



Solid Waste Dept Overview

Presented by

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Solid Waste



Programs Overview

1. Landfill – MSW and C&D
2. Transfer Station
3. 2 Convenience Centers
4. Recycling Programs
5. Landfill Gas Collection and Renewable Energy Production program
6. Franchise Contract admin, non-incorporated areas of Buncombe
7. Solid Waste Code Enforcement
8. Closed Landfill Management
9. Disaster Debris Program Management

Enterprise Fund:
Tip fee funds the
entire department



Landfill Life Remaining

MSW Landfill

- Receives approx. 180,000 tons of waste per year
- 21-29 years of capacity left
- 38 acres remain; \$1M per acre development costs; **TOTAL INVESTMENT = ~\$38M**

C&D landfill

- receives approx. 40,000 tons of waste per year
- 15-20 years of capacity left
- 15 acres remain; \$500K per acre development costs; **TOTAL INVESTMENT= \$8M**

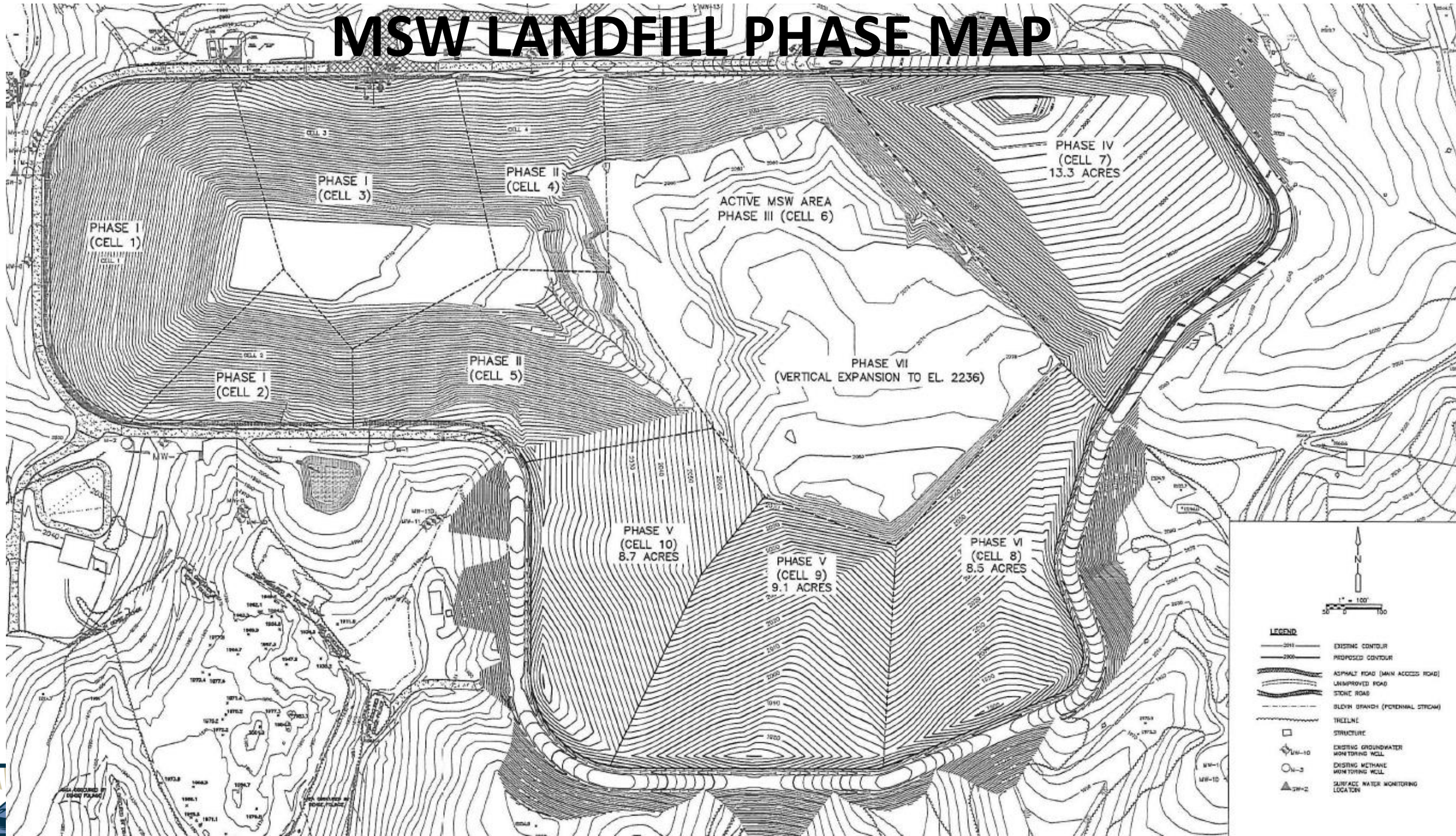
Unlikely that another landfill will be sited in Buncombe County

- Cost of Land
- Politically difficult

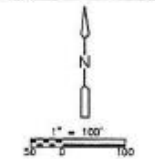
the landfill is a finite resource



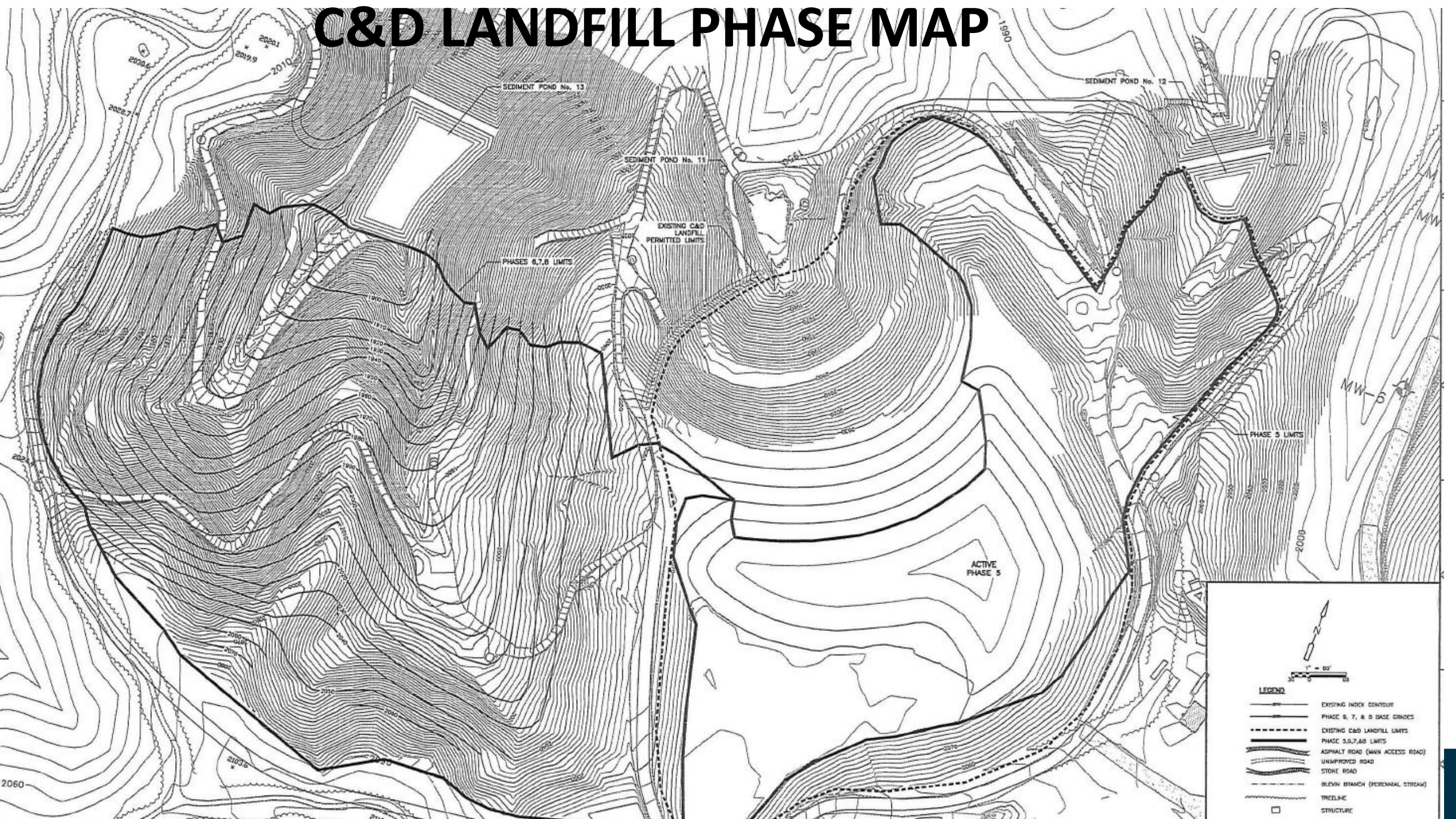
MSW LANDFILL PHASE MAP



- LEGEND**
- 2011 — EXISTING CONTOUR
 - 2000 — PROPOSED CONTOUR
 - ASPHALT ROAD (MAIN ACCESS ROAD)
 - UNIMPROVED ROAD
 - STONE ROAD
 - SLOVH BRANCH (PERENNIAL STREAM)
 - TREELINE
 - STRUCTURE
 - MW-10 EXISTING GROUNDWATER MONITORING WELL
 - MW-3 EXISTING METHANE MONITORING WELL
 - △ SW-2 SURFACE WATER MONITORING LOCATION



C&D LANDFILL PHASE MAP



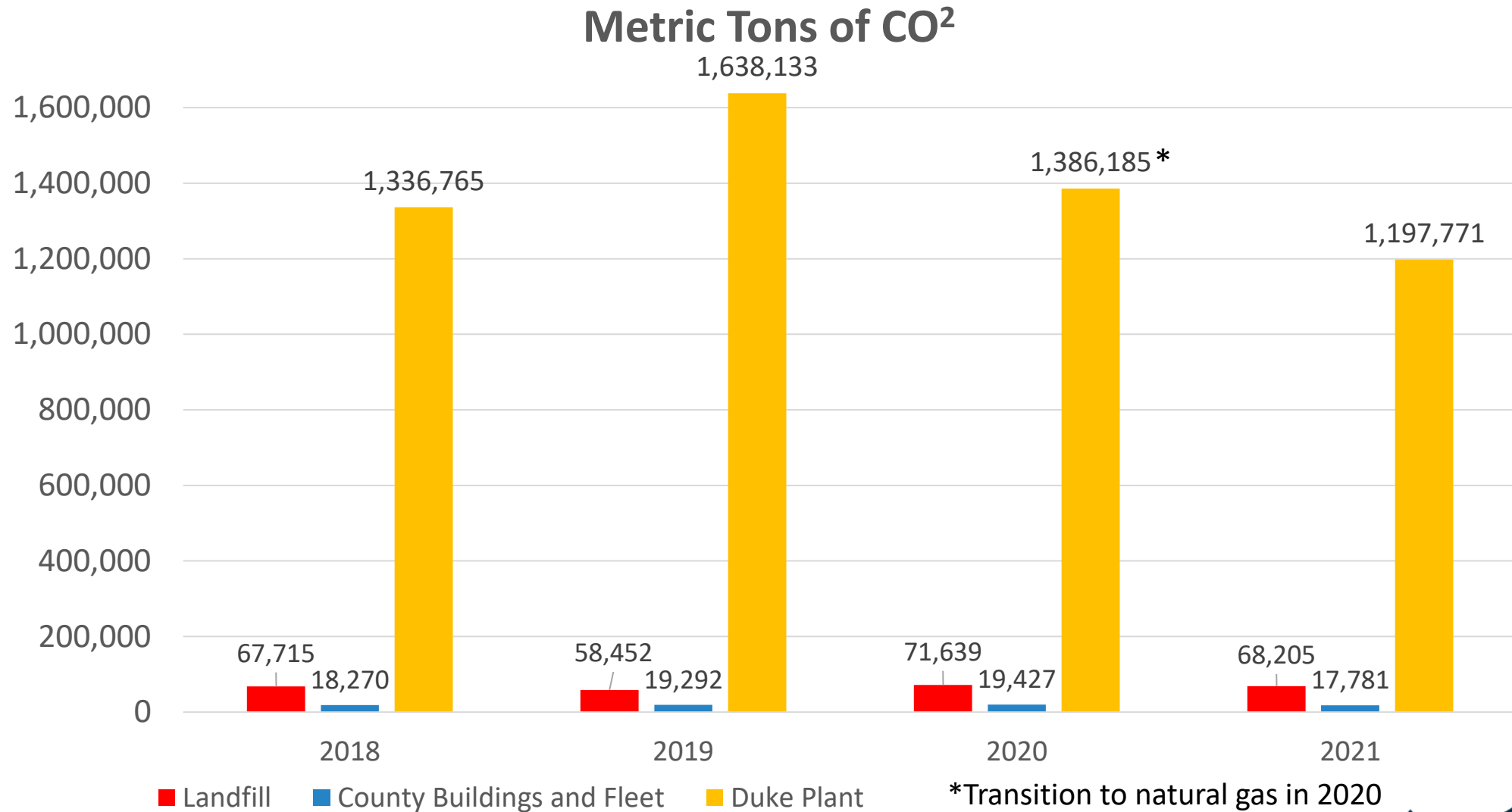
LEGEND

- EXISTING INDEX CONTOUR
- PHASE 5, 7, & 8 BASE GRADES
- - - EXISTING C&D LANDFILL LIMITS
- PHASE 5,6,7,8&8 LIMITS
- ASPHALT ROAD (MAIN ACCESS ROAD)
- UNIMPROVED ROAD
- STONE ROAD
- BLUEN BRANCH (PERENNIAL STREAM)
- TREELINE
- STRUCTURE

Scale: 1" = 50'

North Arrow

MSW Landfill GHG Emissions Comparison



Where do MSW Landfill GHG Emissions Come From?

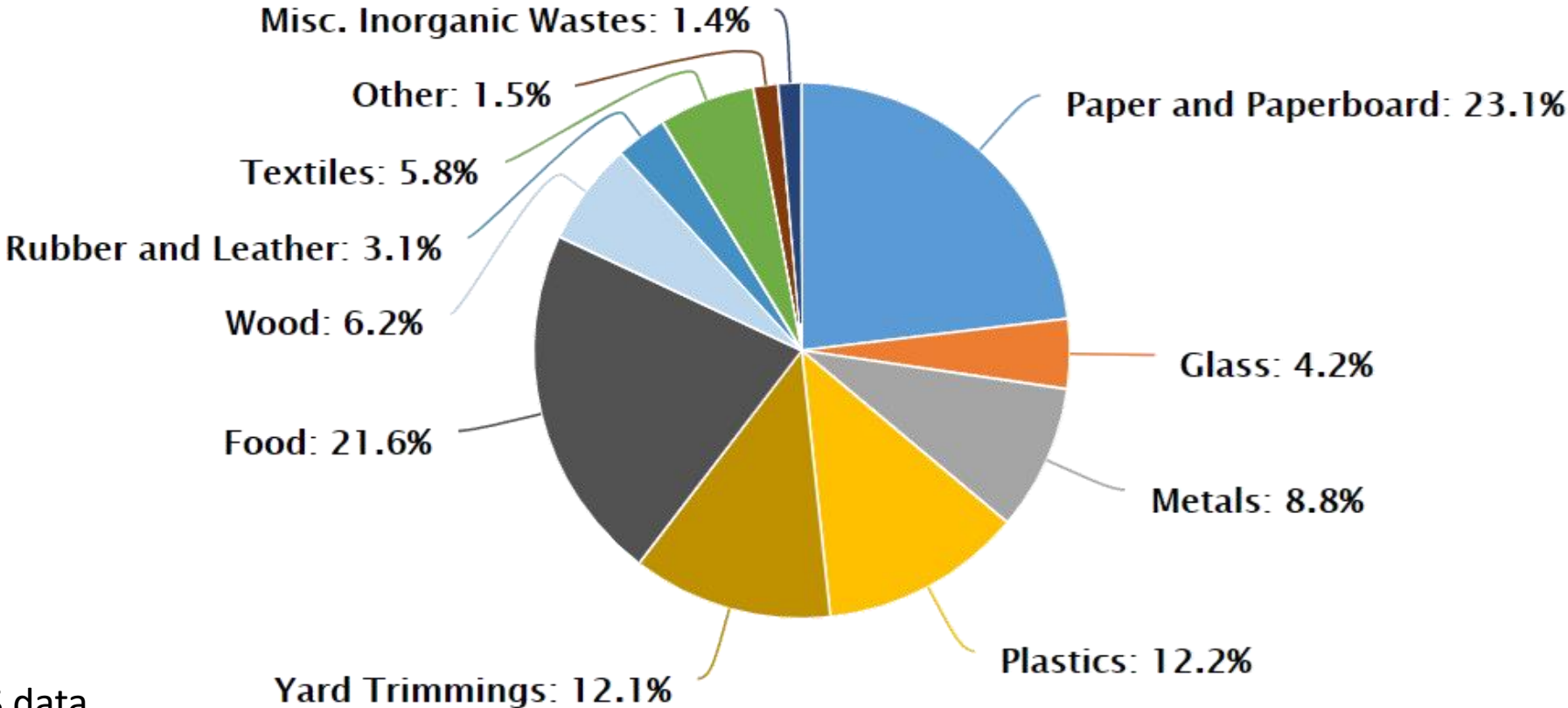
- Organic material, such as food scraps, paper, etc. that breakdown in an environment without oxygen (anaerobic)
- Landfill Gas Collection System reduces GHG emission by turning methane into carbon dioxide
 - 25% of gas escapes (fugitive emissions) and is 50/50 methane/CO²
 - 75% is flared or combusted through the engine and is converted to mostly CO²



What is in our waste stream?

Total MSW Generated by Material, 2018

292.4 million tons

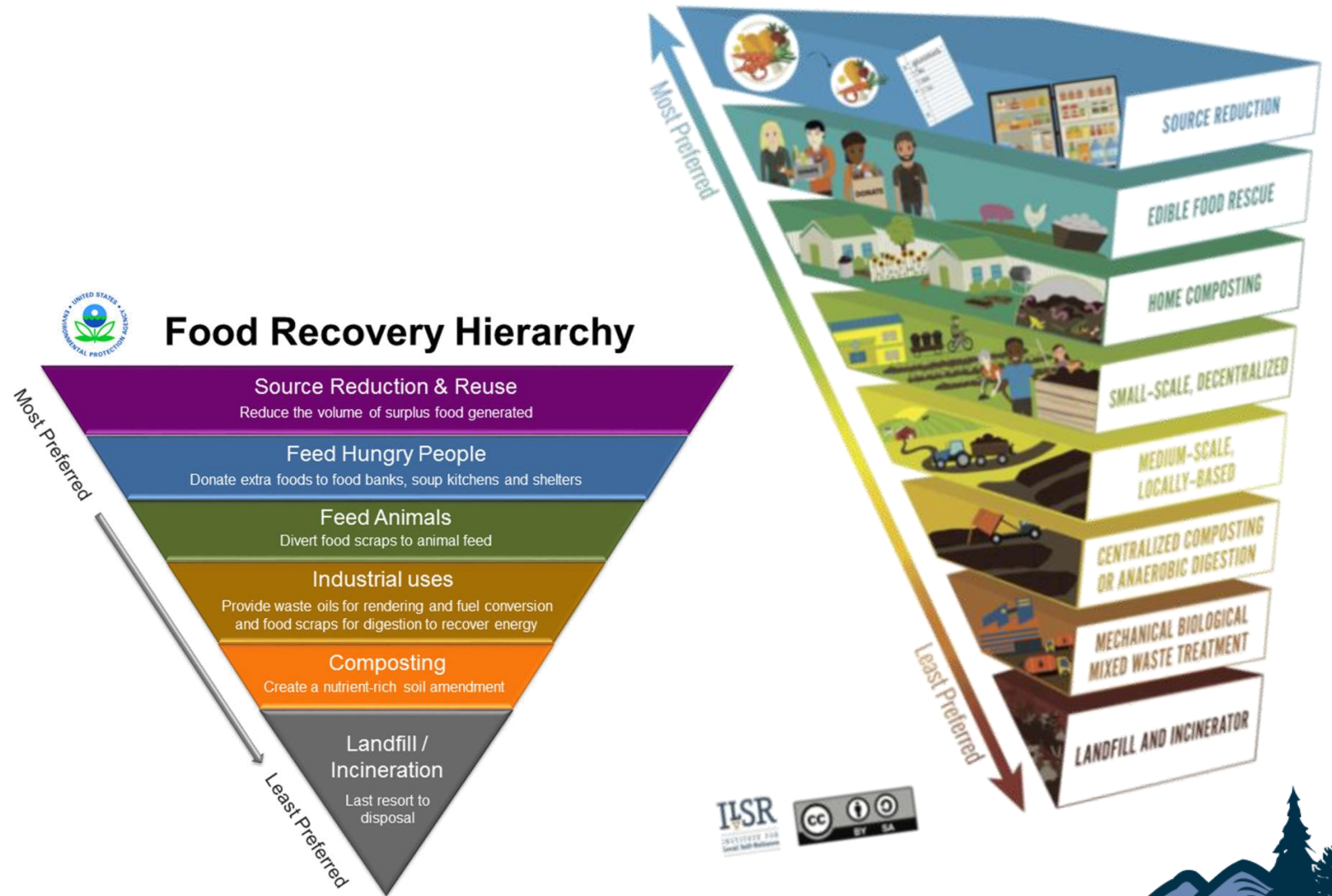


SOURCE: EPA, US data



Waste Stream Evaluation

- Waste characterization study and evaluation of management/diversion strategies beginning soon-\$100K
- MSW and C&D waste will be evaluated
- Study will recommend 5-6 diversion programs to pursue
- Results of study presented to commissioners in Summer 2022



Potential Diversion Programs

Task 2.2 – Identify and Assess Improvements to Existing Waste Diversion Program

The goal of this task is to identify and assess methods/ideas for increasing diversion and recycling in the County. Some of the potential alternatives and ideas to reduce or divert waste from landfilling, include the following:

- Business and restaurant food donation
- School reuse and recycling programs
- Commercial recycling collection
- Organics collection/processing
- C&D diversion ordinance
- LEED/Green Building incentives
- Repair cafes/Fix-it clinics
- HHW product purchasing education
- Pay-as-You-Throw programs
- Recognition and rewards programs
- Mandatory recycling ordinances and enforcement
- Bans for landfilling specified materials and enforcement (plastic bags, polystyrene, etc.)
- Product reuse/recycling grants
- Neighborhood re-use exchanges
- Neighborhood food rescue programs
- Bulky item collection/donation for reuse and repurposing
- Difficult to manage materials (mattresses, textiles, etc.)



Next Steps for Diversion Programs

Priority areas for diversion

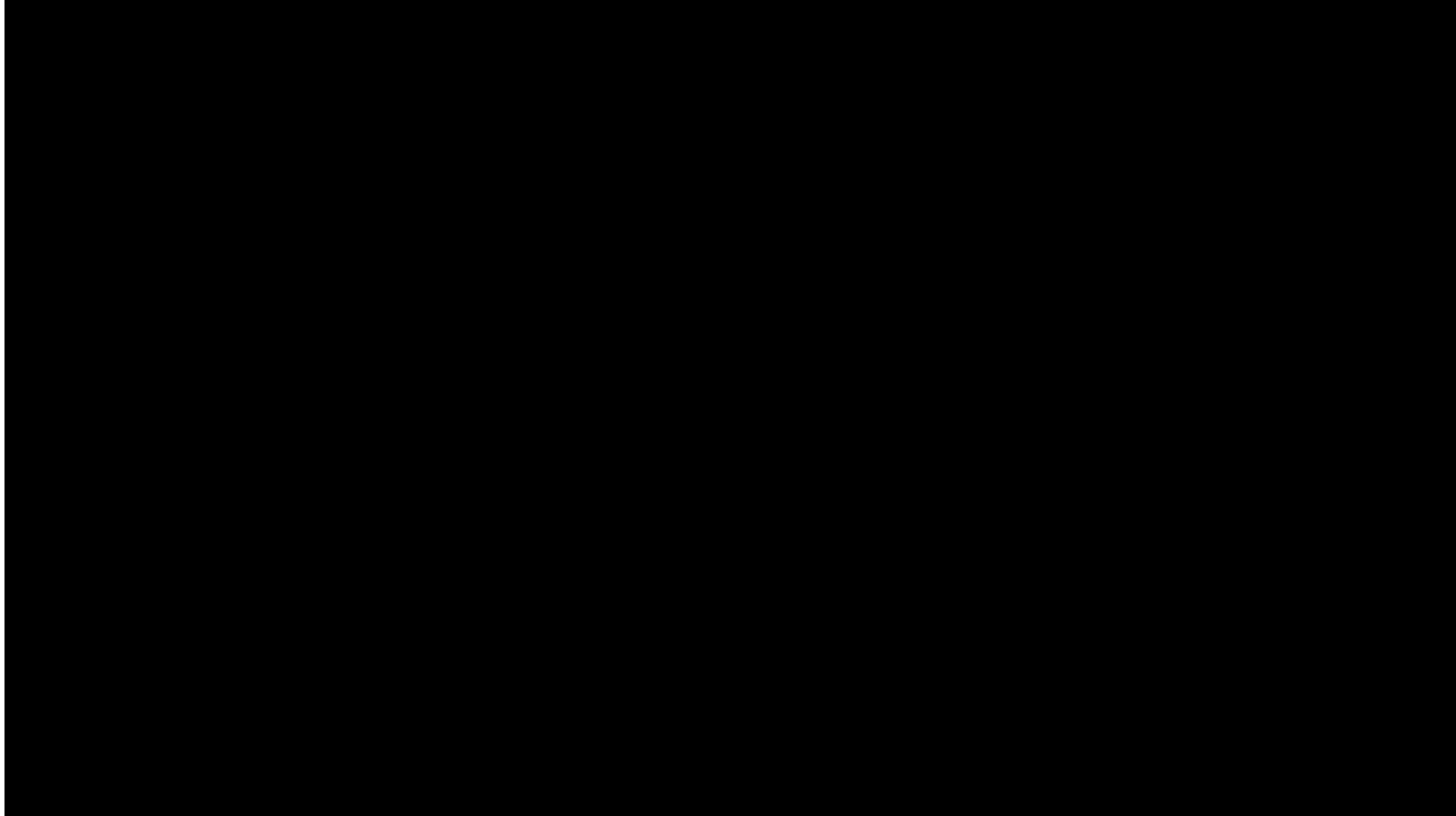
1. Organics –composting pilot program
2. Construction and Demolition – diversion test case

FY23 - Policy development

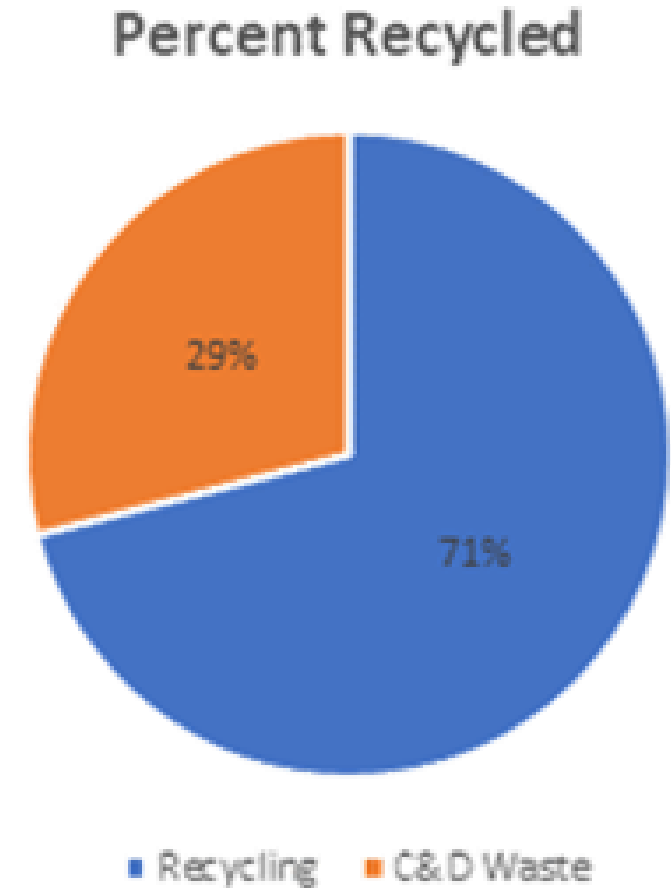
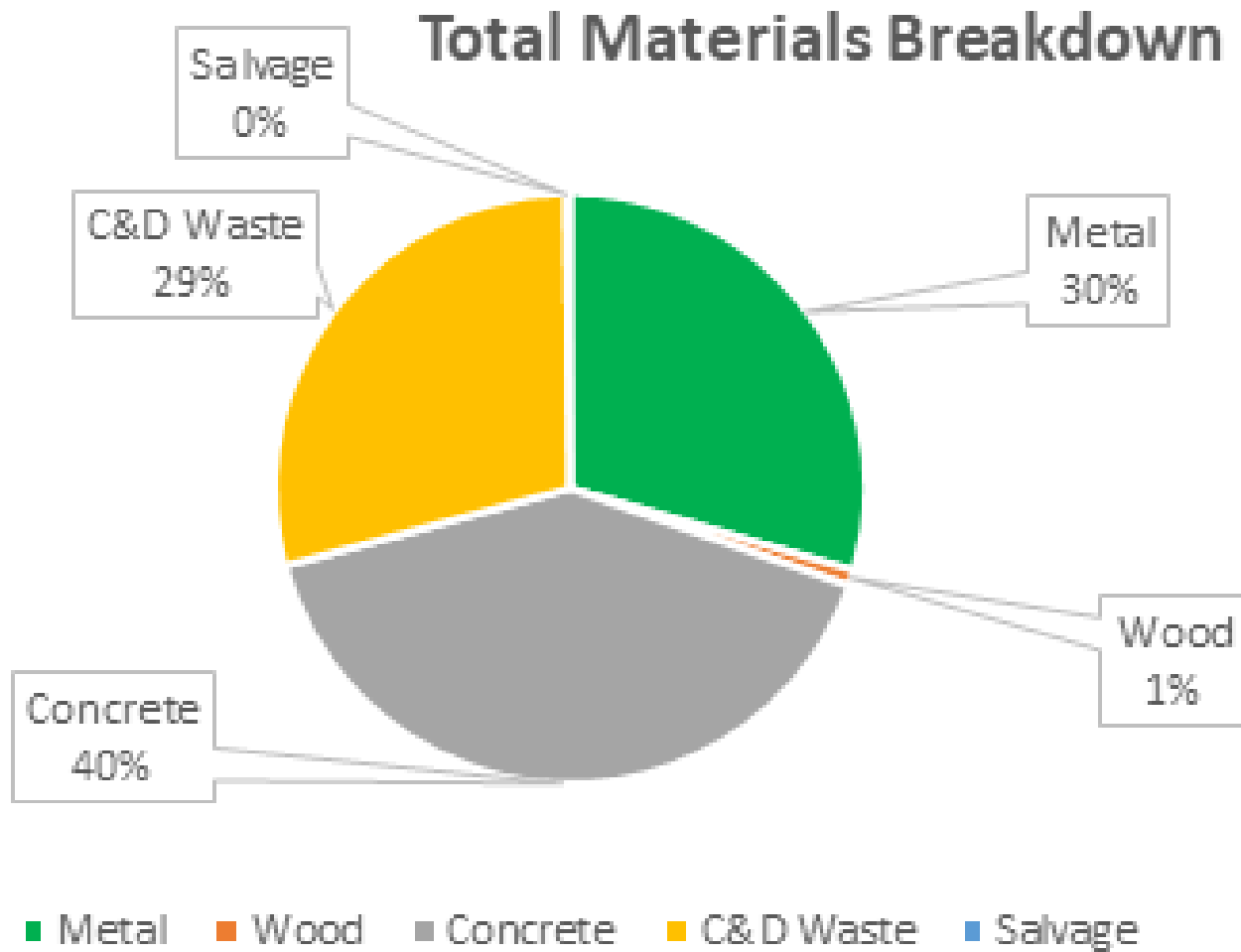
FY24 - Program implementation (staffing/resources in budget)



Composting Pilot



C&D Diversion Demo Data



Other Projects/Issues on the Horizons

- ✓ Power Purchase Agreement with Duke for landfill gas – 3 year contract
- Landfill cell VII/Phase VII expansion – \$16M Construction starting March 2022
- Tip fee evaluation – Feb 2022, presented to the BOC in March, FY24 implementation
- Landfill gas beneficial use evaluation – Fall/Winter 2023
 - What is the best use of our landfill gas? Sell to Duke, battery storage, vehicle charging?
 - What happens if organics are diverted? How many years of gas left? What organics processing system is best?
- Waste Pro contract evaluation – Fall/Winter 2023
 - What is the best way to serve residents? Are convenience centers needed in addition to curbside collection? Should cost for service be collected via the tax bill vs. monthly billing by contractor?
- Emerging Contaminants- PFAS, PFOS regulations

