

PLAYING NICE IN THE SANDBOX

Coordinating Four Construction Contracts At The City Of Houston's Southeast WWTP



HOUSTON
PUBLIC WORKS

Facilities in collaboration with:

**CDM
Smith**



AGENDA

- **Introduction**
- **Project History**
- **Unique Challenges**
- **Coordination Strategies for Multiple Construction Packages**
- **Project Updates**
- **Lessons Learned**

PROJECT TEAM

- **Owner: City of Houston**
 - Singarpal Singh Sekhon, P.E., CCM, PMP, ENV SP, Managing Engineer – Presenter
 - Gauher Khan, P.E., Supervising Engineer – Project Manager
- **Engineer of Record: CDM Smith**
 - Gerald Furrier, P.E., PMP, BCEE – PM (Presenter)
 - Chris Varnon, P.E. Principal – EOR
- **Contractor: LEM Construction Co. , Inc.**
 - Micah Allison, Vice President – Project Manager



VISION

“To be the premier public works agency in North America”

MISSION

“To provide and improve quality of life for Everyone”



DEPARTMENT CORE VALUES

Responsiveness* We respond timely with care and commitment

Collaboration* We work together through clear communication and effective teamwork to achieve results

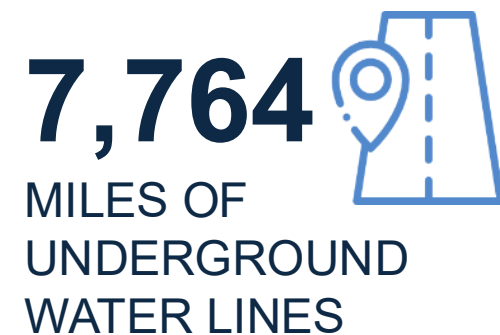
Resiliency* We weather the storms and emerge stronger for the future

Integrity* We are truthful, respectful, and keep our word.

Ownership* We find solutions, instead of excuses.

Innovation* We adapt, improve, and are not satisfied with the status quo

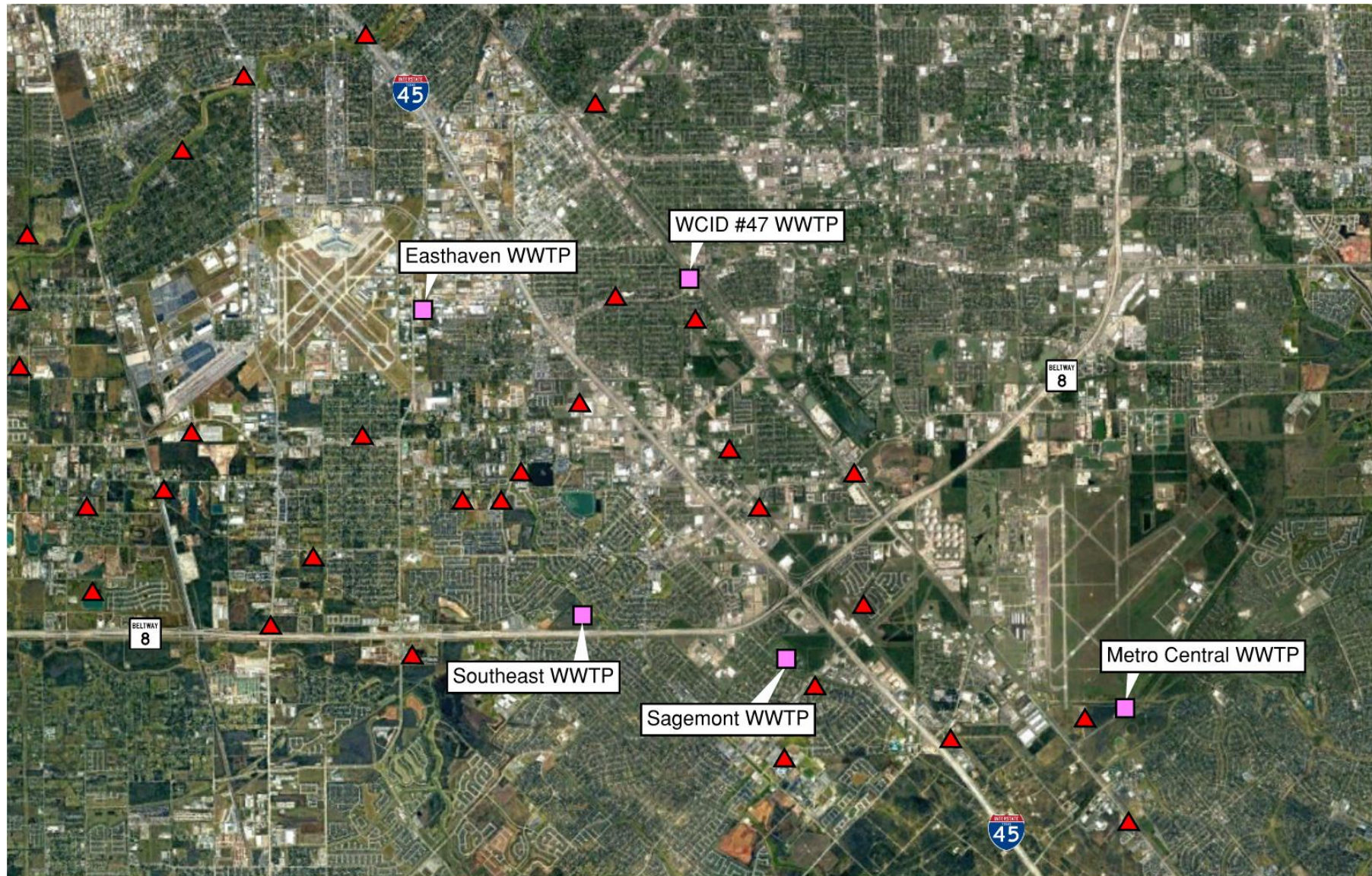
HOUSTON PUBLIC WORKS



PROJECT HISTORY

Southeast Wastewater Treatment Plant
Improvements and Expansion
Package 1 & Package 2

SOUTHEAST HOUSTON WWTPS AND LIFT STATIONS



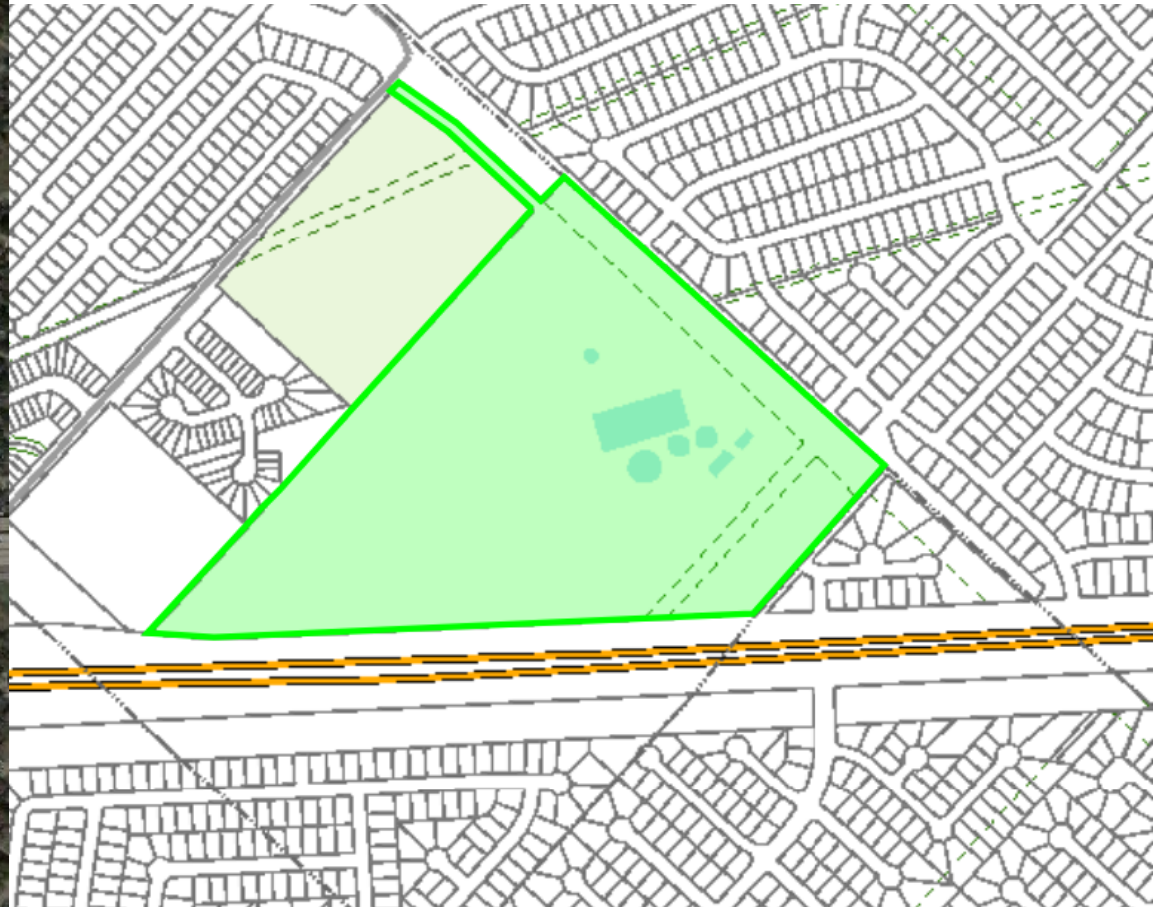
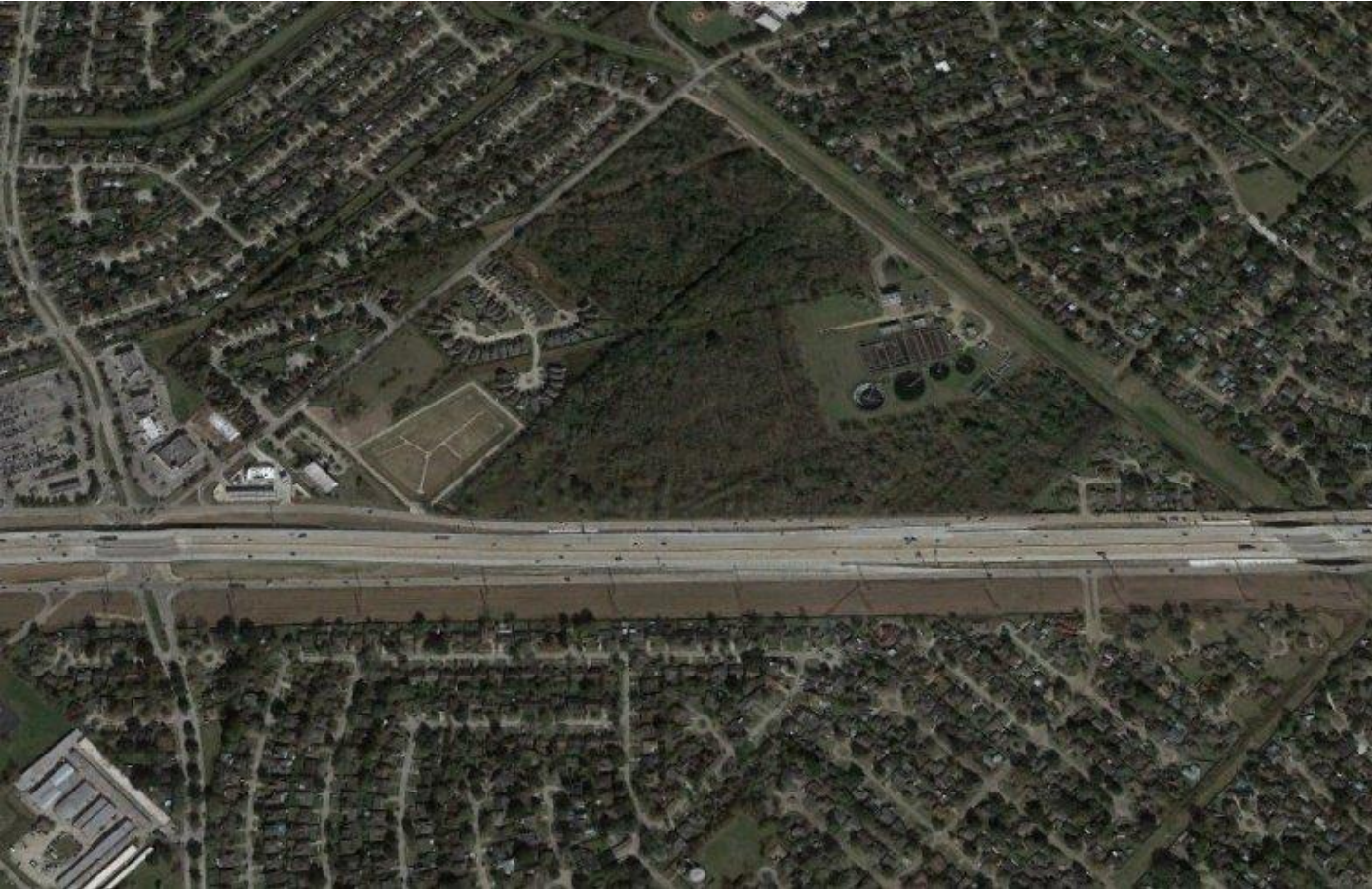
WHAT'S IT GOING TO TAKE? WHAT IS GOING TO BE ACCOMPLISHED/TARGETTED?

- **Objective: Consolidate flows from Sagemont WWTP and Easthaven WWTP into Southeast WWTP**
- **Projects:**
 - Southeast WWTP: Expansion Packages 1 and 2 to increase capacity
 - Sagemont WWTP: Force Main Project and Pump Station Project
 - Easthaven WWTP: Three tunneling projects (segment 1 starts at SEWWTP)
 - Future diversion projects for four future lift stations_ Ballantine, Easthaven, Southridge, & Wingtip

**Consent
Decree**

**Consent
Decree**

SOUTHEAST WWTP – BEFORE CONSTRUCTION



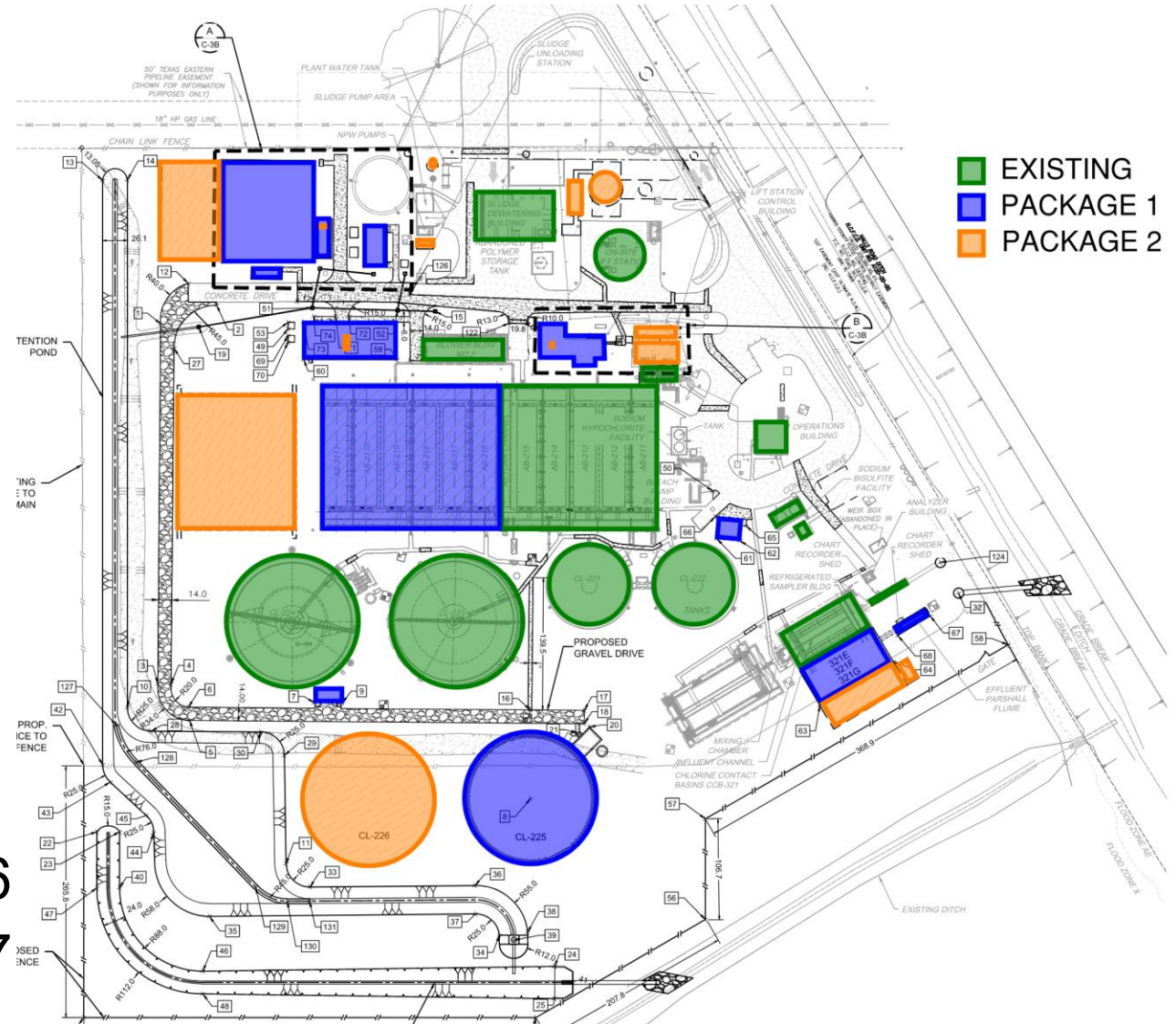
SOUTHEAST WWTP EXPANSION

Existing: 5.33 MGD

Package 1: 10.2 MGD

Package 2: 15.2 MGD

- New incoming power feed
- New outfall
- Hydraulic improvements
- Drainage improvements
- New deep lift station
- Package 1: Q1 2023 to Q2 2026
- Package 2: Q3 2024 to Q1 2027



SAGEMONT WWTP DIVERSION (FORCE MAIN)

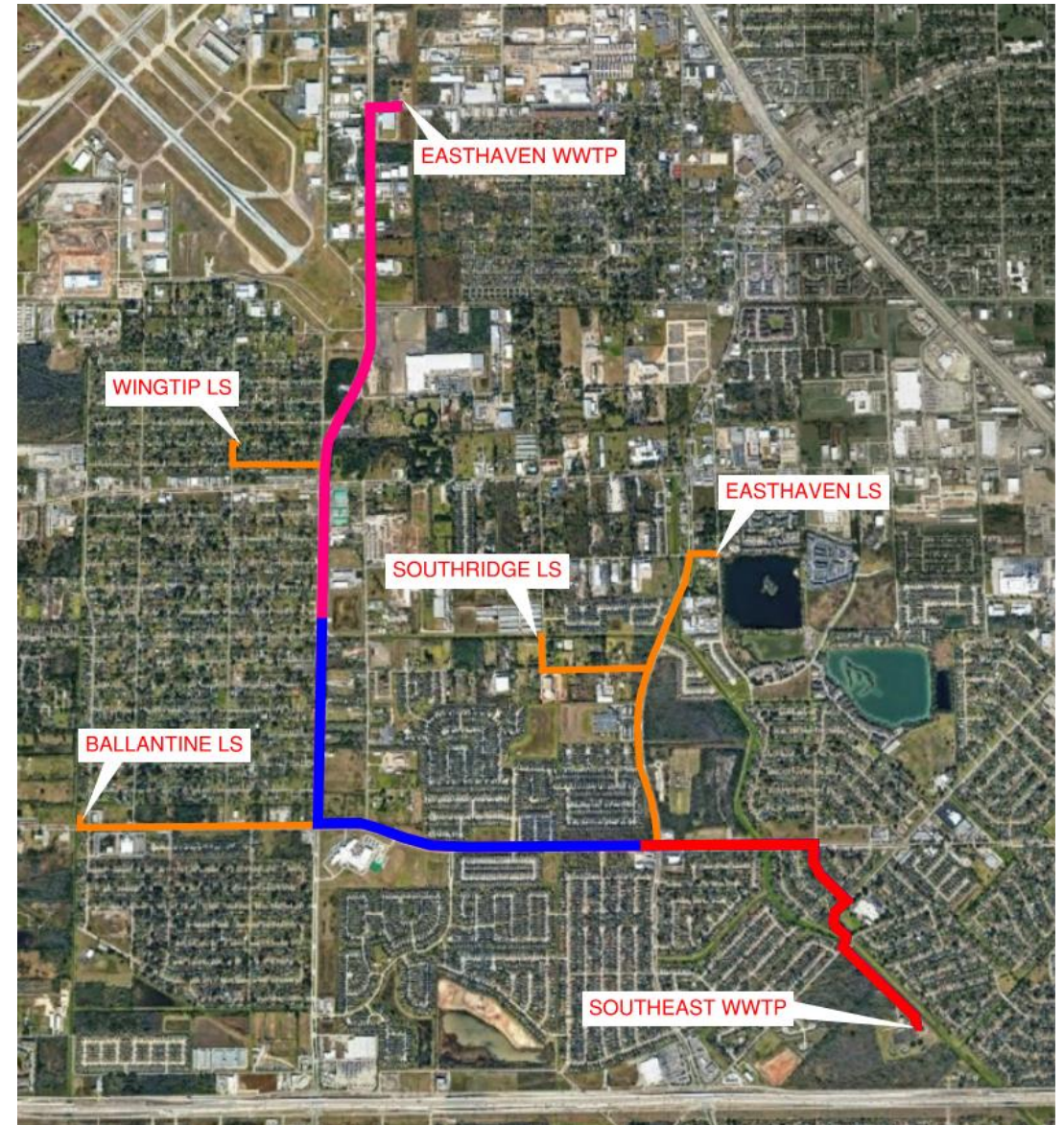


Sagemont Pipeline

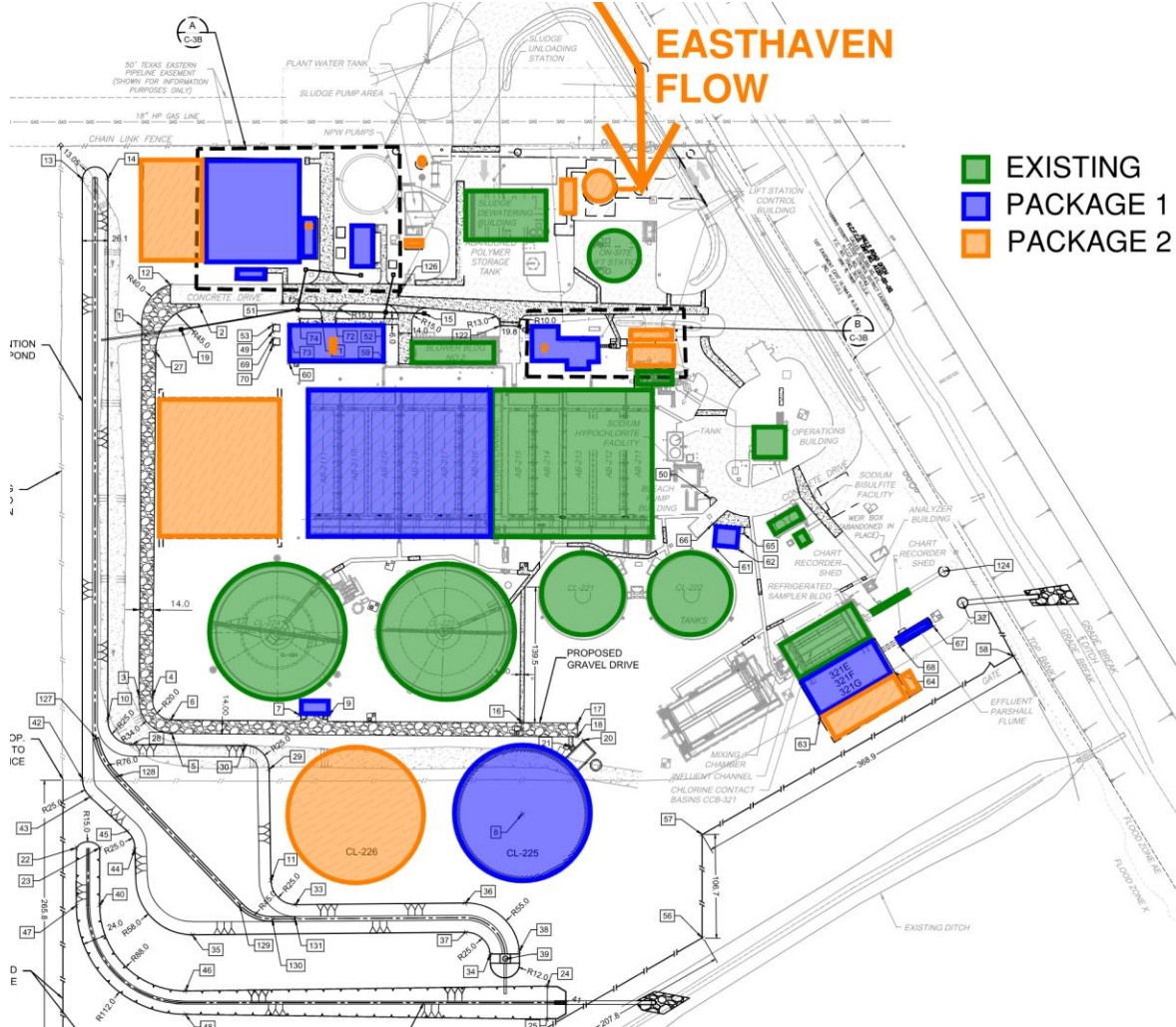
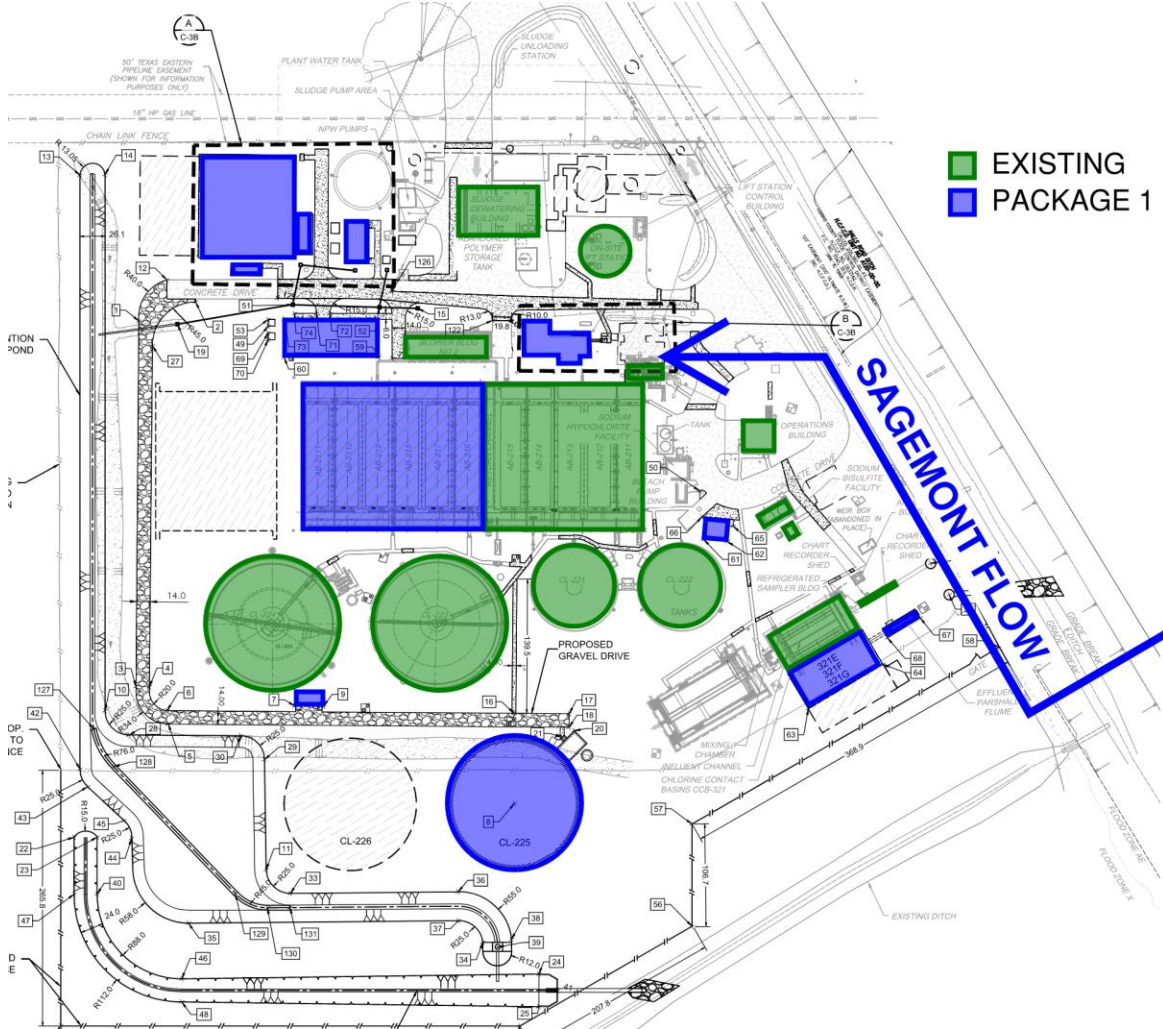
- 2.3 miles of 36" force main, partial trenchless construction
- Crosses highway (Beltway 8), two drainage channels, and CNP electrical/pipeline corridor
- Construction planned from Q4 2023 to Q2 2026 (lift station to be brought online August 2026)

EASTHAVEN WWTP DIVERSION (GRAVITY)

- 4.38 miles of 36"-60" gravity sewer (microtunnelling) - three construction packages
- Approximately 60 ft depth at termination at SEWWTP
- Construction - Q4 2024 to Q1 2028.
- Future Project(s) - divert four lift stations to gravity sewer (additional 1.8 miles of 15"-36" gravity sewer)



COORDINATION OF DIVERSION PROJECTS WITH EXPANSION



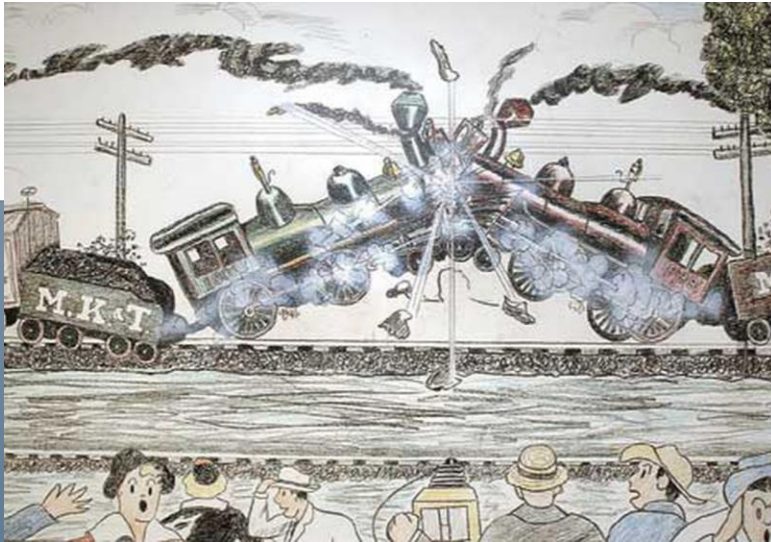
UNIQUE CHALLENGES

WHAT'S SO HARD ABOUT ALL THAT? WHY IS THIS SO COMPLICATED? - CONFLICTS, UNCERTAINTIES, & UNPREDICTABLES

Schedule
Coordination

Intersections
of Scope

Maintenance of Plant
Operations (MOPO)



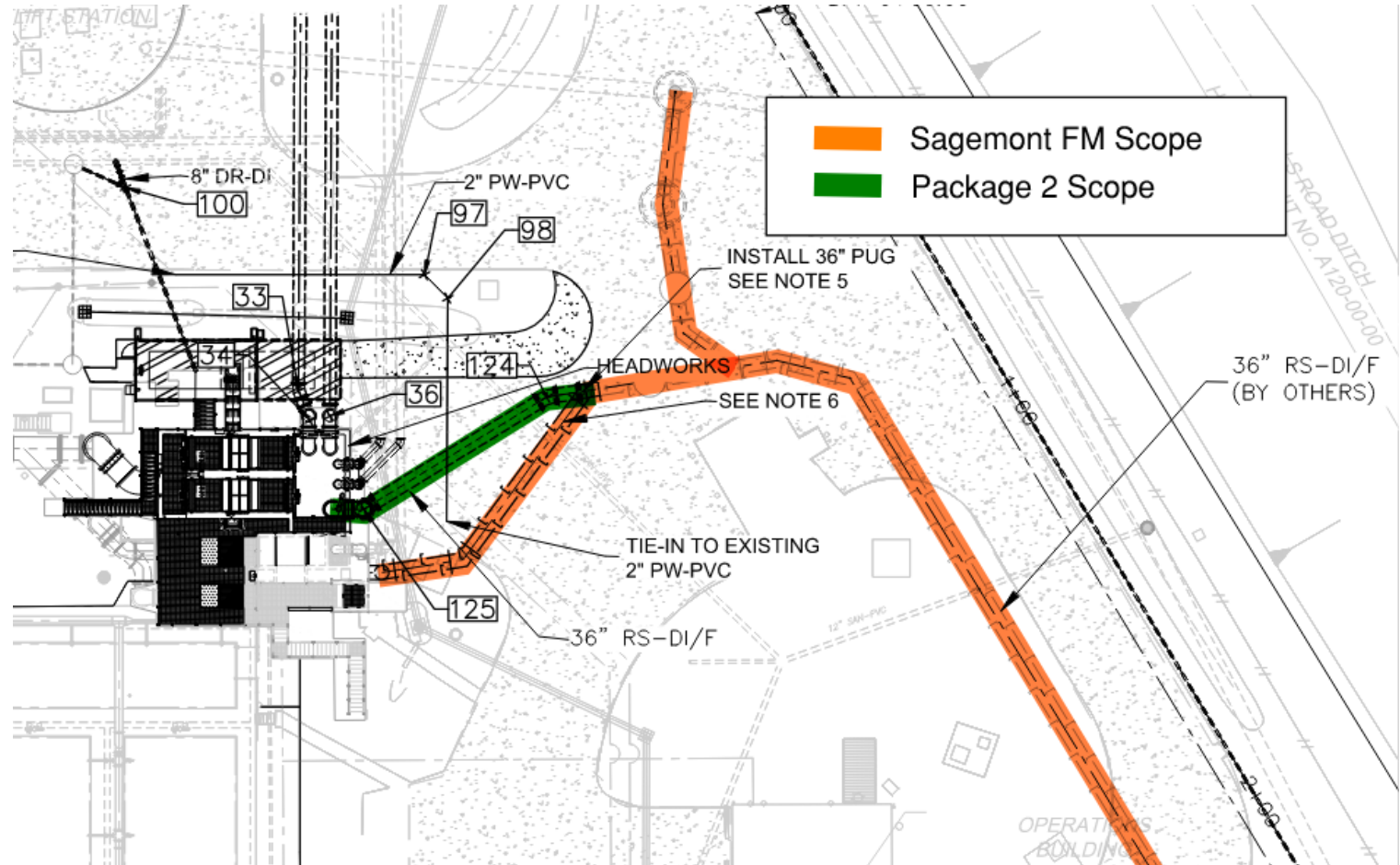
SCHEDULE COORDINATION

	2023				2024				2025				2026				2027				2028
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
SEWWTP Package 1	NTP: FEB-2023												Time Extension								
SEWWTP Package 2									NTP: JUL-2024												
Sagemont Pipeline					NTP: NOV-2023								Lift Station								
Easthaven Tunnel									NTP: OCT-2024								Package 2		Package 3		

INTERSECTIONS OF SCOPE

Sagemont Force Main

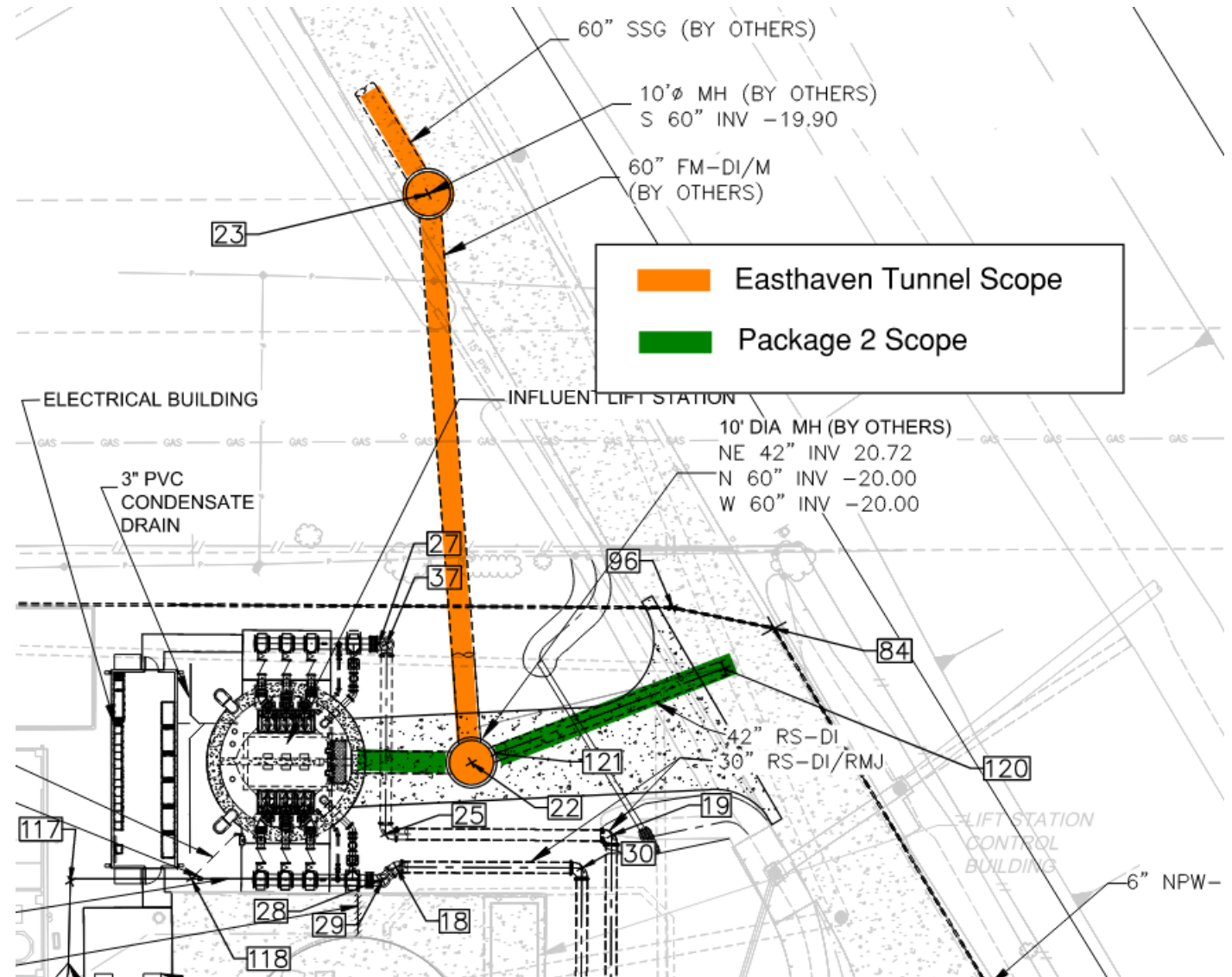
- Included scope to temporarily route FM to existing HW
- Package 2 contractor to re-route FM to expanded



INTERSECTIONS OF SCOPE

Easthaven Tunnel

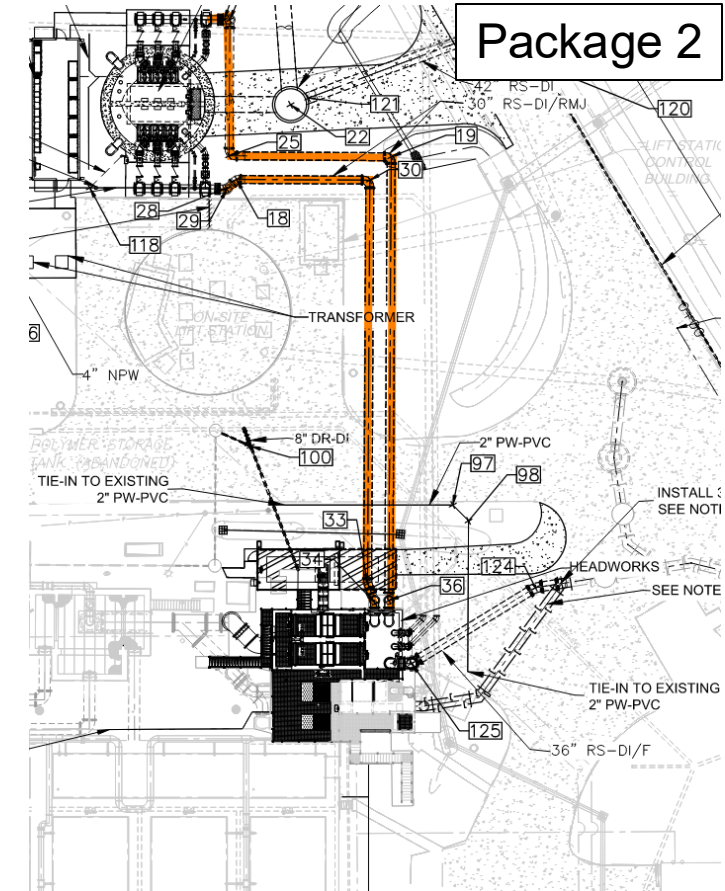
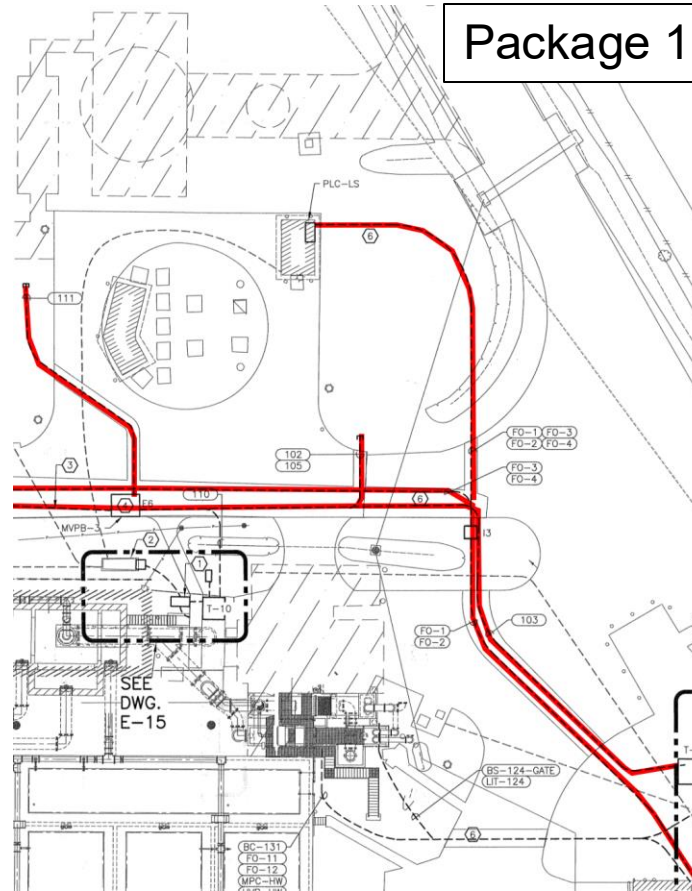
- Extended tunnel and final shaft onto SEWWTP site to keep all microtunneling with one contractor
- Package 2 contractor to tie into MH with bore and jack from new LS and with much shallower 42" to provide bypass pipe for flow from existing SEWWTP collection system into new LS.



INTERSECTIONS OF SCOPE

SEWWTP Packages 1 and 2

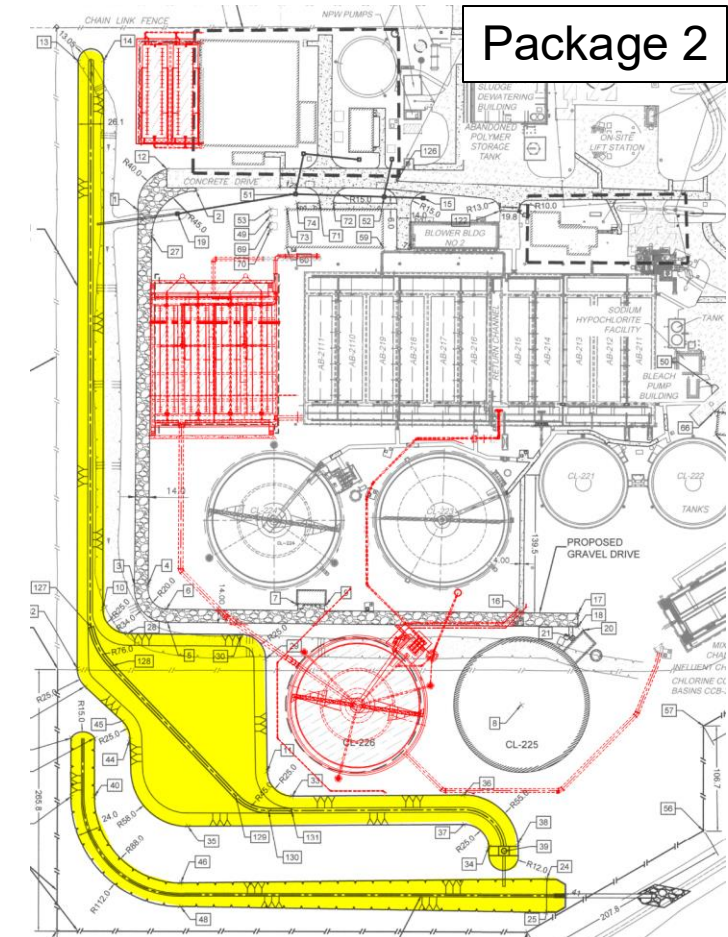
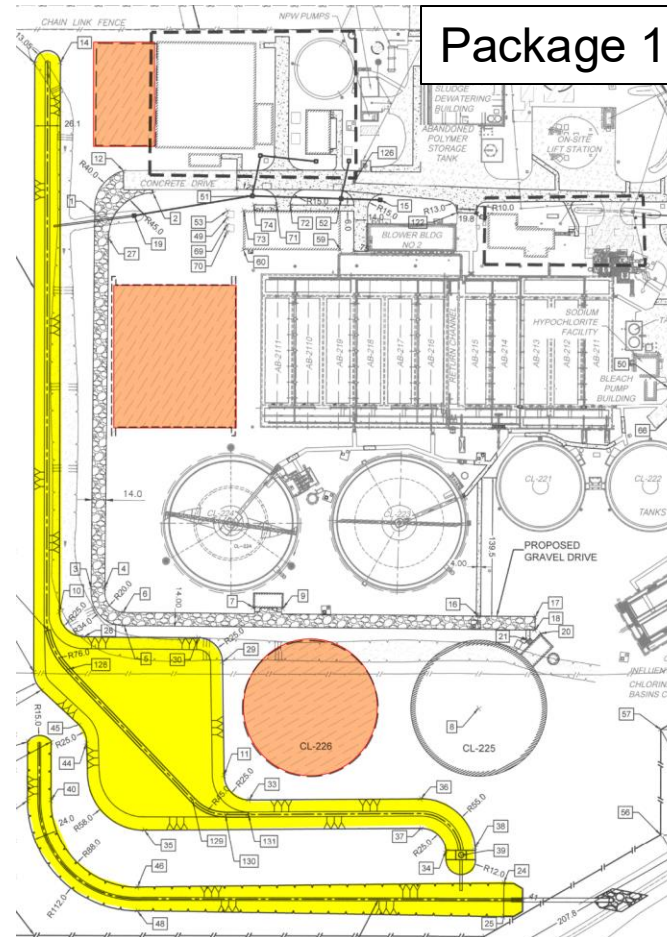
- Package 1 shallow duct banks and Package 2 deeper piping and structures
- E.g. Package 2 piping from lift station to headworks installed early, before Package 1 ductbanks



INTERSECTIONS OF SCOPE

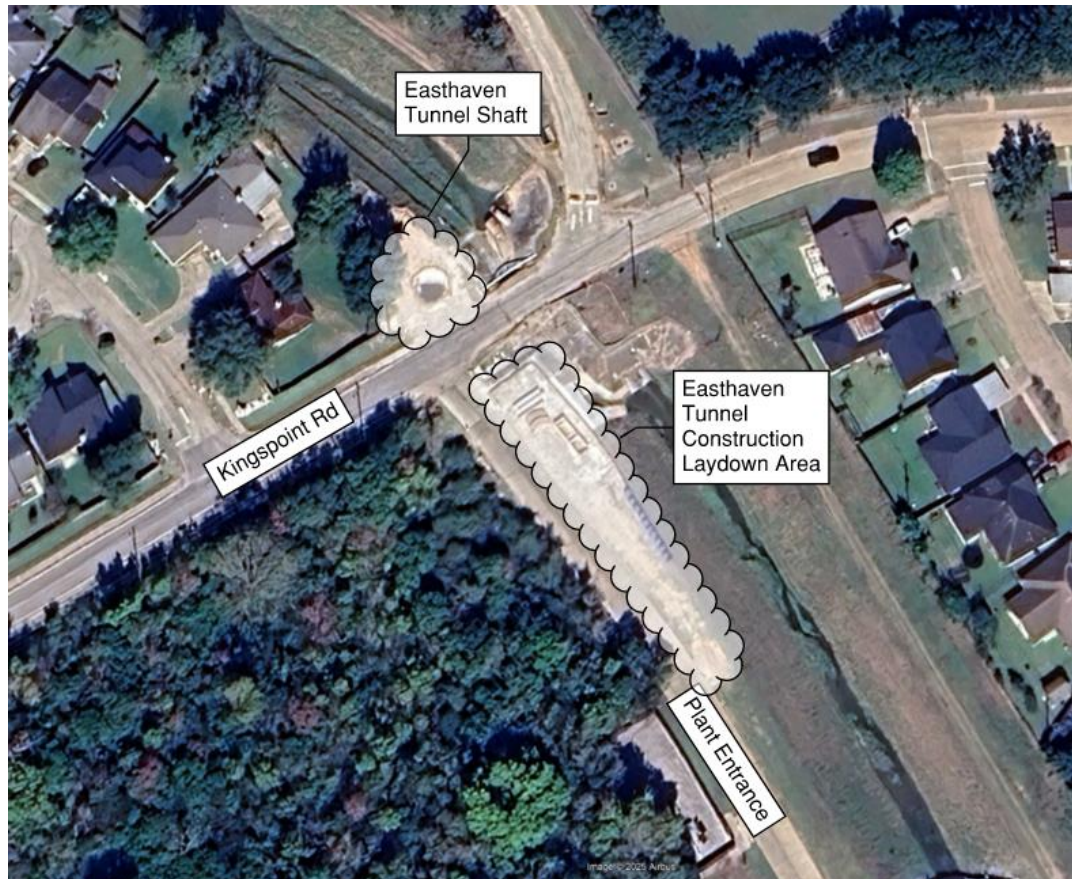
SEWWTP Packages 1 and 2

- Package 1 stormwater ponds and Package 2 structures and piping
- Package 1 substantial completion to be granted before completion of stormwater pond to allow Package 2 scope to be completed before installation of pond.



MAINTENANCE OF PLANT OPERATIONS (MOPO)

- Contractors must allow continuous access for sludge hauling trucks



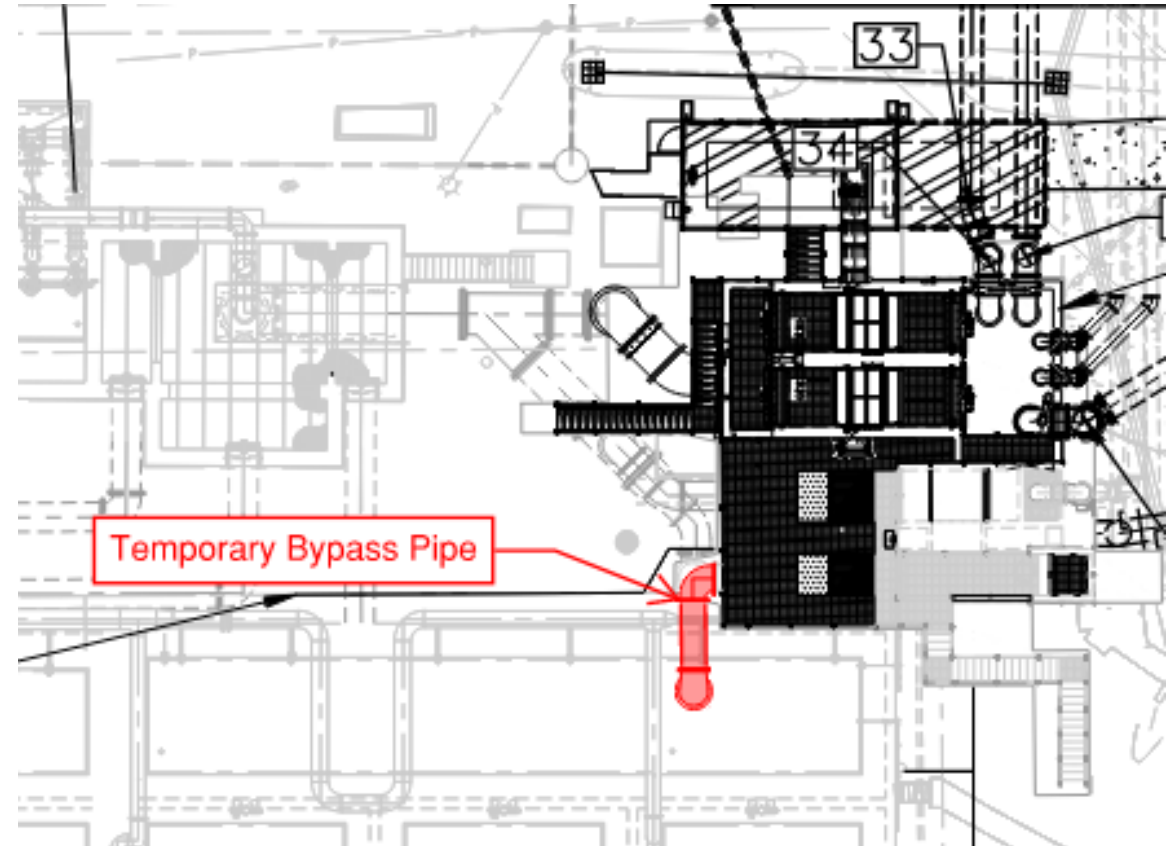
MAINTENANCE OF PLANT OPERATIONS (MOPO)

- Multiple contractors on same site requires additional coordination and communication with plant staff



MAINTENANCE OF PLANT OPERATIONS (MOPO)

- Temporary piping/interim operating modes require coordination/understanding of plant staff



COORDINATION STRATEGIES

PLAYING NICE IN THE SANDBOX

Held monthly design coordination meetings with three Consultant Engineers

- Discuss intersections of scope and logical scope delineation
- Discuss schedules and constraints

Coordinate contractors as they came on-board, with City PMs and CMs

- Regular calls to discuss progress and staging of work

NOAs (Notifications for Operator Assistance) for all disruptions of operations

- Contractor schedules all activities that impact operations with staff for advanced coordination

Combined Package 1 and 2 construction progress meetings

PROJECT UPDATE

PROGRESS TO DATE

Sagemont pipeline completed in Q4 2025



PROGRESS TO DATE

Southeast Package 1 started up in April 2026



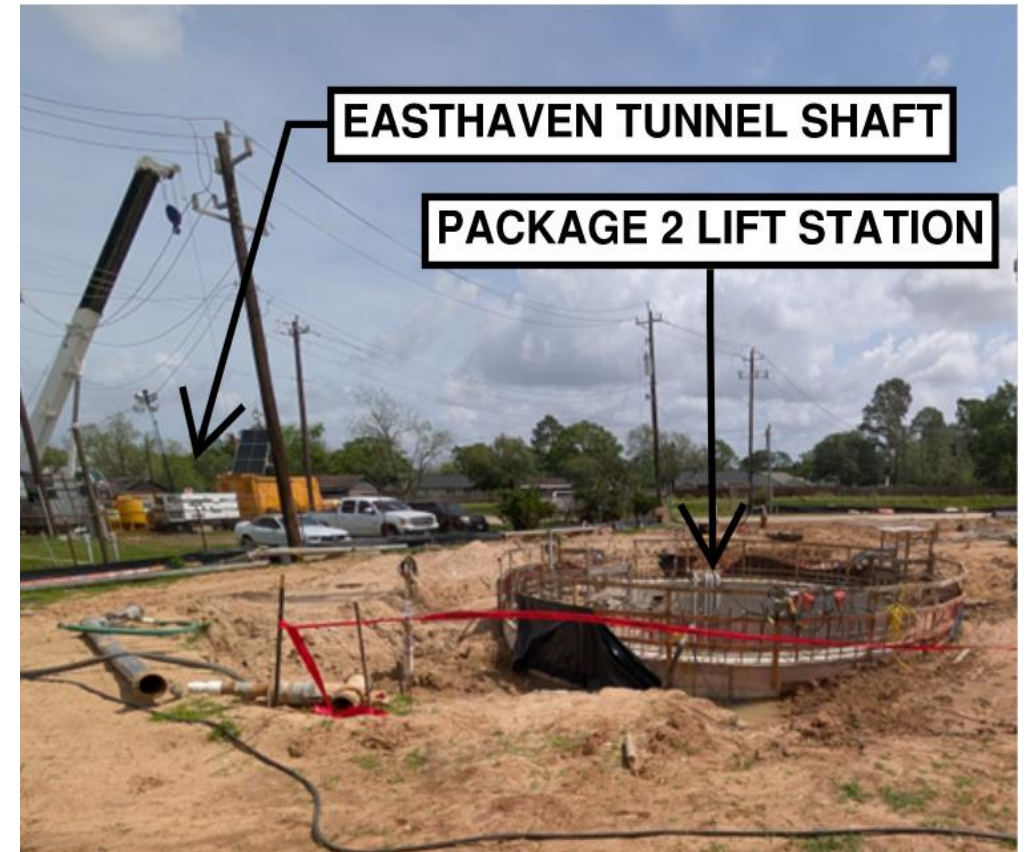
PROGRESS TO DATE

Southeast WWTP Package 2 scheduled for completion in Q1 2027



PROGRESS TO DATE

Easthaven Package 1 near complete, but Package 2 ILS not yet completed



PROGRESS TO DATE

Easthaven Package 1 near complete, but Southeast WWTP Package 2 ILS not yet completed

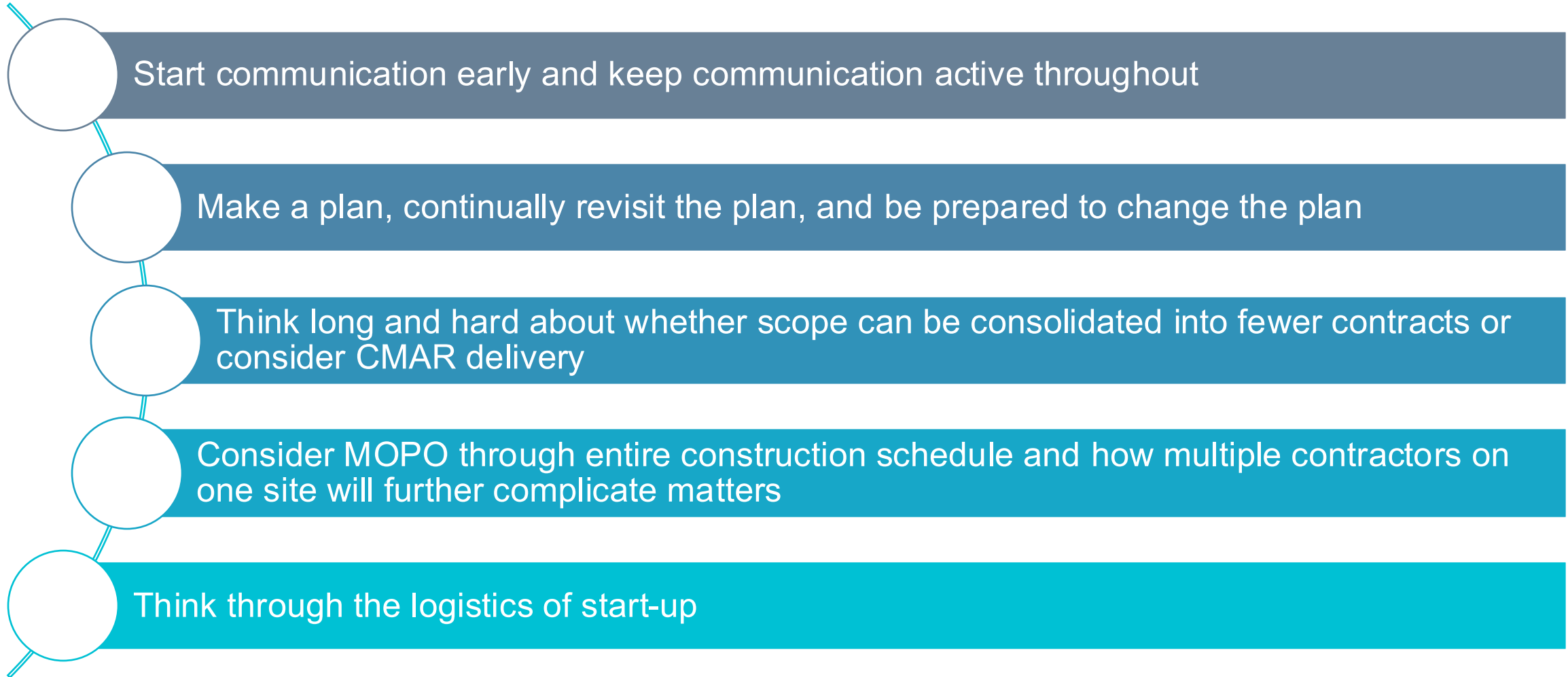


UPCOMING ACTIVITIES

- **SEWWTP Package 1 started up, working through substantial completion acceptance**
- **Sagemont lift station to be started up in August 2026**
- **Currently coordinating completion of Package 2 Lift Station and Easthaven Tunnel Package 1 final segment**
- **No flow in Easthaven diversion trunk lines until 2028 (completion of Package 3)**

LESSONS LEARNED

KEYS TO SUCCESS/AREAS FOR IMPROVEMENT



Questions?



HoustonPublicWorks.org



@HouPublicWorks

Chris Varnon, PE

Principal at CDM Smith
varnonck@cdmsmith.com
713-423-7313



Singarpal S. Sekhon,

P.E., CCM, PMP, ENV SP
Managing Engineer
Facilities, Houston Public Works
Singarpal.sekhon@houstontx.gov
832-395-2320



Micah Allison

Vice President at LEM
Construction Co.
mallison@lemconstruction.com
281-495-9550



Thank you!



HoustonPublicWorks.org



@HouPublicWorks