What is the Assessment?

A resource for City leaders and staff to continuously assess and better manage impacts from hazard events

- Integrates with the City’s Flooding and Sea Level Rise Strategy, the Dutch Dialogues, and other planning efforts.
- Uses trusted sources of information and best practice (NOAA’s Steps to Resilience) to quantify vulnerability and risk to hazards.
- Solutions-oriented and informs targeted use of limited resources—in a complex and changing world.
Assets and Core Systems

**PROPERTY AND PUBLIC SERVICES**
- Businesses
- Homes
- Government functions
- Critical facilities (schools and public safety)
- Parks and cultural resources

**ROADS & MOBILITY**
- Access to critical services

**ECONOMY**
- Annual sales volume
- Jobs and employees

**PEOPLE AND SOCIOECONOMICS**
- Sensitive populations
- Public housing
- SNAP food retailers
Hazards

Which *Hazards* are most likely to harm people and communities and cause loss to or failure of Core Systems in the City of Charleston?

- Flooding
- Sea Level Rise
- Earthquakes
- Extreme Heat
- Water Shortage
- Hazmat
Same exposure, different vulnerability
Areas of the City

1. Daniel Island
2. Downtown/Peninsula
3. James Island (North)
4. James Island (South)
5. Johns Island (North)
6. Johns Island (South)
7. Cainhoy
8. West Ashley (Outer)
9. West Ashley (Inner)
Finding: Highest levels of vulnerability citywide are to flooding, storm surge, and earthquake hazards

<table>
<thead>
<tr>
<th></th>
<th>Floodplain Inundation</th>
<th>Storm Surge</th>
<th>Earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Businesses</strong></td>
<td>2,379 (71%)</td>
<td>2,832 (84%)</td>
<td>1,563 (46%)</td>
</tr>
<tr>
<td><strong>Homes</strong></td>
<td>43,116 (70%)</td>
<td>53,918 (87%)</td>
<td>24,456 (39%)</td>
</tr>
<tr>
<td><strong>Critical Facilities</strong></td>
<td>205 (59%)</td>
<td>249 (72%)</td>
<td>304 (88%)</td>
</tr>
</tbody>
</table>

Note: numbers are the number of property parcels; earthquake assessment only focused on vulnerability
Finding: Certain areas of the city contain high proportions of the citywide vulnerability and risk.
Finding: Increased frequency and severity of tidal flooding will be a primary impact of sea level rise

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major roads inaccessible</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Minor roads inaccessible</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Property inaccessible</td>
<td>15,000</td>
<td>(22%)</td>
</tr>
</tbody>
</table>

3 ft above MHHW
(2030-2100)

Potentially Inaccessible Roads
Finding: Areas vulnerable to hazards are also socially vulnerable

Example: Storm Surge

- About 96% of homes in the most socially vulnerable neighborhoods are vulnerable to storm surge
- Public Housing: 102 (99%)
- SNAP Retailers: 117 (96%)
Alignment with the City’s Critical Components

- Assessment integrates and builds on the City’s **Flooding & Sea Level Rise Strategy**
- Recognizes holistic approach needed for building resilience
Strategy: Acquire appropriate flood response assets for public safety

- 86% of properties citywide could be inaccessible to emergency response in a major flood event
- Assessment helps to inform how and where to prioritize resources
The assessment can inform pathways to a resilient future

Limited resources means that every issue cannot be addressed. Three types of risks that all require planning for today and additional stakeholders to address:

**Near-term**
Flooding, Tidal Flooding (with current sea level rise), Hazardous Materials

**Long-term future change**
Sea Level Rise and Future Tidal Flooding, Extreme Heat

**High-impact event**
Storm Surge, Earthquake
Final Report

- Assessment Summaries
- Key Findings
- Options and Priorities
- Appendix
  - Technical Documentation
  - General Area Reports
  - 2-Page Asset-Hazard Profiles
  - All Options
Thank you!

We want to give a special thanks to City staff.