

Coastal No Adverse Impact Initiatives



www.floods.org

NOAA in the Carolinas and NAI

- Identify local to *regional challenges, needs and opportunities* in North Carolina and South Carolina.
- Mobilize, share, and integrate knowledge and capabilities across NOAA and extramural partners to *respond to constituent needs and opportunities*.
- Coordinate with NOAA's Southeast and Caribbean Regional Team (SECART) to support regional activities and more effectively engage extramural partners in mission planning and execution.
- Attract new resources to address regional issues and develop initiatives using a OneNOAA approach.
- Create opportunities for outreach that *promote NOAA products and services*.

What Does No Adverse Impact Mean?

“No adverse impact (NAI) floodplain management is an approach that ensures the action of any community or property owner, public or private, does not adversely impact the property and rights of others.”

(NAI Toolkit)

Not a New Idea...



- Code of Hammurabi: “If a man let in the water, and the water overflow the plantation of his neighbor, he shall pay ten gur of corn for every ten gan of land.”



- Institutes of Justinian: “By the law of nature these things are common to all mankind: the air, running water, the sea and consequently the shores of the sea.”



- Common Law: “Sic utere tuo ut alienum non laedas.” (“One should use his own property in such a manner as not to injure that of another.”)



- ...and even Biblical philosophy: “...like a foolish man who built his house on sand.” (Matthew 7)

No Adverse Impact – “Building Blocks”

- Hazard Identification and Floodplain Mapping
- Education and Outreach
- Planning
- Regulations and Development Standards
- Mitigation
- Infrastructure
- Emergency Services

THREE LEVELS OF EFFORT:

1. **BASIC** (minimum)
2. **BETTER** (more effective – usually minimizes impacts on other properties)
3. **NAI** (protects property *AND* prevents increased flood problems)

No Adverse Impact – “Building Blocks”

- Hazard Identification and Floodplain Mapping
- Education and Outreach
- Planning
- Regulations and Development Standards
- Mitigation
- Infrastructure
- Emergency Services

THREE LEVELS OF EFFORT:

1. **BASIC** (minimum)
2. **BETTER** (more effective – usually minimizes impacts on other properties)
3. **NAI** (protects property *AND* prevents increased flood problems)

Some Points about the NFIP

- The National Flood Insurance Program is **VOLUNTARY**
- Regulations controlling construction in floodplains and other hazard areas are **LOCAL** – membership in the NFIP requires local governments to adopt FEMA regulations via their local ordinances
- **FEMA does NOT REGULATE** – they evaluate for compliance with NFIP. Non-compliance may result in removal from NFIP.

No Adverse Impact – Financial Bonus

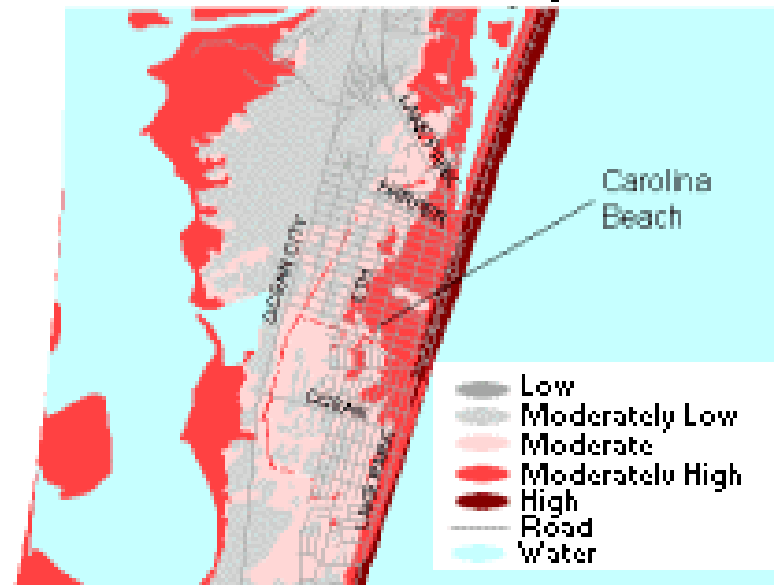
- Most NAI initiatives listed in the NAI Toolkit are also recognized by the Community Rating System!



No Adverse Impact – Hazard Identification

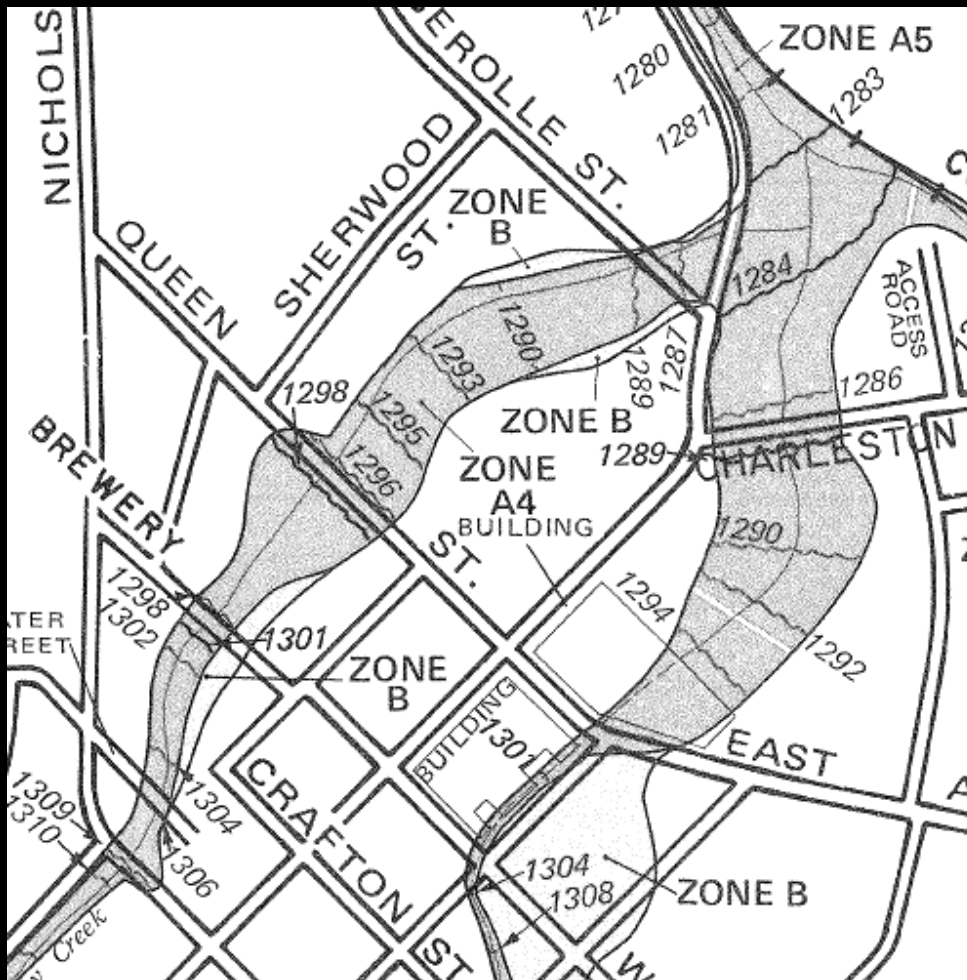
- Use a comprehensive approach
- Reflect future conditions
- Identify hazards not mapped by FEMA

Natural Hazard Summary Risk Areas



BASIC

The Flood Insurance Rate Map



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
HORRY COUNTY,
SOUTH CAROLINA
AND INCORPORATED AREAS

PANEL 703 OF 753
(SEE MAP INDEX FOR PANELS NOT PRINTED)


CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|----------------------|--------|-------|--------|
| HORRY COUNTY | 450704 | 0703 | H |
| MYRTLE BEACH CITY OF | 450705 | 0703 | H |

Notes to User: The MAP NUMBER shown below should be used when placing map orders. The COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
45051C0703 H

MAP REVISED:
AUGUST 23, 1999


Federal Emergency Management Agency

BETTER

Fill in the Gaps

- Require developers to provide **detailed flood data in approximate zones or unmapped areas**
- **Overlay the OCRM base lines and setbacks, coastal barrier resource areas, and other protected areas over the FIRM**
- **Map other flood-related hazards** (areas with local flood history; tsunami zones; stream erosion; dam failure inundation; mudflow hazard)

NAI

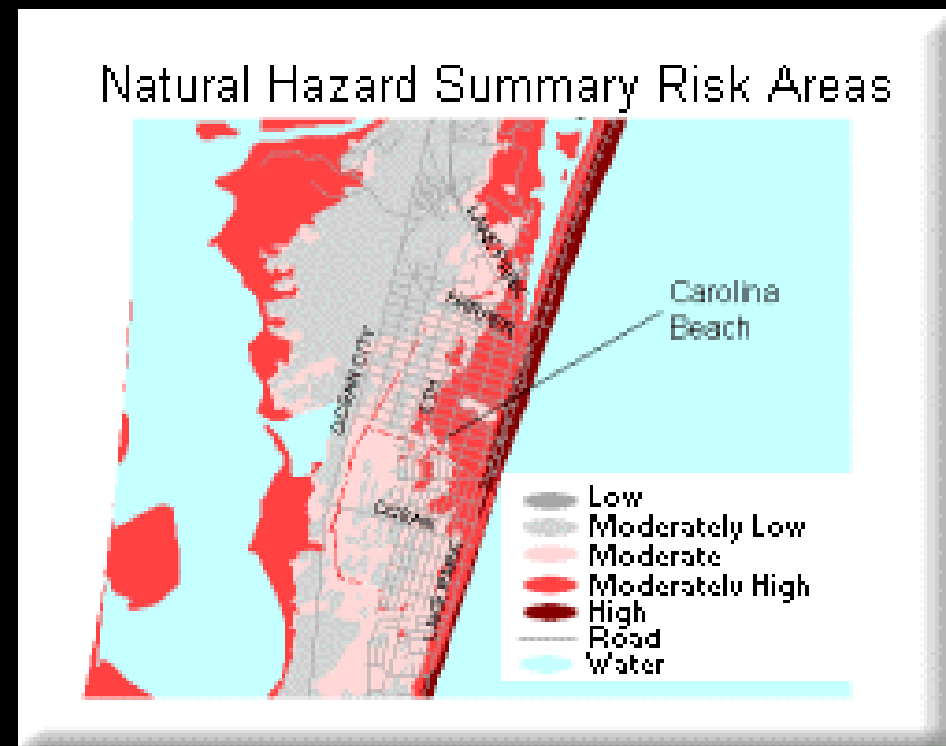
Higher Mapping Criteria

- Use **future conditions hydrology** (flood discharges based on build-out scenarios for current zoning)
- Prevent a loss of storage and/or an increase in velocity (**restrict allowable rise** in floodplain development, allowable increase in velocity)



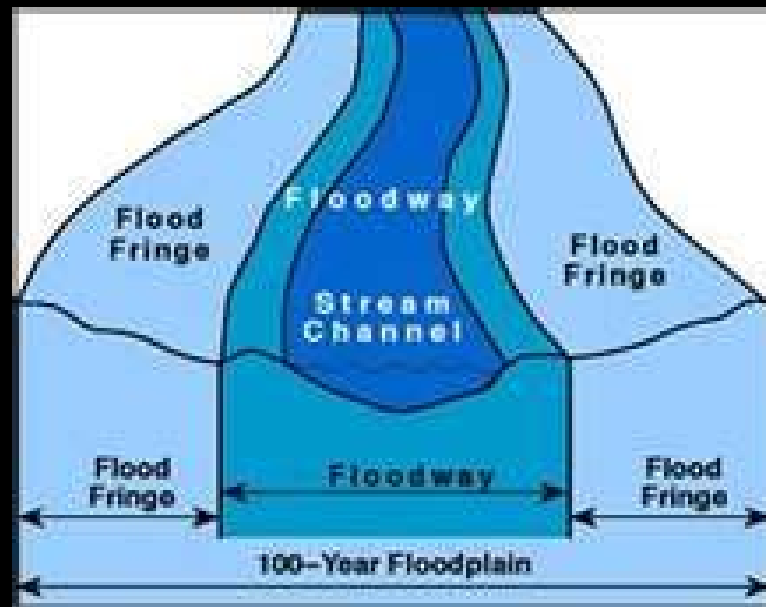
The NOAA Connection– Hazard Identification

- Map data, historical data
- Digital Coast tools
- Hazard ID mapping training
- Coastal Inundation Toolkit



No Adverse Impact – Planning

- Use a comprehensive watershed approach
- Incorporate NAI in all planning activities



BASIC

Land Use Planning and Zoning

- *SC Comprehensive Plan Enabling Act of 1994* states that, in order to have zoning in your community, your community must have a *comprehensive plan*
- *NC General Statute 160A-383* states that zoning regulations shall be made in accordance with a *comprehensive plan*

BETTER

Plans that Address Flooding

- Use zoning to **restrict damage-prone development in hazardous or sensitive areas**
- Encourage **low-density zoning in floodplains**
- Have your **floodplain management plan adopted by reference** into your community's comprehensive, standard or emergency operations plan
- Encourage **stormwater planning**

The logo consists of the letters 'NAI' in white, bold, sans-serif font, centered within a blue square. The square has a thin white border.

NAI

Multi-Object Management

- Identifies ALL impacts of a hazard and ALL alternative measurements that address the impacts
- Works along side sustainable development regulations
- Provides a solid base to build from
- Includes hazard identification, which should already have been addressed in your comprehensive and/or hazard mitigation plans

The NOAA Connection – Planning

- Smart Growth, Community Resilience guidance
- Digital Coast tools, data
- Demographics
- Discussion starters
- Roadmap training



No Adverse Impact – Mitigation

- Mitigate while not transferring the problem elsewhere
- Non-structural mitigation on individual structures:
 - elevation
 - acquisition
 - flood proofing
- Structural---often causes adverse impacts to others
 - levees, dams, channels



BASIC

Structural Controls, Insurance

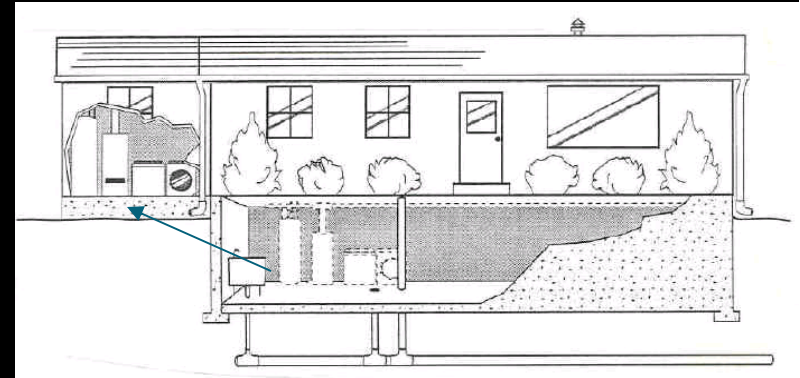
- Structures used to control flooding
 - Reservoirs
 - Levees, floodwalls, seawalls
 - Groins
 - Channel modification
 - Dredging
- Flood Insurance



BETTER

Human Adjustment to Flooding

- Enforcing the rules you *do* have
- Relocation of structures out of the floodplain
- Acquisition of properties in the floodplain
- Elevating structures
- Building barriers around a structure
- Wet and dry floodproofing



NAI

Master Planning and Monitoring

- Take a “master plan” approach to flood protection

Involve all levels of services...

- Utilities (water, sewer, power)
- Stormwater
- Streets
- Building services
- Planning
- Parks
- Budget/Finance

Involve the public...

- “Town Hall” meetings
- Workshops with Planning Commission
- Owners of properties affected
- Other interested parties

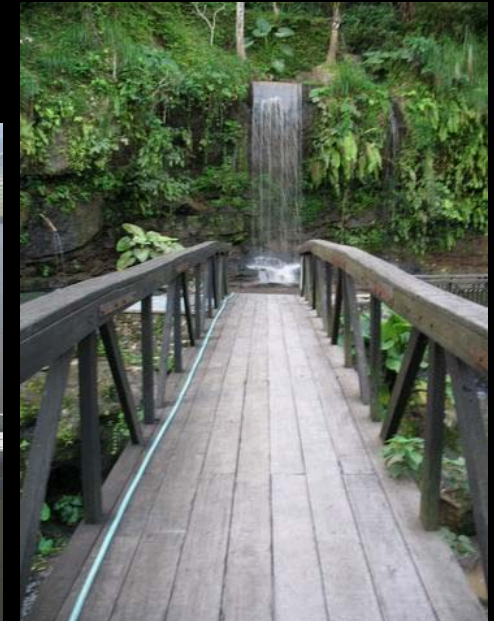
The NOAA Connection – Mitigation

- Data regarding the commercial benefits of maintaining open space in coastal floodplains
- Habitat data
- Benthic data



No Adverse Impact – Infrastructure

- Consider impacts of maintenance, repair and new construction
- Consider individual and cumulative impacts
- Mitigate infrastructure while not transferring the problem elsewhere



BASIC

Response and Replacement

- Doing the minimum to maintain the infrastructure and repair it after a flood or other disaster
- Includes roads, bridges, utilities, parks, drainage systems

BETTER

Protection Measures, Procedures

- **Routine inspections** of bridges, culverts, etc. after a flood event, with resulting corrective measures
- Set **higher flood standards** for new construction
- Do a “**flood audit**” of all public buildings in relation to the floodplain
- Participate in the development of **emergency action plans**

NAI

Plans and Alternatives

- **Use a capital improvement plan (CIP)** to acquire land for public uses – parks in the floodplain, channels and drainage structures, etc.
- **Restrict road development** through flood-prone areas (wetlands, marshes, floodplains, etc)
- **Create a master greenway plan** to link open spaces
- **Stream restoration**
- **Regulate critical facilities out of flood zones**

The NOAA Connection – Infrastructure

- Impervious Surface Analysis Tool (ISAT)
- Nonpoint Source Pollution and Erosion Comparison Tool (NSPECT)
- Sea Level Rise Viewer
- CanVis

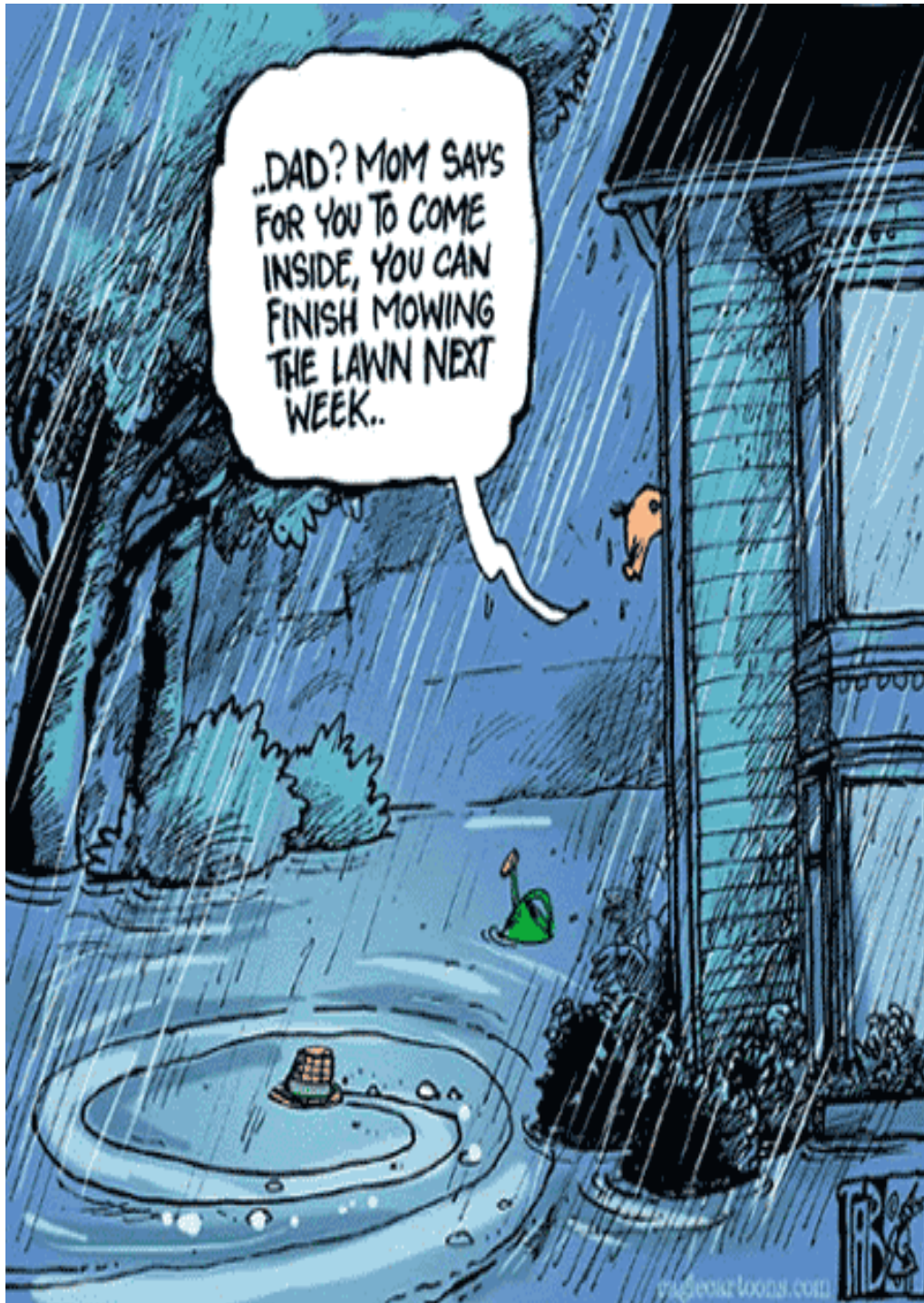


Justifying Regulations Resulting from Disaster Planning

- Reduces loss of life and property – and, as such, reduces potential lawsuits.
- Helps avoid takings challenges by depending on public safety.
- Works toward the goal of safe, sustainable neighborhoods.

Questions?





Thank You!

Allison Hardin, CFM
Planner

City of Myrtle Beach

843.918.1059 office

ahardin@

cityofmyrtlebeach.com