U.S. ARMY CORPS OF ENGINEERS
RESPONSE TO COVID-19

Mr. Lloyd C. Caldwell, P.E. SES
Director of Military Programs

Mr. George Lea, P.E.
Chief, Military Engineering

July 2020
AGENDA

• USACE Overview
• USACE Response to COVID-19
  o Outcomes
  o Concept of Operations
  o Acquisition Strategy
  o Conversion Concepts
  o Best Practices
  o Key Challenges and Considerations for the AEC Community
• Q&A
USACE ORGANIZATION

USACE Vision
Engineering solutions for the Nation's toughest challenges.

USACE Mission
Deliver vital engineering solutions, in collaboration with our partners, to secure our Nation, energize our economy, and reduce risk from disaster.

Globally Engaged and Regionally Aligned

Headquarters
9 Regionally Aligned Divisions
43 Geographic Districts
9 Centers and Laboratories
40+ Centers of Expertise

1 Active Duty Unit
249th Prime Power Battalion

2 Army Reserve Theater Engineer Commands – 412th & 416th

8 Centers of Standardization
USACE MISSION AREAS

Military Programs
- DoD Construction Agent
- CCMD Support, Overseas Contingency Operations (OCO)
- Installation Support, Environmental, Energy and Sustainability

Civil Works
- Federal / State / Local Agency Construction & Technical Support
- "Whole of USACE" Capabilities
- Capacity Development

Geospatial Support
- Army Common Operating Picture / Mission Command
- Civil Works Programs
- Military & IIS Programs
- Emergency and Contingency Operations

Contingency Operations
- ESF-3 FEMA "Whole of Government" Disaster Response and Recovery
- Life-Cycle Flood Risk Management
- Critical Infrastructure

International and Interagency
- Real Estate — Acquire, Manage and Dispose / DoD Recruiting Facilities / Contingency Operations

Research and Development
- Support to Warfighter Readiness
- Force Protection, Installations & Resilience
- Environment
- Water Resource Modeling
PARTNERING WITH INDUSTRY

Key Partnering Objectives:

- Posture and respond rapidly to national emergency and supplemental workload
- Promote effective federal procurement processes and practices
- Advance the standard through application of innovative practices, processes, and materials (e.g., Pre-Fab, collaborative delivery methods)

An enduring commitment towards achieving shared objectives by jointly managing performance, risk, and relationships in a manner that builds and sustains mutual trust and transparency

Federal Agencies
- ~35,000 Employees
  - Perform “inherently governmental” functions

Industry
- Critical Technical Resource
  - Perform > 65% of Planning & Design
  - Perform 100% of Construction
  - Partner in advancing the delivery standard

Academia

Mission Delivery Value Chain

Stakeholders
COVID-19 IMPACTS TO USACE MISSION DELIVERY

Potential COVID-19 Impacts to Projects Across the Military Programs

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<tr>
<th>Program</th>
<th>Total Active Projects</th>
<th>Projects with Potential Impacts</th>
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<td>Pre-Award</td>
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<td>531</td>
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*P2 data as of 06 July 2020*
USACE SUPPORT TO CONTINGENCIES

**Flood Control and Waterways**
- Disaster Preparation
- Emergency Operations
- Water Assistance
- Advance Measures
- Rehabilitation
- Hazard Mitigation

**Domestic Disaster Preparedness & Response**
- Emergency Support Function (ESF) #3: Public Works & Engineering (USACE Lead)
- ESF #6: Mass Care, Temp Housing & Human Svcs (DHS/FEMA Lead, USACE Spt)
- ESF #8: Public Health & Medical Services (HHS Lead, USACE Spt)
- ESF #12: Energy (DoE Lead, USACE Spt)
- National Emergency Preparedness Program

**Domestic Recovery Operations**
- Infrastructure Systems Recovery Support Function: Coordinating Agency

**Support to Deployed US Forces**
- Expeditionary Engineering, Environmental, Real Estate, Base Camp Development & Logistics Support Teams
- Embedded LNOs
- Deployable communications & reconnaissance tools
- Technical Reachback
- Army Facilities Component System
- 249th Prime Power
- Contingency Engineer Districts

**International Humanitarian Assistance/Disaster Response**
- Ituango Hydroelectric Dam (Colombia)
- Nepal Earthquake
- Pakistan Landslide
- Ebola Crisis
- Haiti Earthquake

**END STATE:**
Nation is Provided Responsive Technical Engineering and Construction Support
U.S. ARMY CORPS OF ENGINEERS

COVID-19
CORONAVIRUS

ADMINISTRATIVE
MISSION
ASSIGNMENTS
OPEN: 64
CLOSED: 61
CUMULATIVE
FUNDING
$1.8B: MA: $1.8B
NEPP FUNDING: $21.6M
ENGAGED
PERSONNEL
DEPLOYED: 75
SUPPORTING: 253

ASSESSMENTS

1,155 REQUESTED
1,155 COMPLETED

ALTERNATE CARE FACILITY CONSTRUCTION

ALTERNATE CARE FACILITY
TOTAL BED COUNT

15,074

ARENA TO HEALTHCARE (A2HC)
603 Assessments
Complete
12,184 Potential Beds

HOTELS/DORMS TO HEALTHCARE (H2HC)
552 Assessments
Complete
2,890 Potential Beds

ENGINEERED SOLUTION PLANS
Approved site adaptations must be accomplished in as little as 5 days and at most 2 weeks to align with state projected virus infection peaks.

STANDARD DESIGNS
All 4 designs can be adapted to serve COVID and NON-COVID patients.

PROJECT COMPLETION
38 OF 38 COMPLETE

For more information about what the Corps is doing in response to COVID-19 visit: https://www.usace.army.mil/coronavirus/
USACE works in conjunction with the entire federal eco-system during responses like COVID-19 through FEMA learn more about their mission here: https://www.fema.gov/coronavirus
USACE COVID-19 SUPPORT MISSIONS:
COMMON OPERATING PICTURE

ATTRIBUTION: COP BASE LAYER: CENTER ARMY ANALYSIS SEIR MODEL 21-28 JUN 20 / DATA: 01 JUN 20 / EXTRACTION AS OF 01 2000 JUN 20 / DATA EXPIRATION: 05 JUN 20

FEMA REG. | MSC | STATE/TERRITORY ALIGNMENT (COVID-19 RESPONSE) | MAJOR DISASTER DECLAR.
--- | --- | --- | ---
I | NAD | CT, ME, MA, NH, RI, VT | 6
II | NAD | NJ, NY, PR, USVI | 4
III | NAD | DC, DE, MD, PA, VA, WV | 6
IV | SAD | AL, FL, GA, KY, NC, SC, TN, MS | 8
V | LRD | IL, IN, MI, OH, MN, WI | 6
VI | SWD | AR, OK, TX, LA, NM | 5
VII | NW | KS, MO, NE, IA | 4
VIII | NW | MT, ND, SD, WY, CO, UT | 6
IX | SP | AZ, CA, NV, HI, Guam, CNMI, AS | 7
X | NW | ID, OR, WA, AK | 4

TOTAL MAJOR DISASTER DECLARATIONS: 56

LEGEND
- USACE AWARDED ACF CONTRACT
- USACE PENDING ACF CONTRACT
- USACE DESIGN --> STATE EXECUTION
- USACE ASSESSMENT AREAS
- USACE DIVISION BOUNDARY
- FEMA REGION BOUNDARY
- COVID HOT SPOTS FROM 14-21 JUN
CONCEPT OF OPERATION

**Site**

- **Lead:** State / Municipality
  - Identify existing available facilities
  - Assess for suitability
  - USACE provides technical advice/assistance under FEMA Mission Assignment (MA) – Critical Public Facilities PRT
  - Existing utilities and infrastructure (electric, power, water, HVAC, IT,...)
  - Obtain rights / ownership (i.e. Lease facility)
  - Determine construction agent

**Build**

- **Lead:** USACE (w/ MA) / State / Municipalities
  - Criteria and Design
  - Convert/retro-fit existing structure
    - Hotel, dorm, or apartment building
    - Arena or convention center
  - Enable conversion of facility to support identified facility type
  - Main Functions - supply & auxiliary power, washable floors & walls, negative pressure HVAC, nurse’s station, IT infrastructure
  - Stafford Act – emergency contracting authorities, utilizing local, capable business(es); Construction contracts.

**Supply**

- **Lead:** FEMA / HHS / State / Municipality / Other
  - Federal or State Stocks
  - Procure, Install, and Configure medically unique equipment
  - Meets end-state requirements
  - FEMA would task to either HHS or DLA to procure and install

**Staff**

- **Lead:** State / Municipality
  - Identify and draw upon from existing and augmented resources
  - National Guard
  - NORTHCOM
  - Anticipated to be most significant challenge
The Requirement:
• Address medical facility needs across the nation in response to the COVID-19 pandemic
• Ensure no person would lack care due to facility capacity limitations by creating Alternate Care Facilities (ACFs)

The Challenge:
• COVID-19 care projected to overwhelm existing medical facilities
• Sufficient National facility capacity required to ensure necessary provision of care for all in need
• No known standard designs for contingency hospital for infectious diseases
  o Existing military and civil emergency medical facilities designed primarily for trauma care
  o Limited Department of Health and Human Services (HHS) criteria for "Alternate Care Sites"

The Objective:
Plan and develop Alternate Care Facility (ACF) standards and criteria capable of rapid application at any community level in suitable existing structures with minimal alterations using readily available materials and skills.
The Strategy:

• **Develop Technical and Clinic Requirements**
  o Collaborative effort between USACE Medical Design Center of Expertise and HHS medical experts
  o Included technical evaluation guidelines for assessment and selection of existing buildings and engineering and clinical guidelines for ACF design/construction
  o Objective to use existing operational facilities in good condition, but currently underutilized due to COVID-19 restrictions with focus on hotels, college dormitories, and arenas/gymnasiums

• **Publish Standards and Criteria**
  o Suitable for implementation in any community by State/local authorities or USACE

• **Assign Roles and Responsibilities**
  o Project management, engineering application of criteria, and execution (including contract procurement and management) for work assigned to USACE via FEMA delegated to District with geographic responsibility
  o State/local authorities responsible for site identification, real estate leases, and site disposition post COVID-19
ACQUISITION STRATEGY CONT’D

The Strategy:

• **Solicit and Issue Contracts**
  - Design-Build rapid reaction/rapid performance under emergency authority allowing work initiation within 72 hours (or less) of walking site and/or contract award
  - When necessary, contracts awarded with undefinitized scope and cost
  - Selections based on factors such as experience, capability, local/regional familiarity, and established sub/supplier/labor/building authority relationships
  - Objective to marshal strength and commitment of local/regional businesses and communities

• **Share Lessons and Provide Advice**
  - Teams of USACE and Public Health Service subject matter experts established to coach and advise Districts, states, or local authorities
  - Feedback loop and Lessons Learned website developed to share lessons / best practices and evolve criteria

• **Establish A Communications Battle Rhythm**
  - Conducted daily National-level Operations Command and Control briefings
  - Maintained senior level communications with FEMA, HHS, State, and local officials to advance response times
PERFORMANCE WORK STATEMENTS

- Tools available for State, Municipality and AEC community use
- Provides means for a quick contractual start
- Conversion Concepts
  - Hotel Room to Healthcare Room (H2HC) – COVID Non-ACUTE
  - Hotel Room to Healthcare Room (H2HC) – COVID ACUTE (Negative Pressure, Ventilator use)
  - Arena to Healthcare Room (A2HC) – COVID Non-ACUTE
  - Arena to Healthcare Room (A2HC) – COVID ACUTE (Negative Pressure, Ventilator use)
  - Containerized Option

**Non-ACUTE Care** IAW NFPA 99 Standard for Health Care Facilities, Patient Care Category 3; failure of systems or equipment is likely to cause discomfort to Patient, Staff or Visitor discomfort.

**ACUTE Care** IAW NFPA 99 Standard of Health Care Facilities, Patient Care Category 2; failure of systems or equipment is likely to cause minor injury to Patient, Staff or Visitors.

https://www.usace.army.mil/Coronavirus/Alternate-Care-Sites/
CONVERSION CONCEPTS:
H2HC - HOTEL ROOM to HEALTHCARE ROOM

Hotel PROVIDED

H1. HOTEL BED
  *WITH MEDICAL LINENS
H2. HOTEL RECLINING CHAIR/DESK CHAIR
H3. HOTEL WARDROBE
H4. HOTEL DESK
H5. HOTEL PLUMBING FIXTURES

ENGINEERING CHANGES

- REMOVE CARPET
- INSTALL VINYL FLOORING OR EPOXY
- *REVISE HVAC DUCTING AND HEPA FILTERING
- ADD EMERGENCY BACK-UP POWER & UPS
- ADD ELECTRICAL OUTLETS
- ADD PRIVACY CURTAIN

SPECIAL MEDICAL EQUIPMENT – TO BE PROVIDED BY OTHERS (NON-USACE)

E1. VENTILATOR CAPABLE: STORAGE CABINET
E2. TELEMETRY/PUMP ON IV STAND
E3. STOOL
E4. OVER BED TABLE
E5. MOBILE WORK STATION
E6. LINEN HAMPER
E7. SHARPS/GLOVES
E8. HAND SANITIZER STATION
E9. INFECTIOUS WASTE
E10. CUBICLE CURTAIN

PHASES
1. SITE (State)
2. BUILD (USACE)
3. SUPPLY (FEMA)
4. STAFF (State)

STANDARD DESIGN

*COVID
Non - COVID
Scalable, Tailorable,
Site Adaptable
EXAMPLE: MISSOURI ACF AT FLORISSANT– FLORISSANT, MO
HOTEL TO HEALTHCARE (H2HC)

Alternate Care Facility Overview

- Location: Florissant, MO
- MSC: Northwest Division (NW D)
- FEMA Region: VII
- Contractor: Tarlton
- Type: Hotel (H2HC)
- Patient Type: COVID
- Facility Size: 45,000 SF
- Bed Capacity: 118
- Address: 55 Dunn Rd., Florissant, MO 63031

Timeline

- Assessment MA received: 06 APR 20
- Construction MA received: 06 APR 20
- Contract Awarded: 08 APR 20
- Construction Start: 08 APR 20
- Contractual Completion: 12 APR 20
- Estimated Completion: 11 APR 20
- Actual Completion: 11 APR 20
- Total Construction Duration: 4 Days
- Notes: 100% Complete; First patient admitted 15 APR.

Projected Bed Shortfall 07 JUN – 14 JUN

Plans

- Plans Key:
  - Layout of 3rd Floor
  - Total of 4 floors with similar layout.

- Notes:
  - 118 Patient Units
  - 4 Nurse Stations
  - 12 Support Areas

In Progress Photos

- COVID Convalescent Patient Room
- MG Toy Meets with Contractors

As of 050800JUN20
CONVERSION CONCEPTS:
A2HC TYPICAL POP-UP CARE SPACES

ENGINEERING CHANGES
1. ADD HVAC DUCTING AND HEPA FILTERING
2. ADD EMERGENCY BACK-UP POWER
3. ADD ELECTRICAL OUTLETS
4. ADD DATA OUTLETS
5. ADD PLUMBING

NEW EQUIPMENT
E1. VENTILATOR CAPABLE; STORAGE CABINET
E2. TELEMETRY/PUMP ON IV STAND
E3. STOOL
E4. OVER BED TABLE
E5. MOBILE WORK STATION
E6. LINEN HAMPER
E7. SHARPS/GLOVES
E8. HAND SANITIZER STATION
E9. INFECTIOUS WASTE
E10. PATIENT BED
CONVERSION CONCEPTS: A2HC TYPICAL LAYOUT

- 1 Nurse Station for each 15 Patients
- Total of 120 Pods

Facility Provided:
- Field House Ice Machine

Engineering Changes:
- All Typical Floor Plan Additions
- Add Generator

Medical Equipment:
- Storage Workstations
- Med Dispensing Units

Clean Room

Nurse Stations
Patient Pods
Mechanical Chase (Typical)
### Alternate Care Facility Overview

| Location: Denver, CO  
| MSC: South Pacific Division (SPD)  
| FEMA Region: VIII  
| Contractor: ECC Environmental LLC.  
| Type: Arena (A2HC)  
| Patient Type: COVID  
| Facility Size: 584,000 SF  
| Bed Capacity: 1,243  
| Address: 700 14th St., Denver, CO 80202 |

### Timeline

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<td>01 APR 20</td>
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<td>Contract Awarded</td>
<td>05 APR 20</td>
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<tr>
<td>Construction Start</td>
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<td>Total Construction Duration</td>
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### Notes:
- 100% Complete;

### Projected Bed Shortfall 07 JUN – 14 JUN

### Completed Photos

#### Staff Showers

#### Plans

- CLEAN
- HANDWASH STATION AND DRINKING FOUNTAIN
- NUTRITION
- SOILED
- NURSE STATION
- PATIENT ROOM
- BARIATRIC PATIENT ROOM
- RESUSCITATION PATIENT ROOM
- FLEX SPACE
- PHARMACY (ENCLOSED W/ DOOR)
- EXISTING TOILET ROOMS

As of 050800JUN20
MCCORMICK PLACE – CHICAGO IL
ARENA TO HEALTH CARE (A2HC)

- Facility size 1.5M SF
- Target Patient Areas – 3,000
- Three Halls
  - Hall “A” – 1750 Low Acuity Patient Spaces
  - Hall “B” – 750 Medium Acuity Patient Spaces
  - Hall “C” – 500 Low Acuity Patient Spaces
Total Construction Duration – 26 Days

Hall “B” Narrated by COL Reisinger, Chicago District Commander

https://usace.dps.mil/sites/KMP/LessonsLearnedVideos/Forms/AllItems.aspx?id=%2Fsites%2FKMP%2FLessonsLearnedVideos%2FA2HC%20Lessons%20Learned%20%2D%20McCormick%20Part%202%29%2Emp4&parent=%2Fsites%2FKMP%2FLessonsLearnedVideos&parent=%2Fsites%2FKMP%2FLessonsLearnedVideos&parent=%2Fsites%2FKMP%2FLessonsLearnedVideos&parent=%2Fsites%2FKMP%2FLessonsLearnedVideos
CONVERSION CONCEPTS: A2HC CONTAINERIZED OPTION

ENGINEERING CHANGES
- Field modified isolation room entry door
- Add louver with gravity damper and balancing damper
- Add exhaust fan with HEPA filtering
- Add mounted lighting
- Add emergency back-up power
- Add electrical and data outlets
- Add washable wall and floor covering

MEDICAL EQUIPMENT
- E1. Ventilator capable: Storage Cabinet
- E2. Telemetry/Pump on IV Stand
- E3. Stool
- E4. Over bed table
- E5. Mobile work station
- E6. Linen hamper
- E7. Sharps/Gloves
- E8. Hand sanitizer station
- E9. Infectious waste
- E10. Patient bed
BEST PRACTICES - LEANING FORWARD TO ADVANCE DELIVERY

Rapid Fabrication & Assembly

Forecasting Future Need

Advanced Modeling Tools

Technology-Enabled Collaboration Tools

Augmented Reality Technology

Framing, Oxygen & Containerized Solutions
BEST PRACTICES – CREATING A NEGATIVE AIR PRESSURE ENVIRONMENT

**COA 1:** demo window and exhaust to exterior

**COA 2 (Preferred):** exhaust through existing door to exterior

**Variable Frequency Drive**

**Pressure Sensor**

**Requirement:** -0.05” wc

**Diff. Pressure Monitor,** tied to building BMS

**Requirement:**

-0.05” wc

**Diff. Pressure Monitor,** tied to building BMS

**Particulate filter panel**

*(HEPA is behind)*

**Custom sheet metal fabrication**

**Existing door frame to exterior**
CHALLENGES AND CONSIDERATIONS FOR OUR AEC COMMUNITY

Challenges

• Predicting Need Dates, accuracy of models
• Speed of Delivery
• Supply chains
• No common set of terminology
• State/local orders directing limitation to travel

Considerations for the AEC Community

• Hospital design, what percentage should be capable for isolation infectious disease?
• Modular market, capacity to deliver numbers of units with speed?
• Energy Performance versus need for fresh air exchange
• Convention Centers, design, provide exhibitor areas, wall panels for multi purpose use
QUESTIONS
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<th>Status</th>
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<th>Facility Name</th>
<th>Location</th>
<th>COVID or NON-COVID</th>
<th>Type</th>
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<td>Blue Island, IL</td>
<td>COVID</td>
<td>A2HC</td>
<td>585</td>
<td>29-Mar-20</td>
<td>30-Mar-20</td>
<td>23-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>LRD</td>
<td>Sherman Hospital</td>
<td>Elgin, IL</td>
<td>COVID</td>
<td>A2HC</td>
<td>274</td>
<td>29-Mar-20</td>
<td>30-Mar-20</td>
<td>23-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>LRD</td>
<td>McCormick Place</td>
<td>Chicago, IL</td>
<td>COVID</td>
<td>A2HC</td>
<td>3,000</td>
<td>28-Mar-20</td>
<td>29-Mar-20</td>
<td>24-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>Hagerstown Correctional Facility</td>
<td>Hagerstown, MD</td>
<td>COVID</td>
<td>A2HC</td>
<td>0</td>
<td>10-Apr-20</td>
<td>13-Apr-20</td>
<td>24-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>LRD</td>
<td>Westlake Hospital</td>
<td>Chicago, IL</td>
<td>COVID</td>
<td>A2HC</td>
<td>430</td>
<td>5-Apr-20</td>
<td>6-Apr-20</td>
<td>24-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>SUNY Stony Brook</td>
<td>Stony Brook, NY</td>
<td>COVID</td>
<td>A2HC</td>
<td>1,028</td>
<td>29-Mar-20</td>
<td>29-Mar-20</td>
<td>26-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>SPD</td>
<td>Colorado Convention Center</td>
<td>Denver, CO</td>
<td>COVID</td>
<td>A2HC</td>
<td>1,243</td>
<td>5-Apr-20</td>
<td>9-Apr-20</td>
<td>27-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>SUNY Old Westbury</td>
<td>Westbury, NY</td>
<td>COVID</td>
<td>A2HC</td>
<td>1,024</td>
<td>29-Mar-20</td>
<td>31-Mar-20</td>
<td>27-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>St Francis Hospital</td>
<td>Trenton, NJ</td>
<td>COVID</td>
<td>A2HC</td>
<td>37</td>
<td>13-Apr-20</td>
<td>14-Apr-20</td>
<td>27-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>SPD</td>
<td>Atsia Biyaazh School - Navajo Nation</td>
<td>Shiprock, NM</td>
<td>NON-COVID</td>
<td>A2HC</td>
<td>40</td>
<td>17-Apr-20</td>
<td>18-Apr-20</td>
<td>29-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>New Bridge-Bergen Med Ctr Parking Lot</td>
<td>Paramus, NJ</td>
<td>NON-COVID</td>
<td>A2HC</td>
<td>100</td>
<td>14-Apr-20</td>
<td>15-Apr-20</td>
<td>29-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>Javits Center</td>
<td>New York, NY</td>
<td>COVID</td>
<td>A2HC</td>
<td>2,106</td>
<td>25-Mar-20</td>
<td>30-Mar-20</td>
<td>30-Apr-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>SPD</td>
<td>Chinle Community Ctr - Navajo Nation</td>
<td>Chinle, AZ</td>
<td>NON-COVID</td>
<td>A2HC</td>
<td>50</td>
<td>17-Apr-20</td>
<td>18-Apr-20</td>
<td>1-May-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>SPD</td>
<td>The Ranch Events Complex</td>
<td>Loveland, CO</td>
<td>COVID</td>
<td>A2HC</td>
<td>192</td>
<td>8-Apr-20</td>
<td>11-Apr-20</td>
<td>1-May-20</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>NAD</td>
<td>East Orange General Hospital</td>
<td>East Orange, NJ</td>
<td>COVID</td>
<td>A2HC</td>
<td>250</td>
<td>7-Apr-20</td>
<td>9-Apr-20</td>
<td>3-May-20</td>
<td>100%</td>
</tr>
</tbody>
</table>

**ASSESSMENTS**
- 1,155 REQUESTED
- 1,155 COMPLETED

**TENTATIVE**
- 0 FACILITIES
- 0 BEDS

**PENDING**
- 0 FACILITIES
- 0 BEDS

**USACE DESIGN/STATE EXECUTED**
- 36 FACILITIES
- 12,745 BEDS

**USACE EXECUTED**
- 38 FACILITIES
- 15,074 BEDS

**COMPLETED PROJECTS:** 14,681 Bed Spaces Currently Available

**48 HOUR PROJECTION:** 14,500 TOTAL Bed Spaces Available

**USACE COVID-19 RESPONSE**

**ALTERNATE CARE FACILITY (ACF) ROLL UP (1/2)**
# USACE COVID-19 RESPONSE

## ALTERNATE CARE FACILITY (ACF) ROLL UP (2/2)

### COMPLETED PROJECTS:
- 14,374 Bed Spaces Currently Available
- 0 Bed Spaces Currently Available

### 48 HOUR PROJECTION:
- 14,400 TOTAL Bed Spaces Available

### Status | MSC | Facility Name | Location | COVID or NON-COVID | Type | Bed Capacity | Award Date | Start Date | Complete Date | Comp. %
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
A | NAD | Walter Washington Convention Ctr | Washington, DC | COVID | A2HC | 443 | 16-Apr-20 | 22-Apr-20 | 8-May-20 | 100% |
A | SAD | 210th ARNG Regional Training Institute | St. Croix, VI | COVID | H2HC | 24 | 17-Apr-20 | 24-Apr-20 | 8-May-20 | 100% |
A | SWD | Integris Baptist Medical | Oklahoma City, OK | COVID | H2HC | 110 | 26-Apr-20 | 27-Apr-20 | 8-May-20 | 100% |
A | SWD | OSU Medical Center | Tulsa, OK | COVID | H2HC | 125 | 26-Apr-20 | 27-Apr-20 | 10-May-20 | 100% |
A | NWD | Eugene River Avenue Facility | Eugene, OR | COVID | H2HC | 42 | 17-Apr-20 | 18-Apr-20 | 13-May-20 | 100% |
A | MVD | Milwaukee County HOC Lotter House | Milwaukee, WI | COVID | H2HC | 120 | 30-Apr-20 | 4-May-20 | 21-May-20 | 100% |
A | NWD | Kalispell Regional Medical Center | Kalispell, MT | NON-COVID | A2HC | 100 | 5-May-20 | 6-May-20 | 26-May-20 | 100% |
A | LRD | Nashville General Hospital | Nashville, TN | COVID | H2HC | 67 | 1-May-20 | 4-May-20 | 29-May-20 | 100% |
A | SPD | St Luke’s (Phoenix) | Phoenix, AZ | COVID | H2HC | 254 | 11-Apr-20 | 12-Apr-20 | 1-Jun-20 | 100% |
A | SWD | Memorial Hospital of Texas County | Guymon, OK | COVID | H2HC | 8 | 24-May-20 | 26-May-20 | 5-Jun-20 | 100% |
A | LRD | Commercial Appeal Building | Memphis, TN | COVID | A2HC | 401 | 16-Apr-20 | 16-Apr-20 | 10-Jun-20 | 100% |

### Assessments

- **ASSESSMENTS**
  - 1,155 REQUESTED
  - 1,155 COMPLETED

### Tentative

- **TENTATIVE**
  - 0 FACILITIES
  - 0 BEDS

### Pending

- **PENDING**
  - 0 FACILITIES
  - 0 BEDS

### USACE Design/State Executed

- **USACE DESIGN/STATE EXECUTED**
  - 36 FACILITIES
  - 12,745 BEDS

### USACE Executed

- **USACE EXECUTED**
  - 38 FACILITIES
  - 15,074 BEDS

---

**COMPLETED PROJECTS:** 14,374 Bed Spaces Currently Available

**48 HOUR PROJECTION:** 14,400 TOTAL Bed Spaces Available

---

UNCLASSIFIED//FOUO
## USACE TERMINOLOGY:
### COVID-19 PERFORMANCE WORK STATEMENTS (PWS)

<table>
<thead>
<tr>
<th>Patient Diagnosis</th>
<th>Acuity **</th>
<th>Clinical Differentiation Impacting the Facility Design</th>
<th>NFPA 99 Space Category &amp; NFPA 101 Classification</th>
<th>Recommended Facility Solution per PWS’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVD Positive</td>
<td>Acute*</td>
<td>Airborne Infectious On Ventilator</td>
<td>Cat 2 Plus* (General/Critical Care) Non-Ambulatory</td>
<td>Hotel/Barracks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Single Patient Space</td>
</tr>
<tr>
<td>COVID Positive or Presumed Positive (pending test)</td>
<td>Non-Acute</td>
<td>Airborne Infectious Not On Ventilator. May require supplemental oxygen</td>
<td>Cat 3 (Basic Care) Ambulatory</td>
<td>Single Patient Space</td>
</tr>
<tr>
<td>NON-COVID</td>
<td>Non-Acute</td>
<td>Not airborne infectious</td>
<td>Cat 3 (Basic Care) Ambulatory</td>
<td>No Special Requirements – No negative pressure. Multi-patient room permissible Line of sight not required</td>
</tr>
<tr>
<td>NON-COVID</td>
<td>Acute</td>
<td>Not airborne infectious May require medical support spaces not in ACF.</td>
<td>Cat 2 (General Care) Non-Ambulatory</td>
<td>Typical Med/Surg May not be appropriate for ACF*</td>
</tr>
</tbody>
</table>

**Applicable Performance Work Statement for Alternate Care Facility (ACF)
- H2HC Acute or B2HC Acute
- H2HC Non-Acute or B2HC Non-Acute
- A2HC Acute
- A2HC Non-Acute (NON-COVID)**

**NOTES**

* Category 2 Plus applies NFPA 99 Category 2 considerations (General Care – risk of minor injury) plus additional Category 1 provisions (Critical Care – risk of major injury or death) as relates to the specific needs of a COVID-positive patient on a ventilator.

**This column is not intended to represent true clinically defined patient acuity but represents a general categorization (and terminology) used across the PWS’s
Key Points
- We are looking to marshal the support and capability of the industry to help with this crisis
- Powering Down- Districts are empowered reach out to local leaders and help them to frame options

Alternate Care Site Documents
- Developed by USACE and HHS medical and construction experts to help States and municipalities address potential shortages in medical facilities during the 2020 COVID-19 pandemic
- Intended to assist in assessing and developing potential facilities for suitability as alternate care sites and to rapidly engage contractors to convert and prepare them for medical use.
- May not fit all circumstances
- Local & state governments must determine appropriate use of facilities

Execution
- Magnitude and required speed of effort requires Federal, State, and local agencies issue be able to contract work
- The decision is by the State and FEMA!
- Primarily via emergency contracting authorities to local/regional firms (large or small business) with capability to begin immediately and execute the work rapidly
  - Contracted either by USACE or to State and local authorities
  - Governor must request FEMA provide the mission assignment (MA) to USACE
  - FEMA must provide USACE the MA under our Emergency Support Functions (ESFs) to be the executing agent
    - Example: NY was a directive from FEMS
RECOMMENDED FACILITY CONSIDERATIONS

All Facilities
- Within 10 miles/30 min of permanent medical hospital, HazWaste disposal, linen/laundry, pharmacy
- ADA compliant only to current ADA compliance of existing facility
- Facility templates and standards are adapted from DoD UFC criteria.
- Municipality and Construction Agent must discuss and agreed upon use of local municipality/county/state standards
- State or City Owned Property Preferred.
- Cost estimates
  - Do not include real estate, lease acquisition, restoration costs post-medical use
  - Are minimum costs for renovation/construction and IO&T. Actual costs developed when site adapting each facility.

Hotel to Healthcare (H2HC) Specific
- Built/Renovated after 1990 (mitigate lead paint/asbestos)
- Single Room with attached Bathroom
- Install exhaust on Exterior walls if needed
- Sprinklered and meets Fire Code
- Modern Power 3-Phase, 3-Wire

Arena to Healthcare (A2HC) Specific
- Existing redundant power or emergency power
- Can be modified or supplemented to meet Fire Code.
- Stage temporary facilities on perimeter (including med waste, sanitary, soiled linen, hand washing, med supply/pharmacy)
- Modern Power 3-Phase, 3-Wire w/ temp power supplemented to patient care areas on floor
CONVERSION CONCEPTS: H2HC FLOOR PLANS

Ground Floor Plan

- Staff Entrance
- Generator
- Laundry Room
- Patient Admin
- Break Room
- On-Duty Quarters
- Medical Gas Storage
- Sterile Storage
- Pharmacy
- Med Storage
- On-Duty Quarters
- Dining
- Kitchen
- Admin Storage
- Patient Rooms
- Red Bag Disposal Area
- Bldg. Security
- Command Center Security
- Dirty/Dirt/Dirty Area
- Dirty Room

Ground Floor Plan – Option 2

- Generator
- Kitchen
- Dining
- Laundry Room
- Nurse Station
- Patient Rooms
- Red Bag Disposal Area
- Bldg. Security
- Command Center Security
- Dirty/Dirt/Dirty Area
- Dirty Room

Typical Floor Plan

- Staff Entrance
- Generator
- Laundry Room
- Patient Admin
- Break Room
- On-Duty Quarters
- Medical Gas Storage
- Sterile Storage
- Pharmacy
- Med Storage
- On-Duty Quarters
- Dining
- Kitchen
- Admin Storage
- Patient Rooms
- Red Bag Disposal Area
- Bldg. Security
- Command Center Security
- Dirty/Dirt/Dirty Area
- Dirty Room

Typical Floor Plan – Option 2

- Generator
- Kitchen
- Dining
- Laundry Room
- Nurse Station
- Patient Rooms
- Red Bag Disposal Area
- Bldg. Security
- Command Center Security
- Dirty/Dirt/Dirty Area
- Dirty Room

Engineering Changes
- All typical floor plan additions
- PLUS GENERATOR
- Hotel furniture for staff quarters
- Hotel kitchen
- Hotel dining
- Hotel vestibule
- Hotel CCTV for security
- Hotel card readers

New Equipment
- Metal detector
- VTC for command center
- Control room access
- Infectious clean
- Reminders gates
- Eye handwash stations

Engineering Changes
- All typical floor plan additions
- PLUS GENERATOR
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- Control room access
- Infectious clean
- Reminders gates
- Eye handwash stations
CONVERSION CONCEPTS:
H2HC – SITE IMPROVEMENT PLAN

ENGINEERING CHANGES

- ADD PERIMETER FENCING
- ADD GENERATOR
- ADD PATIENT SCREENING TENT
- ADD EXTERIOR PHARMACY
- ADD MED GAS STORAGE
- ADD ACCESS CONTROL POINT (ACP)
- ADD RED BAG DISPOSAL AREA
BEST PRACTICES – CONTINUAL COMMUNICATION & COORDINATION

• Districts empowered to engage directly with FEMA, State, and local governments to assist as necessary
  o Engagement prior to facility assessment key to establishing common understanding of expectations and requirements
  o Early communication of risks enabled informed decision-making on appropriate facility selections
• Daily internal / external status meetings at multiple echelons to coordinate response efforts (includes Senior Commanders / Executives at HQs, Divisions, Districts, and Centers and within specific project delivery teams)
  o Maintained situational awareness across Command
  o Enabled timely communication and resolution of challenges/impacts to delivery
  o Allowed for sharing of best practices and lessons learned