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# **Long-Term Postclosure Maintenance, Corrective Action, and Financial Assurances At Solid Waste Landfills**

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**CIWMB Technical Training Series  
October 19, 2009**

# Topics

- **Background**
- **Postclosure Maintenance**
- **Corrective Action**
- **Pooled Fund**
- **Summary**

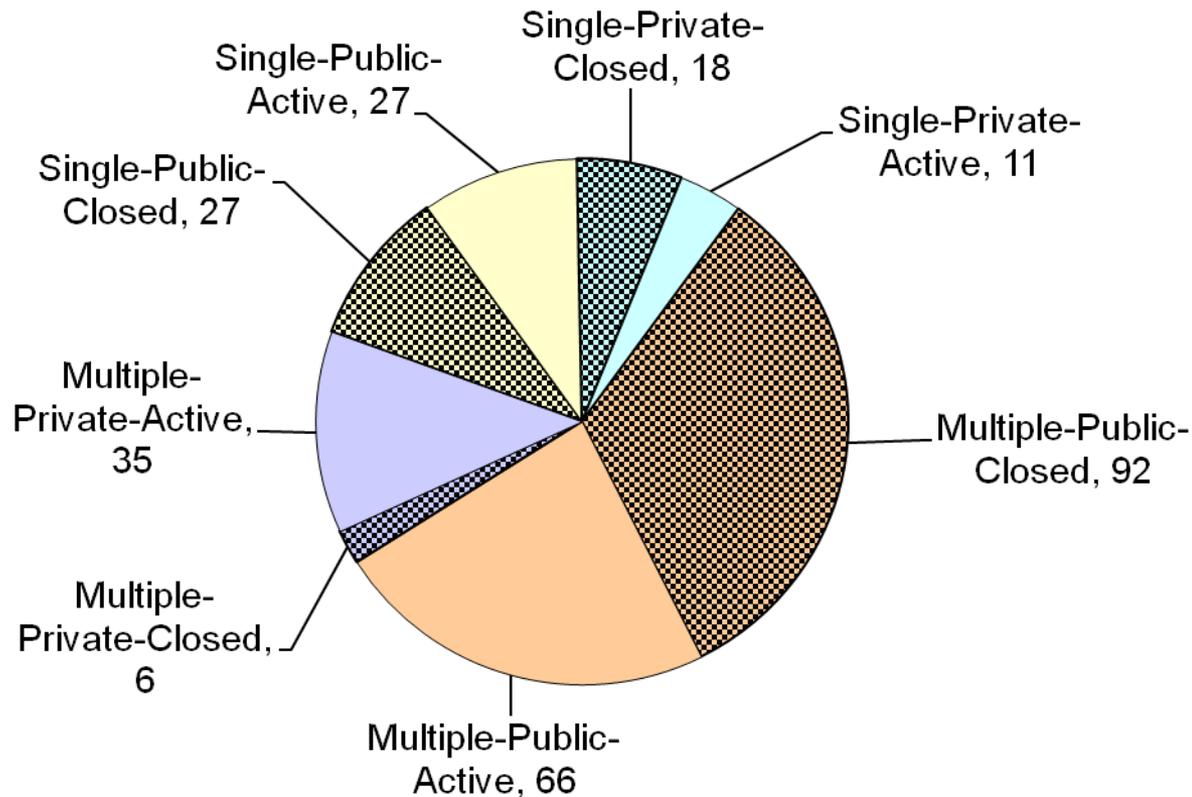
# **Where Are We Now?**

- **282 of 1700 Landfills in California are subject to Closure/Postclosure and Financial Assurance Requirements**
- **Half of California's 282 landfills have stopped accepting waste**
- **First landfill will be beyond minimum 30 years PCM in 2021**

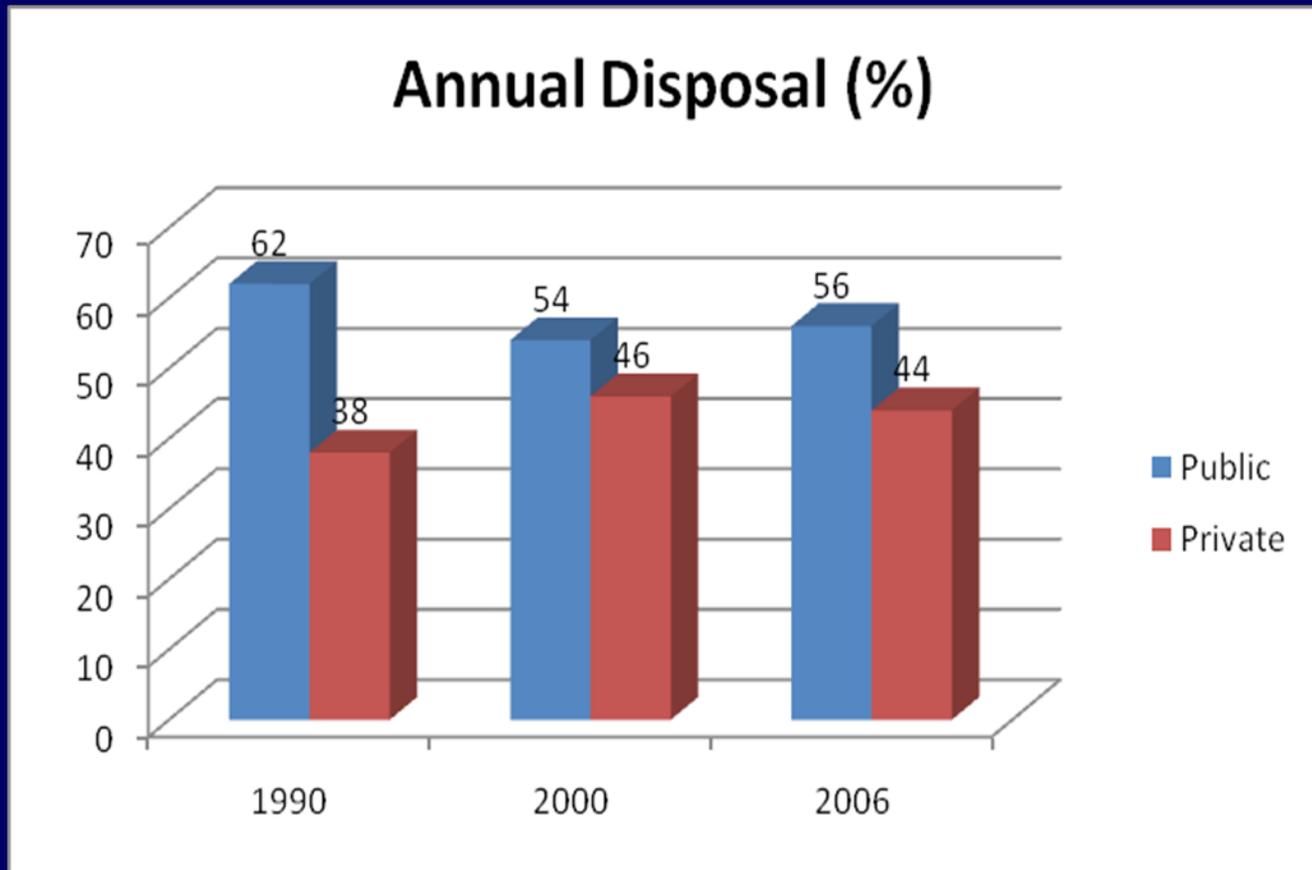
# Landfill Profiles

## Number of Landfills (Total 282)

### Operator Type and Status by Type



# Landfill Trends - Waste Flow Public/Private



# When Does PCM End?

## Federal Subtitle D Regulations

- **30 years**
- **Can Be Shortened Or Extended by Director**
- **Financial Assurance required throughout Postclosure Maintenance Period**
- **California Law**
  - **Minimum 30 years**
  - **Until waste no longer poses a threat**



# When Does PCM End?

## California Experience Over Past 20 Years:

- **Actual Release of California Landfills from PCM -  
- Myth or Reality?**
  - **CIWMB/Local Enforcement Agencies (LEAs)**
    - **None released from PCM requirements**
  - **Regional Water Boards**
    - **Require no ground water monitoring (seven sites)**
    - **Rescinded Waste Discharge Requirements (six sites)**
    - **Sites are inspected periodically**
    - **All seven sites required to perform PCM**

# When Does PCM End?

## Other States Poll:

1. **Has your state decreased or increased the post-closure care period of any Subtitle D municipal solid waste landfills in your state?**
  - **49 states participated in the survey**
    - **47 states have not changed the 30-year care period**
    - **Two states have changed the 30-year care period as follows:**
      - **Nebraska decreased the period of one MSWLF to 18 years**
      - **Tennessee increased the period of one MSWLF to 50 years**
    - **Wisconsin has increased the financial assurance requirement to 40 years with PCM required until the waste no longer poses a threat.**

# When Does PCM End?

## Other States Poll:

1. **If so, what criteria were used to make the determination?**
  - **Six states are currently considering criteria to increase or decrease the postclosure maintenance period:**
    - **Indiana,**
    - **Minnesota,**
    - **Nebraska,**
    - **Ohio,**
    - **Utah, and**
    - **Virginia.**

**(Draft documents are currently being prepared for the states of Indiana, Minnesota, Utah, and Virginia and will be considered “guidelines,” not official mandates.)**

# **Do PCM Costs Change Over Time?**

## **California Experience Over Past 15 Years:**

- **Reported Reductions/Increase in Annual PCM Costs**
  - **Insufficient evidence to determine definitive trend**
  - **Requests for fund releases**
    - **1/30 of PCM estimate**
    - **Some for > 1/30 PCM estimate**
  - **Few revised PCM plans**
    - **Many included increased costs**
  - **Stakeholder Survey aborted**

# How Long Would Financial Assurances Last?

**49X=Perpetual**

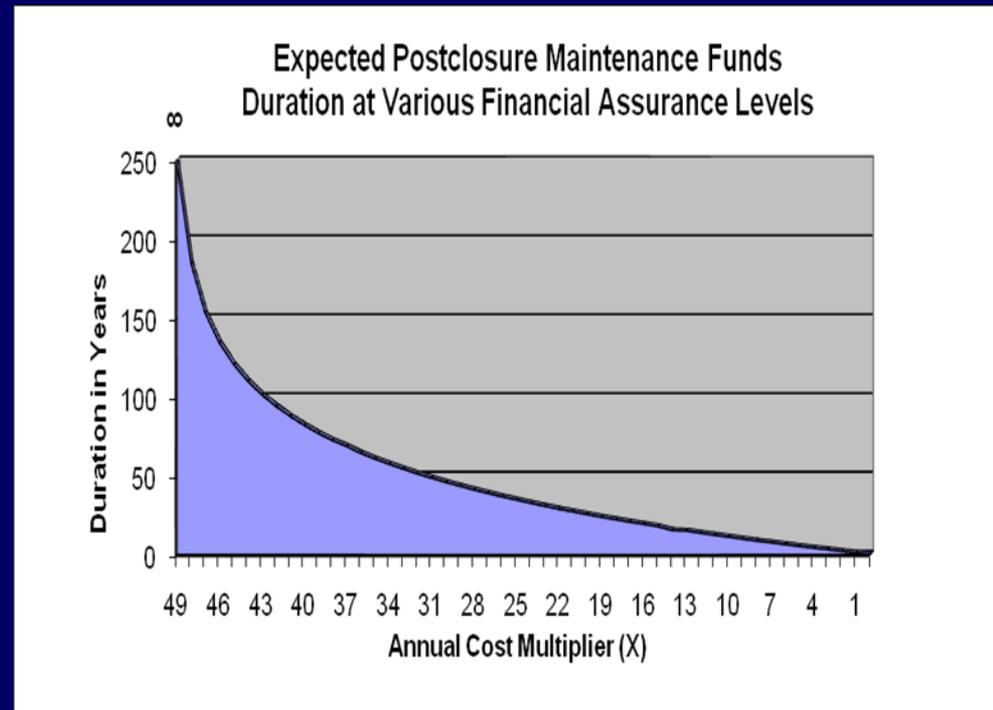
**43X=100 years**

**30X=48 years**

**15X=18 years**

**8X= 9 years**

**5X= 5 years**



# **What was CIWMB's basis for assumptions used in financial exposure modelling?**

**Used constant costs and modeling period of 100 years**

- **Inflation**
- **Differential increases in engineering costs**
- **Rate of replacement of aging containment and environmental cost systems**
- **Changes in solid waste infrastructure**
- **Success of disposal reduction efforts**
- **New technologies**
- **Future design requirements**

# **What was CIWMB's basis for assumptions used in financial exposure modelling?**

## **Staff Modified Default Rates:**

- **Double-default – simultaneous default by operator and financial assurance provider = square of standard default rate**
- **Single Private Landfills (18)=1% per year, 100% of defaults permanent**
- **Rural Public Landfills (64)=1% per year consistent with single landfill default rate**
- **Default Resulting From Divestiture (37)=12% per year for Small Business Start-ups**

# Postclosure Exposure at Various Assurance Levels Over 100 Years

Scenario	Assured Risk	Unassured Risk	Std	Rural Publics	Sgl Pvt	Default	Divest-iture	Total
\$ in Millions								
43X	\$5,590	0	\$11	\$41	\$263	\$315	0	\$315
30X	4,562	\$1,232	29	41	41	111	0	111
15X	2,972	2,748	60	41	84	185	0	185
8X	2,399	2,893	66	41	91	198	\$433	631
5X	2,153	2,955	75	41	103	219	578	797
Draw down 0X	1,822	3,172	83	41	120	244	667	911

# **What was CIWMB's basis for assumptions used in financial exposure modelling?**

## **Conceptual Approach:**

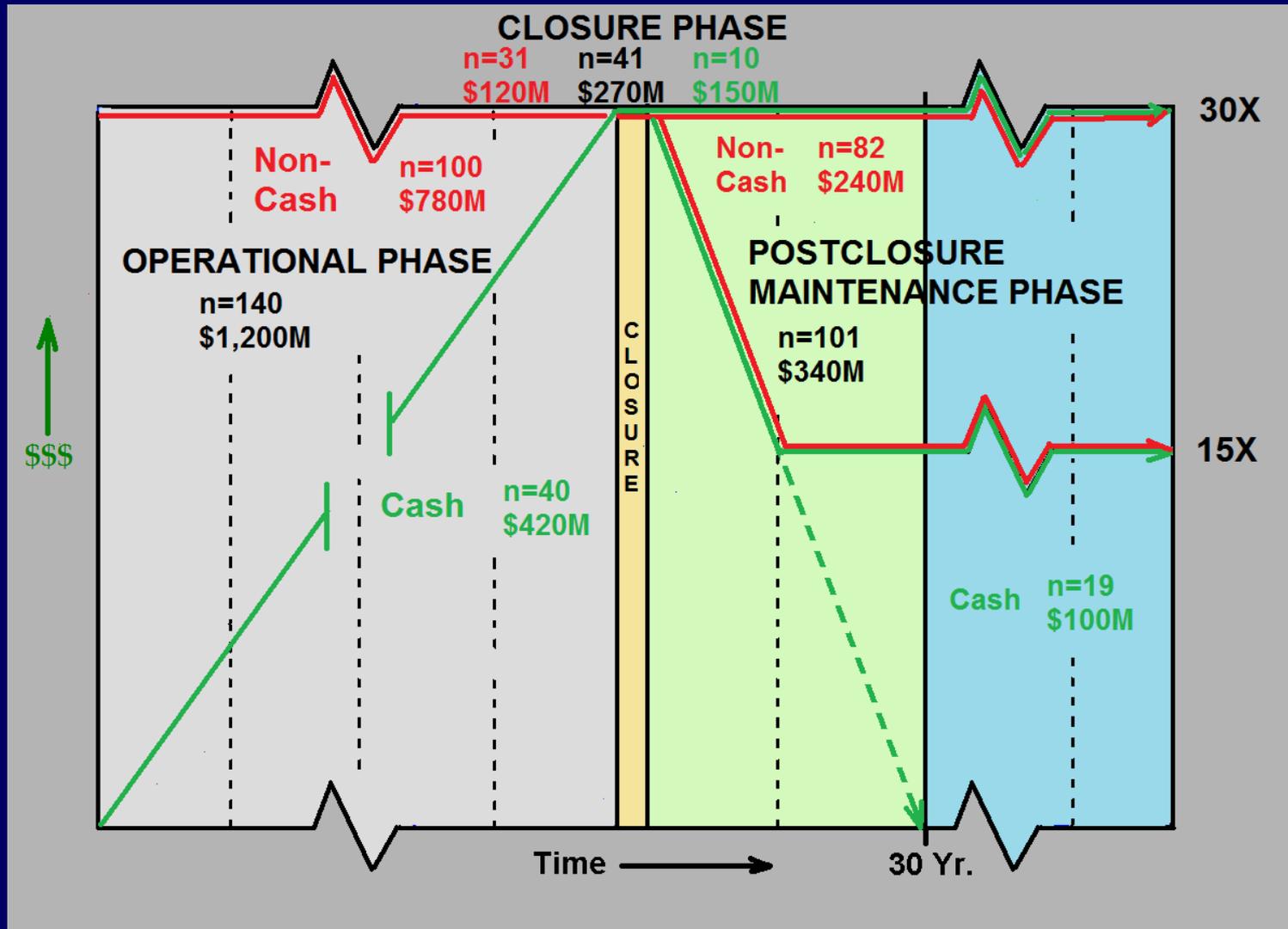
- **Consider the Time-Value of Money**
  - **49X provides funding indefinitely**
  - **Below 30X compounding diminishes, by 15X essential year for year financial assurance coverage**
- **Increasing above current financial assurance levels may prompt early defaults especially by single private landfills**
- **Below 15X default resulting from divestiture becomes problematic**

# **What was CIWMB's basis for assumptions used in financial exposure modelling?**

## **Conceptual Approach:**

- **5X is the minimum that can be considered financial assurance**
- **Most single private landfills will ultimately permanently default**
- **Some rural public landfills will temporarily default**
- **Some level of default exposure is inevitable regardless of the required level of assurance**

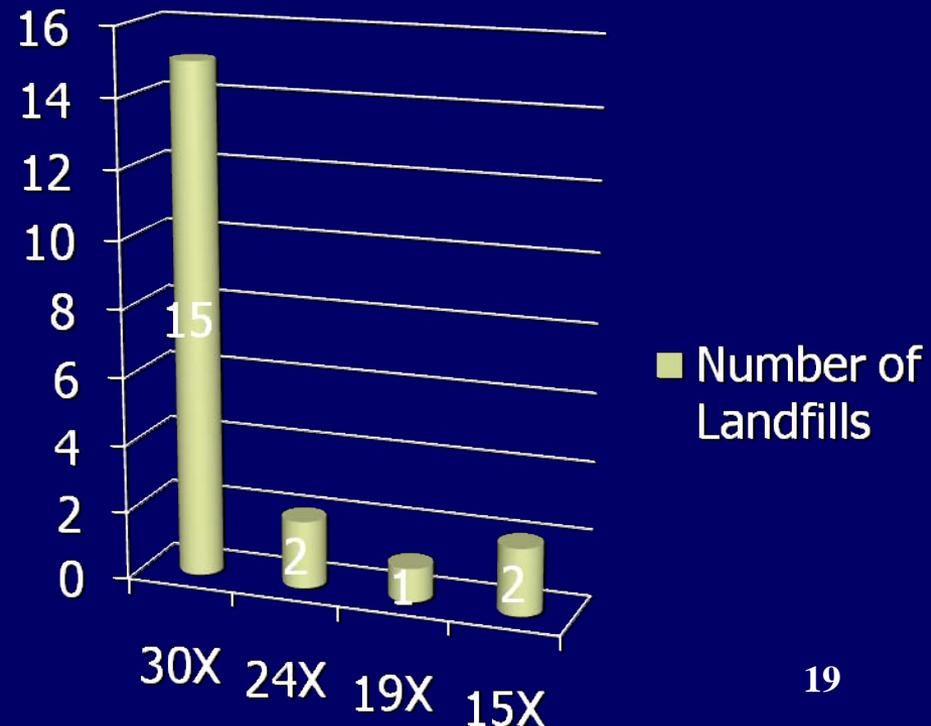
# What is the impact of establishing a rolling 30X level of financial assurance on current landfill operators?



# What is the impact of establishing a rolling 30X level of financial assurance on current landfill operators?

- **20 Closed Landfills Use Cash Mechanisms**
  - **5 Trust Funds**
  - **10 Enterprise Funds**
  - **4 Insurance**
  - **1 CD**
- **Includes seven Single Private Landfills**

**Actual Postclosure Assurance Levels for Closed Landfills with Cash Mechanisms**



# **What is the impact of establishing a rolling 30X Level of Financial Assurance on Current Landfill Operators?**

- **Adjusted Annual Cost Estimate for Inflation Since Closure**
- **Compared to Current Amount of Demonstration**
- **6 of 20 Have Received Disbursements**
- **Returning to 30X Would Impact**
  - **Six Closed Landfills with Cash Mechanisms**
  - **Cost an Estimated \$2.3 million**

# **What is the Board's Current Direction for the Proposed Regulations?**

- **Closed and Closing Landfills Allowed to Draw-Down Financial Assurances for PCM on a Year for Year Basis to a Minimum of 15X**
- **Operating Landfills Required to Maintain 30X until 5-year Review of Performance Criteria**
  - **Proving Performance Allows for 5X Step Reductions (ultimately to a minimum 15X)**
  - **Lack of Performance Holds "X" Value or Increases "X" Value in 5-year Increments (maximum of 30X)**

# **Corrective Action Plan/ Estimate Options Considered**

- **One Combined Plan**
  - **Release to Water (current requirement)**
  - **Non-Water Quality - Top Types from Corrective Action Survey**
  - **Determine most expensive CA type**
- **Separate Plan – Non-Water Quality only**
- **Most Expensive Cost Likely to be from Water Quality Plan**
- **Provide for Most Expensive Water Quality or Replacement of Final Cover/Non-Water Quality CA**

# **What options were considered for a Pooled Fund?**

- **Basic - backstop for defaults**
  - **Combined (public and private)**
  - **Split (public/private)**
- **Enhanced - backstop for defaults including**
  - **Basic**
  - **Defaults Resulting from Divesture if not addressed separately**
  - **Major Maintenance**
  - **Extraordinary Corrective Action**

# **Pooled Fund Key Considerations**

- **Coverage**
- **Definition of Public/Private**
- **Myth of Gift of Public Funds**
- **Use of any Excess Funds**
- **Changes Public/Private Over Time**
- **Administrative Cost**
- **Indemnification of Locals**
- **Fair share**

# **AB 274 Passed Legislature – Currently Waiting on Signature of Governor**

- **Provides for creation of a voluntary pooled fund**
- **Must have 50% of landfill capacity participating to go forward**
- **Covers all landfills, regardless of participation**
- **\$0.12 per ton collection**

# Summary - Current Proposed Rulemaking

## Postclosure Maintenance – Currently Operating

- **Rolling 30X**
- **Step-down in 5X increments for good performance**
  - **No Corrective Action**
  - **Participate in Proactive Monitoring**
  - **Costs Do Not Exceed Estimates**
- **15X Minimum**

## Postclosure Maintenance – Closed and Closing Landfills

- **Draw-down on Year for Year Basis**
- **15X Minimum**

## Corrective Action – All

- **Most Expensive Water Quality or Replace Final Cover/  
Non-Water Quality**