INLAND NAVIGATION DESIGN CENTER- STATUS BRIEF

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Inland Navigation Design Center

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US Army Corps of Engineers
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Current Status-Initial Operating Capability

- Engineering Regulation Complete
- Performing ATR's, small design projects, support to ERDC, PIANC and USACE.
- Reimbursable work: $400K in FY13, $800K in FY14, $3-5 Million projected for FY15. Performed work in SWD, NWD, NAD, MVD and LRD.
- Fred Joers MVR and Jeff Stamper MVS selected as permanent Technical Managers. Two additional permanent positions will be advertised within LRD in the next 60 days.
- Virtual resources being used across MVD and LRD

FY14 Accomplishments

- The INDC is participating in the IMTS Investment Program Action Team (formally known as the CPBM). ITMS IPAT purpose is to develop an integrated strategy for prioritizing future projects that focus on risk reduction.
  - Investment Program Action Team-Navigation Infrastructure Strategy scheduled for completion this FY
  - .09 cent increase in fuel tax will create more revenue.
  - Olmsted major construction completed in FY18.
  - $50-100 million additional construction funds potentially available in FY18.
- Developed 2 navigation dam risk cadres, that will be performing risk analysis on the navigation dam portfolio.
- Inland Navigation Design has been designated a Community of Practice.

FY14 Program

- MVS Roller Gate Bulkheads ATR
- MVR Marseilles VE Study, Risk analysis and ATR
- MVR Lock 19 Lift Gate Design/ATR
- MVN Empire Lock Gate ATR
- MVR Dresden Island Tainter Gate Design
- MVS Mel Price Cable Replacement ATR
- MVS L/D 25 Dam Safety Modification Report
- LRP Upper Ohio River Prioritization Study ATR
- MVS Lock 27 Guide cell ATR
- MVS Locks 24 & 25 Tainter/Roller Gate and Service Bridge Repair ATR
- Chickamauga VE Study Support

FY14 Program

- Two Navigation Dam Risk Cadres for RMC
- Lock and Dam 25 Risk Assessment
- Soo Locks Risk Assessment and Major Rehab Report
- Webbers Falls L/D Scour Evaluation
- Great Lakes and Mississippi River Inter-basin (Transfer) Study(GLMRIS)
- Emsworth Bulkhead Recess design
- Charleroi Stilling Basin design
- Olmstead Left Boat Abutment ATR

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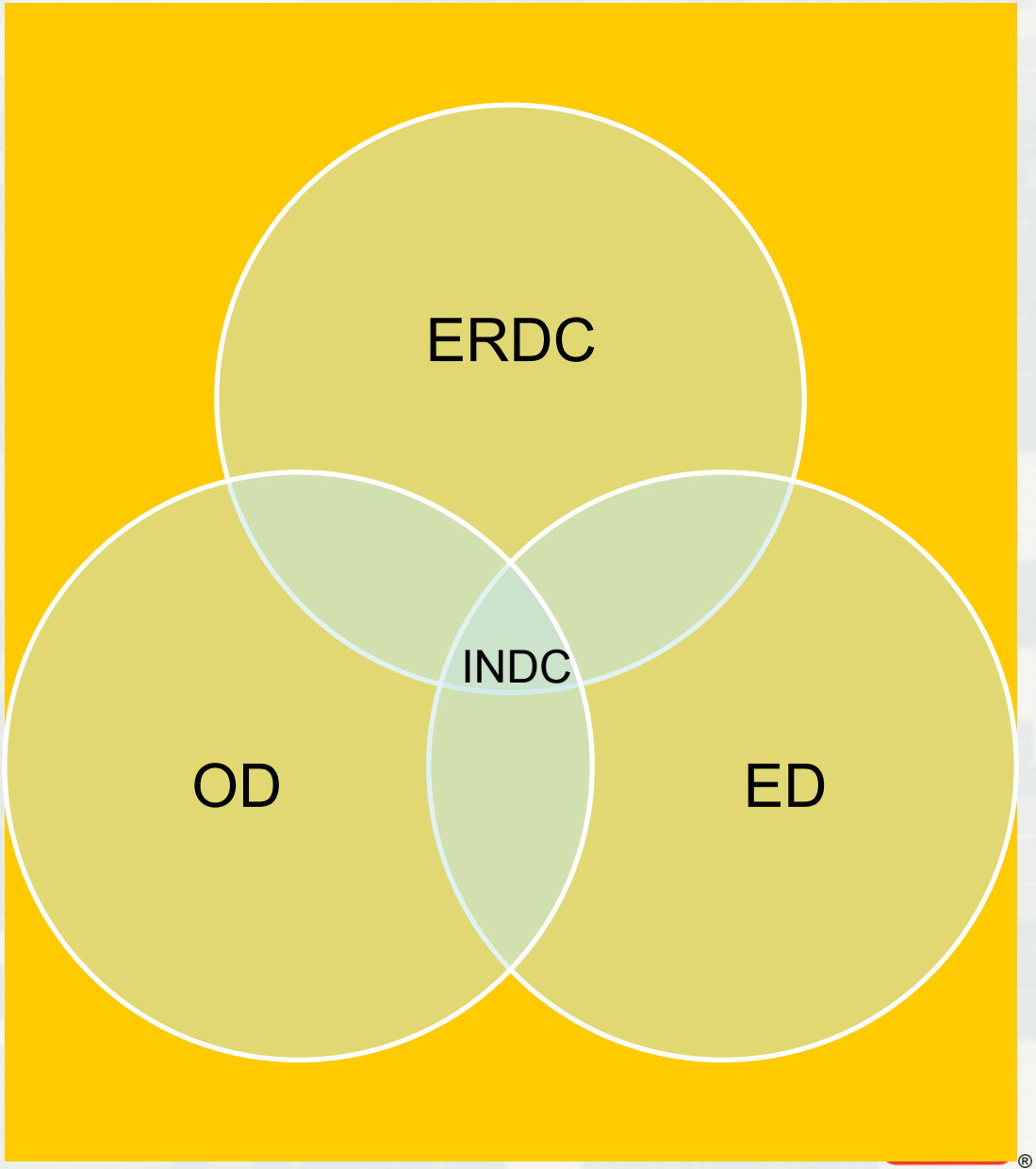
Community of Practice

- Developing and leading Inland Navigation Design CoP.
- Setting up page on TEN for knowledge management and information transfer.
- Engaged in reviewing and approving reviewers in CERCAP.
- Hosting major rehab workshop to train workforce in requirements for major rehab reports.
- Participating in PIANC activities with Netherlands an other countries in knowledge sharing and technology transfer.

INDC CoP

INDC objective to work with ERDC, OD, ED to help further the interaction and communication for design improvements and standardization in navigation infrastructure



Support to OD

Sample Projects

- **Dashields Bulkhead Slots-LRP**
- **Troy Lock Miter Gates-NAN**
- **Great Bridge Lock Valves-NAO**

Dashields Locks and Dam Upstream Bulkhead Recesses

Project Details:

- Project design by INDC, constructed by the LRP Ops. Crew
- Design phase: Early December- early March 2014
- Primary construction phase: Early August 2014-late September 2014
- Four contracts were utilized: Wiresawing, material supply, recess and protection plate assembly fabrication, and concrete supply
- The project was very successful and the INDC is currently in the design phase for recesses at Emsworth Lock and Dam.

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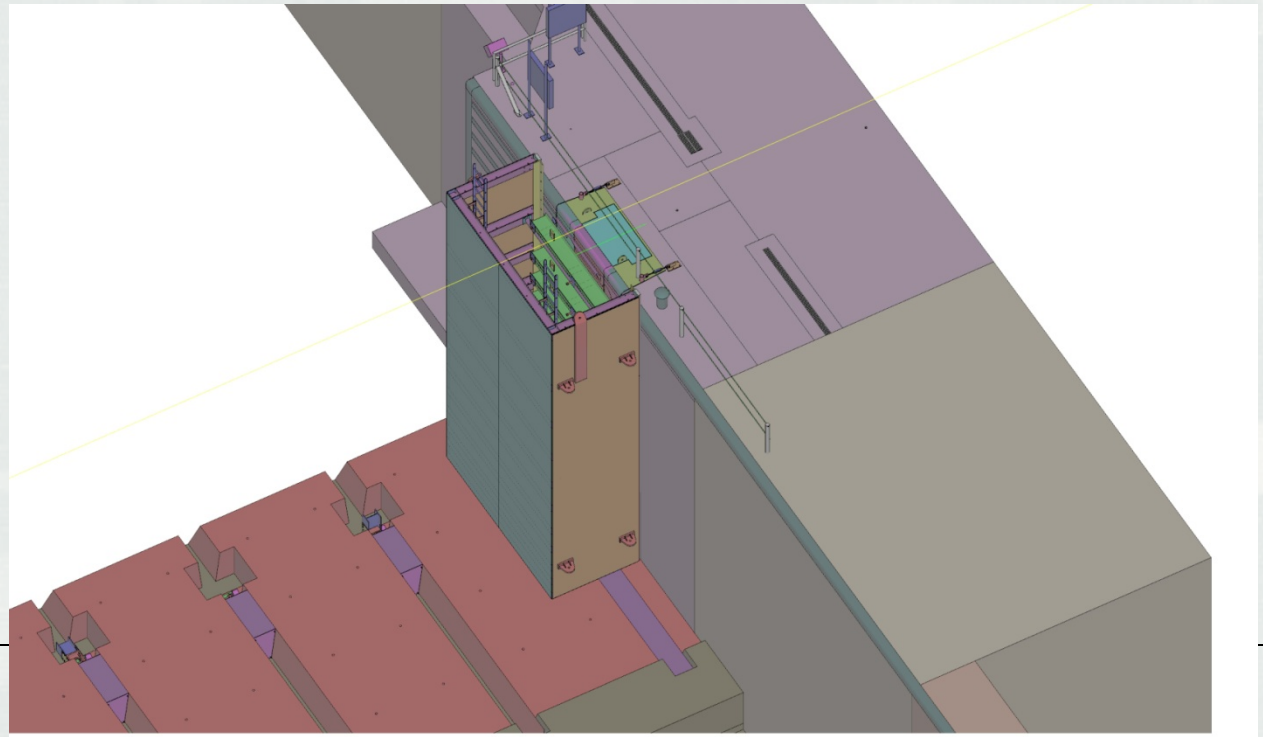
Dashields Locks and Dam Upstream Bulkhead Recesses

Design Details:

- 3D Modeling was utilized by the INDC throughout design and construction to resolve design and construction issues



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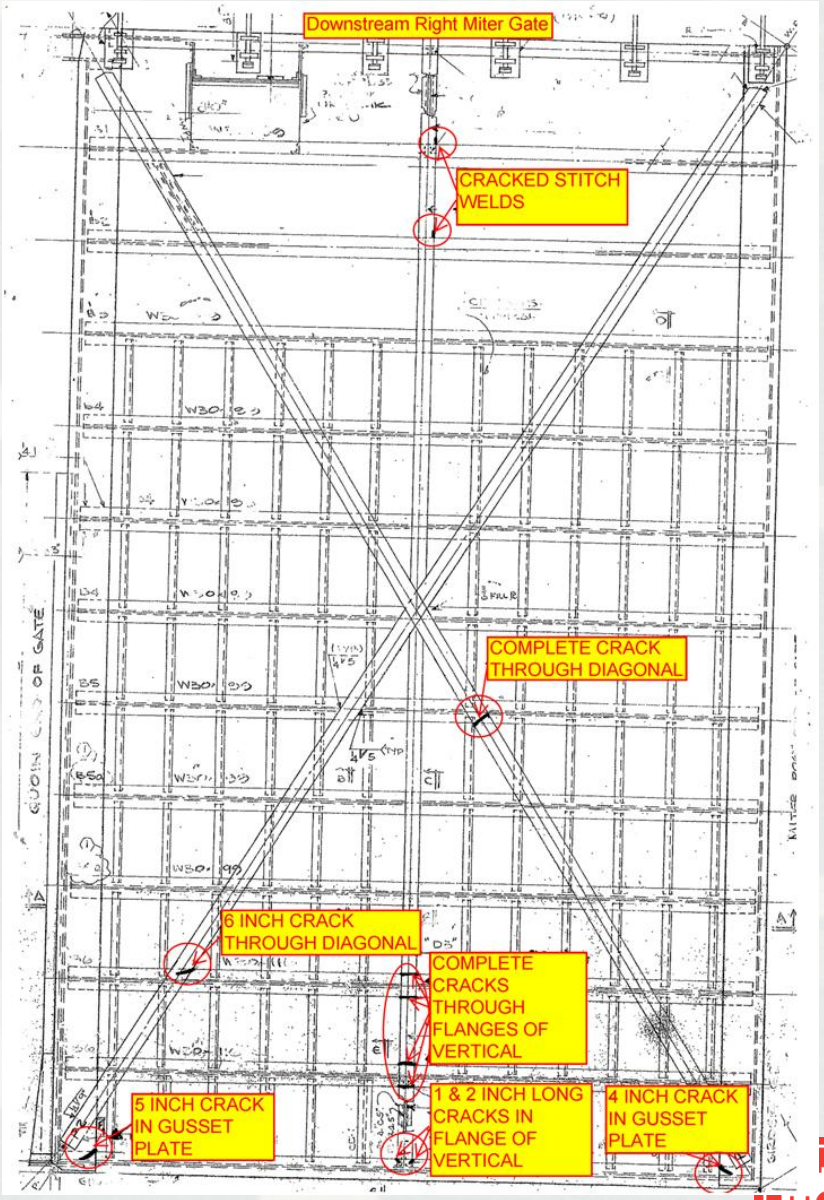
NAN / INDC Troy Lock Miter Gates

- NAN had INDC perform HSS special inspection of lock miter gates
- INDC completed report and recommendations with immediate concerns and long term issues

NAN Troy Lock

- ROM estimate for repair and replacement
- Risk considerations with respect to budget and schedule
- Design final plans and specifications.
- Engineering during construction



INDC - Great Bridge Lock

- **Norfolk District (NAO) - project is west of the Great Bridge in Chesapeake, VA**
- **Existing 8'x10' butterfly valve out of service**
  - **Original 1930's valves - limited to no maintenance**
- **Plan: spare parts until new valves are purchased**

INDC - Great Bridge Lock

- **NAO preparing P&S package for fabrication of new butterfly valves**
- **INDC – QC & ATR review of P&S package**
  - ▸ **QC - LRP & LRH, ATR - MVD**
- **LRP Ops Repair Crew – maintenance support**
  - ▸ **install spare valve & parts**
  - ▸ **trunnion area repairs**

INDC/Operations Collaboration

- Join inland navigation engineering CoP.
- Communicate issues of concern.
- Participate in educational webinars or provide suggestions for webinar topics.
- Support standardization and consistency
- Questions, INDC-MCX@usace.army.mil.