

System-Wide Wastewater Inspections for the Environmentally Conscious

GLOBAL WATER SCARCITY

- Climate change impacts
- Project sustainability
- Triple Bottom Approach, TBL
- Social, environmental, and economic aspects



ENVIRONMENTAL ASSESSMENT APPROACH



Phase 1: Initial
Assessment

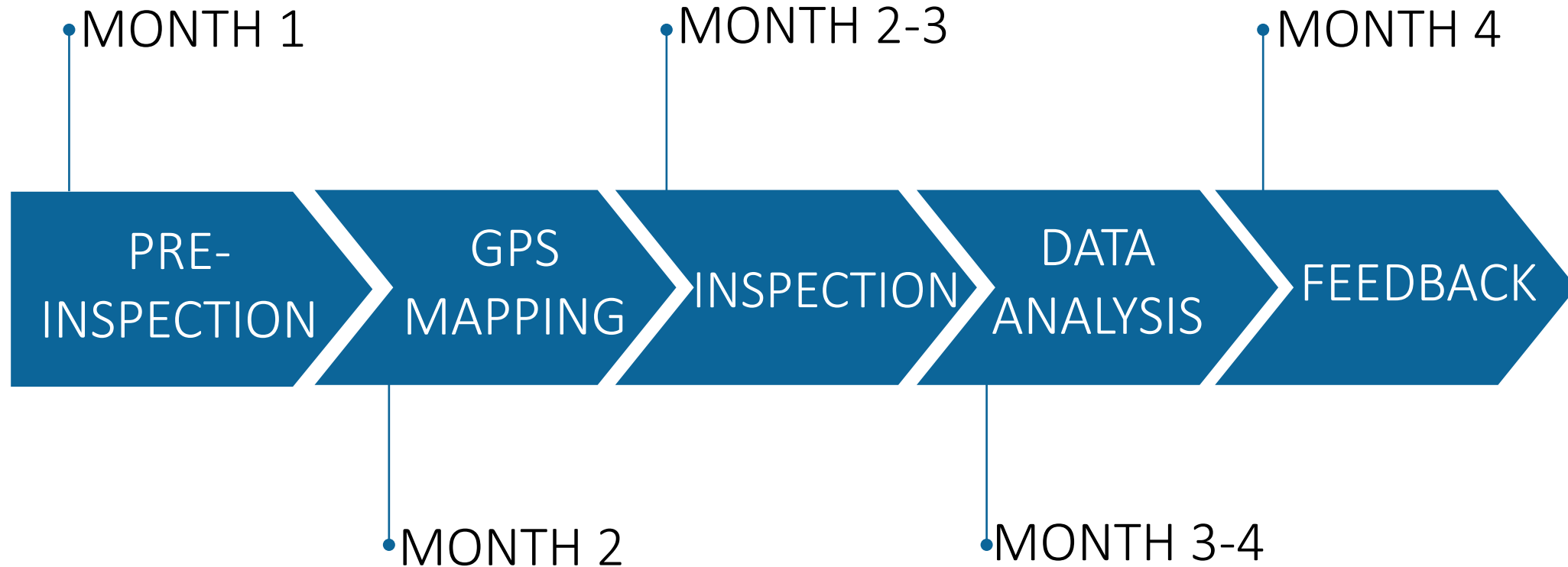


Phase 2: Cleaning,
Maintenance,
and Asset Location



Phase 3: Final
Inspections and
Close-out

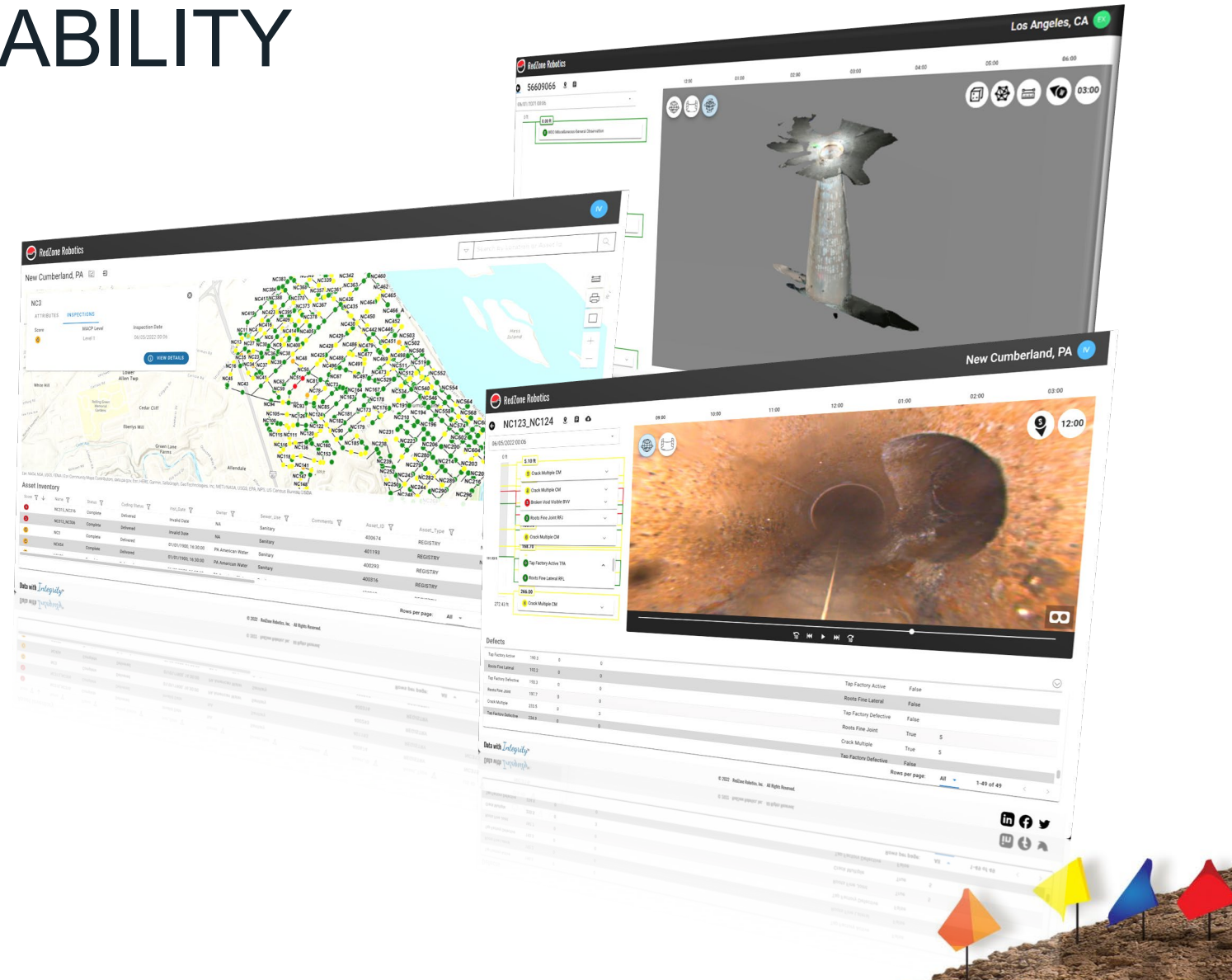
SAMPLE COMMUNITY– 25 MILE SYSTEM



SUCCESSFUL SUSTAINABILITY

50 Mile System

- Eliminate 170 tons of CO2 emissions
- Over 1 million gallons of water saved
- 7 cities



TECHNOLOGY DRIVEN INSPECTIONS

Small diameter inspections

- 40 gallons of fuel per 1,000 LF
- VS 3 gallons of fuel per 1,000 LF
- Reduce fuel consumption by 86%
- Autonomous inspection equipment



JUSTIFIED MAINTENANCE

- Cost Reduction
- Cleaning backed by data
- Clean when necessary
- Reduce CO2 emissions



ADVANCED INSPECTION METHODS

Large diameter complexity

- Increased costs
- Water usage
- Risk assessment: SSOs
- Data is critical
- Never been maintained

QUANTIFYING DEBRIS

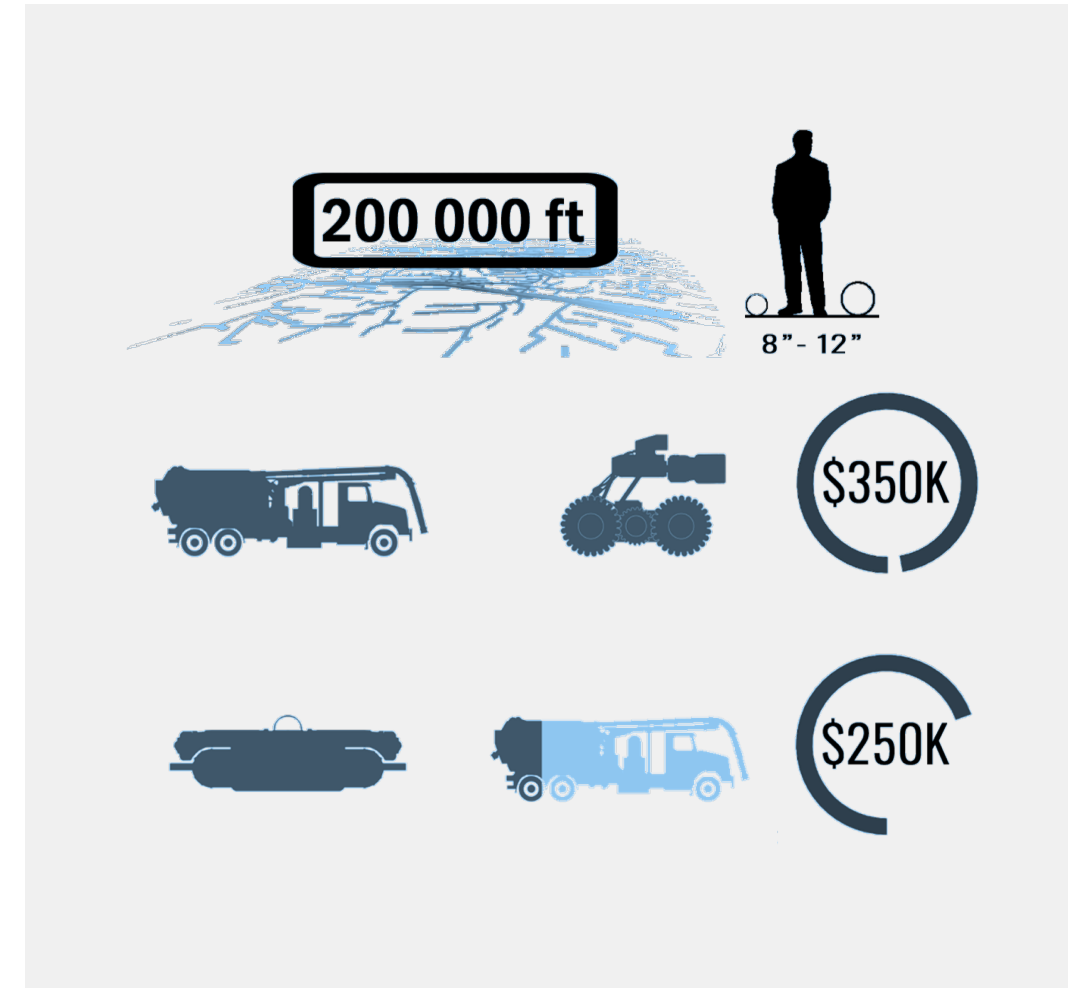
- Sonar method benefits
- Volume measurements
- Targeted cleaning
- Cons – specialized equipment costs



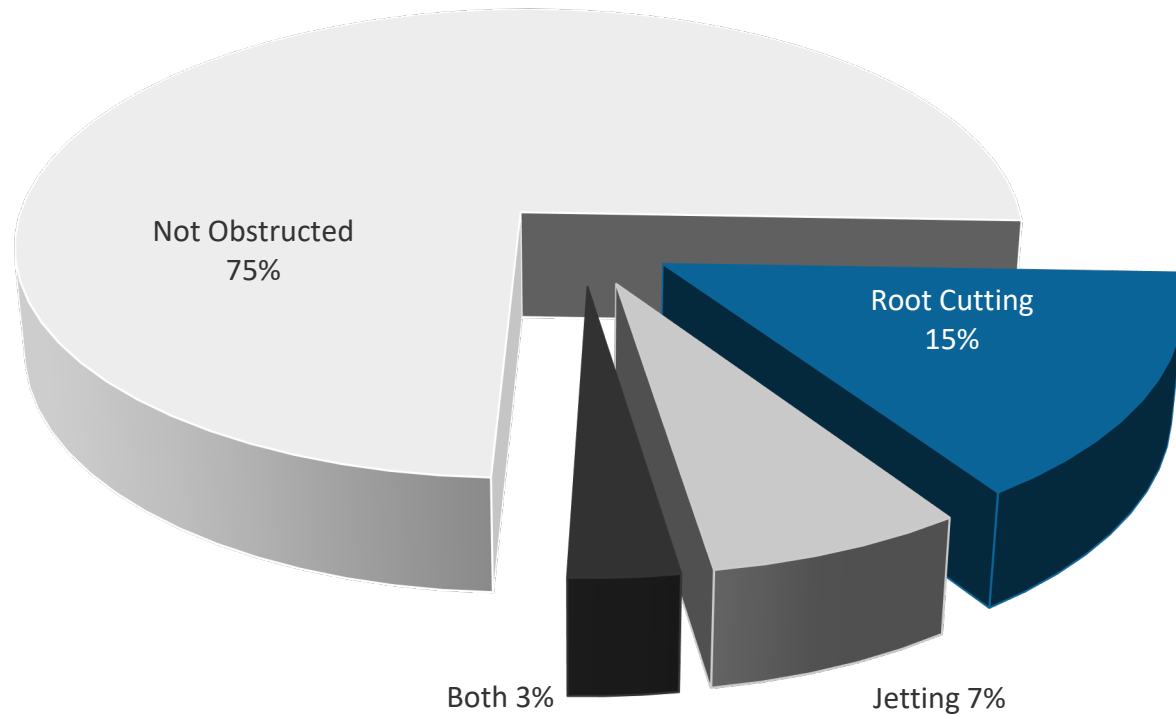
CASE STUDY – INSPECT TO CLEAN

Southern California City

- Clean to inspect
- Inspect to clean
- 200,000 LF= 100K savings



CASE STUDY – INSPECT TO CLEAN



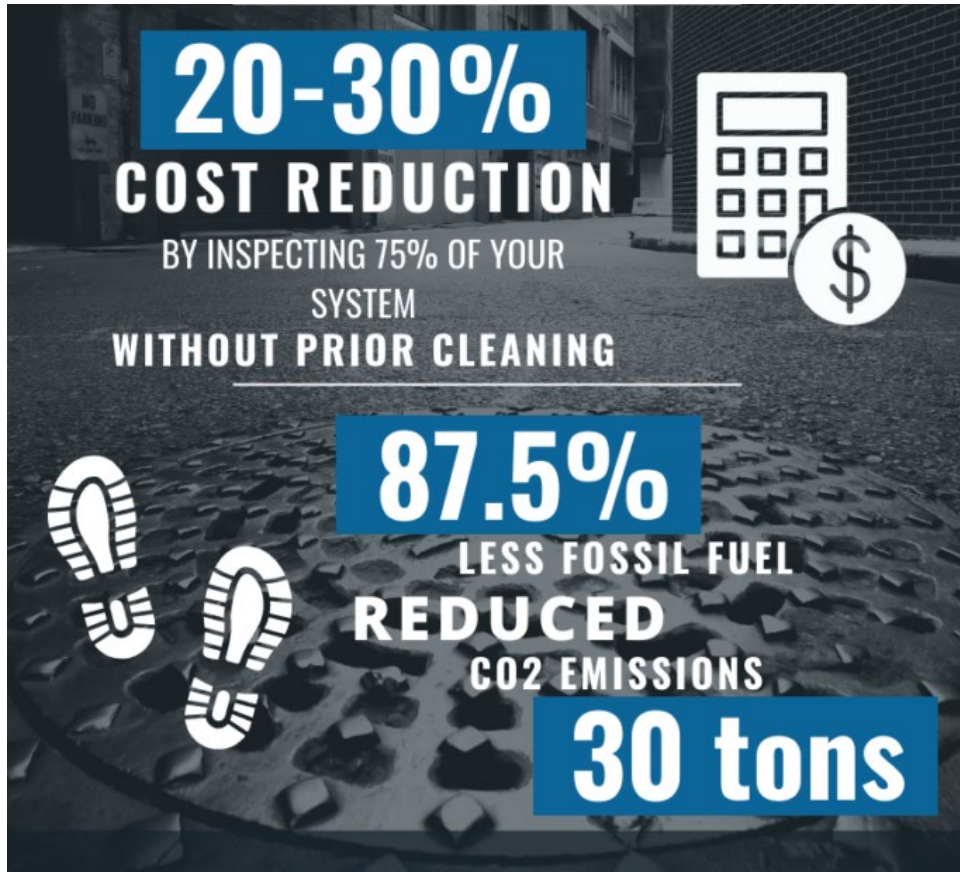
- 29% cost reduction
- Reduced water consumption
- Predictable failures

CASE STUDY— ROCHESTER HILLS, MI

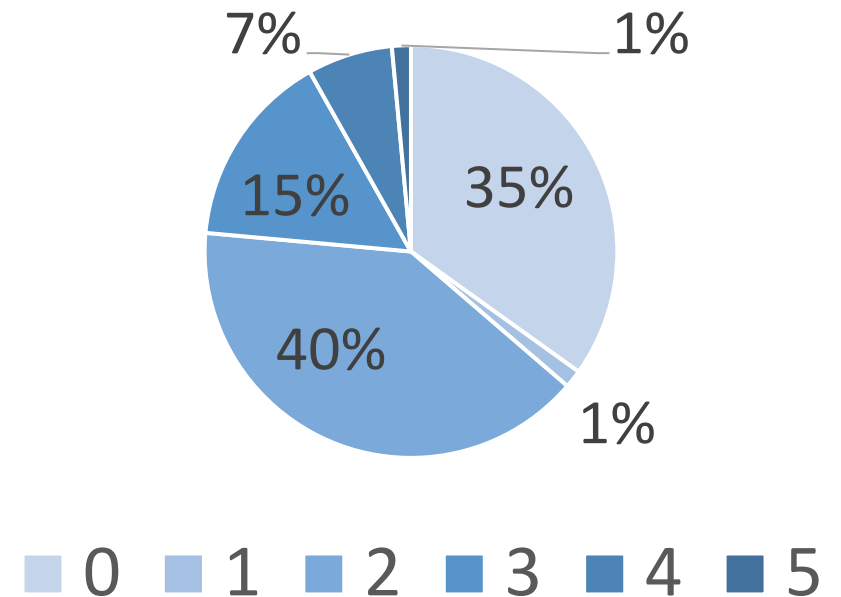
- 200 miles system
- 6-inch to 36-inch
- 6,000 MHS



CASE STUDY– ROCHESTER HILLS, MI



- O&M Defect by Inspection

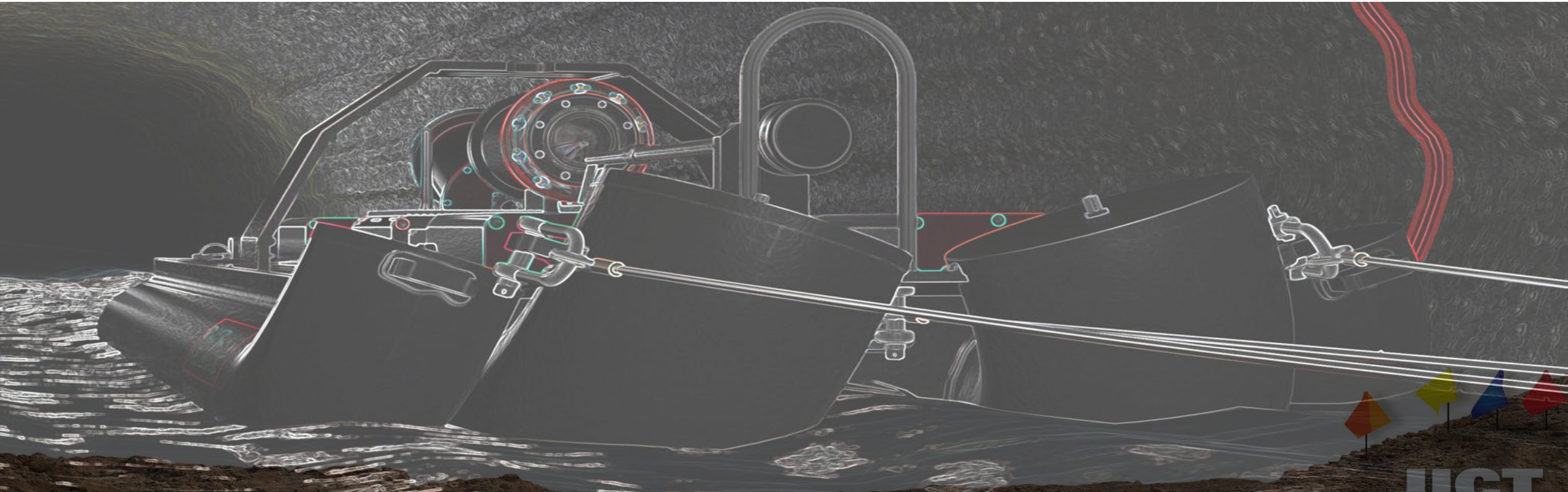


CASE STUDY – FT WORTH, TX

- Pipeline repair and replacement
- CIP : \$26M in savings (4 years)
- Cleaning: \$6.9 M saved



QUESTIONS



UNDERGROUND CONSTRUCTION TECHNOLOGY

THE UNDERGROUND UTILITIES EVENT | February 7-9, 2023 | Orlando, FL





THANK YOU



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