# FROM CRISIS TO CAPACITY

A Case Study in Building a Private Septage Disposal System

*“It’s only waste, if we waste it!”*

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## A NOTE BEFORE WE START

The views, opinions, and conclusions presented in this session are my own, drawn from my own operational experience. They do not represent the views or positions of NOWRA or NAWT, and should not be attributed to either organization.

# The Crisis Every Operator Is Facing

Municipal wastewater plants are cutting outside haulers loose — restricting volumes, raising prices, or ending septage programs entirely.

## Longer

**Haul distances as local access closes**

## Rising

**Disposal costs with no ceiling in sight**

## Real

**Operational risk to businesses and public health**

***For septic and portable sanitation operators, this isn't a regulatory inconvenience. It's an existential threat to the business.***

# Disposal independence isn’t just one path.
# It’s many paths, I’ve studied four.

Each path starts from a different asset an operator already has.

# Four Paths to Independence

1

### Legacy Land

Land you already have, positioned by growth you didn’t plan for.

2

### Build It From Scratch

The depot model: satellite receiving, centralized treatment.

3

### Let the City Do the Heavy Lifting

Screened discharge into existing municipal infrastructure.

4

### Partner on Their Ground

Lease a small footprint from the utility, screen and dewater on site.

***Mechanical prescreening shows up across all four — protecting an asset, powering a system, standing alone as the whole solution, or working alongside dewatering to solve strength as well as debris.***

# 1 The Land You Already Have

**Some operators are sitting on the answer without knowing it.**

Land bought a generation or two ago, once far outside of town, that the town has since grown up around. What used to be “the back forty” is now perfectly positioned real estate for wastewater disposal capacity.

**EXAMPLE FROM THE FIELD**

A mechanical prescreening process with specific results sits on roughly 600 acres of irrigated bermuda grass in Central Texas, purchased three generations ago when the property was well outside town. The town grew up around it. What was once remote acreage is now perfectly positioned to receive and process hauler waste — an asset built by decades of accident, not design.

# 1 Two Ways to Put That Land to Work

### Land Application

Wastewater is spread directly across the surface of designated fields, absorbed into the soil, and taken up as a nutrient source by hay, bermuda grass, or other managed crops.

### Subsurface Discharge

Wastewater is dewatered — solids separated out — and the remaining effluent is distributed underground through large lateral line systems, similar in principle to a septic drain field, built at a much larger scale.

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**WHERE PRESCREENING FITS**

Pre-screening protects polymer spend and uptime on the dewatering side, and keeps trash, wipes, and needles out of the field on the land-application side.

# 2 Build It From Scratch: The Depot Model

Most operators don’t inherit land in the right place. They build independence the hard way: buying acreage wherever it’s available, even an hour outside of town, and engineering a system to make that distance manageable.

**Satellite receiving depots, mechanically prescreened at each site, feed centralized treatment where the land actually is. This is CleanWater Farm — five years of real, operating data.**

| 5 | 4.5M | 80 | 0 |
|---|---|---|---|
| years in operation | gallons processed / year | acre treatment facility | odor complaints |

# Five Years of Real Results

- **Stable soil conditions** — across all 24 acres of managed hay fields
- **Increased crop yields** — under the permitted nutrient management program
- **Zero odor complaints** — in five years of continuous operation
- **A cost structure we control** — instead of one set by a municipality

# 3 Let the City Do the Heavy Lifting

**Here’s the model nobody expected five years ago: no land at all.**

Install a screening unit at the receiving point, screen incoming waste to a fine cut, and discharge directly into the existing municipal sewer system. This path depends entirely on the municipality’s willingness to accept the stream.

**THE QUESTION WORTH ASKING THE ROOM**

*If a properly screened load carries less physical debris risk than what’s already entering a collection system every day from ordinary residential use — rags, wipes, fibrous material — what does that open up for private operators looking for alternatives to long hauls?*

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***IMPORTANT DISTINCTION: this is about physical debris and rag content — not organic strength (BOD/TSS/ammonia). Screening solves the blockage risk; strength is a separate conversation, typically resolved through metered discharge or surcharge agreements.***

# 4 Partner on Their Ground

**An idea that has already worked: lease the ground directly from the utility itself.**

A hauler leases a small footprint of ground directly from a regional wastewater facility — even one that doesn't otherwise accept outside haulers — and builds a compact receiving and dewatering operation right on that footprint. Area haulers bring their loads there instead of hauling long distance.

**EXAMPLE FROM THE FIELD**

An operator has already put this to work: leasing a small footprint of ground from a regional wastewater facility that does not accept outside haulers. On that footprint he built his own compact receiving and dewatering operation, charges each hauler by metered volume, and sends treated effluent back to the very facility that wouldn't take raw loads in the first place.

# 4 The Process: Screening and Dewatering Before Metering Out

1. Haulers dump at the leased site; a gallon counter meters and charges each load accurately by volume.
2. Incoming waste passes through mechanical prescreening, similar in principle though less advanced than the depot model's screening step.
3. Screened wastewater moves to frac tanks for storage and agitation.
4. From the frac tanks, it passes through a polymer blending step into a rotary dewatering unit for final dewatering.
5. The dewatered effluent is metered again and pumped directly to the wastewater facility, now within a strength range the plant can accept.
6. Solids are currently trucked to a landfill for final disposal — an area with room for a better long-term answer.

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***WHAT MAKES THIS MODEL DIFFERENT: unlike straight screened discharge, this solves both problems at once — physical debris through prescreening, and organic strength through dewatering — before the water ever reaches the plant.***

# Know What You Have.

# Then Choose Your Path.

| | | |
|---|---|---|
| 1 | Land | Protect it with prescreening — land application or subsurface discharge |
| 2 | Capital & Patience | Build the depot model — distributed collection, centralized treatment |
| 3 | A Cooperative Utility | Screen and discharge — the prescreening process becomes the whole solution |
| 4 | A Utility Willing to Lease | Lease their ground — screen and dewater on site before metered discharge |

# Pre-screening Is the Key

No matter which pathway or process you choose, the proper pre-screening process is the key.

### WHY IT MATTERS FOR BOTH PATHS

- Waste still takes one of two paths at the Clean Water Farm. For land application, hydrated lime raises pH above 12, then it is land applied. For dewatering, there is no lime; effluent goes out through about 3,600 feet of lateral line.
- Without pre-screening at receipt, trash builds up in holding tanks, eats usable capacity, and forces more pickups. Whatever slips through fouls dewatering gear, lateral lines, and land-application quality.
- Pre-screening protects polymer spend and uptime on the dewatering side, and keeps trash, wipes, and needles out of the field on the land-application side.
- Clean loads at the front end make either pathway work. That is why pre-screening is not optional.

# Thank You

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