



# **Plan for Improving Community Emergency Resilience in Eilat, Israel**

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# Prominent Disasters in Eilat



- Floods
- Storms
- Earthquakes
- Power Outages
- Heat Waves
- Droughts

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# Public Health Risks from Heat Waves



- Heatstroke
- Rhabdomyolysis
- Heat syncope
- Heat exhaustion
- Worsened heart conditions
- Increased risk of premature birth
- Increased risk of preeclampsia

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# Public Health Risks from Floods and Severe Storms



- Drowning
- Hypothermia
- Injuries from collapsing structures
- Animal bites
- Starvation
- Diseases carried by contaminated water

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**These disasters can disproportionately affect certain groups: the elderly, young children, the disabled, immigrants, and foreign tourists.**



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# Existing Disaster Response Plans and Infrastructure



Plans currently handle:

- Earthquakes
- Floods
- Storms
- Toxic Spills


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## Existing Disaster Response Plans and Infrastructure



### Opportunities for more work:

- Decentralized volunteer force
- Residents have low confidence & knowledge of disaster relief plans
- Decentralized communication between agencies
- No proactive plan for some vulnerable groups



**Eilat also has no systems in place for responding to heat waves. Resiliency centers will be the community's main resource during extreme heat events.**



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**Eilat plans to create community resiliency centers that will provide public services during an emergency.**



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**Eilat also relies heavily on volunteer-based disaster relief organizations that help during city-wide crises.**



**We aimed to find best practices for responding to city-wide emergencies for Eilat.**

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## Research Questions

To make our recommendations, we needed to find out:

- What are the current risks to Eilat's population and infrastructure?
- What existing structures does Eilat have to deal with disasters?
- How have other cities solved similar problems?
- How can we adapt those solutions to Eilat's specific circumstances?

We answered these using comparative analysis, interviews, and cost-benefit analysis.

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# City Comparison



- Gathered information on 15 cities' emergency response plans
- Performed a comparative analysis to Eilat based on size, climate, common disasters in the area, and volunteer structure

# Risk Assessment: Disaster Service Matrix

		Disasters					
		Heat Wave	Earthquake	Flooding	Storm	Power Outage	Drought
Services Provided	Sheltering	Red	Red	Red	Red	Green	Yellow
	Cooling	Red	Green	Green	Green	Green	Yellow
	Medical Services	Red	Red	Yellow	Yellow	Yellow	Yellow
	Transportation	Green	Red	Red	Yellow	Green	Green
	Security	Green	Yellow	Green	Green	Yellow	Green
	Fire Prevention	Yellow	Green	Green	Green	Green	Green
	Search and Rescue	Green	Red	Red	Red	Green	Green
	Communication	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Food and Water	Red	Red	Red	Red	Red	Red
	Backup Power	Yellow	Red	Red	Yellow	Red	Green
	Hazardous Material Disposal	Green	Green	Yellow	Yellow	Green	Green
	Waste disposal	Green	Green	Green	Green	Green	Green



**We explored factors of community emergency preparedness resources in other cities:**

- **Resiliency Centers**
- **Volunteer-Based Emergency Response Teams**

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# Implementation of Emergency Centers



- Building
  - Location
  - Design & Structure
- Amenities & Services
  - Electrical
  - Water
  - Food preparation
  - Auxiliary Services
  - Supplies
- Sanitation & Hygiene
- Safety & Security





# Methods for Activating Resiliency Centers

## Binary Activation:

- Phase 1: No current emergency
- Phase 2: Active emergency
- Pros: easy to implement
- Cons: Tough to prepare for, harder on the public.

## Three Phase Activation:

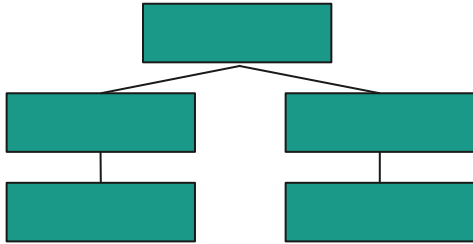
- Phase 1 - Early readiness
- Phase 2 - Alert and preparation
- Phase 3 - Full activated
- Pros: preparation, budgeting, staff allocation
- Cons: time consuming, harder to implement

**\*Activation can occur right before emergencies (short-term) or months in advance (long-term)**



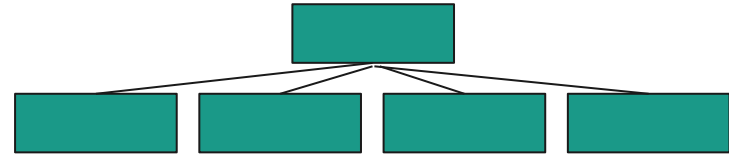
# Methods for Managing Resiliency Centers

Split Branch Management:



- Pros: More delegation / assistance, dispersed responsibilities
- Cons: Limited communication with main center manager

Multi Branch Management:

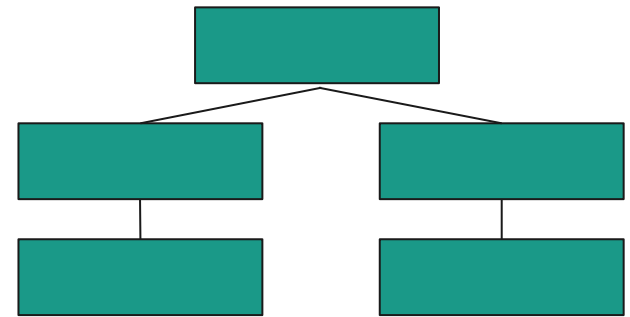
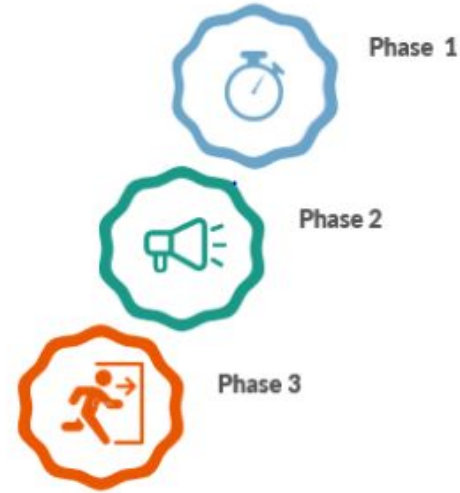


- Pros: Direct communication with main center manager
- Cons: Little communication between branches and coordination between branches

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## Eilat's centers should incorporate:

- Consideration of center locations/amenities
- Long-term 3 phase activation plan
- Split-management model



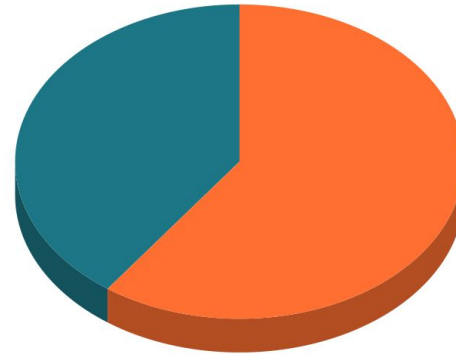
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**We found that  
volunteer-based  
community  
emergency response  
teams (CERTs)  
provide centralized  
resources for  
emergency resiliency.**



**Eilat will benefit from a CERT program aimed specifically at youth volunteers.**

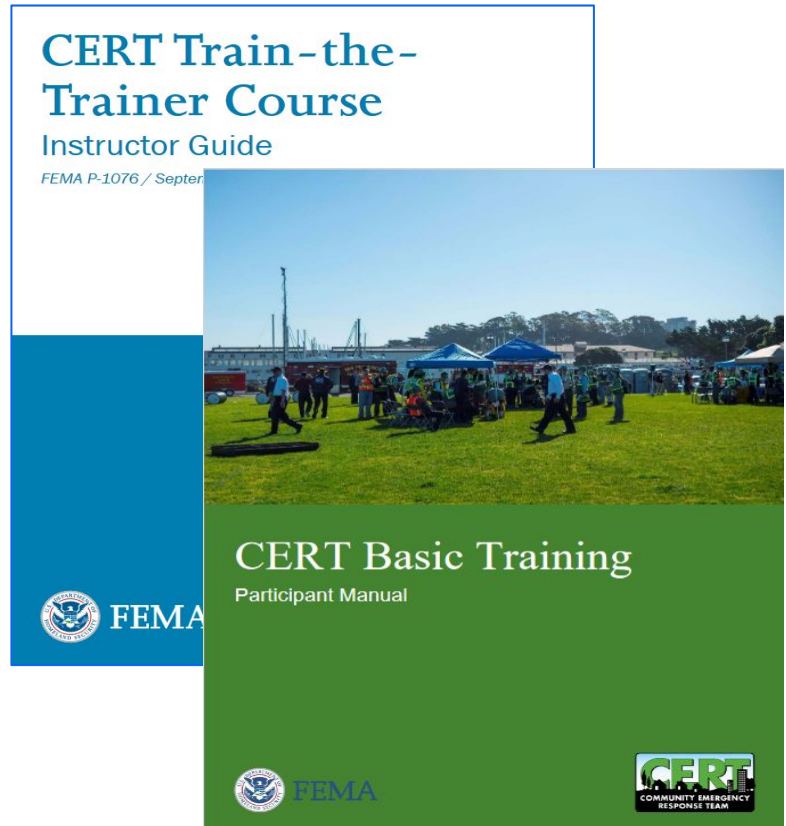
**Increased public awareness of emergency response protocols**



**60% of Eilat teens volunteer**

Most CERT  
programs use  
FEMA's curricula:

“Basic Training” &  
“Train the Trainer”.



2584  
Registered CERT  
Programs (US)

8  
Countries using  
FEMA's Curricula

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**Eilat should use FEMA's training curriculum to implement a youth-based CERT program.**





## Further Work for Current Project

- Deeper & More up to date Assessment of vulnerable communities
- Discover needs and potential roles of tourism industry
- Discover youth Recruitment opportunities through Jewish Community Center





## Broader Areas for Future Work

- Interdepartmental communication
- Centralizing existing volunteers under CERT

Thank you

