Agenda

- Wake County Solid Waste Overview
- Background on South Wake Landfill
- BOC Emphasis on Extending the Life of the Landfill
- Study in Process
- Potential Landfill Initiatives
- Potential Waste Diversion & Reduction Initiatives
- Q&A
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
  - Facility Tours
  - Food Waste Reduction
South Wake Landfill Background

- Planning, designing & permitting a landfill is a time and money consuming adventure!
- The SWLF timeline started in 1990 with construction starting in 2007.
South Wake Landfill Background

- **Phase 1A**
  (2008 to 2010)

- **Phase 1B**
  (2010 to 2015)

- **Phase 2A**
  (2015 – 2022?)

- **Phases 2B – 5**
  (2022 – 2040+)}
South Wake Landfill Background

- Annual evaluation of airspace remaining – both on an individual phase and overall basis
- Depending upon annual tonnage assumptions, phased construction & density estimates, SWLF projected to last until 2040 to 2048

### South Wake Landfill Background

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In 2016, BOC developed strategic goals:

- Community Health
- Economic Strength
- Education
- Great Government
- Growth and Sustainability (GS)
- Public Safety
- Social and Economic Vitality

The 2018 version of the BOC Strategic Goals & Objectives includes:

- GS 2.2 - Update comprehensive solid waste plan to extend the life of the landfill through recycling and technology, and improve strategies to reduce litter.
Events Impacting SWLF Life

- Prior to BOC Strategic Goals Statement
  - Economic slow down (15% reduction in tonnage)
  - Implementation of commingled recycling & large carts by all municipalities
  - Separation of C&D Material at convenience centers
  - Landfill density (beyond contract requirement)
  - General focus on better recycling (O&E)
  - NCSU study/modeling of Wake County SW
  - Piloting organics separation at convenience centers
Events Impacting SWLF Life

- **Ongoing efforts:**
  - Improvements at numerous facilities with the goal of improving recycling and other programs that minimize waste to landfill.
Events Impacting SWLF Life

- Partial Closure of SWLF
  - Helps with LFG collection and associated odors
  - Potentially compromises future waste disposal
  - Delicate balance which ultimately led to reduced closure footprint to maintain future disposal area

- Improved school recycling
  - Paper only to commingled
  - Politics, Politics, Politics…
Life of Landfill (LOL) Study

- Decision to conduct a study (in progress) titled “Landfill Life Extension Study” for South Wake Landfill
- SCS Engineers assisting with development of study
- Study being looked at as “menu” list of topics and ideas, both on and off the landfill, that can increase the life of the SWLF
Potential Landfill (on-site) Initiatives

- **Density, Density, Density…**
  - Easy 10 year impact on life of SWLF with a 25%
    increase in density (1100 vs. 1375 lbs/CY)
  - Not without a cost, but airspace value is significant

- **Side slopes - 4:1 versus 3:1 (Risk versus Reward?)**
  - 4:1 much safer in long term
  - 3:1 yields more volume – but may not be worth the
    reward due to potential side slope failures as well as
    maintenance difficulties
  - Where is the "sweet" spot for the landfill – potentially in
    between based upon soils and other conditions
Potential Landfill (on-site) Initiatives

- **MSE Berm**
  - Costs versus airspace addition
  - Potential use of waste material (coal ash) to build wall

- **Lateral Landfill Expansion**
  - Availability of land adjacent to existing facility
  - Easier than a new LF?
  - Potential Environmental impacts
Potential Landfill (on-site) Initiatives

- **Vertical Landfill Expansion**
  - Final grade elevation increase
  - Base grade elevation decrease

- **Temporary Overfilling Analysis**
  - Waste compacts over time due to gravity
  - Anticipate compaction to minimize future waste placement in areas that will be remote…
  - Allows earlier partial closure due to meeting final permitted grades
Potential WD&R (off-site) Initiatives

- Curbside Recycling
  - Municipal partners doing all they can?
  - Franchising for non-municipal areas
    - To impact recycling rates, needs to be mandatory
    - Competition concerns and developed convenience center program impact effectiveness
  - Providing incentives to recyclers

- Mattress Recycling
  - SWLF single biggest headache of typical items brought to landfill
  - Availability of vendors and/or volume to process
Potential WD&R (off-site) Initiatives

- Encourage Commercial Recycling
  - Data, Data, Data – waste audits, landfill data
  - Stick vs. carrot approach (require vs. encourage)
  - Small vs. Large (businesses)

- Multi-family Recycling
  - Container placement/space
  - Private vs. Public
Potential WD&R (off-site) Initiatives

- Organics
  - Education, Post Consumer Use, Composting and Anaerobic Digestion
  - Reasons other than landfill life to do organics as impact is not significant (compared to other materials)

- Reuse
  - Private groups (Habitat, etc.)
  - 4 private C&D Landfills in Wake – hard sell when disposal is pretty cheap
  - Swap shops (not sweat shops, but they may make you sweat if you open one up...)
Potential WD&R (off-site) Initiatives

- Landfill &/or Development Policies
  - Use of disposal bans or surcharges
  - Construction permitting – SW plan requirement
  - Further source separation at Convenience centers

- C&D Recycling
  - 7 private C&D LFs & TSs in Wake – hard sell when disposal is pretty cheap & easy
Conclusions

- Never to early to start studying future waste disposal options
  - Another landfill – unlikely in Wake County
  - Out of County transfer…
  - Waste to Energy
    - 10-15 years for planning, environmental review, design & construction
    - Want to have landfill space left for the ash!
    - Very expensive, especially with lower energy pricing!
    - Regional… Hey, Durham & Orange, want to build a WTE facility like that light rail line that worked so well…
Conclusions

- Current study will have a menu of items for Wake BOC to select from to study further.
- Mattress recycling and waste composition study are at the top of the list for now.
- Most of the cheap and easy solutions have been implemented, now costly and potentially controversial ideas have to be investigated.