



Achieving State, Local, and Tribal Integration Using A Risk Matrix to Reduce the Economic Impact of Disaster and Terror Events



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Abstract

Designed and implemented by a student team from the CREATE sponsored Working Together for A Safer Tomorrow (WTST) program, this project applies a two-step model to determine the ability of multi-jurisdictional, demographically diverse areas to integrate resources with the goal of operating cooperatively as self-sustaining communities or campus sites in the event of a natural disaster or terror attacks.

Methods: **Step 1:** A risk matrix is used to determine a risk ranking of regional disaster and terror events.

Step 2: An area in the study region is chosen and a real time tri-level status report is conducted by area stakeholders.

Step 3: As the model is incorporated for each area a Cumulative Regional Integrated Operability Score (CRIOS) becomes apparent.

An integrated operability score (IOS) is then calculated to determine integrative and cooperative regional response capabilities. As the model is incorporated for each area a Cumulative Regional Integrated Operability Score (CRIOS) becomes apparent. The model is to be introduced for state, local, and tribal leaders during symposia sponsored by WTST. Once the model is employed, strategies incorporating the integration and shared utilization of regionally available human and material resources can be coordinated that enhance response capabilities.

Results: In October 2008, this project became directly aligned with the January 2009 Homeland Security's mission relevant directive requiring local, state, and tribal integration. A pilot model was field tested in the Pacific Northwest and results submitted to the WTST student faculty mentor.

Discussion: This project is related to the Social and Behavioral Sciences research area via the introduction and application of a user friendly model designed to promote diverse entities to work together to identify areas within to operate as self-sustaining communities/campus sites in catastrophic events.

Broader Impacts:

A.) The creation of a risk ranked database that can be used for the establishment of resource allocation priorities based upon the CRIOS,

B.) The development of qualitatively derived statistical indicators related to stakeholder perceived abilities to function as self-sustaining communities or campus sites in the event of a natural disaster or terror attacks,

C.) The reduction of economic impact of disaster and terror events, which is in alignment with CREATE's mission.

Step 3: Cumulative Regional Operability Score (CRIOS)

A cumulative IOS includes crucial criteria about Emergency Management cooperation among tribes, towns, and counties within regional jurisdictions. A risk scale (0-5) is used to quantify regional cooperation. A time scale should be considered with re-evaluation of the risk analysis every five years. To identify the history of the CRIOS in a study area, jurisdiction(s) records can be examined to determine the time series benefits of lessening risks.

List of Cooperative Interoperability Criteria - Ranks: Tribes, Towns, County in a Regional Network
Graduated Scale: (0-5): 0) Nothing 1) Insufficient 2) Unsatisfactory 3) Sufficient 4) Satisfactory 5) Resilient

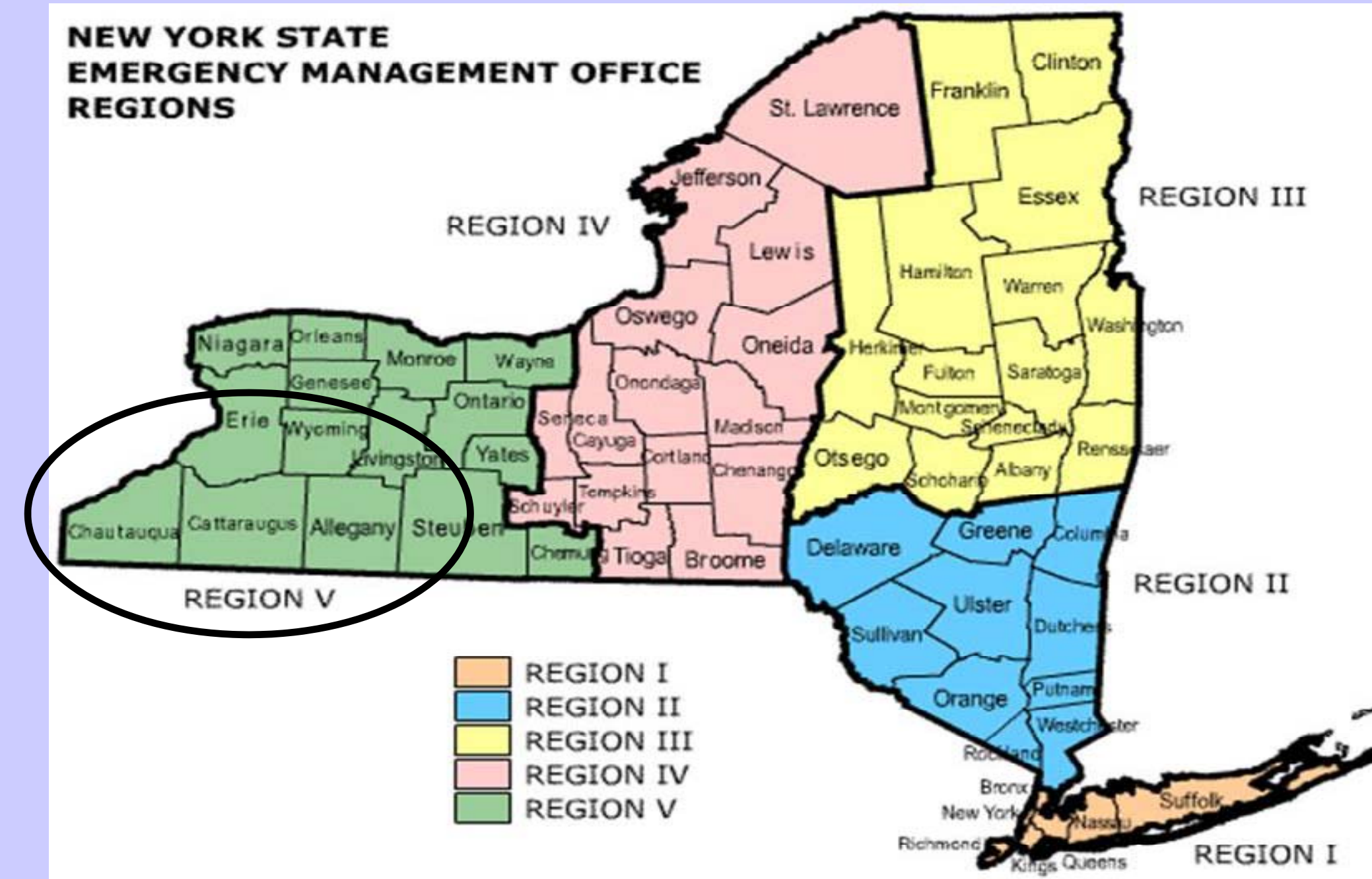
Criteria	Units to Scale
Mapping Technology (iCAV and ACAMS)	Application Levels
Volunteer Training (CERT, NIMS)	Frequency
Collaborative Training	Jurisdiction Levels
Training Frequency	Time Scale
Training Scenarios	Diversity/Types
Mutual Aid	Procedures and Practice
EM Resources	Sharing Levels
Emotional Support	Frequency
Heritage Recognition	Involvement Levels
Infrastructure Security	Procedures
Infrastructure Resources	Capacity/Maintenance Levels
(water, sewer, transportation, utilities, internet, etc.)	
Economics	Funding Levels
Organizational Structure	Public/Private/Tribal/Combined
Staff Structure	Qualifications
	Hours/month
Medical Facilities	Capacity, Number, Locations (distance-elevation)
Containment Sites (Casinos, College campuses)	Capacity and Number, Locations (distance-elevation)

Selected References

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Methods

1. Background Search



2. Problem

Local communities adjacent to American Indian tribes may be inadvertently exposed to long term terror related activities simply due to geographic location (i.e. international border, big cities, airports, military bases). Regions with American Indian Reservations that have significant natural resources, dams, reservoirs, or have land used for storing critical defense or waste material may also have an elevated risk.

3. Data collection

- Real time events
- Site visitations: Allegheny, Cattaraugus, Erie, Chautauqua
- Non-obtrusive field methods
- Photographic documentation

4. Confirm Results: Compare tribally specific field or real time data

5. Utilize Risk Matrix to Identify Higher Risk Regions: Organize qualitative and quantitative data

6. Compose Integrated Operability Score, and

7. Cumulative Regional Integrated Operability Score

Step 1: Risk Matrix: Risk Occurrence Scale= 1 (month), 2 (quarter), 3 (bi annual), 4 (annual), 5 (2-5 yrs.), 6 (5-10yrs.)
Study Area in SW New York.

Regional Disasters	Tribal	Towns	County	Region	State
Flooding	6	6	6	6	0
Blizzards	2	2	2	2	2
Debris Flows	1	1	1	0	0
Nuclear Waste	1	1	1	1	0
Roadway Vandalism	5	5	0	0	0
Business Closures (Smoke shops)	0	0	0	0	0
Bio-terrorism	0	0	0	0	0

Step 2: Integrated Operability Score (IOS)

A study area in SW New York with a tri-county collaboration and three tribal reservations was chosen. This region is recovering from a real time flooding event. Fieldwork and an initial workshop took place to determine and observe the crucial criteria for IOS along with tri-level review. The IOS is to be introduced for state local, and tribal leaders during symposia sponsored by Working Together for A Safer Tomorrow hosted by stakeholders and ARIES.

Step 2.1: Real Time Tri-Level Status Report

Level	Definition	Descriptors
High	What we are doing best	
Medium	What we are trying to do	
Low	What we can not do	

* Modified with Permission from Willman, Elaine, Citizens for Equal Rights Alliance

Step 3: Cumulative Regional Interoperability Score (CRIOS)

Once the CRIOS model is engaged, strategies incorporating Integration and shared utilization of regionally available resources can be coordinated to enhance preparation capabilities for these tribal and non-tribal communities.

Step 2: Interoperability Score (IOS)

(Modified from STATEWIDE COMMUNICATION INTEROPERABILITY PLAN (SCIP) WEIGHTED EVALUATION CRITERIA September 2007)

4) 20% Governance

4.4 (4%) Identify the members of the governing body and any of its committees. (List them according to the categories recommended for a communications interoperability committee in the All-Inclusive Approach.)

Criteria

Organizational Structure
Staff Structure

Units to Scale

Public/Private/Tribal/Combined
Qualifications
Hours/month
Frequency
Involvement Levels

Emotional Support

Heritage Recognition

4.6 (3%) Describe multi-jurisdictional, multi-disciplinary agreements needed for decision-making and for sharing resources.

Criteria

Mutual Aid
Emergency Management Resources

Units to Scale

Procedures and Practice
Sharing Levels

5) 10% Technology

5.2 (3%) Describe plans for continuing support of legacy systems, and developing interfaces among disparate systems, while migrating to newer technologies.

Criteria

Mapping Technology (iCAV and ACAMS)

Units to Scale

Application Levels

6) 15% Standards of Procedures

6.2 (5%) Define the process by which the regions, localities and tribes will develop, manage, maintain, upgrade, and communicate standard operating procedures (SOPs), as appropriate.

Criteria

Medical Facilities
Containment Sites
(Casinos, College campuses)

Capacity and Number, Locations (distance, elevation)

Capacity and Number, Locations (distance, elevation)

6.3 (2%) Identify the agencies included in the development of the SOPs, and the agencies expected to comply with the SOPs.

Criteria

Infrastructure Resources
Infrastructure Security

Units to Scale

Capability/Maintenance Levels

(water, sewer, transportation, utilities, etc.)

Procedures

5% Training and Exercises

7.1 (3%) Define the process by which the jurisdiction(s) will develop, manage, maintain and upgrade, or coordinate as appropriate, training and exercises program

Criteria

Volunteer Training (CERT, NIMS)
Collaborative Training

Units to Scale

Frequency
Jurisdiction Levels

7.2 (1%) Describe the process for offering and requiring training and exercises, as well as any certification that will be needed.

Criteria

Training Frequency
Training Scenarios

Units to Scale

Time Scale
Diversity/Types

7.3 (1%) Explain how the process ensures that training is cross-disciplinary.

9) 5% Funding

9.1 (3%) Identify committed sources of funding, or the process for identifying and securing short- and long-term funding.

Criteria

Economics

Units to Scale

Funding Levels

Future Plans: The next step is to request specific data for the criteria from the user groups. The user groups and stakeholders will scale the criteria in cooperation with ARIES. The risk analysis using the scale is valid if completed with the specific data provided by and from the jurisdictions. The benefits of the CRIOS is to inform the jurisdictions of the cooperative risks in their regional networks and criteria that need improvement.

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