M2S2 WEBINAR SERIES
RISK MANAGEMENT METHOD (RMM) FOR MUNITIONS RESPONSE

RISK MANAGEMENT METHOD OVERVIEW

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TOPICS

FUDS Process
Property Eligibility
Preliminary Assessment
Project Categories and Eligibility
MMRP-Specific Stuff
Project Approval Process

There will be a quiz at the end…
seriously!

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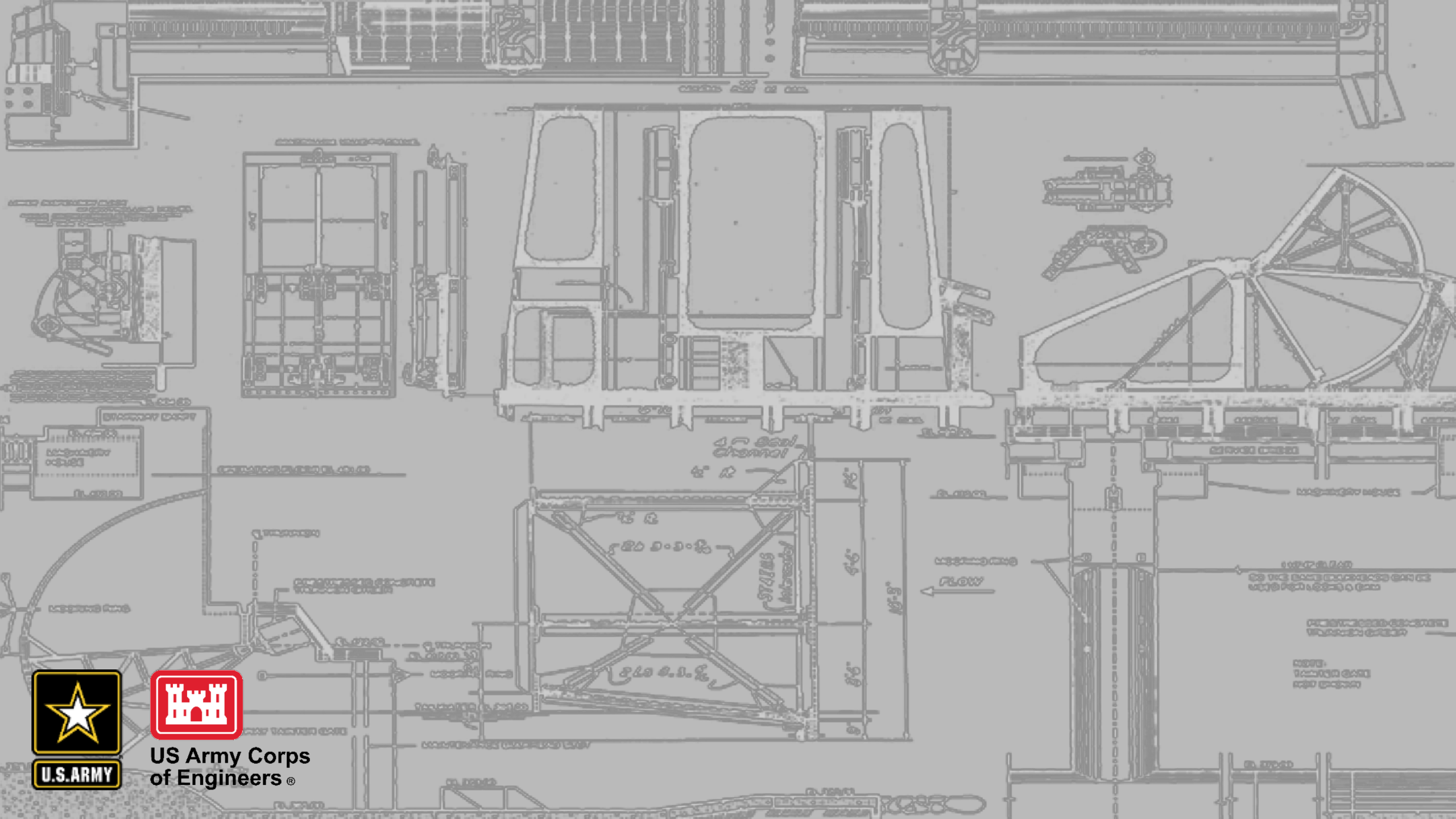
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EPA RI/FS GUIDANCE

"The objective of the RI/FS process is not the unobtainable goal of removing all uncertainty, but rather to gather information sufficient to support an informed risk management decision regarding which remedy appears to be most appropriate for a given site."[1]

[1] *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, U.S. EPA, October 1988*

Note that the Remedial Investigation and Feasibility Study (RI/FS) share the same objective.

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MATRIX RELATIONSHIPS

Designed to simplify relationships between:

- Quantity
- Accessibility
- Severity
- Sensitivity of Munitions
- Site Activities

Matrix 1: Frequency of Encounter

Matrix 2: Frequency with Severity of an incident

Matrix 3: Sensitivity of items with consideration of Site Activities

Matrix 4: Brings together all that is known about UXO or DMM that may remain

SUMMARY OF RISK MANAGEMENT MATRICES (RMM)

Matrix 1

Likelihood of Encounter (Amount of MEC versus Access Conditions)		Access Conditions (frequency of use)			
		Regular	Often	Intermittent	Rare
Amount of MEC	Category I (Most)	Frequent	Frequent	Likely	Occasional
	Category II	Frequent	Likely	Occasional	Seldom
	Category III	Likely	Occa	Seldom	Unlikely
	Category IV	Occasional	Seldom	y	Unlikely
	Category V	Seldom	Seldom	Unlikely	ikely
	Category VI (Least)	Unlikely	Unlikely	Unlikely	ikely

Matrix 2

Severity of Explosive Incident (Severity vs. Likelihood of Encounter)		Likelihood of Encounter (from Matrix 1)				
		Frequent	Likely	Occasional	Seldom	Unlikely
Severity	Catastrophic/Critical	A	A	B	B	D
	Modest	B	B	B	C	D
	Minor	B	C	C	C	D
	Improbable	D	D	D	D	D

SUMMARY OF RISK MANAGEMENT MATRICES (RMM)

Matrix 3

Likelihood of Detonation (Sensitivity vs. Likelihood to Impart Energy)		Likelihood to Impart Energy on an Item		
		High	Modest	Inconsequential
Sensitivity	High	1	1	3
	Moderate	1	2	3
	Low	1	3	3
	Not Sensitive	2	3	3

Matrix 4

Acceptable and Unacceptable Site Conditions		Result from Matrix 2			
		A	B	C	D
Result from Matrix 3	1	Unacceptable	Unacceptable	Unacceptable	Acceptable
	2	Unacceptable	Unacceptable	Acceptable	Acceptable
	3	Unacceptable	Acceptable	Acceptable	Acceptable

EXAMPLE: REMEDIAL ACTION OBJECTIVES

RAOs established for each exposure scenario
Identify acceptable conditions for each scenario

MRS	Receptors	Location	Pathways	MEC Hazard	Vertical (ft bgs)	Baseline Risk	Acceptable Remediation Goals
Impact Areas (HUA)	Recreational users	All portions of impact area	Interaction during hiking, camping, hunting (Non-intrusive)	60mm HE mortar	1.5	Unacceptable (A-2)	B-3 or D-2
				75mm HE projectile	3.0	Unacceptable (A-2)	B-3 or D-2
	Maintenance Crews	Roads and trails plus 15 m buffer	Interaction during trail maintenance (Intrusive)	60mm HE mortar	1.5	Unacceptable (A-1)	B-3 or D-1
				75mm HE projectile	3.0	Unacceptable (A-1)	B-3 or D-1

5 CASE STUDIES

5 Abstracts / Case Studies

5 Contractors and PDT experiences
Unanimous Experience: Forces discussion to key elements for decision logic

Agenda

Paired Case Studies
- 10-15 slides each group
- Focus on Positives and Challenges

Review Summary
- Collective Findings
- Path Ahead

Open Panel for Discussion

QUESTIONS?

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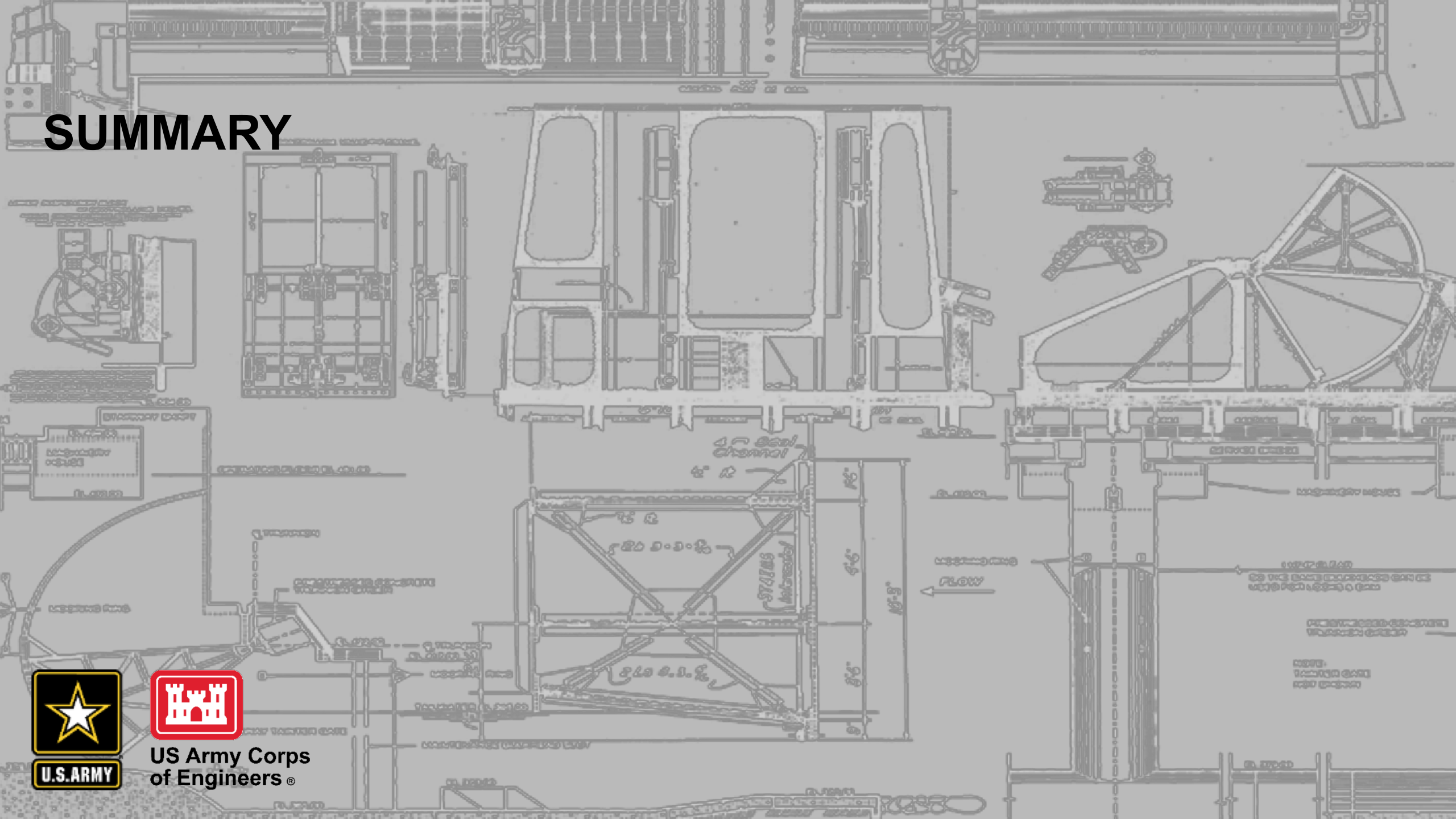
SUMMARY



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POSITIVES

Promotes Communication
Promotes DQO Development
Standard Process for Various Conditions
Data Reliant “Amount of MEC”
Differentiates and Justifies Acceptable Vs. Unacceptable
Supports Definition of RAOs
No (Minimal) Δ$
Keeps NFA on the Table

CHALLENGES

Terminology
Consistency (Guidance)
- Sensitivity
- Severity
- How Relates to Delineating MRSs
- Type and Amount of MEC
- Benefits in Remedial Alternatives, Institutional Analysis

PATH AHEAD

Extended Use Mandatory for FUDS MRSs
Voluntary Use in Other Programs

EM CX working to develop Guidance to address challenges

QUESTIONS?

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