

Daniel Christodoss, PhD, PE

URS Corporation

Years of Experience with URS: 2

Total Years of Experience: 34

Education:

PhD, Civil Engineering, University of Tennessee, 1990

Master of Science, Public Health Engineering, Bharathiyar University, 1986

Bachelor of Science, Civil Engineering, Madras University, 1980

Registration:

Professional Engineer, TX, No. 86016, 1999

General Summary

Dr. Christodoss has over 30 years of engineering experience including infrastructure asset management, design, construction and operations management or wastewater collection and treatment plants. His career highlights include four Awards: (1) National Pollution Engineering Award, (2) Texas Environmental Excellence Award, (3) Air Force Base Environmental Excellence Award and (4) AWWA Award for his work in water quality.

City of Waco FOG to Biodiesel

- Provided a detailed proposal with schematics for converting oil and grease (used cooking oil from restaurants and oil and grease from grease traps) to biodiesel. The proposal includes the location and the schematics of the process. The concept was approved by the Waco Metropolitan Area Regional Sewer System Board.
- Process proposed included an enzymatic process that can tolerate oil and grease with a higher fat content.
- Proposal included public meetings and promotions for increasing the amount of used cooking oil recycled to biodiesel for operating city fleet.

City of Houston FOG to Biodiesel

- Provided a presentation to City Staff on the concept for conversion of oil and grease to biodiesel along with return on investment (ROI) calculations.
- Concept included a central location for receiving oil and grease from commercial waste haulers and City revenue from tipping fee.

City of Fort Worth FOG to Biodiesel

- To move the City further along towards being a net-zero energy model, concepts were presented on converting used cooking oil to biodiesel with an enzymatic process to run generators at the plant to generate electricity.
- Concept presented included conversion of oil and grease with high fat content to biodiesel.
- Schematics of the process and ROI calculations plus return on investment from reduction of clogs in the sewer collection system and reduction in operation and maintenance expenses were presented.

Wastewater collection system and wastewater treatment plant projects:

- Conducted Wastewater Plant, force main (FM) and gravity sewer:
 - Asset Inventory & Condition Assessment with Condition/Criticality Ranking.
 - Prioritized Weighted Long Term Capital Improvement Project Program Planning.
 - Programmed Asset Preventive Maintenance Schedules/Risk Reduction based on Asset Life, Condition and Criticality
 - Pro-Active Maintenance and Rehabilitation/Replacement.
 - Implemented Root Cause of Failure Analysis, Risk reduction measures, Hazard Identification Failure Modes & Effects Consequence/Criticality Analysis and designed lift stations for electrical hydraulic surge protection.
- Technical review for City of Redlands, CA, conventional and tertiary WWTP Operations Efficiency Initiatives. The WWTP produces secondary treated water for land disposal and tertiary treated California Title 22 recycled water for re-use. To accomplish both treatment objectives, the liquid treatment processes and facilities at the WWTF have two separate treatment trains, conventional and MBR.
- Technical review of Compliance Study for South Bay International Wastewater Treatment Plant, San Diego, CA. Since startup of the secondary plant in early 2011, there have been several National Pollutant Discharge Elimination System (NPDES) permit exceedances for total suspended solids (TSS) and carbonaceous biochemical oxygen demand (CBOD5), believed to be caused by solids washout from the secondary clarifiers. Recommended dye tracer, pH and coagulant dose optimization along with establishment of a pre-treatment program so domestic sewage is not mixed with industrial effluents.
- Asset, Design and Construction Manager for over 10 wastewater plants (conventional and tertiary) at Southwest Water Company.
- Program manager at Waco Water Utilities for the wastewater collection system and regional wastewater treatment plant (WWTP) with over 800 miles of sewer-lines including major regional interceptors. Prepared SSO reduction plan and monitored compliance with CIP and operational improvements. Rehabilitated gravity sewer lines, force mains and manholes with Cure-in-place liners.
- Lead Engineer for the regional 37.5 MGD wastewater plant stress testing to support plant uprating to 45 MGD and prevent down-rating to 30 MGD. Presented paper on "Activated Sludge Plant Field/Model Capacity Evaluation", at the Texas AWWA Conference.
- Lead Engineer for Waco WWTP modifications to treat high BTU wastes from industries and FOG to minimize sewer clogs, produce methane to run the sludge to soil-conditioner bio-solids reuse plant to save natural gas costs, and co-generate 1/3rd of the plant's electricity requirements.
- Lead Engineer for West District and Upper Brays WWTP Service Areas Sewer and Odor Control Systems Master Plan, City of Houston (COH): Prioritized O&M and Capital Improvement Project Recommendations including Chelford City facility consolidation projects. Evaluation criteria were developed for sewer basins and condition assessment was performed basin by basin. Criteria next presented were those considered to prioritize the sewer basins; those in bold were selected as criteria to use for this master plan to prioritize the sewer basins for inspection and rehabilitation/replacement: age of sewer, excessive inflow/infiltration (I/I), Number of excursions for sewer basin, Number of sewer related service calls/311 calls for sewer basin, brick manhole construction,

presence of concrete pipe in sewer basin, pipe diameter, slope of pipe, InfoWorks ICM Model predicted surcharge violations and excursions by sewer basin, frequency of inspection or maintenance, CCTV Ratings, sewer line location in back lot easements, presence of open ditches vs. curb and gutter streets.

- Lead Engineer City of Beaumont Collection System Optimization with InfoWorks ICM to determine optimum operating conditions to maximize the collection system capacity and additional storage needs to minimize wet weather impacts.
- Lead Engineer for sludge dewatering technology feasibility study at Windermere WWTP, Pflugerville and anoxic basin, blower and air-line improvements at Cherokee Shores WWTP, Mabank
- Lead Engineer for Waco Emergency Sinkhole 36-inch Sewer-line Replacement: Designed and constructed an emergency 36 inch sewer line adjacent to major gas, telephone and electrical lines over a major arterial road that collapsed in Waco due to a 400 x 800 ft sinkhole adjacent to Lake Waco. Completed the project with in-house utility staff at 50% of contractor's bid price.
- TRA Central WWTP Diamond Filters Design Project Engineer for the high flow and small footprint diamond cloth filters to replace the existing sand filters. Features include higher solids loading per square foot of media (2.5 times the filtration area of sand filters), higher hydraulic loadings, reduced backwash water volume, and reduced footprint.
- Lead Engineer for the Azle WWTP reclaimed water pump station upgrade preliminary design. Presented paper on "Water Reuse Technologies for Industrial and Municipal Applications", at the 9th Annual Practical "Water Issues & Technologies" Short Course, Texas A&M. Project manager for lift station and creek and highway sewer-line crossing design and collector street sewer-line relocation.
- Lead Engineer for the Tower Terrace Collection System I&I compliance plan provided to TCEQ followed by a Sanitary Sewer Evaluation Survey (SSES) field study to identify sources of I&I.
- Designed lift stations, force-mains and collection systems for private developments in Killeen.