Presenter: Kris Zimmerman

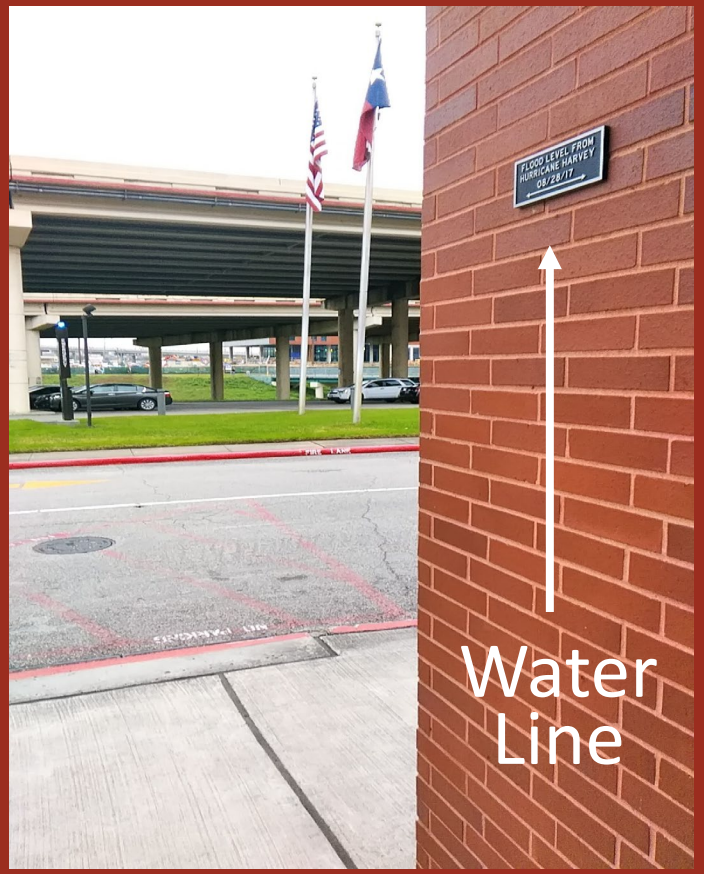
Storm History – Worked Storms
August 18, 1983 – Hurricane Alicia
June 5, 2001 – Tropical Storm Allison
September 23, 2005 – Hurricane Rita
September 13, 2008 – Hurricane Ike
August 25–28, 2017 – Hurricane Harvey

Hurricane Harvey

CATASTROPHIC CLIMATE PREPARATION AND RECOVERY
UNIVERSITY OF HOUSTON DOWNTOWN EXPERIENCE

REFERENCE LINK - HTTPS://WWW.WEATHER.GOV/IMAGES/HGX/PROJECTS/HARVEY17/SCREENCAPTURE_HARVEY50.GIF

Prepare For The Worst Flood Catastrophe



Begin Catastrophic Risk Assessment

A. Accept The Risk through Risk Identification.

   I. Measure and Map the Risk Intensity and Potential Location Impact.
   II. Begin Continuous Preparation Procedures to Mitigate the Risk.

B. Consider the Highest Vulnerability and Susceptibility to Damage in the Property Portfolio (Property Epicenter).

   I. Reduce The Risk through Containment / Isolation.
   II. Avoid The Risk through Removal / Transfer

REFERENCE LINK - HTTPS://WWW.READY.GOV/RISK-ASSESSMENT

A. Accept The Risk Through Risk Identification.

I. Measure and Map the Risk Intensity and Potential Location Impact.

a. Stay focused on One or Two Sources of Information, as Not to Create Information Confusion Overall.

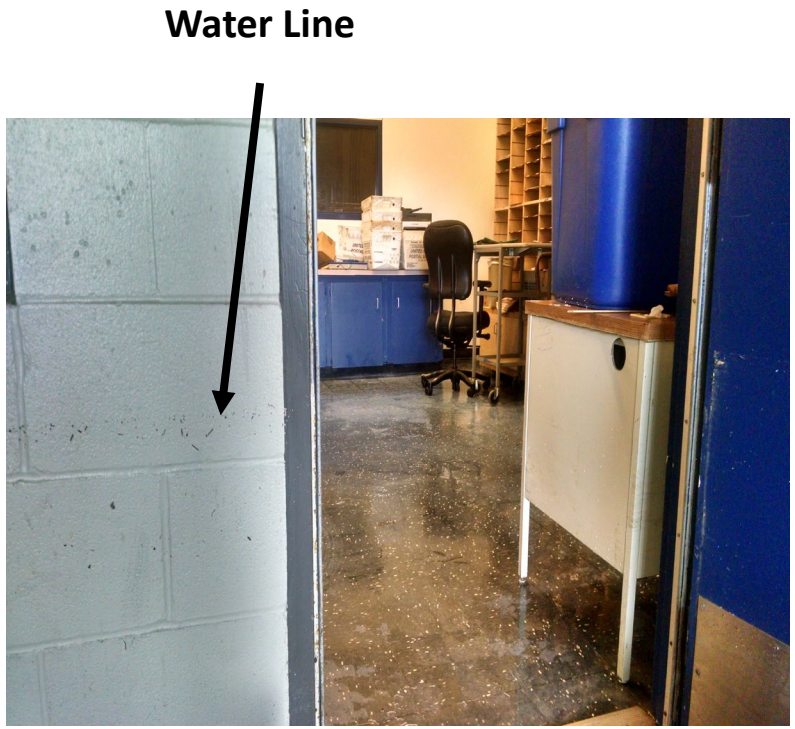
   i. Example: One Local and One National Source for comparisons of intensity and location impact.

b. Implement a review of Emergency Management Protocols - Property and Local Community.

   i. Bookmark Local and County sites for Emergency Evacuation Routes.

c. Review Prior historic Catastrophic Outcomes.

   i. Review prior Storm histories for prior and current flood pathways.



A. Accept The Risk Through Risk Identification.

II. Begin Continuous Preparation Procedures to Mitigate the Risk - Example:

120 HOURS Before (5 DAYS)	72 HOURS Before (3 DAYS)	72-36 HOURS Before (3-1.5 DAYS)	36 HOURS Before (1.5 DAYS)	36 HOURS-STORM Before Ground Zero (1.5-0 DAYS)	AFTER STORM Document Damage
National Hurricane Center to be observed 24-hours/day. Monitor City , CBD, and stake-holder communications. Window washing staging systems, cabling, fencing and equipment will be removed from building exterior and secured. Potential Ride-out team personnel confirmed.	Test generators and sump pumps. Top off generator fuel tanks as necessary. Check roof tops, secure all roof hatches. Potential ride out team on standby status. Inventory/replenish critical supplies: first aid kits, caution tape , duct tape, tarps, plywood, temporary barriers, etc.	Sandbags , wet-vacs, and other recovery equipment will be prepositioned to centralized stand by areas. Review and update personnel, tenant, and contractor lists. Prepare preliminary advisory letters. Prepare evacuation notices . Order a 30 yard dumpster in anticipation of debris/damage collection.	In coordination with city authorities and ownership, issue a building closure order. Building will release public address announcement that building closure will be in effect in two hours. Reminder announcements will be given in 15 minute intervals. Occupants should power down all computers, copiers, fax machines, coffee makers, refrigerators (empty) and any other equipment. Upon closure; conditioned air, escalators, elevators, lighting and electrical outlets will become non-operational. ALL NON-ESSENTIAL PERSONS MUST EXIT THE BUILDING.	Building is closed. No admission to building or parking garage until further notice. Building hotline and call notifications will be updated /issued each day to provide information on building status. Potential ride out team in place. Acquire all perishable food stuffs. Function check and acquire all personnel equipment items. Flashlights, batteries, radios, rain gear, etc.. IMPORTANT NUMBERS Hotlines Team Members Logistics Not on Property After the storm GC/SC	Continue to call hotline for up-to-date building status reports. Document / Picture the damage. Emergency generator will be operational should electrical power to the facility fail. Post storm recovery action commences. Damage Surveys complete. Resumption of recovery / operations timeline determined and released. .....??????????? .....??????????? .....??????????? .....??????????? .....???????????

B. Consider the Highest Vulnerability and Susceptibility to Damage in the Property Portfolio (Property Epicenter).

I. Reduce The Risk through Asset Containment / Isolation.

a. Determine Immediate Risk Limitations and Lower Exposure.

i. What can be elevated to a higher level on property.

b. Search for Opportunities to reduce the impact.

i. What can be stowed away inside the building.

c. Review Roof, Perimeter Exterior Door and Stairwell Accesses

i. Lower damage from flying objects and secure building exterior access.

B. Consider the Highest Vulnerability and Susceptibility to Damage in the Property Portfolio (Property Epicenter).

II. Avoid The Risk Through Removal / Transfer

a. Determine Immediate Removal of potential Assets.

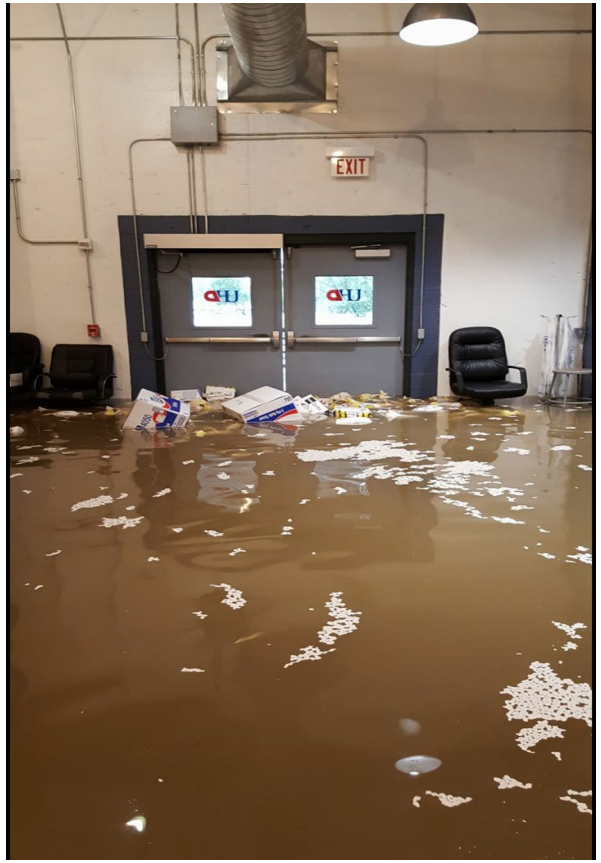
i. What can be transferred / removed off property.

b. Search for Opportunities to reduce the impact.

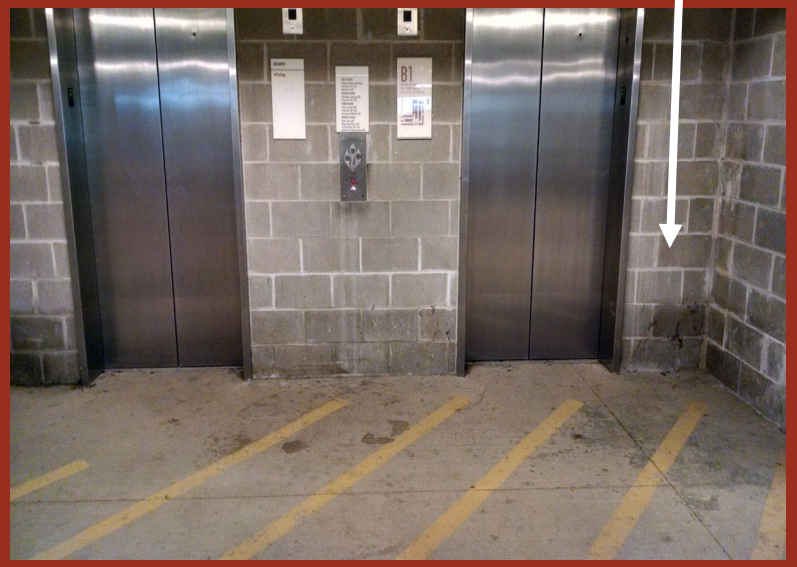
i. What can be stowed away inside the building and elevated on property.

c. Review Roof, Perimeter Exterior Door and Stairwell Accesses

i. Lower wind damage risk from flying objects and secure building exterior accesses.



Adjusters and Consultants Insurability



Immediately After the Storm
Communications with Adjusters and Consultants
Insurability

A. In House Teams or Managing Consultants

   I. In House Teams.
   II. Consultants Can Paper The Claims And Manage Construction.

B. Meet With Adjusters And Walk With Them On The Property

   I. Make All documentation Available To Adjusters / Investigators.
   II. Adjusters Will Be Available Buy Insurance Providers To Meet The Demand Of Catastrophes.

REFERENCE LINK - HTTPS://WWW.INVESTOPEDIA.COM/TERMS/C/CATASTROPHE-LOSS-INDEX.ASP

A. In House Teams or Managing Consultants

I. In House Teams

a. In House teams may have expertise or limited knowledge about the organization of the claim process.

i. Immediate emergency response, first on property, starts the further development of the data base and damage assessment.

ii. Consider assembly of an In-House claims team dedicated to the management of the claims process (Risk Management).

iii. Develop contingency controls and schedules with direct attention to resource requirements, remediation and rebuilding scopes.

A. In House Teams or Managing Consultants

II. Consultants Can Paper The Claims and Manage Construction Processes.

a. Go / No Go decisions for operations.

i. What is under water in a flood is a “Go Decision” to remove debris (start cleanup).

ii. Organize contracted Consultants/ Adjusters, start organization of the database.

iii. Fluctuating Market conditions will affect prices already submitted by contractors/sub-contractors.

B. Meet With Adjusters And Walk With Them On Property

I. Make All Documentation Available To Adjusters / Investigators.

a. Provide pictures, original prints, pdf's, floor plates of damaged areas.

i. Base Cad and Floor Plates with up to date stacking plans of prior construction are important for reclaimed constructability.

II. Adjusters Will Be Available By Insurance Providers To Meet The Demand Of Catastrophes.

a. Adjuster Tools and Pricing Applications in a geographical area by market condition.

i. The tools needed/used by the insurance carrier may decide how adjusters engage a knowledgeable contractor to assist in managing the claim settlement process. The insurance industry has found ways through available resources to assist the insured in a fair and equitable settlement for both parties.

Remediation Then Renovation

Begin Catastrophic Remediation / Renovation

A. Debris Remediation / Removal

   I. Remediation Consists Of The Clearance / Removal Of The Debris That Hinders Or Poses An Immediate Threat To Public Health and Safety.
   II. Categorize The Debris.

B. Renovation / Recovery

   I. Define The Priority To Open Access To Critical Community Facilities / Operations On Campus.

C. Rebuild / Design Implementation / Execution Errors

   I. Design Errors and Execution Errors

REFERENCE LINK - HTTPS://WWW.CDC.GOV/MOLD/CLEANUP.HTM

A. Debris Remediation / Removal

I. Remediation Consists Of The Clearance / Removal Of The Debris That Hinders Or Poses An Immediate Threat To Public Health and Safety.

   a. Preliminary Planning with Remediation Contractors to remove hazardous material that poses a health risk for occupancy.

      i. Recommend removing hazardous debris immediately.

II. Categorize The Debris.

   a. Remove non hazardous waste.

      i. Recommend Separation of waste products from recycled products.

B. Renovation / Recovery

I. Define The Priority To Open Access To Critical Community Facilities / Operations On Campus.

a. Community needs may need to be considered while determining FIRST critical facilities for operation.

i. Care and concern genuinely expressed for community services that flow along with critical facility services.

ii. Take the Building / Buildings / Facility to a recognizable construction make-ready state for renovation and recovery.

C. Rebuild / Design Implementation / Execution Errors

I. Design Errors and Execution Errors

a. A recognizable, construction make-ready state is the original building design floor plan or plans, floor plates that you had before the storm.

i. Older historic buildings may not be built to current code, which you may or will have to build to current code for major renovations.

ii. Prior building stacking plans and floor plans are extremely helpful for this process.

iii. Any modifications to prior designs need to be approved first so as not to redesign what was constructed in the first place.

Recovery

People and Expenses

Recovery - People and Expenses

A. People Are Your Most Valuable Asset To Manage Recovery

   I. Recognize The Hardship And Disruption To Infrastructure And Services.

B. Completing The Work To Adjusters Perspective Safely

   I. Ensure The Work Continues To The Perspective Of Adjusters And Claims Managers Safely.

C. Exploit Prior Experiences And Proficient Processes

   I. Community Resilience To Remedy A Problem Saves Money In The Long Term.

REFERENCE LINK- HTTPS://GSDRC.ORG/TOPIC-GUIDES/DISASTER-RESILIENCE/CONCEPTS/WHAT-IS-DISASTER-RESILIENCE/

A. People Are Your Most Valuable Asset To Manage Recovery

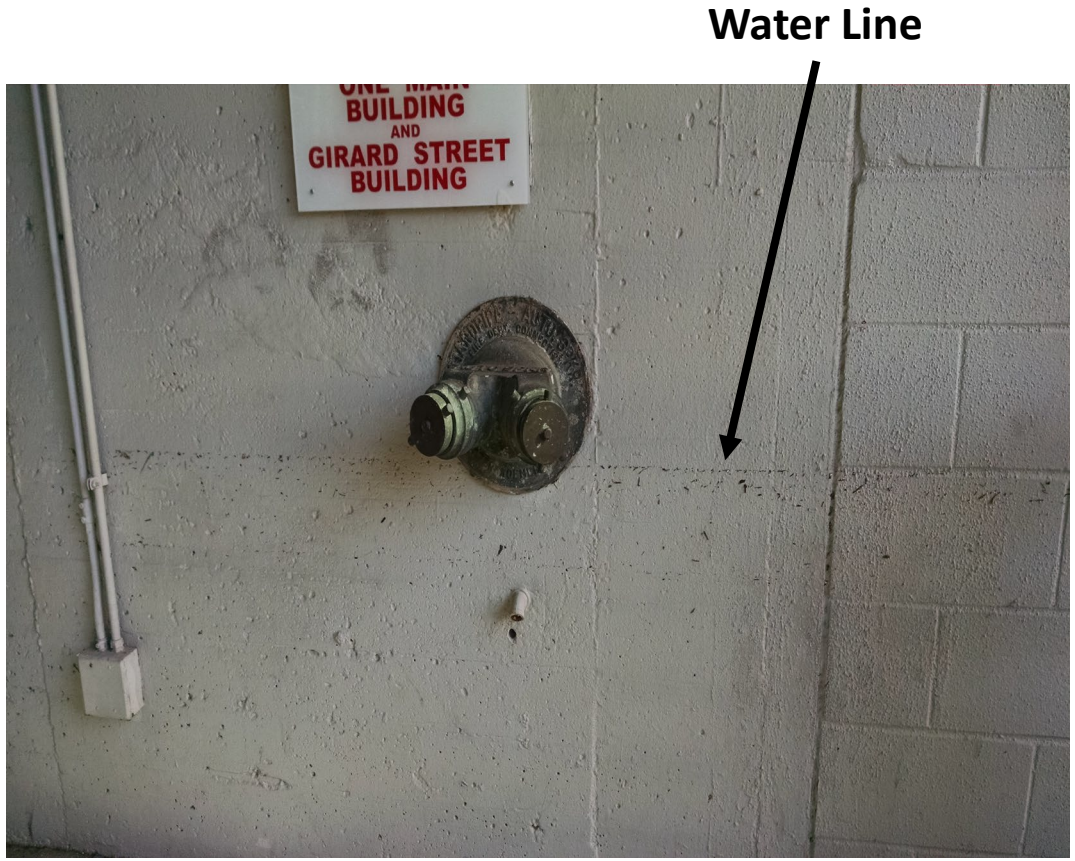
I. Recognize The Hardship And Disruption To Infrastructure And Services.

a. Assemble teams daily to keep track of who is on site.

i. There will be human resources that will not be able to return to work right away.

ii. Choose key individuals for work in their area of competence to recover.

iii. There will be human resources over time that will tire out / burn out and become ill.



B. Completing The Work To Adjusters Perspective Safely

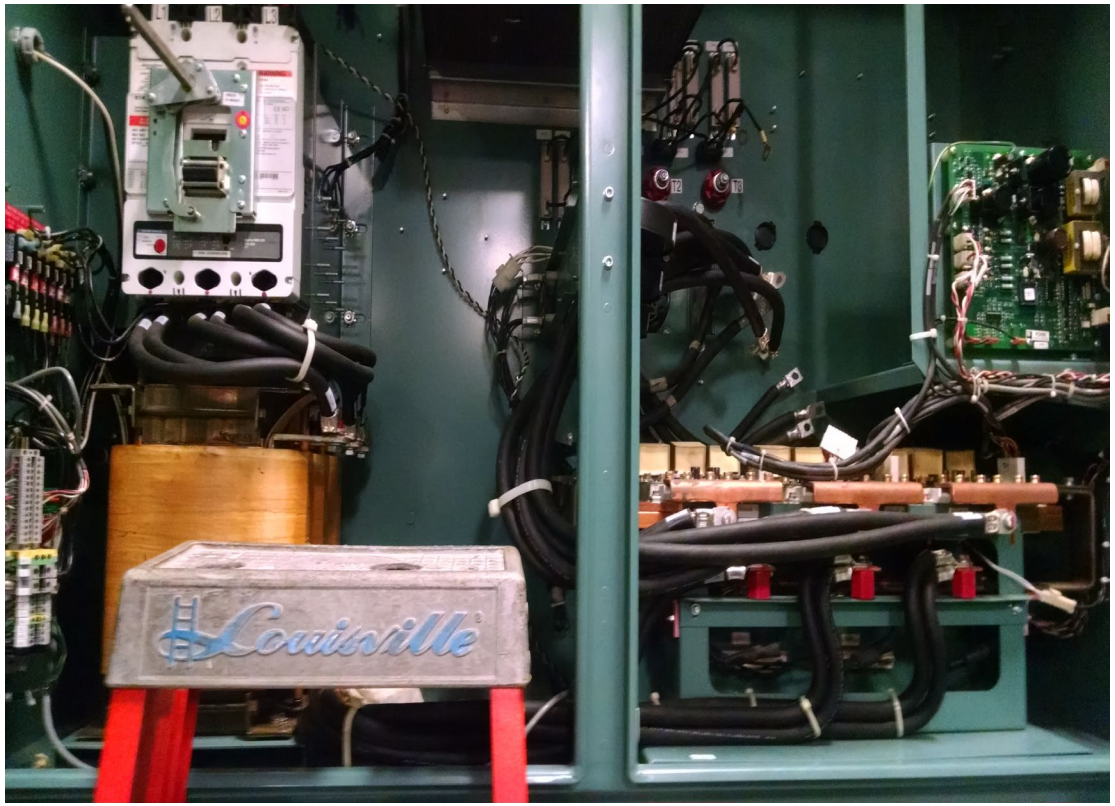
I. Ensure The Work Continues To The Perspective Of Adjusters And Claims Managers Safely.

a. Implement safety meetings and consistently communicate proper PPE during remediation and renovation.

i. As rooms and equipment are uncovered and exposed for cleaning new electrical hazards are revealed.

ii. Many materials are contaminated and hazardous during the initial start of cleanup / remediation.

iii. Potential Safety accidents / incidents must be reduced through daily safety meetings / observation / investigation.



C. Exploit Prior Experiences And Proficient Processes

I. Community Resilience To Remedy A Problem Saves Money In The Long Term.

a. Resilient communities affect the ability to anticipate, cope with, and respond to catastrophic changes.

i. We are exposed to repetitious climate events in coastal locations with hurricanes.

ii. We are adapting to these events with proficient solutions and processes for mitigation.

iii. Are there securities that can assist communities on the horizon with catastrophe (Resilience Bonds).

Questions

End Of Presentation

Thank You For Your Participation / Time