Integrating Hazard Mitigation Into Long-Range Transportation Planning

Mapping Exercise Results Meeting
February 19, 2009
Agenda

- Presentation of Alternative Scenarios
- Review of Hazard Assumptions Adopted at December PTAC Meeting
- Review and Discussion of Maps Produced at December PTAC Meeting
- Map and Hazard Mitigation Policy Changes
Presentation of Scenarios
Scenarios

➢ Geography
  • Charlotte County

➢ Time Horizon
  • 2100: Sea Level Rise and Storm Surge Hazards
  • 2050: Land Use Transportation
  • 2035: LRTP Update

➢ Number of Scenarios
  • 4
4 Proposed Scenarios

➤ Scenario 1(a): Policy and Development Trend

- Represents current Charlotte County and Punta Gorda comp plan
  - land use pattern
  - mixture of uses
  - density of development
- Based on the Renaissance Planning Group (RPG) Buildout Plan, dialed back to the 2050 horizon year.
Proposed Scenarios (cont’d)

- **Scenario 2(a): Smart Growth**
  - **Features:**
    - Generally increased residential and commercial densities
    - Creation of a pattern of urban nodes
    - Can be served by multiple transportation modes
    - Protects sensitive lands and productive agricultural lands
  - **Based on:**
    - Glatting-Jackson smart growth-oriented county comprehensive plan update
    - Existing Punta Gorda comprehensive plan through the 2050 horizon year
Proposed Scenarios (cont’d)

 Scenario 2(b): Smart and Safe Growth

- Pursues and implements:
  - Wide range of transportation and land use policies
  - Infrastructure investments
  - Programs that protect existing urban development

- Accommodates new development in ways that recognize the risks relate to hurricane storm surge and long-term sea level rise

- Will be generated by FSU project personnel through:
  - Adjustments to the Glatting-Jackson county smart growth scenario
  - Adjustments to the Punta Gorda comprehensive plan.
Scenario 2(c): Smarter and Safer Growth

- Pursues and implements:
  - Wide range of transportation and land use policies
  - Infrastructure investments
  - Programs to protect/purchase that achieve a broader set of smart and resilient growth goals including:
    - Denser, nodal development patterns
    - A mixture of land uses in these nodes
    - A variety of transportation options
    - A broader mix of housing types and densities
    - Environmental protection for sensitive lands and habitats
    - Community resiliency in the face of natural or manmade disasters.

- Will be generated by FSU project personnel through:
  - Further, more substantial adjustments to the Glatting-Jackson smart growth scenario
Review of Hazard Assumptions Adopted at December PTAC Meeting
## Non-Coastal Flooding Return Frequency

<table>
<thead>
<tr>
<th>Return Frequency</th>
<th>Annual Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-year</td>
<td>4%</td>
</tr>
<tr>
<td>50-year</td>
<td>2%</td>
</tr>
<tr>
<td><strong>100-year</strong></td>
<td><strong>1%</strong></td>
</tr>
<tr>
<td>200-year</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
100-Year Flood Zone
## Storm Surge Zone

<table>
<thead>
<tr>
<th>Category</th>
<th>TS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind Speed (mph)</td>
<td>39-73</td>
<td>74-95</td>
<td>96-110</td>
<td>111-130</td>
<td>131-155</td>
<td>&gt;155</td>
</tr>
<tr>
<td>Storm Surge Elevation (ft)</td>
<td>≤ 3</td>
<td>4-5</td>
<td>6-8</td>
<td>9-12</td>
<td>13-18</td>
<td>&gt;18</td>
</tr>
<tr>
<td>Annual Probability for Charlotte County (1900–2005) – All</td>
<td>n/a</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>2%</td>
<td>n/a</td>
</tr>
<tr>
<td>Annual Probability for Charlotte County (1900–2005) – Direct</td>
<td>n/a</td>
<td>1%</td>
<td>n/a</td>
<td>2%</td>
<td>1%</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Storm Surge Zones
Storm Surge vs 100-Yr Flood Zones
## Sea Level Rise Scenarios for 2050 and 2100

<table>
<thead>
<tr>
<th>Plan Horizon</th>
<th>Sea Level Rise From 1990 through Plan Horizon</th>
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<tbody>
<tr>
<td>2050</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.25 m [0.8 ft]</td>
</tr>
<tr>
<td></td>
<td>0.50 m [1.6 ft]</td>
</tr>
<tr>
<td></td>
<td>0.75 m [2.5 ft]</td>
</tr>
<tr>
<td></td>
<td>1.0 m [3.3 ft]</td>
</tr>
<tr>
<td>2100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.5 m [1.6 ft]</td>
</tr>
<tr>
<td></td>
<td>1.0 m [3.3 ft]</td>
</tr>
<tr>
<td></td>
<td>1.5 m [5.0 ft]</td>
</tr>
<tr>
<td></td>
<td>2.0 m [6.6 ft]</td>
</tr>
</tbody>
</table>
Review of Maps Produced at December PTAC Meeting
Charlotte County SLR Response Zones

Legend

SLR Response Zones
ZONE
- ACCOMMODATE
- PROTECT
- RETREAT OR RELOCATE
- Tropical Storm Surge Area
- Charlotte USA
- Major Roads
- Rail Lines