

South Wake Landfill



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Introductions

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Operations Overview

Manage 19 waste facilities

- 11 Convenience Centers

- 3 Multi-Material Recycling Facilities

- 3 Household Hazardous Waste Facilities

- SOUTH WAKE LANDFILL (SWLF)**

- East Wake Transfer Station

Landfill gas systems

Illegal dumping enforcement

Closed North Wake Landfill



Outreach and Education Overview

Feed the Bin School Program

86it Anti-Litter Campaign

Community Outreach

Food Waste Reduction

Facility Tours

South Wake Landfill Tours



2020 Public Landfill Tours

One tour per month

Private tours scheduled as needed



LANDFILL TOURS



WAKEGOV.COM/LANDFILLTOURS

South Wake Landfill Timeline

1990's – NCDEQ approved the construction permit

2005 – ILA approved with the exception of Holly Springs

2006 – Contracted with Waste Industries, now GFL

2008 – SWLF opened

25 year design life (2033) at 450,000 tons/year

South Wake Landfill Timeline

2008/2013 – 400,000 tons/year

2013/2019 – 500,000 tons/year

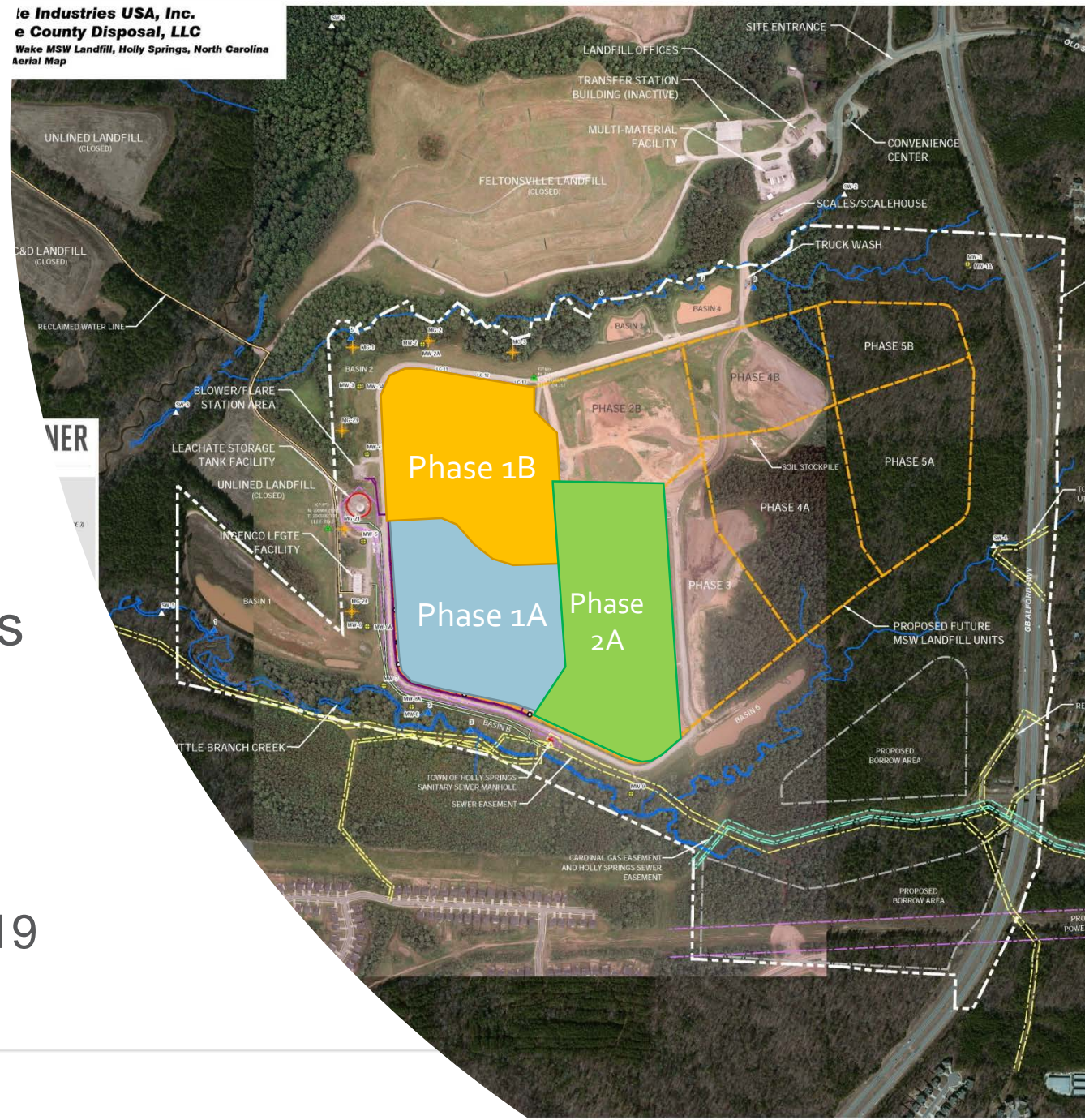
2020 – Projected at 540,000 tons

Total landfill size is 179 acres

75 acres are in operation

20 acres permanently closed in 2018/19

le Industries USA, Inc.
e County Disposal, LLC
Wake MSW Landfill, Holly Springs, North Carolina
Aerial Map



Two Primary Landfill Odor Sources

Operations/Working Face

GFL Environmental is responsible for daily operation of the landfill working face and all cover aspects of buried waste

Landfill Gas

Wake County is responsible for all aspects of landfill gas (collection, control, monitoring or compliance) including well, pumps, blowers, flares, O&M contractor and energy partner

**Transition to GFL's slides and then return
here when complete**

SWLF Odor Issues

Landfill Gas Related

System shut downs (power related typically; system downtime < 2%)

Gas wells not optimized due to environmental factors (barometric pressure, rain, hot, cold, dry)

Liquids accumulation in wells

Wind Speed (1-5 mph) & Direction (to S/SW/SE) are always a contributing factor

Industry Odor Mitigation Best Practices

BMP Strategies for LFG Emissions

- ✓ Extensive LFG Collection & Control System
- ✓ Accelerated Installation of LFG System
- ✓ Dedicated Wellfield Dewatering System
- ✓ Timely Final Cap Installation
 - Interim Cover System
 - Horizontal Collectors

BMP Strategies for Investigation & Outreach

- ✓ Supplemental LFG & Air Monitoring
- ✓ Odor Complaint Tracking & Analysis

Wake County Continues to



Monitor Surface Emissions

Monitor Leachate Cleanouts

Optimize Wellfield Performance

Evaluate Integrity of Daily Cover

Manage Odor Neutralizer System

Evaluate Working Face Operations

LFG System Improvements

On-Site Weather Station

Increased well density to 82 wells

Vapor Based Odor Mitigation System

Expand wellfields prior to final grades

Extra Blower capacity (6,000 cfm total)

Automated Well Heads (new technology)

Use of pumps in wells (20 installed to date)



WAKE COUNTY

Town of Holly Springs Resolution

Initiate a landfill waste plan...


Evaluate waste disposal alternatives...

Explore early landfill closure options...

Identify alternate disposal site(s)...

Waste to energy...

Solid Waste Management Plan



Alternative waste disposal options are being evaluated as part of the Comprehensive Solid Waste Management Plan. Draft document by April 30, 2020.

Proven Waste Disposal Alternatives

Energy from Waste EfW (mass-burn type)

Regional approach (Wake, Durham, Orange?)

10 year minimum development period

Expensive alternative – 3 times current disposal rate (\$90+/ton)

Out of County Waste Disposal

Additional Transfer Station(s) needed

60+ miles in transportation costs

Rates controlled by market/availability of space

Emerging Conversion Technologies

The following are not widely used and do not deal with the entire MSW waste stream, long-term feasibility evaluation is ongoing

Pyrolysis – thermal decomposition at elevated temperatures

Gasification – thermal energy produces biogas, fuels and fertilizers

Fermentation – novel approach to waste management

Town of Holly Springs Resolution



Increase near-term efforts and investments...

Identify innovative landfill practices...

Significantly reduce malodors...

Future Odor Mitigation Strategies

Comprehensive Odor Management Plan – This joint document will include a strategy/response matrix that outlines past, present and future approaches to odor mitigation. Draft document by June 30, 2020.

Optimize LFG System Infrastructure – System expansion

Phase 2A in 2020

Phase 2B in 2021

GFL's Near Term Items

Landfill Design and Operation – Continuous evaluation and implementation of best management practices

New pilot of odor mitigating Bio-Organic Catalyst

Use of tarps with odor neutralizer

Dirt based daily cover

Town of Holly Springs Resolution

Include FY 21 funding for landfill odor mitigation...

To date, over \$3.5 M in LFG improvements

\$ 2.5 M additional improvements in next 7 years

\$ 200,000 per year for future Environmental Nuisance Mitigation efforts

\$ 100,000 vapor based odor system with \$ 100,000/year operating cost
(this is a shared cost with GFL)

Town of Holly Springs Resolution

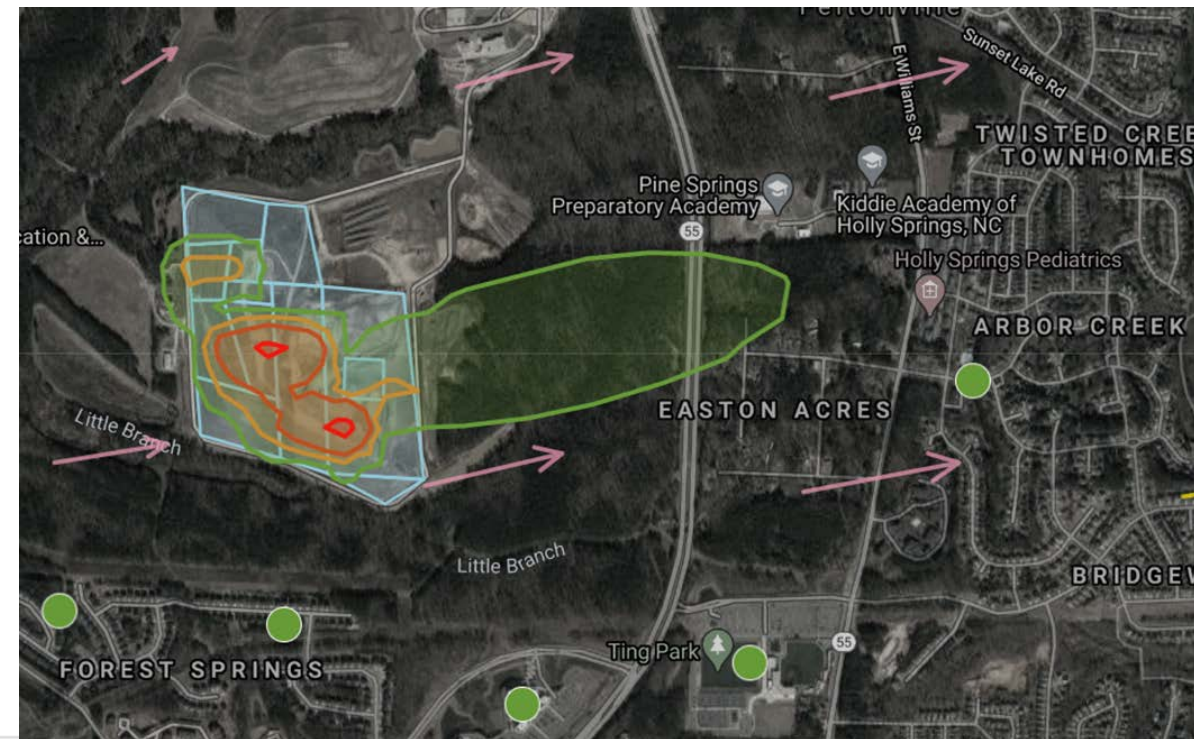
Complete the odor reporting/resident engagement app...

Odor reporting app completed March 6th

New odor reporting form that will allow the County to be more responsive and graphically evaluate odor complaints

Air dispersion modeling allows for better prediction of bad odor days – enable's the County and GFL to be more proactive

What is Envirosuite?



Town of Holly Springs Resolution

Increase community engagement...

Monthly communications on odor mitigation...

Response: We have collaborated with our Communications Office to enhance our capabilities in this area.

Next Steps

Comprehensive Odor Management Plan (draft June 2020)

Comprehensive Solid Waste Management Plan (draft April 2020)

Future Waste Disposal (WTE/EfW or out of county)

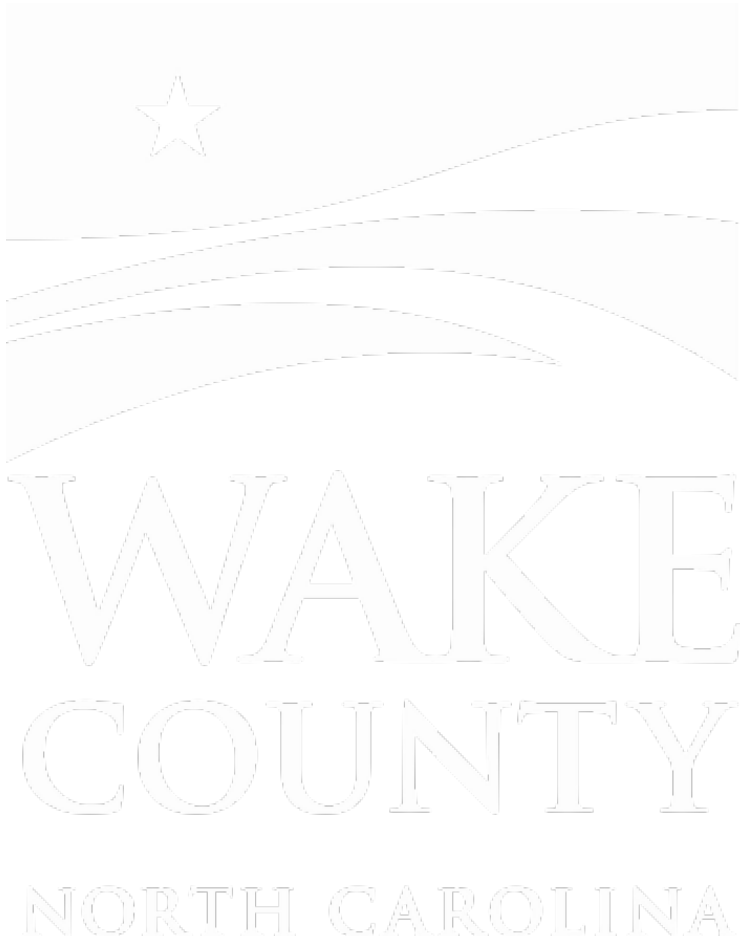
Future Transfer Station(s)

Other Special Waste (tires, mattresses, etc.)

SW Citizens Committee Meeting (March 24th)

Arbor Creek Home Owners Association (April 9th)

Additional community meetings as requested



OPEN DISCUSSION

Aerial Maps of Development

