



WHEN COMPLICATED PROJECTS BECOME MORE COMPLICATED – A FACILITY SITING ADVENTURE



JONTE' GREER – ASSISTANT DIRECTOR,
GENERAL ENGINEERING - GULF COAST AUTHORITY

JONATHAN SANDHU – ASSISTANT DIRECTOR,
TECHNICAL SERVICES – GULF COAST AUTHORITY





AGENDA

- Overview of GCA
- Bayport Facility
- Project Background
- Proposed Siting
- Construction Progression
- Conclusion





• OVERVIEW OF GCA

-Political Subdivision of the state

-Established 1969

-Can Operate Statewide

-Fully Funded by Service Fees

-4 Industrial Wastewater Treatment Facilities

-1 Municipal Wastewater Treatment Facility

-Central Laboratory

Mission: Protecting the waters of the State of Texas through environmentally sound, economically feasible and technologically advanced wastewater and water management practices.

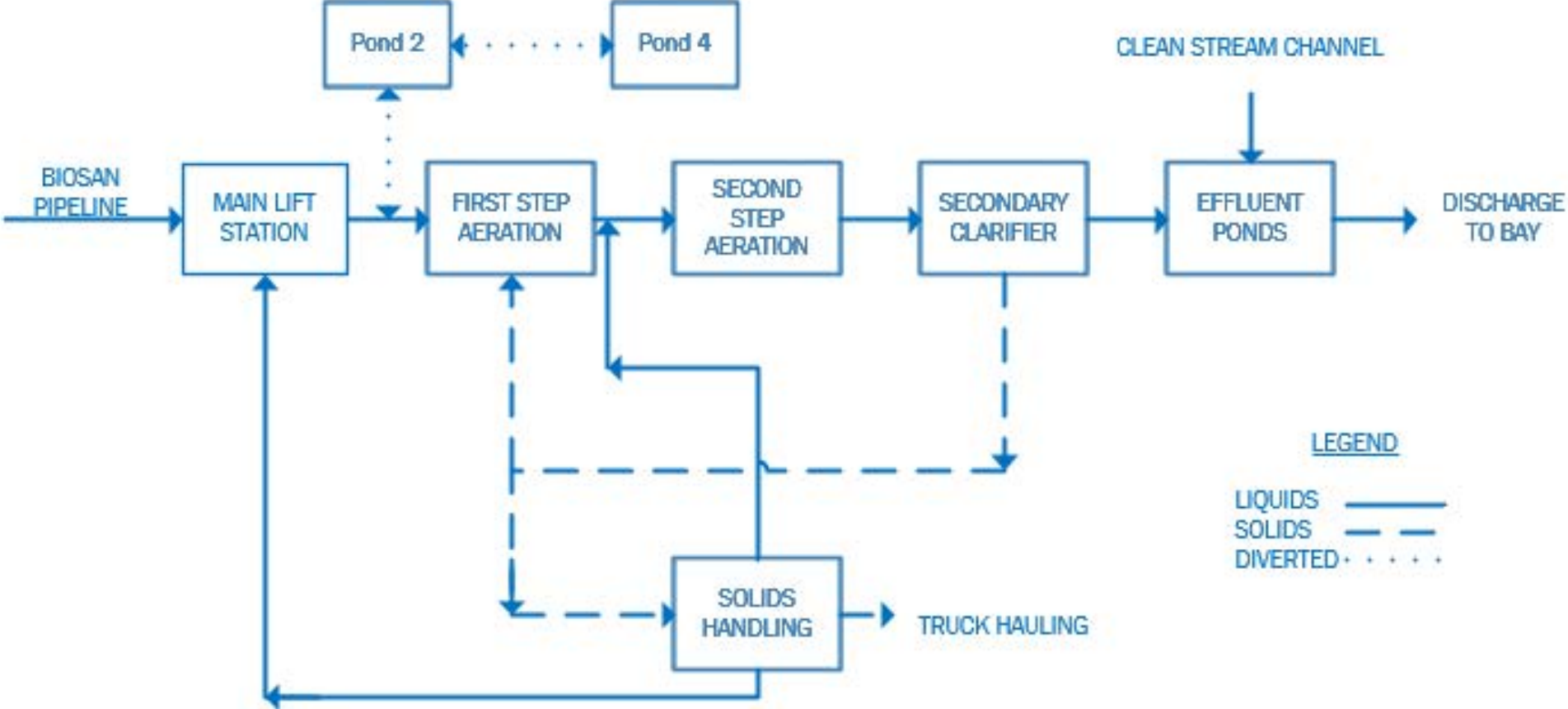


Bayport Facility Overview

- Treats wastewater from over 70 industries (and counting!)
 - Chemical Manufacturing
 - Petrochemical Industries
- Avg. Flow: 24 mgd
- Avg. TOC: 80,000 lb/day
- Two-step activated sludge process
- Strict air permit



BAYPORT SIMPLIFIED BLOCK FLOW DIAGRAM





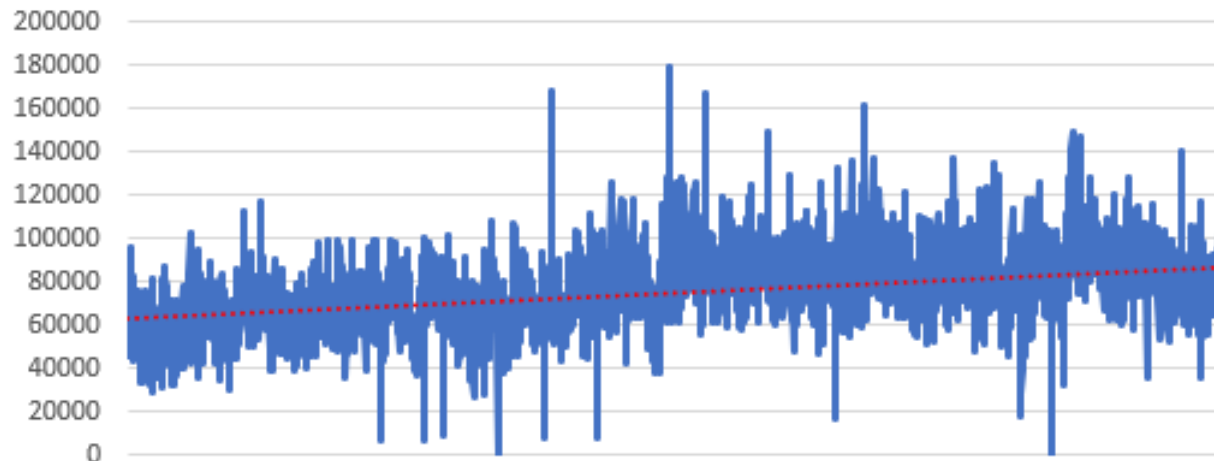
BAYPORT LAYOUT





PROJECT BACKGROUND

- Influent flow and organic loads were increasing
 - New industrial facilities being built
 - Existing industrial facilities expanding
- Bayport had increased hydraulic capacity, needed to increase organic capacity
- Improvements need to include impacts to:
 - Air emissions
 - Solids
 - Organic treatment





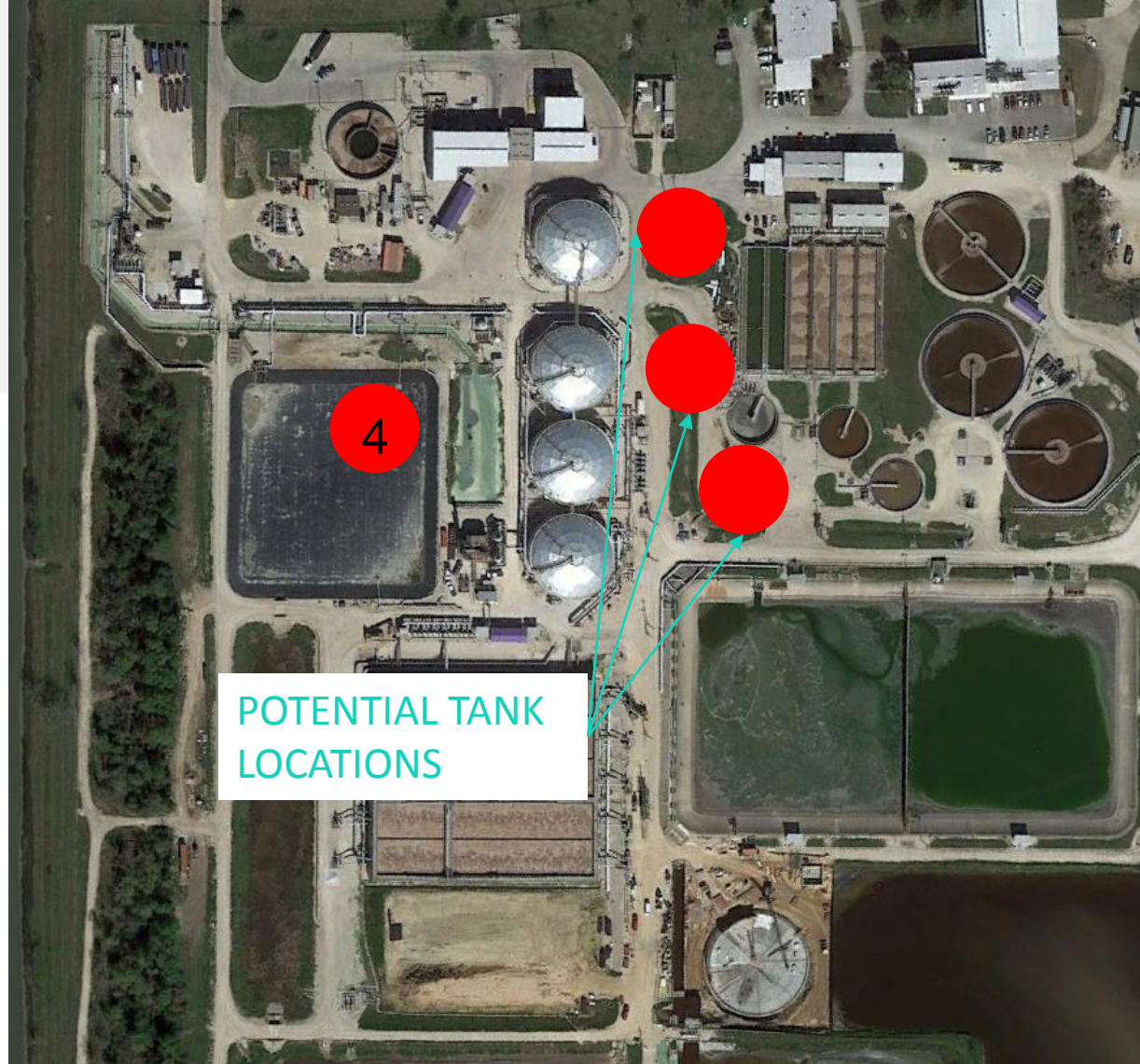
ORGANIC CAPACITY STUDY CONDUCTED



- Organic capacity study conducted
 - Identified multiple capacity options (14)
 - Narrowed down to:
 - One New First Step Aeration Tank
 - Two New Second Step Aeration Basins



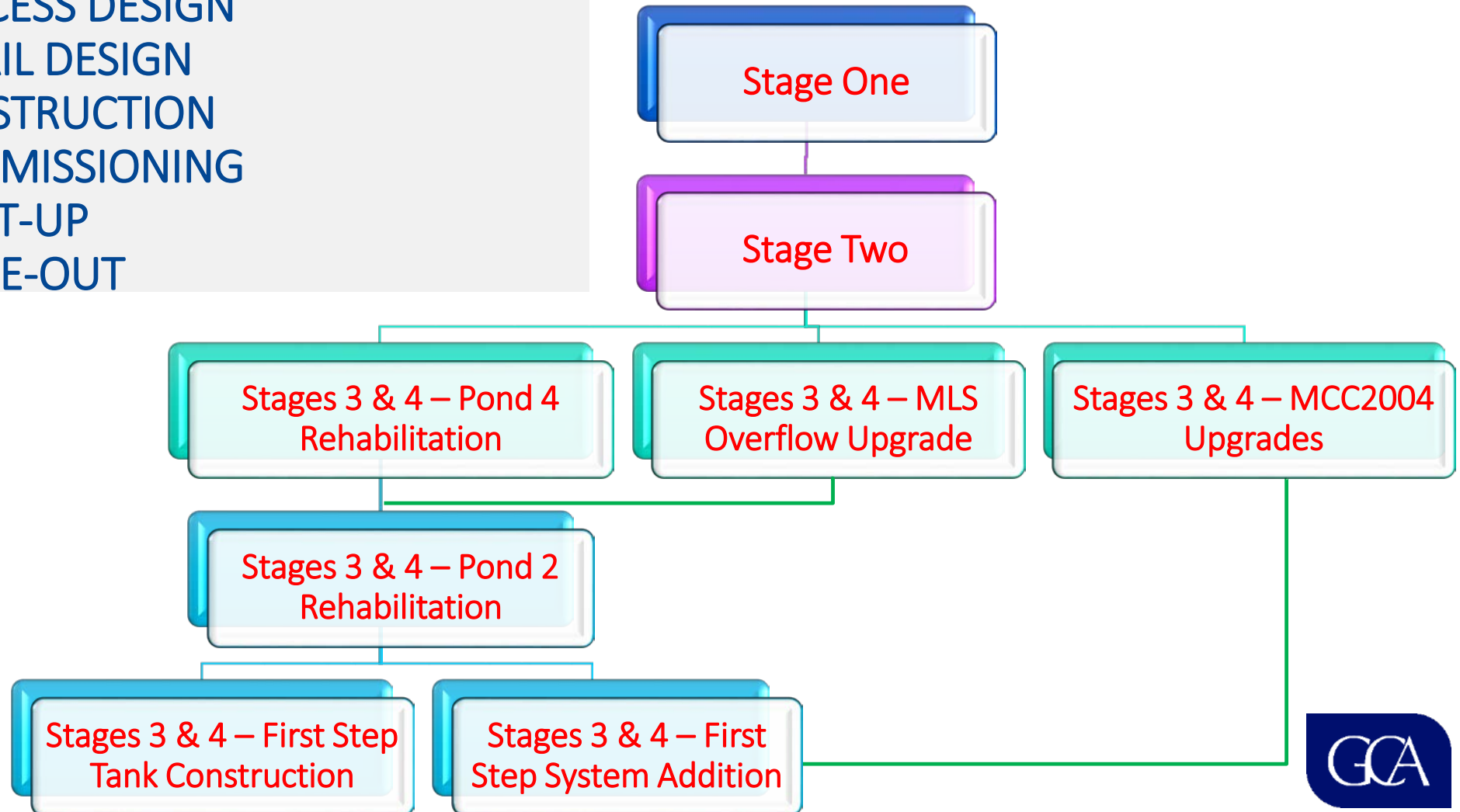
PROPOSED SITING





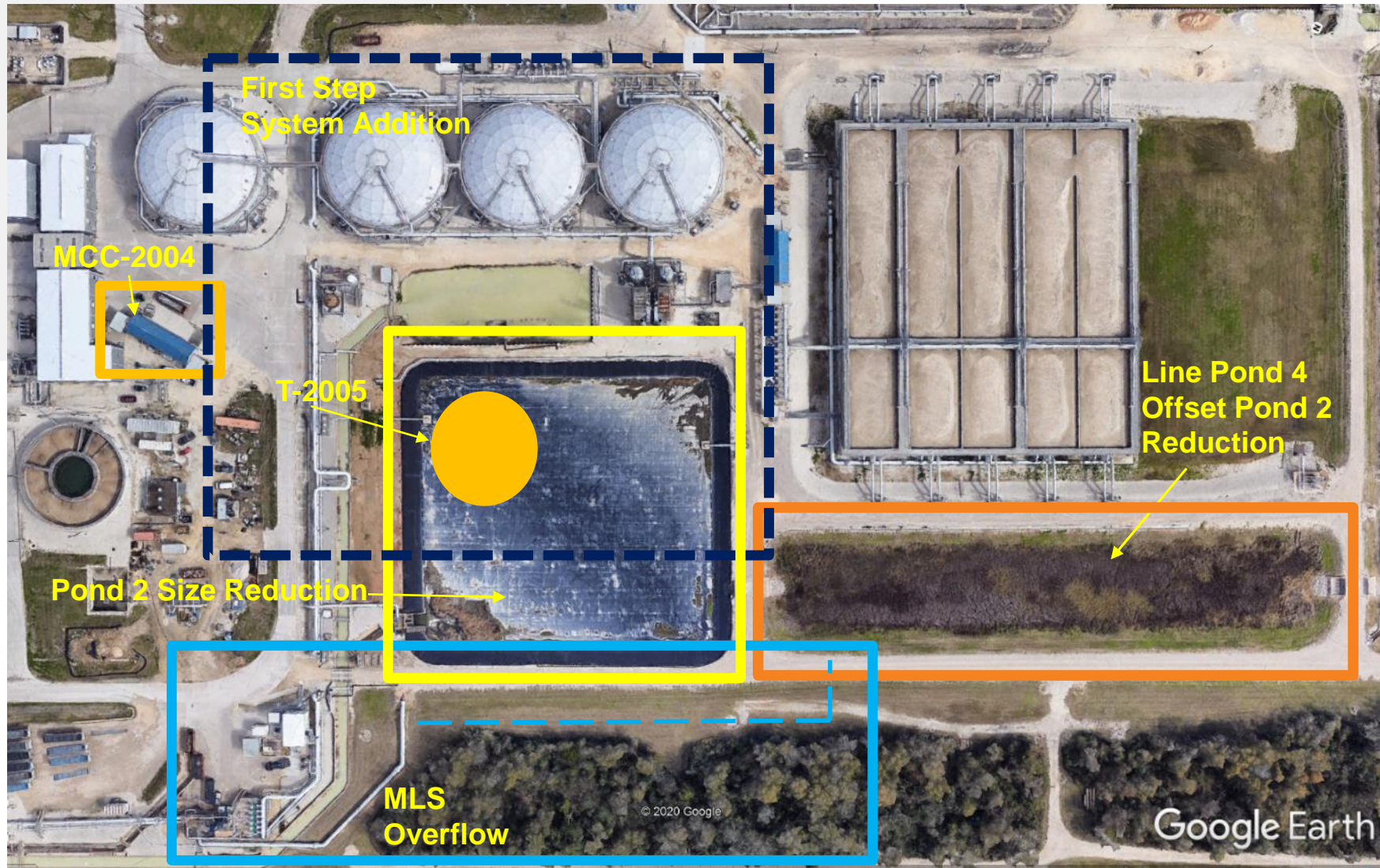
PROJECT STRATEGY

- STAGE 1: PLANNING STUDIES
- STAGE 2: PROCESS DESIGN
- STAGE 3: DETAIL DESIGN
- STAGE 4: CONSTRUCTION
- STAGE 5: COMMISSIONING
- STAGE 6: START-UP
- STAGE 7: CLOSE-OUT





SITE LAYOUT AND CONSTRUCTION SEQUENCING





CONSTRUCTION PROGRESS AND CHALLENGES



Buck Inside Newly Lined Pond 4

Later Followed By...



Baby Wild Hogs in Pond 4



CONSTRUCTION PROGRESS & CHALLENGES



Shaft Drilling Between Operating Transformers and Blowers



Piers, Supports and Piping Installed



T-2005 PROGRESSION



Drilling 197 Piers and Erecting Panels



T-2005 PROGRESSION



Concrete Coating and Completion





CONSTRUCTION PROGRESS – AERIAL VIEWS





CONCLUSION

- Be aware of Possible Surprises Below the Surface
- Team Collaboration with Operations and Flexibility are Key
- Even After Technology is Selected, Facility Siting can be Challenging
- Don't Forget About the Domino Effects from Relocating

Questions or Comments

Jonte' Greer, PMP

Assistant Director – General Engineering

jgreer@gcatx.org

Jonathan Sandhu, PE

Assistant Director – Technical Services

jsandhu@gcatx.org



GULF COAST AUTHORITY

facilitating industry + environment in harmony