SEWER SUPERHIGHWAY: FAST TRACK FOR A LARGE DIAMETER CONSENT DECREE PIPELINE

Jeff Farnsworth, P.E.
Kimley-Horn
David Bennett, P.E.
AGENDA

- Background
- Design Criteria
- Design Challenges
- Tunneling
- Current Project Status
- Conclusion
- San Antonio growth
- San Antonio Water System (SAWS)
- Over 5,200 miles of sewer pipe
- Aging WW infrastructure
- SSOs Common
Environmental Protection Agency (EPA)

June 2013 EPA Consent Decree agreement w/SAWS

Significantly Reduce Sanitary Sewer Overflows (SSOs)

10-year period

Replacement & rehabilitation of aging WW infrastructure
3 Primary Watersheds

- Eastern Watershed
- Trunkline, E19
E-19: Seguin Rd to Nacogdoches Rd

- Largest capacity problem in SAWS system
- Built in 1970s
- 6 miles in length
- Existing 42”/48” RC P
► Pipeline at capacity during dry weather
► During minimal rains, 50,000 – 100,000 gal or greater SSOs
► Replacement with 60” to 78” pipeline

BACKGROUND – PROJECT DETAILS
- Expedited design due to SSOs
- Alignment through U.S. Military Installation (1 mile)
- 2 major hospital complexes
- Close proximity to a major creek (3 crossings)
- Existing pipeline in easements and public ROW
- 3 large siphons
- 2 major highway crossings
- 1 railroad crossing
- Multiple arterial roads
- Replace-in-place alternative
- Parallel pipe alternative
- Dry weather flows = 24 MGD
- Projected peak wet weather flows = 93 MGD
- Extended bypass pumping not desired
- Parallel pipeline alternative selected

DESIGN CRITERIA
- Narrow Roadway
- Limited Time for ROW Acquisition
- Adjacent Major Waterway
- Existing Utilities
- Adjacent Permanent Improvements
- Critical Path
- Initial Stakeholder meeting
- Frequent coordination
- Existing easements
- No Dig
- Categorical Exclusion

DESIGN CHALLENGES
FORT SAM HOUSTON
Proposed 78” SS line between transmission and distribution power lines

DESIGN CHALLENGES

FORT SAM HOUSTON
- Surface disruption within 25-ft easement only
- 30-ft depth
- Proximity to power lines
- Space for tunnel shafts
- Groundwater
- Trenchless methods

DESIGN CHALLENGES
CONSTRUCTION METHOD
- Hand mining
- Open shield pipe-jacking
- Micro-tunneling
- Subsurface Conditions
- Shaft Locations

DESIGN CHALLENGES TUNNELING
Tunnel No. 1 - Freedom Park

DESIGN CHALLENGES - TUNNELING
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Tunnel No. 2 - Freedom Park
Tunnel No. 2 – Binz-Engleman

DESIGN CHALLENGES - TUNNELING
Tunnel No. 2 – Binz-Englema nn

DESIGN CHALLENGES - TUNNELING
Tunnel No. 2 – Binz-Englema nn

DESIGN CHALLENGES - TUNNELING
Tunnel No. 3 - FSW / SAMMC

DESIGN CHALLENGES - TUNNELING
Tunnel No. 3 – FSW / SAMMC

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Tunnel No. 3 – FSW / SAMMC

DESIGN CHALLENGES - TUNNELING
DESIGN CHALLENGES - TUNNELING

Tunnel No. 4 - Walzem Creek

Existing Siphon

Existing 9x9 MBC

MBC Headwall

MATCH LINE STA. 157+00
Tunnel No. 4 – Walzem Creek
CURRENT PROJECT STATUS

SEGMENT 1:
- Project design completed November 2016
- Bid/Award phase Nov 2016 – Feb 2017
- Construction NTP – March 2017
- Project completion – March 2019

SEGMENT 2:
- Project design completed March 2018
- Bid/Award phase April – June 2018
- Construction NTP – July 2018
- Project completion – July 2020
QUESTIONS?

Jeff Famsworth, P.E.
Kimley-Horn
Jeff.Famsworth@Kimley-Horn.com

David Bennett, P.E.
Freese and Nichols
David.Bennett@Freese.com

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