Integrated Resiliency
Regional/Local - Planning/Implementation

REGIONAL

National Cooperative Highway Research Program


LOCAL

HUD Sustainable Communities Program

Hoboken Local Demonstration Project: Local Resilient Planning & Implementation in a Regional Context

Planning

Implementation
“Resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.”


The National Academy of Sciences (NAS) report puts forth a vision of the characteristics of a resilient nation in the year 2030:

“The characteristics describe a more resilient nation in which

– Every individual and community in the nation has access to the risk and vulnerability information they need to make their communities more resilient.

– All levels of government, communities, and the private sector have designed resilience strategies and operation plans based on this information.

– Proactive investments and policy decisions have reduced loss of lives, costs, and socioeconomic impacts of future disasters.

– Community coalitions are widely organized, recognized, and supported to provide essential services before and after disasters occur.

– Recovery after disasters is rapid and the per capita federal cost of responding to disasters has been declining for a decade.

– Nationwide, the public is universally safer, healthier, and better educated.” (NAS 2012 Summary, page 2.)
Integrated Regional Resiliency Planning / Implementation

REGIONAL
- Large geographic area
- Multiple jurisdictions
- Major coordination challenges
- Timeframes overlap
- Different interests / benefits

LOCAL
- Small geographic area
- Single jurisdiction
- Limited resources
- Defined issues
- Defined benefits

Planning
Implementation

Project Objective

Develop a guide with principles and resources to facilitate regional transportation planning, coordination, and operations for disasters, emergencies and significant events across:

» **Agencies**: law enforcement, emergency mgt., health, transit, etc.

» **Modes**: highway (truck, auto), transit (bus, paratransit, rail) water, air, pedestrian, etc.

» **Jurisdictions**: towns, cities, counties, states, tribal and international borders

» **Levels of government**: local, regional, state(s), possibly tribal, federal and international

» **Private and non-profit entities**: critical infrastructure (e.g., utilities, communications); suppliers; client focus (e.g., service providers)

Successful integrated planning essential to project implementation, effective mitigation & resilience
Basic Premises

Transportation is a key asset in any major event. Conversely, can also present a hazard.

This Guide focuses on the regional to national scale (not local).

All potential circumstances require communication & collaboration, plus application of basic principles identified in the Guide.

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INCIDENT SCALE / PUBLIC PREPAREDNESS / INTERGOVERNMENTAL – MULTIJURISDICTIONAL INVOLVEMENT

Public Preparedness

High for local

Low for national

Need for interoperability

Increased coordination complexity

Greater State / Federal involvement

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<table>
<thead>
<tr>
<th>Classification</th>
<th>LOCAL</th>
<th>REGIONAL</th>
<th>STATE</th>
<th>NATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples</td>
<td>Minor traffic incidents, Vehicle fires, Minor train/ bus accidents, Accidents w/ injuries but no fatalities</td>
<td>Train derailment, Major bus / rail transit accidents, Major truck accidents, Multi-vehicle crashes, Hazmat spills, Injuries &amp; fatalities</td>
<td>Train crashes, Airplane crashes, Hazmat incidents, Multi-vehicle accidents, Tunnel fires, Multiple injuries &amp; fatalities</td>
<td>Port/airport incidents, Large building fire or explosion, Industrial incidents, Major tunnel/bridge closure</td>
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<tr>
<td>Expected Duration</td>
<td>0-2 HOURS</td>
<td>2-24 HOURS</td>
<td>DAYS</td>
<td>WEEKS</td>
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Graphic courtesy of John Contestabile, Maryland Department of Transportation (former position, graphic used with permission)
Connections Between Transportation Planning & Operations and Emergency Mgt. Operations & Recovery/Mitigation Planning & Implementation

<table>
<thead>
<tr>
<th></th>
<th>Project Plans</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td>Transportation systems</td>
<td>Transport operations</td>
</tr>
<tr>
<td></td>
<td>Long Range Transportation Plans link with community &amp; land use plans; climate adaptation planning ties to EM mitigation planning</td>
<td>Day to day management of facilities, equipment and systems, incident response</td>
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<tr>
<td><strong>Emergency Management</strong></td>
<td>Recovery &amp; Mitigation Planning &amp; Implementation</td>
<td>Emergency Operations</td>
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<td></td>
<td>Coordinated support to community recovery- state multi-hazard mitigation plans update triennially</td>
<td>Tactical planning- all-hazards, with training, exercises, preparedness, response, recovery</td>
</tr>
<tr>
<td><strong>Time Frames</strong></td>
<td>Years to Decades +</td>
<td>Minutes to Months</td>
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Example: Regional Transportation and Community Resilience

- City of Hoboken Strategic Green Infrastructure Plan (New Jersey) – Transit Resiliency
  Part of Together North Jersey
Hoboken: Regional Context
Hoboken: Regional Transit Node
Hoboken: Sandy Flooding
Hoboken: Making Regional Transit Locally Resilient
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Critical Transit infrastructure is concentrated at the borders of H1, H2, H4, H5, and H7
Transit runs along the "blue zone," which presents opportunities for protecting transit while furthering stormwater management goals.
Hoboken: Making Regional Transit Locally Resilient through market forces + local planning

Connecting the Dots

RETENTION

CONSTRUCTED WETLANDS

SUBSURFACE STORAGE

Blue zone can support all major BMPs

DETENTION

GREEN ROOFS

RAINWATER HARVESTING

INfiltration

BASF SITE

PINO SITE

BLOCK 12 SITE

BIOSWALEs

STORMWATER PLANTERS
Hoboken: Making Regional Transit Locally Resilient

**Opportunities – Short Term**
- Significant stormwater Retention/Treatment
- Ripe for immediate action
- Reduced public investment
- Incremental development
- Integrated Green Infrastructure
Opportunities – Market-Based

- Private Redevelopment – with Mixed use
- Creating new blue-green waterfront and new economic value and engine
- Combine with new TOD and Technology Campus
- Privately funded resiliency through market forces
- Sustained Tax Revenue
- New Hudson River waterfront
- Increased Local and Regional Transit Connectivity and Ridership
Hoboken: Making Regional Transit Locally Resilient through market forces + local planning

- Parking
- Development
- Open Space
- Planters
- Public Plaza (Pervious)
- Detention Basin
- Green Roof
- Public Plaza (Impervious)
- In-lieu Contribution
- BMP Implementation
- Unmet Retained Rainfall Requirement
- Public Park

FAR = 1.0
Open Space = 41%
Impervious Cover = 80%

FAR = 3.2
Open Space = 43%
Impervious Cover = 70%

FAR = 4.0
Open Space = 48%
Impervious Coverage = 60%
Conclusion

• Local and shorter-term projects can fit within regional longer-term projects
• Investment community is interested in investing in concrete projects with defined revenue source
• Multifunctional projects present greater investment opportunity and flexibility
• Sustainability and Resiliency initiatives (federal and local) can reinforce each other and create new value
• Market forces can help
To Provide Comments/
For Further Information

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