San Francisco's Future Bioenergy Park
Phase I: FOG-to-Biodiesel

Grease clogs our sewers

- Increased maintenance costs (often grease must be removed by jackhammer)
- Decreases System Capacity
- #1 Cause of Sanitary Sewer Overflows - >75% of all SSOs annually

Where does it come from?

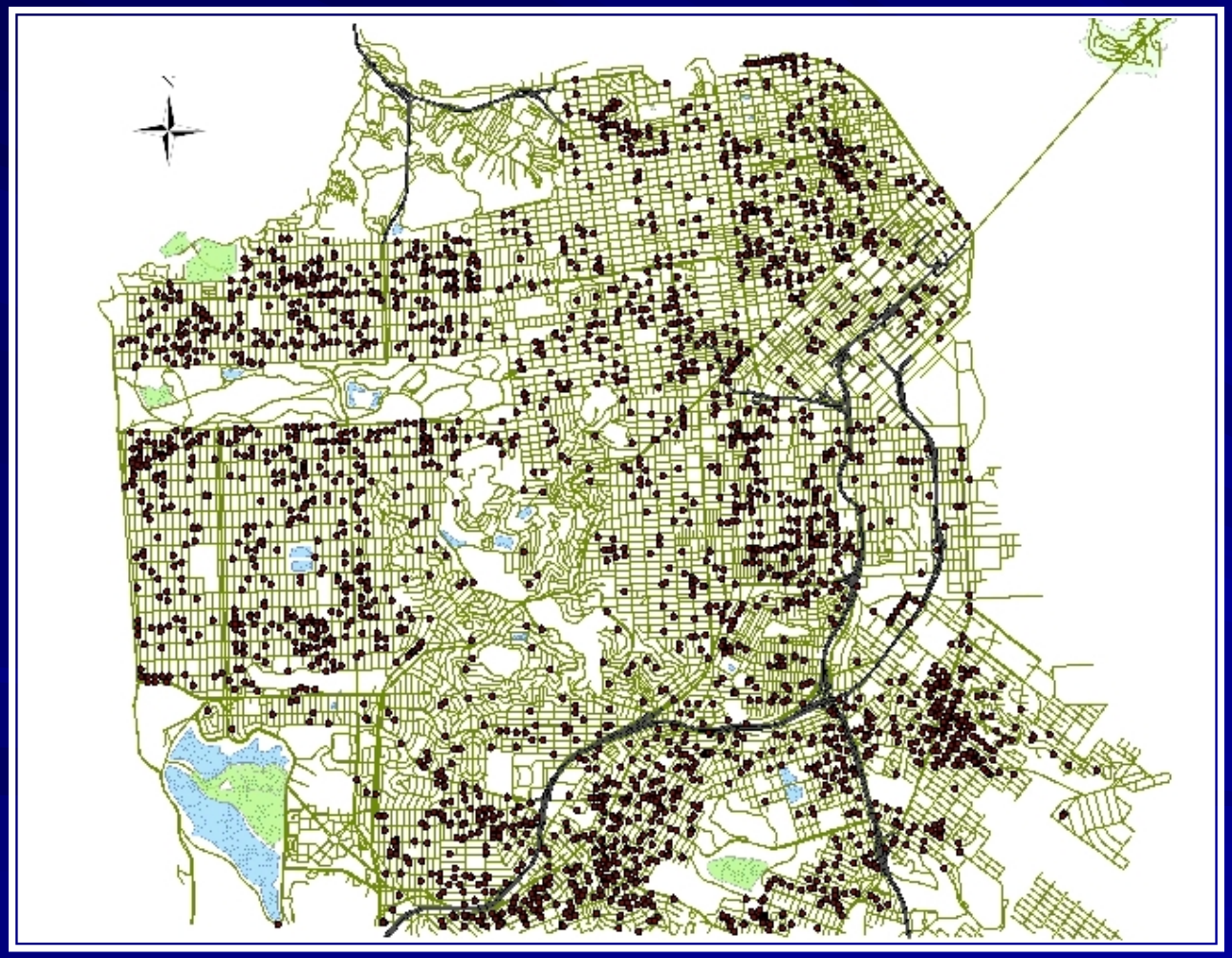
- #1 Culprit is Restaurants
  - Disposal is complicated and expensive
  - Storage Attracts Nuisances (rats)
  - Fast and Simple Solution:
    - Pour it down the drain

Grease Trap

Grease Interceptor

Automatic Grease Recovery Device

Snapshot of Grease-Related Incidents in SFPUC's Collection System



>$3.5 million/year on grease-related collection system maintenance

Program Drivers

- All POTWs must prevent/reduce SSOs (Fed & State)
- Future regulations will prohibit landfill disposal of grease
- Governor's Executive Order S-06-06
  - State to produce biofuels within CA:
    - 20% by 2010, 40% by 2020, 75% by 2050
- Bioenergy Action Plan
  - Bioenergy Interagency Working Group
  - AB 32: California Global Warming Solutions Act
- Governor's Ten Point Electricity Plan
- Energy Action Plan II
- Western Governor's Assoc.'s goals for a clean & diversified energy supply

SFPUC Current Efforts

New Sewer Ordinance

- Restaurants must upgrade to Automatic Grease Recovery Device within 3 years
- Haulers must service devices every 90 days

FOG-to-Biodiesel Demonstration Project

- Validate Technologies
- Establish Engineering Design Standards
- Document Benefits of Co-location

PUBLIC INTEREST ENERGY RESEARCH
"Research Powers the Future"

All SF Municipal Diesel Vehicles use B20 since January 1, 2008

Benefits of Co-location

Locating brown grease recovery and biodiesel facilities at a WWTP allows streams to be shared between processes, utilizing wastes and conserving energy and materials

Project Site: Oceanside WWTP

- WWTP provides steam heat, electricity
- WWTP will receive less FOG in headworks
- Brown Grease Recovery provides high BOD wastewater for anaerobic digestion
- Biodiesel Process provides glycerol, a degreaser

FOG-to-Biodiesel Demonstration Project

Overall Goals: Reduce FOG discharges to sewers; Recover energy value of FOG & reduce San Francisco's reliance on fossil fuels; Reduce greenhouse gas emissions

Project Technical Goals: Recover brown grease at <2% MIU; Convert brown grease to ASTM quality biodiesel; Establish engineering design standards

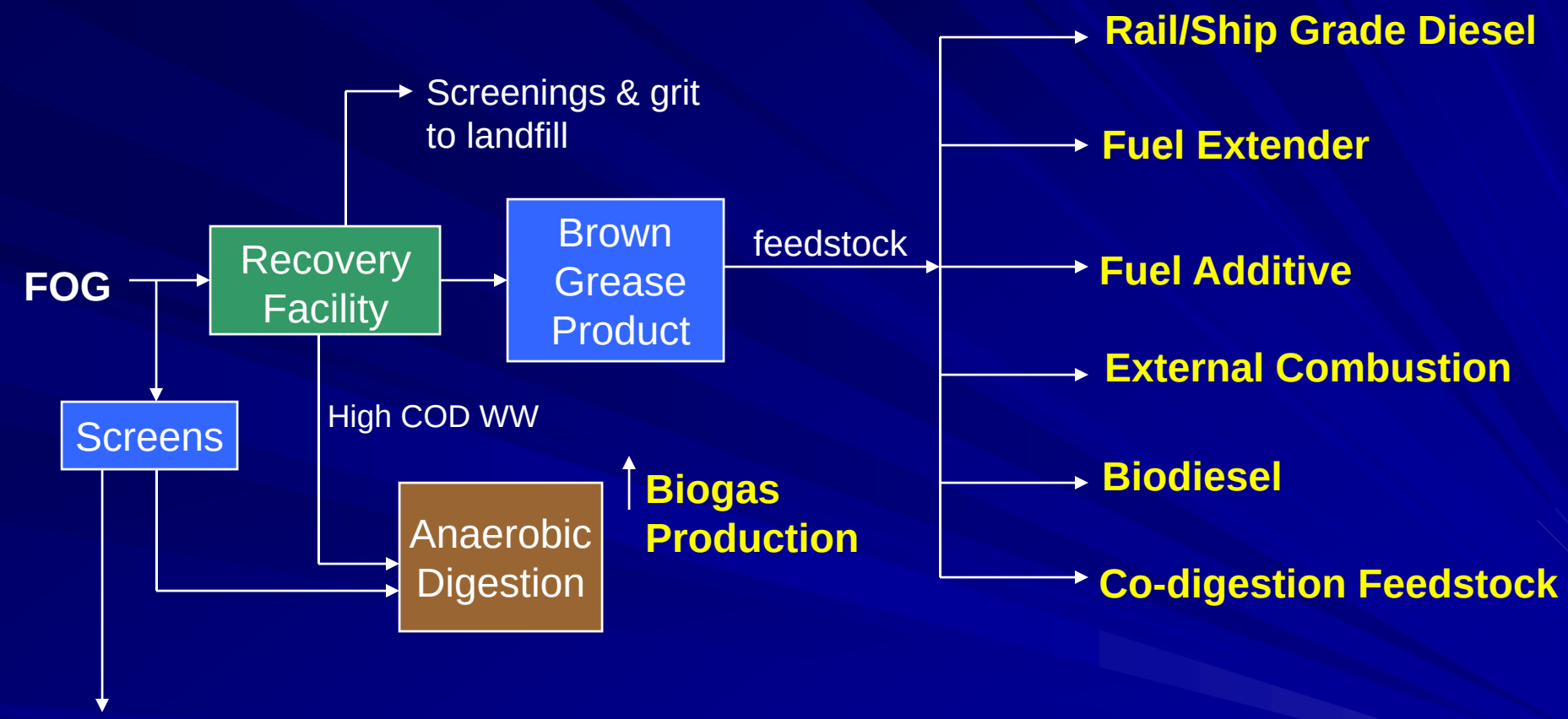
Project Economic Goals: Develop business model to enable project to be replicated by other municipal agencies

Future Bioenergy Park

VIDEO

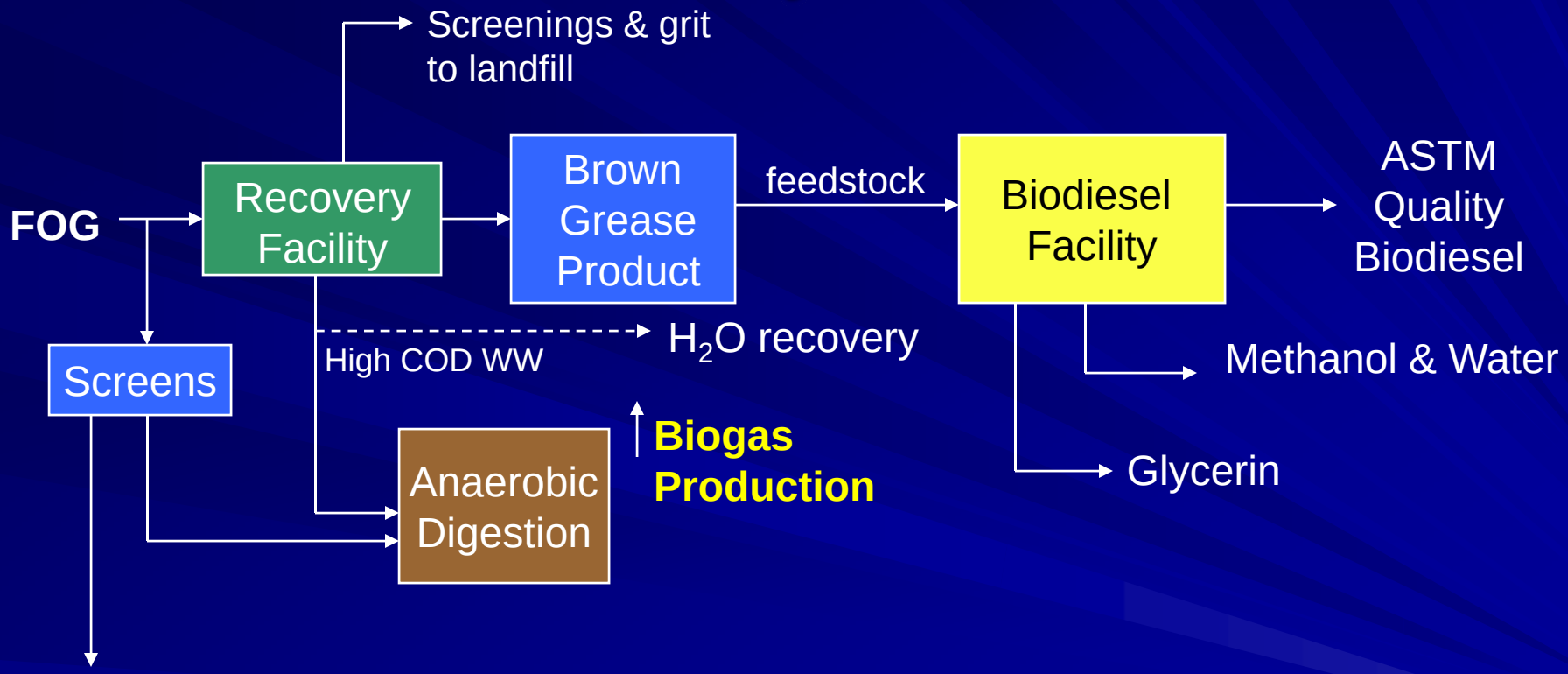
FOG-to-Fuel is Phase 1 of Future Bioenergy Park

FOG Recovery Facility



BENEFIT: Municipal WWTP's Convert FOG to Energy and Fuel, Reduce Fossil Fuel Use, Greenhouse Gases, and Waste Hauling Costs, and Extend Life of Landfills

FOG-to-Biodiesel Demonstration Project

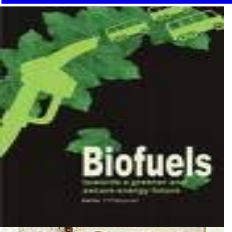


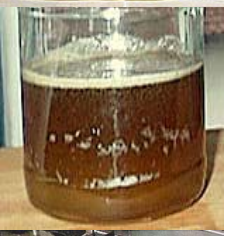
Glycerin: research use as collection system degreaser
Low grade methanol: research use as carbon source for denitrification
Water recovery: cost of recovery for reuse applications

Future: All San Francisco Municipal Fleets will run on FOG-Derived Biodiesel

All SFGreasecycle trucks currently run on B99 produced from waste grease collected from San Francisco Restaurants

Contact Information





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