Moving Forward to Protect the Upper Texas Coast –
Converting Concepts to Reality

James F. Thompson, PE, DBIA
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Hurricane Ike (2008)
Hurricane Rita (2005)
Hurricane Alicia (1983)
Houston, Tx 2001 (TS Allison)
Studies show that every 1$ spent on mitigation – efforts to reduce risk before disasters occur – saves $4 in recovery costs

Financial Times 2014
“Resiliency” is the Defining Topic of Our Era

– Resilience as a term has moved from just recovery and mitigation

– Addresses inevitable change in real time or in a predictive manner to ensure effective social and business continuity

– Estimated 3.4 billion people worldwide threatened by natural hazards

– Insured losses from natural catastrophes have jumped from an average $5.1 billion per year in the period 1970-89 to $27 billion annually over the last two decades
The only thing worse than being blind is having sight but no vision.

Helen Keller

Let me embrace thee, sour adversity, for wise men say it is the wisest course.

William Shakespeare

Never give in--never, never, never, never, in nothing great or small, large or petty, never give in....

Sir Winston Churchill
Visions for our Future

Now we’re investing in its future.

Learn More
Funding Mechanisms

– How best to fund long term, sustainable, programs for resiliency?
  Storm/Flood Utility?  Bond Indebtedness?
  User Fees?  Public Private Partnerships (P3s)?
  Other?

– Enticing private investment is certainly gaining much attention, but is still maturing in these types of programs.

– Federal, State, and Local municipal governments are strained and are looking for off-balance sheet financing.

– Dedicated utilities provide for sustainable solutions and are being implemented throughout the nation.

– Local funding options coupled with Federal funding is very appealing.
Funding Solutions

A.

B. Local TAXES
Funding Solutions

C. Local Funding  Federal Funding

Local Sponsor  Design & Construction

JOB DONE
Need to Have a Unified Plan – No Bickering Allowed!
Funding is Limited

– Limited funding is stretched between various projects and programs.

– While impactful, natural disasters fade in the publics memory over time – often quickly.

– Are we willing to pay the price?

– Voter sentiment is typically very anti-tax.
## Triple Bottom Line Evaluation Criteria

<table>
<thead>
<tr>
<th>Financial</th>
<th>Environmental</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Costs</td>
<td>Climate</td>
<td>System Resilience</td>
</tr>
<tr>
<td>Operations and Other* Costs</td>
<td>Habitat</td>
<td>Ratepayer Affordability</td>
</tr>
<tr>
<td></td>
<td>Water Use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water Quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Resource Inputs</td>
<td></td>
</tr>
</tbody>
</table>

*Includes Operations & Maintenance, Replacement & Renewal, Decommissioning, and Avoided Costs

Courtesy TBL Assessment Model - San Francisco Water Power Sewer
Converting Concept to Reality

- Coastal protection post Hurricane Sandy
- Design Competition
- Federal Funding
- Local Funding
- Alternative Delivery being Evaluated

Lower Manhattan Coastal Resiliency BIG U 2
Converting Concept to Reality

Miami Beach Flood Mitigation Program

- $430M Public Works Program
- Dry Weather Flooding Mitigation
- Water Quality Treatment
- Convert from Gravity to Pumped Storm System with 80 pump stations
- Elevating Roads and Infrastructure
- Integrated Funding
  - State
  - Local Bonds
  - Local Utility Fees
  - National Grants
  - Community Resilience Grants
Blackpool, UK
Construction 2009 - 2011
Blackpool, UK
2012
Richmond Park Waterfront
Vancouver, BC
Fact: Flooding and Storm Surges will NOT go away!

– What are we willing to live with?

– What “Level of Service” (LOS) are we willing to pay for?

– Protection against structural flooding vs. “Nuisance” flooding?
  • What may be nuisance flooding to one person is critical flooding to another.

– Resiliency is measured and costs vary depending on the LOS.
  • Full protection against Category 5 Hurricanes?
  • Prevention of structural flooding and tolerance of flooding at lesser events?
Visions for Community Resiliency

– They can be a mile wide and an inch deep.

– Must go hand-in-hand with sustainable funding mechanisms.

– Must be supported locally by the public.

– Must shown demonstrable resiliency improvements (i.e. flood reduction and/or storm surge protection).
Thank You

James F. Thompson, PE, DBIA