



CITY OF RIDGECREST, CALIFORNIA

# Military Installation Resiliency Study/Risk Assessment of China Lake, Ridgecrest, and Surrounding Areas



January 22, 2021

**Welcome,**

**Due to the large number of participants please **turn off your video** and remember to mute yourself.**

**We will start shortly.**



**Defense Community Resilience Study  
Workshop #1 – Critical Hazards + Assets  
Wed 6<sup>th</sup> Oct 2021  
8.30-11.30am PT**

CITY OF RIDGECREST, CALIFORNIA

# Military Installation Resiliency Study/Risk Assessment of China Lake, Ridgecrest, and Surrounding Areas



January 22, 2021

## Agenda

- Introductions
- Workshop Overview
- Survey Results
- Defining Criticality
- Working Session:
  - Exploring Critical Assets + Hazards
    - *Break – 10.00-10.05am PT*
- Close
  - Next Steps
  - Schedule



# Introductions



# Core Project Management Team



**Jim Paulmann, FAICP**  
*Principal-in-Charge*



**Cyrena Chiles Eitler, AICP**  
*Project Manager*



**John Malueg, PE**  
*Resiliency Advisor*



**Ned Araujo, PE**  
*Deputy Project Manager*



**Craig Bloxham**  
*Cardno - NAWS China Lake  
Advisor*



**Christine Davis, AICP, PMP**  
*Cardno - Deputy Project  
Manager*



**Christina Hurley, AICP**  
*Climate Risk and Resilience  
Assessment*



**Shane O'Hanlon**  
*Climate Risk and Resilience  
Assessment*



**Caroline Cunningham, AICP**  
*Climate Risk and Resilience  
Assessment*



# Roles & Responsibilities – Technical Process

## **Committee Members/Stakeholders**

- Provision of data
- Completion of surveys
- Input on Assets, Criticality and Ownership
- Input on Hazards

## **Stantec**

- Data request
- Survey administration
- Technical lead
- Drafting
- Facilitation, coordination

## **Cardno**

- Data input
- GIS support



# Overview



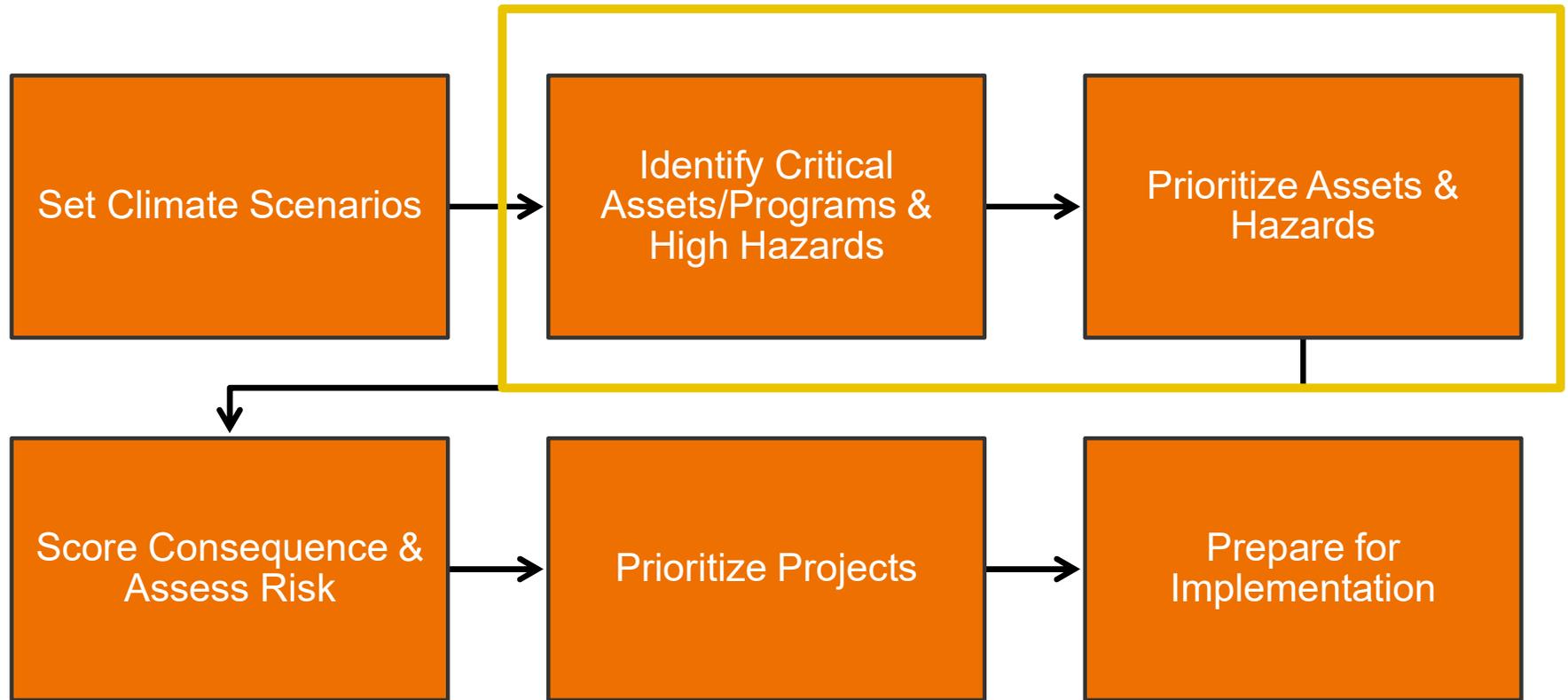
# Resilience

## Past $\neq$ Future

Building and planning codes, regulations, and standards are based on historical data

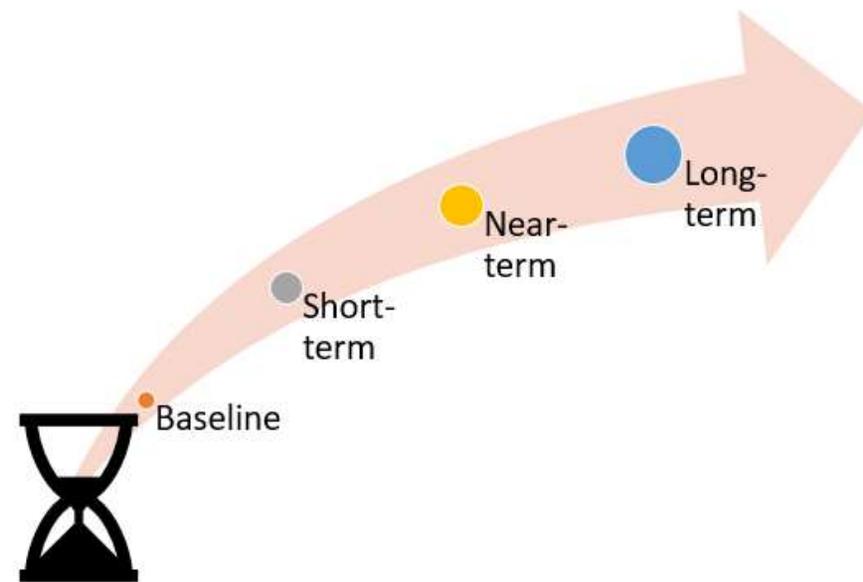


# Process for Military Installation Resilience Assessment



# Time Horizons

- **Climate:** ~30-year average
- Current climate baseline:
  - **1981-2010**
- Future climate projections:
  - Based on asset lifecycle or design horizons:
    - Short-term: **2020s** (2011-2040)
    - Near-term: **2050s** (2041-2070)
    - Long-term: **2080s** (2071-2100)



Set Climate Scenarios

Identify Critical  
Assets/Programs & High  
Hazards

Prioritize Assets &  
Hazards

Score Consequence &  
Assess Risk

Prioritize Projects

Prepare for  
Implementation

# Community Lifelines



**Water:**  
Groundwater, Water/Wastewater Treatment Plants, Distribution



**Safety and Security:**  
Public Safety Building



**Health and Medical:**  
Hospital, Stormwater Park, Nature-Based Solution, Health System



**Education:**  
School, College, Daycare



**Energy:**  
Power Grid, Microgrids, Renewables



**Communications:**  
Communication Updates



**Transportation:**  
Road Elevation, Evacuation



**Food, Shelter:**  
Community Housing





# Draft Hazard List

<b>Natural</b>	<b>Non-Natural</b>
Drought / Water Shortage	Power Grid Failure / Power Outage
Earthquake	Aircraft Accident
Extreme Cold / Freeze	Civil Disorder
Extreme Heat / Heat Wave	Cybersecurity Threats
Extreme Wind	Hazardous Materials and/or Chemical Release
Flood (Riverine and Pluvial)	Infectious Disease Outbreak
Landslides (Mud / Debris Flows)	Labor Strikes
Lightning	Supply Chain Disruption
Wildfire	Terrorism and Malevolent Attacks
Volcanic Hazards	

# Prioritize Assets & Hazards

**Impact** = Critical Asset \* Hazard Event

## Engagement with Committee Members

- Identify critical assets
- Identify high hazards
- Survey issued



*Asset*

**X**



*Hazard*

**=**



*Impact*

Set Climate Scenarios

Identify Critical Assets/Programs & High Hazards

Prioritize Assets & Hazards

Score Consequence & Assess Risk

Prioritize Projects

Prepare for Implementation



## Survey Results



# Stakeholder Survey

	Vital to maintaining a functioning city	Vital to maintaining military installation resilience
<b>Water:</b> Potable Water System, Stormwater Conveyance, Wastewater Systems	<input type="checkbox"/>	<input type="checkbox"/>
<b>Energy:</b> Electricity Generation & Distribution, Natural Gas, Fuel	<input type="checkbox"/>	<input type="checkbox"/>
<b>Safety and Security:</b> Police, Fire & Rescue, Emergency Operations	<input type="checkbox"/>	<input type="checkbox"/>
<b>Health and Medical:</b> Hospitals, EMS, Public Health Services & Programs	<input type="checkbox"/>	<input type="checkbox"/>
<b>Communications:</b> Telecommunications, Broadband, Radio, Emergency Notification Systems	<input type="checkbox"/>	<input type="checkbox"/>
<b>Transportation:</b> Roadways, Rail, Airports/Airfields, Ports, Maritime Systems	<input type="checkbox"/>	<input type="checkbox"/>
<b>Food and Shelter:</b> Food Distribution Systems, Agriculture, Emergency Shelters, Community Housing	<input type="checkbox"/>	<input type="checkbox"/>
<b>Education:</b> School System, Universities, Community Colleges, Workforce Development	<input type="checkbox"/>	<input type="checkbox"/>



# Survey Results - Respondents

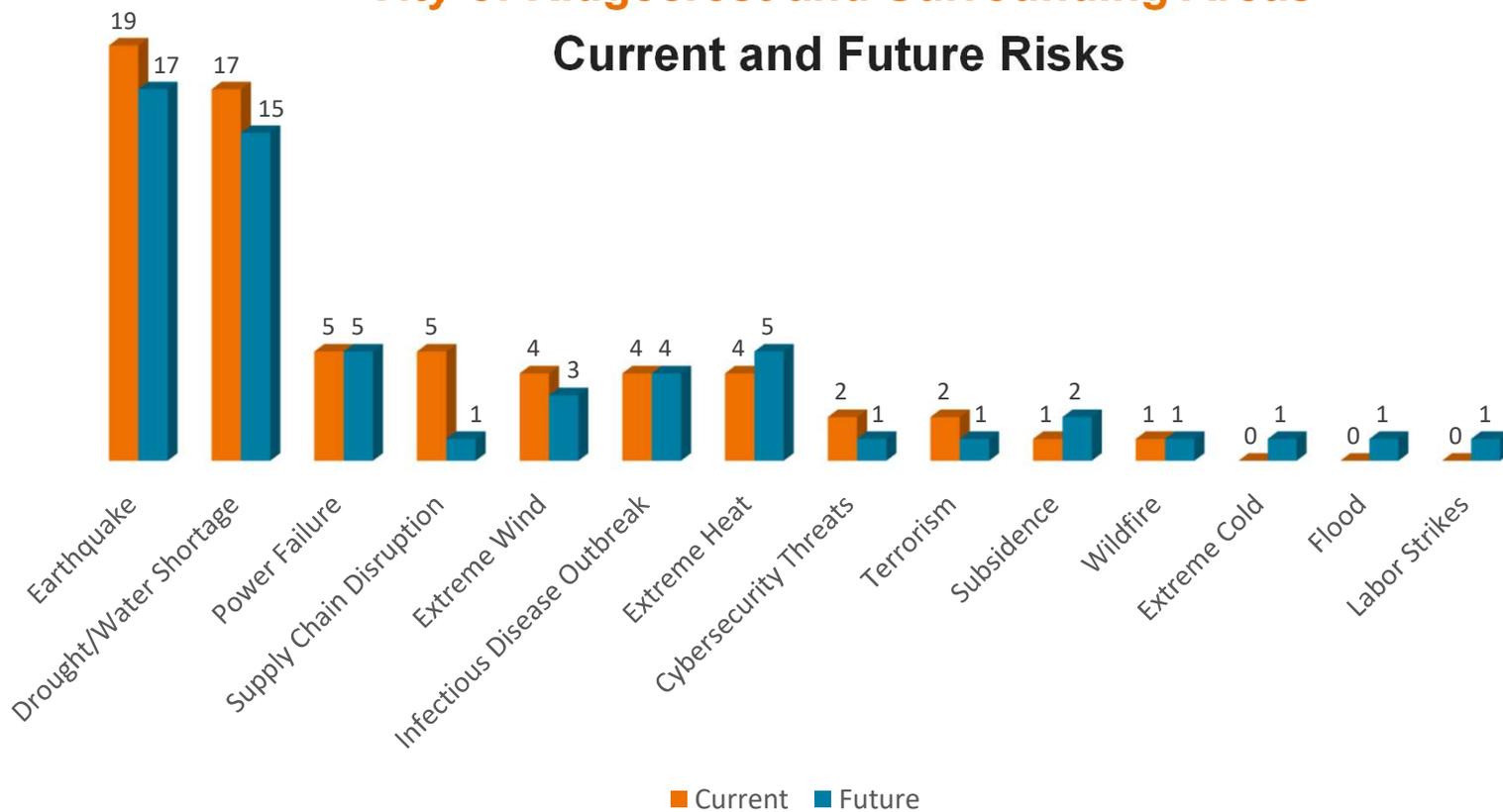
**26** Survey responses from **13** organizations

- NAWS China Lake
- City of Ridgecrest
- Indian Wells Valley Water District
- China Lake Alliance
- Kern County Sheriff's Office
- Inyo County Sheriff's Office
- Kern County Fire
- Inyokern Airport
- Southern California Edison
- Indian Wells Valley Economic Development Corp.
- Cerro Coso Community College
- Ridgecrest Regional Hospital
- Bernie's Landscaping



# Survey Results – Hazard Identification

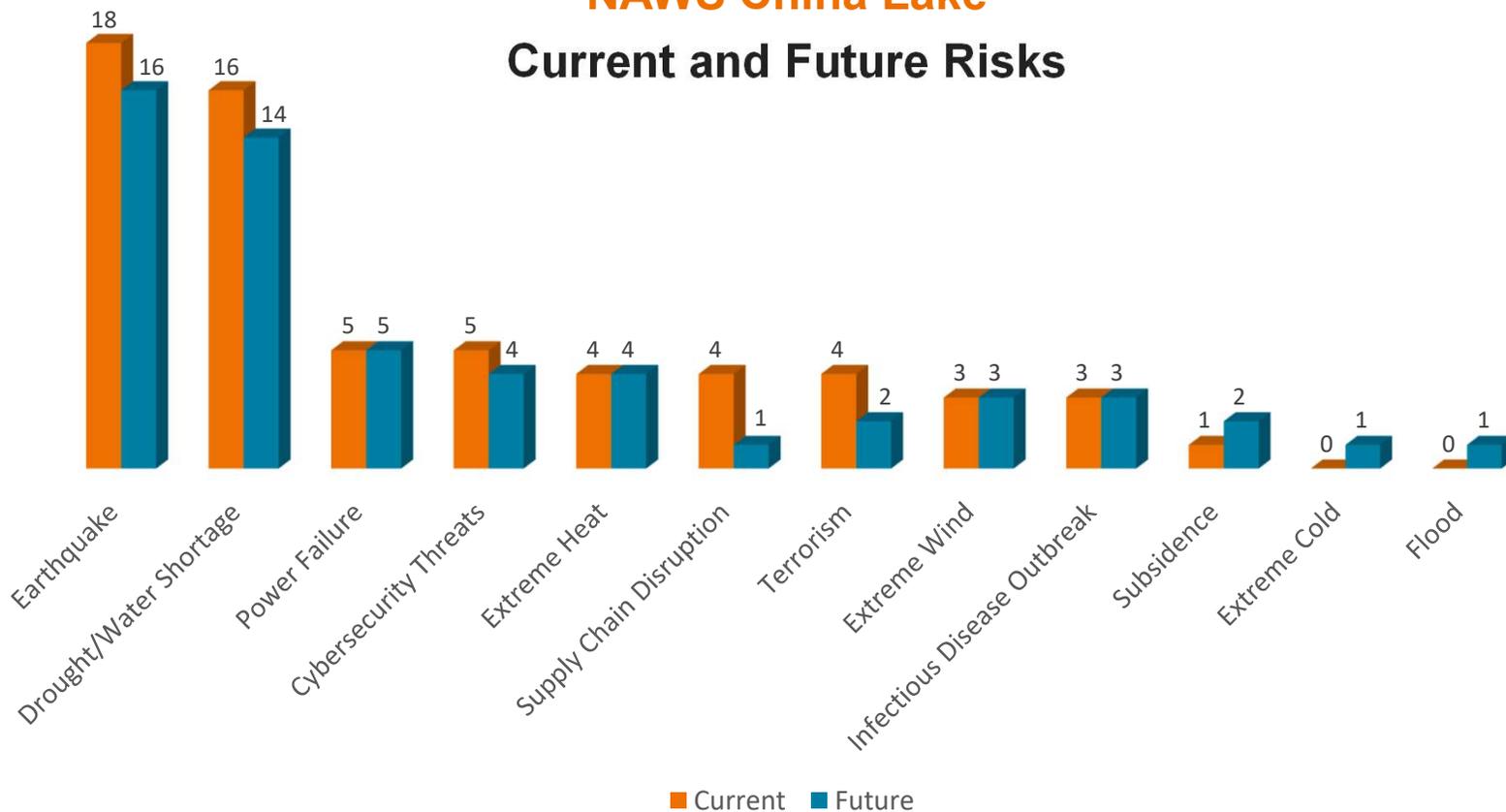
## City of Ridgecrest and Surrounding Areas Current and Future Risks





# Survey Results – Hazard Identification

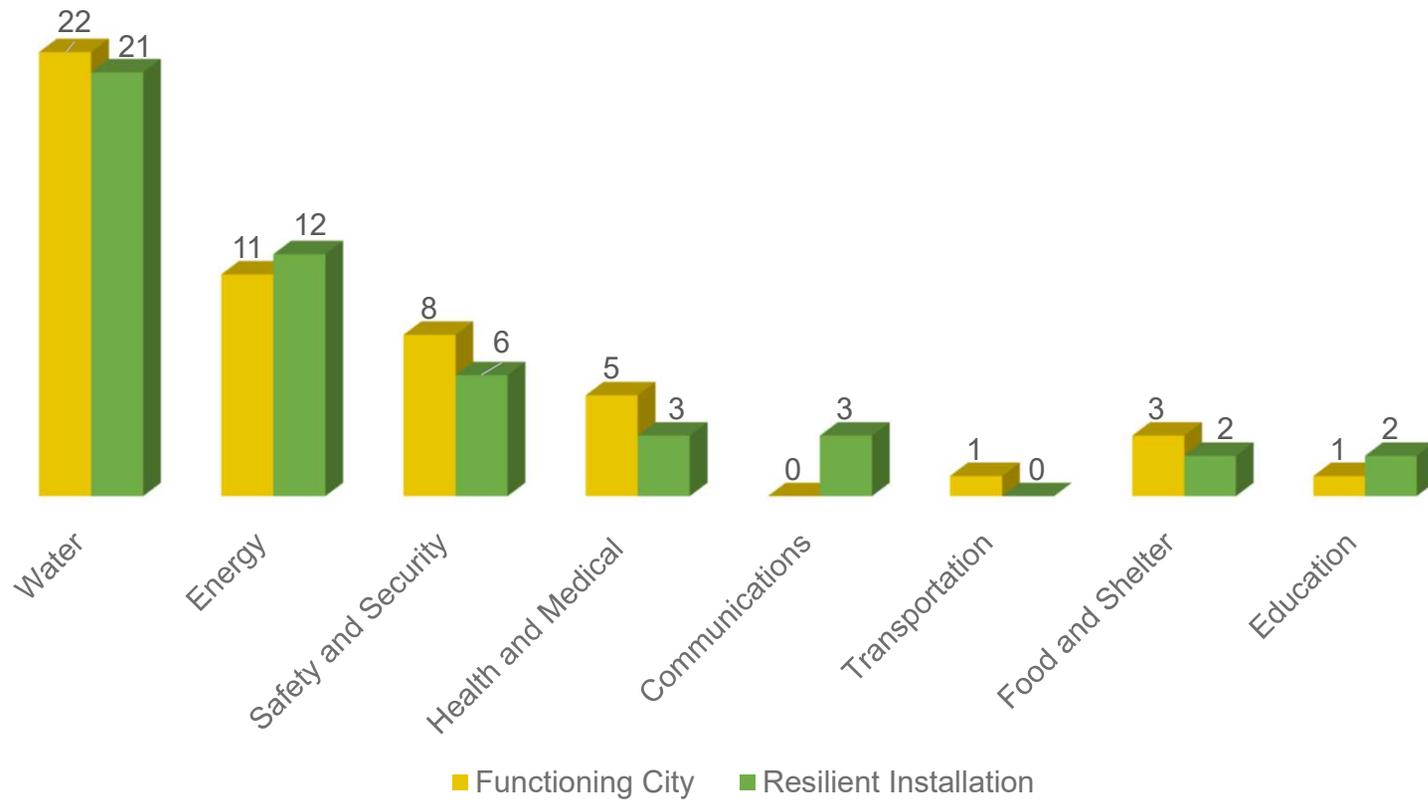
## NAWS China Lake Current and Future Risks





# Survey Results – Community Lifelines

Which community lifelines are most vital to maintaining a...





# Survey Results – Critical Assets (Water)

## Assets

- Ability to bring purchased water into basin (IWVGA)
- California State Water Resources Board
- China Lake Naval Weapons Center
- City of Ridgecrest
- Drinking Water Distribution System
- Future Infrastructure
- Groundwater Authority
- Imported Water Supply (Source and Infrastructure)
- Indian Wells Water District
- Indian Wells Water District Infrastructure
- Inyokern Community Service District
- IWV brackish water aquifer
- IWVGA Groundwater Sustainability Plan including Imported Water Interconnect plan
- NAWS China Lake
- POTW
- Power Plant
- Rebuild Wastewater Treatment Facility (JPA City of Ridgecrest)
- Recycled Water
- Ridgecrest regional hospital
- Ridgecrest Wastewater Treatment Facility including Recycled Water Treatment Facility
- Tanks
- Transmission pipelines
- Treatment of Brackish Water
- U.S. Navy
- Wastewater system
- Wastewater Treatment



# Survey Results – Critical Assets (Energy)

## Assets

- California Energy Commission
- China Lake Naval Weapons Center
- City of Ridgecrest
- Coso Geothermal power plant
- Electricity Infrastructure
- Generation capacity (with margin)
- Inyokern Main Switching Station
- Inyokern Substation
- LA Department of Water & Power
- Natural Gas Infrastructure
- Pacific Gas & Electric
- Passive solar power
- Potential Ridgecrest micro-grid and emergency generators
- Power lines along Inyokern Road
- Power Plant
- Ridgecrest Regional Hospital
- Solar Energy Usage
- Southern California Edison
- Storage or backup (sufficient during outages)
- Transmission & Distribution (with redundancy)
- Transmission Lines



# Survey Results – Critical Assets (Transportation)

## Assets

- City of Ridgecrest
- Fuel availability in Ridgecrest and aboard NAWSCL
- Highway 14/395
- Inyokern Airport
- Kern Regional Transportation
- Kern Transit
- Liberty Ambulance
- NAWS China Lake
- NAWSCL Airfield
- Personal Automobiles
- Public Transit
- Ridgecrest Bus
- Ridgecrest Regional Hospital
- Ridgecrest Transit System
- Roadways
- Sierra Sands Unified School District
- Stoplights

# Survey Results – Critical Assets (Safety & Security)

## Assets

- Access restrictions via badging systems for key facilities
- BLM
- California Department of Corrections
- China Lake Naval Weapons Center
- China Lake Police Department
- Emergency Services Council
- EMS
- Fenceline surrounding NAWSCL main installation area
- Inyokern Airport
- Joint NAWSCL/Community routine collaboration and joint exercises
- Kern County Fire Department
- Kern County Fire Station
- Kern County Sheriff's Office
- Liberty ambulance
- Local fire departments (municipal and Navy)
- Local police departments
- Mitigation by seismic retrofit to ensure life safety in existing buildings
- Perimeter security for key assets (e.g., substations)
- Ridgecrest Police Department
- Ridgecrest Regional Hospital
- RPD, KCSO, KCFD, Kern County Chiefs Collaboration, CHP, BLM, CLPD, NCIS
- Security of installation water reservoir - Inyokern/Hardy Field



# Survey Results – Critical Assets (Health & Medical)

## Assets

- Air medivac service
- Backup power system
- California Department of Public Health
- China Lake Naval Weapons Center
- City of Ridgecrest
- Crisis Stabilization Unit
- Earthquake early warning system (USGS)
- EMS
- High Desert Women's Shelter
- IWW and naval medical emergency capabilities
- Kern County Fire Department
- Kern County Public Health Department
- Liberty Ambulance
- Mercy Air
- NAWSCL Branch Health Clinic
- Public Health Services
- Ridgecrest Regional Hospital
- Ridgecrest Regional Hospital/Liberty Ambulance/Mercy Air
- Ridgecrest Women's Center
- Sierra medical



# Survey Results – Critical Assets (Food & Shelter)

## Assets

- Affordable Housing
- Albertsons
- American Red Cross
- Backup generators in emergency shelters aboard NAWSCL
- Cerro Coso Community College
- City of Ridgecrest
- Community churches
- Dining Facilities
- Food Banks
- Food Supply
- Homeless Shelters
- Housing
- K-M Center, Desert Empire Fairgrounds; SSUSD
- Local grocery stores
- Local school facilities
- Meals on Wheels
- NGOs: Food Banks, Salvation Army, Lighthouse, Churches, etc.
- Retail Super/mini markets, hotels
- Ridgecrest Red Cross
- Sierra Sand Unified School District
- Stater bros

# Survey Results – Critical Assets (Communications)

## Assets

- ARES/RACIES HAM Radio Operators
- AT&T
- Backup power for cell phone repeater sites
- Broadband Infrastructure
- CA Public Utilities Commission
- Cal OES, Emergency Services Council radio frequencies/operations
- California Public Utilities Commission
- Cellular Towers
- China Lake Naval Weapons Center
- City of Ridgecrest
- Dedicated Emergency Services Comm Net
- Digital 395 long-haul trunks
- Digital 395/Broadband (robust improvement needed)
- Emergency radio system - China Lake Police Department
- Frontier Communications
- Hardline Phone Infrastructure
- Interoperable radios between first responders
- local landline telephone services including regional microwave links
- Local media
- Mediacom
- RACE Communication
- Radio Tower - B Mountain
- Radio Tower - various peaks, NAWSCL
- Reliable Broadband Access
- Robust on-site backup power for key comm's sites
- Verizon Cellular
- Verizon/Frontier for Landlines



# Survey Results – Critical Assets (Education)

## Assets

- Broadband Services
- Burroughs High School
- Career Technical Training
- Cerro Coso Community College
- City of Ridgecrest
- Community College / University Partnerships
- Immanuel Christian Church
- K-12: Sierra Sands Unified School District, St Anns, REALMS
- KC Library
- Kern Community College District
- Local educators
- Murray Middle
- Pierce, Viewig, and Richmond Elementary
- Private schools
- Private Schools located in Ridgecrest
- School System
- Science, Technology, Engineering, Math Programs
- Sierra Sands Unified School District

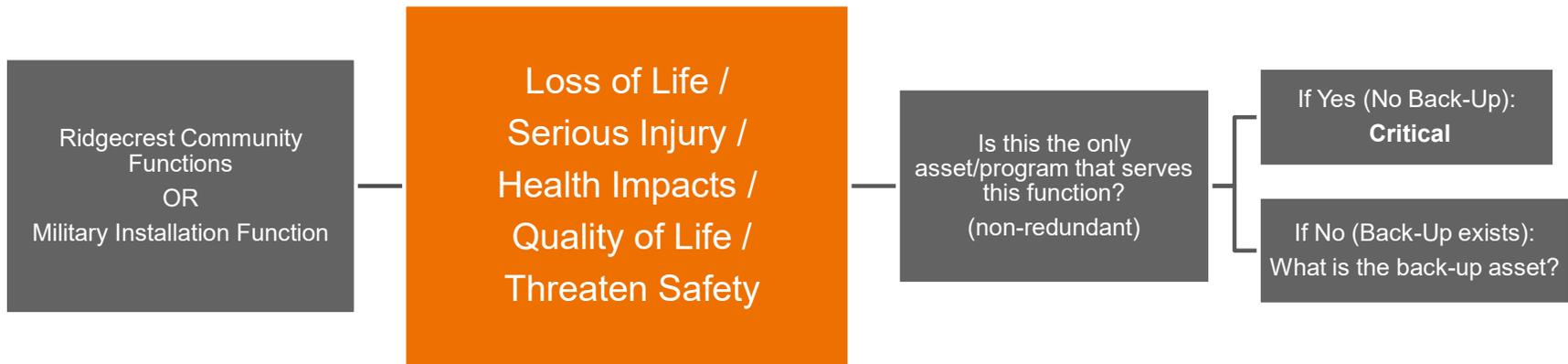


# Criticality



# Defining Critical Assets

What makes an asset or program critical?





## Working Session: Critical Hazards + Assets



# Draft Critical Hazards List

**Earthquake**  
**Drought / Water Shortage**  
**Power Failure**  
**Supply Chain Disruption**  
**Extreme Heat**  
**Extreme Wind**  
**Infectious Disease Outbreak**  
**Cybersecurity**  
**Terrorism**  
**Flood**  
**Subsidence**  
**Extreme Cold / Freeze**  
**Wildfire**  
**Labor Strikes**



# Critical Asset Identification

## 9. CRITICAL ASSETS AND PROGRAM IDENTIFICATION:

Please provide the names of up to three (3) critical assets or programs within the **Health and Medical Community Lifeline**. If you are unsure of the specific asset or program for any of the lifeline categories, you may skip them.

Health and Medical  
Answer 1

Health and Medical  
Answer 2

Health and Medical  
Answer 3

### ENERGY LIFELINE

1. Coso Geothermal Power Plants
2. Inyokern Main Switching Station

*Versus*

### ENERGY LIFELINE

1. Natural Gas Infrastructure
2. Solar Energy
3. Transmission Lines





**Close**



# Next Steps

## **Draft Prioritization List**

- These will be reviewed with working groups
  - Assets
  - Hazards

## **Data Requests on Asset Information**

- Coordination via Cardno and City of Ridgecrest
  - Asset Data Retrieval
  - Exposure Analysis

## **Working Group/Committee Meeting**

- Consequence Criteria
- Hazard Thresholds/Scenarios

## **Workshop #2**

- Consequence / Scoring Interactions



# Schedule

Tasks	2021							2022			
	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Climate Scenarios		Data Retrieval			Data Validation						
Critical Assets & Hazards			Survey								
Prioritize Assets & Hazards					Workshop						
Assess Risk						Workshop	Present Results				
Prioritize Projects									Workshop		
Implementation										Draft Action Plan + Report	Final Report

# Discussion & Close

