

WHAT THE **BLUE TEXT** *DOESN'T* TELL YOU

*Things the MR-QAPP
does not address*

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**US Army Corps
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MR-QAPP Module 1: RI/FS
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INTERGOVERNMENTAL DATA QUALITY TASK FORCE

**Uniform Federal Policy
For
Quality Assurance Project
Plans**

Munitions Response QAPP Toolkit

Module 1:
Remedial Investigation (RI)/Feasibility Study (FS)

Update 1, April 2020

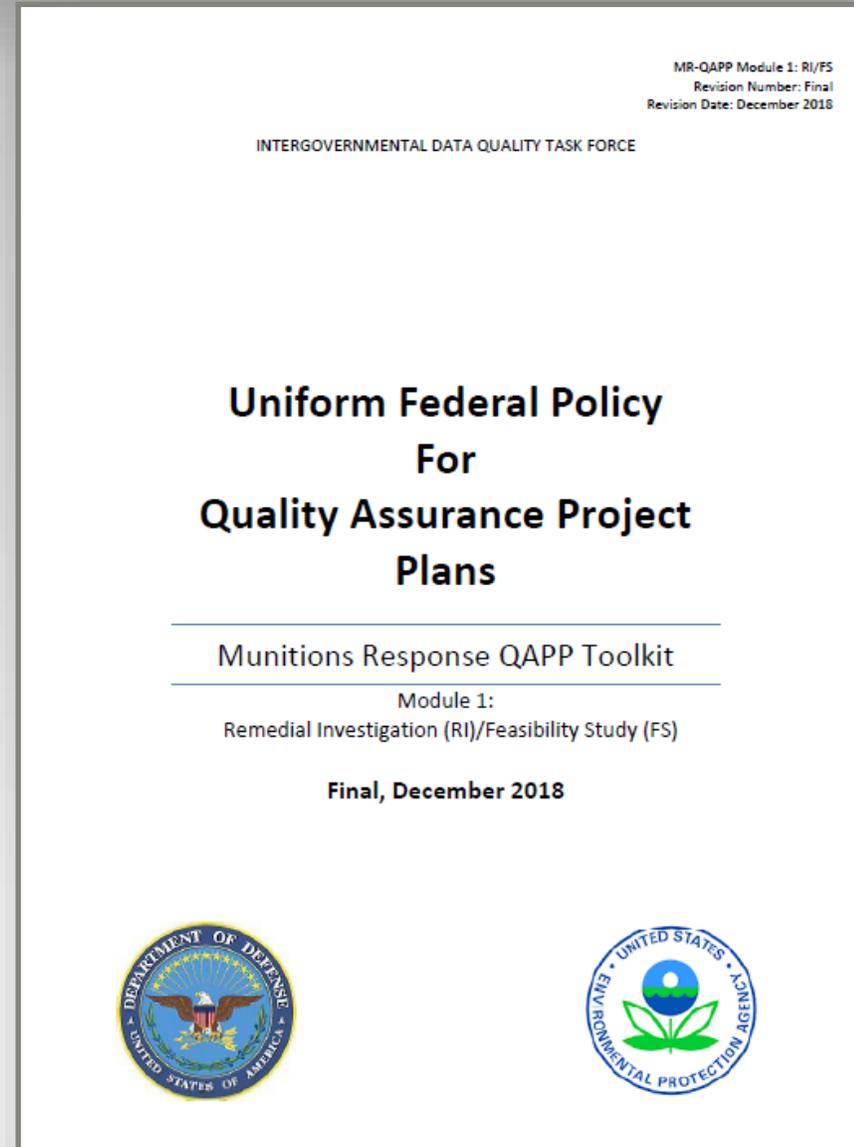




THE MR-QAPP IS GREAT!



- ❖ Planning tool for characterization and remediation of MEC at MRSs
 - Module 1: RI/FS
 - Module 2: Remedial Action (**SO close**)
 - Currently using AGC-QAPP
- ❖ Based on Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP, IDQTF, 2005)
- ❖ Implements a systematic planning process (SPP)
- ❖ Contains a variety of useful information
 - **Black text** = min. recommended requirements
 - **Blue text** = examples
 - **Green text** = instructions





BUT THERE'S A PROBLEM WITH IT...



- ❖ Important data often short-changed (or missed) during RI/FSs
 - Information for the risk assessment
 - Detailed land use data
 - Information to support the FS
 - Detailed land use data (again!)
 - Includes access restrictions
 - Terrain information
 - Topography, vegetation, etc.
 - Institutional Analysis
- ❖ This can be a big problem when we get to the RI Report stage
- ❖ So, why does this happen...?



That moment when you realize they didn't collect all the data you needed...



MR-QAPP: DQO STEP 2 – A CLOSER LOOK...



What is usually addressed

- 1) Has the horizontal boundary of the site been confirmed? [Note: When establishing horizontal boundaries, it is critical to ensure the entire MRS boundary and acreage in the database of record (e.g., FUDSMIS, AEDB-R, or NIRIS) is characterized. Geographic Information Systems (GIS) files from previous investigations may not exactly match the MRS boundary in the database of record. (Source: EM 200-1-15, Section 8.2.1)]
- 2) Within the MRS, what are the horizontal boundaries of:
 - a. HUA (e.g., bombing targets, firing ranges, or disposal areas)?
 - b. LUA (e.g., maneuver areas and buffer zones surrounding targets)?
 - c. NEU?
- 3) Within each HUA, what is the horizontal distribution of anomalies?
- 4) Within each HUA, what is the vertical distribution of sources?
- 5) What types of MEC, munitions debris (MD), range-related debris (RRD), and other metallic debris are/may be present in the high-use areas and low-use areas?
- 6) For MEC potentially remaining at the site, what is the sensitivity, potential severity, and likelihood of reaction by explosives (e.g., detonation, deflagration, or burning)?

- 5) How is land within the MRS currently being used? What are the reasonably anticipated future land uses (if known)?
- 6) Who are the current and future potential receptors, where are they located, and what activities are they, or would they be, performing within the MRS?

Requires collecting land use data

- 7) Has soil movement (e.g., scraping, filling, or digging) occurred or will future soil movement be required in association with future use? If so, describe.
- 5) How is land within the MRS currently being used? What are the reasonably anticipated future land uses (if known)?
- 6) Who are the current and future potential receptors, where are they located, and what activities are they, or would they be, performing within the MRS?
- 7) What access restrictions are present?
- 8) What endangered species, sensitive habitats, and/or historical/cultural resources are present?

What is usually not addressed



MR-QAPP: DQO STEP 3 – A CLOSER LOOK...



Data typically collected

- Information needed to establish presence/absence of MEC and characterize the potential hazard:
- The expected background anomaly density
 - The average target area density above background
 - The horizontal and vertical boundaries of high-use areas and low-use areas
 - The anticipated depth of reliable detection for munitions known to be present
 - Mapped anomaly locations and anomaly sources:
 - To establish whether HD areas are high-use areas
 - To refine boundaries of high-use areas and low-use areas
 - To build weight of evidence supporting NEU determinations
 - To estimate anomaly density and distribution
 - Types of munitions on the site:
 - UXO vs DMM
 - Caliber and type (mortars, bombs, projectiles, etc.)
 - Nature of explosive hazard (i.e., sensitivity of fuzing and ordnance)
 - Associated hazardous components

Requires collecting land use data

Requires collecting terrain data

Requires stakeholder involvement

- Additional Information needed to establish exposure potential:
- Current and reasonably anticipated future land use
 - Current and reasonably anticipated future receptors
 - Potential exposure scenarios based upon current/future land use activities and receptors
- Information needed to support the FS, if necessary: [complete with site-specific information.]
- Data to establish the effectiveness of various alternatives, including anticipated detection technology performance
 - Data to support costing of various alternatives, including [identify project-specific requirements]
 - Information that will impact the practicality of various alternatives, including:
 - Descriptions and locations of natural and cultural resources
 - Terrain, vegetation, geology
 - Institutional analysis

Data not so typically collected



SO, WHAT'S THE PROBLEM?



- ❖ **BUT MR-QAPP *doesn't* address *all* data collection**
 - Focused **solely on geophysics** past WS#11
 - This was *intentional*
 - These toolkit worksheets (and others) **only** address geophysical data collection
 - WS#12, Measurement Performance Criteria (MPCs)
 - WS#14, Project Tasks and Schedule
 - WS#17, Sampling Design & Rationale
 - WS#22, Measurement Quality Objectives (MQOs)





I'M STILL NOT SEEING THE PROBLEM...



- ❖ Many people use MR-QAPP as a **template**, rather than a **toolkit**
 - Not accounting for site- and project-specific requirements
 - Copying the example (blue) text and making minimal (if any) changes
- ❖ This means that many work plans only plan for
 - Collecting geophysical data
 - Investigating anomalies
 - Disposing of MEC/MPPEH

...but **not** collecting the other data for the risk assessment and FS





BUT WE NEED THOSE DATA FOR THE CSM!



❖ Land Use and Exposure Profile includes

- Types of land uses at (or near) site
 - Current and reasonably anticipated future land use
- Receptors associated with those uses
 - What kinds of people are involved?
- Activities associated with those uses
 - What are those people doing?
 - Include frequencies and depths
- Complete or potentially complete exposure pathways
 - How might receptors be exposed?
- Zoning, planning, and restrictions
 - Inc. restrictions placed at property transfer
- Site and nearby resources
 - Includes groundwater

Table 2-1. Profile Types and Information Needs, continued

Profile Type	Typical Information Needs
Release Profile	<ul style="list-style-type: none"> • Known or suspected contaminants of potential concern, including MEC and HTRW/MC, and their associated environmental media and release mechanism(s). <ul style="list-style-type: none"> ◦ For MEC, a description of fillers, fuzing, and status (i.e., unexploded ordnance (UXO) or discarded military munitions (DMM)). ◦ For HTRW/MC, a description of chemical properties (e.g., solubility, volatility, adsorption coefficient, tendency to bioconcentrate). • Sampling locations and investigation/analytical results. • Suspected and confirmed locations of contaminant releases, including lateral and vertical extents, and estimated quantities and/or concentrations. • Determination of contaminant movement from source areas. • Distribution of contaminants in different phases and media (e.g., DNAPL/LNAPL, adsorbed on vadose zone soils or aquifer materials, dissolved phase, soil vapor). • Natural attenuation processes (e.g., aerobic, anaerobic, and abiotic degradation of chlorinated solvents or redox/pH-mediated dissolution or precipitation of metals). • Mass flux between media (e.g., mass discharge from an aquifer into surface water).

Land Use and Exposure Profile	<ul style="list-style-type: none"> • Types of current or reasonably anticipated future land uses at or near the site. • Receptors associated with current or reasonably anticipated future land use (e.g., residential, recreational, commercial, agricultural, industrial, public forest, conservation area) at or near the site. • Receptor activities (intrusive and non-intrusive), including frequency, depth, and nature of activities. • Complete or potentially complete exposure pathways for known or suspected site contaminants. • Demographics, including subpopulation types and locations (e.g., schools, hospitals, day care centers, site workers). • Zoning, master planning, community interests, and any government restrictions such as safety fly zones or noise zone near airports. • Locations of site resources (e.g., water supply wells, recreational areas (hiking, swimming, boating, fishing, etc.), grazing lands, burial grounds).
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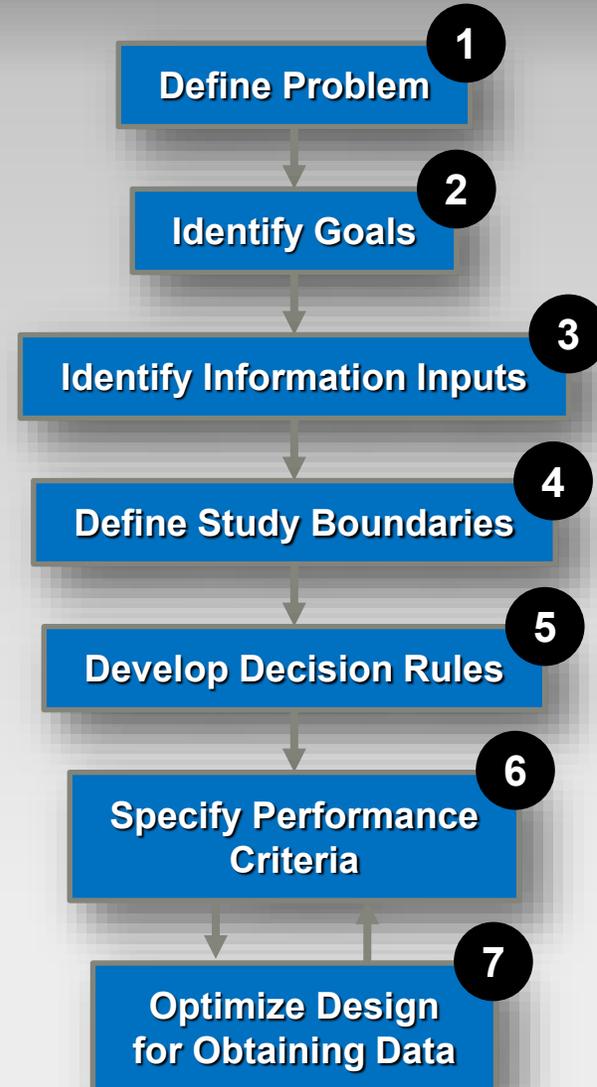
Resources Profile	<ul style="list-style-type: none"> • Description of sensitive environments at the site, including habitat type (wetland, forest, desert, pond, etc.), size, and quality. • Description of historic buildings or structures; prehistoric sites; historic or prehistoric objects or collection; rock inscriptions; culturally significant earthworks, canals, or landscapes.
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SO, WHAT DO WE NEED TO DO?



- ❖ Ensure DQOs are **PROJECT-SPECIFIC**
 - Not just copied from MR-QAPP (or UFP-QAPP) **blue text** examples
- ❖ Look at data needs identified in Step 3 of the DQOs
 - Should tell us **all the data** we need
 - See the examples in the toolkits
- ❖ Make sure **collection of all these data** is addressed in
 - WS#12, Measurement Performance Criteria (MPCs)
 - WS#14, Project Tasks and Schedule
 - WS#17, Sampling Design & Rationale
 - WS#22, Measurement Quality Objectives (MQOs)
 - And other WSs, as appropriate



Follow the 7-step DQO process to develop the technical approach

(That's what it's supposed to be used for)



A WORD ABOUT REMEDIAL DESIGNS



- ❖ MR-QAPP Toolkits
 - Module 1: RI/FS
 - Module 2: Remedial Action
 - No module for Remedial Design
 - And none in the works, so there's no toolkit for that!
- ❖ So, are we out of luck?
 - **NO!**
- ❖ Both MR-QAPP Toolkits provide a pattern to follow
 - Describe preliminary CSM
 - Establish site-specific DQOs
 - Develop site-specific data collection plan
- ❖ Apply that to the RD and we should be good to go
 - Just have to put some thought into it

