Welcome to Army Design & Construction Programs

Moderator: Col. Pete Mueller, P.E., F.SAME, USA (Ret.), The Architect of the Capitol

Speakers:
• Maj. Gen. Mark Yenter, P.E., USA, Deputy Commanding General for Military & International Operations, HQ USACE
• Lloyd Caldwell, P.E., SES, Director of Military Programs, HQ USACE
• Ray Alexander Jr., SES, Chief, Interagency & International Services, HQ USACE
• Stacey Hirata, P.E., SES, Chief, Installation Support Division, HQ USACE
SAME FY18 DOD AND FEDERAL PROGRAMS BRIEFING: USACE MILITARY PROGRAMS

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Major General, US Army
Deputy Commanding General for Military and International Operations

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Director of Military Programs

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Chief Installation Support Division

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Chief, Interagency and International Services Division

March 7, 2017

“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”
DELIVERING THE MISSION

Chief of Engineers
Authorities, Roles & Responsibilities

- Senior ARSTAF Engineer
- Army, DOD, IA Coord. & Spt.
- CPA-18 Functional Chief
- Design & Construction Agent
- Real Estate Agent & Advisor
- Army Power Procurement Officer
- Army Topographer (Geospatial)
- Civil Works Title 33 Execution
- ESF#3 Coordinating Agency
- Head of Contracting Activity

Assignments Missions & Resources

- Other Services
- Army
- DOD
- CCMDs
- International
- Interagency

USACE Capabilities

- Engineering Advisor & Agent
- Full Spectrum CCMD Support
- Real Estate & Real Property Accountability
- Energy Security, Environment & Sustainability
- Disaster Risk Management & Resilience

Spectrum of Military Programs

- Infrastructure
  - Life-Cycle A/E, Acquisition & Construction Management
  - Asset Management
  - Real Estate Acquisition, Management & Disposal
- Technical Services
  - Energy & Cyber Security
  - NetZero
  - Alternative Financing
  - Master Planning
  - Critical Infrastructure Protection
  - Expeditionary Support
  - Reconstruction & Stabilization
  - Security Cooperation
  - Environmental Quality
  - Restoration & Remediation
  - Sustainability & Resilience
  - Water Security
  - Sustainment Management Systems
  - Metering & Data Management
  - Modeling
- Science & Technology
  - Geospatial Engineering, Analysis & Mapping
  - Common Operating Picture/Environment
  - Military Engineering

= Commander, USACE
= Chief of Engineers, Army Staff
= Chief, Engineer Branch

US Army Corps of Engineers.
FY17 MILITARY PROGRAMS - $23.3B
($M)

- MILCON: $7,010 (30%)
- Real Estate: $801 (3%)
- Interagency and International Services: $2,021 (9%)
- Environmental: $1,085 (5%)
- IS (BOS/SRM): $4,825 (21%)
- Research and Development: $608 (2%)
- Planning and Design: $1,996 (8%)
- Overseas Contingency Operations (OMA): $166 (1%)
- Other: $889 (4%)

FY18 MILITARY PROGRAMS - $20.9B
($M)

- MILCON: $3,537 (17%)
- Host Nation/Foreign Military Sales: $3,904 (19%)
- MILCON: $4,825 (23%)
- Environmental: $1,110 (5%)
- Planning and Design: $1,930 (9%)
- Interagency and International Services: $3,279 (16%)
- Research and Development: $647 (3%)
- Real Estate: $806 (4%)
- Other: $889 (4%)
MILITARY CONSTRUCTION

- Fundamental shift in portfolio makeup
- Army MILCON capital investments focused on sustaining, restoring, modernizing existing facilities
- Robust Host Nation Funded Construction program
- High Visibility:
  - European Reassurance Initiative & European Infrastructure Consolidation
  - US Army Cyber

Projected FY18 Program - $9.6B ($M)

- Energy Conservation Investment Program, $62M (1%)
- Army Construction, $798M (8%)
- AF Construction, $977M (10%)
- Department of Defense, $1,700M (18%)
- Host Nation Funded Construction, $3,200M (34%)
- Planning and Design, $1,930M (20%)
- Other, $887M (9%)

FY16 – 28 Army Cyber Initiative

DoD Education Activity (DoDEA)

Elementary School – Yokota AB, Korea

Missile Defense Agency

Early Warning Radar – Clear AFS, AL
INSTALLATION SUPPORT: SUSTAINMENT, RESTORATION & MODERNIZATION (SRM)

Program Initiatives

- Multi-year SRM design and execution
- Facility cyber and energy security
- Turnkey /troop-ready facilities with complete Fit-Out and Furniture

Current Focus Areas

- Medical facility renovation and modernization
- Army barracks upgrades
- U.S. Army Cyber facility modernization
- Airfield runways and hangars
- Military terminal pier repairs and dredging
- Facility demolition

ANNUAL FORECAST $4,204 ($M)

<table>
<thead>
<tr>
<th>Service</th>
<th>Forecast Amount</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Army</td>
<td>$1,714</td>
<td>41%</td>
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<tr>
<td>DoD</td>
<td>$1,826</td>
<td>43%</td>
</tr>
<tr>
<td>Navy</td>
<td>$71</td>
<td>2%</td>
</tr>
<tr>
<td>Air Force</td>
<td>$592</td>
<td>14%</td>
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</table>

FY12-FY17 SRM TREND ANALYSIS ($M)

Repairs to Hangar Bldg 3036
Joint Base Lewis McChord WA

Military Ocean Terminal Concord Repairs
Integrates capabilities and expertise across the organization that:

- allows USACE to deliver scalable solutions at home and abroad
- enable our partners and stakeholders to focus on their primary mission goals and objectives
- leverages USACE’s global presence, unique authorities, enduring relationships, and enterprise processes

IIS Enabling Authorities

- Economy in Government Act [31 USC 1535]
- Chief’s Economy Act [10 USC 3036(d)]
- WRDA, Section 234 [33 USC 2323(a)]
- Intergovernmental Cooperation Act [31 USC 6505]
- Foreign Assistance Act [22 USC]
- Arms Export Control Act [22 USC 2769]
INTERAGENCY & INTERNATIONAL SERVICES
MOSUL DAM - IRAQ

- Largest dam in Iraq, 4th largest in Middle East
- Crest: total length 3.4 km; height 113 m
- 115 km S of Turkey; 50 km N of Mosul
- 2nd largest city in Iraq; 1.7M people
- Flood control, irrigation, water supply – storage capacity
  - Maximum: ~ 11.1 billion m³
- Power generation 750MW max
- Pool Elevation: 302.4 masl; Hydropower generation ends below 300 masl

Critical Areas for Emergency Grouting

- 3 Grout Batch Plants; one at each access point and one adjacent to the spillway
- 9 Drill Rigs: 7 within the Gallery and 2 for outside - 24/7/365 operation
- Initial phase of grouting will extend 50 meters into bedrock below Grouting Gallery
- Gallery dimensions constrain productivity
INTERAGENCY & INTERNATIONAL SERVICES: SECURITY ASSISTANCE

- USACE Capability
  - Engineering Advisor & Agent

✓ 35 Countries + NATO
  ➤ 121 Cases; total case value: $3.9B
✓ Active Mission Funding: $1.3B
  ➤ $1.2B in CENTCOM AOR; includes Qatar, Kuwait, and Saudi Arabia

C-17 Bed Down Squadron Operations - India

Upcoming Solicitations

- Egypt
  - Peace Vector (PV)- VII Package C
- Saudi Arabia
  - Language School
- Kuwait
  - HAZMAT Material Removal
- Georgia
  - Wounded Warrior Facility

* scheduled for FedBizOpps this FY
**INTERAGENCY AND INTERNATIONAL SERVICES:**
**SUPPORT TO THE DEPARTMENT OF VETERANS AFFAIRS**

**USACE Capability**
Engineering Advisor & Agent

**TOTAL SQUARE FOOTAGE**  1,195,058

<table>
<thead>
<tr>
<th>Location</th>
<th>Project Description</th>
<th>Assigned MSC</th>
</tr>
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<tbody>
<tr>
<td>Aurora, CO</td>
<td>New Medical Center</td>
<td>NWD</td>
</tr>
<tr>
<td>Portland, OR</td>
<td>Specialty Care Bldg, Seismic, Parking, Energy Plant</td>
<td>NWD</td>
</tr>
<tr>
<td>American Lake, WA</td>
<td>Renovations for Office Space, Seismic Corrections, Outpatient Medical Facility</td>
<td>NWD</td>
</tr>
<tr>
<td>Louisville, KY</td>
<td>New Medical Campus and Medical Center</td>
<td>LRD</td>
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<tr>
<td>Canandaigua, NY</td>
<td>Outpatient Clinic, CLC, Chiller Plant, Emergency Power</td>
<td>LRD</td>
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<tr>
<td>San Francisco, CA</td>
<td>Research/VET Med Unit, Parking, Seismic, Renovation</td>
<td>SPD</td>
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<tr>
<td>West Los Angeles, CA</td>
<td>Construct New Bed Tower, Parking, Expand Energy Plant, Seismic Corrections, and Renovation</td>
<td>SPD</td>
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<tr>
<td>West Los Angeles, CA</td>
<td>Seismic Correction - 12 Buildings</td>
<td>SPD</td>
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<tr>
<td>Long Beach, CA</td>
<td>Mental Health Clinic, Community Living Center, Power Plant, Parking, Seismic</td>
<td>SPD</td>
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<tr>
<td>Alameda, CA</td>
<td>Outpatient Clinic, Columbarium, Parking</td>
<td>SPD</td>
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<tr>
<td>San Diego, CA</td>
<td>Spinal Cord Injury, CLC, Parking, Seismic Corrections</td>
<td>SPD</td>
</tr>
<tr>
<td>Livermore, CA</td>
<td>CBOC, CLC, CUP, Specialty Procedure Center, Engineering/Logistics Bldg, Livermore Campus closure</td>
<td>SPD</td>
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<tr>
<td>Reno, NV</td>
<td>Upgrade Seismic, Life Safety, Infrastructure; Demolition/Construction to Expand Clinical Services</td>
<td>SPD</td>
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<tr>
<td>Tampa, FL</td>
<td>New Bed Tower, Parking, Access Roads, Demolition</td>
<td>SAD</td>
</tr>
</tbody>
</table>

**Upcoming Projects**

**DVA Replacement Hospital – Aurora, CO**

**Concourse (CON)**
- 159,013

**Research (RES)**
- 62,927

**Diagnostic & Treatment (DAT)**
- 328,457

**Inpatient Building South (IBS)**
- 129,958

**Inpatient Building North (IBN)**
- 131,126

**Energy Center (ENC)**
- 55,787

**Clinic Building Center (CBC)**
- 95,952

**Clinic Building South (CBS)**
- 131,834

**Beds**
- 148
  - Medical / Surgery: 60
  - In-Patient Psychiatric Ward: 30
  - Spinal Cord Injury: 30
  - Intensive Care Unit: 28

**Parking Spaces**
- 2193
  - Parking Staff North: 1220
  - Parking Visitor North (PVN): 655
  - Parking Visitor South (PVS): 318
Five-year MOA signed with DOE / National Nuclear Security Administration (NNSA) in FY16

Continued partnership to collectively meet NNSA's ageing infrastructure needs

Areas of support include:
- Engineering
- Project management
- Construction management
- Asset management

<table>
<thead>
<tr>
<th>Location</th>
<th>Project</th>
<th>Assigned USACE Office</th>
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<tbody>
<tr>
<td>Oak Ridge, TN</td>
<td>Uranium Processing Facility - Mechanical Electrical Building On-Site Warehouse</td>
<td>Nashville District</td>
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<tr>
<td>Oak Ridge, TN</td>
<td>Y-12 National Security Complex - Fire Station</td>
<td>Nashville District</td>
</tr>
<tr>
<td>Oak Ridge, TN</td>
<td>Y-12 National Security Complex - Emergency Operations Center</td>
<td>Nashville District</td>
</tr>
<tr>
<td>Pantex, TX</td>
<td>High Explosive Science &amp; Engineering Facility (HES&amp;E)</td>
<td>Tulsa District</td>
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<tr>
<td>Albuquerque, NM</td>
<td>NNSA Albuquerque Office Complex</td>
<td>Albuquerque District</td>
</tr>
<tr>
<td>Los Alamos, NM</td>
<td>TA-55 Construction Support Facility</td>
<td>Albuquerque District</td>
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<tr>
<td>Los Alamos, NM</td>
<td>TA-46 Chemical Metallurgy Research Replacement (CMRR) Warehouse</td>
<td>Albuquerque District</td>
</tr>
<tr>
<td>Los Alamos, NM</td>
<td>Los Alamos Road Improvements</td>
<td>Albuquerque District</td>
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</tbody>
</table>
INTERAGENCY & INTERNATIONAL SERVICES:
SUPPORT TO U.S. CUSTOMS AND BORDER PROTECTION

USACE Capability

Engineering Advisor & Agent

Horizontal Construction

• Border pedestrian / vehicle barriers
  ➢ 400 miles in 2 years (2007-2009)
  ➢ $1.3 billion construction program
• Bridges, roads, lighting
• Surveillance towers, systems

Facilities Construction

• Border Patrol stations
• Land ports of entry
• Checkpoints
• Boat docks
• Firing ranges
• Forward Operating Bases
• Training centers
• Processing centers
REAL ESTATE: OPTIMIZING REAL PROPERTY ASSETS FOR ARMY AND DOD

Current Focus Areas

- Recruiting Facilities Program
  - Base Program
  - Security upgrades
- BRAC Disposals
- Reduce the Footprint
- Overseas support
- Enhanced Use Leasing
- Energy projects (coupled with energy contracts; stand alone)

FY18 Real Estate Program - $826M ($M)

- Homeowners Assit Prog (HAP), $10, 1%
- RE AR, AF, AG, FM Etc., $417, 51%
- RE Operations, $3, 0%
- DoD Recruiting Facilities, $318, 39%
- GSA Fac Leases (USACE), $2, 0%
- DoD Recruiting Facilities Sec Upgrades, $50, 6%
- Leased Gov’t Housing, $8, 1%

DoD Recruiting Facilities Program

- Establishes, relocated, closes, expands, and upgrades recruiting offices and stations
- Promotes footprint reduction and space optimization
- Ensures safe and secure facilities through implementation of force protection enhancements

Base Realignment and Closure (BRAC)

Legacy BRAC
- more than 178,700 acres transferred; 47,280 acres remaining

BRAC05
- more than 46,700 acres transferred; 23,770 acres remaining
- 202 of 209 Reserve Centers disposed
ENABLING EFFECTIVE MISSION DELIVERY

USACE Standards and Processes
✓ Applies to all projects
  ➢ Assures appropriate Quality is met
✓ May use stakeholder criteria if applicable
✓ Will not deviate from building codes

Challenges and Opportunities
✓ Advancing Modeling (BIM) Implementation
  ➢ Quantity take-offs for IGEs
  ➢ Facility Data for O&M (e.g. BUILDER)
✓ Time and Cost Management
✓ Earned Value Management
✓ Infusion of new technologies
✓ Cybersecurity

USACE Project Management Business Process

Project Delivery Tenets
➢ One Project, One Team, One Project Manager
➢ Manage with a PMP
➢ Quality matters

Risk Management
Industry Owner / End User Design & Construction Agent

Cross Laminated Timber Purple Pipe

CHP Process Flow Diagram
Traditional System CHP System
Power Plant CHP
Boiler
45% Efficiency 80% Efficiency
ELECTRICITY HEAT
DELIVERING ENGINEERING SOLUTIONS

33,000 Employees
Perform government functions

A-E Firms
5,000 Employees

Critical Technical Resource
Perform > 65% of Planning and Design

Construction Contractors
300,000 Employees (daily)

Unlimited Capability
Perform 100% of Civil Works and Military Construction