RFQ INFORMATIONAL SESSION

Allegheny River Tunnel (ART) Final Design Consultant (FDC) Services

02/29/2024 2:00 PM
Location: MS Teams

Agenda

- Introduction
  - Communications During ART FDC Procurement Phase
  - ART FDC Procurement Schedule
  - Procurement Discussion
- ART FDC Services Coordination
- ART Project Background
- ART FDC Services to Be Provided
- Questions/Comments

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ALCOSAN Communications

- Questions due by 2:00 PM EST, April 1, 2024.
- Questions and requests for clarification regarding this RFQ must be directed, in writing, to:

  Suzanne Thomas at Procurement@alcosan.org

  Please do not contact other ALCOSAN staff regarding this procurement.

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ART FDC Procurement Schedule

• April 12, 2024	Qualifications Due
• May 2024	Shortlist / RFP Release
• July 2024	Proposal submission due
• August 2024	Interviews
• September 2024	Contract Award
• October/November 2024	Negotiate, Award Fee, Issue Notice to Proceed

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ART FDC Procurement Information

- BODR and Geotechnical Field Manual/Survey available upon request to Procurement.
- Ten (10) hard copies and one (1) electronic
- Administrative Requirements of the Procurement
- Delivery to the Admin Annex Building, Room 106.
- Q&A and attendee list will be posted on the website
- SF 330 required (available on the ALCOSAN Website)

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ART FDC Services Coordination

- ALCOSAN Directors with oversight on Services – Kim Kennedy, Mike Lichte, Michelle Buys
- With support from and/or in coordination with :
  - Clean Water Program Director – CDM Smith
  - Tunnel Program Management (PM) – Shawn McWilliams & Consultant (Jacobs)
    - As well as ORT FDC (Mott MacDonald) & ART NSF6 FDC (DLZ)
  - Outside Utilities and Stakeholders
- ALCOSAN Procurement officer: Suzanne Thomas

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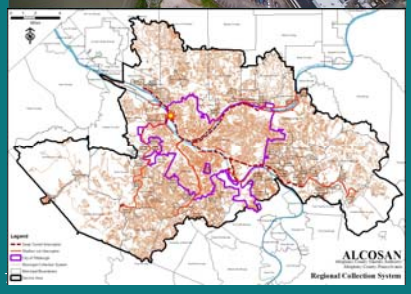
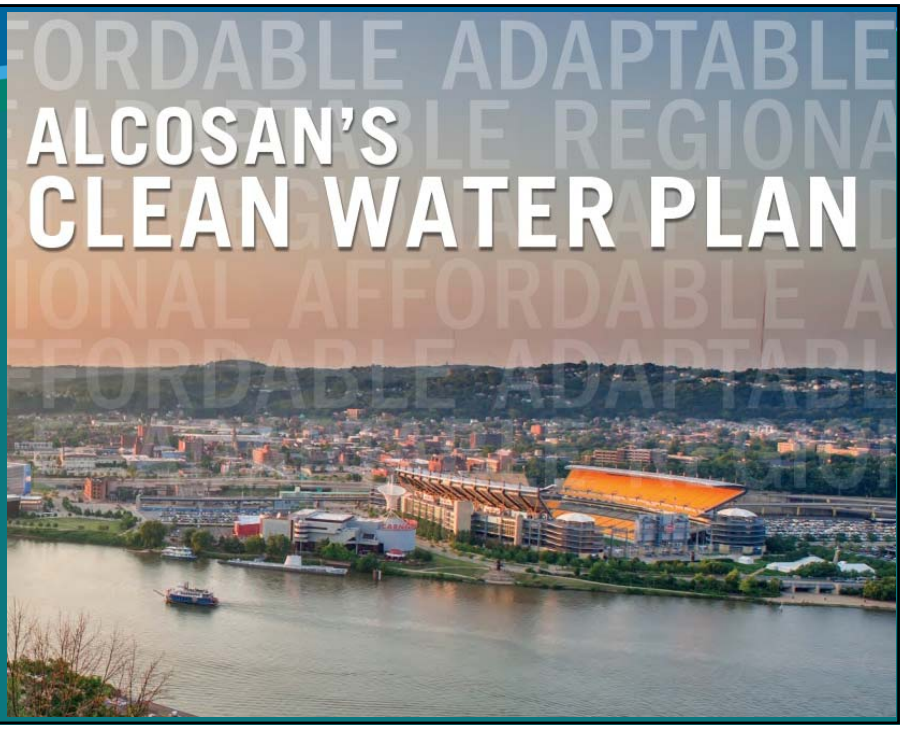
Allegheny County Sanitary Authority



- Provides wastewater treatment services to 83 communities in Allegheny County, including the City of Pittsburgh
- 59-acre wastewater treatment plant
- 250 million gallons per day treatment capacity
- Operates 24 hours/day, 365 days/year
- Entirely funded by ratepayers
- 20% of service area have combined sewer systems, populated by 50% of customer base
- Currently owns 90 miles of interceptors and 18 miles of trunk sewers. Remainder are municipal/authority owned
- 300 discharge points

- Modified Consent Decree approved May 15, 2020
- First phase projects must be completed by the end of 2036
- Involves $2 billion* in investment
- Reduce overflows for improved water quality
  - Demonstration Approach
- Other benefits to region include jobs



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* In 2010 dollars

Key References

Availability	Reference
On ALCOSAN's website	ALCOSAN Clean Water Plan (2019), including Interim Measures Wet Weather Plan (IWWP).
	Modified Consent Decree (2020).
In RFQ	Preliminary Basis of Design Report (BODR). Approved March 30, 2021.
Selected FDC only	Proposed Revisions to the Interim Measures (2020 Revisions Report). Approved March 30, 2021.
	Proposed Revisions to the Interim Measures (2023 Revisions Request). Approved August 4, 2023.

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BODR Content

Section 1 Executive Summary
Section 2 Introduction
Section 3 Systemwide Hydraulics and Operations
Section 4 Systemwide Overview – Geotechnical
Section 5 Systemwide Overview – Environmental
Section 6 Electrical Power Requirements
Section 7 Mechanical Design
Section 8 Instrumentation and Control
Section 9 Risk management
Section 10 Ohio River Tunnel Segment
Section 11 Allegheny River Tunnel Segment
Section 12 Monongahela River Tunnel Segment
Section 13 Survey and Base Mapping
Section 14 Structural Design Criteria
Section 15 Permitting Requirements
Section 16 Project Sequencing Scheduling and Packaging
Section 17 EOPCC
Section 18 Future Considerations

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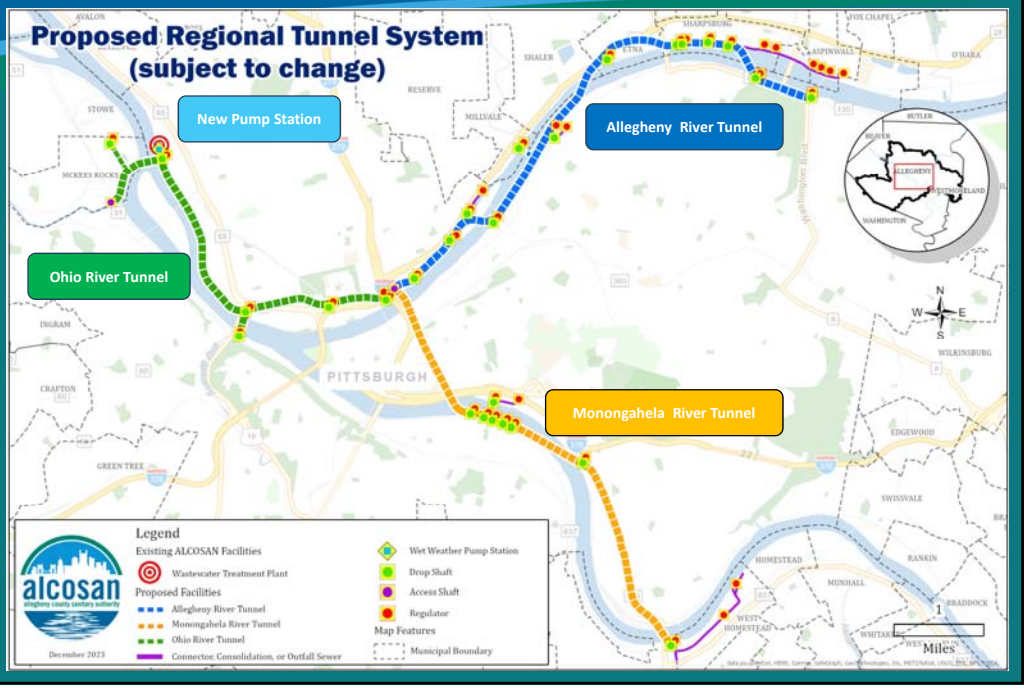
Regional Tunnel System*



* Updated from BODR/ Section 2

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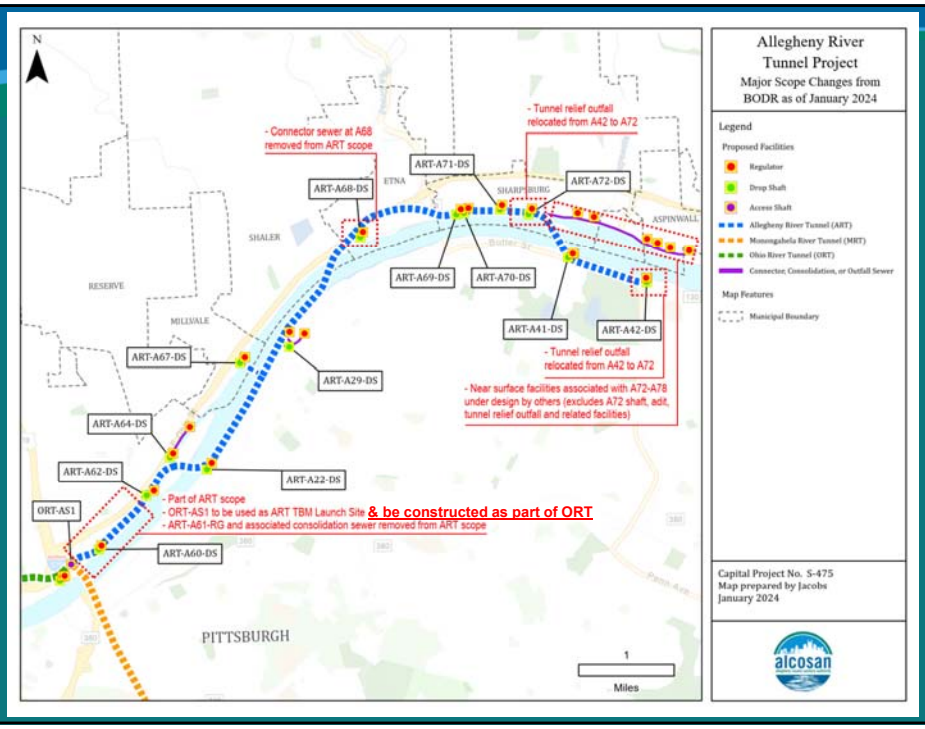
ART Current Horizontal Alignment & Major Scope Changes Compared to BODR/Section 11



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ART Main Scope as of 2/2024

- TBM launch shaft (designed/constructed by others) at AS1 Site/Interface with ORT project
- TBM retrieval shaft (A42 Site)
- ART main tunnel – 18 ft finished diameter, ~6.2 miles (~32,740 ft) long, 120 to 150 ft underground
- 13 drop shafts (including A42) and associated adits/connector tunnels
- 4 active control gates
- 15 new regulators, conveyance sewers and modified outfalls, including 1 tunnel relief outfall at A72/Interface with ART NSF6 project at A72 Site
- Evaluate proposed regulator modifications/weir adjustments along the ART and recommend final improvements

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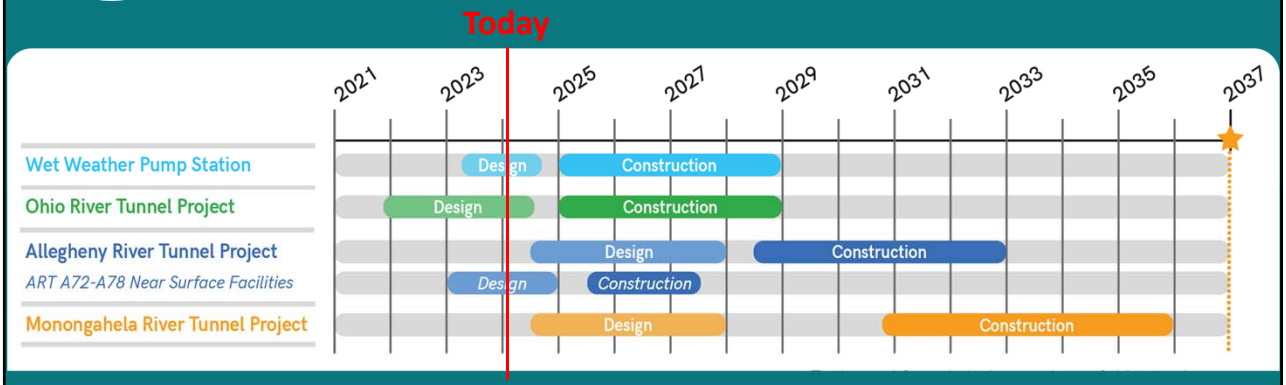
Implementation Schedule



*Overall schedule driven by Modified Consent Decree schedule. Final completion by December 31, 2036, including commissioning. Detailed design and construction schedule **subject to change**. Last update: Feb 2024.*

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Scope of Services (Overview)

DESIGN PHASE

- Progress the preliminary design and deliver 30%, 60%, 90% and 100% design documents for review and approval; including:
  - Optimize tunnel alignment and layouts at each construction sites
  - Perform hydraulic design
  - Provide survey services
  - Conduct geotechnical investigation and prepare a GDR and GBR
  - Collect supplemental environmental data and prepare an EDR
  - Evaluate and recommend construction methods/technologies
  - Design I&C and electrical system for the ART project
  - Evaluate contract packaging
  - Prepare and submit a construction schedule and bottom-up cost estimate at each stage of completion
- Identify and obtain all necessary permits
- Identify required construction and permanent easements and work with Property Acquisition consultants to acquire necessary property
- Coordinate with applicable stakeholders and facilitate necessary licenses and agreements
- Advance/maintain ART project-level risk register

BIDDING PHASE (standard bidding phase services)

CONSTRUCTION PHASE (not included in this Scope)

Optimize Tunnel Alignment and Layouts at Each Construction Site

- Section 18 of the BODR
  - Confirm/refine flow rate management into the tunnels
  - Optimize tunnel relief outfall locations and sizes
  - Optimize siting and configuration of all proposed regulators, drop shafts, and consolidations sewers including evaluation of additional locations as needed. Particular attention will need to be given to sites A-22, A-42, and A-68 due to current and anticipated site constraints.
  - Optimize tunnel alignment based on final sites for drop shafts, property considerations, and hydrogeologic conditions

Hydraulic Design

- Section 3 of the BODR provides information on System Wide Hydraulic and Operational Design
  - Regulator and drop shaft design flows
  - Surge and air movement results
- Scope of work items:
  - Update of IWWP and Selected Plan (SP) models at 30, 60, 90, and 100% designs
  - Conduct surge analysis to confirm or refine surge management strategies
  - Conduct hydraulic analysis to confirm performance of proposed facilities including CFD and/physical modeling if needed
  - Assess air movement and odor control
  - Evaluate recommended drop shaft types for each site
  - Conduct sediment transport analysis

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Models to Made Available to Selected FDC

- PCSWMM, Engine 5.2.3
  - Existing Conditions (20230701-SW-PD-EC-TY-AM-CDM)
  - IWWP (20230801-SW-TP-IP-TY-KK-WT) includes IWWP improvements but no municipal improvements
  - Selected Plan (20231001-SW-TP-SP-TY-KK-WT) includes IWWP & SP improvements and municipal improvements
- Illinois Transient Model – Surge Model

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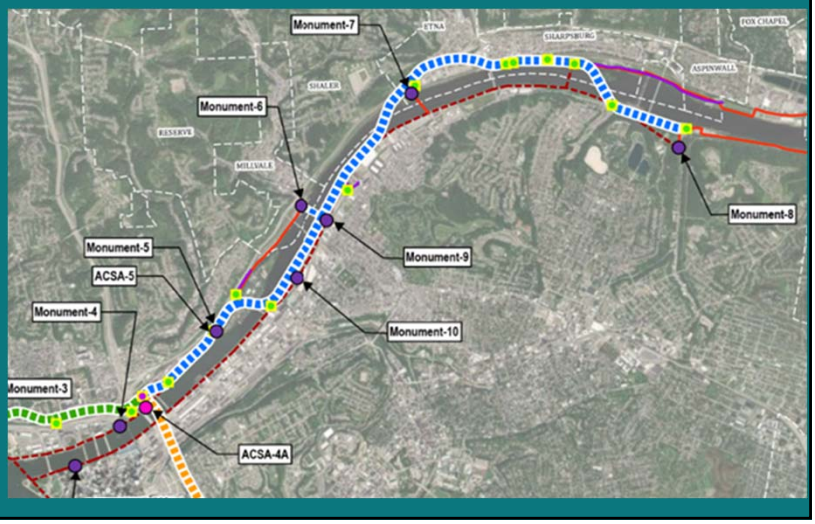
Survey Requirements

- Provide survey services for all designed facilities following:
  - TPMC Survey Recommendations for Final Design Consultants TM (Revision 3 dated August 2023; included as part of the RFQ).
- The work includes Level Loop Survey on Monuments 5 through 10, tying into the ORT survey monument ACSA-4A.



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Geotechnical Conditions

- Section 4 of the BODR provides the Systemwide Overview of Geotechnical Conditions
  - Three phases of geotechnical investigations – 74 borings Total
    - Phase 1 investigations (12 borings) reported in Appendix B of the BODR
    - Appendix E contains the Geotechnical Data Report (Phase 2 and 3)
    - Appendix F contains the Geotechnical Design Memorandum
  - Boring depths for tunnel alignment 100-300 feet and near surface boring depth 60-70 feet
  - Selected boreholes had observation wells and vibrating wire piezometers installed for collecting groundwater elevation data

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Geotechnical Conditions (cont.)

- Additional data available beyond BODR – to be made available to selected FDC.
  - ALCOSAN Historical Boring Database from past projects. (1704 Records)
  - A-42 Additional Investigation by Hatch:
    - Geotechnical Data Report for Investigation Near Allegheny River Lock and Dam #2 in Pittsburgh, Pennsylvania. November 2022
  - Selected Borings from ORT Final Design
  - Selected Borings from NSF Package 6 Final Design

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Geotechnical Recommendations (see Section 18 of BODR)

- Additional borings approximately every 500-1000 feet along tunnel alignment and every 200-300 feet along consolidation sewer alignment
- Additional borings at new large regulators, and shaft locations
- Hydrogeologic monitoring at new shaft locations
- Additional Laboratory Sampling
- Field sampling for contamination (PID) and combustible gas
- Numerous explosions in original tunnel construction (1957)
- ALCOSAN may suggest a set aside budget for this effort for cost proposals and loading
- GDR and GBRs assumed as part of ART Final Design

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Geotechnical Investigation Process

- Enact a geotechnical investigation program in accordance with ALCOSAN's Geotechnical Field Manual (GFM).
  - ART FDC will be required to utilize OpenGround by Bentley for boring log development.
- Drilling Services:
  - Consultant shall include a minimum of two drilling companies on the project team to allow drilling activities to be shifted between drilling companies as needed to enhance scheduling.
  - Once the consultant is awarded the ALCOSAN contract, the consultant shall obtain proposals including qualifications and pricing from the drilling companies included on the project team.
  - The consultant shall review these proposals and select one or more drilling companies to complete the geotechnical investigation based on the company qualifications and proposal. Work can be distributed based on scope and availability of companies to complete the work in a timely manner.
- Firm(s) providing geotechnical logging services shall not be direct employees of the firm(s) performing geotechnical investigation drilling services.

Environmental Requirements

- Section 5 of the BODR
  - Environmental Screening Report in Appendix G of BODR
- Designer needs to maintain an overall awareness of environmental concerns at all sites
- At primary work shaft sites, Property Acquisition team will conduct Phase 1 and Phase 2 ESAs.
- *Designer shall collect supplemental environmental data at shaft and near surface site borings as needed & prepare Environmental Data Report including Phase 1 and Phase 2 ESAs and final designer supplemental testing data.*
- Develop specifications to properly dispose of excavated materials based on classification of excavated materials determined during environmental assessment

Mechanical/Instrumentation Requirements

- Section 7 and 8 of the BODR and further refinements during development of the ORT
- Four inflow control gates limit flow into the tunnel system
- Other gates are manually closed via either a portable powered operator or crank
- Vault or building required for each automated control gate
- Regulator structures will include coarse screens (inclined bar racks), wedge wire screens, floatable baffles, and rock sumps which would be manually cleaned
- Instrumentation (gate status, tunnel level) required
- Instrumentation monitoring data to be transmitted to ALCOSAN's WWTP SCADA system – integration into the WWTP DCS to be handled by ALCOSAN

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Electrical Requirements

- Section 6 of the BODR
- Electrical power requirements have been further developed by the ORT FDC and can be coordinated through the TPMC
- Power for the AS1 site to support TBM Tunnel Operations will be installed for the ORT and will be available for the ART Contractor.
- Permanent power to support level sensing equipment at shafts and lighting within regulators
- Four automatic gates (hydraulically operated) are proposed for the ART and need permanent power supplied

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Contract packaging

- Section 16 of the BODR
  - BODR envisioned 7 contract packages in addition to ART NSF Package 6 currently underway:
    - 1 tunnel package (includes A-72 Diversion)
    - 6 additional NSF packages
- FDC to evaluate and confirm packaging in collaboration with ALCOSAN and the TPMC

ART - Near Surface Facilities (NSF) Contract Packaging Recommendations

Package	ALCOSAN Points of Connection Included
ART Tunnel Package	A-42, A-68
ART NSF Package 1	A-67
ART NSF Package 2	A-22
ART NSF Package 3	A-29, A-29Z
ART NSF Package 4	A-64, A-65
ART NSF Package 5	A-69, A-70, A-71
ART NSF Package 6	*A-72 thru A-78*
ART NSF Package 7	A-41

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Construction Schedule

- Establish and update a Critical Path Method (CPM) construction schedule using P6 and including all aspects of the construction contract.
  - Starting point of the Work Breakdown Structure (WBS) will be ALCOSAN's Tunnel Program Schedule
  - WBS should correlate throughout with the EOPCC, schedule, and Schedule of Values (SOV).
- Provide schedule update as part of the 30/60/90/100% Design Phase Submittals

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Engineer's Opinion of Probable Construction Cost

- Prepare estimates utilizing the estimating software HCSS HeavyBid, or equal, with approval by ALCOSAN.
- Estimate shall be representative of a bottom-up detailed construction estimate
- EOPCC, schedule, and SOV shall be interrelated so that the costs, durations, manhours, and resources for each Bid Item and detail activity, schedule activity, and SOV line item correspond.
- Provide EOPCC updates as part of the 30/60/90/100% Design Phase Submittals

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Permitting Requirements

- Section 15 of the BODR
- FDC responsible for identifying & obtaining all necessary permits/approvals (except NPDES Part I renewal) to allow design & construction to proceed in timely manner.
  - Includes application package development with supplemental reports, pre-app meetings, submittal/responding to agency comments, etc.
  - Supplemental reports to include project-specific Environmental Assessment
- To be performed in coordination with ALCOSAN/Program Director/TPMC.
  - ALCOSAN lead for interactions with certain permitting agencies, including DEP and USACE. Lead for all public meetings.
  - Program Director lead for Act 537 Plan/updates; NPDES Part I Permit renewals; PNDI Clearances (USFWS, PFBC, PAGC, DCNR); PHMC/SHPO coordination & cultural resources clearances/special studies; Revisions to Comprehensive Environmental Assessment
  - TPMC lead/lead support for mussel surveys, required public meetings, other programmatic activities, including maintenance of overall contact database, overall permitting status/schedule tracking, consistency across applications/lessons learned.

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Questions/Comments
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