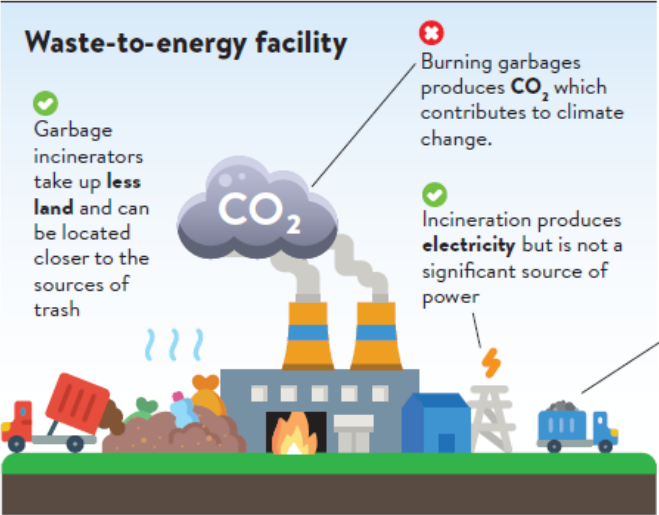
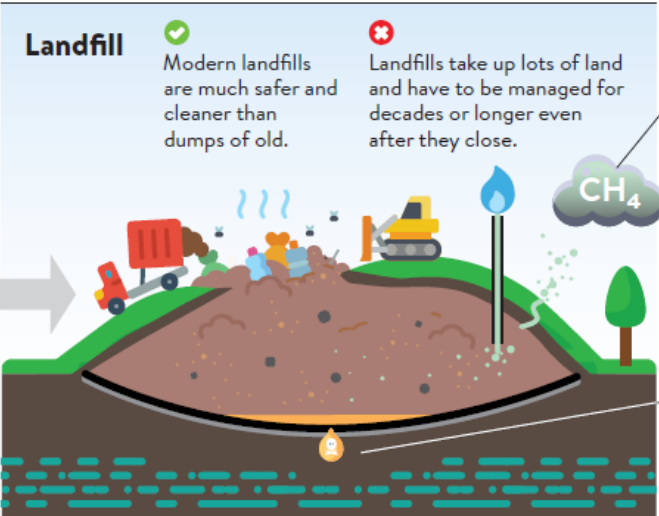
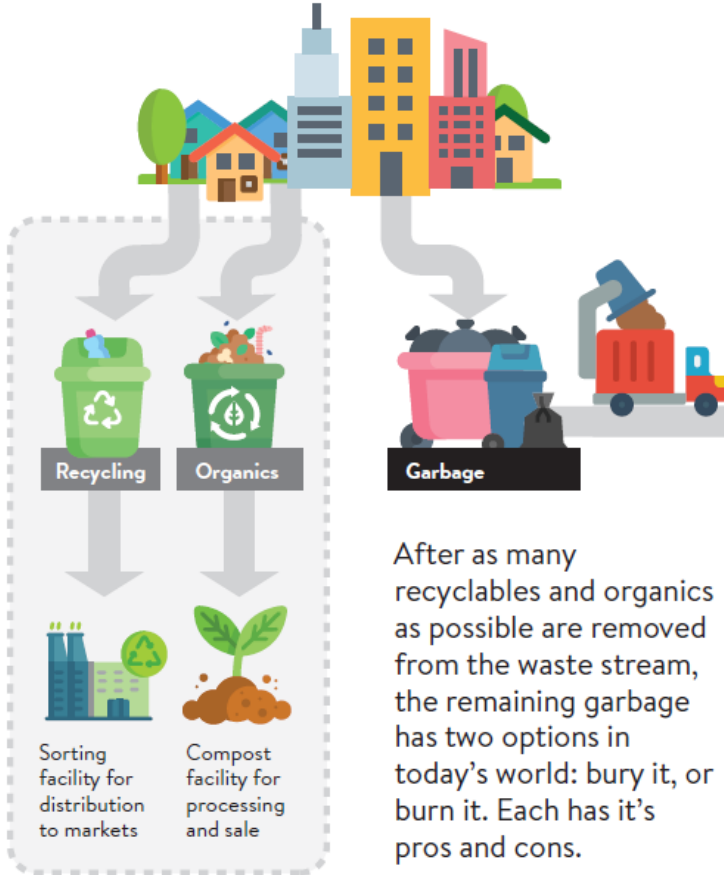


# Solid Waste in Minnesota

- Brief Solid Waste History and the Waste Management Act (WMA)
- Role of the State
- Current System
- Future of waste management
- Role of Schools
- Questions

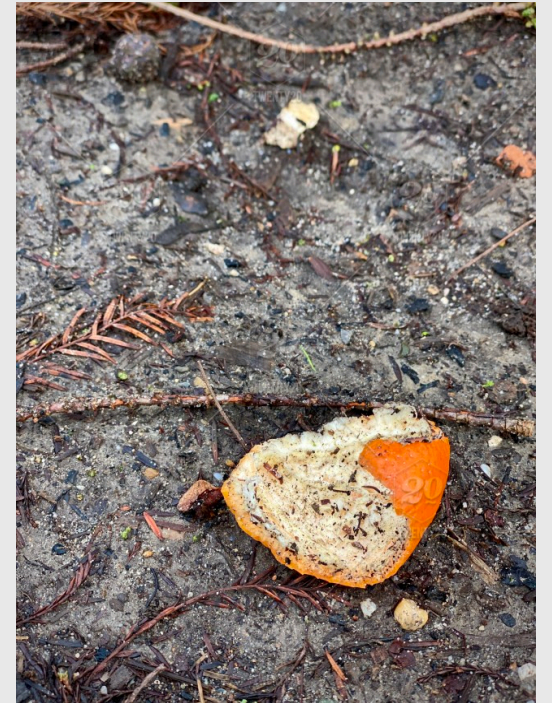
# What is Solid Waste?

## Municipal solid waste: Landfilling verses Waste-to-energy (incineration)



# History of Solid Waste Management Before 1980

- “Throughout most of time, human beings disposed of garbage in a very convenient manner; simply by leaving it where it fell.”





# History of Solid Waste Management before 1980 continued



Minneapolis Star photo by Larry Schreiber



# Federal Government Response

- 1965 Solid Waste Disposal Act
- Amendment to the Clean Air Act
- 1st federal law that required environmentally sound methods for disposal of household, municipal, commercial and industrial wastes.
- 1976 – Resource Conservation and Recovery Act
- Hazardous wastes banned from solid waste disposal



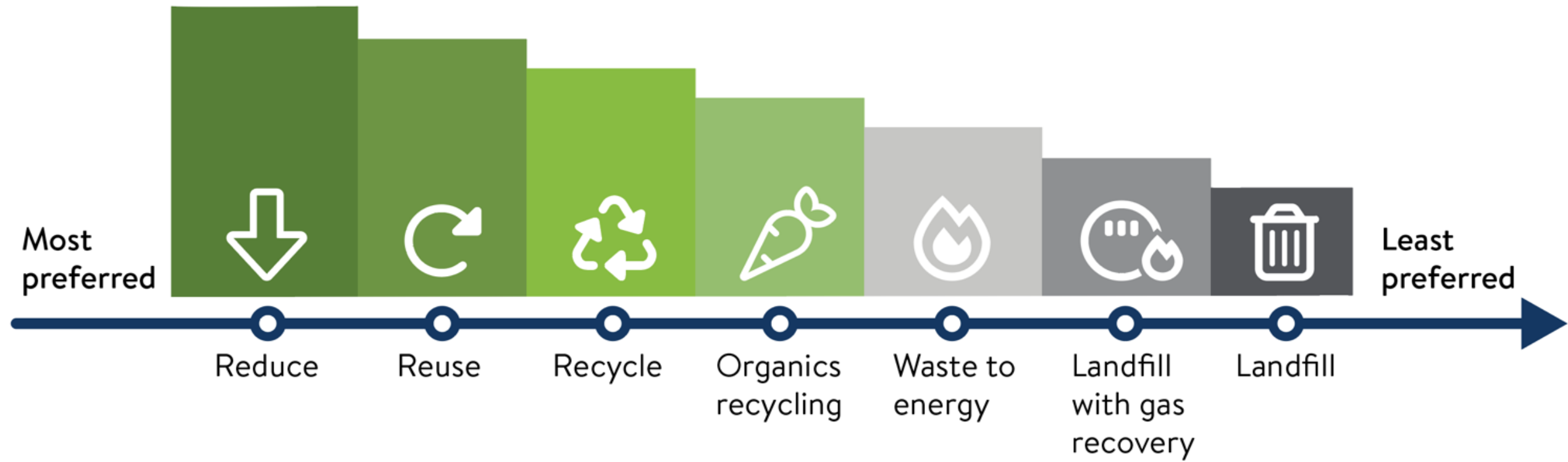
- **1967 – MPCA created**
- **1970's – MPCA adopted**
  - **solid waste disposal rules**
- **1973 – MPCA moved to**
  - **replace 1500 open dumps with 140 permitted sanitary landfills**



# 1980 Waste Management Act

- Minn. Statute 115A.02 (a) It is the goal of this chapter to protect the state's land, air, water, and other natural resources and the public health by improving waste management in the state to serve the following purposes:
  1. reduction in the amount and toxicity of waste generated;
  2. separation and recovery of materials and energy from waste;
  3. reduction in indiscriminate dependence on disposal of waste;
  4. coordination of solid waste management among political subdivisions; and
  5. orderly and deliberate development and financial security of waste facilities including disposal facilities.



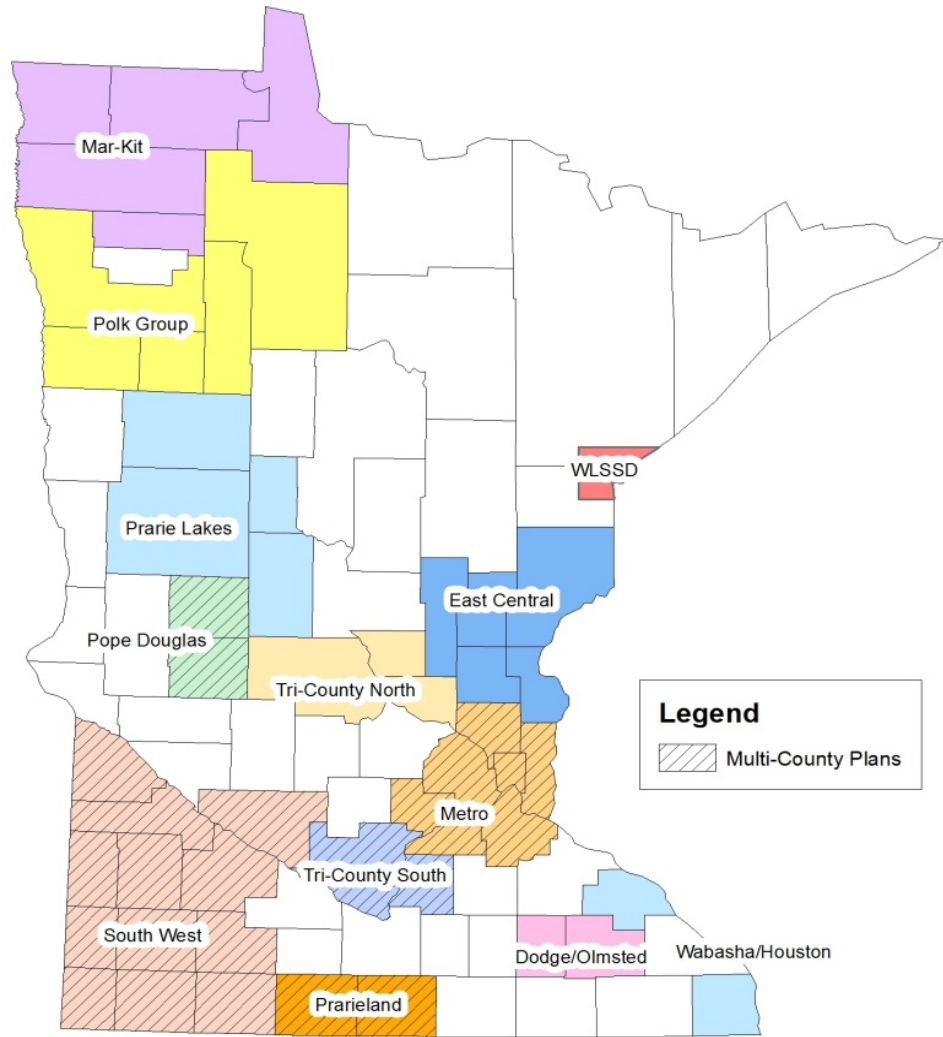


# Waste Management Hierarchy

# Role of the State in Waste Management

- Regulate Solid Waste Management/Disposal Facilities
- Recommend Solid Waste Policy
- Advance goals of reduction, reuse, recycling, and resource recovery
- Require County Planning
- Provide Technical and Financial Assistance
- Achieve goals in partnership with counties

## County Solid Waste Planning Regions



# Solid Waste Planning

- Greater Minnesota planners work with counties outside the metro to approve their solid waste plan which established the plan for managing the solid waste of the county or region
- Within the Metro area, the planners create [The Metropolitan Solid Waste Management Policy Plan](#) and then approve individual county plans that must be in-line with the Policy Plan

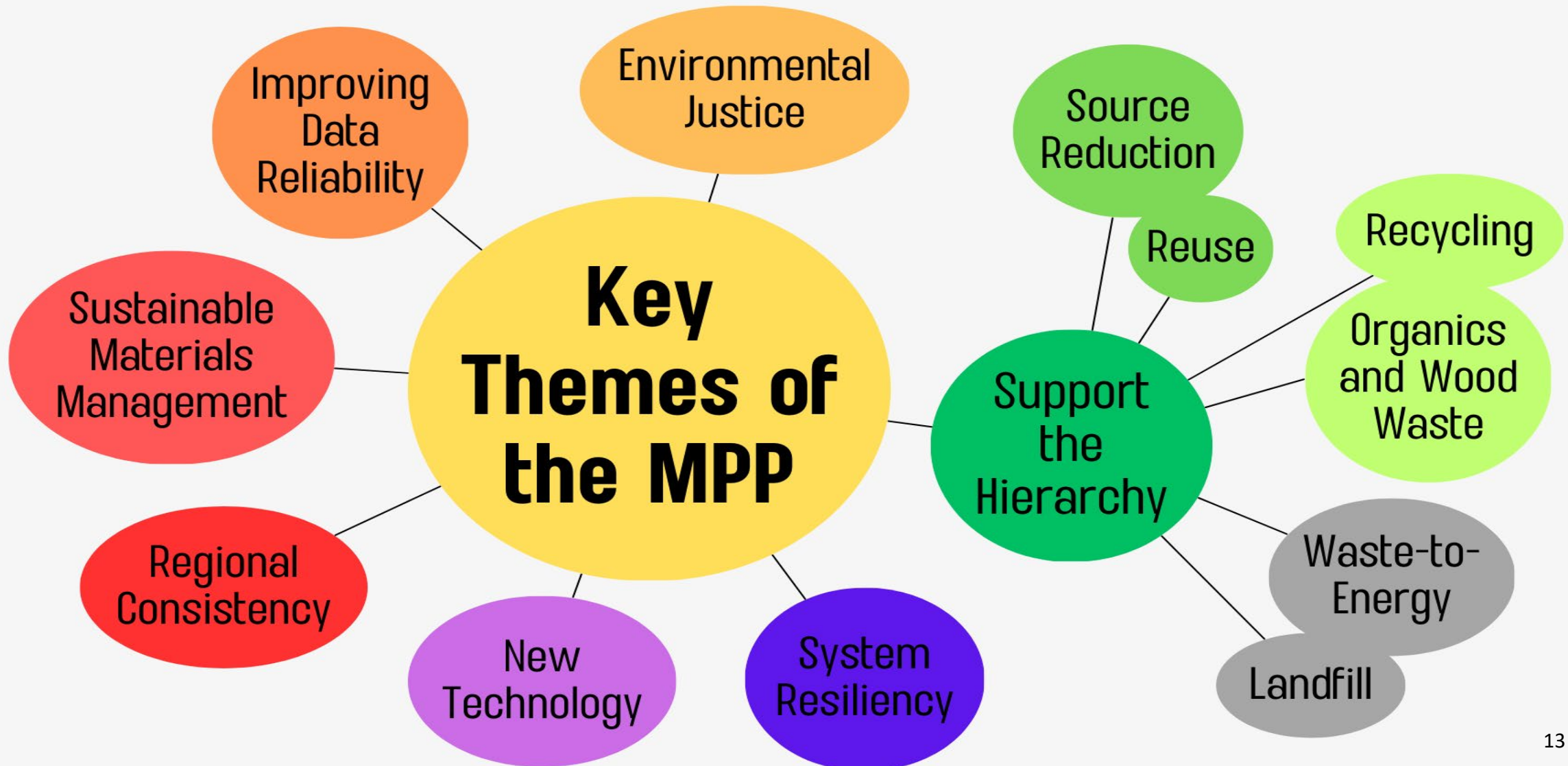
# Metro Policy Plan

- Waste Management Act requirement
- 20 year plan
- Corresponding county plans





# Key Themes of the Metro Policy Plan (MPP)



# The evolving waste stream

**2000**



**2013**



Paper

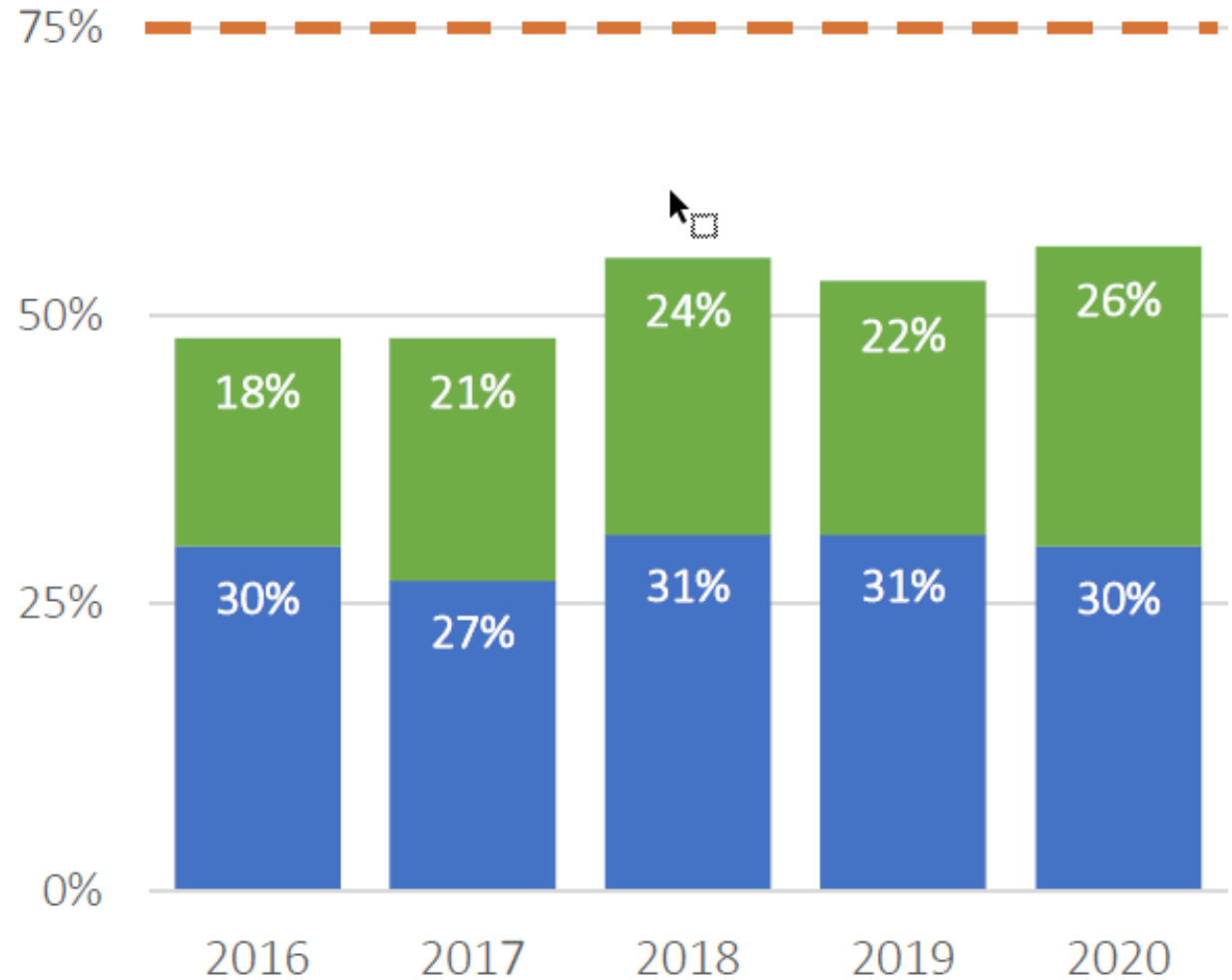
Plastics

Organics

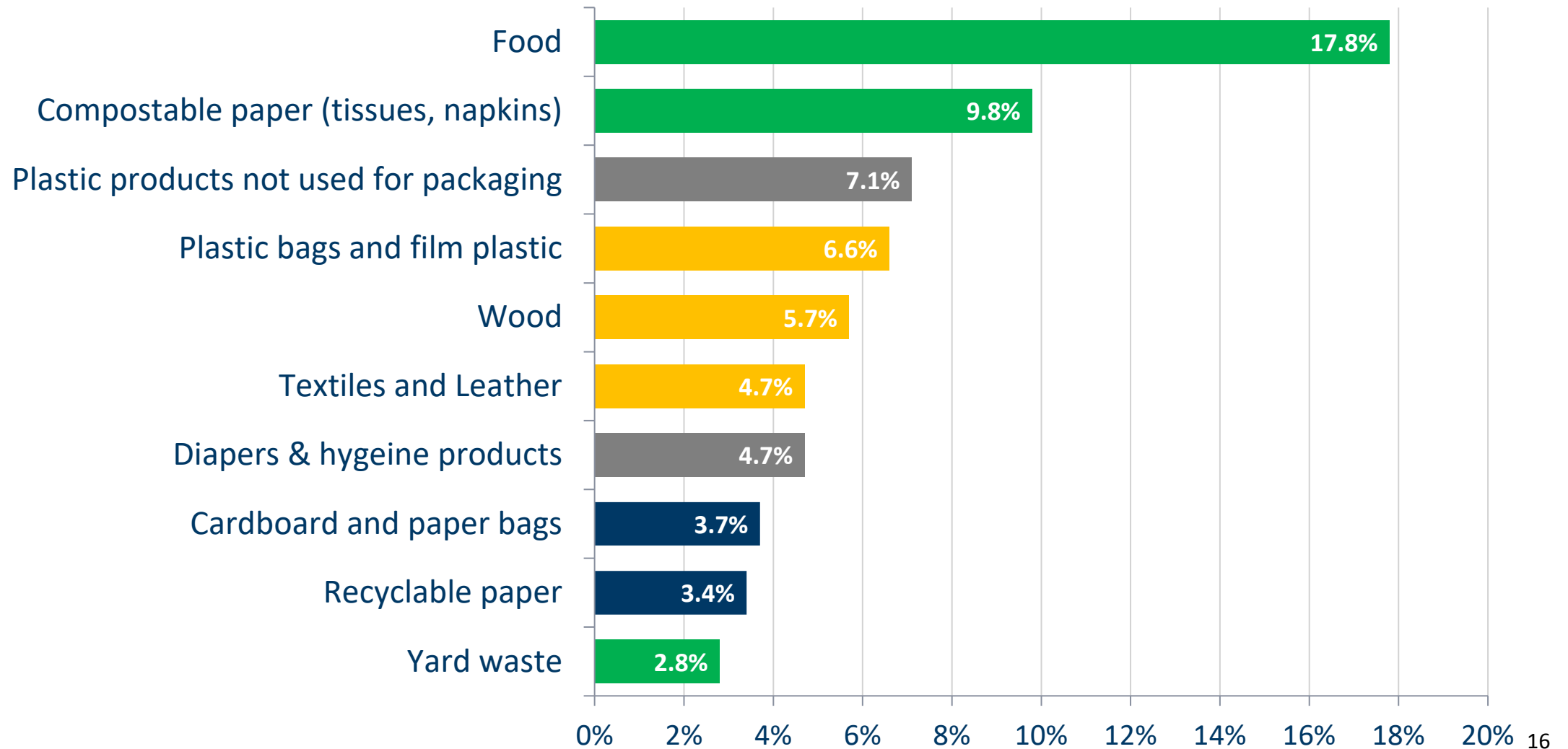
Other

# Metro Area Goal – Dakota County

75% Recycling and Organics by 2030



# Top 10 items in the trash





# Can we do better?

Yes! 40% of waste can be recycled!

- Corrugated cardboard and paper bags: 3.7% or 106,000 tons
- Mixed paper (primarily residential mixed mail): 3.4% or 100,400 tons
- Boxboard (cereal and cracker boxes): 1.6% 45,000 tons
- Newsprint: 1.4% or 40,400 tons
- Office paper (notebook and computer paper): 1.1% or 33,500 tons

- Sustainable Materials Management
  - Managing materials in a way to minimize environmental impact
  - Include life cycle assessment (LCA), toxicity reduction, an environmental impact target, and measuring progress via GHGe reductions.
  - Goes beyond just recycling and composting – looks upstream to minimize waste before it's generated

# New Technology

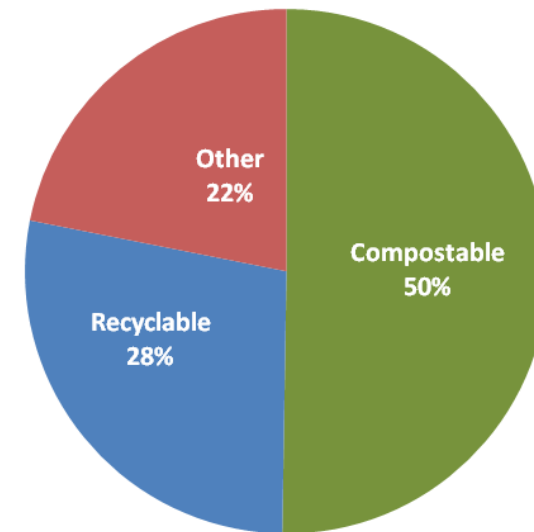
- Robots/AI
- Bacteria power
- Anaerobic digestion
- *AMP Robotics communicates with robots, which can pick items twice as fast as humans with 99 percent accuracy. Image courtesy of AMP Robotics.*



# Why Schools?

- State Law
  - All public schools
  - The majority of private schools
- Nearly 80% of school waste=recyclable or compostable
- Educational opportunity for students and community
- 17% solid waste tax on trash (not recycling)

Recyclable and Compostable Components of School Waste

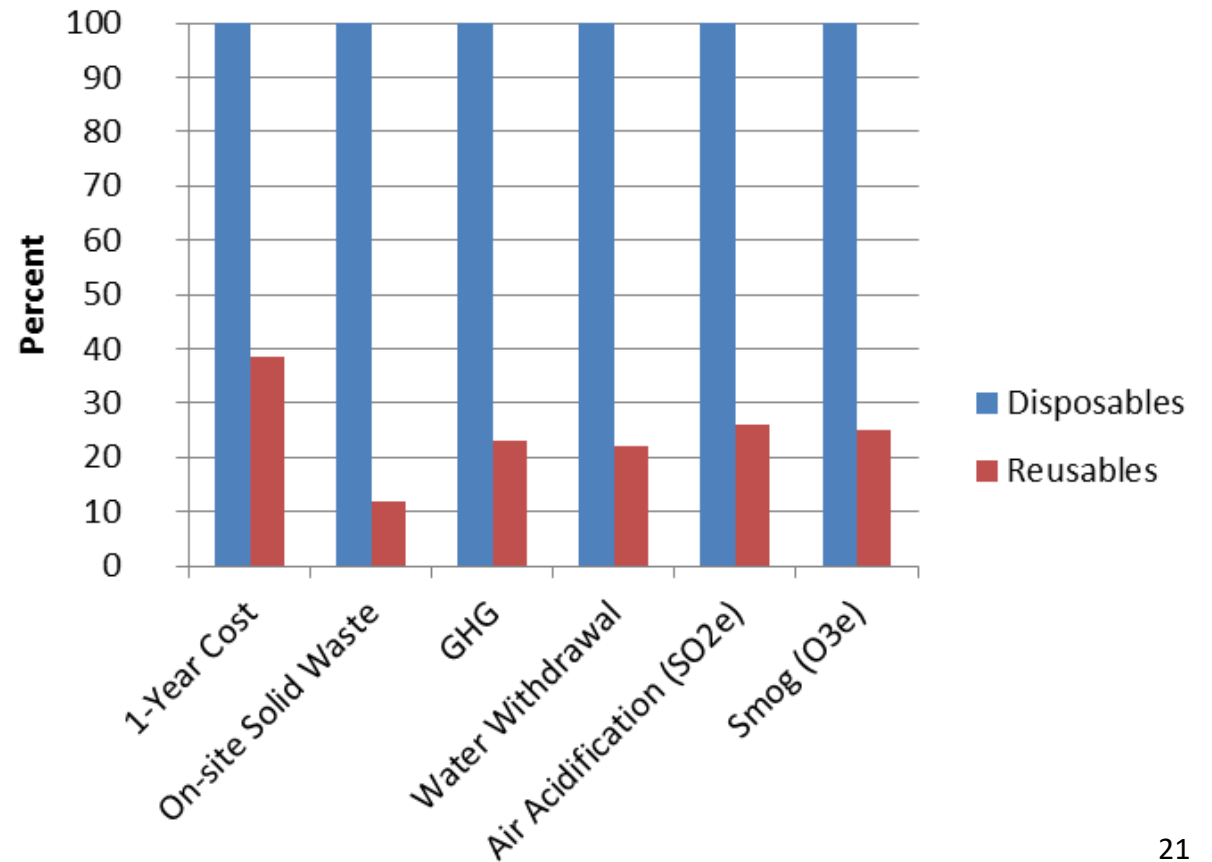




# Reusables are better!



First year impacts of reusables as percentage of disposables (utensils only)



# Role of Schools

- Custodial staff are key to success
- Food waste reduction
- Create the next generation of recycling and composting experts!



Thank you!

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