

Solid Waste Management Division



# SOUTH WAKE LANDFILL

Citizens Committee Meeting

September 24, 2019



@wakegov    

wakegov.com

# Introductions & Overview

The South Wake Landfill Citizens Committee was established in 2006, prior to the opening of the South Wake Landfill. The purpose of the committee is to:

- Provide a forum for neighbors of the South Wake Landfill to have a voice in the continuing development of the landfill
- Assist the County with continued operations of the landfill
- Provide a conduit for information between Wake County Environmental Services staff and the neighboring public regarding activities at the landfill

# Solid Waste Division Overview

- Solid Waste Operations
  - 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



# Solid Waste Division Overview

- Solid Waste Outreach & Education
  - Feed the Bin School Program
  - 86it Anti-Litter Campaign
  - Community Outreach
  - Food Waste Reduction
  - Facility Tours





# General Solid Waste Projects

# Recent South Wake Improvements



# Comprehensive Solid Waste Management Plan Update



## WAKE COUNTY SOLID WASTE MANAGEMENT PLAN

APEX • CARY • FUQUAY-VARINA • GARNER • HOLLY SPRINGS  
KNIGHTDALE • MORRISVILLE • RALEIGH • ROLESVILLE  
WAKE COUNTY • WAKE FOREST • WENDELL • ZEBULON

2012 - 2022 Planning Period

JULY 2012

## Why Update the Plan?

7+ years since last Plan Update

Significant changes to factors influencing recycling, waste transfer, and disposal at the SWLF

The need to plan for the next disposal option, which may be sooner than expected due to unanticipated increased waste tonnages

No longer State-driven, thus more flexibility

The need to update and evaluate financial aspects of solid waste management in Wake County

- Is the household fee still appropriately set?
- Should the SWLF Partnership rebate be restructured?

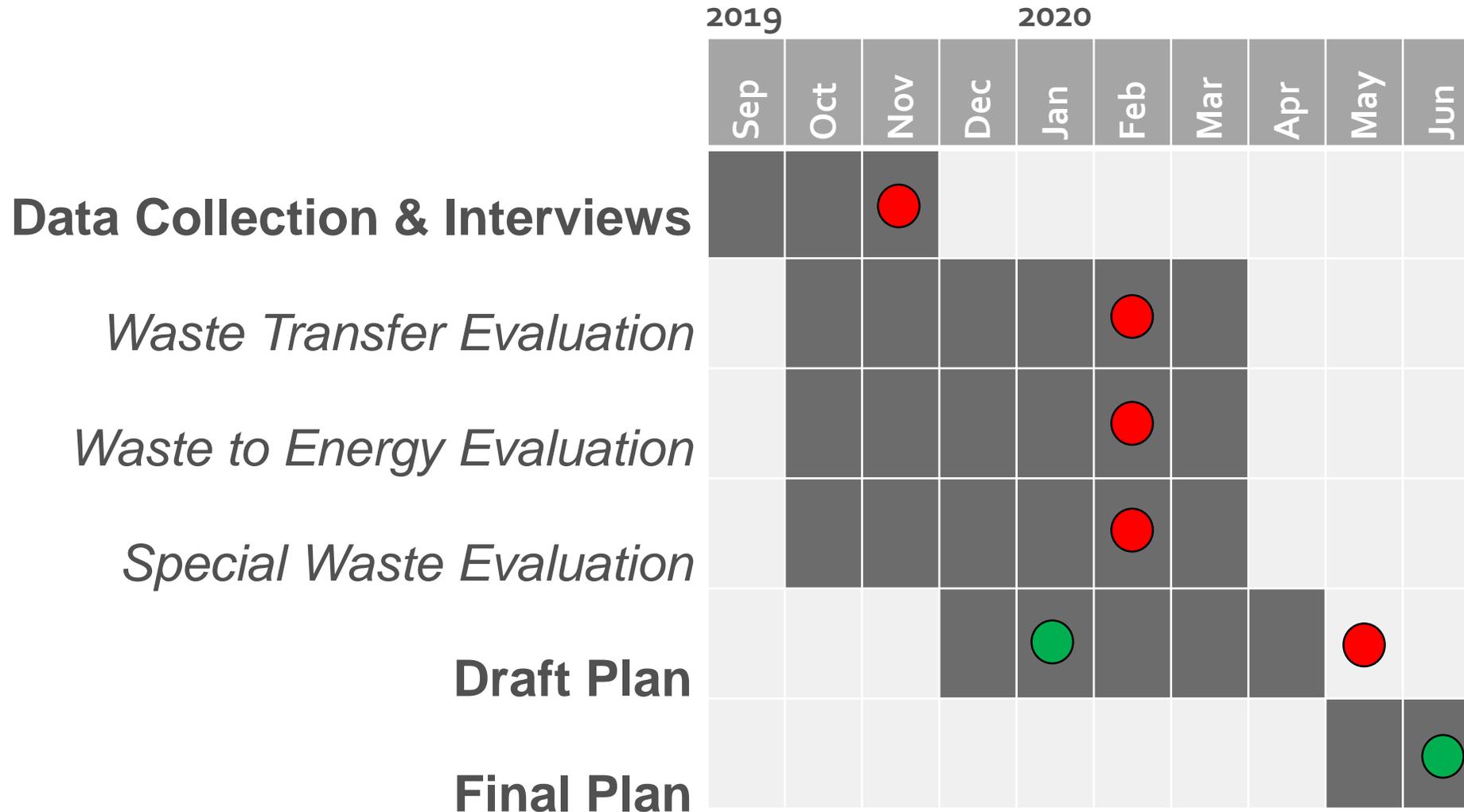
# Elements Addressed in the 2012 Plan



# 2020 Plan Outline (Draft)

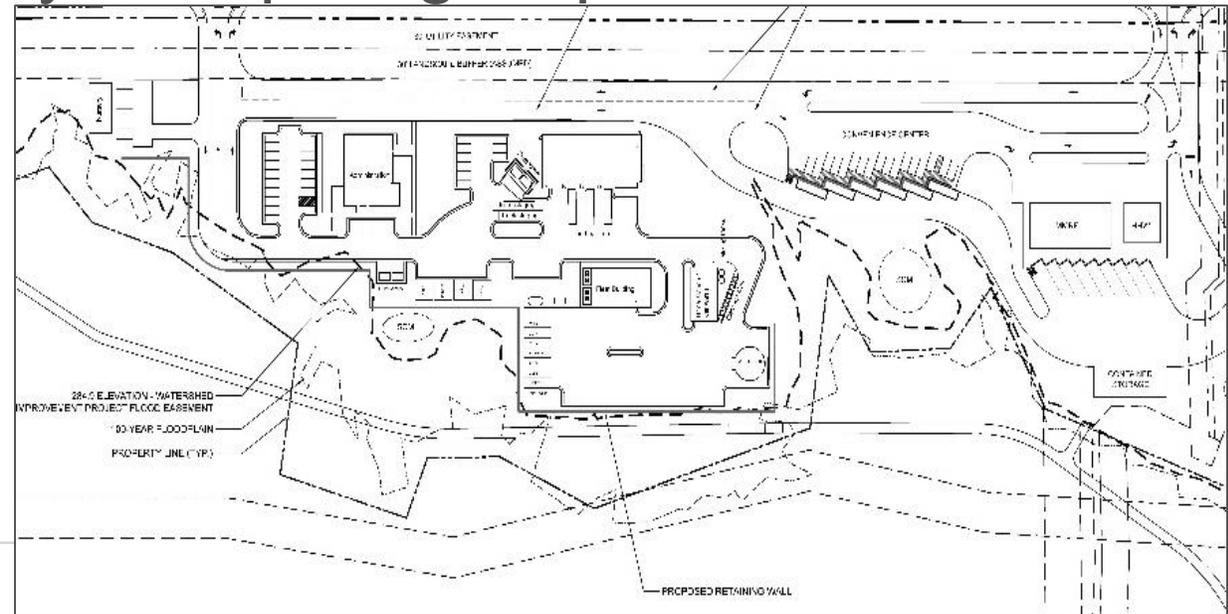
- **Executive Summary**
- **Introduction**
- **Solid Waste Management Goals**
  - *All municipalities in Wake County will be a part of the process and solid waste goal descriptions*
  - *Group and individual jurisdiction goals will be developed and described*
- **Characterization of Existing Solid Waste System including the South Wake Landfill and associated environmental factors**
- **Waste Management and Reduction Programs**
  - *Emphasis on the identified focus areas*
- **Program Costs and Financing**
  - *Wake Co. Fund Model Update (Household Fee)*
  - *Evaluation of alternative rebate approaches*

# Planning Process & Schedule



# Site Expansion in Morrisville/Cary

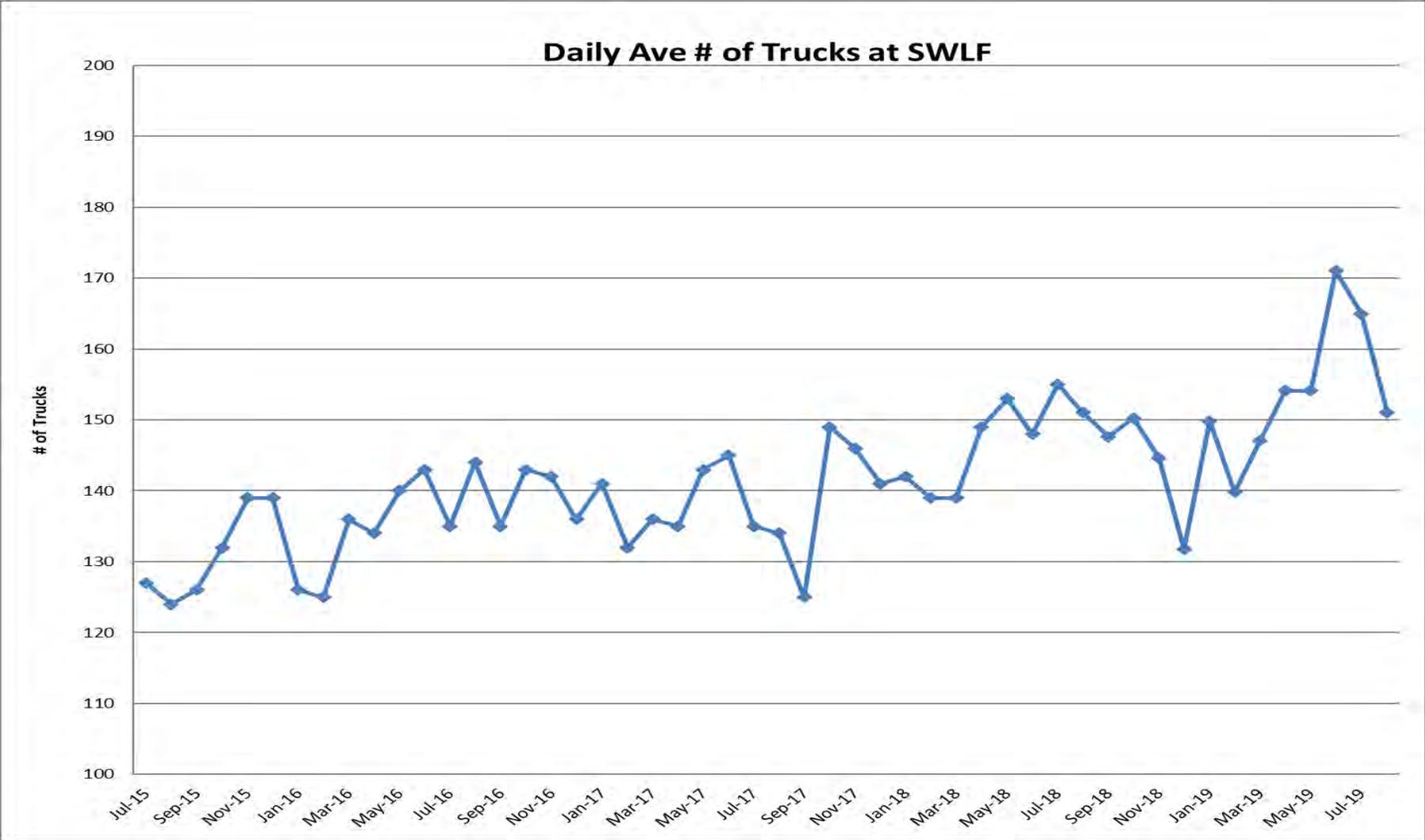
- Similar to recent expansions of sites in Wendell and Apex/Holly Springs
- On property owned by the Town of Morrisville – shared with their proposed Public Works facility
- Widening of Aviation Parkway is requiring displacement of existing facilities (for Wake County and the Town).
- Planned for 2021/22 construction





# South Wake Landfill Operations

# SWLF Truck Stats



# South Wake Landfill Discussion

- ✓ Land purchased in late 1980's
- ✓ Wake County/Holly Springs ILA on landfill location & wastewater disposal in mid 1990's
- ✓ Landfill Design Approved by NC DENR in 1999
- ✓ Interlocal Agreement developed and approved by Wake and all muni's in 2005/6 to form South Wake Partnership. Member of the Partnership as follows:
  - Wake County, Raleigh, Cary, Apex, Morrisville, Fuquay-Varina, Garner, Wendell, Knightdale, Zebulon and Wake Forest
  - Holly Springs chose to not be a member

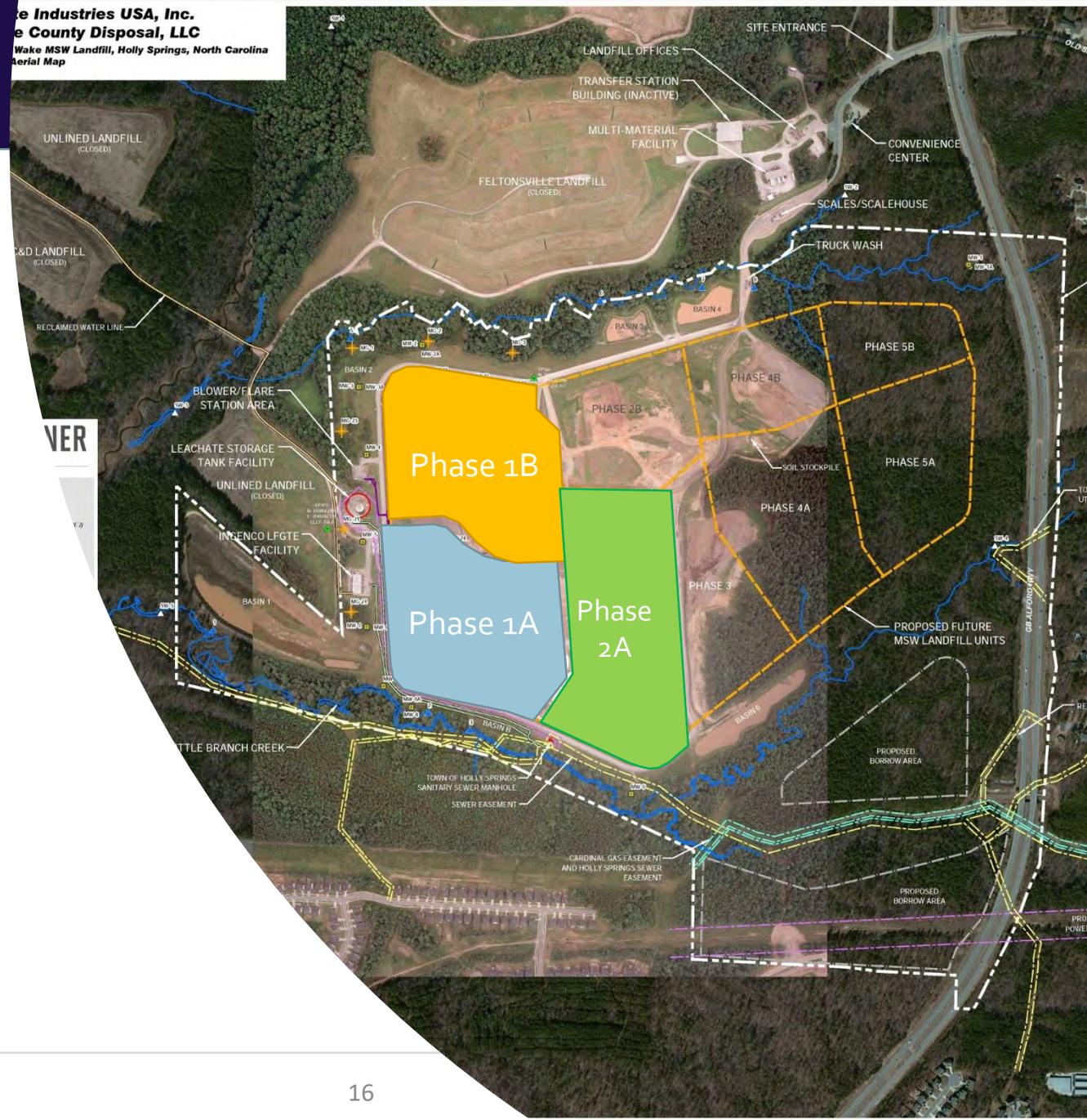
# South Wake Landfill Discussion

- ✓ Landfill vendor chosen to design, build, operate & maintain landfill in early 2006 (Waste Industries, now GFL)
- ✓ Construction began in late 2006
- ✓ Opened in February 2008
- ✓ Designed as a 25 year facility (2033) based upon an initial waste delivery rate of 450,000 tons/yr growing at 2.8%/yr

# SWLFW Timing

- Great Recession reduced rates to 400,000 tons/yr by 2013
- Growth in waste rate since 2013 to approx. 500,000 tons in FY2019
- Current estimate for final closure is 2038-2040 (5-7 years later than design)
- Total landfill size is 179 acres of which 75 acres have currently been opened.
- Approximately 20 acres have been permanently closed

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



# SWLF Environmental Factors

## Working Face Related Odors

- Extremely wet waste
- Restaurant waste stored in dumpsters for multiple days
- Use of Alternative Daily covers (posi-shell or industrial tarps)

## Landfill Gas Related Odors

- Shutdowns due to electrical storms
- System gets out of balance due to rain or other environmental conditions

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

# What is Posi-Shell

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Posi-shell is a common Alternative Daily Cover used by landfills all over the country.

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Comprised of a cementous material mixed with water and the recycled paint we receive thru our HHW program.

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WI/GFL has started adding an odor mitigation element to the Posi-shell

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Used due to recycled paint use and long term landfill benefits

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Fairly costly but with limited odor mitigation

# SWLF Environmental Factors

- ✓ Working face of landfill covered every day (GFL)
- ✓ Vapor based odor neutralizing system (GFL/WC)
- ✓ Expansions of LFG system well before required (WC)
- ✓ System maintained appropriately to run over 99% of the time
- ✓ Automated wellheads (WC)
- ✓ Reduced working face & use of soil (GFL) – difficult after significant rain events
- ✓ Odor neutralizer added to Posi-shell (GFL)

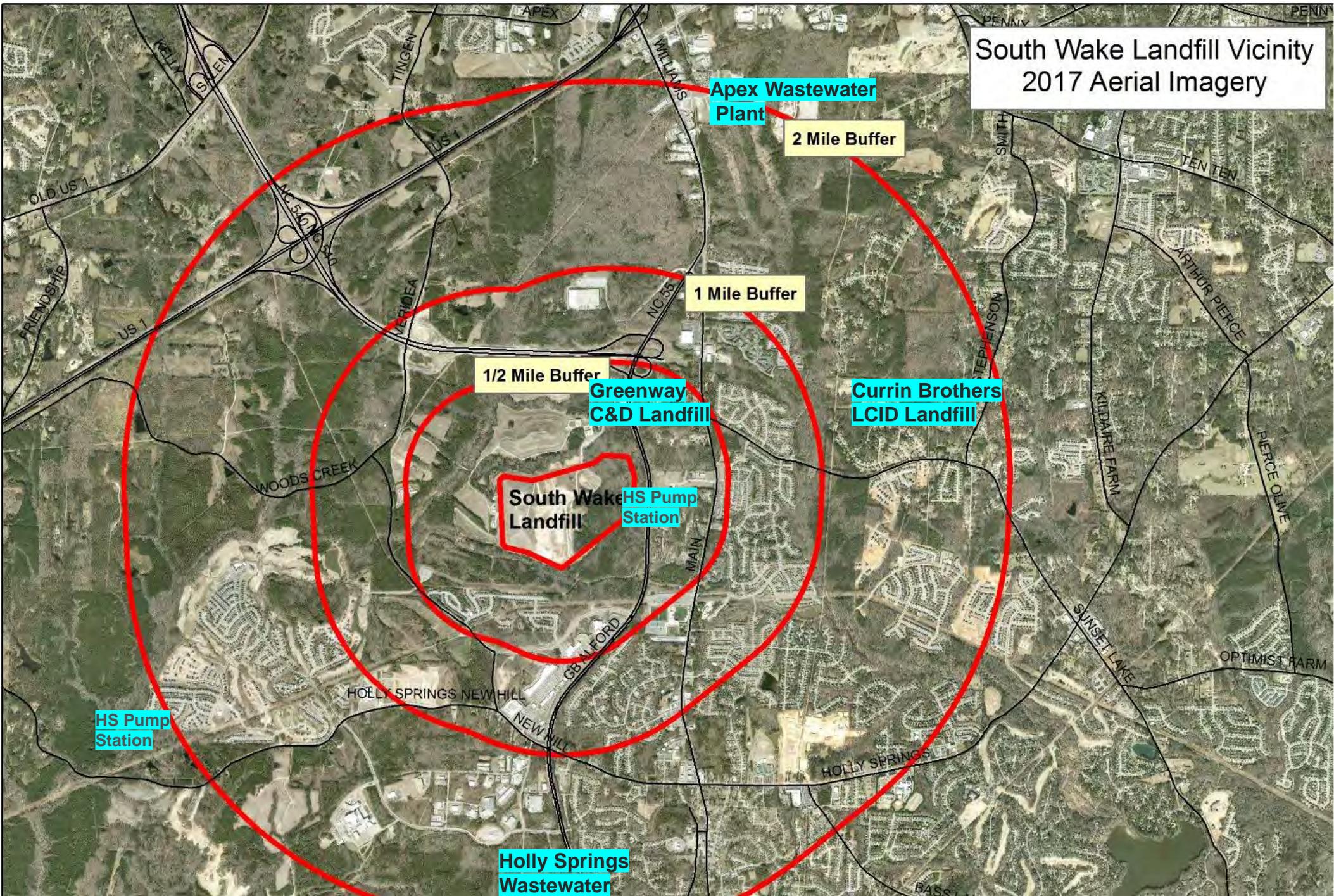
# SWLF Environmental Factors

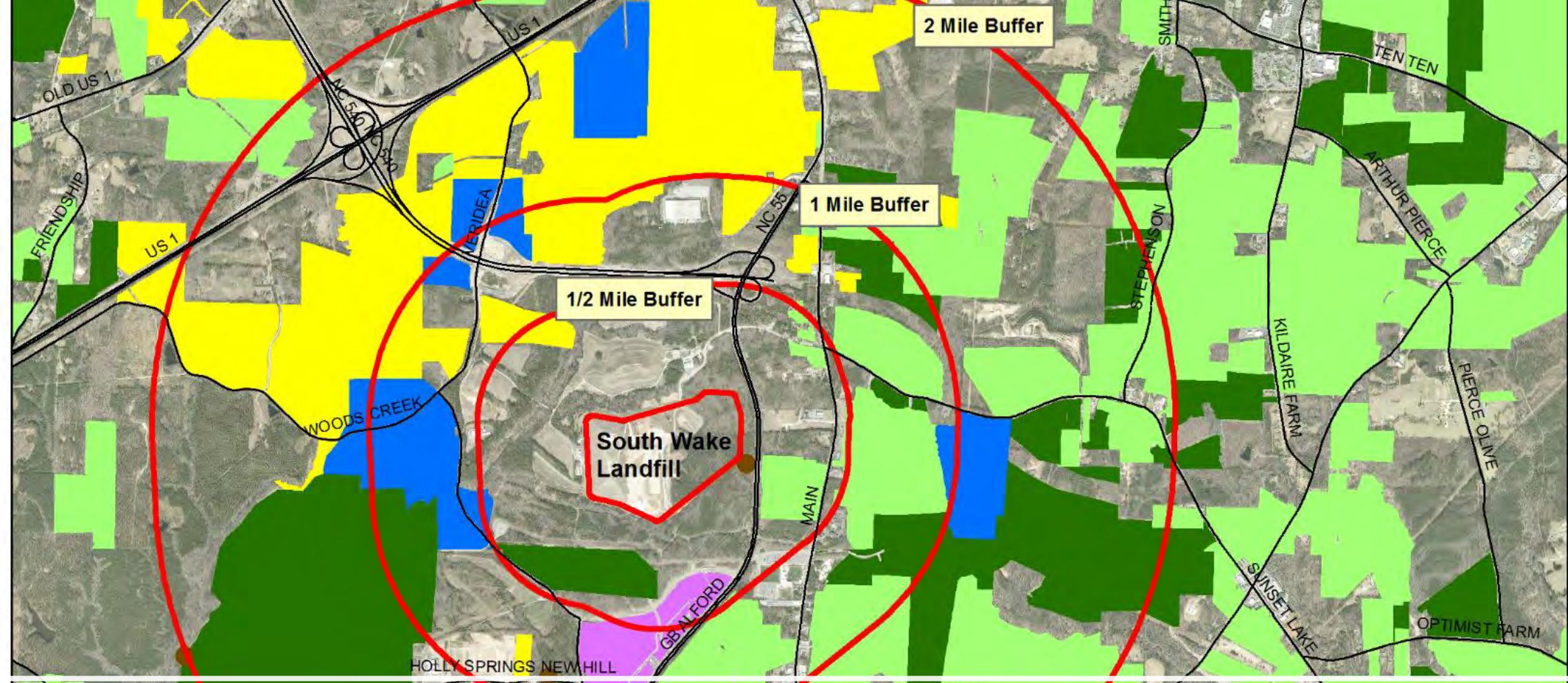
## **In process or upcoming considerations**

- ❑ Envirosuite software with App (WC)
- ❑ Piloting a foam ADC – mostly to replace dirt and posi-shell (GFL)
- Future consideration of further odor misting systems at working face at initial opening

Goal of all of the above efforts are to minimize odor duration and frequency. Due to proximity to landfill, occasional odors are unavoidable.

South Wake Landfill Vicinity  
2017 Aerial Imagery





# Aerial Maps of Development

**Legend**

- Select Sewer Pump Stations in Holly Springs
- Wastewater Treatment Facilities for Holly Springs and Apex
- Commercial Development

**Subdivisions**

# Education & Outreach

- Public Landfill Tours
  - Sat, Oct 12 @ 9:30 am
  - Wed, Nov 13 @ 9:30 am
  - Sat, Dec 14 @ 9:30 am
- Recycling Center Tour
  - Tue, Oct 15 @ 10:30 am



[wakegov.com/landfilltours](http://wakegov.com/landfilltours)



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# Education & Outreach

- Fall Festivals
  - Bass Lake Day - Sat, Oct 5 from 1pm - 4pm
  - NC State Fair Oct 17-27
- *#RecycleRightNC* Campaign
  - Wed, Sep 25<sup>th</sup> 9am - 11am @ Site 8
  - Thu, Sep 26<sup>th</sup> 11:30am - 1:30pm @ Site 1
  - Fri, Sep 27<sup>th</sup> 9am - 11pm @ Site 9
  - Fri, Sep 27<sup>th</sup> 10am - 12pm @ Site 4



86it.com and Composting at State Fair



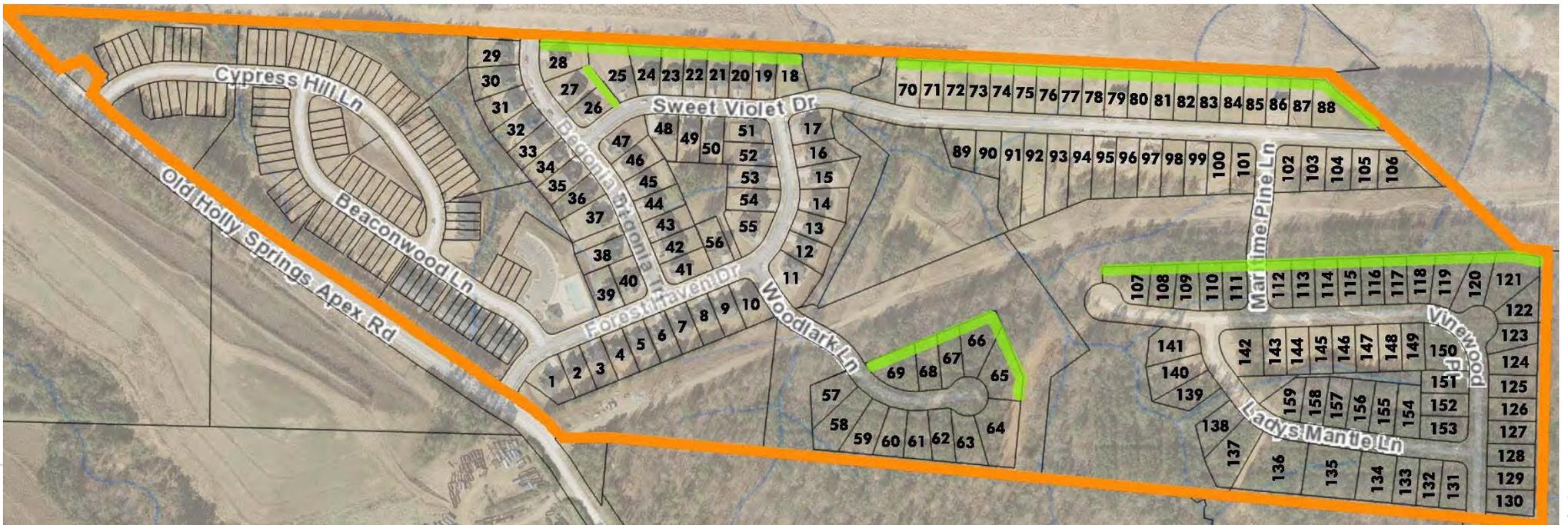
RecyclingRightNC at Convenience Centers

# SWLF Trees

- **Tree Program Data**

- 54 trees provided
- To 11 homes
- Out of 50 eligible homes

- Program temporarily discontinued, but ready/willing to reopen if eligible homes show interest





WAKE  
COUNTY  
NORTH CAROLINA



**QUESTIONS?**