



Organic Waste Processing in California

Regulations to Reality

Presented to



Northwest Regional Solid Waste Symposium

April 24, 2025

Jim Miller



Tracie Bills

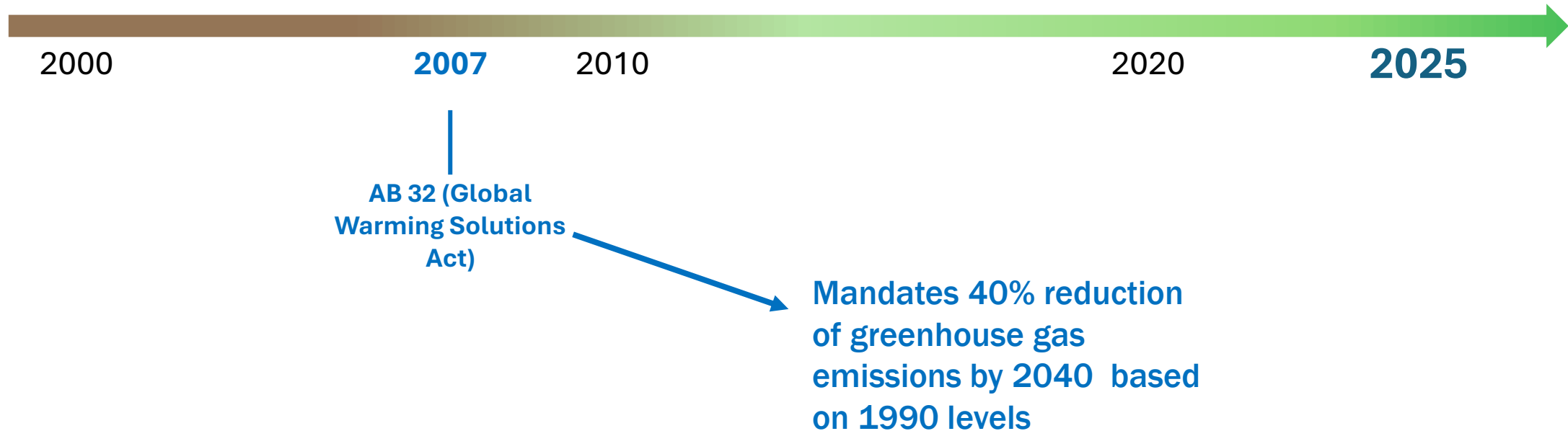


Tim Raibley



Organic Waste Processing in California

Regulations



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Regulations

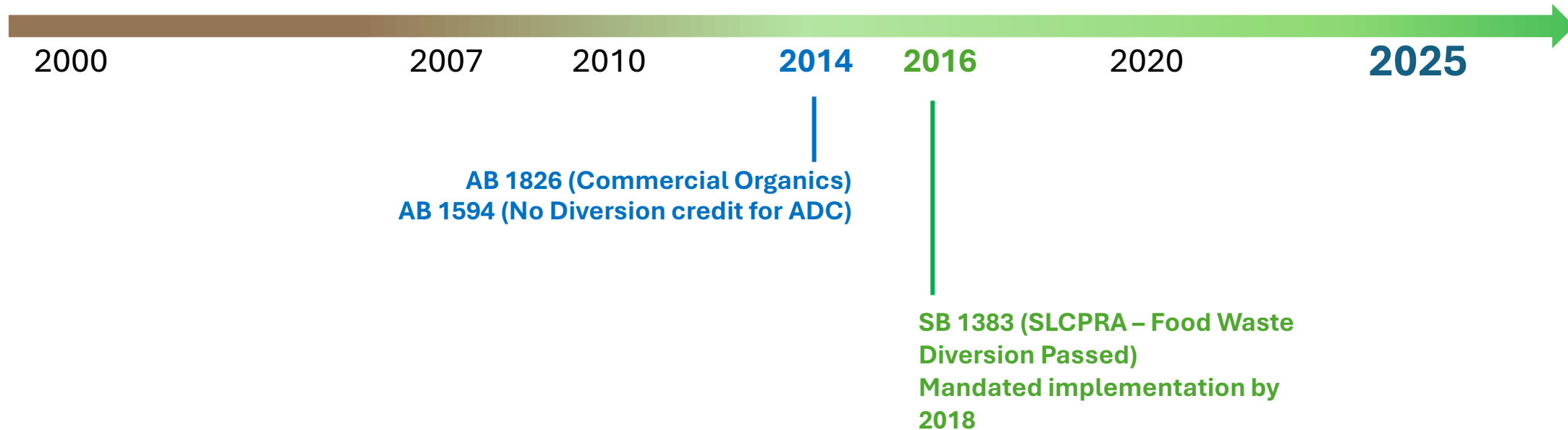


Landfills: 3rd largest generator of GHG, \approx 20% of total methane emissions.

Organics made up nearly half of landfill disposal.

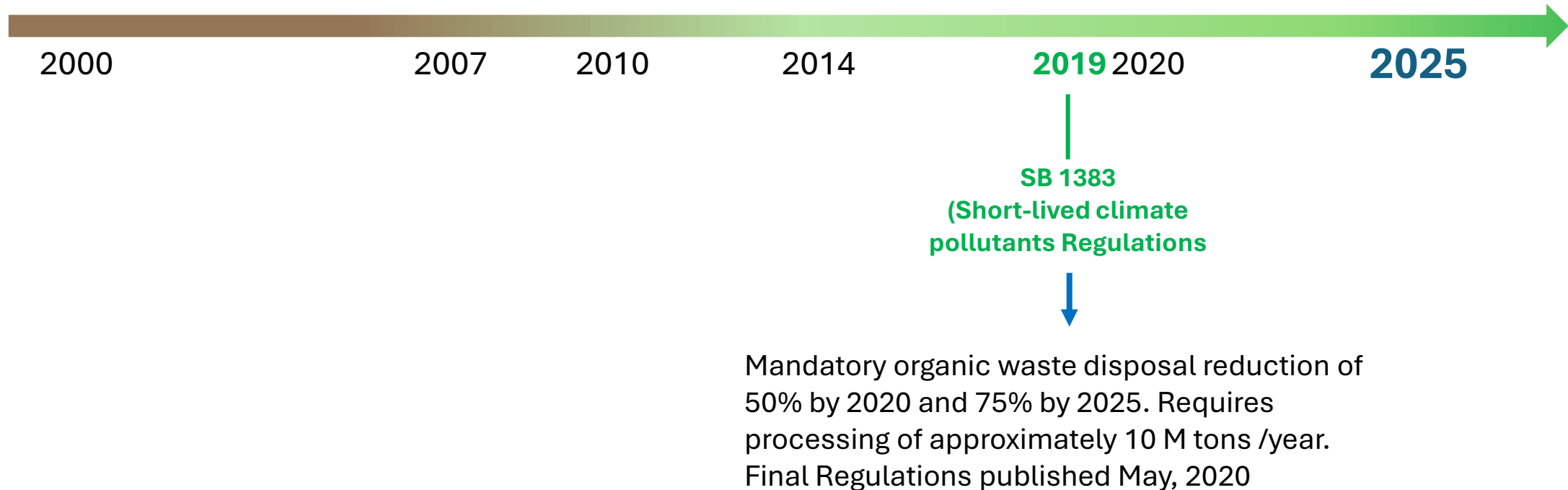
Organic Waste Processing in California

Regulations



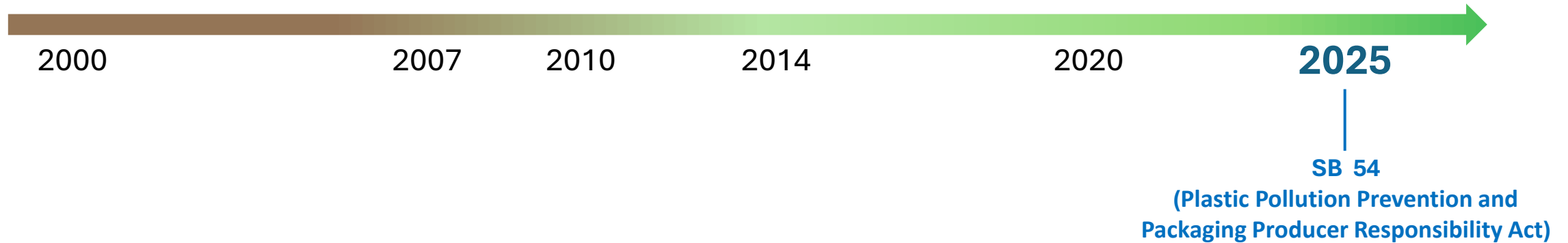
Organic Waste Processing in California

Regulations



Organic Waste Processing in California

Regulations



Organic Waste Management in California

Response from the public sector

- City driven public education programs
- Implementation of many food waste diversion programs
- Implementation of edible food recovery programs



ORGANICS

WHAT TO PUT IN YOUR ORGANICS CART:



Food scraps



Fruits & vegetables



Dairy & eggs



Meat scraps & bones



Coffee grounds, paper filters, tea bags



Food-soiled paper



Leaves, yard trimmings, clean wood scraps (4" diameter or less)



THE ORGANICS CART IS COLLECTED **WEEKLY!**
KEEP ORGANICS OUT OF LANDFILLS.

Layer food scraps with food-soiled paper/yard trimmings or use paper bags/BPI-certified (ASTM D6400) compostable bags for food scraps collection.

ITEMS NOT ACCEPTED



No glass



No metal



No liquids



No plastics



No coated paper or cartons



No treated, painted, stained, oiled wood



No pet waste

Organic Waste Management in California

Response from municipalities, counties and the private sector

- Residential food waste commingled with green waste
- Implementation of source separation for commercial food waste

BUSINESS WASTE REQUIREMENTS

Organics Recycling



Organic Waste Management in California

Facilities and Systems

- Dedicated AD facilities – Muni encouraged
- Food waste to co-digestion at WWTPs
- Composting

Organic Waste Processing in California - AD

Response from municipalities, counties and the private sector

- Construction of several large-scale AD facilities – Muni encouraged
- Construction of food waste preprocessing systems and POTW co-digestion



Organic Waste Processing in California - Compost

Response from municipalities, counties and the private sector

- Many new compost facilities and more seeking permits
- Significant expansion and mechanization of composting at existing facilities to reduce environmental impacts



Organic Waste Processing in California - AD

Response from municipalities, counties and the private sector

- Construction of food waste preprocessing systems in existing facilities
- WWTP modifications for receipt of food slurry





Implementation Progress

Organics Recycling

- 93% with requirements have residential collection programs
- 72% of businesses recycling
- 2 million tons less landfilled organics (2018 to 2021)



Food Recovery

- 100% expanded programs
- 94% of food recovery target in 2023
- 420,042 tons of food recovered
 - Nearly 700 million meals

Diverse Organics Infrastructure

- Compost
- In-vessel digestion
- Co-digestion
- Community Composting
- Food rescue



\$487 million for infrastructure

Organic Waste Management in California

Current Status

Behind schedule

- Regulatory schedule lacked practicality
- Study/regulatory/funding/procurement/development schedule typically 5 to 7 years minimum
- Political will of some local government lacking
- COVID delays



AB 939 Recycling: **50% in 10 years**

SB 1383 Food Diversion: **75% in 5 years**

'Rome wasn't built in a year'

Organic Waste Management in California

Current Status Continued

Some failures

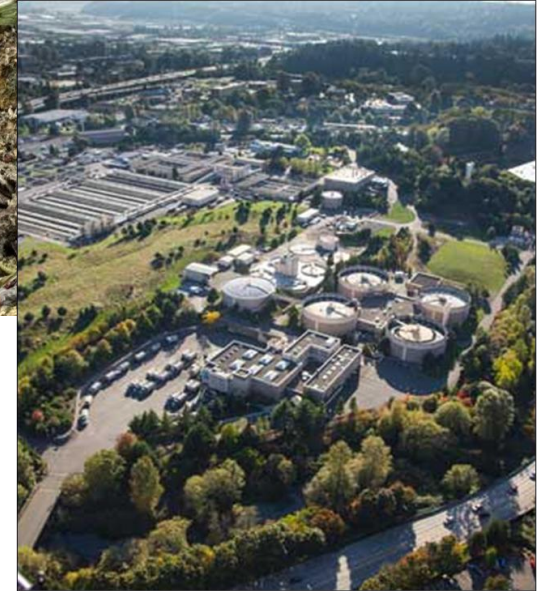
- Feedstock challenges
 - Control/commitment
 - Percentages and characteristics of contaminants are problematic
- Technology
 - Integration / equipment challenges
 - Percentages and characteristics of contaminants are problematic



Organic Waste Management in California

Biggest Issues and Challenges – Part 1

- Planning, permitting, development time requirements
- Complications of AD facilities
- POTW co-digestion hesitancy and requirements
- Managing/responding to contamination in food waste streams



Organic Waste Processing in California

Organic Waste Management in California

Biggest Issues and Challenges – Part 2

- Regulatory hurdles (Air, water, local)
- Financing and clear/fair, risk-balancing
- Effects of time
- Politics
 - Rate increases
 - NIMBY



Summary Observations

- Increased regulatory requirements
- Project development timelines
- Facilities are mostly privately owned/operated
- Feedstock quality challenging
- Risk/responsibility sharing



Lessons Learned

- Muni's to commit feedstock under long term agreement
- Political will to adjust rate/service fees
- Long term offtake agreements required for financing (AD)
- Resolve risk/responsibility for by-product management



Project Development Insights



- Grants and Renewable energy can help but won't fund programs
- Engage Technology providers early to get buy-in on system
- Requires skilled multi-discipline, multi-departmental team
- Engage regulatory agencies early in concept
- Jurisdictions need to expect rate increases



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Questions and Discussion

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Organic Waste Processing in California – Questions

Government Funding and Incentives

- Did government funding help support new programs and/or infrastructure?
 - Local government commits to expanded collection programs and rate increases
- What did support look like?
 - Feasibility studies, grants for new facilities, design and costing studies, waste composition studies, etc.
 - Increased Muni reliance on private sector for AD and Compost infrastructure
 - Muni long term waste flow commitments for processing and financing
 - Minimal grant funding, most funding is muni/private financed