You Want Me to Pay for What?

Andy Coburn, Associate Director
Program for the Study of Developed Shorelines (PSDS)
Western Carolina University
Program for the Study of Developed Shorelines (PSDS):

- Applied, interdisciplinary academic research center that promotes responsible, equitable and science-based coastal environmental management strategies.
- Established in 1985 at Duke University
- Moved to WCU in 2006
WITH GLOBAL WARMING WE'LL SOON BE BEACH FRONT.
POST-STORM PERCEPTION

Sandy could wreak havoc across 800 miles of U.S. About 60 million Americans from East Coast to Great Lakes may be affected by high winds, rains, flooding and snow from hybrid storm system, expected to make landfall Tuesday.

Sandy's devastating blow
Death toll climbs to at least 33, including 17 dead in N.Y.
POST-STORM REALITY
Beach Nourishment
Beach Nourishment Issues:

- Temporary and unpredictable
- Habitat degradation
- Availability of beach compatible sand
- Inequitable distribution of costs & benefits
- Opportunity costs
- Expensive!
Since 1922...

- 2,100 episodes
- 1,400,000,000 yds$^3$
  - 117,000,000 dump trucks (12 cy)
  - 439,560 Olympic-sized swimming pools (3,185 cy)
  - 364 Dallas Cowboys Stadiums (3,851,851 cy)
- $6,200,000,000 (2012 dollars)

Source: beachnourishment.psdswcu.org
ANNUAL NOURISHMENT EXPENDITURES

$150 million to NJ
AFTER SANDY:

$3-5$ Billion

Interactive Chart: Federal Sandy Money Allocated to All States

Federal Department
- Department of Housing and Urban Development
- Department of Transportation
- Department of Homeland Security / FEMA
- National Flood Insurance Program
- Army Corps of Engineers
- Department of the Interior
- Small Business Administration
- Environmental Protection Agency
- Department of Commerce
- Department of Agriculture
- Other

Total Alloc... 57,695,757,875

Public Law 113–1 113th Congress

Why?
The amount of property vulnerable to/damaged by coastal processes is **ALWAYS** presented in terms of Market Value, Assessed Value or Replacement Value (minus depreciation).
This gives the (mis)perception that:

1. More development is at-risk (than really is)
2. More municipal/county tax base and ad valorem tax revenue will be lost (than really will be)
3. Occupancy and sales tax revenue from tourism will be lost (which it won’t)
4. The benefits of protecting at-risk private development is worth the cost (which it isn’t)
“…representatives who are from inland areas of the country don’t understand the importance of beach renourishment, but we know if you spend a few hundred thousand dollars on the front side, you will save millions and millions on the back side after a hurricane or a storm. I don’t know of any other federal program that gives you a 320:1 ratio of return on investment. In other words, for every $1 spent on beach renourishment, it generates $320 in revenue. I have yet to find or hear of any other federal program that gives that kind of return.”

-- Mike McIntyre, Lumina News, April 24, 2014
Using market/assessed/replacement value is great for property owners, politicians and coastal engineering firms, but **NOT** for the public or coastal ecosystems.

Instead…
The expenditure of public funds to protect vulnerable private coastal development should be based on the fiscal benefits that result from protection.
Properties at-risk over the next 30 years: 85
  • Total Assessed Value: $25,069,000 ($294,929/property)
  • Generate $96,516/yr in property tax revenue (local and county)

Properties imminently threatened ▲: 24
  • Total Assessed Value: $2,569,000 ($107,042/property)
  • Generate $9,891/yr in property tax revenue (local and county)
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assessed Value</td>
<td>$25,069,000</td>
</tr>
<tr>
<td>% of OIB Tax Base</td>
<td>0.95%</td>
</tr>
<tr>
<td>% of Brunswick County Tax Base</td>
<td>0.08%</td>
</tr>
<tr>
<td>Total Annual Revenue Loss</td>
<td>$122,191</td>
</tr>
<tr>
<td>NPV Revenue Loss Over 30 Years</td>
<td>$5,005,080</td>
</tr>
<tr>
<td>NPV Revenue Loss Over 30 Years (using 3% discount rate and 5% price appreciation rate)</td>
<td>$5,005,080 $512,906</td>
</tr>
<tr>
<td>NPV Cost of Terminal Groin</td>
<td>$54,900,943</td>
</tr>
<tr>
<td>Tax Increase to Pay for Terminal Groin</td>
<td>$123/Year</td>
</tr>
<tr>
<td>Tax Increase to Replace Lost Tax Revenue</td>
<td>51¢/Year</td>
</tr>
</tbody>
</table>

*Using a 3% discount rate and price appreciation rate of 5%
FINDINGS:

• The fiscal impact of losing a coastal property in NC is about 0.6% of the property’s value.

• The average annual fiscal impact, in terms of property tax revenue, of losing a $1 million coastal property in NC is $6,014.

• 1,983 residential coastal properties are considered at-risk to shifting inlets in NC.

  • These properties represent about 9% of all municipal and county ad valorem tax revenue collected coast-wide.

• Of the 1,983 coastal properties at risk to shifting inlets, 204 (10.3%) are classified as being in imminent risk.

  • These properties represent about 0.08% of all municipal and county ad valorem tax revenue.
CONCLUSIONS:

• Property value is not an accurate metric for quantifying the impacts of chronic erosion and coastal storms and should not be used to justify the expenditure of public funds for erosion control/shore protection measures.

• An analysis of revenue impacts to coastal municipalities, counties, the state and nation is a better methodology by which to evaluate the costs and potential public benefits of protecting vulnerable private coastal property.