Creating a Resiliency Plan

Trainer(s):

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www.ibts.org
Creating A Resiliency Plan

A National League of Cities University Seminar

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Institute for Building Technology and Safety
About IBTS

The Institute for Building Technology and Safety is a 501(c)(3) nonprofit organization established to provide unbiased professional services, while enhancing the communities in which we work.
Introductions

John Cybulski, CQE          John Nelson

• We are here to:
  – Share the current thinking about resilience
  – Discuss what goes into a Resilience Improvement Plan
  – Create a Resilience Improvement Plan
  – Explore ways to fund improvements to resilience
Administrivia

- Fire exits
- Facilities
- Refreshments
- Odds & Ends
Agenda

Module 1: Relating Resilience To Your World

Module 2: Creating A Resilience Baseline

Module 3: Creating Resilience Goals

Module 4: Implementing A Resilience Plan

Exercise: "Resilience In The News"

First Break ~9:40

Exercise: "Resilience Assessment"

Second Break ~10:25

Exercise: "Resilience Plan"

Third Break ~11:10

Exercise: "Follow The Money"

First Break ~9:40

Second Break ~10:25

Third Break ~11:10
Module 1

Define “Resilience”
Identify the common components of resilience models
Compare and contrast attributes of resilience
Identify appropriate applications for each type of model
What Is “Resilience”? 

• “…The American public possesses a great resilience and strength, and good risk communication strategies can tap into and even amplify those assets.”
  - Patrick J. Kennedy

• “…I've always been impressed with the tremendous resilience of the American economy. I think over the years, over the decades, it's demonstrated this tremendous ability to take severe body blows, if you will, and bounce back.”
  - Dick Cheney

• “Success is not final, failure is not fatal: it is the courage to continue that counts.”
  - Winston Churchill
What Is “Resilience?” continued

- As the world becomes more interconnected, we become less insulated from crises
  - **Social** – Knowing your social strengths and weaknesses helps to prioritize efforts to increase overall resiliency
  - **Economic** – Understanding how your economy is built is crucial to preserving it and reducing the need to re-build it
  - **Governance** – Every community needs rules, coordination and discipline; citizens will create surrogates if the government cannot provide them
Rodin Model

The Resilience Dividend

Investments

Residents
- Greater mobility and access
- More job opportunities
- Increased social cohesion

Businesses & Institutions
- Lower operating risk
- More reliable supply chains
- New markets for innovation and technology

Governments
- Increased corporate investment
- Improved coordination across silos
- Greater protection for the vulnerable
City Resilience Framework
NIST Model

- Growth & Achievement
  - Education
  - Belonging
  - Media

- Safety and Security
  - Economic
  - Government
  - Health

- Survival
  - CSOs
  - Family
  - Belief Systems
### IBTS Model

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Durability</th>
<th>Redundancy</th>
<th>Engagement</th>
<th>Coordination</th>
<th>Self-Correction</th>
<th>Adaptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Resilience</td>
<td>Acknowledge stress</td>
<td>Function under adversity</td>
<td>Isolate trauma</td>
<td>Social supports</td>
<td>Stress stimulates growth</td>
<td></td>
</tr>
<tr>
<td>Economic Resilience</td>
<td>Required tech.</td>
<td>Logistical infrastructure</td>
<td>Financial resources</td>
<td>Human resources</td>
<td>Physical resources</td>
<td></td>
</tr>
<tr>
<td>Resilient Governance</td>
<td>Strategic planning</td>
<td>Integration of functions</td>
<td>Relationship with other governments</td>
<td>Align with external plans</td>
<td>Power</td>
<td></td>
</tr>
</tbody>
</table>
Attributes of Resilience

- **Social Resilience** - Knowing a community’s social strengths and weaknesses helps to prioritize efforts to increase overall resiliency

- Social Resilience indicators
  - Acknowledge stress
  - Function under adversity
  - Isolate significant trauma
  - Stress stimulates growth
  - Social supports
Attributes of Resilience continued

• **Economic Resilience** – Understanding how a community’s economy is built is crucial to preserving it and reducing the need to re-build it

• **Elements of Economic Resilience**
  – Logistical infrastructure
  – Required technology
  – Financial resources / strategy
  – Physical and human resources
Attributes of Resilience continued

• Resilient Governance – Every community needs rules, coordination and discipline or citizens will create surrogates if the government cannot provide them

• Evaluating local government for resiliency
  – Strategic planning
  – Integration of functions
  – Power
  – Relationship with neighboring governments
  – Alignment with regional and national plans (if any)
Attributes of Resilience continued

- Awareness
- Durability
- Redundancy
- Engagement
- Coordination
- Self-Correction
- Adaptability
Exercise

“Resilience in the news”
“Resilience In The News”

• Our City has a population of approximately 25,000 and is located 90 minutes from three major cities.

• Some might say it is in the middle of nowhere; on the contrary, Our City has marketed itself based on its central location, which allows it to serve as an effective hub for distribution and for manufacturing, research, and corporate facilities.

• Our City also has small-town advantages such as low crime, a low cost of living, and a close-knit community.
“Resilience In The News”
continued

• Oil has been king in Our City since it was first drilled in 1911; and for most of its 100-year history, Our City had been a one-company town.

• At its height in the 1980s, This Company employed over 5,000 people in research and development, refining, human resources, management, and more.

• The local economy was 80 percent oil-dependent and totally invested in the success of This Company.
“Resilience In The News”
continued

• Our City was first hit by major downsizing at This Company in 1993 when approximately 1,400 jobs were cut.

• The downsizing resulted in an annual payroll reduction of $40 million, which precipitated an economic slowdown in the city and county in 1993 and 1994.

• The unemployment rate, which had always been well below the national average of six percent, jumped to 12 percent and unemployment compensation claims more than doubled from the previous year.
“Resilience In The News”

continued

• In 2002, This Company merged and laid off more than 3,500 workers.

• While This Company once accounted for 50 percent of the jobs in Our City, it now accounts for just seven percent, or 1,400 jobs.

• The town’s psychology and identity were rocked by the downsizing of its one major employer.
“Resilience In The News” continued

• What focus areas are the most vulnerable?

• What focus areas are the most resilient?

• Which attributes are the most evident?

• Which attributes might provide additional insight if there were more information?
Module 2

Assemble a resilience improvement team
Create a resilience baseline questionnaire
Conduct a resilience assessment
Create a resilience baseline
Resilience Improvement Teams

• Applying resilience principles
  – Build consensus on how all of the current ideas about resilience in your area fit together
  – Select the approach that best fits the outcomes you value
  – Identify the resources that best relate to your citizens

• Use “tools” to lighten the load
  – Templates
  – Tool Kits
  – Consultants
# Questionnaire Structure

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Reviewed but not found</td>
</tr>
<tr>
<td>1</td>
<td>Rudimentary</td>
</tr>
<tr>
<td>2</td>
<td>Progressing</td>
</tr>
<tr>
<td>3</td>
<td>Resilient</td>
</tr>
</tbody>
</table>

| Concern | Trait | Score | Question |
|---------|-------|-------|----------|----------|
## Sample Social Questions

<table>
<thead>
<tr>
<th>Trait</th>
<th>Score</th>
<th>Question</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Is there a formal campaign to translate climate change into awareness of local environmental degradation?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Is there a process for ensuring compliance with safety standards when locating, designing and constructing schools and health facilities?</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Is there a formal assessment of the geographic usefulness and capacity of schools and health facilities during emergency situations?</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Are citizens’ groups involved in a public awareness campaign?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Is risk reduction present at all levels of the school curriculum and in all public and private institutions?</td>
<td></td>
</tr>
</tbody>
</table>
# Sample Economic Questions

<table>
<thead>
<tr>
<th>Trait</th>
<th>Score</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Is there a formal process for identifying and prioritizing economic vulnerabilities?</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Are economic plans risk-sensitive?</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Are there stockpiles of relief assistance, response equipment and vehicles?</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Are there incentives for local businesses to support low-income community participation in resilience efforts?</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Is there a formalized process for accessing regional and national funds and programs to support local resilience initiatives?</td>
</tr>
</tbody>
</table>
## Sample Governance Questions

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<th>Score</th>
<th>Question</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Are there early warning and monitoring systems that alert crisis management agencies to risks that approach coping thresholds?</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Do policies, management strategies and plans to strengthen protective infrastructure combine structural and non-structural measures?</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Are risk sharing alliances with neighboring jurisdictions formalized?</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Is there a GIS that includes input data from and is accessible to all actors, including civil society, the production sector and the scientific and technical community?</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Are the roles, authority and responsibilities of depts. defined and reviewed on a regular basis?</td>
</tr>
</tbody>
</table>
Mechanics of Assessment

• Pre-Assessment
  – Validate resilience areas
  – Validate resilience indicators

• Assessment
  – Interview city leaders
  – Interview project teams
  – Tour project sites

• Post Assessment
  – Agree on indicator levels
  – Construct baseline
  – Assess project impacts
# Resilience Baseline

<table>
<thead>
<tr>
<th>SOCIAL RESILIENCE</th>
<th>ECONOMIC RESILIENCE</th>
<th>RESILIENT GOVERNANCE</th>
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<tbody>
<tr>
<td>Acknowledge Stress</td>
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Regional Baseline

City "A"
Exercise

“Resilience assessment”
“Resilience Assessment”

• Find the number included in your handout packet, and introduce yourself to other attendees with the same number

• Decide amongst the team which resilience model is going to work best for your city

• Meet together to discuss how the sample questions relate in your cities

• Assign a score to each question and provide an example of why your group chose that score
Module 3

Articulate what goes into a resilience plan
Identify priority areas
Create a resilience plan
Contents of a Resilience Plan

• Context
  – Social Needs
  – Economic Dependencies
  – Government Systems
  – Infrastructure

• Performance Goals

• Implementation
  – Regulatory Environment
  – Standards
  – Implementation Strategies
Contents of a Resilience Plan continued

• Checklist
  – Buildings
  – Transportation
  – Energy
  – Communications
  – Resources

• Use the checklist to ensure that you are systematically addressing all of the areas that make your community work
Priority Areas

• Social Needs
  – Buildings
  – Transportation
  – Energy
  – Communications
  – Resources
Priority Areas continued

• Economic Dependencies
  – Buildings
  – Transportation
  – Energy
  – Communications
  – Resources
Priority Areas continued

• Government Systems
  – Buildings
  – Transportation
  – Energy
  – Communications
  – Resources
Priority Areas continued

- Infrastructure

- Roads
- Airports
- Harbors
- Railway systems
- Energy networks
- Utility systems
- Education
- Healthcare
- Social Infrastructure
Priority Areas continued

• Performance Goals
  – Flow from long-term community goals
  – Articulate what the desired performance looks like in each performance area
    • Buildings
    • Transportation
    • Energy
    • Communications
    • Resources

• Show the current baseline
• Establish a performance period after which the baseline will be adjusted
Priority Areas continued

• Implementation
  – Regulatory Environment
  – Standards
  – Strategies

• Use your checklist
  – Buildings
  – Transportation
  – Energy
  – Communications
  – Resources
Exercise

“Resilience plan”
“Resilience Plan”

• Use the “Contents of a Resilience Plan” as the outline for your resilience plan

• Think about how you would approach describing the resilience “Context” of your city

• Map how your resilience context maps to your city infrastructure

• How would you go about developing “Performance Goals”?

• In what ways could you implement your plan?
Module 4

Create resiliency projects
Obtain funding for resilience projects
Report on resiliency progress
Create a virtuous cycle
Resilience Improvement Projects

1. Elected Representatives
   (Local Council, Regional Board, etc.)

2. Executive
   (Mayor, City Manager, etc.)

3. Help
   (NGOs, Consultants, etc.)

4. Findings
   (Representatives & Executives)

5. Community
   (Civic, Social & Business Leaders)

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Needs

Priorities

Resilience Assessment
- Resilient Governance
- Social Resilience
- Economic Resilience

Local Budget
- (Revolving Funds, User Fees, etc.)

Regional Assistance
- (State, Federal, etc.)

Leverage
- (Foundations, NGOs, etc.)

Projects

1 2 3 4

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Funding Resilience Projects

- Federal / State Government
  - Grants

- Regions
  - Funds

- Counties / Cities
  - Bonds
  - Fees
  - Premiums

- Corporations
  - Bonds
  - Premiums
  - Pricing

- Individuals
  - Premiums

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Funding Resilience Projects
continued

- **Grants** – Amount not capped, PoP measured in months or years, return is non-monetary

- **Funds** – Amount not capped, PoP measured in months, return realized over months or years

- **Bonds** – Amount capped, PoP measured in years, return realized over years

- **Fees / Premiums** – Amount market-driven, PoP is perpetual, return is non-monetary
Funding Resilience Projects

continued

Impact Investing Continuum
Funding Resilience Projects
continued

• Example of a fund related to resilience
## Resilience Reporting

### Resilience Contribution

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<td>Human Resources</td>
</tr>
<tr>
<td>Resilience</td>
<td>Physical Resources</td>
<td>Strategic Planning</td>
</tr>
<tr>
<td>Contribution</td>
<td>Integration Of Functions</td>
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<td>Align With External Plans</td>
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<td></td>
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</table>

### Resilience Matrix

<table>
<thead>
<tr>
<th>Resilience</th>
<th>Baseline</th>
<th>Highway 1 Elevation</th>
<th>Workforce Housing</th>
<th>Cultural Trail</th>
</tr>
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## Resilience Reporting

### Social Resilience

<table>
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<th>Component</th>
<th>Baseline</th>
<th>Highway 1 Elevation</th>
<th>Workforce Housing</th>
<th>Cultural Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Resilience</td>
<td>6.1</td>
<td>6.5</td>
<td>5.9</td>
<td>7.1</td>
</tr>
<tr>
<td>Resilient Governance</td>
<td>4.2</td>
<td>5.6</td>
<td>6.0</td>
<td>5.1</td>
</tr>
</tbody>
</table>

### Economic Resilience

- Baseline: 6.1
- Highway 1 Elevation: 6.5
- Workforce Housing: 5.9
- Cultural Trail: 7.1

### Resilient Governance

- Baseline: 10.7
- Highway 1 Elevation: 11.3
- Workforce Housing: 11.4
- Cultural Trail: 10.7

### R Values

- Baseline: 0
- Highway 1 Elevation: 15
- Workforce Housing: 15
- Cultural Trail: 15

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Virtuous Cycle

- **Identify Target**
  - Offers public sector leaders a new way to engage their citizens

- **Conduct Assessment**
  - Creates or confirms awareness within communities

- **Identify Projects**
  - Index provides an additional perspective for project prioritization

- **Develop Project Plans**
  - Attracts new funding

- **Complete Projects**
  - Brings new capability and expertise to community

- **Certify Resilience**
  - Communities can leverage to lower cost and monitor progress

Index provides an additional perspective for project prioritization.
Exercise

“Show me the money”
“Show me the money”

• Using the “Implementation” section of your Resilience Plan, think about funding sources that would be applicable to your implementation strategies

• What traditional funding techniques are ‘off the table’?

• What impact investments has your city considered in the past?
Questions?

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