



Houston-Galveston Area Regional Hazard Mitigation Plan

Initial Planning Workshop



Overview

- Project Approach
 - ◆ Hazard Identification and Risk Assessment
 - ◆ Capability Assessment
 - ◆ Policy Development and Project Identification
 - ◆ Adoption and Implementation

- Data Collection
 - ◆ Data Acquisition and Categorization Matrix
 - ◆ Local Capability Assessment Questionnaire

- Project Timeline

- Roles and Responsibilities

- Next steps

What is Hazard Mitigation?



“mit-i-gate”

1: to cause to become less harsh or hostile.

2: to make less severe or painful.



Hazard Mitigation

Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

Disaster Mitigation Act of 2000

- Revitalized Federal Planning Requirements
 - ◆ State and Local Hazard Mitigation Plans
 - ◆ FEMA Approval Required by November 1, 2004

- Federal Grant Funding Eligibility
 - ◆ Hazard Mitigation Grant Program (HMGP)
 - ◆ Pre-Disaster Mitigation Program (PDM)

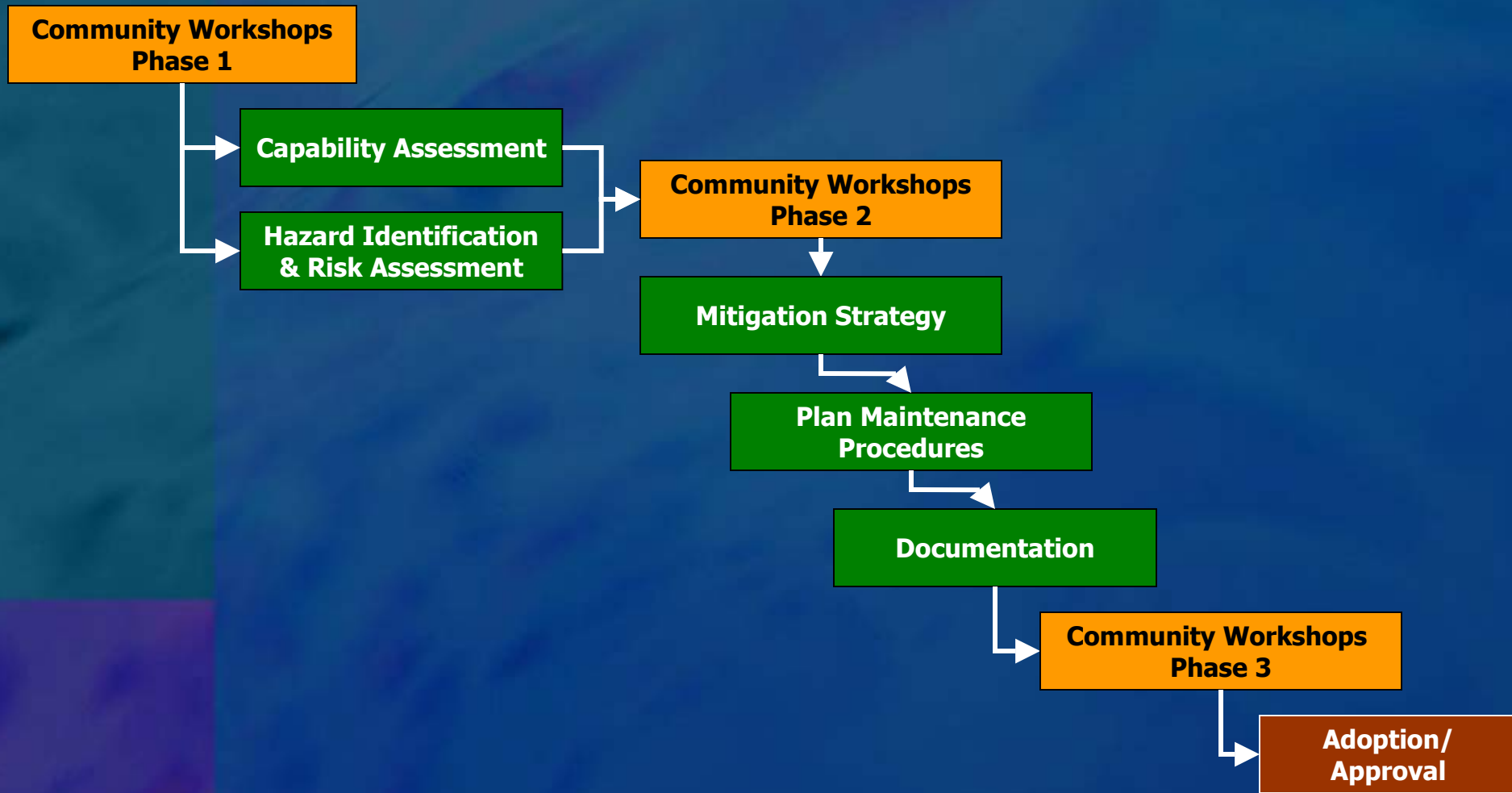
- DMA 2000 is intended to facilitate cooperation between state and local authorities on risk reduction measures and to expedite funding allocation.

Project Approach

- Hazard Identification and Risk Assessment
- Capability Assessment
- Policy Development and Project Identification
 - ◆ Mitigation Action Plan
- Adoption and Implementation



The Process





The Product

- A Regional Mitigation Plan that is compliant with State (Annex P) and Federal requirements
- Each jurisdiction's risk and capability will be assessed separately, leading to individual "mitigation action plans" that will help achieve established goals and objectives
- Each jurisdiction must have the plan reviewed and adopted by their local governing body



Mitigation Action Plan (example)

ACTION #17

Amend the county's Manufactured Housing and Travel Trailer Park Ordinance to require tornado shelters for any new major manufactured/mobile home park with more than 30 mobile home spaces.

| | |
|-----------------------------|---|
| Category: | Property Protection |
| Hazard: | Tornadoes |
| Objective(s) Addressed: | 2.3 |
| Background: | Mobile homes are particularly vulnerable to damage from high winds. Residents, even those who live in mobile homes with tie-downs, should seek safe shelter when a tornado threatens. Tornado shelters should be constructed in major mobile home parks to ensure a safe place for residents to go during a tornado event. The shelter structure, which should be designed to withstand a minimum of 120mph winds, could easily serve an alternate purpose such as a community center, laundry facility, etc. Tornado shelters should be for last minute protection for high wind events but not serve as emergency shelters for other events such as hurricanes and tropical storms. |
| Priority: | Moderate |
| Funding Sources: | N/A |
| Responsibility Assigned to: | Planner |
| Target Completion Date: | June 1, 2004 |

Action

Category

Hazard

Objective(s)
Addressed

Background

Priority

Funding Sources

Responsibility

Completion Date



Hazard Identification and Risk Assessment

- Identify Hazards
 - ◆ Hazard Description
- Profiling Hazards
 - ◆ Hazard History
 - ◆ Hazard Frequency and Magnitude
 - ◆ Hazard Map
- Assessing Vulnerability
 - ◆ Identify Assets (types and number of structures)
 - ◆ Estimate Current and Future Expected Losses
 - ✓ People
 - ✓ Housing Units
 - ✓ Critical Facilities
 - ✓ Special Facilities
 - ✓ Infrastructure and Lifelines
 - ✓ HAZMAT Facilities
 - ✓ Commercial Facilities

Hazard Identification

Natural Hazards

Geologic Hazards
Earthquakes

Flooding
Riverine
Coastal

Extreme Winds
Windstorms
Hurricanes
Tornadoes

Coastal Erosion
Atmospheric
Hailstorm
Drought

Wildfire

Winter Storms
Snow and Ice

Human-Caused Hazards

Dam Failures
Hazardous Materials
Fixed and Mobile

Terrorism
Security
Blast / Explosion
Chemical / Biological

Nuclear Accidents
Radioactive Materials

Utility Failures / Sabotage
Transportation Disruption
Pipelines



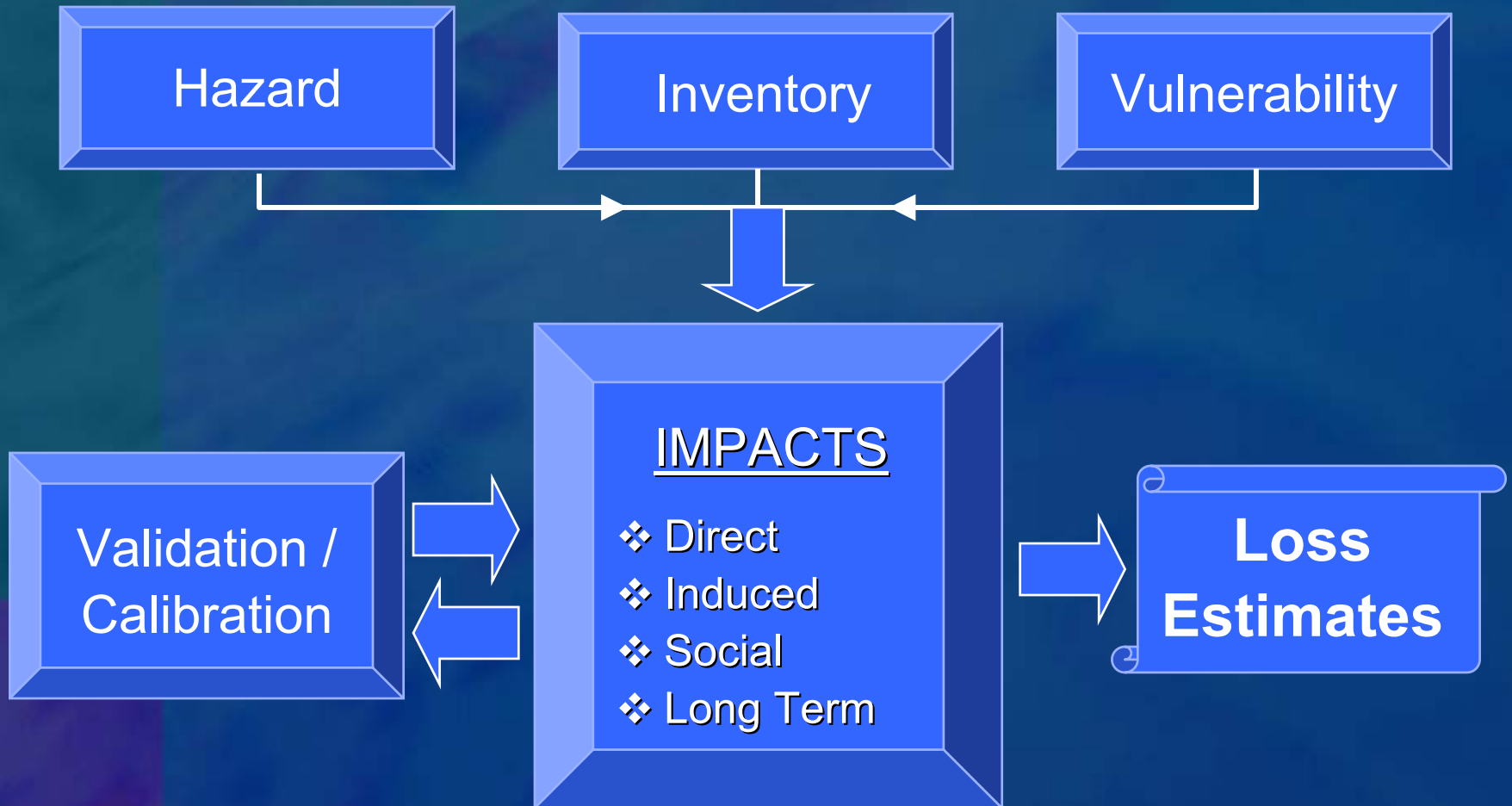


HAZUS Overview: What is HAZUS?

- HAZUS (Hazards US) is a standardized software program that estimates losses from potential hazards
- HAZUS uses mathematical formulas and information about building stock and lifelines to produce loss estimation results
- HAZUS produces analytical reports and maps, allowing communities to understand the possible scope of disaster-related damages



HAZUS-MH Analysis Model Flowchart





Data Acquisition and Categorization Matrix

- Data required:
 - ◆ Baseline Data
 - ◆ Political Boundaries, Environmental Features, Land Use, Demographics
 - ◆ Inventory Data
 - ◆ Critical Facilities
 - ◆ Transportation Facilities
 - ◆ Utility Facilities
 - ◆ Hazard Data
- “Critical” versus “Desired” Data



Data Collection: Baseline Data

Political Boundary

- County Boundary
- City Jurisdiction

Base Map

- Building Footprints/points
- Parcel and Lot Lines
- Landmarks

Environmental

- Hydrographic (rivers, streams, lakes, ponds)
- Hypsographic (contour lines, DEM)
- Soils
- Geology

Demographic

- Census Blocks
- Census Tracts

Land Use

- Land Use (1990, 1995, 2000)
- Zoning Maps
- Parks

Imagery / Aerial Photography

- If available

| Political, Environmental, and Base Data Requirements | Critical | Describe | Available | Specify Format GIS/Tabular/monodigital | Data Source | General Comments |
|--|----------|----------|-----------|---|-------------|------------------|
| Political Boundary | | | | | | |
| Administrative Boundaries | ✓ | ✓ | | | H-GAC All | |
| County Boundaries | ✓ | ✓ | | | H-GAC All | |
| City Jurisdiction | ✓ | ✓ | | | H-GAC All | |
| State Counties | ✓ | ✓ | | | H-GAC All | |
| Base Map (Planimetric Data) | | | | | | |
| Building Footprints/Points | | ✓ | ✓ | | H-GAC-some | |
| Parcel and Lot lines | | ✓ | ✓ | | H-GAC-some | |
| Landmarks | | ✓ | ✓ | | | |
| Hydrographic | | | | | | |
| Rivers, Creeks, Stream Centerlines | ✓ | ✓ | | | H-GAC All | |
| Lakes, Ponds, and Bodies of Water | ✓ | ✓ | | | H-GAC All | |
| Drainage Basins | ✓ | ✓ | | | H-GAC All | |
| Hypsographic | | | | | | |
| Contour Lines | ✓ | ✓ | | | H-GAC All | |
| Digital Elevation Model | ✓ | ✓ | | | H-GAC All | |
| Demographic Data | | | | | | |
| Census Blocks | ✓ | ✓ | | | H-GAC All | |
| Census Tracts | ✓ | ✓ | | | H-GAC All | |
| Land Use | | | | | | |
| Land Use 90-95-2000 | ✓ | | | | | |
| Zoning | ✓ | | | | | |
| Parks | | ✓ | | | | |
| Environmental | | | | | | |
| Geology | ✓ | | | | | |
| Soils | | ✓ | ✓ | | H-GAC-some | |
| Wetlands | | ✓ | ✓ | | H-GAC-some | |
| Imagery | | | | | | |
| SW or Color Orthophotos (mosaics) | ✓ | ✓ | | | H-GAC All | |



Data Collection: Inventory Data (example)

| Transportation Facilities | Critical | Desirable | Available | Specify Format GIS/Tabular/ non-digital | Data Source | General Comments |
|---------------------------|----------|-----------|-----------|--|-------------|------------------|
| | | | | | | |

| Transportation Facilities | | | | | | |
|---|---|--|---|--|-----------------|--|
| Highway Systems (roads, bridges, tunnels) | ✓ | | ✓ | | H-GAC-- Some | |
| Railway Systems (facilities, tracks, bridges, tunnels) | ✓ | | ✓ | | H-GAC-- Some | |
| Ports and Harbor Facilities | ✓ | | ✓ | | H-GAC-- Some | |
| Airport Facilities and Runways | ✓ | | ✓ | | H-GAC-- Some | |
| Public Transportation System Facilities | ✓ | | ✓ | | H-GAC-- Some | |
| Light Rail Systems (facilities, tracks, bridges, tunnels) | ✓ | | ✓ | | H-GAC-- Some | |



Data Collection: Hazard Data (example)

| Flood | Critical | Desirable | Available | Specify Format GIS/Tabular/ non-digital | Data Source | General Comments |
|--|----------|-----------|-----------|--|-------------|------------------|
| Flood | | | | | | |
| 100 Yr. Flood Boundary Map | ✓ | | | | H-GAC | |
| 500 Yr. Flood Boundary Map | ✓ | | | | H-GAC | |
| Base Flood Elevation | ✓ | | | | H-GAC | |
| Historical Flood Event Information | | ✓ | | | | |
| Damage Data from Historical Flood Events of the Area | | ✓ | | | | |
| Repetitive Losses, per municipality | | ✓ | | | | |



Local Capability Assessment Questionnaire

- Program, Plan and Policy Review
- Technical, Administrative, Fiscal, and Political Capability
- Qualitative and Quantitative Assessment
- Excel Spreadsheet
 - ◆ Internet and E-mail data transfer
- Timely Completion



Local Capability Assessment Questionnaire

■ General Community Information:

- ◆ A narrative description of your community, including historical, demographic, cultural and economic information, along with any unique natural or physical features.
- ◆ A brief history of hazards in your community, including the type, date of occurrence and any known impacts.
- ◆ A brief description of current or projected development trends in your community.
- ◆ A general listing of any on-going or completed hazard mitigation projects within your community.



Local Capability Assessment Questionnaire (example)

II. HAZARD MITIGATION PLANS, POLICIES AND ORDINANCES

| Hazard Mitigation Plan | Yes or No? | Narrative / Explanation |
|---|------------|-------------------------|
| Does your jurisdiction receive Emergency Management Performance Grant Funds? | | |
| Does your community have a Hazard Mitigation Plan? If yes, when was it adopted? When was the plan last amended? | | |
| Does the plan address all natural hazards found in your community, or is it a single-hazard plan? If it addresses a single hazard, what is the hazard? | | |
| Does the plan address human-caused hazards? Human-caused hazards may include technological accidents and acts of terrorism. | | |
| Do you believe the plan would meet the requirements established by the Disaster Mitigation Act of 2000? If no, what elements do not meet the new standards? | | |
| Has the plan proven to be an effective measure for reducing hazard impacts? Please provide an approximate measure of its effectiveness to date (HIGH, MODERATE or LOW) and briefly explain. | | |



Local Capability Assessment Questionnaire

- Questionnaires should be completed and returned to H-GAC by **Thursday, May 15th**
- Appropriate local representatives should take the lead on providing responses
- Follow-up information requests may be necessary



Project Timeline

| Project Tasks | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Develop Community Participation | █ | █ | | | | | | | | | | |
| Negotiate Inter-Local Agreements | | █ | █ | | | | | | | | | |
| Develop Consultant RFP | █ | | | | | | | | | | | |
| Release RFP | | █ | | | | | | | | | | |
| Select Consultant | | | █ | | | | | | | | | |
| Develop Demographic Profile | | | █ | █ | █ | | | | | | | |
| Initiate Project with Consultant | | | █ | | | | | | | | | |
| Kick-Off Workshops | | | | █ | | | | | | | | |
| Hazard Identification, Analysis and Risk Assessment | | | | █ | █ | █ | █ | | | | | |
| Identify and Evaluate Hazard Mitigation Strategies | | | | | | █ | █ | █ | | | | |
| Public Participation Meetings | | | | | | █ | █ | █ | █ | | | |
| Draft Plan | | | | | | | | | █ | | | |
| Send Draft to DEM | | | | | | | | | █ | | | |
| Make Recommended Changes | | | | | | | | | | █ | | |
| Adoption of Plan | | | | | | | | | | █ | █ | |
| Final Submission of Regional Hazard Mitigation Plan | | | | | | | | | | | | █ |



Roles and Responsibilities

- H-GAC
- PBS&J / H2O Partners
- Local Governments
- FEMA / Texas DEM

H-GAC

- Project Management
- Coordination
 - ◆ Inter-Local Agreements
 - ◆ Meetings and Workshops
 - ◆ Data Collection and Exchange
- Communications
 - ◆ Group e-mail distribution
 - ◆ Website
- Data
 - ◆ Demographic Profiles (regional and local)
 - ◆ Hazard Identification and Risk Assessment Data
 - ◆ Local Capability Assessment Questionnaires
- Documentation

PBS&J / H2O Partners

- Technical Assistance
- Data Collection
- Analysis
 - ◆ Hazard Identification and Risk Assessment Findings
 - ◆ Capability Assessment Findings
 - ◆ Mitigation Strategy Development
- Community Workshops / Public Participation
- Monthly Progress Reports
- Draft and Final Mitigation Plans

Local Governments

- Coordination
 - ◆ Establish Single Point of Contact
 - ◆ Attend Community Workshops
 - ◆ Gain Public Input/Involvement
- Data
 - ◆ Hazard Identification
 - ◆ Capability Assessment
 - ◆ Completed Hazard Mitigation Projects
- Mitigation Strategy
 - ◆ Goals, Objectives and Mitigation Actions
 - ◆ Implementation Procedures
- Plan Adoption



FEMA / Texas DEM

- Policy Guidance and Technical Assistance
 - ◆ Disaster Mitigation Act of 2000 and Annex P
 - ◆ Policy and Program Updates, Interpretation
 - ◆ Human-Caused Hazards

- Plan Review
 - ◆ On-going process

- Plan Approval

Next Steps

- On-going Coordination
 - ◆ Additional Data Needs
 - ◆ Risk Assessment and Capability Assessment
 - ◆ Public Participation
 - ◆ Human-Caused Hazards
 - ◆ National Strategy for Physical Protection of Critical Infrastructure and Key Assets

- Future Meetings
 - ◆ Risk Assessment and Capability Assessment Findings
 - ◆ Mitigation Strategy Workshops
 - ◆ Draft Plan Presentations



QUESTIONS?