



# **FORT LEONARD WOOD**

# **MILITARY INSTALLATION RESILIENCE REVIEW**

**Executive Committee Meeting**  
**November 18, 2024**



# **WELCOME AND INTRODUCTIONS**

# LISTENING SESSION SUMMARY

## **Community:**

- Ozark Land Trust
- Rolla Emergency Management
- Pulaski County Emergency Management
- Texas County Emergency Management
- Missouri Military Advocate
- Missouri Department of Transportation
- Missouri Department of Conservation
- Mark Twain National Forest
- Electric Utilities
- City of Waynesville
- City of Crocker
- Sustainable Ozarks Partnership
- Pulaski Growth Alliance

## **Community (cont.):**

- Pulaski County Commission
- Waynesville R-VI School District
- City of St. Robert

## **Fort Leonard Wood:**

- DPW Master Planning
- DPW Operations and Engineering
- DPTMS Range Operations
- DPW Environmental
- Logistics Readiness Center
- DPTMS Emergency Operations
- Network Enterprise Center
- Emergency Services

# PRIORITY SECTOR ANALYSIS

- Initial step in the development of the MIRR
- Identification of topics for further study in the Threats and Vulnerabilities Analysis
- Prioritization is based on impact to Fort Leonard Wood mission, host community impacts, and viability of potential solutions at the local / regional level



# INSTALLATION RESILIENCE FACTORS

FACTORS THAT ARE LIKELY TO IMPAIR THE CONTINUED OPERATIONAL UTILITY OF LOCAL MILITARY INSTALLATIONS.



## Extreme Natural Events

- Avalanche
- Drought
- Earthquake/ Seismic Concerns
- Landslide
- Lightning
- Tsunami
- Volcanic Activity
- Wildfire



## Water Supply

- Capacity
- Availability
- Contamination
- Salt Water Intrusion



## Flooding

- Tidal Surge
- Coastal Flooding
- Inland Flooding
- Riverine Flooding



## Land Use/ Development

- Air Quality
- Cultural Resources
- Environmental Justice
- Housing Availability
- Gate Access
- Light Pollution
- Encroachment
- Transportation
- Foreign Investment/Proximity
- Spectrum Encroachment
- Maritime Encroachment



## Severe Weather

- Extreme Temperatures
- Severe Thunderstorms
- Hurricane/ Tropical Storm
- Snow/Ice Storms
- Tornado



## Military Operational Impacts

- AICUZ/RAICUZ/RCUZ
- Airborne Noise
- Industrial Noise
- Artillery Noise
- Security
- Convoy Transportation
- Safety (explosives)



## Land Degradation

- Coastal Inundation
- Erosion
- Forest Health
- Invasive Species
- Permafrost
- Sea Level Rise
- Subsidence



## Infrastructure

- Stormwater
- Wastewater
- Water
- Telecommunications
- Electrical
- Gas



## Species & Habitat Concerns

- Critical Habitat
- Rare, Threatened, Endangered Species
- Special Species of Concern
- Invasive Species
- BASH



## Energy

- Renewable Energy Siting
- Compatibility
- Microgrid
- Energy Redundancy
- Energy Security

# RISK ASSESSMENT SCORING

- Simplified analysis to determine risk based on the likelihood of an event or circumstance occurring multiplied by the consequence of it occurring.

## Risk Score = Likelihood x Consequence

### Risk Level:

- > 12 = High
- 6 – 12 = Moderate
- 1 – 5 = Low

### Likelihood:

- 5 - Certain
- 4 - Likely
- 3 - Possible
- 2 - Unlikely
- 1 - Rare

### Consequence:

- 5 - Catastrophic
- 4 - Major
- 3 - Moderate
- 2 - Minor
- 1 - Insignificant

# RISK SCORING MATRIX

<b>Consequence</b>	<i>Catastrophic</i>	5	5	10	15	20	25
	<i>Major</i>	4	4	8	12	16	20
	<i>Moderate</i>	3	3	6	9	12	15
	<i>Minor</i>	2	2	4	6	8	10
	<i>Insignificant</i>	1	1	2	3	4	5
			1	2	3	4	5
			<i>Rare</i>	<i>Unlikely</i>	<i>Possible</i>	<i>Likely</i>	<i>Almost Certain</i>
			<b>Likelihood</b>				

**Upper Tier**



<b>Risk Levels:</b>	Shock/Stress	Low	Moderate	High
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# PRELIMINARY RISK ASSESSMENT

- Identified 28 potential hazards to infrastructure and support systems that sustain the mission and integrity of the installation
- Hazards can have discrete or broad impact
- Hazards can impact the installation and/or community
- Preliminary risk screening and scoring determined:
  - **High Risk = 8 hazards**
  - **Moderate Risk = 18 hazards**
  - **Low Risk = 2 hazards**

# FORT LEONARD WOOD RISK SCORING

- Survey provided to FLW directorate / agency staff to provide input on risk and prioritization following initial committee prioritization.
- Average risk scores were generally lower than assessed by the project team and committee (only 2 high risk sectors).
- The greatest positive variance was found in 5 high risk sectors: Earthquake, Severe Winter Weather, Electric Disruption, Transportation Disruption, and Wildfire.
- Greatest negative variance was found for Degradation of Ranges / Training / Maneuver Areas, and Community Support.

# HIGH RISK HAZARDS

- Severe Winter Weather
- Tornado
- Electric Supply Disruption (persistent)
- Earthquake
- Wildfire
- Riverine Flooding
- Severe Storms
- External Transportation Network Disruption

# MODERATE RISK HAZARDS (Upper Tier)

- Extreme Heat
- Extreme Cold
- Extreme Precipitation
- Water Supply Disruption (persistent)
- External Installation Access Disruption
- Installation Access Integrity / Security
- Communications Failure (persistent)
- Degradation of Ranges / Training / Maneuver Areas
- Healthcare

# **MODERATE RISK HAZARDS (Lower Tier)**

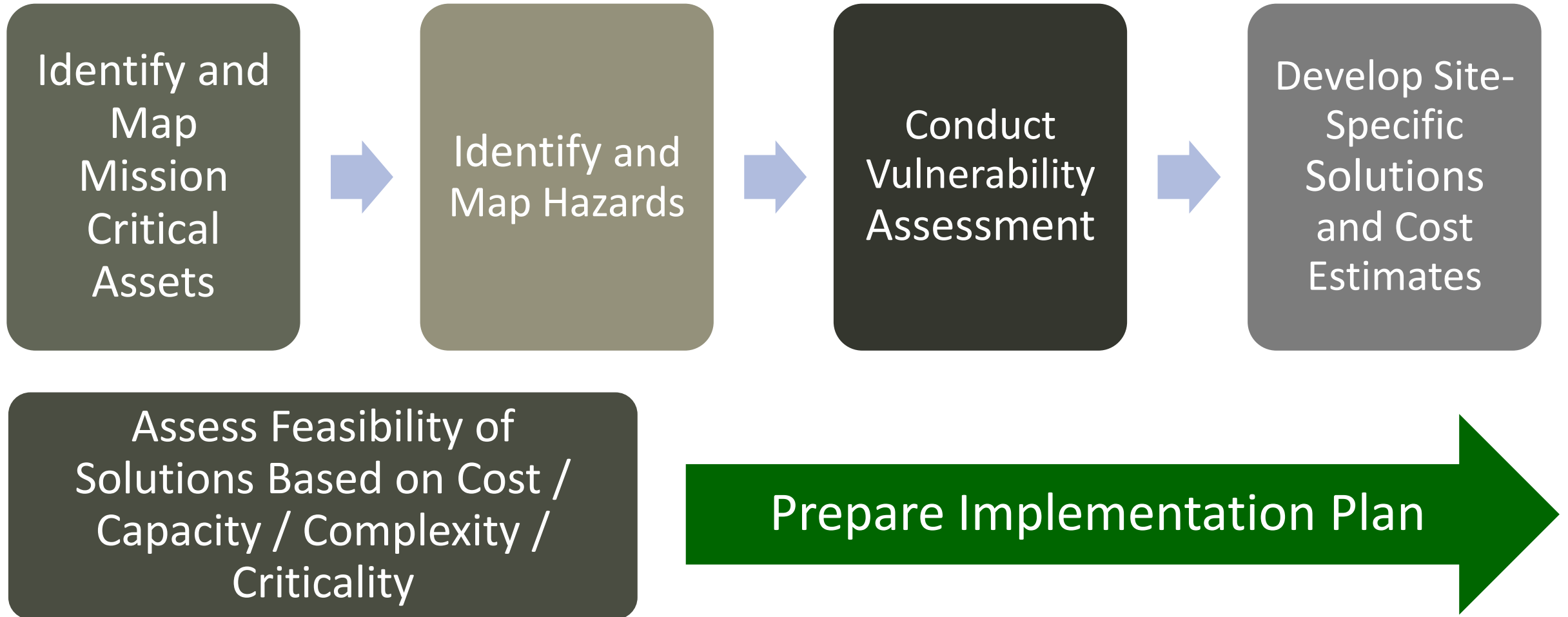
- Land Subsidence
- Natural Gas Supply Disruption (persistent)
- Workforce Availability
- Community Housing Availability
- Supply Chain Disruption
- Community Quality of Life Degradation
- Electric Supply Capacity Availability
- Water Supply Capacity Availability
- Natural Gas Supply Capacity Availability
- Endangered Species Habitat Encroachment

# LOW RISK HAZARDS

- Urban Encroachment
- Diminished Community Support

# **ADDITIONAL SECTORS**

# Threats and Vulnerabilities Analysis



# Threats and Vulnerabilities Analysis

- The extent of the analysis will be greatest for the high risk sectors, with lesser degrees of analysis on moderate and low risk sectors.
- Preliminary distribution of assignments to the project team – to be finalized following confirmation of sectors and priority by the committee.

# Marstel-Day Assigned Sectors

- Severe Winter Weather
- Tornado
- Wildfire
- Severe Storms
- Extreme Heat
- Extreme Cold
- Extreme Precipitation
- Degradation of Ranges / Training / Maneuver Areas
- Land Subsidence
- Endangered Species Habitat Encroachment

# Kimley-Horn Assigned Sectors

- Electric Supply Disruption
- External Transportation Network Disruption
- Water Supply Disruption
- External Installation Access Disruption
- Communications Failure
- Natural Gas Supply Disruption
- Electric Supply Capacity Availability
- Water Supply Capacity Availability
- Natural Gas Supply Capacity Availability

# Benchmark Assigned Sectors

- Workforce Availability
- Housing Availability
- Supply Chain Disruption

## White & Smith

- Quality of Life Degradation
- Diminished Community Support
- Healthcare

# Joint Assigned Sectors

- Urban Encroachment (Benchmark + White & Smith)
- Earthquake (MD / KHA)
- Riverine Flooding (MD / KHA)
- Installation Access Integrity / Security (MD / KHA)

# Joint Assigned Sectors

- Urban Encroachment (Benchmark + White & Smith)
- Earthquake (MD / KHA)
- Riverine Flooding (MD / KHA)
- Installation Access Integrity / Security (MD / KHA)

# Next Steps

- The Threats and Vulnerabilities Analysis will begin in December and conclude in May 2025.
- Anticipate an Executive Committee meeting in the March timeframe to review initial findings of the Analysis.
- Final Threats and Vulnerabilities Analysis findings to be presented to the Executive Committee in May
- Draft and final reports will be prepared, reviewed, and presented over the summer with the project concluding in August.

# **COMMITTEE MEMBER COMMENTS**



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