GENERATION

COLLECTION + TRANSPORTATION

DISPOSAL

PRE-PROCESSING (physical process)

PROCESSING (biochemical process)

POST-PROCESSING (chemical/physical processes)

ENERGY and MATERIAL RECOVERY

ENGINES

Generation sources (top icons): lands | farms | ind food mfg | grocer | food biz | multi-unit dwellings | single-unit dwellings | parks | farms

Process flow labels:
- source separation
- privately contracted services | municipal services | self-haul
- waste stream
- landfill — fugitives / gas collection
- stockpiling
- separation — sort | screen | de-package | press | slurry
- resizing — chip / grind
- pyrolysis or gasification
- digestion (anaerobic)
- larger-scale composting — stock pile | active pile | curing pile
- smaller-scale composting
- incinerate
- landfill gas
- flare
- gas upgrade
- compost upgrade — admix | screen
- Storage — tank | pipeline injection
- bagging | stockpiling
- tank
- Energy Conversion
- Land Application — Soil Amending | Landscaping
- Energy Conversion
- transportation, offroad, portable, stationary equipment backup generators

Flow streams: biooil, syngas, biogas, digestate, compost, mulch, material wastes, landfill gas, biogas, biomtehane, biomethane, syngas, biomass, biogas, bioresource, electricity, steam, heat, low-carbon fuel, renewable natural gas, biochar, compost, mulch, digestate, compost, to crops, to timber, to nursery, to cover, electricity, steam, heat, low-carbon fuel(s)

Emissions Insights : unanswered questions, data gaps, tensions, and potential strategies (incl. stakeholders)

	Criteria Air Pollutants (CAPs)					Toxic Air Contaminants (TACs)						Greenhouse Gases (GHGs)			Odorous Gases
	VOC	PM	NOx	CO	SO2	NH3	H2S	Organic	Acids	Metallics	DPM	CO2	CH4	N2O	odors
source separation	○	◉				○	○	○				○	○	○	○
privately contracted / self-haul	◉	◉				○	○					○	○	○	○
landfill (fugitives)	◉	◉				○	◉	◉		◉		◉	◉	○	
gas collection	◉						◉	◉							
stockpiling	◉	◉				◉	○	○				◉	◉	○	
separation / resizing	○	◉				○	○	○				○	○	○	○
pyrolysis or gasification	○	○	○	○	○	○	○	○	○			○	○	○	○
digestion	◉					◉	◉	○				◉	◉	◉	○
larger-scale composting	◉	◉				◉	○	○				◉	◉	◉	○
incinerate / flare	◉	◉	◉	◉	◉	◉	◉	◉		◉		◉	◉	◉	◉
gas upgrade	○					○	○	○				○	○	○	○
compost upgrade	○	◉				○	○	○				○	○	○	○
Storage / tank	○					○	○	○				○	○	○	○
bagging / stockpiling	○	◉				○	○	○				○	○	○	○
Energy Conversion	◉	◉	◉	◉	◉	◉	◉	◉	◉			◉	◉	◉	
Land Application	○	◉				○	○	○				○	○	○	○
engines / transportation	●	●	●	●	●		●			●	●	●	●	●	
	VOC	PM PM10 PM2.5	NOx	CO	SO2	NH3	H2S	incl. PCB, dioxins, furans	incl. HCl, HF	Metallic HAPs	DPM	CO2	CH4	N2O	odors

LEGEND
- ● well known
- ◉ partly known
- ○ little known
- ☐ unknown