

Emergency Plan
Evacuation Plan
Recovery Plan
Cost Control

When Disaster Strikes: Managing the "Chaos"

Managing the Chaos of a Disaster Can be A Challenge:

- ⦿ Emergency Planning
- ⦿ Facilities Planning
- ⦿ Management Planning
- ⦿ Pre-Emergency Implementation
- ⦿ In-Emergency Implementation
- ⦿ Post-Emergency Restoration
- ⦿ Post-Emergency Cleanup
- ⦿ Post-Emergency Reconciliation

Typical Disaster Planning Timeline





Details of the Timeline

- **Pre-Planning**
 - Who is in Charge?
 - Where will the Emergency Planning Center Be Located?
 - What are the IT/Telecom, Energy and Safety Needs of the Facility?
 - Designate Back-Up Facility.
- **Organization**
 - Update Contact Information.
 - Update Assistance Information.
 - Update Resources—System Maps, Facility Maps for Emergency Planning Center.
 - Procure IT/Telecom Resources, Energy Resources and Check Safety of Facilities.



- **Drill**

- Simulate an Emergency—usually coordinated with the State.
- Activate Emergency Planning Center.
- Observe the Function of the Emergency Plan.
- Document Deficiencies.
- Hold Lesson’s Learned Meeting.

- **Implement Lesson’s Learned**

- Make Necessary Changes in Information and Resources to Improve Functionality in the Event of a Real Emergency.
- Update any Information that was found to be in error during the drill.



Activate Emergency Planning Center

- **24-48 Hours Before Expected Emergency**
 - Move Critical Resources to the Emergency Planning Facility.
 - Test IT/Telecom, Emergency Power,
 - Secure Fuel, & Water for Emergency Planning Facility.
 - Notify Standby Contractors.
 - Notify Standby Suppliers.
- **12 Hours Before Expected Emergency**
 - Review Weather Data and Logistics Information.
 - Determine Potential Impacts.
 - Determine Potential Number of Crews and Types.
 - Release all Personnel to make Personal Preparations and Return to their designated storm duty.

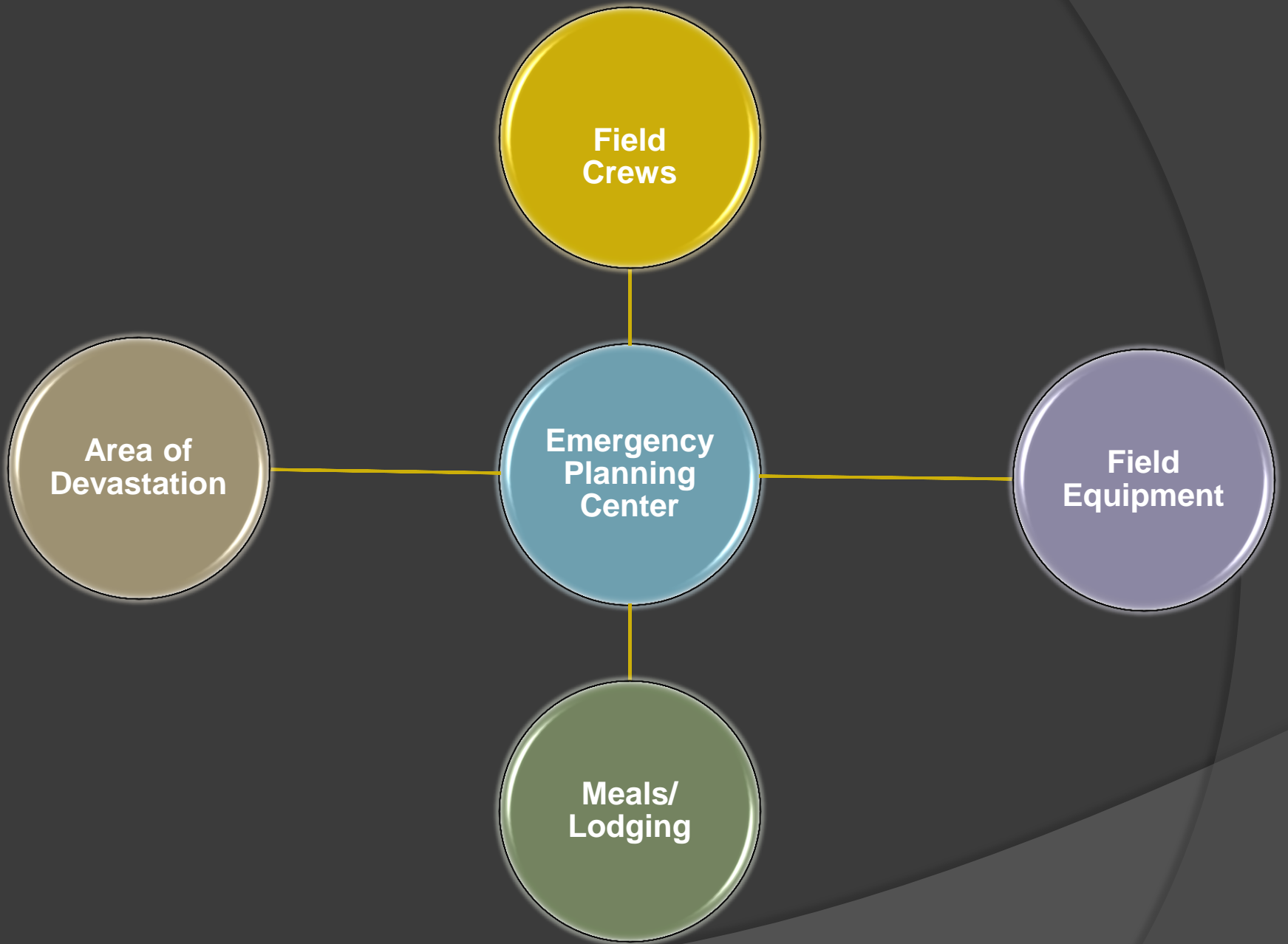


- **During the Emergency**

- Monitor Damage and attempt to Predict Hardest-Hit Areas.
- Monitor Conditions to Determine if Emergency Planning Facility Will be Usable.
- If not usable, mobilize to Back-Up facility.

- **After the Emergency Has Passed**

- Assess Damages.
- Mobilize Crews to major damage areas.
- Determine and move equipment and materials to designated locations.
- Attempt to re-power critical infrastructure sites first—water, sewer, hospitals etc.
- Re-power lodging facilities centrally located to the damage area.
- Determine number of crews and lodging needs in each area.
- Secure Lodging.
- Secure Catering/Suppliers for in-house and contract crews.
- Remove Debris
- Estimate total area outage durations and communicate with customers.



**Field
Crews**

**Area of
Devastation**

**Emergency
Planning
Center**

**Field
Equipment**

**Meals/
Lodging**

A Few Minor Details:

- Not all emergencies follow the predictable timeline of a named-tropical system:
 - The “No-Name Storm” occurred outside the “normal” Hurricane Season.
 - Numerous tornadoes, resulting from a spring-time cold front devastated a large are of the state of Florida including the Progress Energy Central Warehouse.
 - Winter Storms can behave un-predictably, suddenly icing over major portions of transmission & distribution grid.
 - Flash floods can occur with no warning.

- ◎ **Storm emergencies do not always follow the a statistically predictable set of behaviors.**
 - Hidden variables interact with complex systems and result in unexpected changes in intensity or location.
 - Variables in infrastructure systems can interact with natural systems and can cause unexpected damage and failure.
 - Infrastructure can fail leading to further unexpected emergencies.
- ◎ **Detailed planning is critical—but it often falls short.**

When Disaster Strikes:

- ◎ You need to know:
 - The most-affected area.
 - The critical infrastructure involved.
 - Where you need crews, how many, and what type.
 - The type of equipment and crew required.
 - Type and number of materials required to make repairs.
 - A fast method of getting standard assembly prints to the crews.
 - Where you need temporary generators.
 - Where you need fuel.
 - Where to set up lodging.
 - Where to send meals.

- How much and what type of material is required.
- Where the material can be delivered.
- Where to stage debris disposal facilities.
- Where to stage chemical toilets.
- Who to call for PCB and oil-spill cleanup and whether they can respond.
- Where you need environmental cleanup.
- Where to stage remote-ware-house laydown yards.
- Where you need security services.

You Depend on Your Team but...

- ⦿ ...Many are within the damage area and may be stranded.
- ⦿ ...Cell phone, internet, and land-line communications may be down.
- ⦿ ...Your own communication infrastructure may be down.
- ⦿ ...Debris may need to be cleared just to get an assessment.

During a Disaster it is not a good time...

- ⦿ ...To find out that the satellite phones are not working.
- ⦿ ...To find out that many of your field personnel are stranded.
- ⦿ ...To be “in the dark”.
- ⦿ ...To find out the crews on the mutual assistance roster you had staged got a call to go to another state.
- ⦿ ...The contractor you hired to provide food for your emergency planning center and crews provided contaminated products.
- ⦿ ...The emergency pumps you ordered are stuck on the interstate.

Long After Restoration is Usually When you Discover...

- ⦿ ...The contractor billed you for the contaminated food that made your people ill.
- ⦿ ...You paid for emergency pumps that never arrived.
- ⦿ ...You paid for a tanker of fuel that was diverted to another location.
- ⦿ ...The restoration contractors billed you for more crews that were on your site.
- ⦿ ...You paid for a helicopter crane that was working for another utility.
- ⦿ ...Dumpsters were still on the right-of-way, 3 months later.
- ⦿ ...Chemical toilets were never removed from the show-up and you paid for extra months of rental.
- ⦿ ...Multiple reels of conductor were diverted or stolen.
- ⦿ ...The hotel over-billed on rooms.
- ⦿ ...It took six months to sort out the billing and your supply-chain and accounting staff was overwhelmed.



Solutions

- At EHV, our personnel have years of experience working through the devastation and headaches of many major storms—from Andrew, Charlie, Francis, Ivan, Rita, Katrina; countless tornados, floods, ice-storms and other emergencies.
- Our personnel average 30 years in all phases of T&D construction, supervision and management, maintenance and outage restoration and emergency planning.

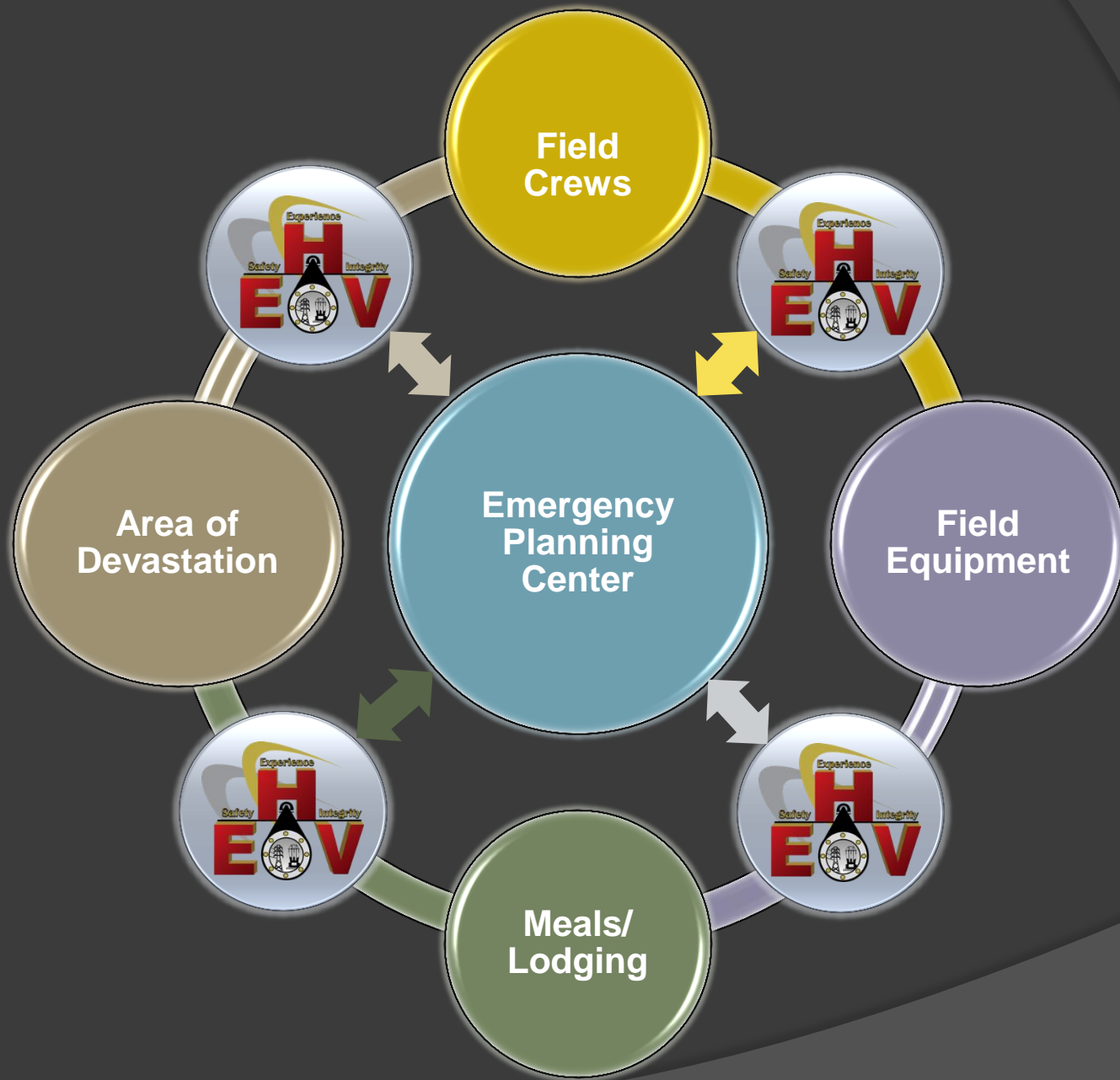


We Specialize in Coordination and Verification

- ⦿ At EHV, we are experienced in “boots on the ground” activities:
 - Providing detailed and accurate damage assessments,
 - Providing detailed material requests,
 - Managing and protecting material inventory,
 - Mobilizing crews, fuel, and meals to the proper location,
 - Providing oversight of restoration work to ensure it is completed according to safety codes and standards,
 - Interfacing with customers in the field,

- Coordinating crews and equipment,
- Reviewing crew time and invoicing from the field,
- Coordinating remote warehouses and yards,
- Returning unused materials,
- Manning substations and facilities to provide information while SCADA systems are down.
- Inspection:
 - Crew Equipment—safety and environmental
 - Crew Performance—safety and environmental
 - Crew Performance—workmanship and quality
 - Meals and Service Providers—safety and quality





Field Crews

Field Equipment

Emergency Planning Center

Area of Devastation

Meals/Lodging

Experience
Safety Integrity
EHV

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Call Us Before Disaster Strikes

- ⦿ We can review your planning and assist with coordination ahead of the emergency.
- ⦿ We don't charge "retainer" fees, unlike some services.
- ⦿ Simple T&M service agreements.
- ⦿ You pay for only the hours worked and meals, mileage and lodging during the work.
- ⦿ No hidden fees, no "extras".



**Experienced in Bringing
Order from Chaos**

