1.9' to -1.9'
 - Range: +8.7' to -6.1
- **FLUM Floodplain (Future landuse)**
 - Average change: +4.3 to -0.2
 - Range: +11.0 to -4.6
- **Mallard and McAlpine Data**



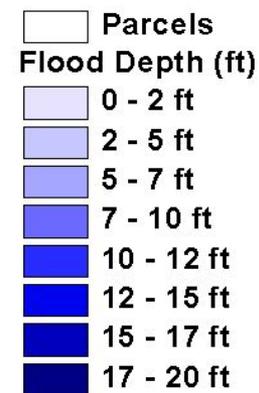
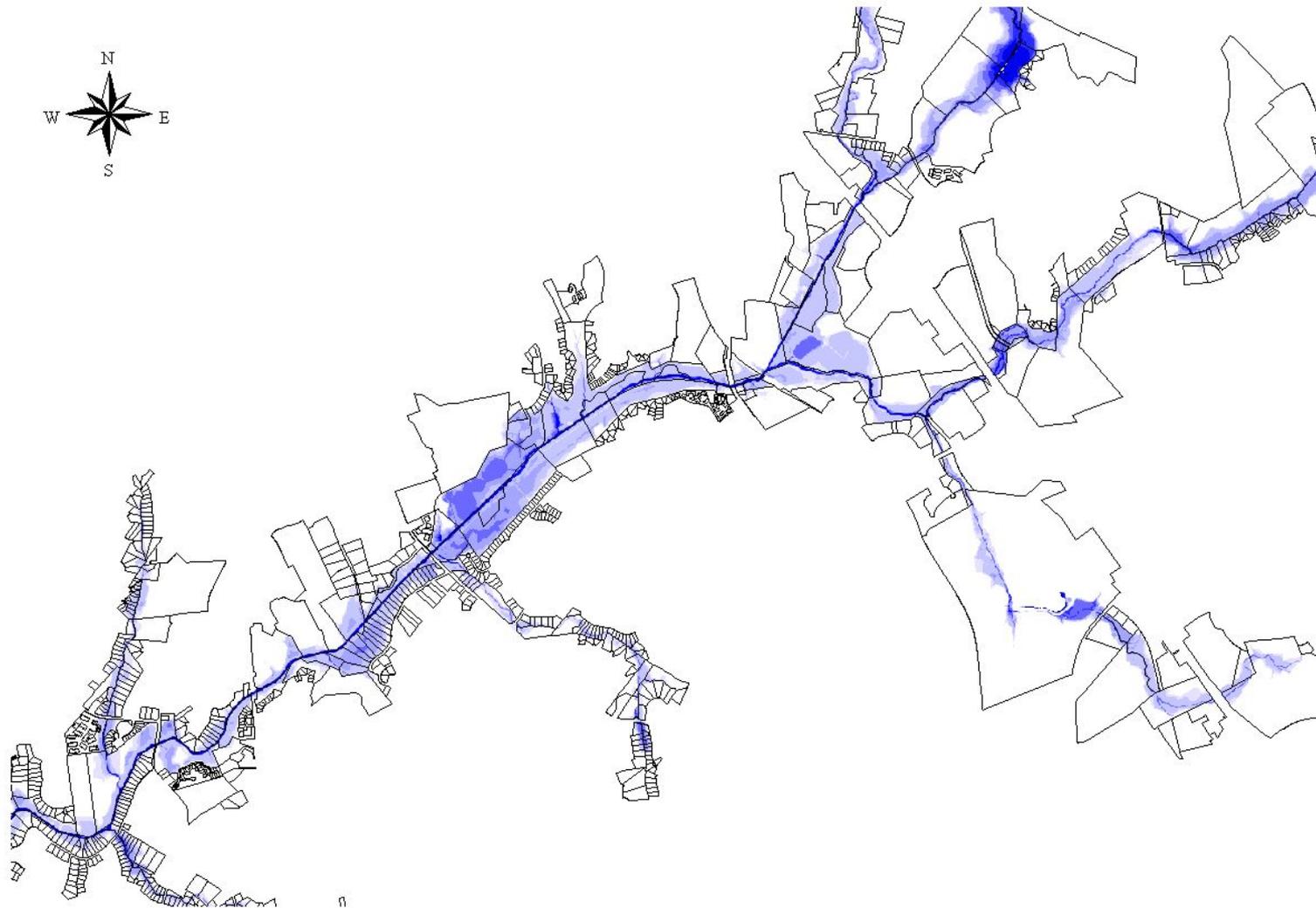
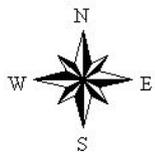
McAlpine Creek Flood Depth Original 100-Year Floodplain



0.5 0 0.5 1 1.5 Miles



McAlpine Creek Flood Depth New 100-Year Floodplain



0.5 0 0.5 1 1.5 Miles

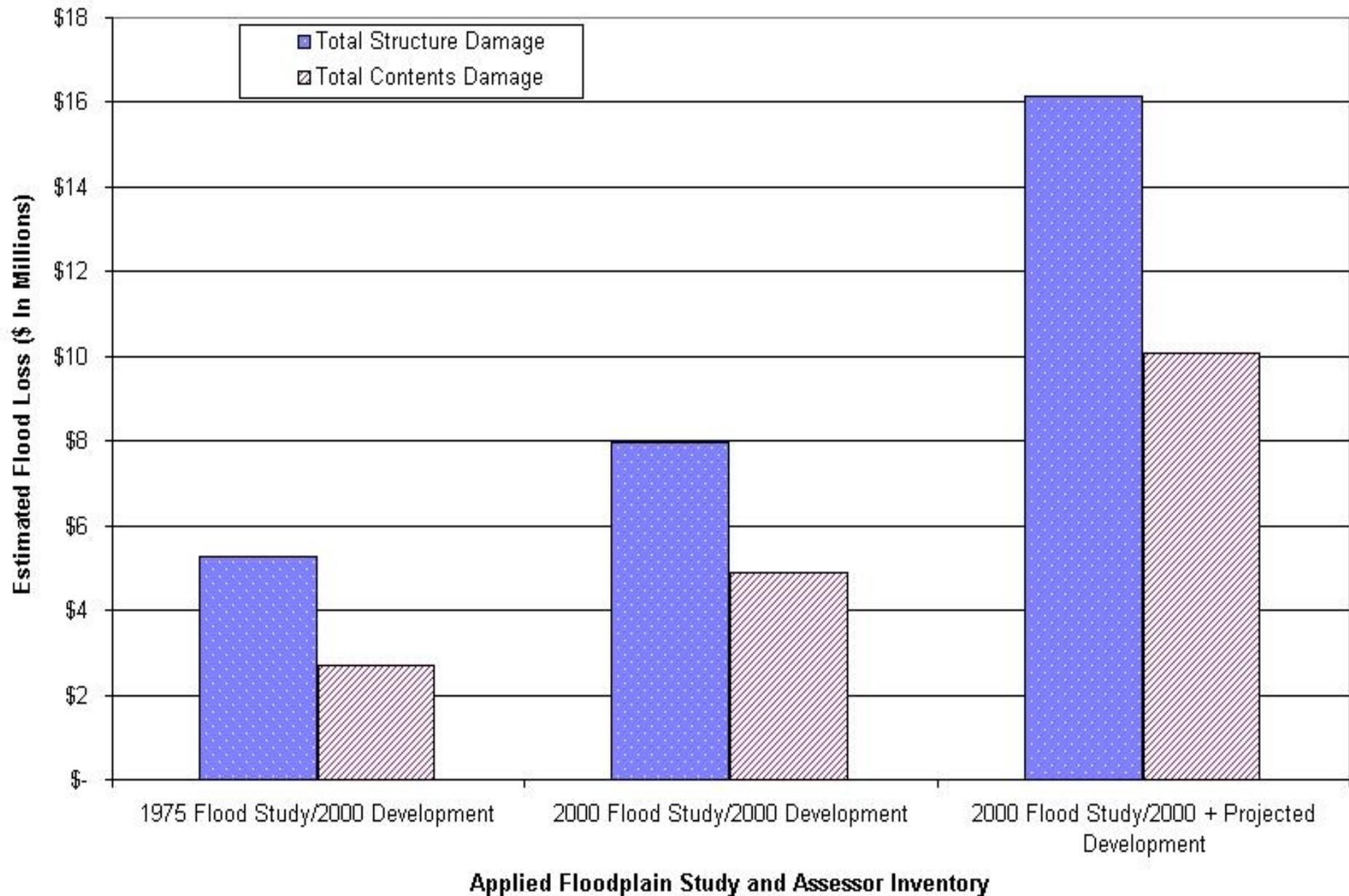


Intuitive.....

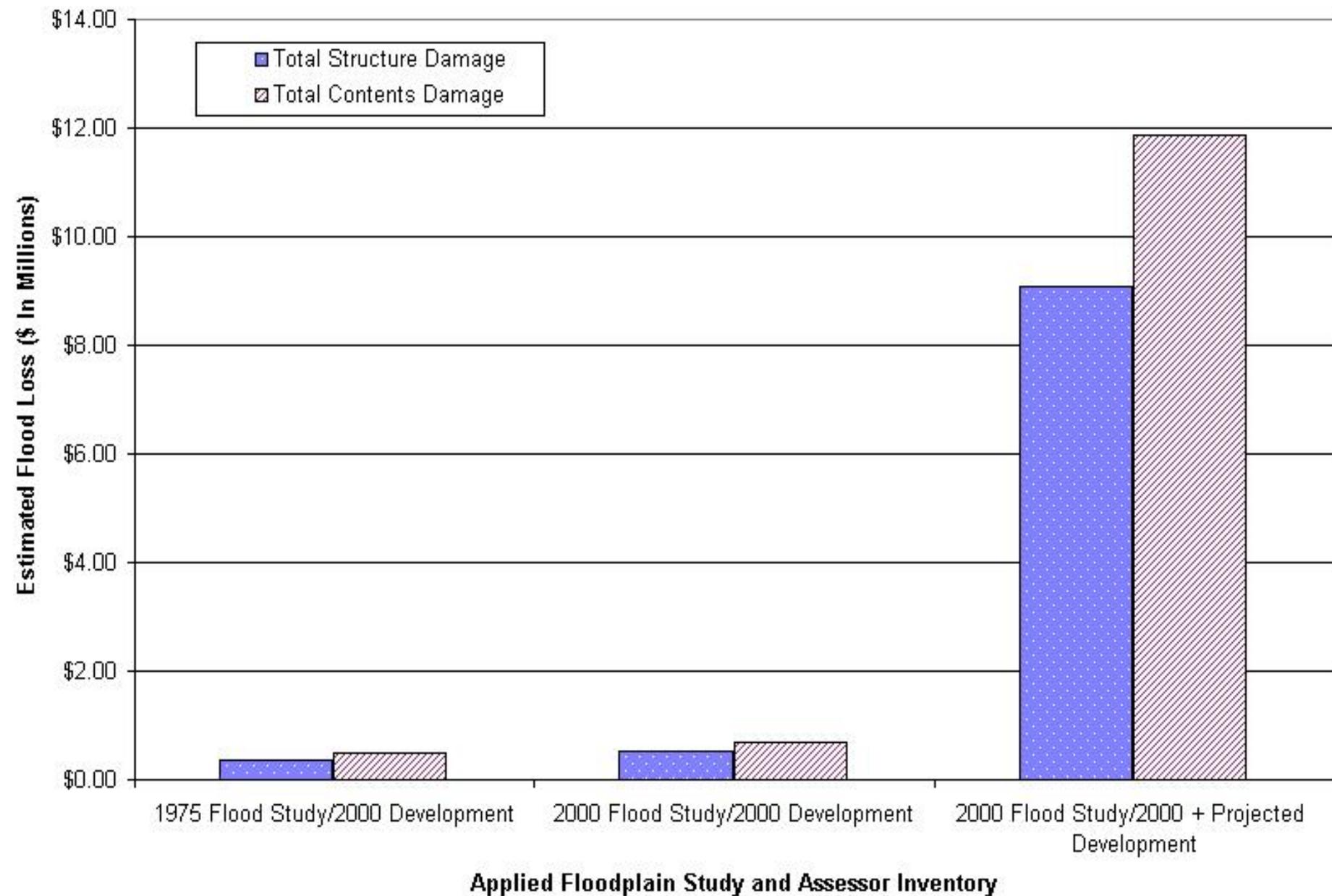
- **Future floodplain mapping is effective mitigation**
 - But how effective?
- **Acquisition is effective mitigation**
 - But how effective?
- **Future mapping/acquisition are great “balanced” activities**
 - How much of the problem are we avoiding/solving
- **We have no flood loss baseline!!**



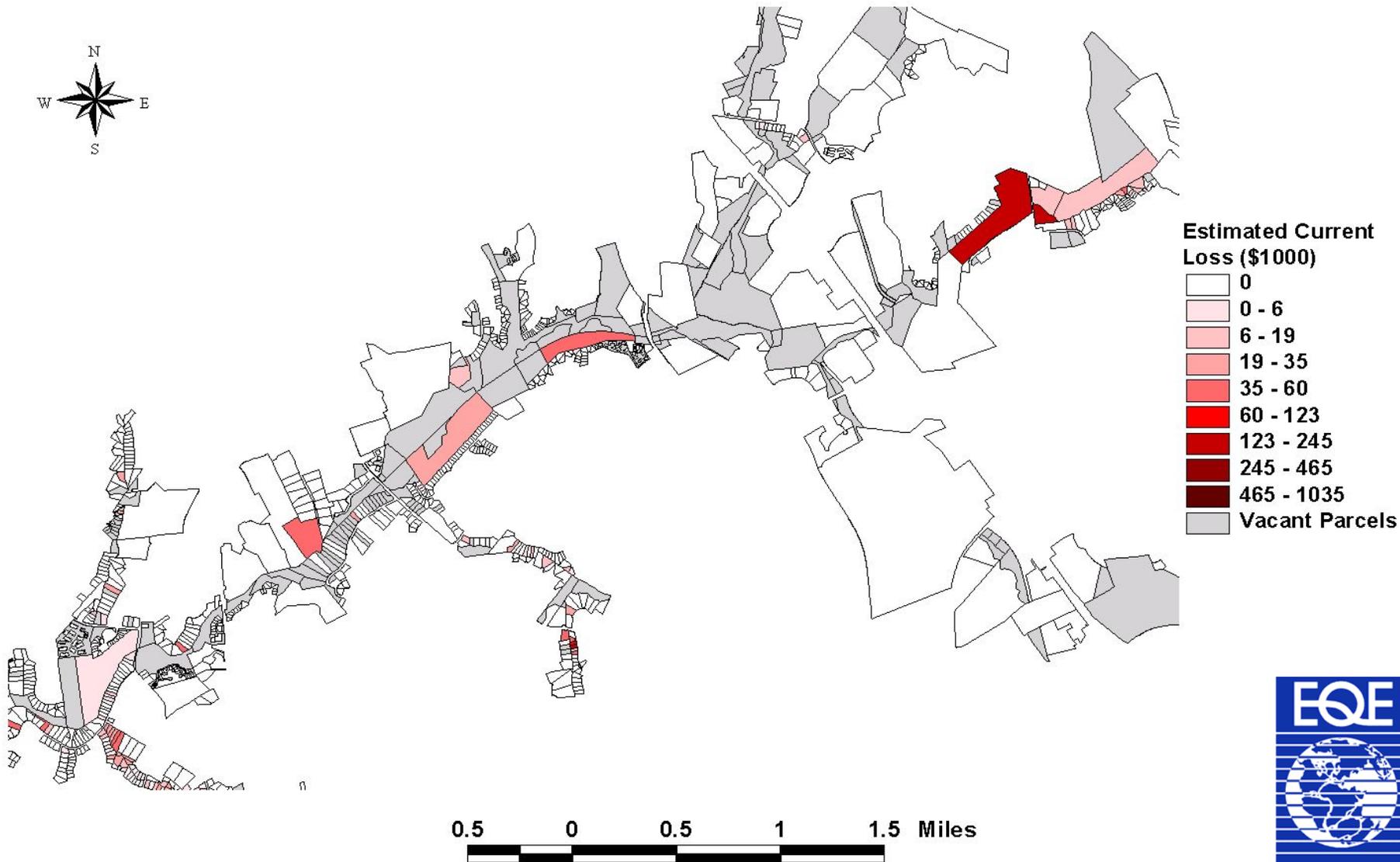
Estimated Flood Loss for Residential Occupancies in the McAlpine Watershed



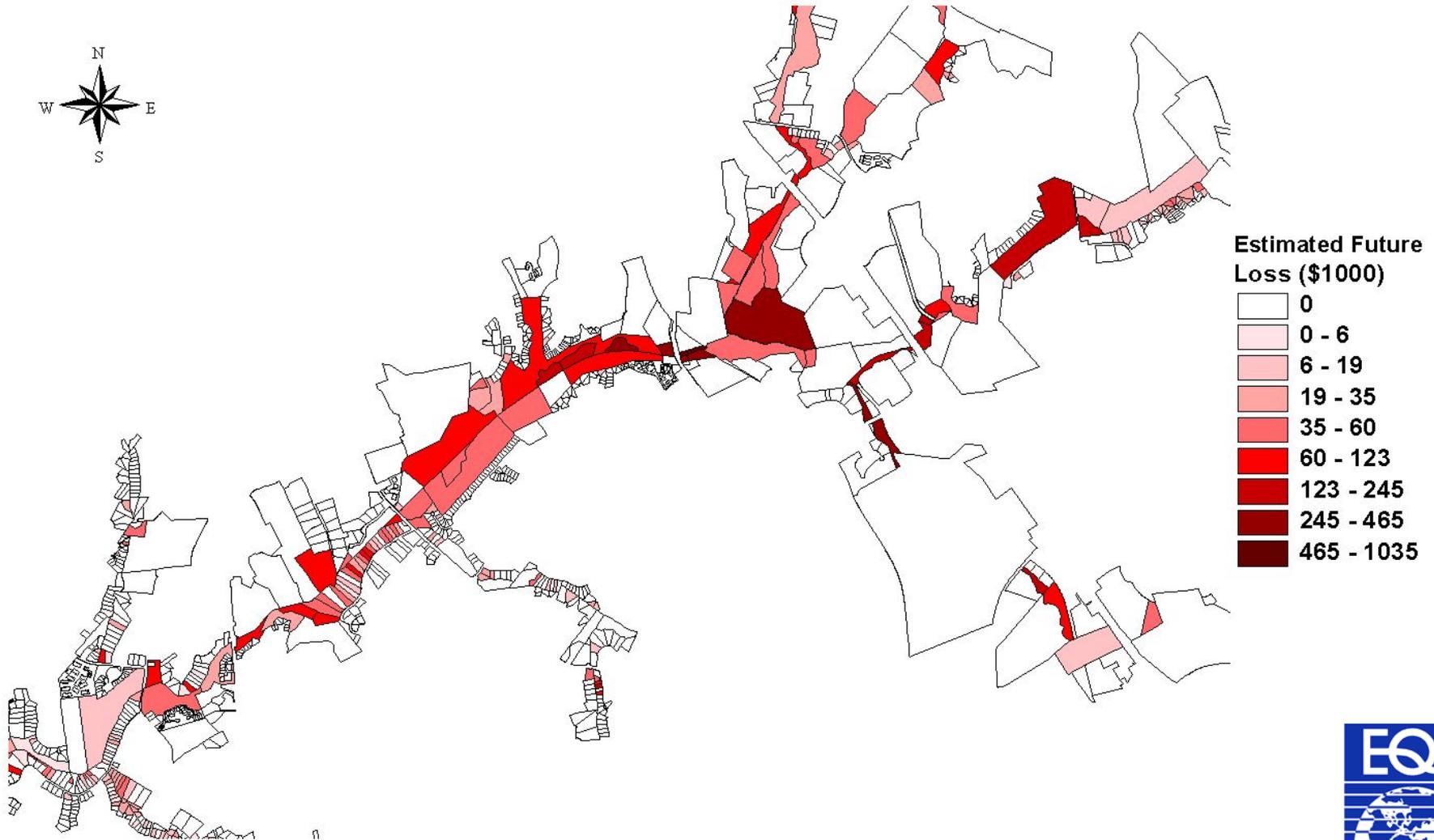
Estimated Loss for Non-residential Occupancies in the McAlpine Watershed



McAlpine Creek Structure Damage Original 100-Year Floodplain, Current Building Inventory



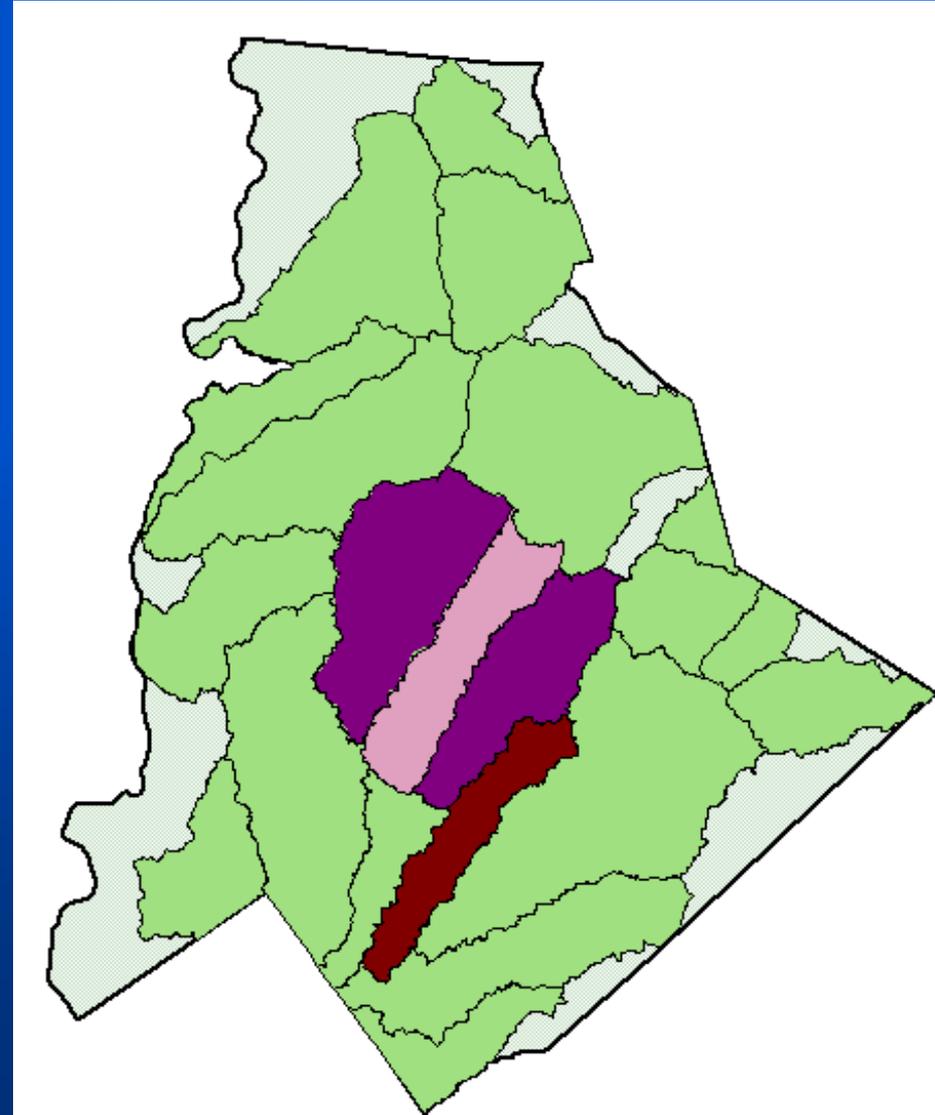
McAlpine Creek Structure Damage New 100-Year Floodplain, Future Building Inventory

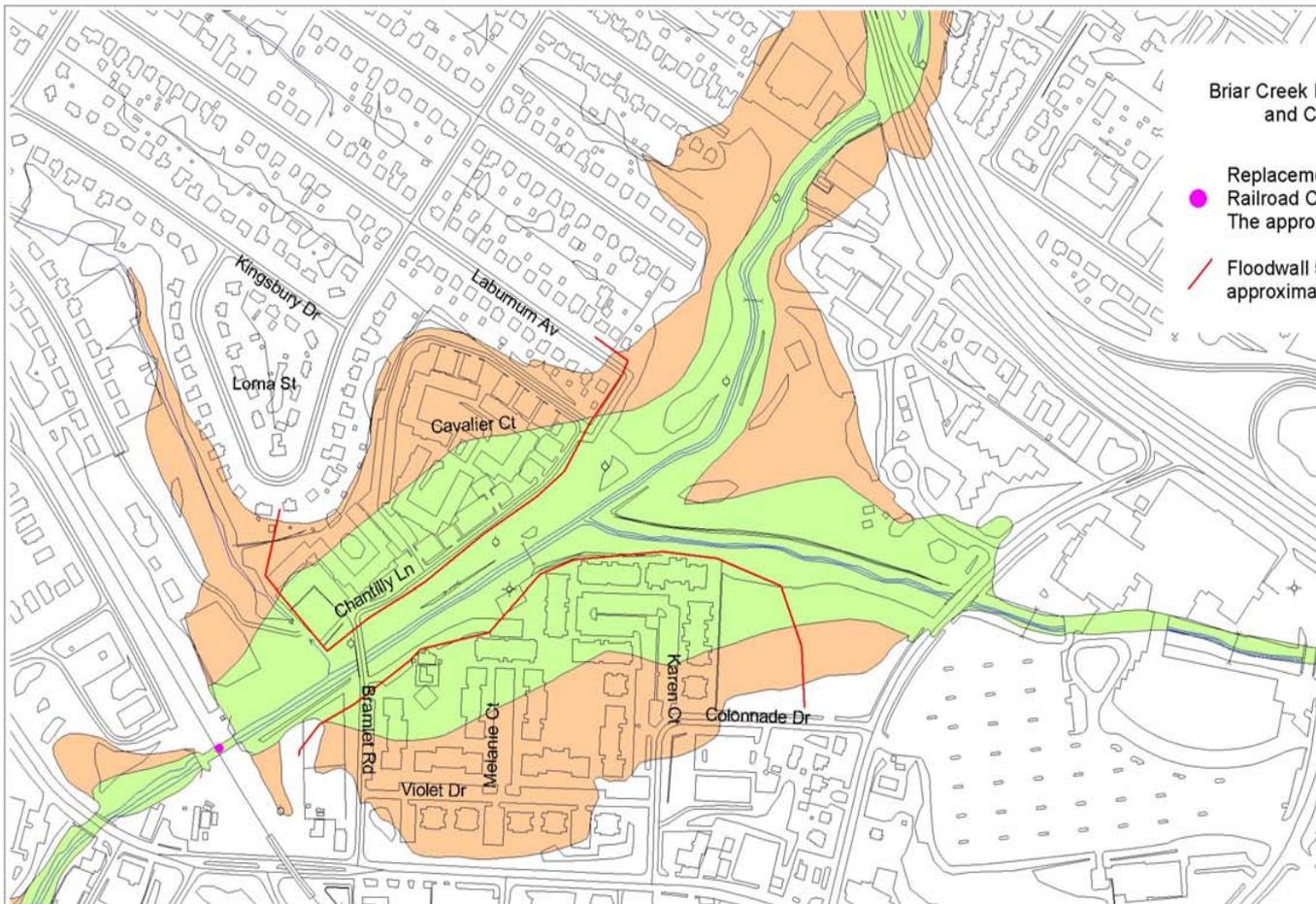


0.5 0 0.5 1 1.5 Miles

Strategy VI. *Mitigation Planning*

- Developed per watershed
- Identify floodprone structures
- Develop alternatives
- Compare alternative to other community values





Briar Creek Between Seaboard Coastline and Commonwealth Avenue

- Replacement of existing Seaboard Coastline Railroad Culvert with a larger span bridge. The approximate cost is \$1,200,000
- Floodwall 5 feet high that will cost approximately \$360,000

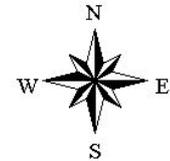


| REVISION | DATE | DESCRIPTION | BY | APP |
|-------------------------------------|------|--|----------|----------|
| | | | | |
| DESIGNED | DEJ | MECKLENBURG COUNTY FLOOD HAZARD MITIGATION BRIAR CREEK MITIGATION BASIN 009 | | |
| DRAWN | DMW | | | |
| CHECKED | CRK | | | |
| APPROVED | APP | | | |
| SUBMITTED | DDJ | | | |
| HAYES, SEAY, MATTERN & MATTERN, INC | | SCALE | WORK NO. | COMB NO. |
| ARCHITECTS - ENGINEERS - PLANNERS | | DATE | 1-21-09 | 3006 |
| CHARLOTTE, NC | | SHEET | 3 of 4 | |



Upper Little Sugar Creek Between Woodlawn Road and the Confluence with Diary Branch

- ▲ Acquisition of 33 structures at a cost of approximately \$4,700,000
- Elevation of 80 structures at a cost of approximately \$3,500,000
- Floodway
- 100 Year Flood Plain



| REVISION | DATE | DESCRIPTION | BY | APP |
|---|------|---|-------------|------------|
| DESIGNED | RWP | | | |
| DRAWN | LG1 | | | |
| CHECKED | RWP | | | |
| APPROVED | JBC | | | |
| SUBMITTED | JBC | | | |
| | | MECKLENBURG COUNTY FLOOD HAZARD MITIGATION | | |
| | | UPPER LITTLE SUGAR CREEK MITIGATION BA SIN 005 | | |
| RAYES, SEAY, MATTERN & MATTERN, INC ARCHITECTS - ENGINEERS - PLANNERS CHARLOTTE, NC | | SCALE NONE | CORN NO | MIS 213 |
| | | DATE 11-4-02 | SHEET 10 | 21 |

HAZUS, Mapping and Mitigation Plans

- **Measure success (in dollars) and take credit for mitigation from future mapping**
- **Develop a flood loss baseline to measure from**
- **Use occupancy types and locations to focus implementation of mitigation techniques**
- **Data justifies actions**