CLIMATE CHANGE
ADAPTATION

Ask the Climate Question

Ideas and Issues for Planners, Engineers and Policy Makers

Scott Shuford, AICP
Onslow County
PLANNING FOR A NEW ENERGY AND CLIMATE FUTURE

- PAS Report – Collaborative effort
- Funding support from Surdna & George Gund Foundations, ENRE Division & NOAA
- Help planners incorporate energy and climate change considerations into their work
- Assist communities and regions to
  - Reduce energy use & GHG emissions
  - Adapt to a changing climate
  - Transition to renewable energy
PLANNING FOR A NEW ENERGY AND CLIMATE FUTURE

More information about the report and about energy and climate change can be found at:

www.planning.org/research/energy/
THANKS
AM I AT THE RIGHT CONFERENCE?

Mitigation
- Copenhagen
- Cap-and-Trade
- VMT
- CAFE standards
- 83% Below 2000 Levels
- Sequestration

Adaptation
- Sea-Level Rise
- Strong Storms
- Wildfires
- Flooding
- Drought
- Heat Waves
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GOVERNING

Local Warming
It's too late to stop climate change. What we can do is plan for it.
STRATEGIC POINTS OF INTERVENTION

- Long-Range Community Visioning and Goal Setting
- Plan Making
- Standards, Policies, and Incentives
- Development Work
- Public Investment
- Education and Outreach
PLAN-MAKING

www.planning.org/research/energy/
DEVELOPMENT WORK

http://www.greensburggreentown.org/

www.planning.org/research/energy/
DEVELOPMENT PATTERNS

- Migration
- Concentrating development in low-risk areas
DEVELOPMENT PATTERNS

Migration

Photo by Dave Saville, FEMA News Photo
DEVELOPMENT PATTERNS

Migration
DEVELOPMENT PATTERNS

Concentrating development in low-risk areas

NOAA image

NCGS image
INFRASTRUCTURE

- Infrastructure design
- Maintenance
INFRASTRUCTURE

Infrastructure Design

The Confederation Bridge

www.confederationbridge.com/en/
INFRASTRUCTURE

Infrastructure Maintenance

Coastal Resources Commission

- 1.25’ to 4.5’ SLR
- 40” best estimate

Source: Federal DOT
ECONOMIC DEVELOPMENT

- Agriculture and forestry
- Insurance
ECONOMIC DEVELOPMENT

Agriculture

• Crop varieties
• Erosion
• Pests
• Competition for water
• Wildfires
• Food preferences

NCDCR image
Insurance

• Historical data used to assign risk and determine rates will become increasingly less useful
• Regulators may hold insurance prices below actuarial levels to avoid damage to markets
• Liability concerns

NOAA file photo
SITES AND BUILDINGS

- Landscaping and “green infrastructure”
- Building design
SITES AND BUILDINGS

Green
Infrastructure
SITES AND BUILDINGS

Building Design

www.hopeplantation.org/
NATURAL RESOURCES

- Water management
- Sea-level rise
NATURAL RESOURCES

Water management

National Institute of Environmental Health Sciences image

U.S. Drought Monitor

NASA image
NATURAL RESOURCES

Water management

RENCI images
NATURAL RESOURCES

Sea-level rise

Alligator River – Current Sea Level

Alligator River – 2 feet of Sea Level Rise

The Nature Conservancy
HOW TO MANAGE ADAPTATION?

Decision Makers Face Many Challenges

- Diversity of stakeholder values
- Decisions are based on a combination of factors and not a single driver
- Information is often not at the proper scale
- Who is a trusted source of information?
- Uncertainty with data
- Who is empowered to make the decisions?
HOW TO MANAGE ADAPTATION?

Addressing the Challenges Will Require:

– Predict the range of outcomes resulting from different actions - scenarios
– Identify “win-win” and “no regrets” solutions
– Use data scaled to the level of decision making
– Tie data to community values through decision support tools
– Communicate effectively across all sectors – “interdisciplinarity”
HOW TO MANAGE ADAPTATION?
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Image courtesy of Mark Combs