Working with Emergency Management During Storm Events

PAST COLLABORATION EFFORTS – A PLANNERS PERSPECTIVE

MARCH 30, 2017
Anne Arundel County
Maryland;
Sea Level Rise Planning
2008 - 2011
Anne Arundel County
Maryland;
Hurricane Isabelle - 2003
Anne Arundel County (MD)
Long Range / Strategic Planning Documents
• 2009 decennial update to the General Development Plan (GDP)
  o Includes 2008 Background Report on Sea Level Rise

• Integration of Sea Level Rise projections into long range planning.

• Rationale based on needing to decide upon the level of public service extensions to vulnerable areas of the County.

• Focus for GDP update was creating an integrated adaptation strategy with long range planning & implementation targets.
‘Policy 1’ – Account for Sea Level Rise is making land use / development decisions; primarily ....

- Planning & Zoning
- Public Works & Infrastructure
- Emergency Preparedness & Response
Protect Resources from Sea Level Rise

2009 General Development Plan Goal

• ‘Action Item’ – Establish strategic plan that emphasizes
  o Avoidance of risk altogether
  o Reduction of impacts

• ‘Action Item’ – Establish policies that **guild relocation, extension, or expansion of public infrastructure in vulnerable areas**
0-5 feet of rise – APPROX. IMPACTS
- 6,900 ac. @ $4.13 Billion in total assessed value
- 7,200 Septic Systems inundated
- 7,600 Private Wells inundated
- 120 Community Wells
- 2,400 principal structures
- 5,400 linear feet of water lines
- 170,000 linear feet of gravity sewer lines
- 137,000 linear feet of forced main lines
- 66,000 linear feet of storm drain pipes
- 24 sewer pumping stations
- 9 stormwater management facilities

Two (2) particularly vulnerable peninsulas
- Edgewater/Mayo + Deal / Shady Side
Edgewater / Mayo + Deal / Shady Side Peninsulas
Sea Level Rise Study - 2011
Recommended Actions

• Est. **Sea Level Rise project team** – integrating into all County functions – to implement GDP.

• Priority placed upon Dept. of Emergency Management and Dept. of Public Works to develop standardized recording methods to track ongoing / future inundation from storm events.

• Priority placed upon Dept. of Emergency Management work with community networks to assist vulnerable areas in developing specified risk reduction action plans.
Hazard Mitigation Plan - 2012
Sea Level Rise integration

| Planning and Zoning (P&Z) | General Development Plan | Last updated April 2009, reviewed every 7 – 10 years or as needed | OEM did and will continue to provide input where land use policies affect community services, cultural resources, housing, natural resources, public utilities and transportation— all impacted in times of disaster. Developed strategies to include in plan. |

• First time DEM Hazard Mitigation Plan references Sea Level Rise in officially adopted document.
Benton County Arkansas; Flooding Event Dec. 2015

2015/09/30  10:30

2015/12/28  10:19:32
NOAA Atlas 14 for Benton County indicates that between 9 and 10 inches of precipitation in a 48 hour period equals a 100-year (i.e. 1% annual chance) flood.
Damage Assessment
Benton County / NWA Flooding Event – Dec. 26th - 29th 2015

• Arkansas Christmas Flooding Most Extensive in 25 Years on Some Rivers (USGS release)

• Federal Disaster Declared 2/5/16

• Radar estimated between 9 – 11 inches of rain in 48 hours period in NWA and Eastern Oklahoma.

• Rain gauge network showed between 9-10 inches from 12/27 to 12/28 2015 in Benton County
• Provided private property owners information;
  o Substantial damage rules for NFIP compliance
  o Mitigation grant information
  o Increased Cost of Compliance grant information
  o Local floodplain development permitting (FDP) requirements
  o State programs for assistance on clearing channel debris

• Addressed in terms of steps for possible retrofitting, insurance repeat loss properties benefits, and analysis for abandonment.

• Worked with County EMA and Roads Dept. on standards for obtaining NFIP compliance for bridge / culvert repair and/or replacement using disaster funds.