ENGINEERING & CONSTRUCTION
FY21 OPPORTUNITIES

Mark W. Sutton, P.E.
Lead Civil Engineer
Huntington/Great Lakes & Ohio River
Division/Engineering & Construction Division
8 October 2020
ENGINEERING & CONSTRUCTION DIVISION

— Responsible for providing leadership, management, strategic planning, regionalization, resource balancing and development, staff supervision, integration, unification and implementation of policies regarding engineering and construction work throughout the Huntington District.

— Responsible for all construction program requirements, including contract and construction management, quality assurance, and technical services.

— Responsible for performing supervision of EPA superfund work assignments in Ohio and West Virginia; grant assistance for HUD in West Virginia and part of Ohio; and military DERP projects in West Virginia and part of Ohio.
ENGINEERING & CONSTRUCTION DIVISION

August W. Martin, PE, PMP
Chief, Engineering and Construction Division

Shane D. Hall, PE
Deputy Chief, Engineering and Construction Division
Chief, Construction Management and Field Support Branch

William A. Miller, PE
Chief, Design Branch
<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Location</th>
<th>Release Date (Qtr)</th>
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LOWER MUD RIVER FLOOD RISK MANAGEMENT

Milton, West Virginia

- Lower Mud River Basin
  - Extends from its confluence with Middle Fork in Hamlin to the mouth of Mud River in Barboursville
  - Milton is the major flood damage center in basin
    - Over 450 residential and 160 commercial structures located within the 500-year floodplain

- Milton, West Virginia
  - Located 19 miles above the mouth of Mud River
  - Growing population currently estimated at 2,600
LOWER MUD RIVER FLOOD RISK MANAGEMENT

History of Flooding


- Flood of record occurred in March 1997
  - Estimated 3.7% annual chance of exceedance (27-year flood event)
  - Caused over $23M dollars in damage (1997 price levels) $42M in FY18 price level
  - Damaged approximately 360 residential structures, 80 businesses, and 20 public and institutional buildings including two schools
  - Inundated portions of US Route 60 – cutting off access for emergency response

- Similar flood events occurred in 1913, 1939, and 1978

- More recent events have occurred in 2015 and 2018
City of Milton

*Simulated 1% Annual Chance of Exceedance (100-year Flood Event)*

- Majority of the City of Milton lies within the 100-year floodplain – limiting future economic growth and development
- Flood of Record within Milton is estimated at a 3.7% annual chance of exceedance (27-year flood event)
- Estimated damage to residential and commercial structures during the 1% annual chance of exceedance (100-year flood event) is over $68M
  - Damage would occur to approximately 550 structures including 145 commercial structures
- Additional consequences associated with flooding
  - Life safety risk
  - Damage to infrastructure including utilities, roadways, and bridges
  - Vehicle damage
  - Cost of emergency response and recovery
  - Loss of economic productivity
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Overall Site Plan

0.4% Annual Chance of Exceedance (250-year) Levee with Channel Modification

- Major Project Features:
  1. Levee
     a. ~8300 ft. in length
     b. ~19 ft. tall on average
  2. Pump Stations
     a. Newman’s Branch
     b. John’s Branch
  3. Gate Closure
     a. Height: 6.4 ft.
     b. Width: 33 ft. - 3 in.
     c. Type: Stop Log
  4. Channel Relocation
     a. ~4200 ft. in length
  5. Environmental Mitigation
     a. Wetland/ Development
     b. Natural Channel Development
  6. Parking Mitigation
     a. Field Parking Development

250-year Levee Alignment and Channel Modification within Milton, WV
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Levee

0.4% Annual Chance of Exceedance (250-year) Levee with Channel Modification

- Levee Features:
  1. ~8300 ft. in Length
  2. 19 ft. in Height (Average)
  3. Impervious Earth Fill Composition
  4. Cutoff Wall/Seepage Barrier
     a. ~7600 ft. in Length
     b. Variable Depth to Bedrock
  5. Aggregate Crest Access Road
  6. Aggregate Interior Toe Access Road
  7. Filter Drainage
  8. Stone Slope Protection
     a. Select Sections of River Side
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Pump Stations

0.4% Annual Chance of Exceedance (250-year) Levee with Channel Modification

1. Newmans’ Branch Pump Station
   a. Capacity: 63,000 GPM
   b. 3 Vertical Line Shaft, Mixed Flow Pumps
   c. 2 - 6 ft. x 6 ft. Gravity Outfall Culverts

2. Johns’ Branch
   a. Capacity: 87,750 GPM
   b. 3 - Vertical Line Shaft, Mixed Flow Pumps
   c. 2 - 8 ft. X 6 ft. Gravity Outfall Culverts
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Gate Closure

0.4% Annual Chance of Exceedance (250-year) Levee with Channel Modification

- Stop Log Gate Closure Features:
  1. Closure Width: 33'-3"
  2. Closure Height: 6-5"
  3. Two (2) Support Posts
  4. Three (3) Stop Log Bays
  5. Storage Building

Typical Storage Building  
Typical Gate Installation
Includes:
1. ~4200 LF of New Channel
2. Two Channel Plugs US and DS ends of remnant channel
3. Raw Water Intake Structure and Weir
4. Stone Slope Protection on Bends
5. Environmental mitigation/natural channel features
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Environmental Mitigation

0.4% Annual Chance of Exceedance (250-year) Levee with Channel Modification

- Includes:
  1. Natural Channel Features within the 4200 LF of Channel Relocation
  2. Wetland Development Along Relocated Channel and within Select Borrow Sites
Mitigation for Cultural Resource

1. Applies to parking for Pumpkin Festival Only, not for Pumpkin Park Parking.
2. Current Plan Calls for filling Sewage Lagoons and grading them into a parking area.
Subcontracting Opportunities

- Demolitions
  - Required to remove and dispose of residential and commercial structures acquired by the Non-Federal Project Sponsor prior to proposed construction activities
- Seepage Barrier/Cutoff Wall
  - Component of the levee cross section
- Pump Stations
  - Structural Concrete
  - Architectural Infrastructure
  - Mechanical/Electrical
- Gate Closure
  - Structural Concrete
  - Structural Steel
  - Mechanical/Electrical
  - Roadway
- Environmental Mitigation/Monitoring
  - Wetland development at borrow sites
  - Stream bank development
LOWER MUD RIVER FLOOD RISK MANAGEMENT

Construction Contract Structure

- Phased
  - Non-Federal Sponsor funding availability
  - Non-Federal Sponsor real estate acquisition

Forecast

- Anticipated Construction Contract Advertisement: 2\textsuperscript{nd} Quarter FY21
- Start Construction: 4\textsuperscript{th} Quarter FY21