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KNOXVILLE
UTILITIES BOARD

October 2, 2025

Grease Control and Wastewater Treatment

Wastewater System

Customers: 75,216

Service Territory: 243 square miles

Treatment Plants: 4

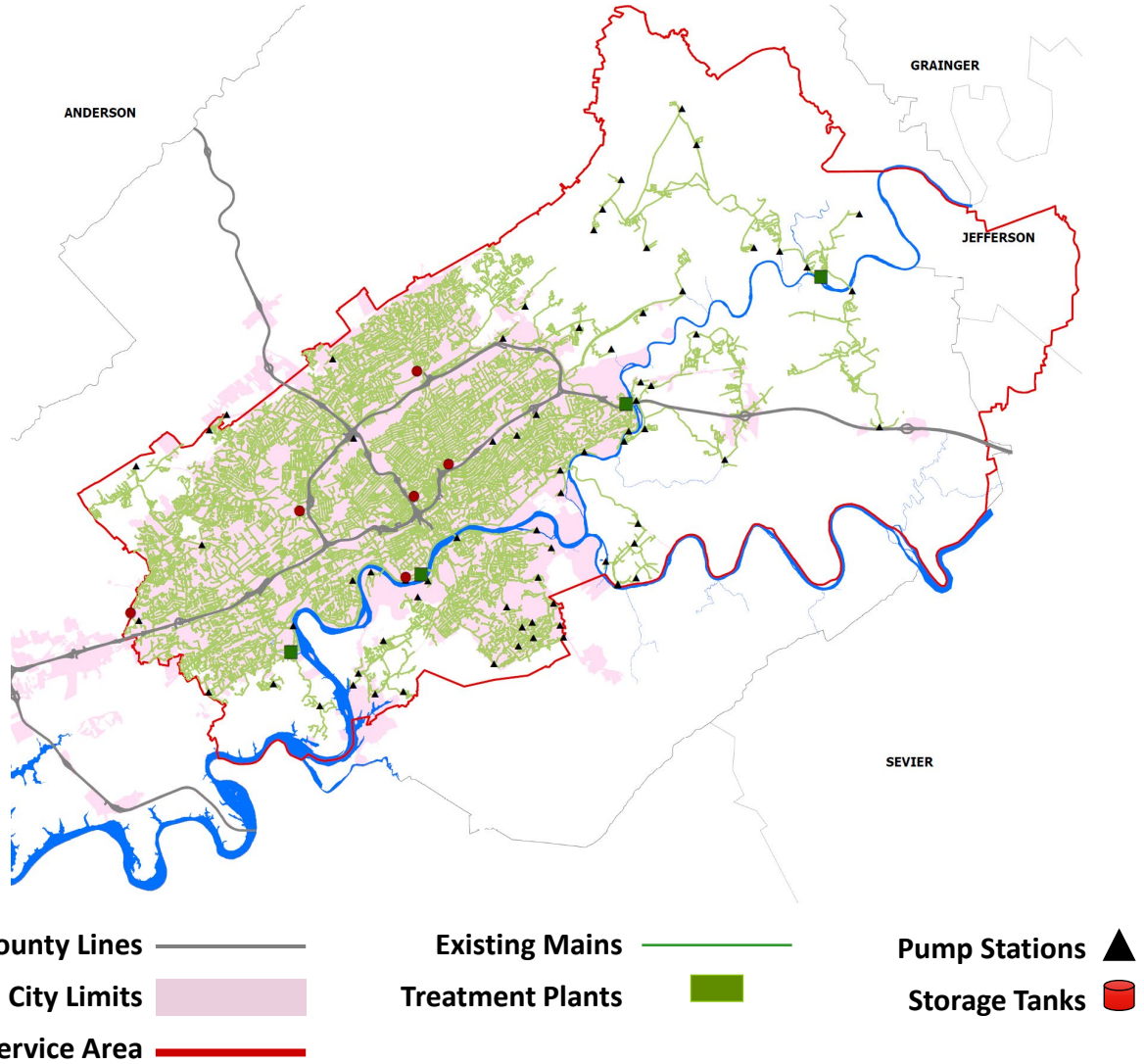
Lift Stations: 64

Collection Mains: 1,340 miles

Storage Capacity: 34 MG in 6 tanks

Plant Maximum Capacity: 173 MGD

Average Flow: 37.75 MGD



System Improvements

- Wastewater utility acquired from the City of Knoxville in 1987
- Consent Decree (CD) 2004 - 2022
  - Reduced sanitary sewer overflows (SSOs)
  - Upgrades to treatment plants
- Management, Operation, and Maintenance (MOM) Programs
  - Retain compliance
  - Performance and capacity
  - Protect the environment and community
  - Protection of assets and CD improvements

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CENTURY II

Grease Control Program

- Reduce the frequency of grease related SSOs
- Control the Fats, Oils, & Grease (FOG) entering the wastewater collection system
  - Industrial discharges
  - Commercial food service facilities (FSFs)
  - Residential homes
- Enhance public awareness on grease collection and disposal

Excessive Grease

- Can cause SSOs
- FOG can harden and build up in the wastewater collection system
- Blockages and “Fatbergs”
- Customer plumbing failures
- Expensive clean-up and maintenance costs
- Impacts treatment operations

Industrial Pretreatment

- Required by the EPA to protect utility assets, the environment, and community
- 23 permitted industries
  - Chemical manufacturers, landfills, food processors, laundries, metal finishers, grease recyclers, and pharmaceuticals
- Routine monitoring and inspections
- Grease limit of 100 mg/L
- Customer service and regulatory compliance

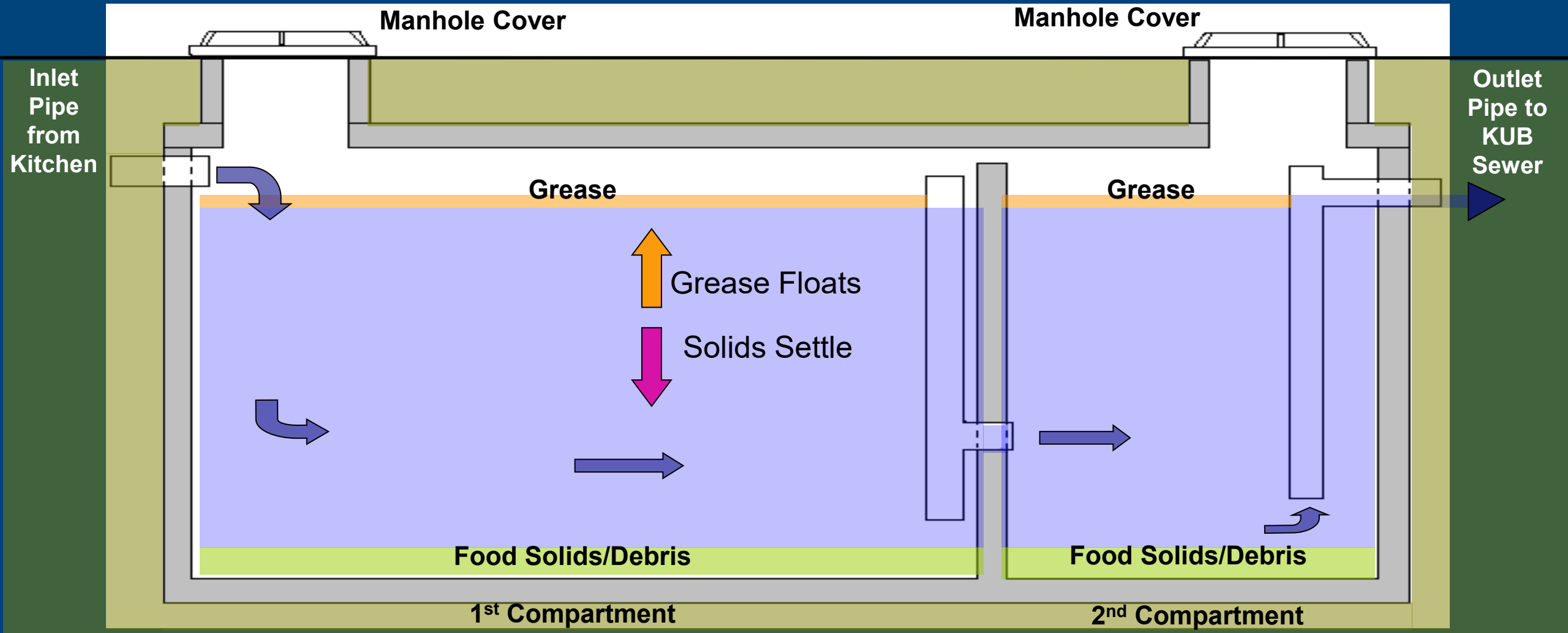
Food Service Facilities

- 882 permitted food service facilities (FSFs)
- Requires proper equipment size and installation
- Routine compliance inspections
  - Equipment must be accessible
  - Grease content <25 % of total capacity
  - Equipment in good working order
- Maintenance of grease equipment
  - Cleaning frequency
  - Follow-up inspections
  - Corrective actions

Grease Control Equipment

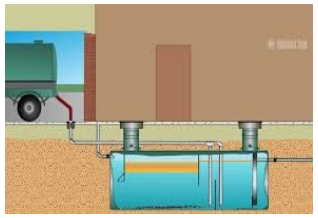
- Grease interceptors
  - Most common application
  - Size determined from EPA and plumbing codes
  - Required for dishwashers or garbage grinders
  - Example: Fast food chain restaurant
- Grease traps
  - Smaller in size
  - Only permissible in certain circumstances
  - Dishwashers and garbage grinders prohibited
  - Example: Convenience store

How a Grease Interceptor Works



Grease Recycling and Reuse

Yellow Grease
(cooking oil)



Brown Grease
(from interceptors
and traps)

Grease Recycler

Clean Water
Discharge

Fuel Oil

Fertilizer

Animal
Feed

Personal
Care
Products

Outreach and Education Efforts

- Can the Grease Program
- Website
- Social media
- Customer newsletter
- Public events

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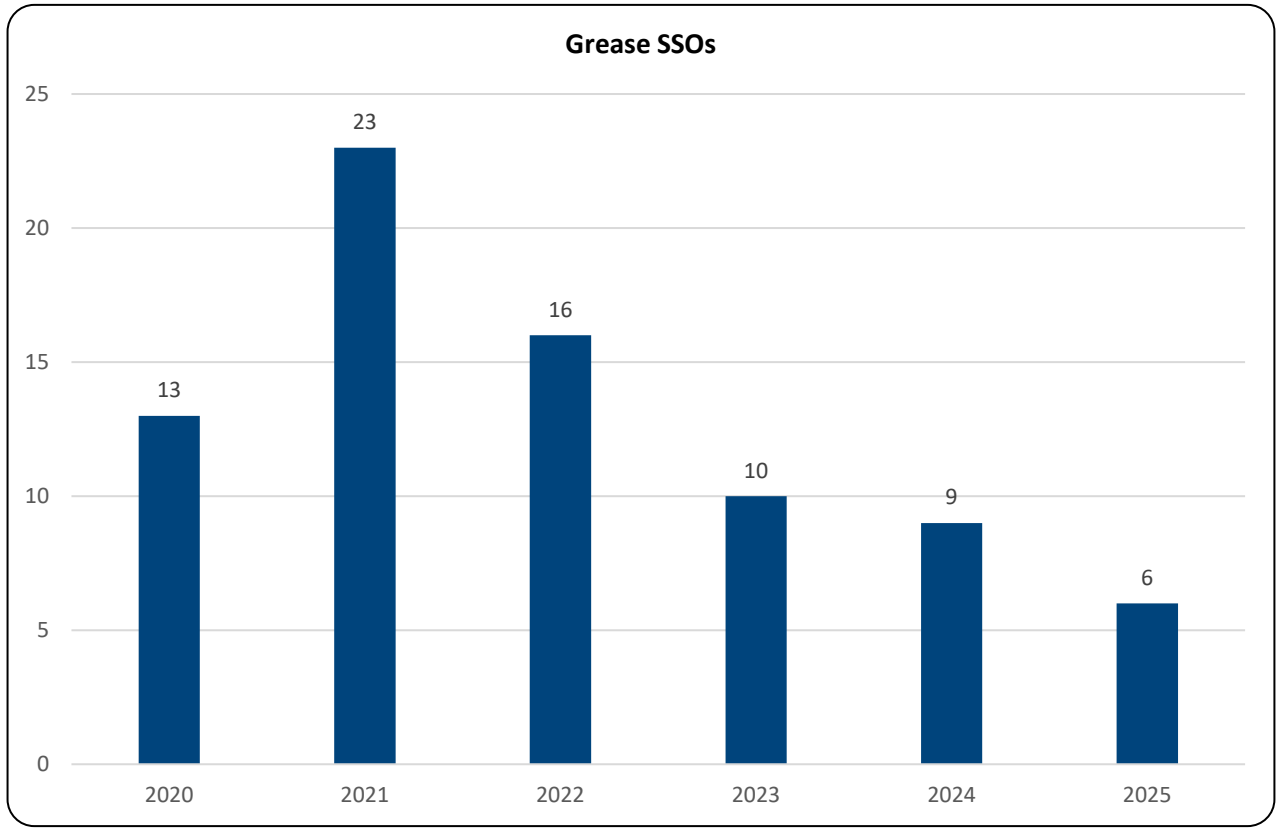
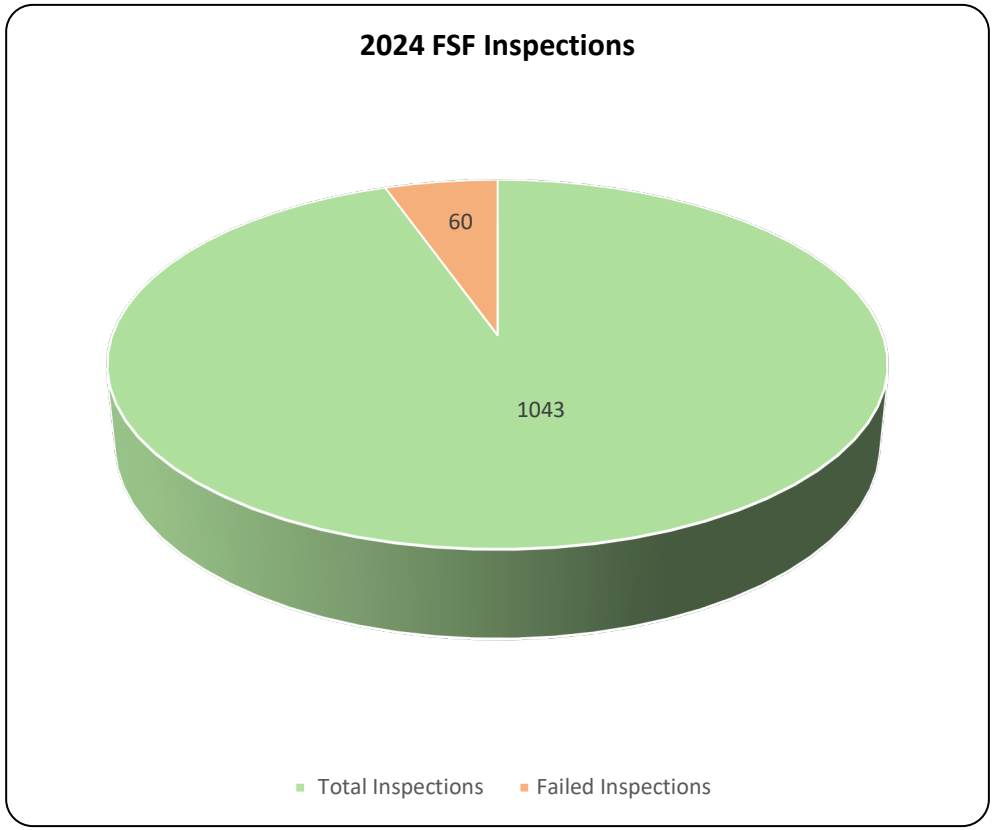
Can the Grease

PREVENT COSTLY REPAIRS AND PROTECT OUR ENVIRONMENT

Grease Program Compliance





Program Success

- Committed to SSO reductions and a clean environment
- Customer relationships
- Knowledgeable workforce
- Regulatory compliance
- Public engagement
- Good stewards of the collection system and plants

Wastewater Treatment Process

Normal Treatment Train

N1. Influent Screens
N2. Grit Removal
N3. Primary Clarifier
N4. Aeration Tanks
N5. Final Clarifier
N6. Disinfection Contact Tank
N7. Tennessee River

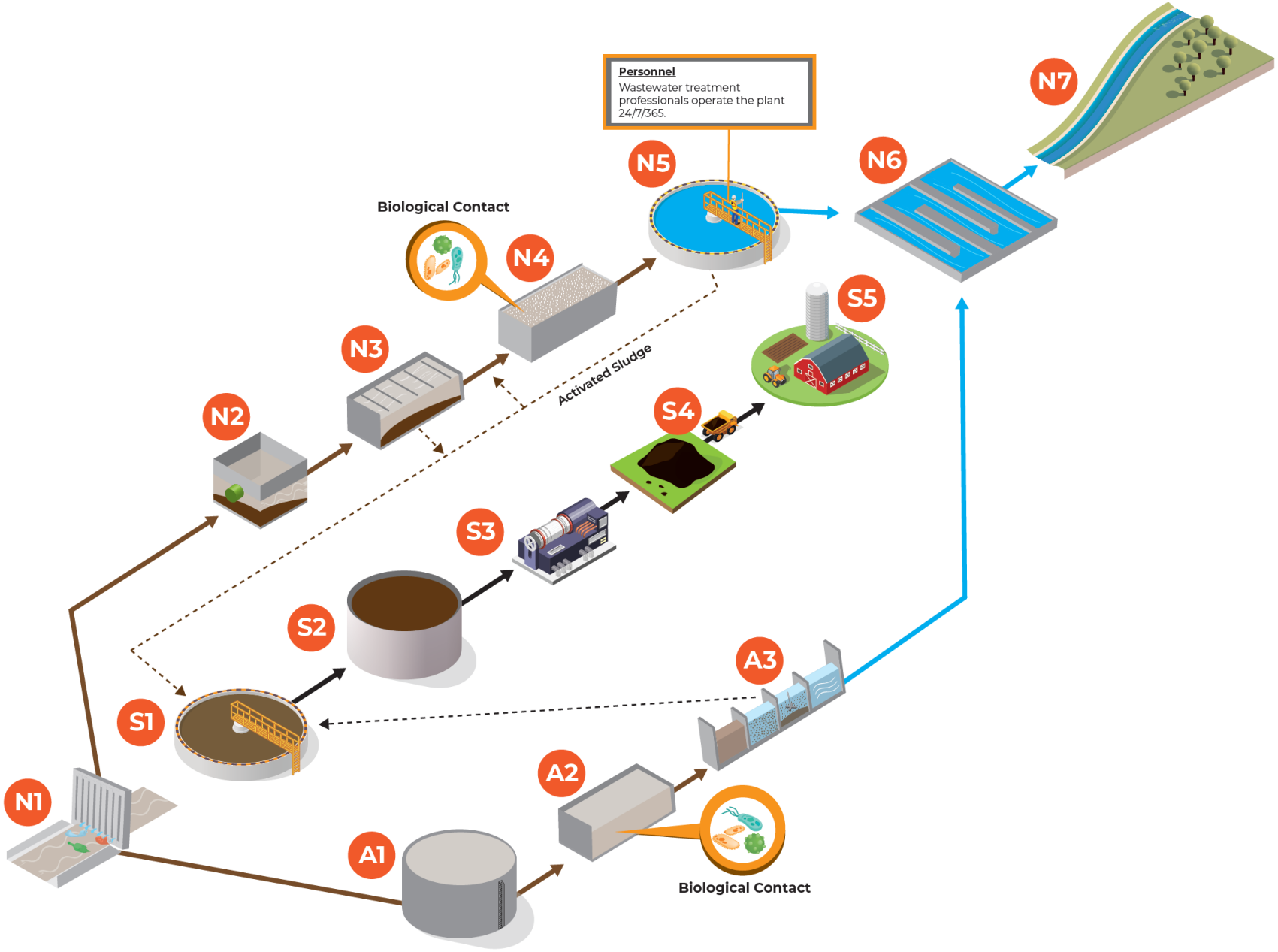
Solids Treatment Train

S1. Solids Thickener
S2. Digester

S3. Centrifuge
S4. Biosolids Cake
S5. Farm

Abnormal (High Flows) Treatment Train

A1. Wet Weather Storage
A2. Biological Contact Tank
A3. High Rate Clarifier



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