

Municipal Solid Waste Landfills in North Carolina

Greg Peverall

Solid Waste Management Services

336-723-3551

2515 Greenbrier Road

Winston-Salem, NC 27104

Landfills in North Carolina

- Industry committed to reducing solid waste through various initiatives, including recycling
- Landfill locations decided at the local level
- Process involves public input and control
- Modern lined Subtitle D landfills are safe

Current Process

- Modern landfills located in open and public manner
- Local authorities control location and size of new landfills
- Opportunities for public comment and input

Federal Regulations

Federal law created regulatory structure that governs solid waste management in the United States.

Congress clear state and local governments, not the federal government, had final control over solid waste management.

Federal Regulations

- Federal laws required the US EPA to create regulatory structure for managing solid waste: Subtitle D regulations.
- North Carolina enacted a solid waste management program pursuant to the federal law.

Local Government Permitting

- Subtitle D landfill permitting begins at the local level many years before permit applications are submitted to the NC DENR.
- Cities and counties have authority to approve or deny the construction and operation of the Subtitle D landfill.

Local Government Permitting

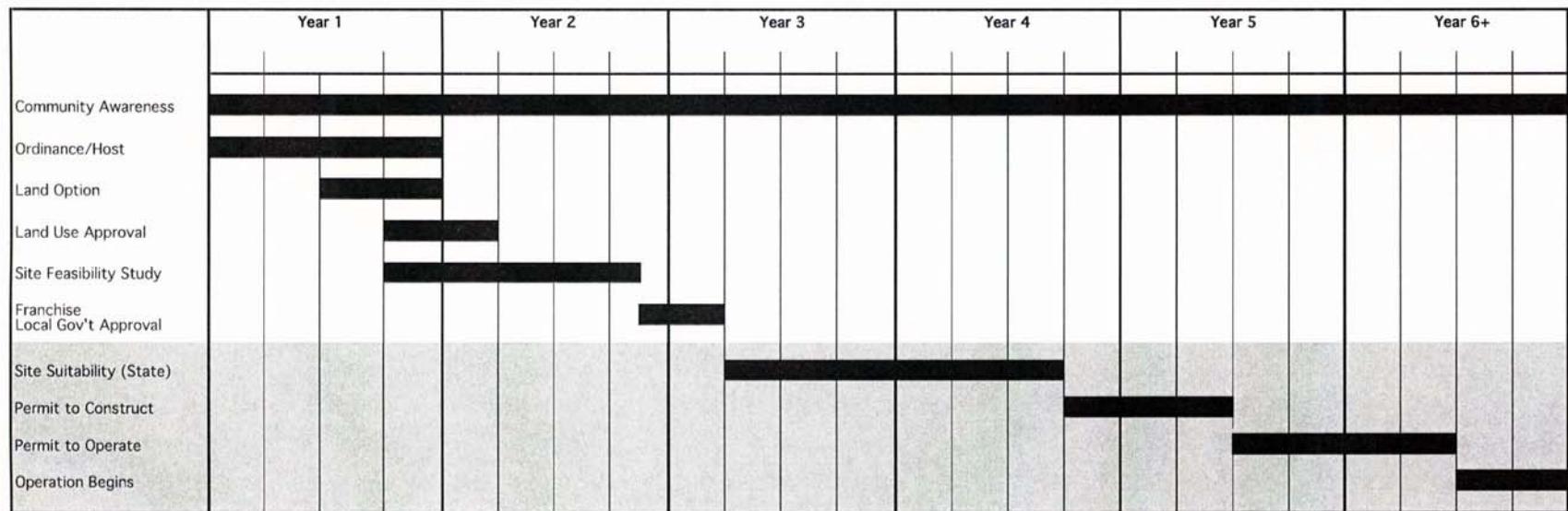
Local approval and permitting includes the following steps:

1. Franchise Ordinance
2. Franchise (Preliminary) Agreement and site identification
3. Zoning and Land-Use Approval
4. Local Government Approval and Final Franchise

Local Government Permitting

- Local permitting process includes at least 7 to 10 public meetings/hearings along with additional public education sessions
- Local permitting costs to private industry can range from \$1 million to \$3 million
- Many landfill projects do not get past this **process** (i.e., Franklin, Halifax, Forsyth, Guilford, Duplin, Green, Chatham, Union, Surry and Burke)

Municipal Solid Waste Landfill Development Timeline Scenario



Local Government Permitting

- Franchise Statute Amendments enacted in 2006 Session to add flexibility and clarity to the franchise process
- Amendments provided that franchise awarded only after public notice of the location of the landfill

Permit application to NC DENR

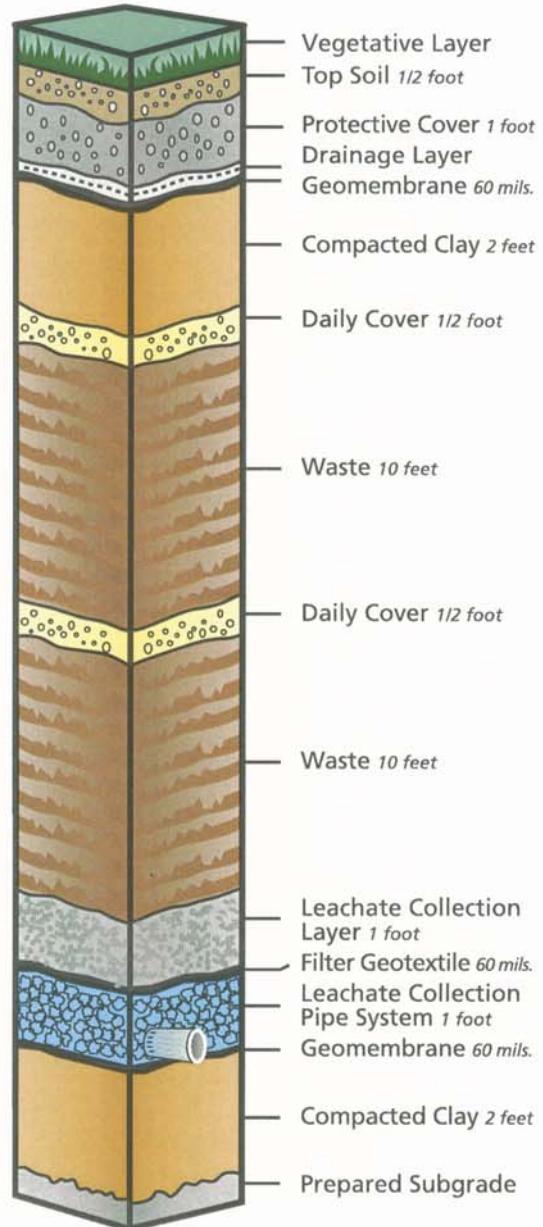
- After local government approval, Site Feasibility Study and Permit Application submitted to Division of Solid Waste
- Permit review involves exhaustive evaluation by state and federal agencies, including Water Quality, Fish and Wildlife, Corps of Engineers, Dept. of Interior

Landfill Design

Environmental safeguards in Subtitle D regulations provide:

- Location restrictions
- Protective liner systems
- Liquid collection systems, surface water management and groundwater monitoring
- Advance technology to manage methane
- Final caps

Typical Modern Landfill Cross Section



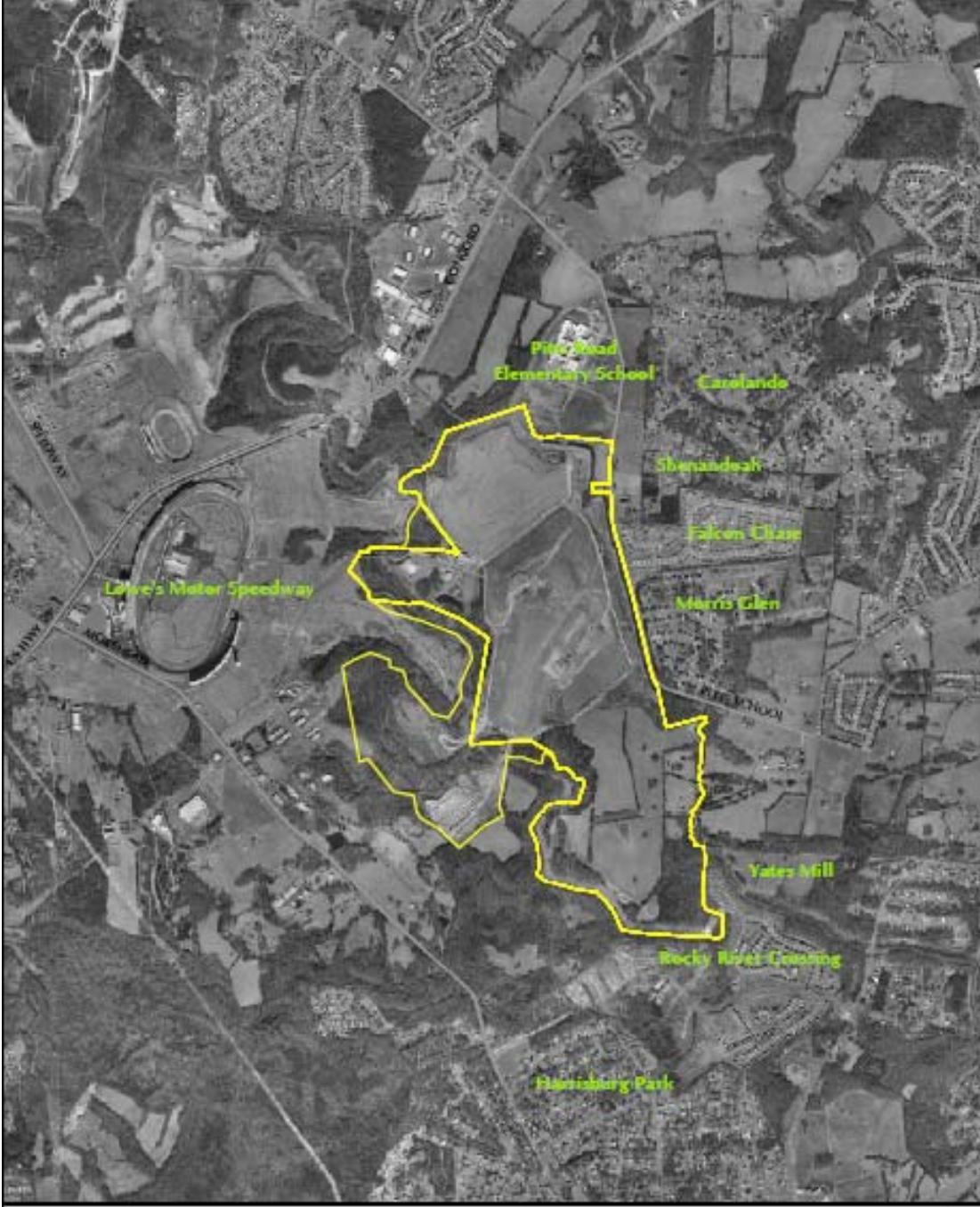
Landfill Design

Additional environmental safeguards include:

- Long-term monitoring after closure
- Financial Assurance
- Operational qualifications/restrictions

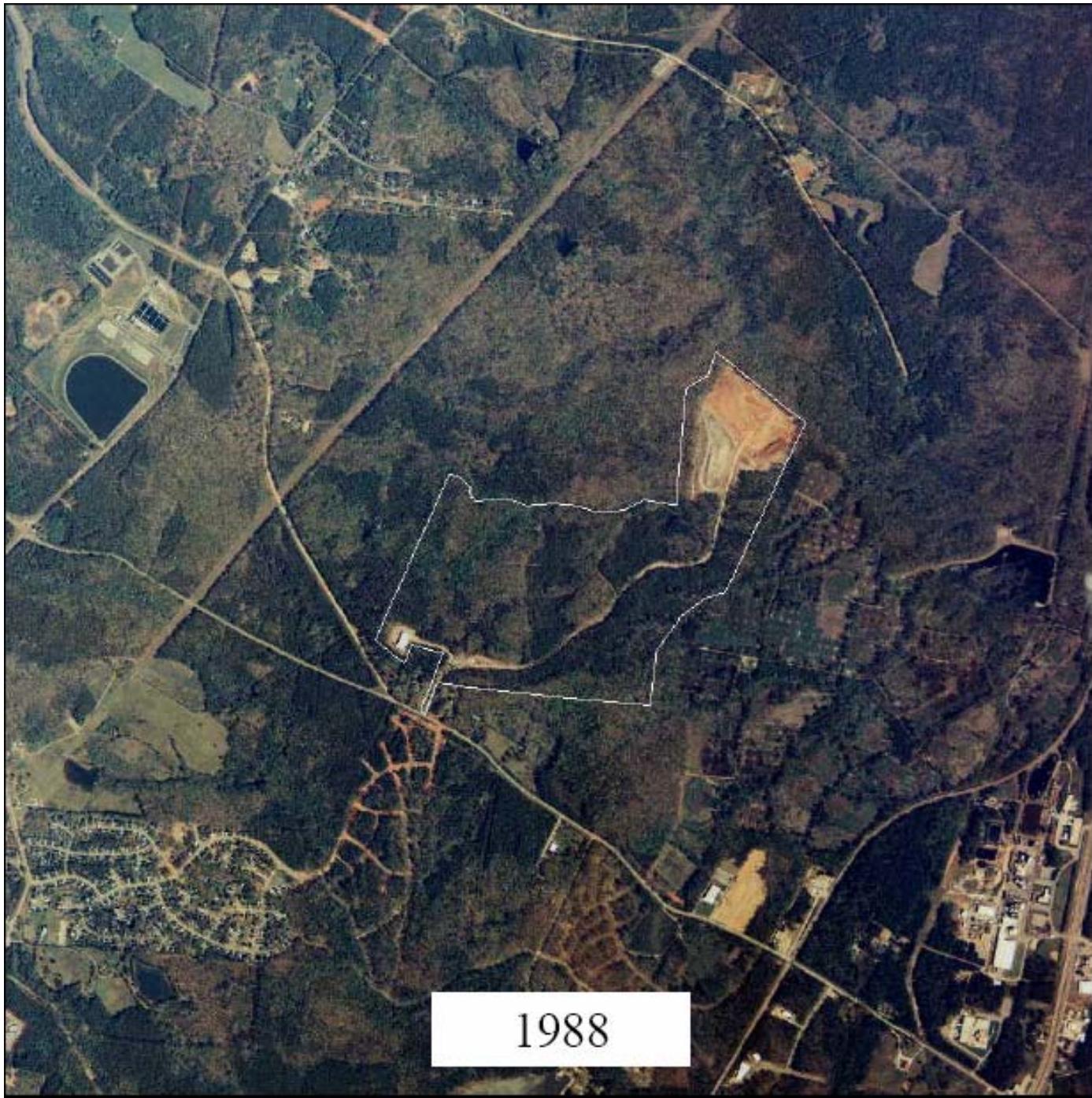




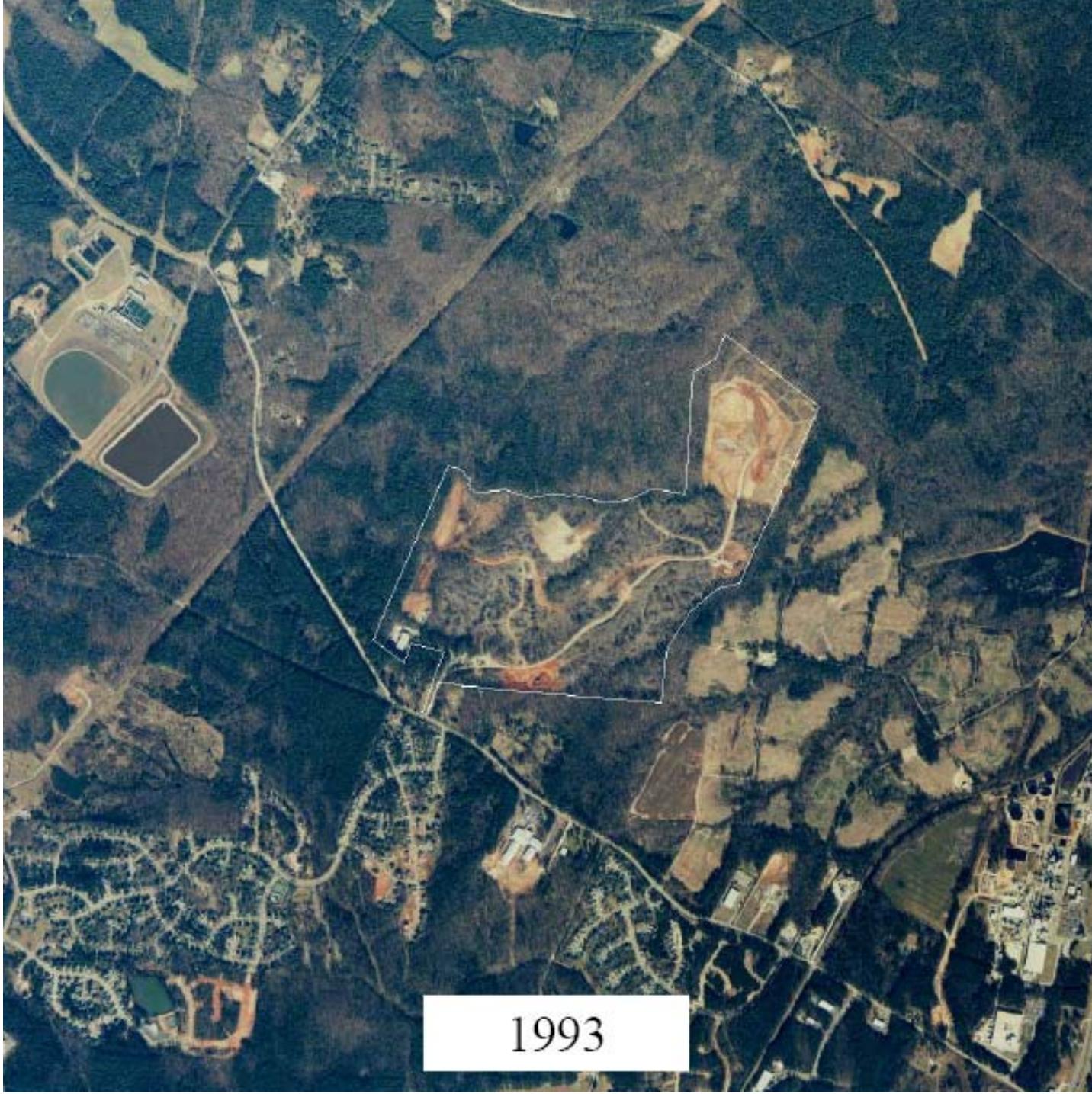








1988



1993



1997



2000



2000

NORTH WAKE LANDFILL

WAKE COUNTY
SCHOOL

DAYCARE

WAKE COUNTY
SCHOOL







COMING SOON

CENTEX HOMES



Ardrey Chase

All Brick
Single Family Homes
From Low \$400's

CentexHomes.com
1-800-704-1978



Private Solid Waste Industry in NC

- Annual payroll over \$152,000,000
Over 3,400 jobs
- Capital Investment of over \$600,000,000
- Annual host fees over \$6,700,000
- Property tax paid in excess of \$4,000,000

MSW Landfills in North Carolina

- The private solid waste industry operates 7 of the 40 modern lined landfills located in North Carolina
- Bertie
- Sampson
- Person
- Anson
- Montgomery
- Cabarrus
- Caldwell

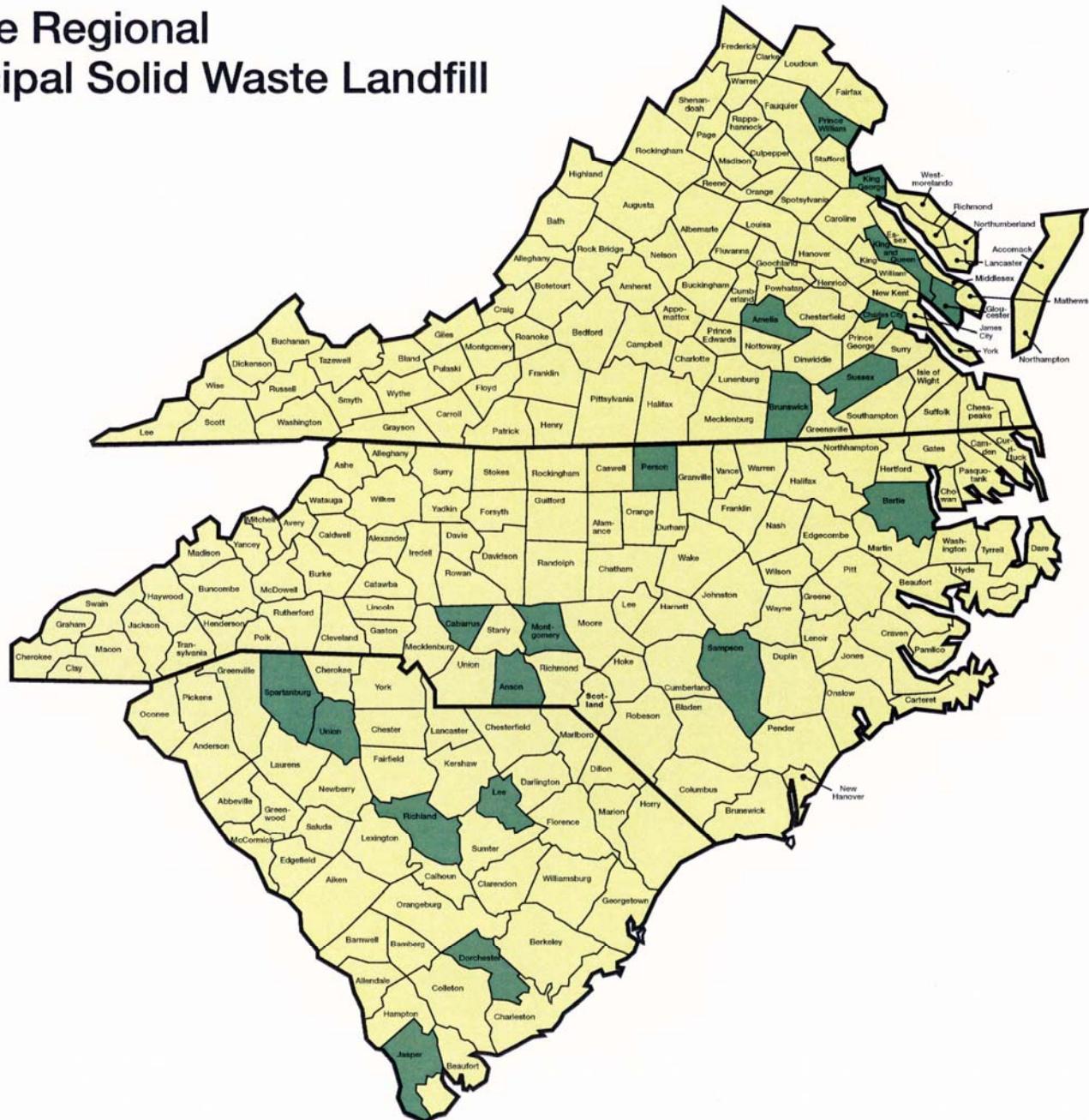
Privately operated Subtitle D landfills

- Private facilities in NC serve principally NC customers
- Represents 40% of the garbage managed by NC

North Carolina Privately Operated Municipal Solid Waste Landfill



Private Regional Municipal Solid Waste Landfill



North Carolina Proposed Landfill

- Municipal Solid Waste
- Construction & Demolition
- Industrial Landfill



Recycling

- Members of the Solid Waste Industry are some of the largest recyclers
- Major private recycling facilities in NC, including, Raleigh, Conover, Winston-Salem, New Bern, Troy
- Examples, Raleigh MRF 5,200 tons/month
Uwharrie MRF 1,000 tons/month









Industry commitment

- Industry committed to providing integrated services to assist in the reduction of the waste stream
- No matter how much recycling and source reduction, there will still be a need for Subtitle D landfills for the foreseeable future

Landfill Gas Program

- Twelve North Carolina landfills operate landfill gas (LFG) recovery projects
- The majority of these projects use LFG for heating and steam
- In four cases, the gas is used to generate electricity with a total of 12MW (power needs for @ 9,000 homes).

Landfill Safety

- The new modern Subtitle D Landfill is safe
- In the US, no modern Subtitle D landfill has been required to fund any clean-up costs associated with leaks or failures
- In NC, no base liner leaks have been detected from any of the 42 lined facilities permitted since 1990

Summary

- Industry is committed to reducing the amount of solid waste going into landfills
- The public controls the current process for locating landfills
- Modern lined landfills are safe