



# Waste Composition Study



Assembly of Planners Symposium 2020

Jacobs

# Why is waste composition important?

- Last update - 30 years ago
- Waste streams have changed (e.g., more plastics, different packaging)
- Identifies opportunities for waste diversion



# Sort into different categories and weigh it



# Sectors and Samples



Sectors	Samples
Commercial	30
Residential – single family	30
Residential – multi family	30
Military	30
Illegal Dump Sites	4
Total	124

Sorting method: ASTM D5231-92

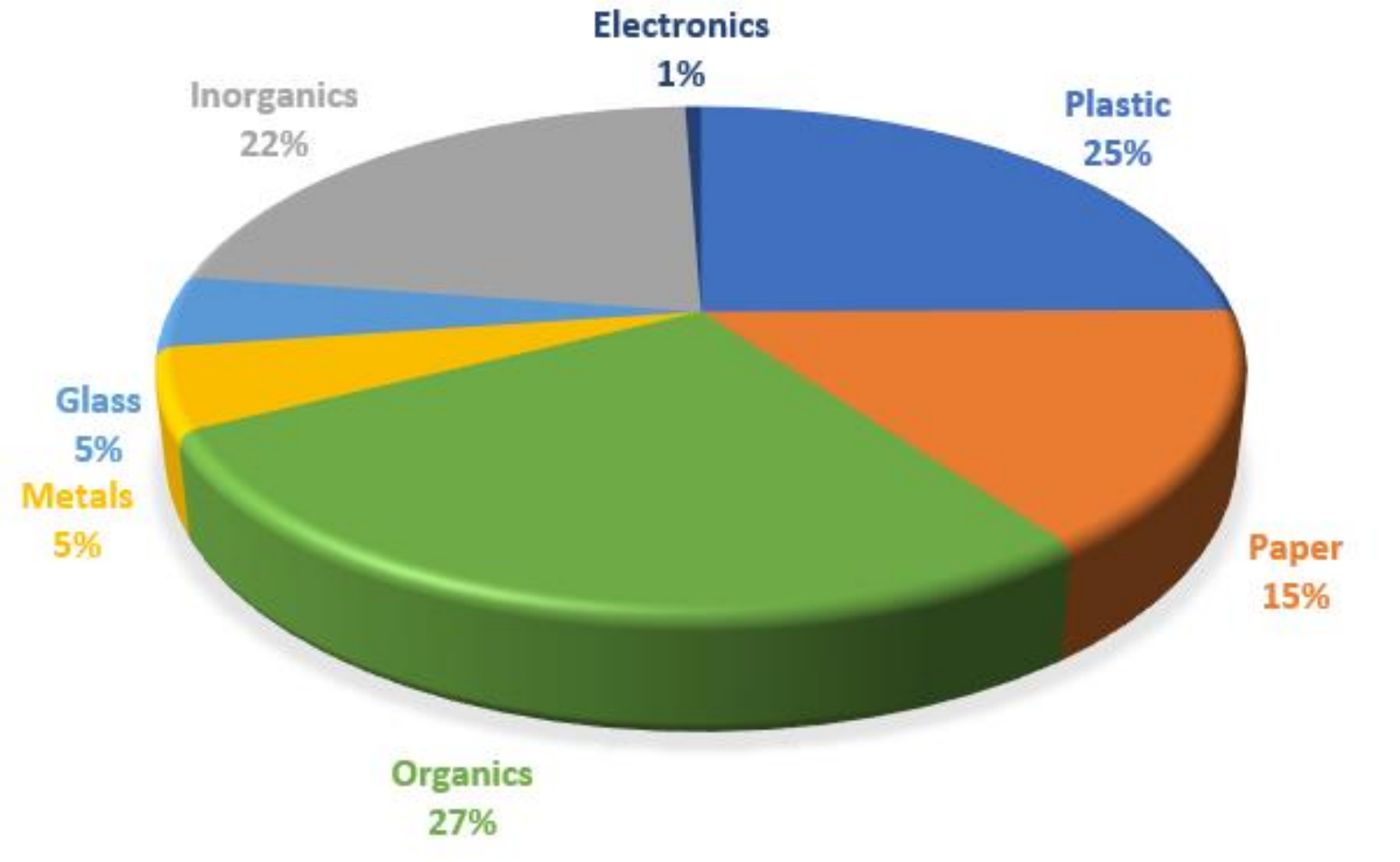
Total waste sorted: >12 tons

Duration: 14 days

Personnel-hours: 896

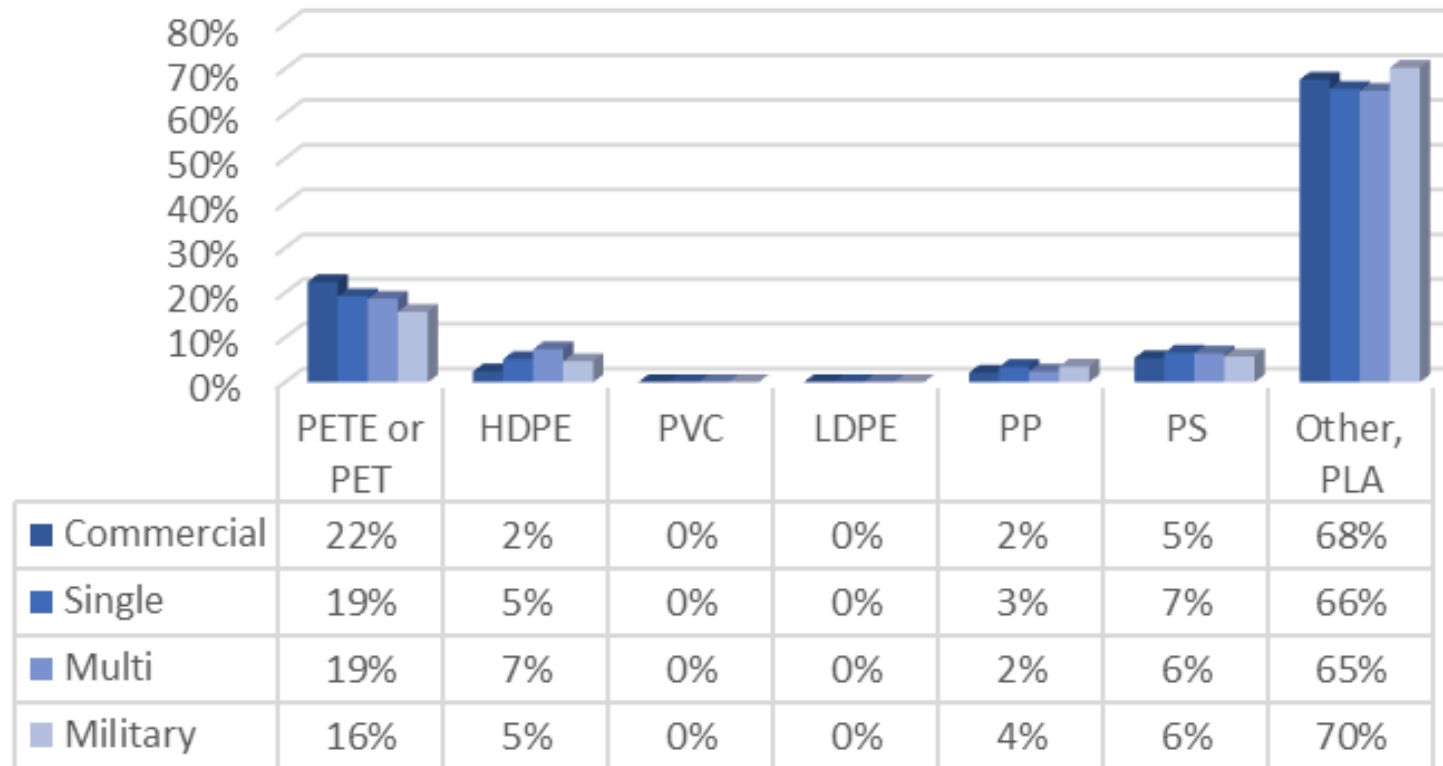


# Overall Results – all sectors

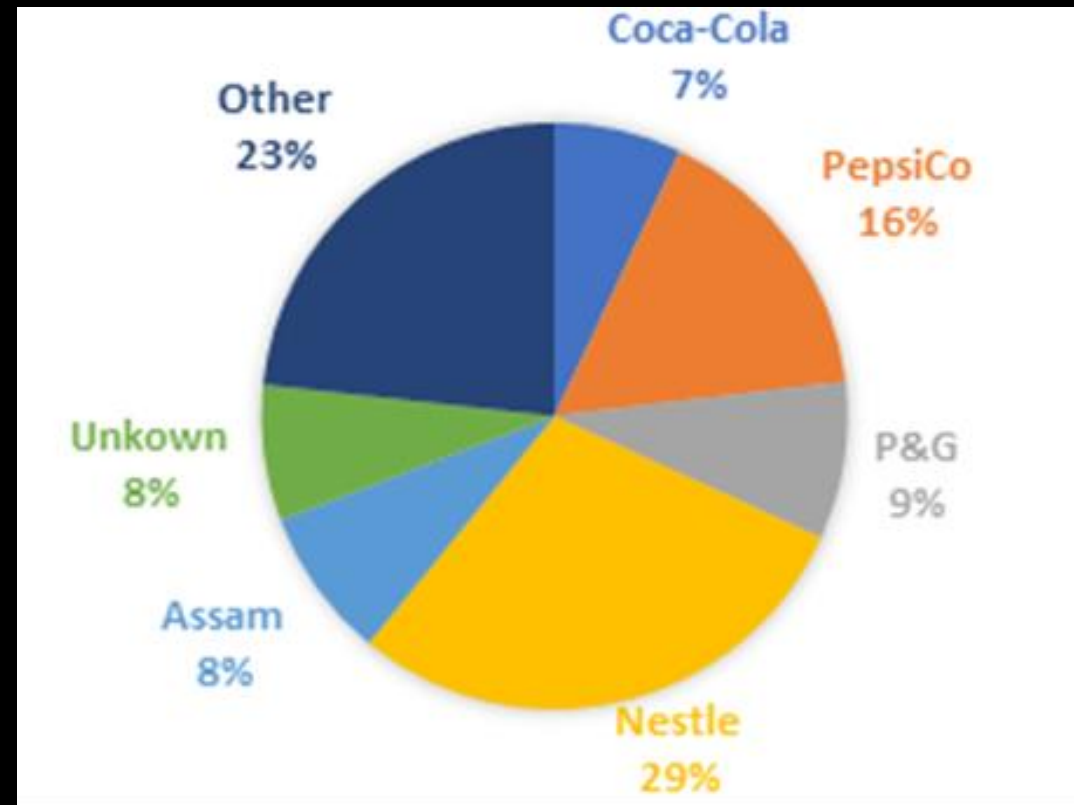


# Plastics

## PLASTIC BREAKDOWN BY SECTOR



# Plastics – Brand Audit (#1/#2 only)

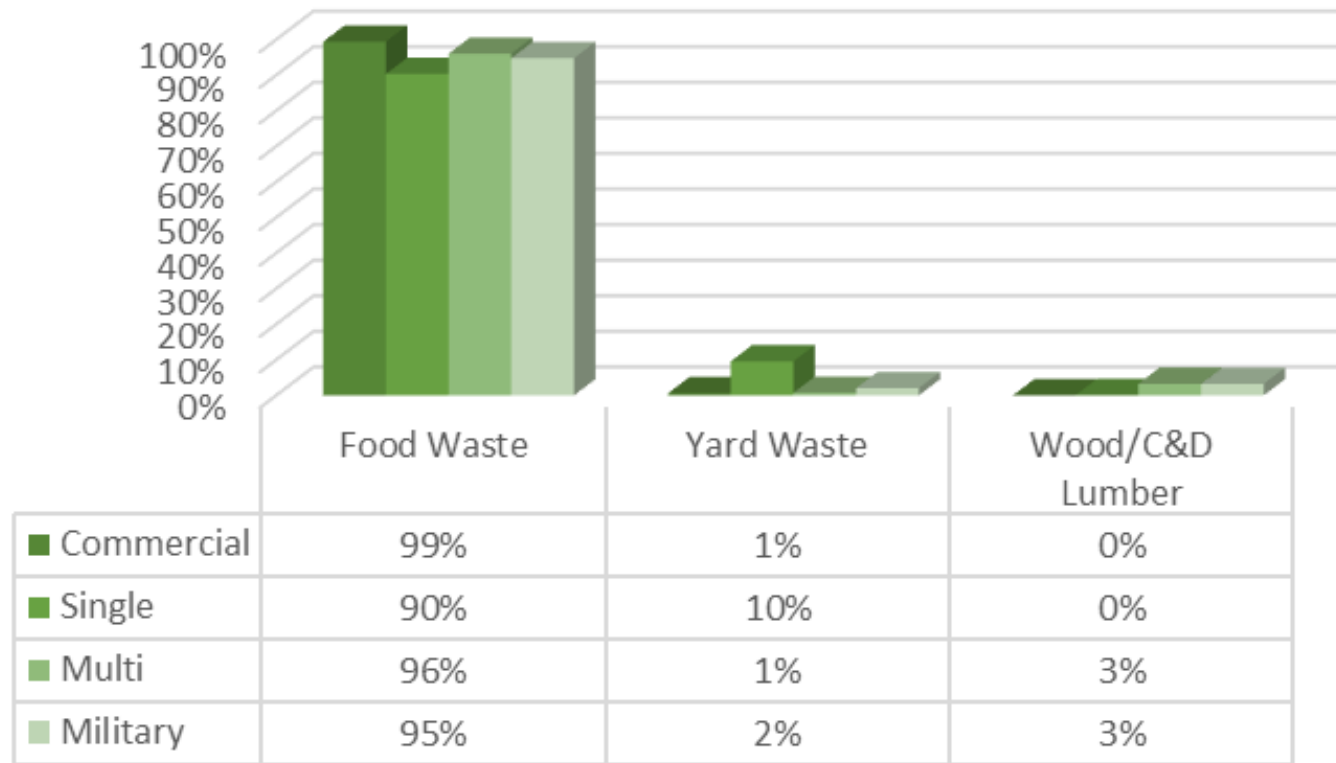


1,400 plastic bottles



# Organics

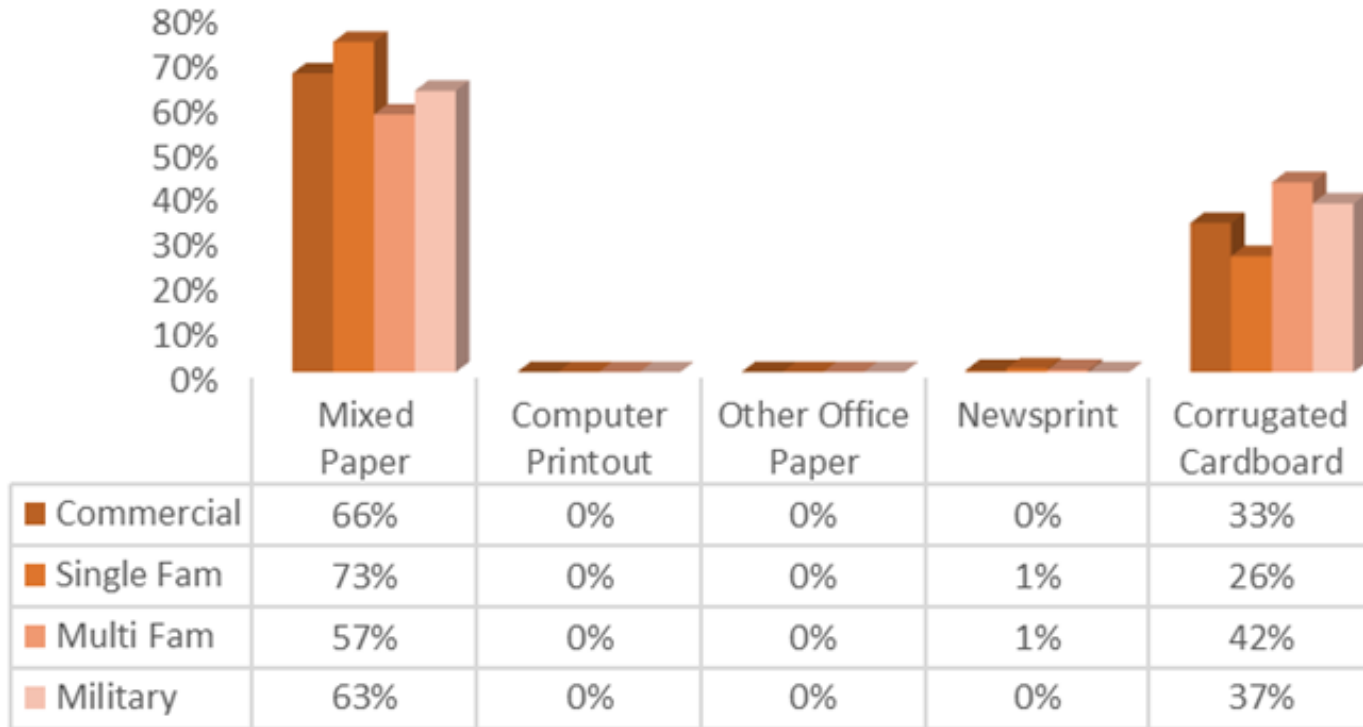
## ORGANICS BREAKDOWN BY SECTOR





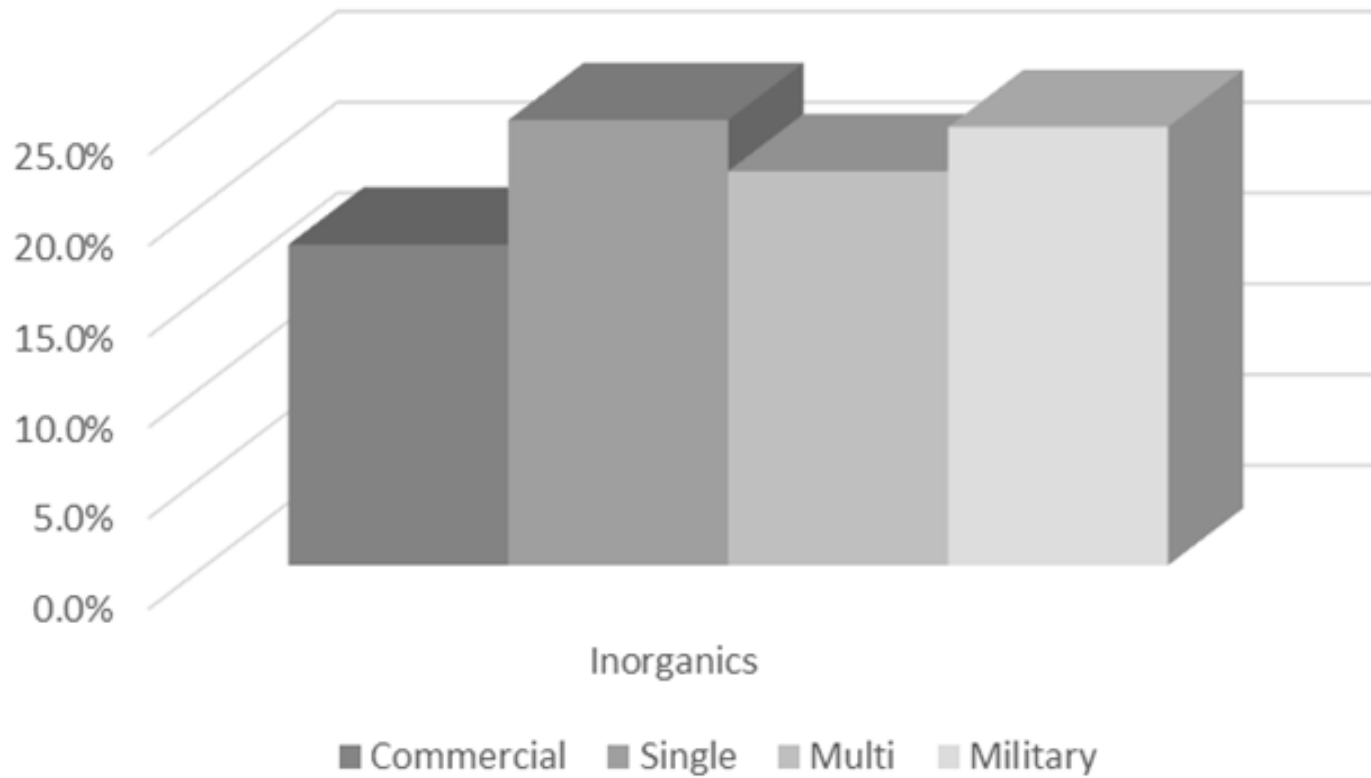
# Paper

PAPER BREAKDOWN BY SECTOR



# Inorganics

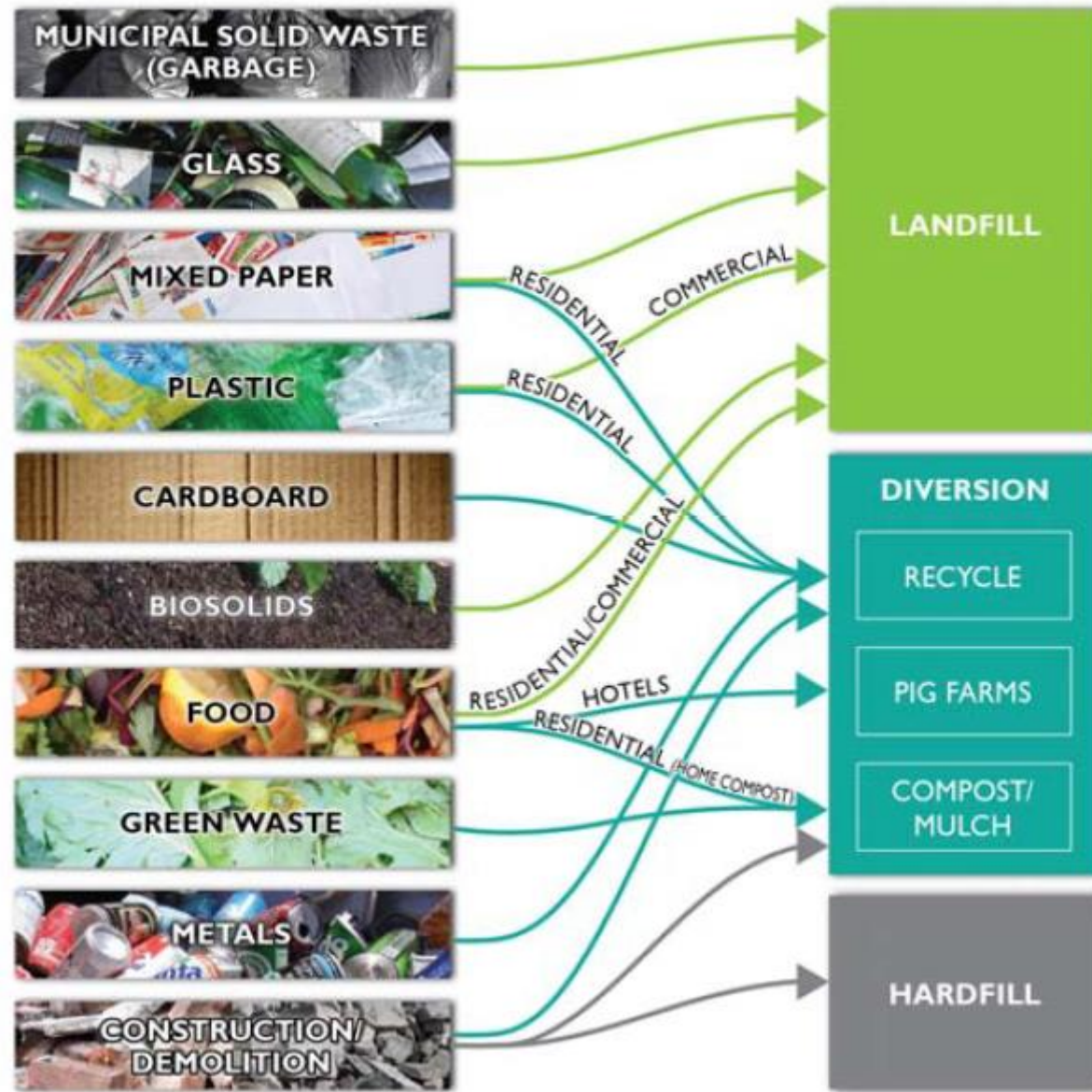
INORGANICS BY SECTOR



- Diapers
- Textiles
- Waxed plates/cups
- Tetrapak
- Rubber



## STATUS OF MATERIALS MANAGEMENT ON GUAM – 2019



# Recommendations

- Implement program(s) to reduce, recover, and divert food and compostable organics from the landfill
- Immediate options:
  - Outreach and education (schools, homes, businesses)
  - Pressure/incentive to expand food recovery/donation
  - School composting
  - Home composting
  - Biosolids composting
- Longer term options:
  - Island wide organics composting
  - Anaerobic digestion (biogas to energy)



# Recommendations

- School and Gov Guam Recycling
  - Tetrapak separation and recycling (schools)
  - Purchasing requirements (Gov Guam)
- Plastic Recycling
  - Evaluate chemical recycling options
    - Plastics to fuels
    - Plastic lumber
  - Leverage investments from American Beverage Assn and Nestle to help
  - Legislative intervention (purchasing, bans)



## Recommendation – Illegal Dump Sites

- Mandatory Waste and Recyclables Collection
  - All residents are required to get a waste bin and recycle bin and pay
  - Mandatory service comes with pickup of oversized items.
    - No more incentive to illegally dump.
  - Expands customer base for GSWA, better economics for the collections and recycling systems
  - Waste collection fees are bundled with utility or housing payments
    - Subsidies for utilities or housing covers waste/recycling collection
  - Structure the program so existing customers do not pay more
  - Smaller bin pays less, larger bin pays more (pay as you throw). Use successful examples from other parts of the country.



# For additional information contact:

Conchita SN Taitano

[conchita.taitano@epa.guam.gov](mailto:conchita.taitano@epa.guam.gov)

Cory Hinds

[cory.hinds@jacobs.com](mailto:cory.hinds@jacobs.com)

Edwin Reyes

[edwin.reyes@bsp.guam.gov](mailto:edwin.reyes@bsp.guam.gov)



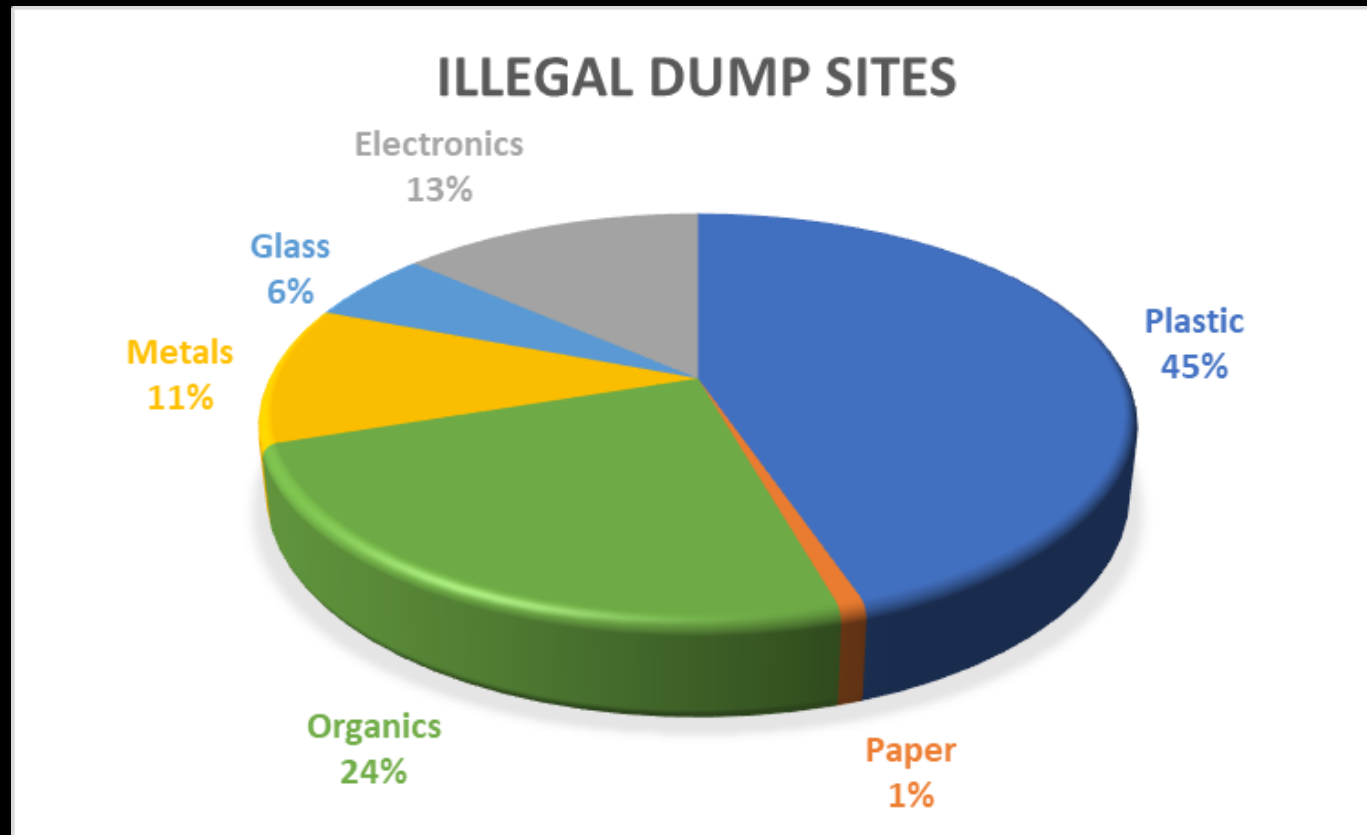
Thank You

**Jacobs**

Challenging today.  
Reinventing tomorrow.

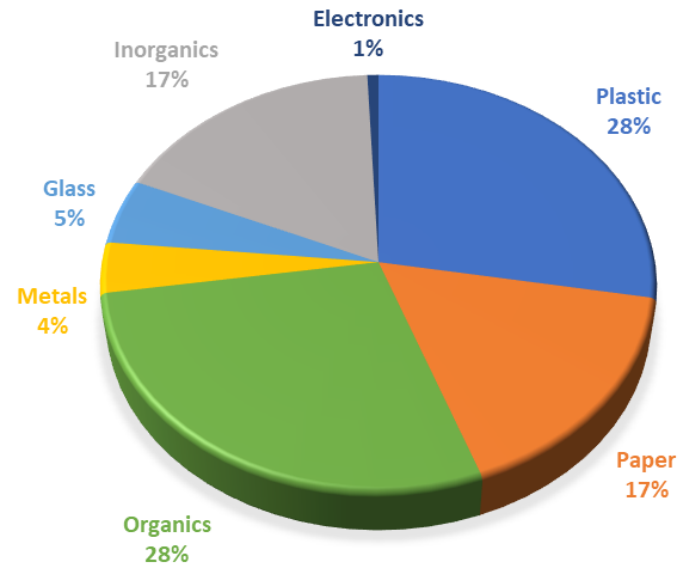


# Results – Illegal Dump Sites

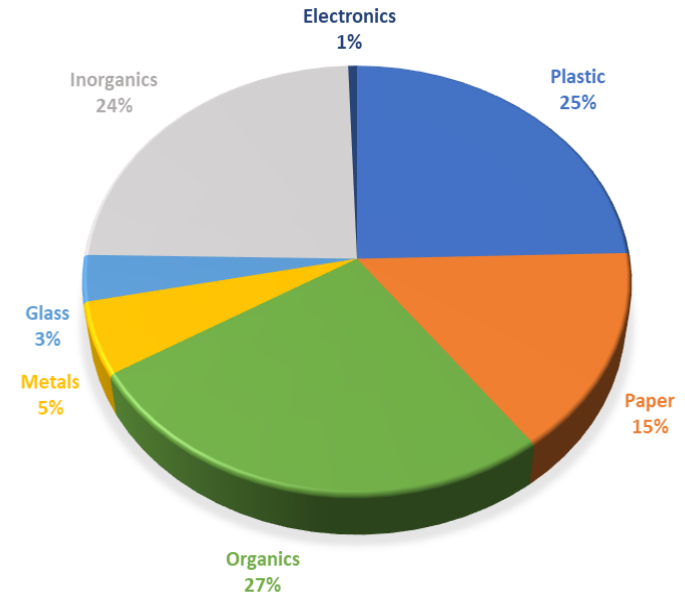


# Results by Sector

## COMMERCIAL



## MILITARY



# Results - Residential

