CRISIS MANAGEMENT:
Lessons Learned From District Leaders Who Know

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How Houston Got Its Schools Back Online After the Hurricane (Interview with Lenny Schad)
Crisis Management: Lessons Learned From District Leaders Who Know

Expert Presenters:

Deborah C. Karcher  
Chief technology officer  
Miami-Dade county public schools

Lenny Schad  
Chief information officer  
Houston Independent School District
An on-demand archive of this webinar will be available at www.edweek.org/go/webinar in less than 24 hrs.
Hurricane Harvey
HISD Lessons Learned
LARGE AND DIVERSE DISTRICT

HISD is the largest school district in Texas, spanning more than 330 square miles in a diverse city that’s home to world-class medical and research institutions, as well as a thriving energy industry.

287 schools

214,000 students

More than 90 languages spoken

80.4% economically disadvantaged
PRE-STORM

• Command Center
  – Consolidated facilities and technology call centers
  – TV’s to monitor news channels
  – Entertainment – Netflix & Movies
  – Food / Food Preparation
  – Allow command center staff time to ensure families are taken care of
• Conference bridges
• MiFi/Laptops with key personnel
• Vendors notified
  – Standby equipment identified
• District and building maps
• Insurance & FEMA
  – Regulations reviewed
  – Internal processes/procedures understood
PRE-STORM

• Safety/Inspection Equipment
  – Gloves, flashlights, masks, rubber boots, digital cameras

• Site inspection teams
  – Members identified
  – Checklists created

• Website re-direction
  – Increased utilization
PRE-STORM

• Government Emergency Telecommunication Service (GETS)
• Priority Wireless Service (PWS)
• 24 Hours
  – Unplug and move equipment
DURING STORM

• Monitor power
• Monitor weather patterns
• Monitor area flooding
POST STORM

• Facilities drives all activities
  – Structural damage
  – Air quality
  – Control who can enter facilities & when

• Track employee status
  – Can they return to work & when

• Communication
  – Everyone will want updates!!
  – Who/What/When
POST STORM

• Tight integration with facilities assessment teams
• Account for increased travel time and fuel
• Centralize site assessment data collection
WHAT’S THE DAMAGE

• 200 Schools had water intrusion
• 75 schools had major or extensive water intrusion
• 6 schools re-located, 4 potential rebuilds
• New bus routes
REMEDIATION

- Cabinet must define “WHAT” constitutes OK for building occupancy
- Most chaotic time
- Control access to buildings
- Board approval of emergency purchasing
- Pay for employees (If district is closed)
REMEDIATION

- Contact Vendors
- Inventory management
  - Pickup
  - Cleaning
  - Delivery
- Re-cabling
- Power
- Wireless access points
REMEDIATION

• Donation Management
• Volunteer Management
• Site Relocation
REMEDIATION

• Emotional Support
A GLOBAL DISTRICT
IN A GLOBAL CITY

THANK YOU
Disaster Recovery Using Azure Site Recovery (ASR)
Replicate Hyper-V, VMWare, AWS, and Physical systems to Azure

Raghavan Srinivas ("Rags")
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Cloud Solutions Architect
Azure Site Recovery
Protect your applications

• Orchestrate the recovery of your apps for simplified disaster recovery

• Improve Recovery-Time-Objectives (RTO) and Recovery-Point-Objectives (RPO) for both planned and unplanned outages

• Achieve zero impact disaster recovery drills

• Minimize app errors and data loss with application consistent recovery points

• Replication for heterogeneous environments: Hyper-V, VMware, AWS, and physical
Responding to a Hurricane

Debbie Karcher
Chief Information Officer
Miami-Dade County Public Schools
Start of Storm Season

- Pictures of facilities
- Update Hurricane Preparedness Handbook
- Check equipment and facility
- Clean all drains on roofs
- Update telephone tree
- Top off fuel levels on generators and vehicle
- Make sure all alternate approvers for POs are in place
Tropical Warning

- Request volunteers for staying in data center
- Move all equipment out of trailers/portables
- Set up Emergency Command Center at Computer Center and Central Administration
- Update telephone trees
- What’s App
- Prepare mapping software for student placement (GuideK12)
- Prepare hurricane websites for outside communications
- Ready Damage Assessment Site
During the Storm

- Communicating with team members throughout using What’s App
- Walking computer center and determining if there are any leaks or problems
- Testing system availability
- Checking power at the school using Solar Winds
- Determining calendar dates for makeups and testing
Reach out to staff to determine their welfare and readiness to return to work and to assist with post-storm activities

Begin monitoring schools through software to determine if there is power

Begin receiving damage assessment surveys as to whether schools can open or not
  - Criteria is power, no debris blocking entrance, and air conditioning

Prepare correspondence for distribution through a myriad of channels to employees, students, parents and community members

Look at the number of instructional days lost due to the storm and determine whether a) we are within the minimum requirements per the State in order to comply with Florida Administrative Code and b) if we meet the minimum requirements, we recommend returning instructional minutes to the school year in order to cover lost time.
  - Review the grading periods and interim reports dates.
  - Make modifications, if needed, to K-12 pacing guides, topic assessment schedules, interim assessment schedule.
Damage Assessment Application
Lessons Learned

- We were forewarned of some problems because Lenny Schad from Houston offered their lessons learned prior to our storm
  - Activate equipment orders
  - Lifted devices from bottom of charging cart
  - Well aware of any environmental issues
  - Better instructions regarding FEMA guidelines and requirements
Azure Site Recovery: The Complete Disaster Recovery/Migration Solution

- **Site to Azure**
  - AWS*
  - VMware
  - Hyper-V
  - Physical*

- **Any Cloud**
  - VMware
  - Hyper-V
  - Physical*

- **Site to Site**
  - Physical*/VMware to VMware
  - VMM to VMM

Windows

Linux
Site Recovery Use Cases & Scenarios

- **Disaster Recovery to Azure**
  - Compliance Assurance without impacting Production
  - Disaster Avoidance – Hurricane warning
  - Failover during real disasters – Fire, Earthquake etc.
  - Failback to on-premises*
  - Test DR plans in full

- **Azure as a Test environment**
  - Use “Test Failover” to create pristine clones of current VMs
  - Hack, test updates, etc. without affecting ongoing PRD systems

- **Planned Migration to Azure**
  - Easiest way to migrate VMWare, AWS, and Physical systems (and Hyper-V too, of course!!)
  - Safest solution to migrate VMs (fallback plan is revert to on-premises VM replicas)
  - NO THIRD PARTY TOOLS REQUIRED
Calls to Action

• Watch the step-by-step online seminar – “Azure Site Recovery Deployment Series”
  • https://aka.ms/edu/ASRNow

• Run the ASR Deployment Planner
  https://docs.microsoft.com/en-in/azure/site-recovery/site-recovery-deployment-planner
  • Profiles VMs with minimal-no intrusion to production apps and provides recommendations
  • Analyzes VMs for go/no-go use in Azure
  • Analyzes bandwidth requirements
  • Analyzes VM “churn” and number of synced changes required to meet RTO
  • Will be updated for Managed Disks
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Suggested Reading from *Education Week*:

*How Houston Got Its Schools Back Online After the Hurricane*

The Houston school district’s technology chief, Lenny Schad, shares lessons about how his 216,000-student system responded to Hurricane Harvey, which besieged the community.