



# **Hazardous Waste Management Report and Plan**

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TH-D2  
February 29, 2024**



**26th California Unified Program  
Annual Training Conference  
February 26-29, 2024**

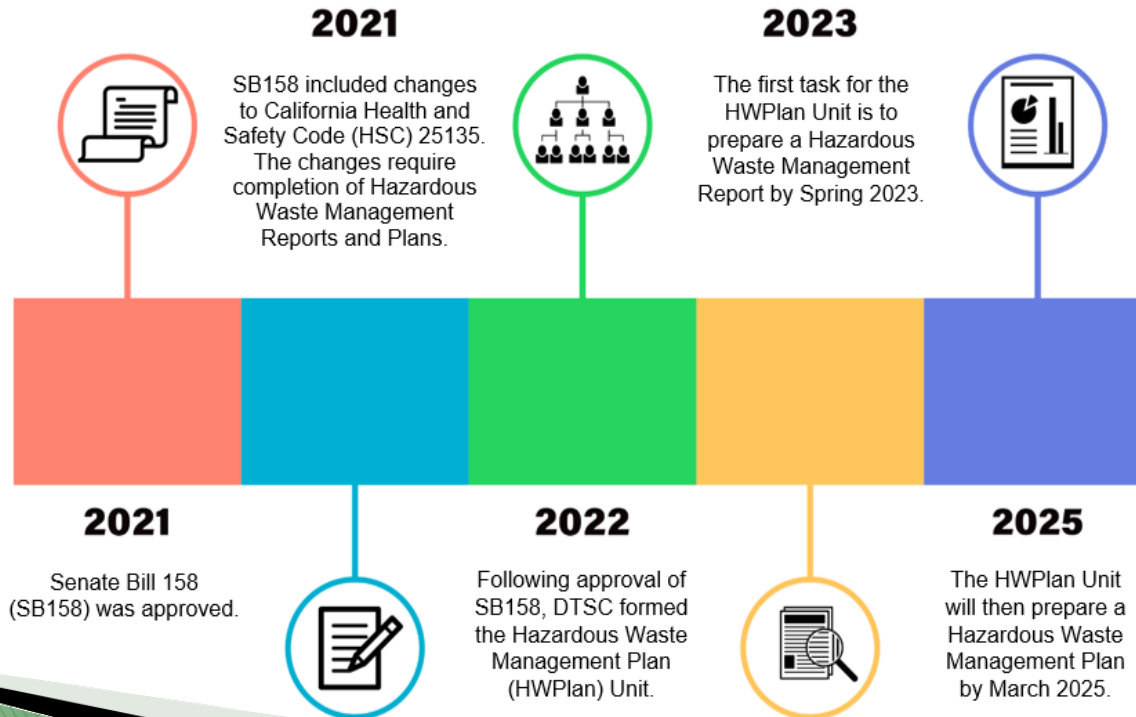
# Agenda

- Hazardous Waste Management Planning Background
- The Hazardous Waste Management Report
- Future Work Areas
- Subtopics



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# Hazardous Waste Management Plan Background



# The Hazardous Waste Management Report

- Baseline understanding
- Data to inform hazardous waste management plans
- Does not make recommendations for how waste should be managed

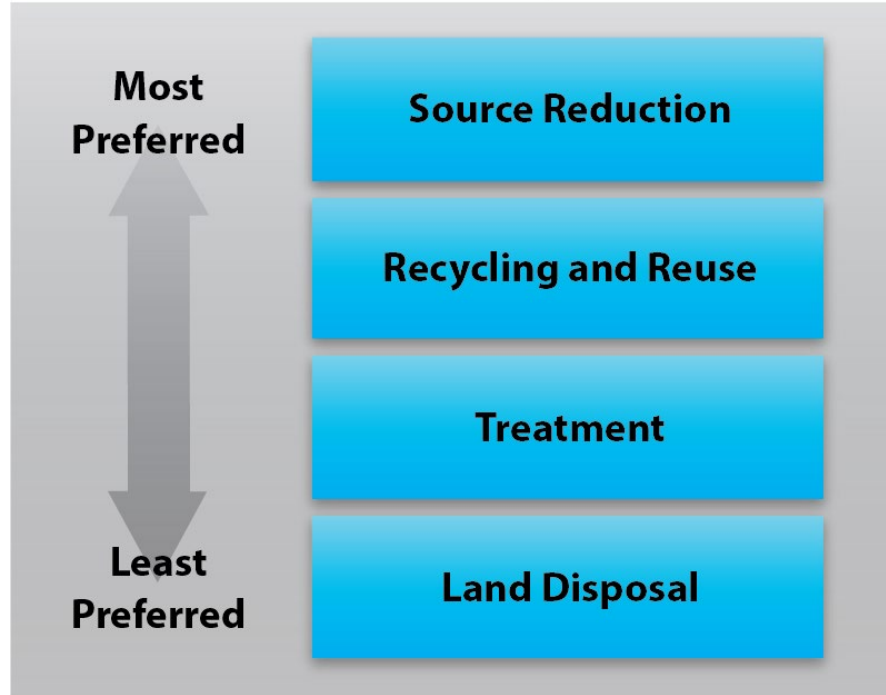


# Key Terms and Concepts

- **Resource Conservation and Recovery Act (RCRA)** – Federal law passed in 1970's to establish national system of solid waste management
- **RCRA Authorization** – USEPA Delegation of authority to states to implement RCRA in lieu of USEPA
- **RCRA Hazardous Waste** – Waste identified federally as hazardous
- **Non-RCRA Hazardous Waste** – Waste identified as hazardous in California but not federally

# Hazardous Waste Management Approach

## Waste Management Hierarchy

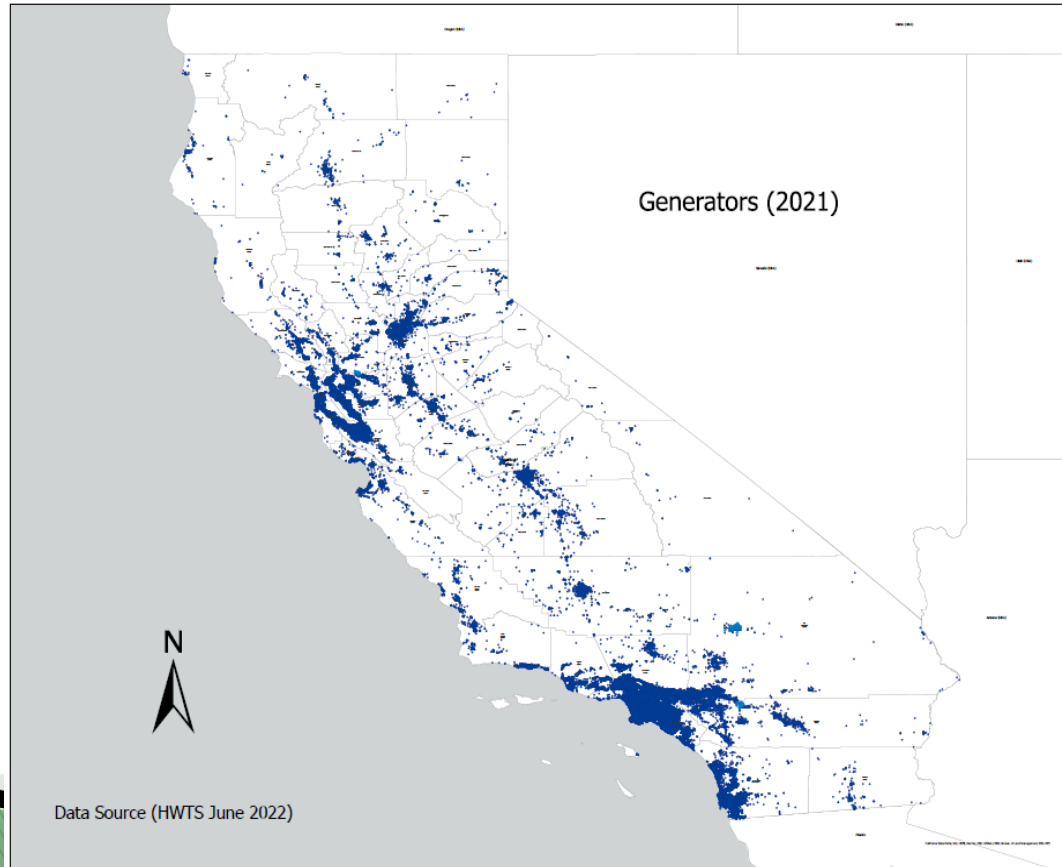


# Hazardous Waste Generation

- Manifested Waste vs Unmanifested Waste
- Unmanifested Waste information in CERS
- Large amount of waste treated onsite or recycled onsite
- Estimate that more than 13 million tons of materials is unmanifested waste in 2021

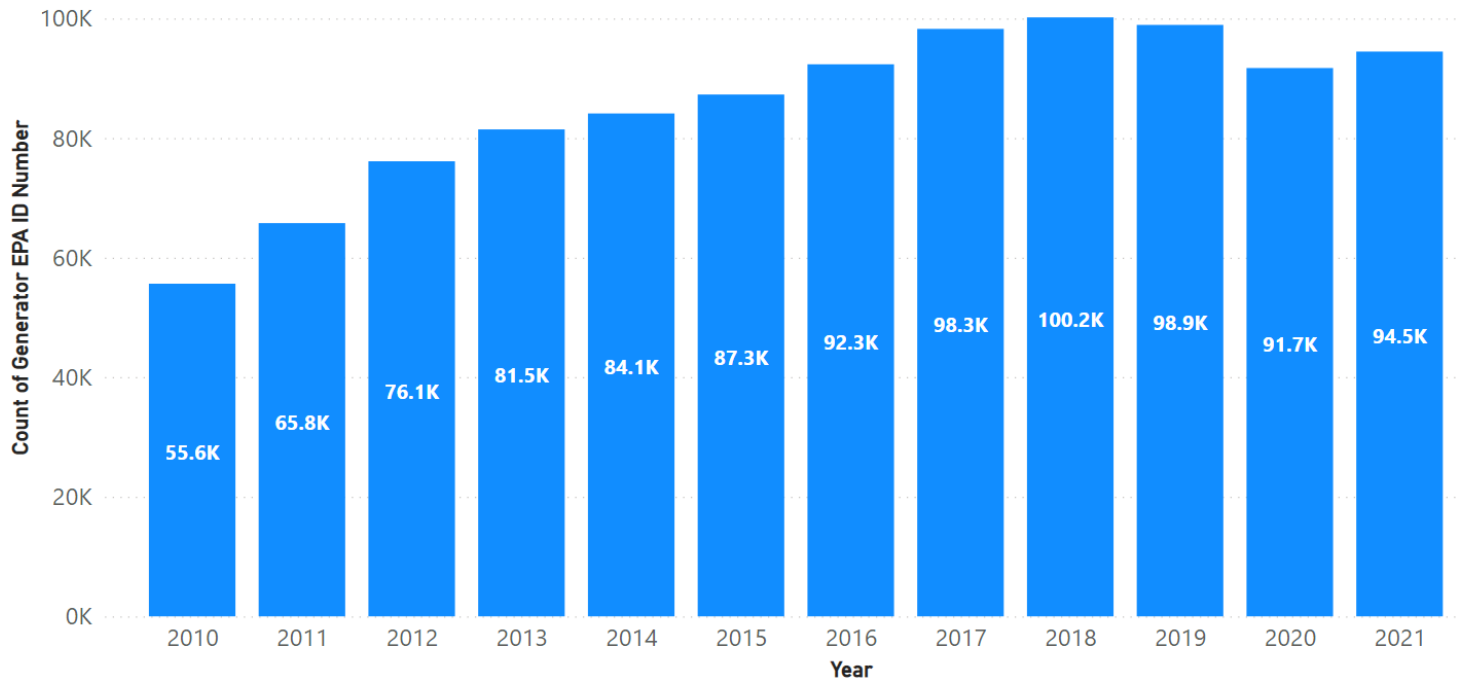


# Generators





# Generators

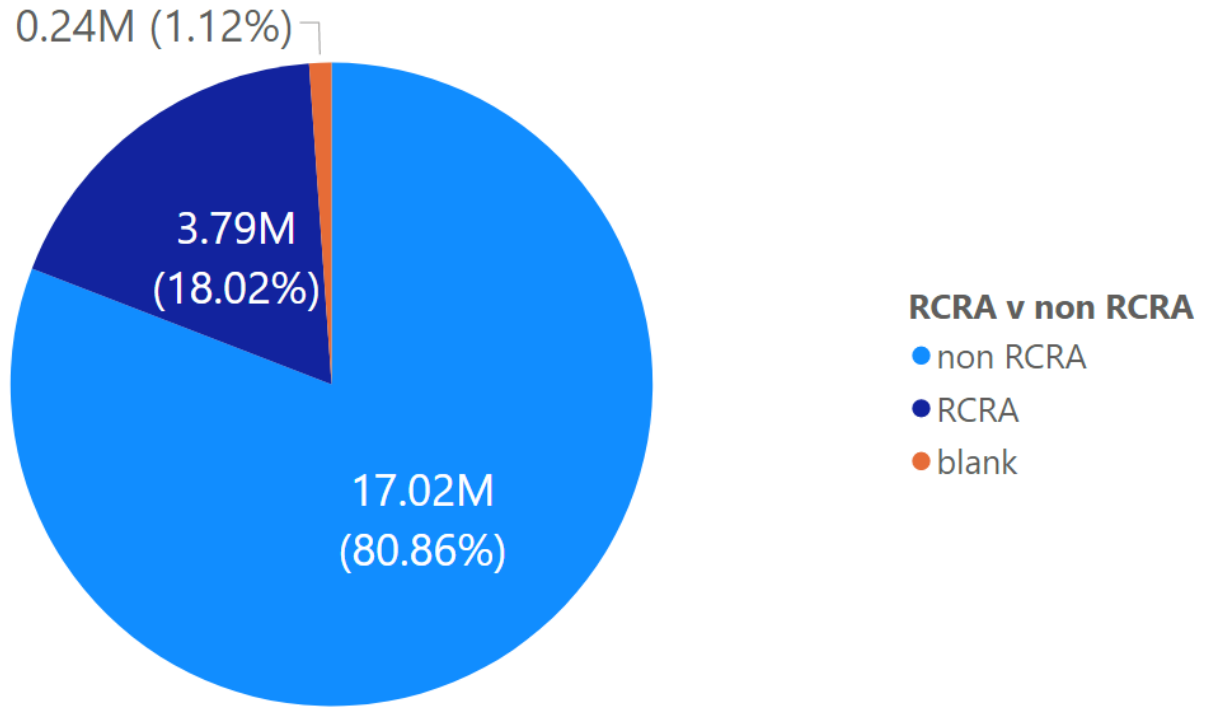


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# Manifested Hazardous Waste Generation

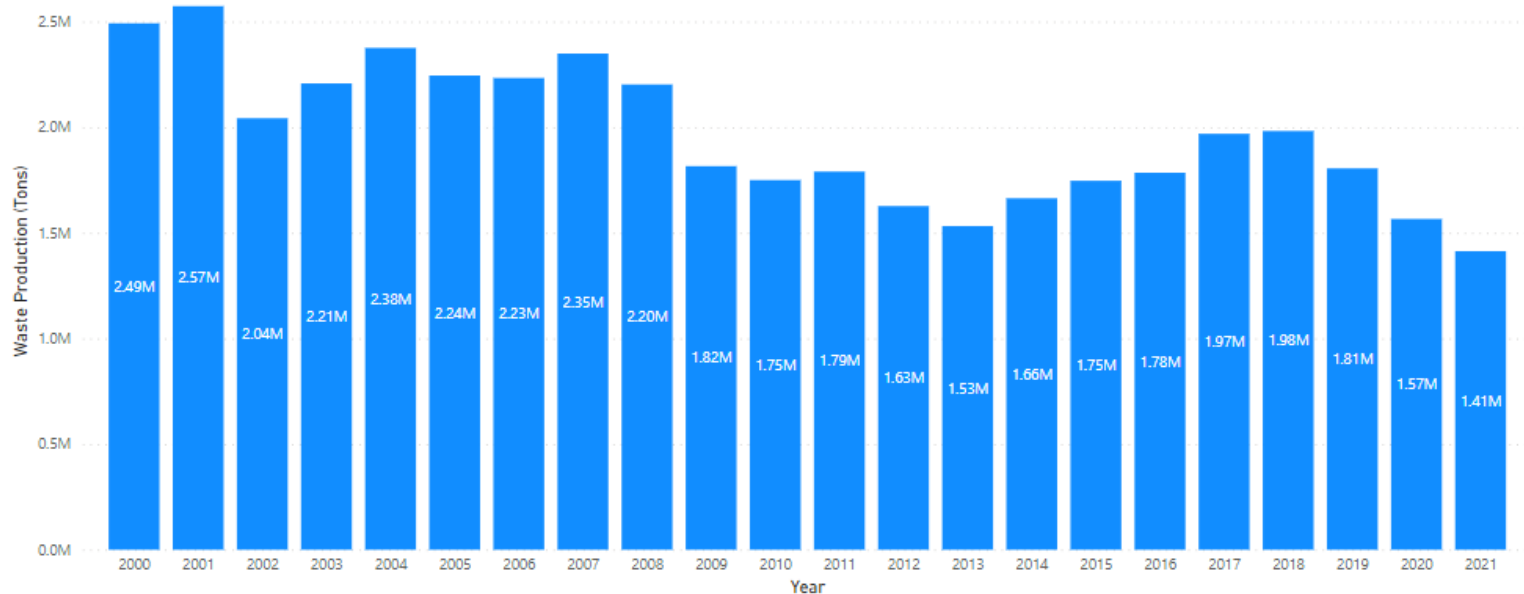
- California's hazardous waste management program is more stringent and broader in scope than the federal program.



# Manifested Hazardous Waste Trends

## Hazardous Waste Production by Year

Note: Hazardous waste data (RCRA, Non-RCRA, and uncategorized) sourced from Hazardous Waste Tracking System after data validation methods. Data range January 1, 2010, through December 31, 2021

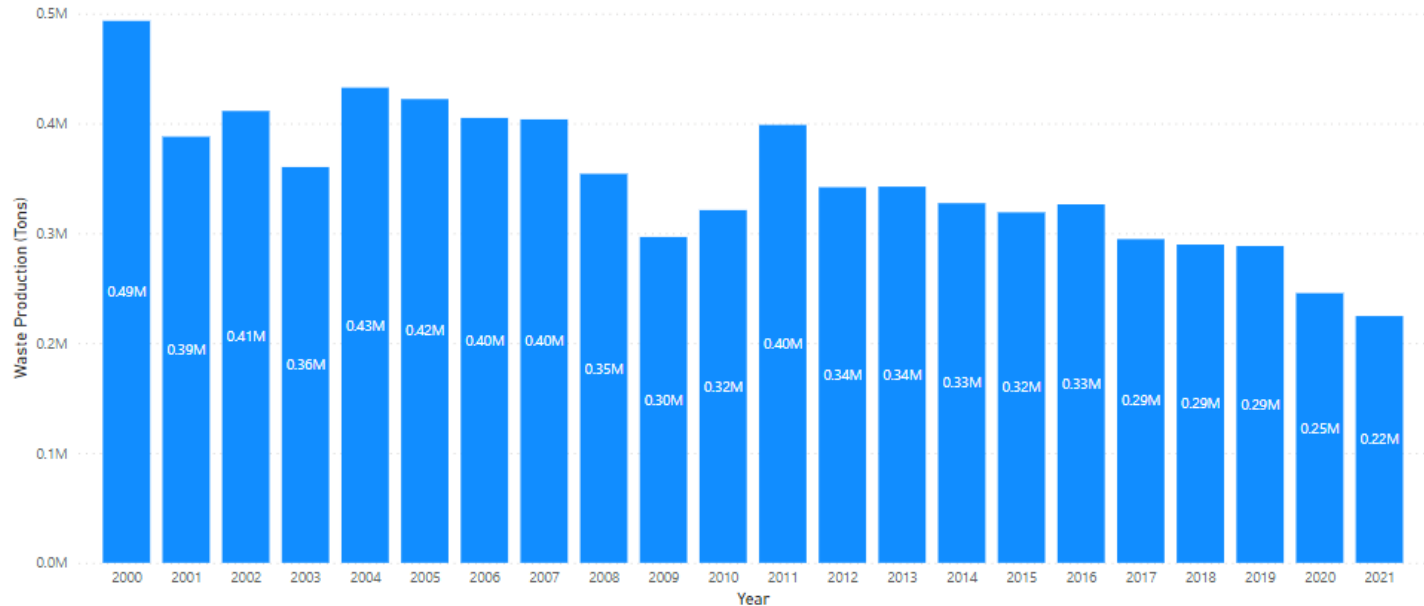


# Manifested Hazardous Waste Generation

- Amount of manifested RCRA hazardous waste has decreased

RCRA Hazardous Waste Production by Year

Note: Data sourced from Hazardous Waste Tracking System after data validation methods. Data range January 1, 2010, through December 31, 2021

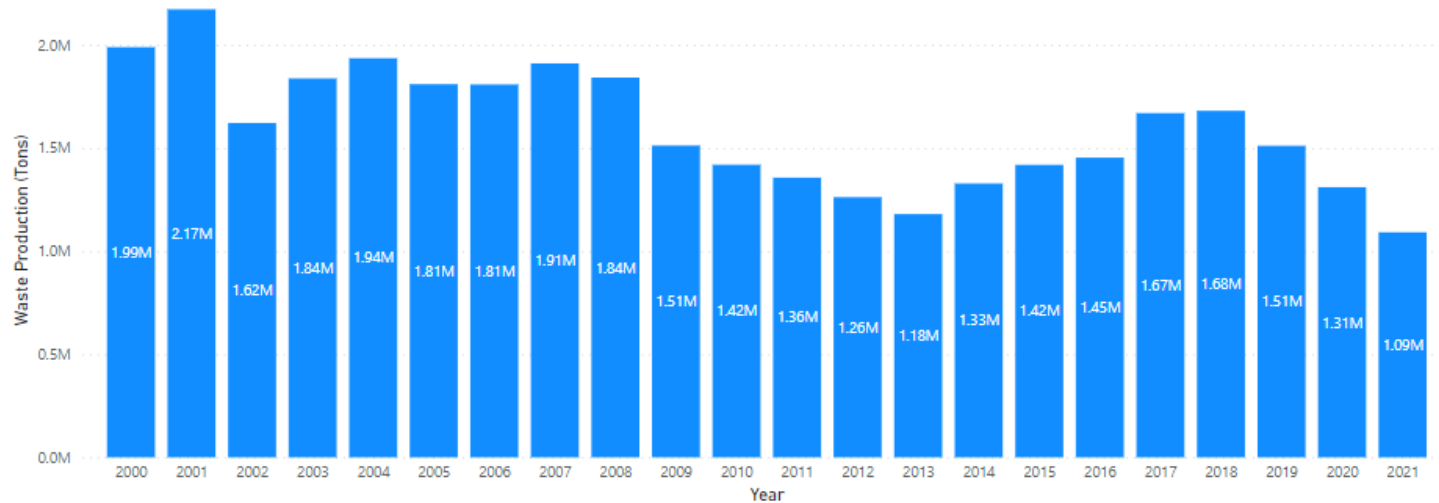


# Manifested Hazardous Waste Generation

- Amount of manifested non-RCRA hazardous waste fluctuates but has also generally reduced over time

Non-RCRA Hazardous Waste Production by Year

Note: Data sourced from Hazardous Waste Tracking System after data validation methods. Data range January 1, 2010, through December 31, 2021



# Manifested Hazardous Waste Generation

- Three Manifested Hazardous Waste Streams account for ~65% annual generation



Contaminated Soil  
(State Waste Code 611)

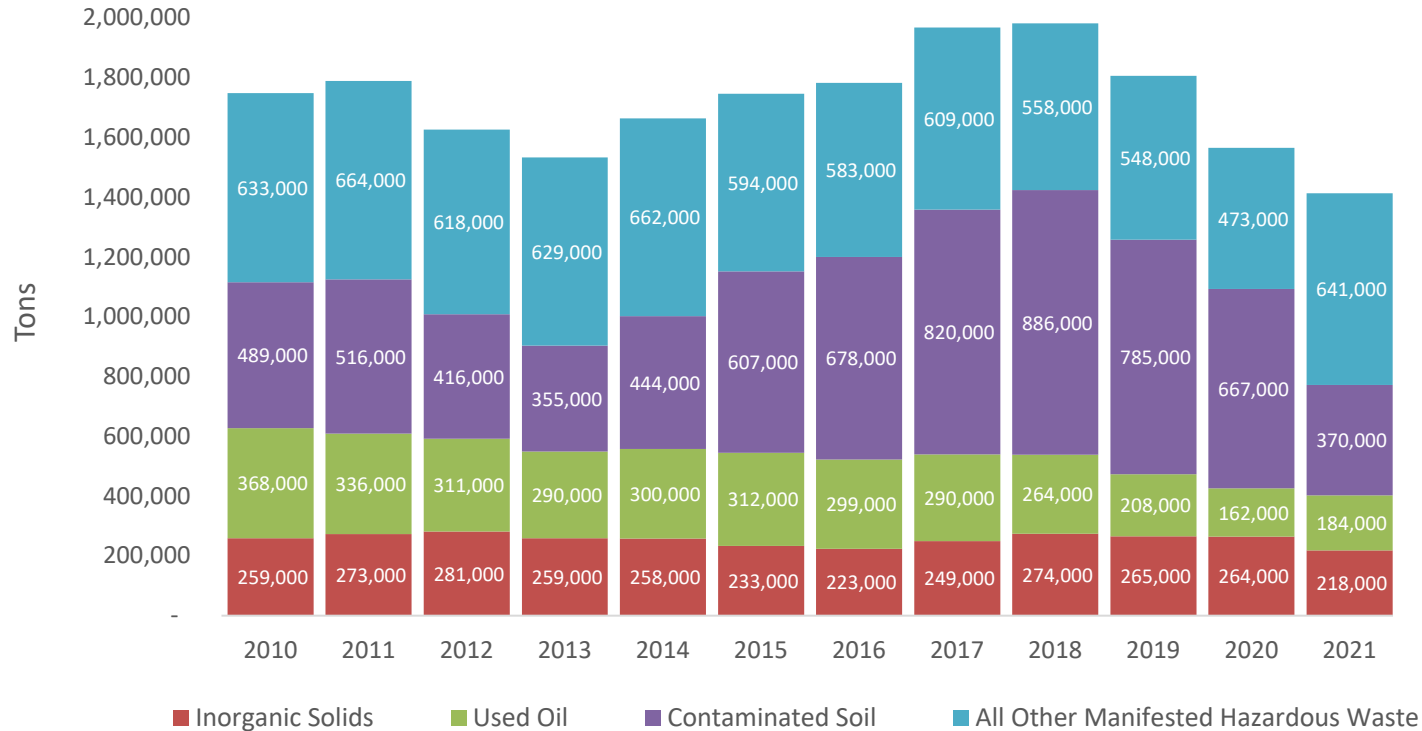


Waste Oil and Mixed Oil  
(State Waste Code 221)

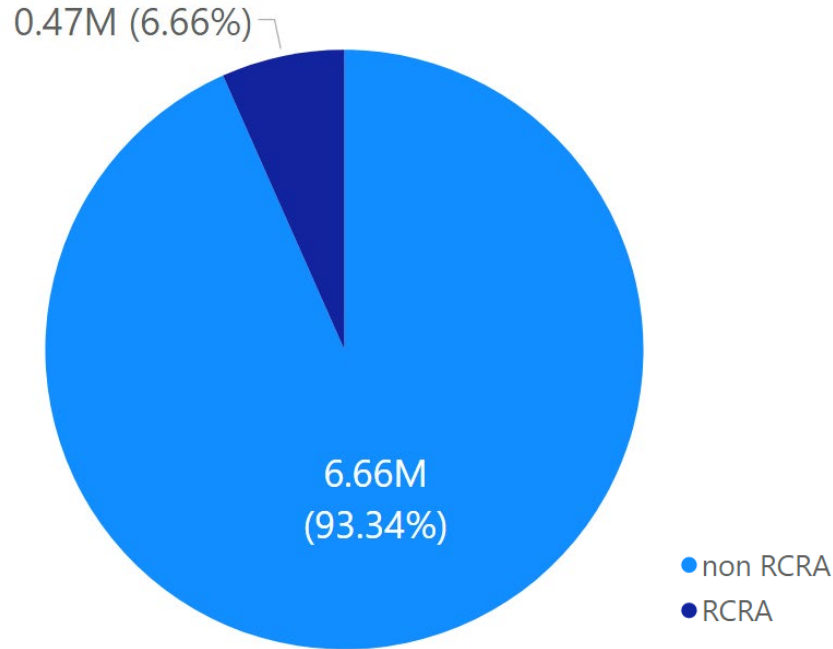


Other Inorganic Solid Waste  
(State Waste Code 181)

# Manifested Hazardous Waste Generation



# Manifested Hazardous Waste Generation



Quantity of RCRA and Non-RCRA Contaminated Soil Generated in California

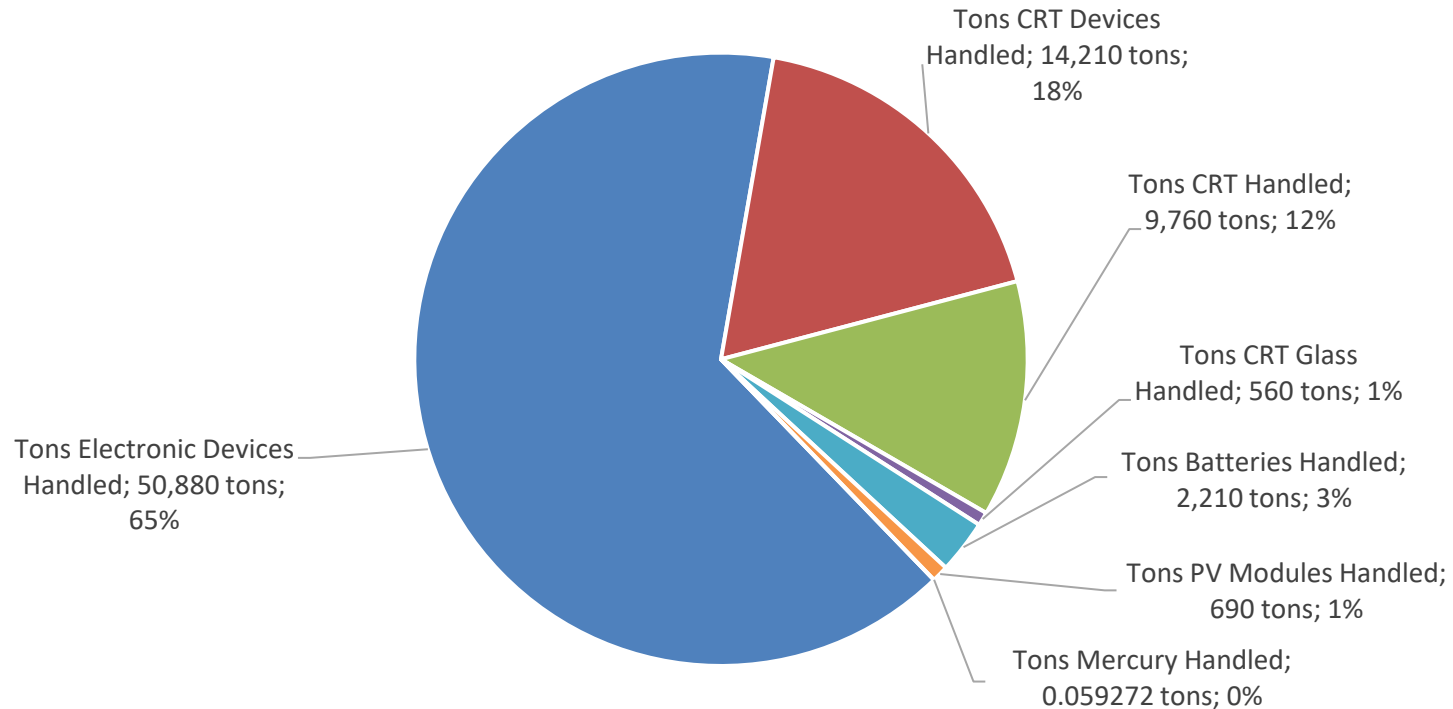
*Data range January 1, 2010, through May 5, 2022*



# Unmanifested Hazardous Waste Generation

Universal Waste Type	Data Source Used
Electronic Devices, including CRT Devices	DTSC Universal Waste Electronic Device (UWED) Annual Report
CRTs	DTSC UWED Annual Report
CRT Glass	DTSC UWED Annual Report
Batteries	DTSC Rechargeable Battery Survey
Lamps	Not Currently Tracked
Mercury-containing Equipment	Thermostat Recycling Corp. Report
Non-Empty Aerosol Cans	Not Currently Tracked
PV Modules	DTSC PV Module Annual Report

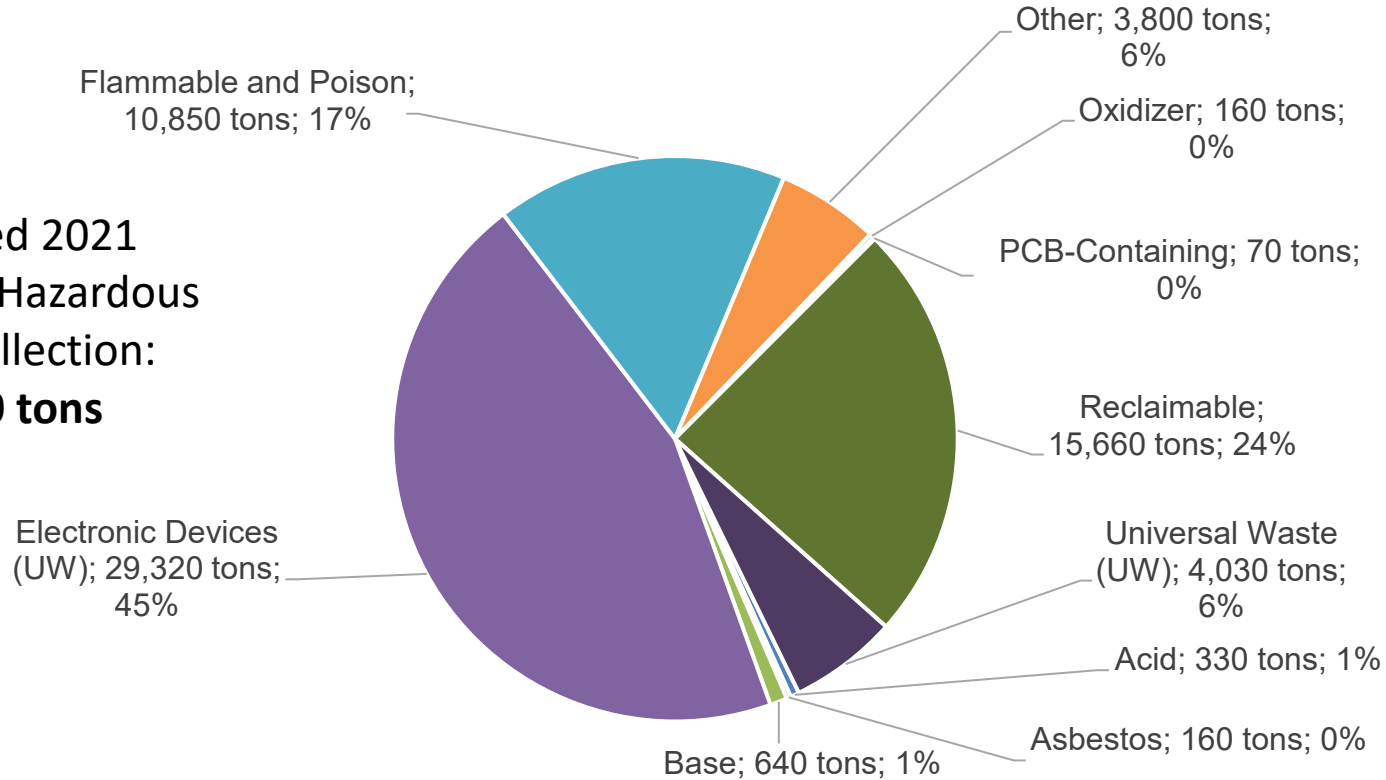
# Universal Waste Hazardous Waste Generation



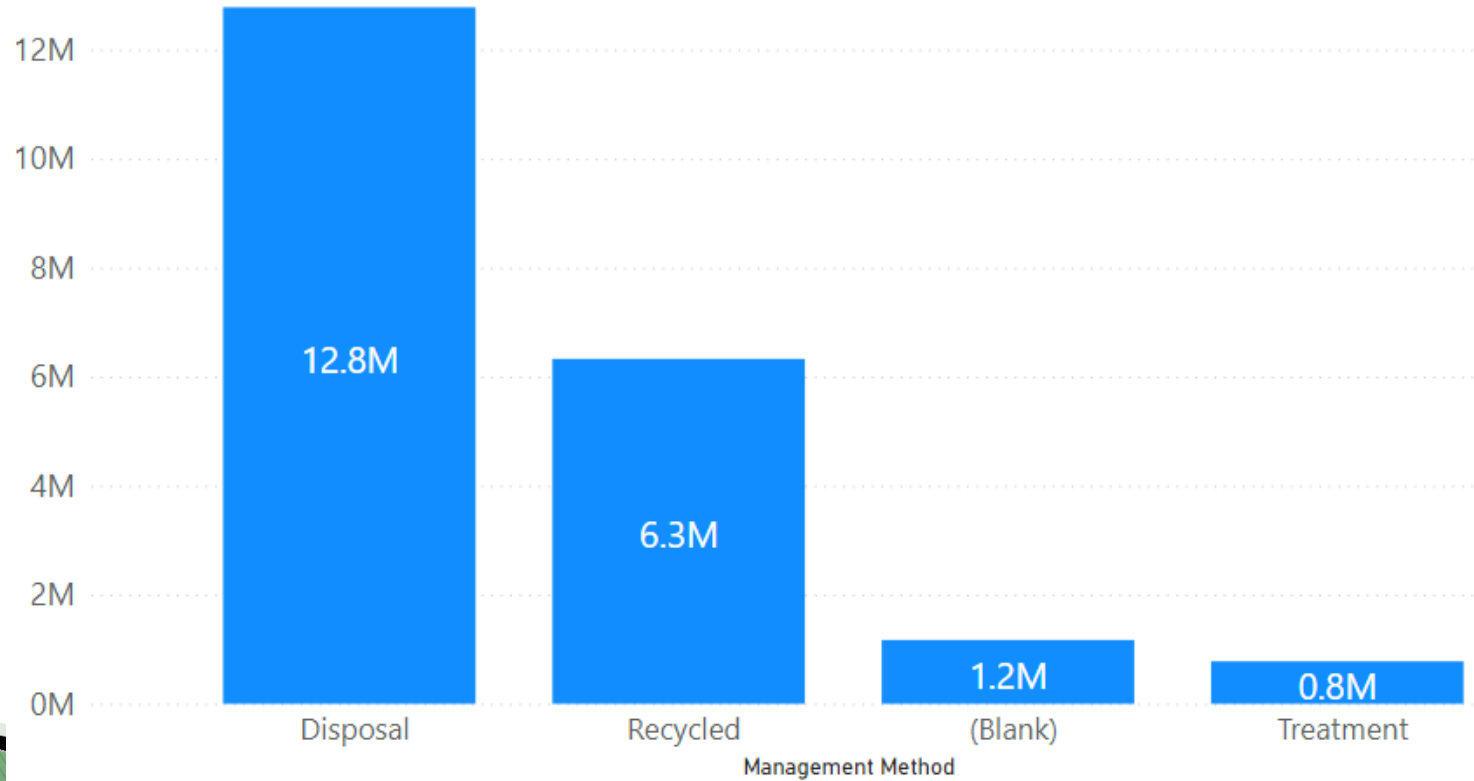
Estimated 2021 Universal Waste  
Handled Tonnage: **78,310 tons**

# Household Hazardous Waste Generation

Estimated 2021  
Household Hazardous  
Waste Collection:  
**65,020 tons**

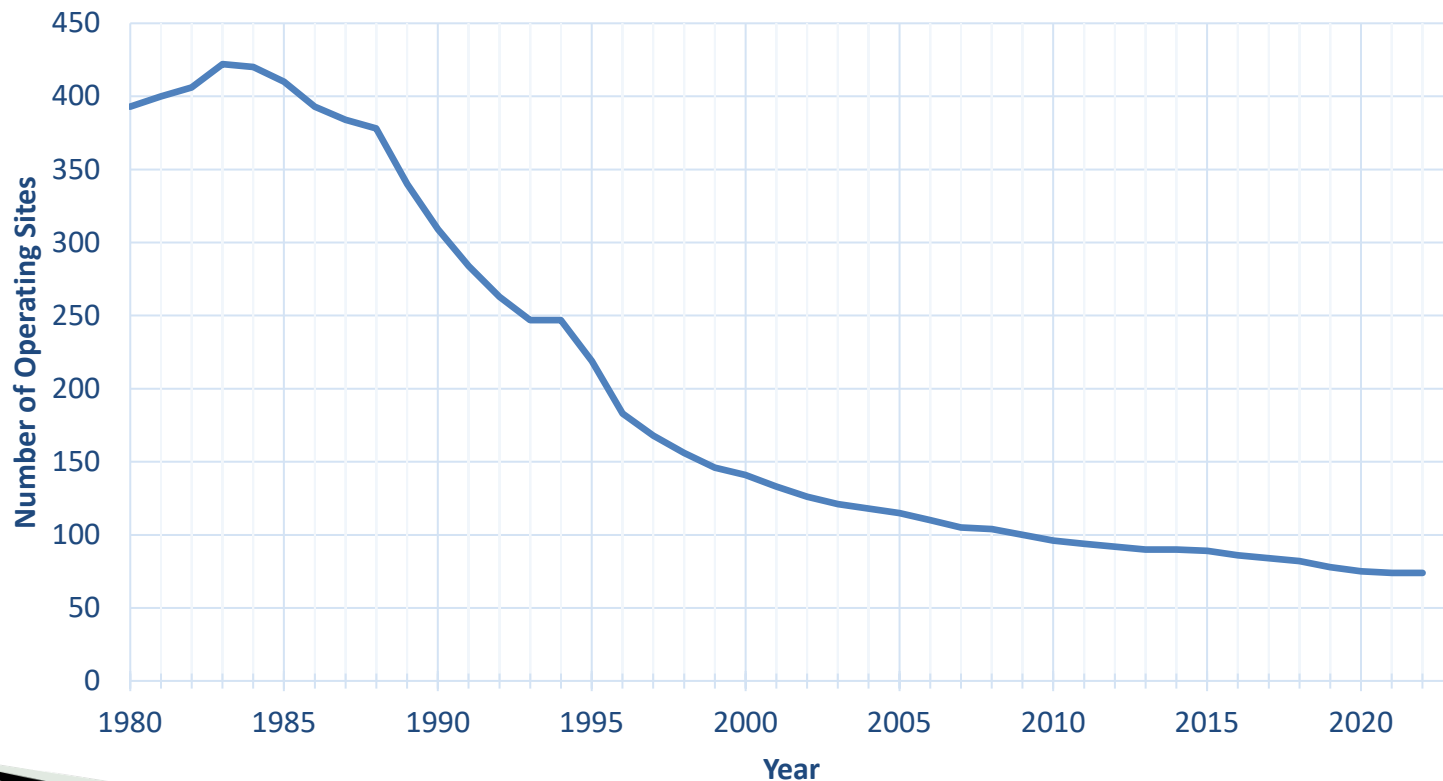


# Destinations of Manifested Hazardous Waste



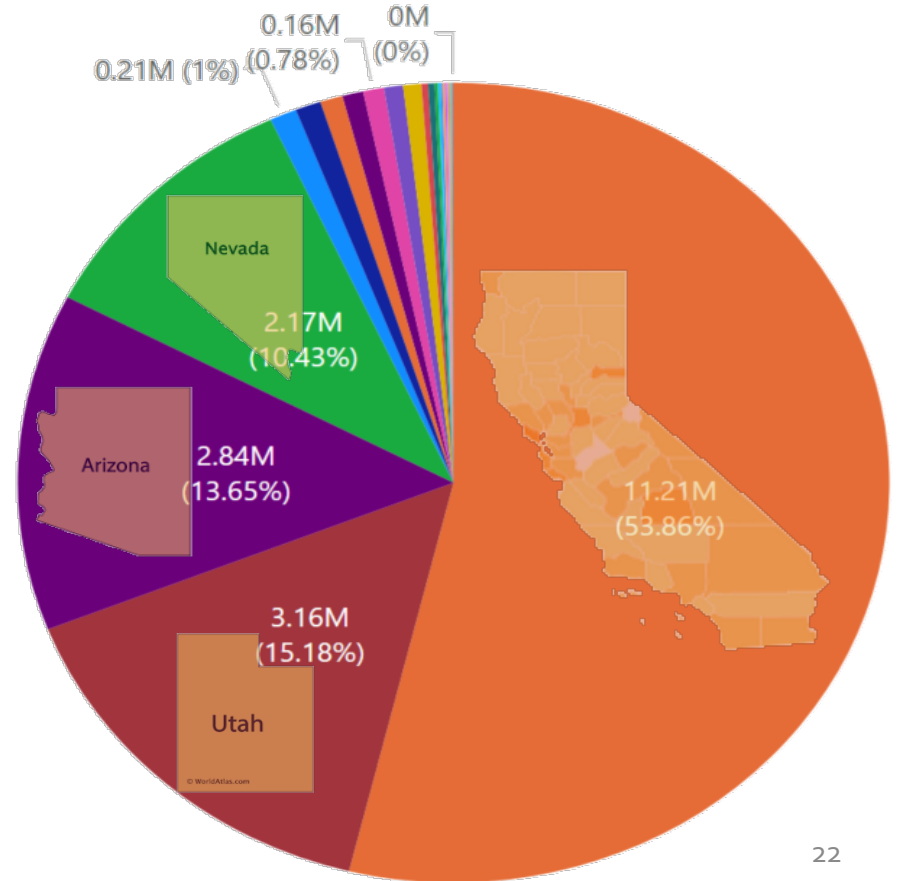
# Destinations of Hazardous Waste

## Operating Permitted Facilities in California



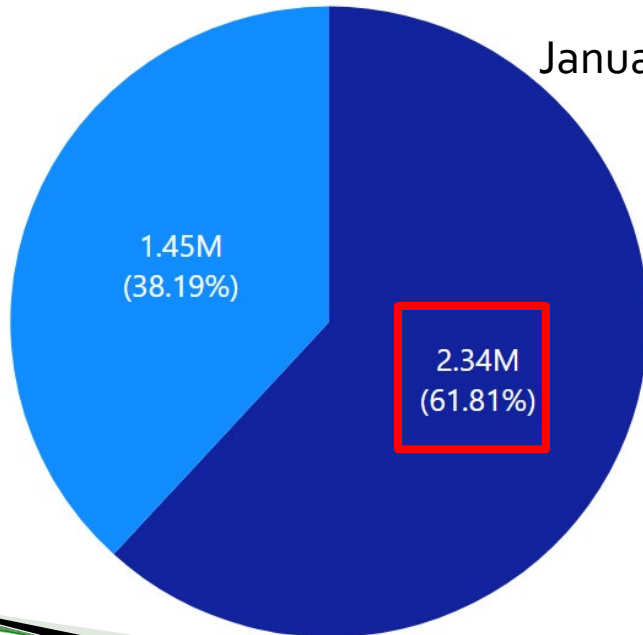
# Destinations of Manifested Hazardous Waste

- About half (53 percent) of the hazardous waste generated in California was managed in California since 2010
- Over 36% of CA manifested hazardous waste was shipped to Utah, Arizona, and Nevada.

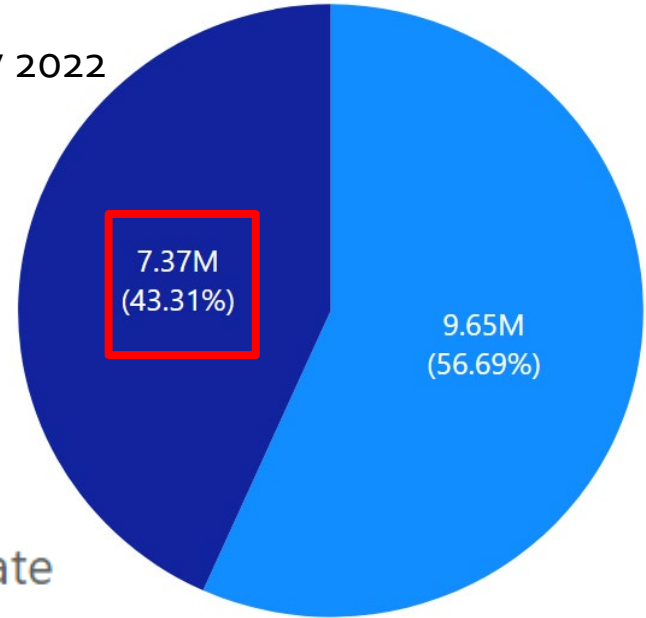


# Destinations of Manifested Hazardous Waste

Quantity of RCRA Hazardous Waste  
Managed In State vs Out of State (Tons)



Quantity of non-RCRA Hazardous Waste  
Managed In State vs Out of State (Tons)



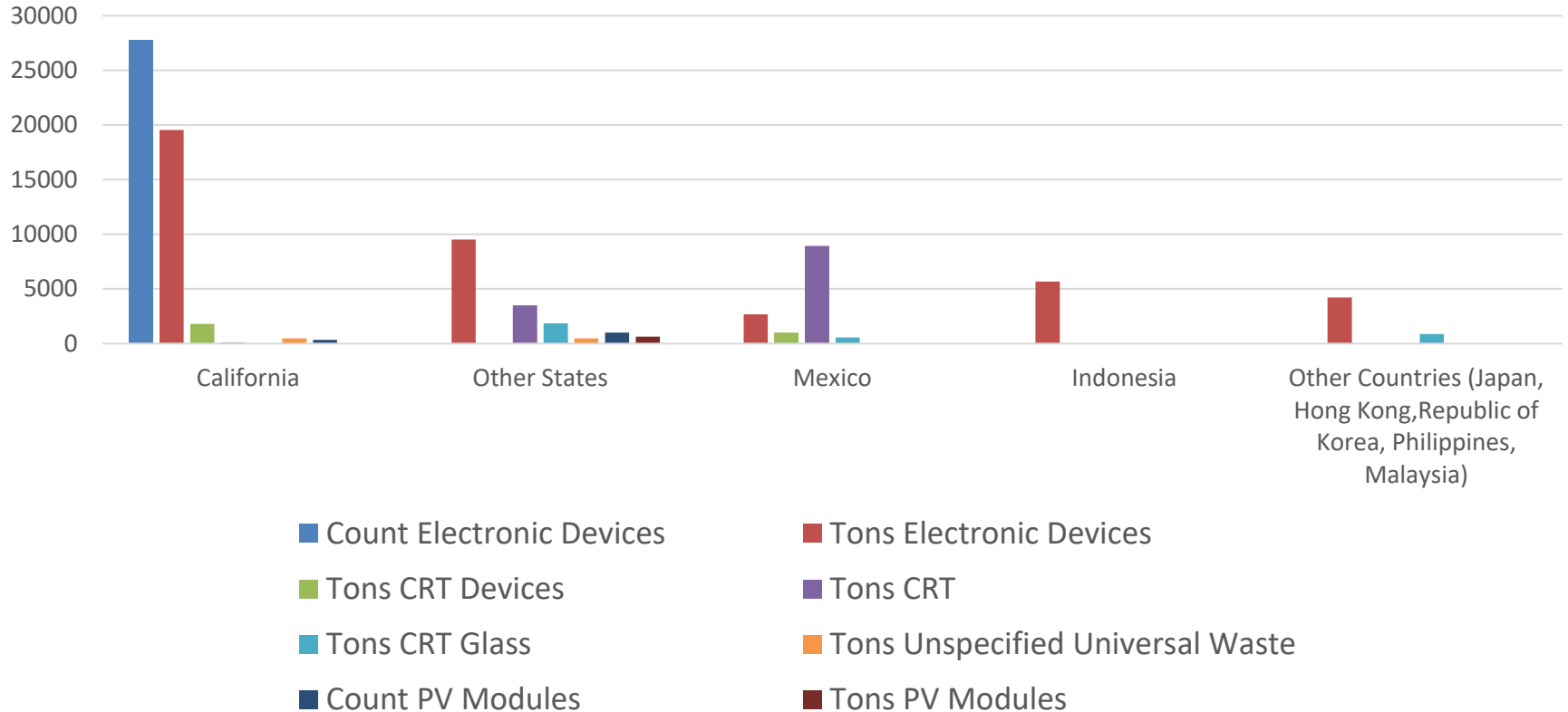
● Out of State  
● In State

# Universal Waste Destinations

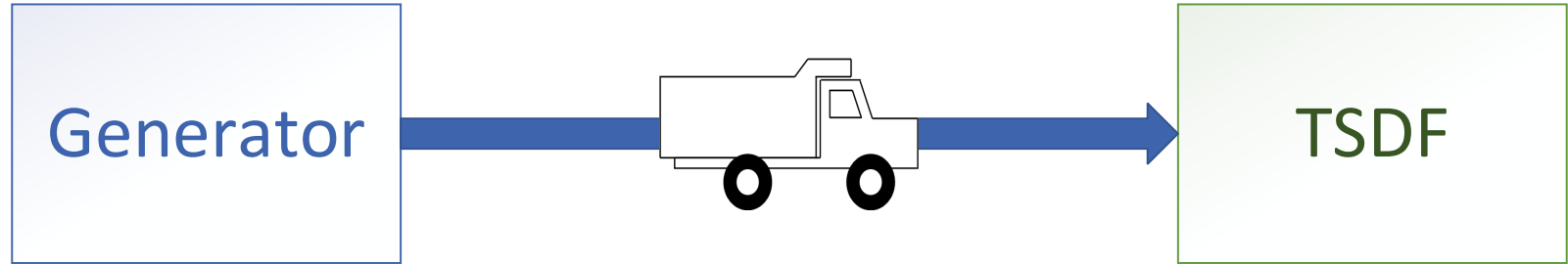
- Handlers, destinations, or listed as both
- Recyclers
- Destination information not available for:
  - Batteries
  - Fluorescent lamps
  - Non-empty aerosol cans
- Difficult to track because unmanifested; estimates



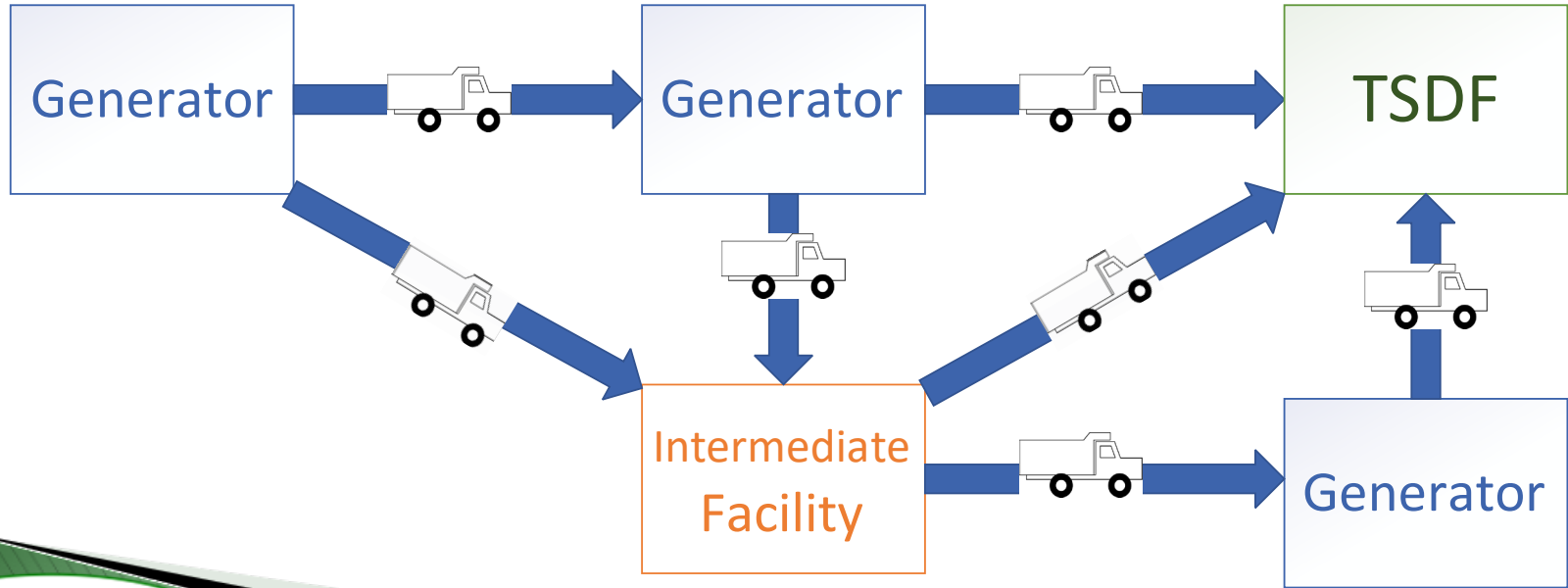
# Universal Waste Destinations 2021



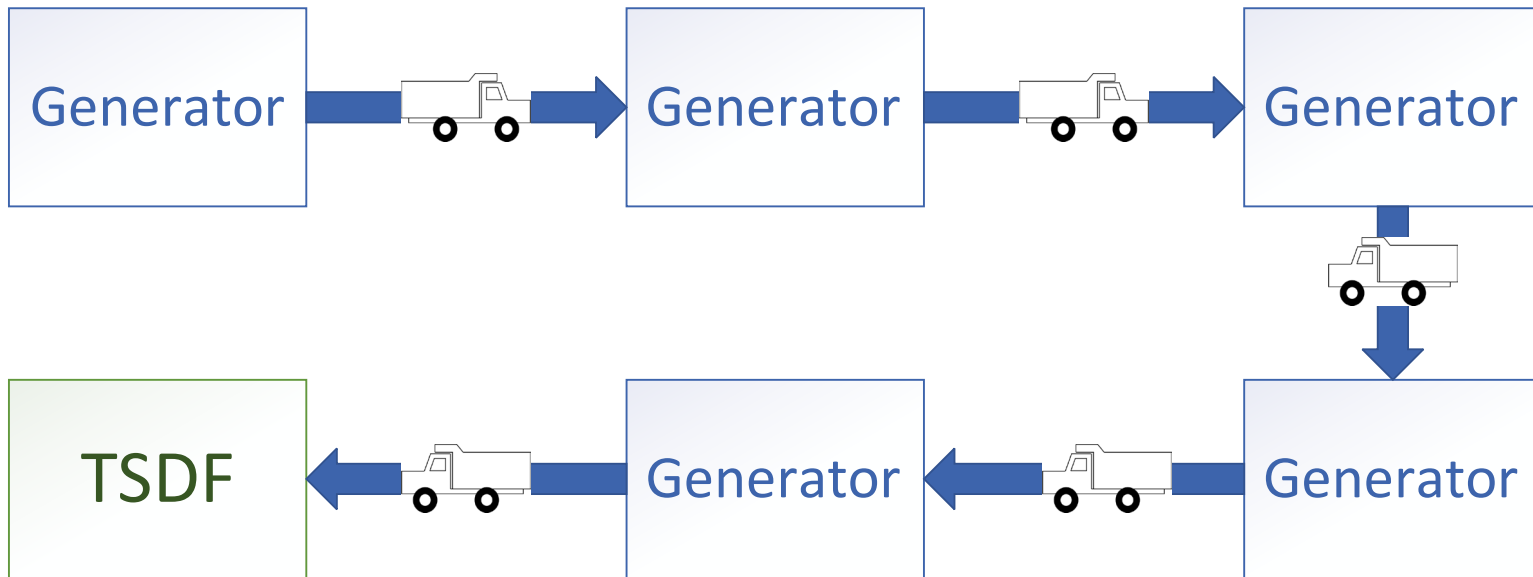
# Hazardous Waste Transportation – Direct Transportation



# Hazardous Waste Transportation – Load Building

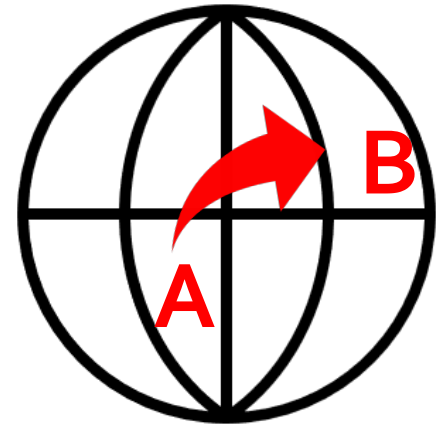


# Hazardous Waste Transportation – Consolidated Manifest



# Hazardous Waste Transportation

- Average distance travelled between generators and destination facilities: 500 miles
- Median distance travelled between generators and destination facilities: 240 miles



# Pollution Prevention

- **Pollution prevention (P2):** The reduction of chemical sources that have adverse impacts on public health and the environment, including, but not limited to, source reduction



# Pollution Prevention (P2)



**US  
Environmental  
Protection  
Agency**

**Pollution  
Prevention  
Resource  
Center**



**Pollution  
Prevention  
Roundtable**

**UN  
Environment  
Programme**



**Department of  
Ecology  
State of  
Washington**



# Pollution Prevention (P2)

- P2 programs work best when targeted
- Not all wastes are good candidates for P2



VS





# Use of Fees to Reduce Waste

- Challenging to find systemic historical data
- Additional research needed for fee impacts
- Flat rate fee vs. tiered rate fee
- Recent change in California fee structure

# Hazardous Waste Criteria

- Evaluate additional safeguards
- Determine if program is consistent with current science, technology, and analytical methods
- Identify potential future waste streams and evaluate current

# Future Work

Waste Reduction

Waste Criteria

Capacity  
Assurance/Capacity  
Planning

Environmental  
Justice

# Environmental Justice

- Focus on understanding how to reduce potential impacts
- Help inform other three focus areas

# Capacity Assurance/Capacity Planning



Throughput  
Capacity



Disposal  
Capacity

# Waste Reduction

- Reduction has been occurring over time
- Focused reduction approach
- Reduction strategy requires many tools to be used
- Support a more circular economy

# Waste Criteria

How Hazardous Wastes are  
Managed

How Hazardous Wastes are  
Identified

# Subtopic – Waste Treatment



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# Subtopic – Pollution Prevention



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# Subtopic – SB14 Reports



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# Subtopic – UWED Reporting



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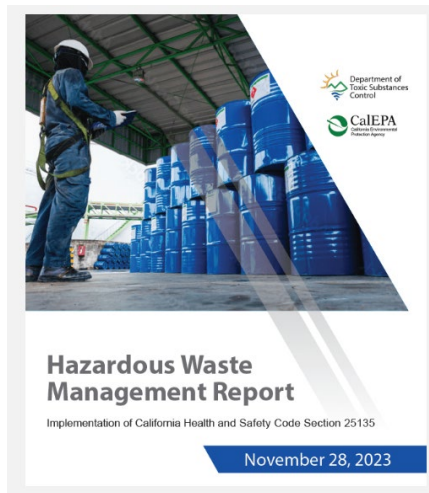
# Subtopic – CERS Data



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# Great Reading!!!!!!!!!!

## Participate in Planning!!!!!!!!!!



<https://dtsc.ca.gov/hazardous-waste-management-plan/>



# Any Questions?

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