

# Building Better Dam and Levee Safety Programs in the US Army Corps of Engineers

## *Briefing for American Council of Engineering Companies*

**Eric C. Halpin, P.E.**

Special Assistant for Dam and Levee Safety

**Nathan J. Snorteland, P.E.**

Director, Risk Management Center

25 April 2011



US Army Corps of Engineers  
**BUILDING STRONG®**



# Outline

- Background
- Risk Management Center Development
- Dam Safety Modification Centers
- Discussion



# Background

- In the Beginning, Safety Programs were Decentrally Led and Executed
- Initial Approach to Centrally Lead Programs was temporary and had a virtual organizational arrangement
- AAA Audit, DSAC I Peer Review Group, and National Technical Competency Team (AFC) all confirmed need for such Improved Program Delivery



# Organizational Transition: Dam and Levee Safety

US Army Corps of Engineers Dam and  
Levee Safety Programs **Decision Leader**

Risk Management Center

Mapping,  
Modeling, &  
Consequence  
Center

Regional Risk  
Cadres

Decision & Safety  
Program Support

Agency Dam Safety  
Modification Center of  
Expertise

Regional &  
Inter-Regional  
Production  
Centers

District Support  
& Construction  
Execution

Decision Execution



# Why an RMC?

- Ad - hoc groups were unsustainable
- Proper management controls could not be instituted without centralized and consistent oversight
- The increasing national dam and levee safety workload demanded:
  - ▶ More objective and consistent decision making
  - ▶ More quality technical decision making
- Consistency in the program suffered due to lack of technical expertise and authority
- Over-Reliance on outside experts was then and is now costly



# Centrally Led Safety Program

## Benefits So Far

- Accelerated High Risk Projects – Pine Creek, East Branch, Addicks, and Barker
- Howard Hanson Dam (\$500M+ modification now scoped at \$50M with same risk reduction)
- Roush Dam (\$100M+ modification now monitoring and investigating further)
- Herbert Hoover (re-tasked project to high risk items [culverts] from medium risk items [foundation])
- East Branch Dam (\$280M modification – still trying to get cost savings)
- Salamonie and Nolin Dams (Changed from significant modifications to monitoring)



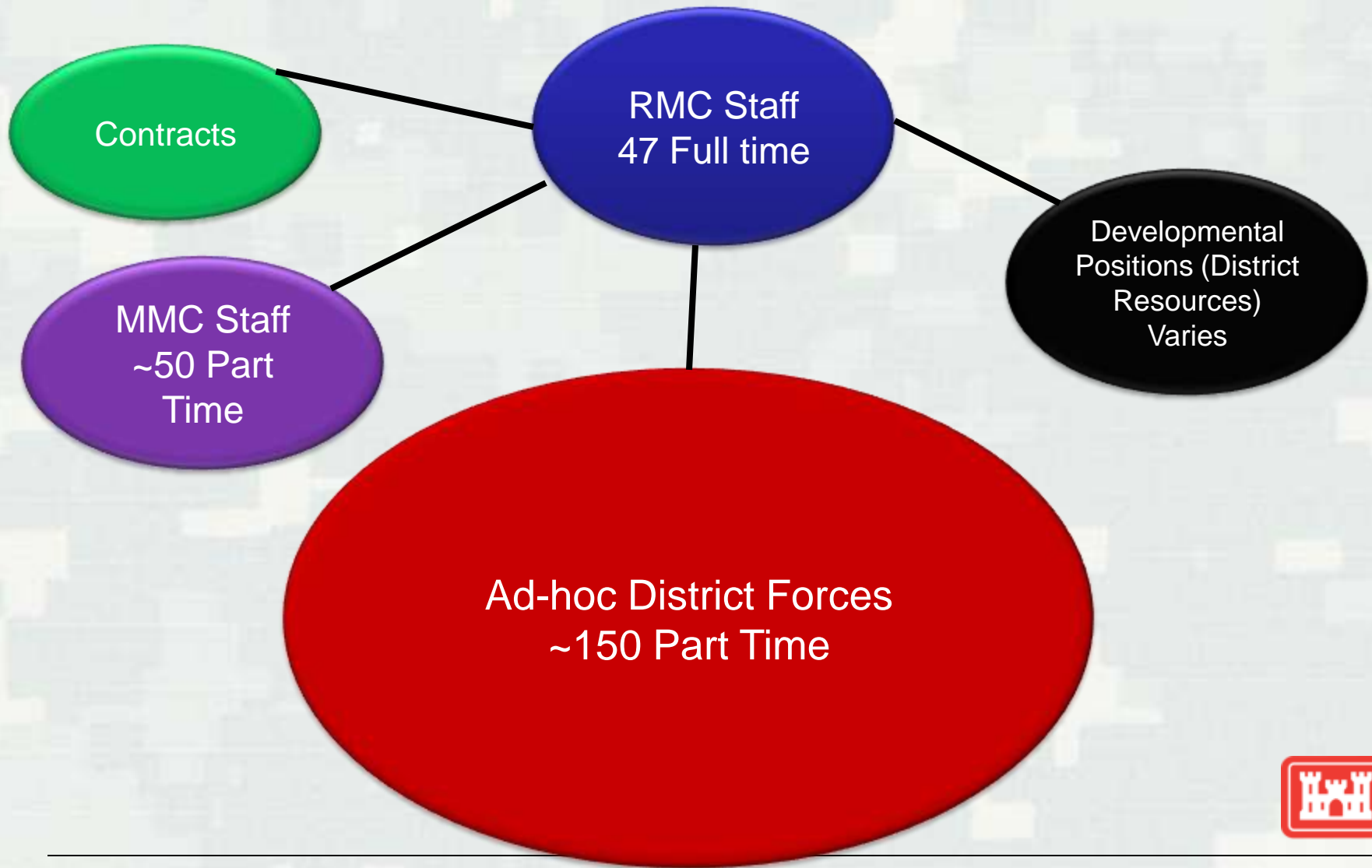


# RMC Stand-up

- Director Started 18 August 2009
- ERR DX transferred in by 31 January 2010
- Other virtual assets transferred in by 31 July 2010
- Major Centers – Denver, CO, Pittsburgh, PA, and limited virtual
- Recruitment continues for a world-class center of dam and levee expertise



# Risk Management Center





# Mission

- **Lead infrastructure risk management development and technical analysis of dams and levees**
- Support risk-informed decision-making for district commanders and DSO's
- Support HQ prioritization and planning for risk reduction studies and activities
- Provide training
- Develop tools
- Develop expertise
- Support and Review DSMC Products
- Lead dam & levee safety risk assessments
- QA/QC for safety and risk products
- Technical review of PA/IE/DSM products
- QA/QC for Safety Program performance
- Focal point for policies and methods
- Manage ATR and IEPR for Dam Safety and Levee Safety
- Manage Wedge Projects and Monitor IRRM Progress



# Major RMC Responsibilities

- Program Management for Centrally-led Activities in the C/G WEDGE and O&M Remaining Items
- Risk Assessment Facilitation and Review
- Review and Support for Dam and Levee Safety Activities
- Data Management
- Development and Technical Competency



# Organizational Transition: Dam and Levee Safety

## US Army Corps of Engineers Dam and Levee Safety Programs

Risk Management Center

Mapping,  
Modeling, &  
Consequence  
Center

Regional Risk  
Cadres

Agency Dam Safety  
Modification Center of  
Expertise

Regional &  
Inter-Regional  
Production  
Centers

District Support  
& Construction  
Execution

Decision Execution



# DSMC Methodology

## Agency Dam Safety Modification Center of Expertise

Regional &  
Inter-Regional  
Production  
Centers

District  
Support &  
Construction  
Execution

- Single Mandatory Center of Expertise that Oversees, Reviews & Supports All Dam Safety Modification Work in the Corps
- Selected from MSC Production Center Proposals based on Qualification & Selection Criteria
- Integral with a Production Center
- Production Centers and MCX will have core team co-located, with some virtual team members



# DSMC Methodology

Agency Dam  
Safety Modification  
Center of Expertise

Regional &  
Inter-  
Regional  
Production  
Centers

District  
Support &  
Construction  
Execution

- Prepare All Dam Safety Modification Reports, Lead Designs, and Supports District Construction
- May Serve as Full Production Staff for Some Districts
- Selected from MSC Proposals based on Workload Analysis, Qualification & Selection Criteria
- Located at a District, Not more than One Per Division but Workload May Require an Inter-Regional or Other Viable Approach to Solution
- A Primary Role is to Sustain Technical Competency Including Staffing and/or Recruiting of DS Professionals
- Lead Engineer Role will be Assigned to an Individual at Production Center & and be the Centers Responsibility



# DSMC Methodology

## Agency Dam Safety Modification Center of Expertise

Regional &  
Inter-  
Regional  
Production  
Centers

District  
Support &  
Construction  
Execution

- District Engineering Support to Regional Centers, Assist with Designs, & Manage Construction as Determined by Regional Centers
- Works under direction of Regional Production Centers
- Maintains all Responsibility for Routine Dam Safety Program, Including DSO & DSPM
- PMBP process will be maintained; the District PM will be responsible for project execution and customer interface





# Discussion



---

**BUILDING STRONG®**