

Fairfield-Suisun Sewer District

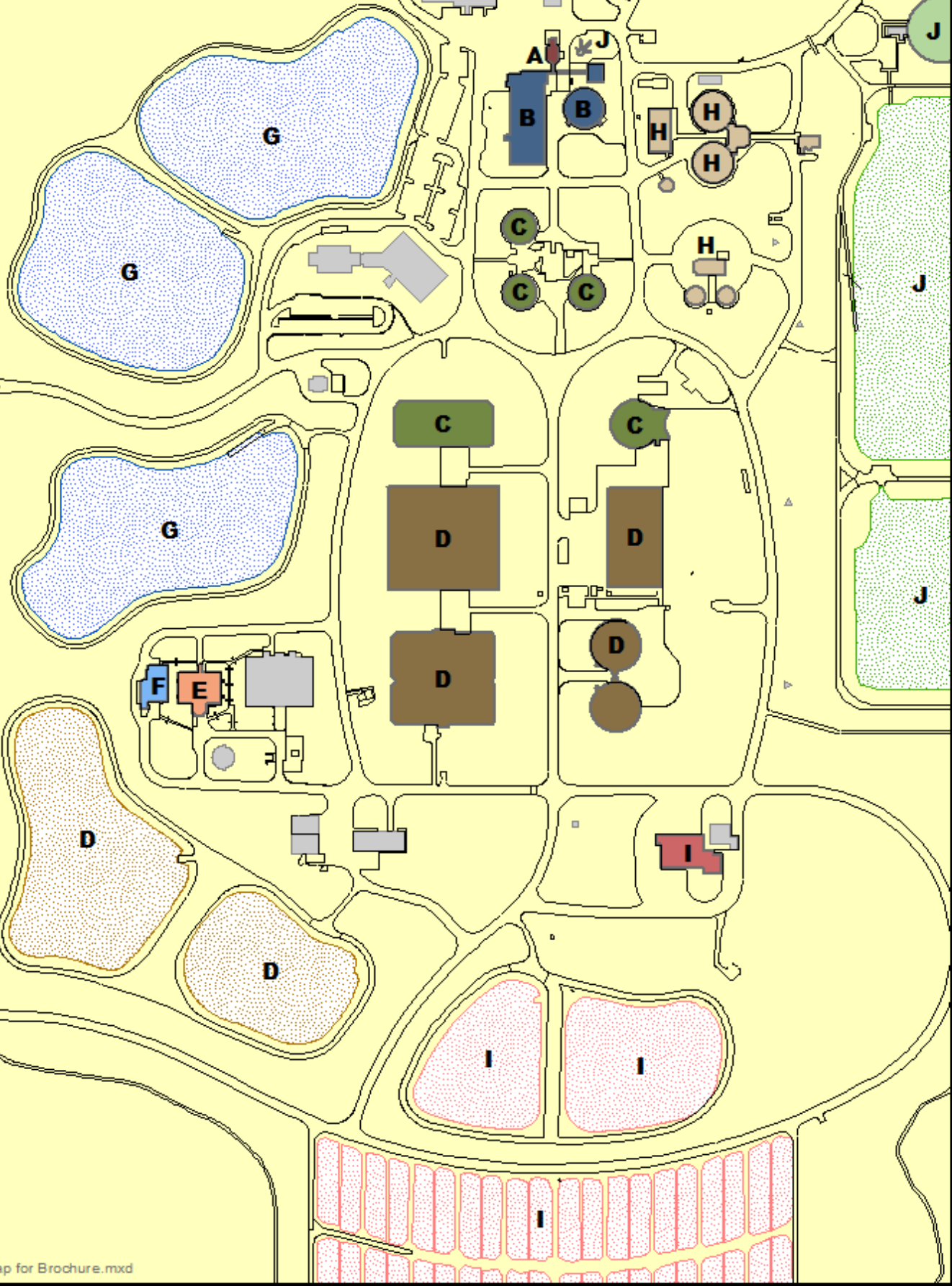


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CHADBOURNE ROAD





A. Preliminary Treatment

Debris and grit that are harmful to downstream equipment are removed with bar screens and degritting equipment. Influent flow is measured and recorded at this location.



B. Primary Treatment

The primary clarifiers at the head of the facility remove heavier solids through settling.



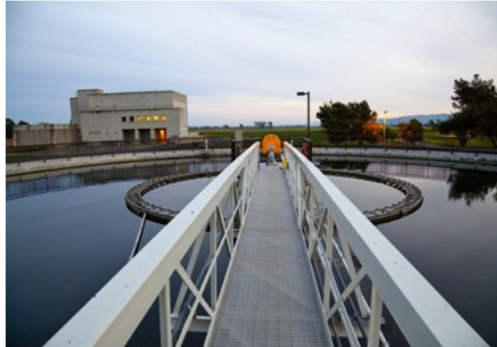
C. Intermediate Treatment

The oxidation towers and intermediary clarifiers remove soluble organic matter.



D. Secondary Treatment

Secondary treatment is accomplished in the aeration tanks and secondary clarifiers. Bacteria consume organic matter in the intermediate treatment effluent, generating an 'activated' sludge. To survive, bacteria need oxygen that is provided in the aeration tanks. Secondary clarifiers remove the activated sludge through settling.



E. Tertiary Treatment

Filters provide a polishing step to remove the few suspended particles remaining in the secondary clarifier effluent.



F. Ultraviolet Disinfection (UV)

UV light destroys the genetic makeup of pathogenic organisms to prevent the spread of waterborne diseases to downstream users and the environment.



G. Final Effluent Storage

Final effluent can be discharged directly into the Suisun Marsh, or temporarily stored in large, earthen reservoirs for later use in irrigation or utility applications.



H. Anaerobic Digestion

Solids removed in the clarifiers are thickened and then digested in a closed vessel. Digesters provide an environment to reduce the organic matter and disease-causing organisms. Methane is produced as the solids are digested and is used as a fuel for on-site electrical generators.



I. Dewatering

The digested solids are pumped to the dewatering building or solar drying beds, where excess water is removed.

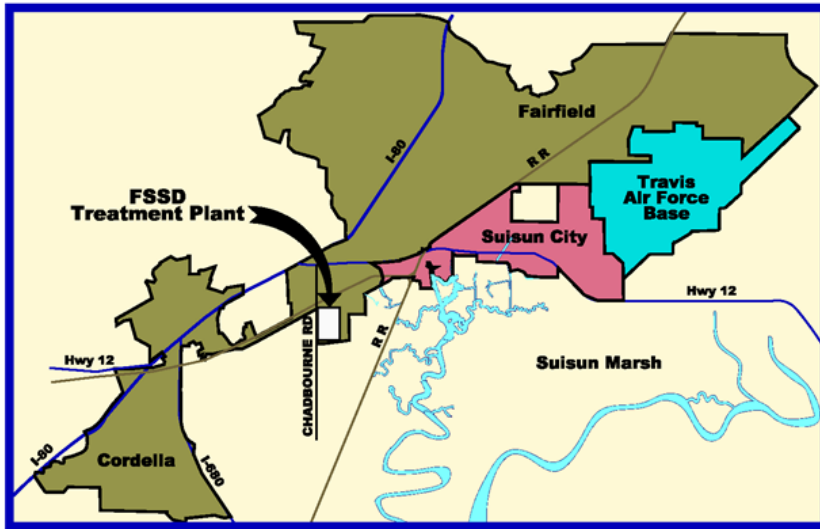


J. Flow Equalization

Flow equalization facilities are used to divert and temporarily store incoming flows during high flow, wet weather periods. The stored wastewater is routed back to the plant for treatment.

Fairfield-Suisun Sewer District

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The Fairfield-Suisun Sewer District oversees wastewater collection and treatment, water recycling, and stormwater management services in a 41-square-mile area of Solano County, California. The service area encompasses the cities of Fairfield and Suisun City as well as one of the nation's most strategically important military installations, Travis Air Force Base.

The District owns and operates a system of sanitary sewers and pumping stations that serves 135,000 residential, commercial and industrial customers and government Agencies. Major industries includes Anheuser-Busch Brewery, Travis Air Force Base, and Super Store Industries. Households, retail businesses, major food and beverage producers, light industries, manufacturers and vital military Operations depend upon this service.

The District's collection system consists of 13 pump stations and a 70-mile network of 12 to 48 inch diameter sewer pipes that collect and transport sanitary waste to a modern, efficient wastewater treatment plant. The treatment facilities, which occupy about 150 acres, replaced three older plants in 1976 and have undergone major renovation and expansion to keep pace with the region's population and economic growth, as well as technological advancements in the wastewater industry.

The District's mission is to safeguard public health and the environment. Just south of the District's boundary is the sensitive Suisun Marsh, which is the nation's largest brackish water marsh as well as the largest wetland on the Pacific Coast. This 116,000-acre region not only supports abundant plant life but also serves as a stopover for up to 1.5 million migratory birds traversing the Pacific Flyway each year. Protecting public and environmental health requires the District to ensure that discharged water meets stringent water quality standards set by Federal, State and Regional agencies.

FLOWS AND LOADING

Average Daily Flow:
12.2 million gallons per day

Biosolids Disposal:
10,400 wet tons annually

Suspended Solids Removed:
99.5% of incoming solids

Dry Weather Capacity:
23.7 million gallons per day

Irrigation/Utility Water Output:
193 million gallons

POWER

Consumed:
11,642 MWh annually

Sources:
PG&E, solar, wind and
methane co-generation

Wind Turbine Power

Wastewater treatment is an energy-intensive process. The District's wastewater treatment facilities are the first in California to be powered by wind turbines. The four are rated at 50 kw and became operational in early 2010.



Solar Power

The District's property is host for the solar system owned and operated by SunEdison. The solar system has the capacity to deliver 1 MW of power to the treatment plant at 12 KV and produces approximately 20% of electricity used each year.

