Rural Counties' Environmental Services Joint Powers Authority
Board of Directors' & Technical Advisory Meeting
Agenda

1215 K Street, Suite 1650 Conference Room
Sacramento, CA

Thursday, March 19, 2015 9:00 a.m. – 3:00 p.m.

Only those items that indicate a specific time will be heard at the assigned time. All other items may be taken out of sequence to accommodate the Board, the staff, and the general public. Indicated time allocations are for planning purposes only and actual times will vary from those indicated.

I. Call to Order, Self-Introductions, and Determination of Quorum

II. Business Matter **Page 1**

Discussion and possible action related to the following:

A. Approval of Minutes from the Meeting of December 11, 2015 – Supervisor Kobseff, ESJPA Chair *(pp 3-7)*

B. Election of the 2015 ESJPA Chair and Vice Chair – Supervisor Kobseff *(page 9; 5 minutes)*

C. Election of the 2015 ESJPA TAG Chair and Vice Chair – Supervisor Kobseff *(5 minutes)*

III. Public Comment

Any person may address the Board on any matter relevant to the Authority's business, but not otherwise on the agenda.

IV. Presentations **Page 11**

A. Proposed New Green Building Standards to Increase Recycling and New Universal Waste Management Plan – Enrique M. Rodriguez, Associate Construction Analyst, California Building Standards Commission *(pp 13-18; 20 minutes)*

B. USDA Rural Development Solid Waste Financing – Katie Schmitt, Area Specialist Community Programs, USDA *(20 minutes)*

C. Stormwater Compliance: A Haulers Perspective - David Ianni, Principal, Aces Waste Services *(20 minutes)*

D. Report from CalRecycle – Joe Rasmussen, Supervisor, Materials Management and Local Assistance Program, CalRecycle *(10 minutes)*

V. Member County Concerns/Comments

VI. Presentation

AB 1826 (Chesbro, 2014) Mandatory Commercial Organics Recycling and AB 1594 (Williams, 2014) Waste Management: Green Waste as ADC – Howard Levinson, Deputy Director, CalRecycle *(pp 19-42; 30 minutes)*

VII. Legislative Update **Supplemental Packet**

(This item may be heard at any time during the meeting depending upon the availability of staff) Discussion of New Legislation - Paul Smith, RCRC Senior Legislative Advocate *(15 minutes)*

A. Complete Text of Selected Bills *(Supplemental Packet pp 1-38)*

B. Summary Listing of All Solid Waste Related Bills *(Supplemental Packet pp3 9-54)*

VIII. Solid Waste/Regulatory Update **Page 43**

Discussion and possible action related to the following:

A. CalRecycle
- AB 2398 Carpet Product Stewardship – Mary Pitto, ESJPA Program Manager *(page 45; 5 minutes)*
- Beverage Container Recycling Program Reform – Larry Sweetser *(pp 47-48; 5 minutes)*
- Compostable Materials, Transfer/Processing regulations – Larry Sweetser *(pp 49-52; 5 minutes)*

B. Department Of Toxic Substances Control
- Thermostat Recycling Program Update – Larry Sweetser *(5 minutes)*
- Solar Panel Disposal – Larry Sweetser *(5 minutes)*

C. State Water Resources Control Board (SWRCB)
- Water Quality Fees Stakeholder Process for Fiscal Year 2015-16 – Larry Sweetser *(pp 53-59; 5 minutes)*
- Storm Water Industrial General Permit – Larry Sweetser *(pp 61-75; 5 minutes)*
- Compost Waste Discharge Requirements – Larry Sweetser *(pp 77-82; 5 minutes)*
- Proposed Trash Amendments – Larry Sweetser *(pp 83-85; 5 minutes)*

D. CA Product Stewardship Council Update – Heidi Sanborn/Christine Flowers, Product Stewardship Council *(pp 87-98; 10 minutes)*

E. PaintCare Update – Daria Kent, Northern California Regional Coordinator *(10 minutes)*

F. Mattress Recycling Council Update – Rodney Clara, Mattress Recycling Council *(pp 99-101; 10 minutes)*

G. Grant Program Update – Larry Sweetser *(pp 103-106; 10 minutes)*

H. Highlights of December/January/February/March meetings – Larry Sweetser *(pp 107-122; 5 minutes)*

I. Other Regulatory Announcements/Issues of Interest

- Cal EPA CUPA Newsletters *(pp 125-131)*
- DTSC E-Waste Upd*ates (pp 133-140)*

IX. Agenda Suggestions, Member County Presentation Volunteer, Workshop Topics for Next ESJPA Board Meeting Scheduled Thursday, May 21, 2015.

X. Articles of Interest *(pp 143-194)* **Page 141**

XI. Adjournment

12:00 PM Lunch

1:00 PM

Technical Advisory Group Breakout Session

This afternoon session will be conducted as an informal workshop. The following topic is intended for robust discussions. You are invited to stay and encouraged to participate in this session.

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- **SWRCB Storm Water Industrial General Permit -** The new General Industrial Permit is effective July 1, 2015. Are you ready? There are a number of measures needed prior to implementation including mandatory use of the Stormwater Multiple Application & Report Tracking System (SMARTS).

  Laurel Warddrip, Environmental Scientist, SWRCB
  Patrick Otsuji, Environmental Scientist, SWRCB

Meeting facilities are accessible to persons with disabilities. By request, alternative agenda document formats are available to persons with disabilities. To arrange an alternative agenda document format or to arrange aid or services to modify or accommodate persons with a disability to participate in a public meeting, please contact our offices at least 72 hours prior to the meeting by calling (916) 447-4806.

Agenda items will be taken as close as possible to the schedule indicated. Any member of the general public may comment on an agenda item at the time of discussion. In order to facilitate public comment, please let staff know if you would like to speak on a specific agenda item.

The final agenda for this meeting of the Board of Directors of the Rural Counties' Environmental Services Joint Powers Authority will be duly posted at its offices: 1215 K Street, 16th Floor, Sacramento, California at least 72 hours prior to the meeting.

Agenda Item II

BUSINESS MATTERS

Minutes of the Rural Counties' Environmental Services Joint Powers Authority Board of Directors Meeting
1215 K Street, Suite 1650, Sacramento, CA

Thursday December 11, 2014

MEMBERS REPRESENTED

Jim McHargue, Director Solid Waste	Amador County
Steve Rodowick, Recycling Coordinator	Butte County
Yvonne Van Zee, Recycling Coordinator	Calaveras County
William Brunet, Director of Public Works	Imperial County
Paula Wesch, Program Coordinator	Lassen County
Ahmad Alkhayyat, Deputy Public Works Director	Madera County
Lorenzo Nadora, Engineer	Madera County
Greg Ollivier, Solid Waste Manager	Mariposa County
Bob Perrault, Director of Public Works	Plumas County
Michael Kobseff, County Supervisor	Siskiyou County
Arthur Boyd, Grant Recycling Coordinator	Siskiyou County
Karl Fisher, County Supervisor	Trinity County

STAFF IN ATTENDANCE:

Mary Pitto, ESJPA Program Manager	RCRC Governmental Affairs
Stacy Heaton, Regulatory Affairs Analyst	RCRC Governmental Affairs
Larry Sweetser, ESJPA Consultant	Sweetser and Associates, Inc.
Julie Lunn, RCRC Office Assistant	RCRC Staff

GUEST SPEAKERS:

Terry Brennan, CalRecycle	Heidi Sanborn, CPSC
Thomas Christofk, APCO, Placer County	

OTHERS IN ATTENDANCE:

Paul Brainin, CalRecycle	Keir Furey, CalRecycle
Susan Mueller, CalRecycle	Kerry Wicker, CalRecycle
Spencer Fine, CalRecycle	Ken Decio, CalRecycle

MEMBERS NOT REPRESENTED

Alpine County, Colusa County, Del Norte County, El Dorado County, Glenn County, Inyo County, Modoc County, Mono County, Nevada County, Sierra County, Tehama County, Tuolumne County.

I. **Call to Order, Determination of Quorum and Self Introductions**
Chair Supervisor Michael Kobseff, Siskiyou County called the meeting to order at 9:02 a.m. Self-introductions were made. A quorum was determined at that time.

II. **Business Matters**
A. Approval of Minutes October 16, 2014. Chair Supervisor Michael Kobseff, Siskiyou County called for the approval of the minutes from the October 16, 2014 Board of Directors Meeting.

The motion to approve the minutes was made by Greg Ollivier Mariposa County and was seconded by Steve Rodowick, Butte County. The motion passed unanimously.

B. Review and approval of the 2015 Budget. Lisa McCargar, RCRC Chief Financial Officer, gave an summary of the 2015 proposed budget.

The motion to approve the 2015 Budget was made by William Brunet, Imperial County and was seconded by Supervisor Jim McHargue Amador County. The Motion was passed unanimously.

C. Review and approval of the 2015 Contract Services Agreement between ESJPA and RCRC. Mary Pitto, ESJPA Program Manager presented the Agreement.

The motion to approve the Agreement was made by Greg Ollivier, Mariposa County and seconded by William Brunet, Imperial County.

D. Adoption of Resolution #14-01 Authorizing the Continuous Submittal of CalRecycle Used Oil Payment Program Proposals on behalf of Member Counties. Mary Pitto presented the Resolution for adoption.

The motion to adopt Resolution #14-01 was made by Greg Ollivier, Mariposa County and seconded by Supervisor Karl Fisher, Trinity County.

III. **Public Comment:** None

IV. **Presentations**
A. Forest Biomass Energy Initiatives. Thomas Christofk, APCO Placer County Air Pollution Control District gave a presentation on their forest biomass project. The presentation is posted on the web.

B. Proposed New Green Building Standards to Increase Recycling. Mary Pitto reported that the California Building Standards Commission is proposing to increase the current requirement of 50% recycling of construction and demolition materials to 75% and is also proposing a new universal waste management plan requirement.

C. Imperial County Presentation- William Brunet presented an overview of the Imperial County solid waste system including recent changes that transfer the Salton Sea Landfill to Burrtec Industries. This transfer provides significant funds to the county which is considering additional privatization of their solid waste system.

D. Report from CalRecycle – Terry Brennan, Materials Management and Local Assistance Program, provided a handout for this update, which is available on the ESJPA website. Ken Decio also provided an update on CalRecycle's compostable material regulations.

V. **Legislative Update.** Mary Pitto and Larry Sweetser provided a brief legislative update. Bills are just beginning to be introduced, with most expected towards the end of February. Sweetser provided and update on AB 45 (Mullin). This bill follows up on AB 2371 from last session, and would establish household hazardous waste Door-to-Door programs as the "principal means of collecting household hazardous waste". This proposal has generated strong concerns from many jurisdictions, CPSC, and SWANA. The ESJPA will continue to monitor developments with this bill.

VI. **Member County Concerns/Comments**

Steve Rodowick, Butte County inquired if anyone had dealt with the disposal of an invasive species of an aquatic reed. No one had an answer. Larry indicated he would look into it.

VII. **Solid Waste/Regulatory Update**

A. CalRecycle-

- AB 2398 Carpet Product Stewardship. Pitto reported the program is no longer considered a pilot program and has expanded into four more counties. CARE is seeking another six and looking for more volunteers. CARE has also hired a new firm for design and public outreach efforts. Butte Co. needs brochures. Bob Perault mentioned carpet recycling has low for several years, only one of two contractors participate.
- AB 1343 Paint Product Stewardship. Sweetser reported that PaintCare's second Annual Report is out for review. PaintCare sponsored a webinar earlier in the week to provide an opportunity for stakeholders to ask questions about the program implementation. CalRecycle is conducting a workshop on January 6th to receive comments on the Annual Report and the ESJPA was asked to participate in a panel at the workshop. The report indicated that the cost per gallon has decreased from last year's report and that there is a $27, million dollar surplus in the fund. Sweetser reported that where a jurisdiction has a PaintCare arrangement, that effort is working and saving money. Eight California counties do not have a PaintCare relationship and seven of those are ESJPA members. Sweetser will continue to work with those jurisdictions and PaintCare on options. Sweetser will also reach out to ESJPA members to research experiences with implementation of this program.
- SB 254 Mattress Product Stewardship – Sweetser attended a Mattress Recycling Council meeting in Oakland. They are very interested in implementation of the program in rural areas. The Mattress Recycling Council is collecting data on the management of mattresses in California and is preparing a memo to retailers on the program.
- Beverage Container Recycling Program Reform – Sweetser reported that CalRecycle has indicated that the Beverage Fund is not in as dire shape as indicated previously. CalRecycle's enforcement efforts seem to be effective in addressing fraud in the program.
- Compostable Materials, Transfer/Processing regulations - Sweetser reported that regulations are going forward. CalRecycle held a workshop on December 10th regarding the proposal and heard comments from numerous stakeholders. The big concerns are including food waste in some composting activities and the limits on residual contamination.

B. Department of Toxic Substances (DTSC)

- Thermostat Recycling Program Update – Sweetser reported that the thermostat industry is not collecting nearly as many thermostats as required by the program goal. DTSC is considering enforcement options for manufacturers for failure to collect the required number of thermostats.
- Solar Panel Disposal – Sweetser reported that DTSC is considering most solar modules as hazardous wastes and cannot be collected with electronics wastes. Attempts by DTSC to regulate the modules as "Universal" Hazardous Waste" failed. Counties are advised not to accept solar modules unless they have arrangements established with legal vendors. Sweetser will work on compiling management options for the next meeting.

C. State Water Resources Control Board (SWRCB) –

- Water Quality Fees Stakeholder Process for Fiscal Year 2015-16 – Sweetser reported that the SWRCB will be conducting a workshop on the proposed Waste Discharge Requirement fees for FY 2015/16 will be held on February 13, 2015. ESJPA staff will attend that workshop and report.
- Storm Water Industrial General Permit – The next meeting of the Training Team is tomorrow and is focused on development of the training program for Qualified Industrial Storm Water Practitioners (QISP). Implementation of the new permit is July 1, 2015 and use of the online reporting system will be mandatory. Sweetser will forward a list of the upcoming workshops and will be attending several workshops.
- Proposed Trash Amendments – The SWRCB is still expected to propose plans for Zero Trash in California. ESJPA staff is awaiting information on the next steps for this measure.

D. CA Product Stewardship Council Update. Heidi Sanborn reported on recent activities of CPSC. She indicated that CPSC was not going to sponsor any bills the next legislative session and would be concentrating on assisting counties on individual efforts for sharps and medicine take back ordinances and implementation of existing product stewardship programs. CPSC is also assisting with many grants and will be conducting a Webinar in the summertime. CPSC is working with Call-to-Recycle on distribution of battery collection boxes and jurisdictions should contact CPSC if there is interest in participating.

E. PaintCare Update. No report

F. Grant Program Update – Larry Sweetser reported the ESJPA continues to implement the USDA training grant and is focusing on finishing the individual county hazardous waste trainings and the SWANA MOLO and environmental sampling training. Sweetser also reported that tire amnesty events continue in the participating counties.

G. Highlights of August/September CalRecycle Meetings. Larry Sweetser reported most items were covered in Terry Brennan's report.

H. Other Regulatory Announcements/Issues of Interest. Mary Pitto directed Members to the Board packet.

VIII. **Agenda Suggestions, Member county Presentation Volunteer, Workshop Topics for Next ESJPA Board Meeting Scheduled Thursday, March 19, 2015.** Bob Perault volunteered Plumas County would give a presentation.

IX. **Articles of Interest**
Mary Pitto directed Members to the Board packet.

X. **Adjournment- 12:06 pm**

Respectfully submitted,
Julie Lunn, Office Assistant/Receptionist

Technical Advisory Group Breakout Session

Due to weather, the afternoon session speakers on wildfire considerations for rural areas were unable to attend and Howard Levinson, Deputy Director at CalRecycle was asked to reschedule.

Mary Pitto talked about AB 1826 (Chesbro 2014), the new mandatory commercial organics recycling legislation. The ESJPA was able to include an exemption for counties with a population of less than 70,000, which impacts 19 counties and represents 1.4% of the solid waste stream. The counties and cities or regional agencies are required to adopt a resolution and submit it to CalRecycle no later than July 1, 2015. Mary worked with CalRecycle and prepared and passed out a sample resolution and staff report for counties to use.

MEMORANDUM

To: ESJPA Board of Directors

From: Mary Pitto, Program Manager

Date: March 19, 2015

RE: Election of Chairs and Vice Chairs

In March of each year, the Environmental Joint Powers Authority (ESJPA) Officers for the year are elected. The Joint Exercise of Powers Agreement states:

> The Board shall elect a chair and vice chair from among its properly designated Delegates at the Board's annual meeting who shall serve a term of one (1) year or until the respective successor is elected.

The current ESJPA Chair is Supervisor Kobseff, Siskiyou County, and the Vice Chair is Supervisor Williams, Tehama County.

Generally, the Rural County Representative of California (RCRC) elects its officers in December of each year for the subsequent year. The Chair then selects his Committee Chairs and makes recommendations of a Chair and Vice Chair to be considered by the several RCRC JPA's. The RCRC 2015 Chair is Supervisor Adams from Sierra County. Supervisor Adams and the RCRC Board has recommended Supervisor Kobseff (Siskiyou County) be nominated as Chair for another year and Supervisor Rawson (Alpine County) be nominated as Vice Chair.

In addition, the ESJPA Board elects a Chair and Vice Chair of the Technical Advisory Group (TAG) selected from the Delegates' Alternates. The current ESJPA TAG Chair is Kristina Miller, Tehama County and the Vice Chair is Jim McHargue, Amador County. You may submit nominations in writing to staff prior to the meeting or make nominations from the floor at the meeting.

Staff Recommendations:
Staff recommends the Board of Directors take action to:

1. Elect the 2015 ESJPA Board Officers.
2. Elect the 2015 ESJPA Technical Advisory Group Officers.

Agenda Item IV

PRESENTATIONS

CALIFORNIA BUILDING STANDARDS COMMISSION

PROPOSED DRAFT EXPRESS TERMS for the 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, (CALGreen), PART 11, CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS

- **Proposed code language for the 2015 Triennial Code Adoption Cycle**

LEGEND FOR EXPRESS TERMS
1. New California amendments: All such language appears underlined.
2. Repealed text: All such language appears in ~~strikeout~~.
[Information for the reader is bracketed and in red italics]

5.408 Construction Waste Reduction, Disposal and Recycling

- **Statement of specific purpose, problem, rationale and benefits:**
CBSC is proposing to increase the percentage of nonhazardous construction waste and demolition waste from 50% to 65%, moving the current Tier 1 voluntary measure of 65% to mandatory. Additionally, CBSC is proposing to increase the Tier 1 65% to 75% and Tier 2 80% to 85%. During the 2013 Intervening Code Cycle, CBSC withdrew this proposed amendment during the Green Code Advisory Committee (CAC) as a result of comments received. It was recommend by the CAC that CBSC reintroduce the proposed code amendment for the 2015 Triennial Code Adoption Cycle. Some of the comments received related to existing franchise agreements between the local jurisdictions and the haulers that were still active. Additionally, there was concern with CBSC proposing a more restrictive standard than the Department of Housing and Community Development.

The proposed Tier 1 increase to 75% as a voluntary measure will aid in CalRecycle's statewide recycling goal at 75% for 2020 as stated in AB 341 (Chapter 476, Statutes of 2011). The proposed Tier 2 increase to 85% as a voluntary measure is an incremental step increase from the proposed Tier 1.

SECTION 5.408
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of ~~50~~ 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

5.408.1.1 Construction waste management plan...

5.408.1.2 Waste management company...

5.408.1.3 Waste stream reduction alternative...

SECTION A5.408
CONSTRUCTION WASTE REDUCTION, DISPOSAL, AND RECYCLING

A5.408.3.1 Enhanced construction waste reduction – Tier 1. Divert to recycle or salvage at least ~~65%~~ 75% of nonhazardous construction and demolition waste generated at the site.

A5.408.3.1.1 Enhanced construction waste reduction – Tier 2 ~~[BSC]~~. Divert to recycle or salvage at least ~~80%~~ 85% of nonhazardous construction and demolition waste generated at the site.

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CALIFORNIA BUILDING STANDARDS COMMISSION

DRAFT EXPRESS TERMS for the 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, (CALGreen), PART 11, CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS

- **Proposed code language for the 2015 Triennial Code Adoption Cycle**

  LEGEND FOR EXPRESS TERMS

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  [Information for the reader is bracketed and in red italics]

301.3 Nonresidential additions and alterations, Waste Diversion.

- **Statement of specific purpose, problem, rationale and benefits:**
  The California Department of Resources Recycling and Recovery (CalRecycle) is proposing to remove the minimum thresholds for waste diversion requirements for additions and alterations. This would require that the requirements of Section 5.408 be mandatory for any project requiring a permit.

  History:
  CalRecycle is proposing a strategy to increase waste diversion. AB 341 (Chapter 476, Statutes of 2011) set California's statewide recycling goal at 75%, and directed CalRecycle to propose statewide strategies to assist in meeting that goal. Construction and demolition waste represents over 20% of what is landfilled. Reducing the threshold for when construction and demolition waste diversion is required would increase overall recycling.

  Rationale for proposed code change:
  Unlike other measures, as a result of construction or demolition, or additions or alterations, waste is generated. Whenever waste is generated, it still needs to be managed. Therefore, diversion should be required. This proposal would increase overall recycling and support jurisdiction efforts to implement mandatory commercial recycling programs pursuant to AB 341.

301.3 Nonresidential additions and alterations

301.3 Nonresidential additions and alterations. [BSC] The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of $200,000 or above (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work....

301.3.1 Waste Diversion. *The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.*

CALIFORNIA BUILDING STANDARDS COMMISSION

DRAFT EXPRESS TERMS for the 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, (CALGreen), PART 11, CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS

- **Proposed code language for the 2015 Triennial Code Adoption Cycle**

  LEGEND FOR EXPRESS TERMS

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  2. Repealed text: All such language appears in strikeout.

  [Information for the reader is bracketed and in red italics]

Recycling By Occupants. Organic Waste

- **Statement of specific purpose, problem, rationale and benefits:**

  The California Department of Resources Recycling and Recovery (CalRecycle) is proposing to add "organic waste" to the list of materials which need to be included for depositing, storing, and collecting in section 5.410.1

  History:

  CalRecycle is proposing a strategy to improve organic waste diversion.
  1) AB 341 (Chapter 476, Statutes of 2011) set California's statewide recycling goal at 75%, and directed CalRecycle to propose statewide strategies to assist in meeting that goal. Organic materials constitute about 40% of what is landfilled and are the primary source of methane emissions from landfills. Providing adequate space for the storage and collection of organic waste would increase overall recycling and reduce emissions of methane, a potent greenhouse gas. 2) AB 1826 (Chapter 727, Statutes of 2014), requires, as of April 1, 2016, any business generating 8 cubic yards or more of organic waste to arrange for recycling services specific to that waste. The threshold for required service is reduced to 4 cubic yards of organic waste on January 1, 2017, and to 4 cubic yards of commercial solid waste effective January 1, 2019.

  Rationale for proposed code change:

  Adding organic waste to the list of materials that need to be included will ultimately assist businesses that will be required to meet AB 1826 starting in 2016, concurrent with this code. It will also result in significant greenhouse gas emission reductions, which is a key goal of the Air Resource Board's 2014 Scoping Plan Update.

5.410.1 Recycling by occupants

5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, *organic waste,* and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: *Rural jurisdictions that meet and apply for the exemption of Public Resources Code 42649.82 (a)(2)(A) et seq. will also be exempt from the organics waste portion of this section.*

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5.402.1 Definitions. The following terms are defined in Chapter 2.

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ORGANIC WASTE

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SECTION 202
DEFINITIONS

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ORGANIC WASTE. *Food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. [Note: As defined by Public Resources Code (PRC) sec. 42649.8(c)]*

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CALIFORNIA BUILDING STANDARDS COMMISSION

PROPOSED DRAFT EXPRESS TERMS for the 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, (CALGreen), PART 11, CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS

- **Proposed code language for the 2015 Triennial Code Adoption Cycle**

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5.408.2 Universal Waste

- **Statement of specific purpose, problem, rationale and benefits:**

California stakeholder (**Richard Ludt from Interior Removal Specialist, Inc.**) is proposing a new code section in CALGreen to address Universal Waste. The hazardous waste regulations (Cal. Code Regs, tit. 22, div. 4.5, ch. 11 section 66261.9) identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported and recycled following the simple requirements set forth in the universal waste regulations (UWR) (Cal. Code Regs, tit. 22, div. 4.5, ch. 23)

On February 9, 2004, regulations took effect in California that classified all discarded fluorescent lamps as hazardous waste. This includes even low mercury lamps marketed as "TCLP passing" or "TTLC passing." **No one in California is allowed to discard their fluorescent lamps and batteries as nonhazardous solid waste (as ordinary trash).**

Under California's Universal Waste Rule households and "conditionally exempt small quantity generators" were allowed to dispose fluorescent lamps, batteries (not lead/acid batteries of the type used in autos), mercury thermostats, and electronic devices to the trash through February 8, 2006, unless the local trash companies or other agencies prohibited it. Large and small quantity handlers are required to ship their waste to either another handler, a universal waste transfer station, a recycling facility, or a disposal facility.

By adding Universal Waste to CALGreen, the authorities having jurisdiction can provide more enforcement of existing landfill bans and increase the chance of tracking Universal Waste being removed from construction and demolition projects.

SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

5.408.1 Construction waste management.

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5.408.1.1 Construction waste management plan.

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5.408.1.2 Waste management company.

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5.408.1.3 Waste stream reduction alternative.

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5.408.1.4 Documentation.

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5.408.2 Universal Waste.

Additions or alterations to a building or tenant space of 5,000 SF or greater shall require a Universal Waste Management Plan. This plan shall be included in conjunction with the Construction Waste Management Plan per Section 5.408.1.1.

5.408.3 Excavated soil and land clearing debris. [BSC]

CalRecycle

Mandatory Commercial Organics Recycling

Program News...

- **Upcoming Workshops**
  --April 16, 2015, Sacramento (CalEPA Headquarters) 9:00 a.m. to 3:30 p.m.
  --April 28, 2015, Southern California (location TBD) 9:00 a.m. to 3:30 p.m.
- **FAQs.** CalRecycle is collecting related frequently asked questions (FAQ) to address. Please submit your questions to lamd@calrecycle.ca.gov. In the subject line, please include "AB 1826 question."

Background and Overview

In October of 2014 Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on or after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that by 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units (please note, however, that, multifamily dwellings are not required to have a food waste diversion program). Organic waste (also referred to as organics throughout this resource) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time, while also offering an exemption process for rural counties. In particular, the minimum threshold of organic waste generation by businesses decreases over time, which means that an increasingly greater proportion of the commercial sector will be required to comply.

Why Organics? Mandatory recycling of organic waste is the next step toward achieving California's aggressive recycling and greenhouse gas (GHG) emission goals. California disposes approximately 30 million tons of waste in landfills each year, of which some 30 percent could be used for compost or mulch (see the 2008 Waste Characterization Study). Organic waste such as green materials and food materials are recyclable through composting and mulching, and through anaerobic digestion, which can produce renewable energy. Greenhouse gas (GHG) emissions resulting from the decomposition of organic wastes in landfills have been identified as a significant source of emissions contributing to global climate change. Reducing the amount of organic materials sent to landfills and increasing the production of compost and mulch are part of the AB 32 (California Global Warming Solutions Act of 2006) Scoping Plan. For more information on the connection between the waste sector and California's GHG emission reduction goals, please see CalRecycle's Climate Change page.

Key Elements of the Law

The sections below address the specific requirements of businesses, jurisdictions, and CalRecycle.

1. Requirements for Businesses

The mandatory organics recycling law defines a business as a commercial or public entity (such as a school or hospital) including multifamily residential dwellings (5 units or more), that generates a specified amount of organic waste after April 2016 (see Implementation Dates and Thresholds for detailed phase-in information below). A business is a commercial or public entity, including, but not limited to, a firm, partnership, proprietorship, joint stock company, corporation, or association that is organized as a for-profit or nonprofit entity, or a multifamily residential dwelling. A business that meets the waste generation threshold must engage in one of the following organic recycling activities:

- Source separate organic waste from other waste and participate in a waste recycling service that includes collection and recycling of organic waste.
- Recycle its organic waste on site, or self-haul its organic waste off site for recycling.
- Subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste.

Note: A business generating organic waste shall arrange for the recycling services in a manner that is consistent with state and local laws and requirements, including a local ordinance or local jurisdiction's franchise agreement, applicable to the collection, handling, or recycling of solid and organic waste. However, if separate organic waste collection and recycling services are not offered through a local ordinance or local jurisdiction's franchise agreement, a business generating organic waste may arrange for separate organic waste collection and recycling services, until the local ordinance or local jurisdiction's franchise agreement includes organic waste recycling services.

Additional points related to businesses:

1. A business that is a property owner may require a lessee or tenant of that property to source separate their organic waste to aid in compliance.
2. Additionally, all businesses that contract for gardening or landscaping services must stipulate that the contractor recycle the resulting gardening or landscaping waste.
3. A multifamily complex is not required to arrange for recycling services for food waste.
4. Businesses located in a rural county that is exempted from the law do not have to arrange for recycling services for their organic waste.

2. Requirements for Local Jurisdictions

Local jurisdictions are required to implement an organic waste recycling program (program) by January 1, 2016, to divert organic waste generated by businesses. Each jurisdiction is unique and must adopt a program that suits its specific local needs, e.g., depends on type of organic materials that businesses generate, etc. If a jurisdiction, as of January 1, 2016, has in place an organic waste recycling program that meets the requirements of this section, it is not required to implement a new or expanded organic waste recycling program.

A jurisdiction's organic waste recycling program targeted to commercial organic waste generators may include, but is not limited to, one or more of the following key elements:

- Implementing a mandatory commercial organic waste recycling policy or ordinance.
- Enforcement provisions, including a structure for fines and penalties.
- Requiring a mandatory organic recycling program through a franchise contract or agreement.
- A requirement that organic waste go through a source separated or mixed processing system that diverts organic waste from disposal.
- Certification requirements for self-haulers.
- Charging and collecting a fee from an organic waste generators to recover the jurisdictions' cost complying with the law.
- Implementation or enforcement of organic waste recycling requirements that are more stringent or comprehensive than the minimum requirements outlined here.

The law also requires that each jurisdiction's program contain certain common elements. These requirements are applicable whether or not the jurisdiction meets its 50 percent per capita disposal target.

Rural Exemptions

Exemptions are allowed for jurisdictions that are located entirely within a rural county(ies). A rural county is one with a population of less than 70,000. A rural jurisdiction, e.g., county, city or regional agency, can submit a resolution to CalRecycle exempting themselves, and the businesses that operate in the region from the mandatory organic recycling requirements. Jurisdictions that wish to be exempt must submit their resolution to CalRecycle prior to June 30, 2015, to be considered for an exemption from implementation of the law on January 1, 2016. The related resolution should include findings as to the purpose of and need for the exemption.

- Map of Rural Counties (PDF, 398 KB)
- Template Resolution for Rural Jurisdictions (MS Word, 17 KB).

1. Identifying the businesses that meet the applicable thresholds.
2. Conducting annual education and outreach to inform businesses about the law and how to recycle organics in the jurisdiction. Jurisdictions can build on their education, outreach and monitoring activities into the activities that they are doing to implement the Mandatory Commercial Recycling law. For example, a jurisdiction could incorporate information about how to recycle organics into its existing education/outreach activities via using electronic tools, e.g., the jurisdiction's and the hauler's websites; providing written materials, e.g., a brochure; and making direct contact with businesses, e.g., on waste assessments or presentations to business organizations.
3. Implementing annual monitoring activities to identify those not recycling and to inform them of the law and how to recycle organics in the jurisdiction. Jurisdictions can build on their monitoring activities for Mandatory Commercial Recycling. For example, the hauler may be responsible for identifying those not recycling organics and the jurisdiction may contact those not recycling organics via a letter, phone call, and/or site visit.

Note: The authority of a local governmental agency to adopt, implement, or enforce a local organic waste recycling requirement, or a condition imposed upon a self-hauler, that is more stringent or comprehensive than the requirements of this law is not limited. Additionally, the following are not modified, limited, or abrogated in any manner by this law:

- A franchise granted or extended by a city, county, city and county, or other local governmental agency.
- A contract, license, or permit to collect solid waste previously granted or extended by a city, county, city or county, or other local governmental agency.
- The existing right of a business to sell or donate its recyclable organic waste materials.
- The authority of a local jurisdiction with respect to land use, zoning, or facility siting decisions by or within that local jurisdiction.

Exemptions. On a case-by-case basis, a jurisdiction may exempt individual businesses from the organic waste recycling requirements. Jurisdictions must include their rationale for allowing exemptions in the electronic annual report they submit to CalRecycle. Certain exemptions (denoted with an asterisk) will not be allowed on or after January 1, 2020, if CalRecycle determines that statewide disposal of organic waste has not been reduced to 50 percent of the level of disposal during the 2014 calendar year. Exemptions may include, but are not limited to the following:

- Lack of sufficient space in multifamily complexes or businesses to provide additional organic material recycling bins.
- The current implementation by a business of actions that result in the recycling of a significant portion of its organic waste.
- The business or group of businesses does not generate at least one-half of a cubic yard of organic waste per week.
- Limited-term exemptions for extraordinary and unforeseen events.
- *The business or group of businesses does not generate at least one cubic yard of organic waste per week (if the local jurisdiction provides CalRecycle with information that explains the need for this higher exemption).

Reporting. Beginning with the August 2017 Electronic Annual Report (EAR) that jurisdictions submit to CalRecycle (and which covers calendar year 2016), jurisdictions will be required to report on progress on the implementation of the organic waste recycling program. Each jurisdiction's annual report must include the following information in the 2017 and subsequent EARs:

- Existing local organic waste recycling facilities and the respective capacities available for materials to be accepted.
- Existing solid waste and organic waste recycling facilities within the jurisdiction that may be suitable for potential expansion or colocation of organic waste processing or recycling facilities.
- Efforts underway to develop new private or public regional organic waste recycling facilities that may serve some or all of the organic waste recycling needs of the commercial waste generators within the jurisdiction, and the anticipated timeframe for completion of those facilities.
    - Closed or abandoned sites that might be available for new organic waste recycling facilities.
    - Other nondisposal opportunities and markets.
    - Appropriate zoning and permit requirements to site new organic waste recycling facilities.
    - Incentives available, if any, for developing new organic waste recycling facilities within the jurisdiction.
    - Barriers to siting new or expanded composting, anaerobic digestion and chip and grind facilities and a plan to remedy those barriers that are within the control of the local jurisdiction.
- Report on the education, outreach and monitoring activities, including the number of businesses that are not recycling organics and what was done to inform them of the law. Providing tonnage on the amount of material that is recycled is optional.
- Rationale for allowing exemptions, and, if applicable, report on enforcement efforts.

3. Requirements for CalRecycle

CalRecycle will annually review each jurisdiction's organics recycling program. CalRecycle will also review a jurisdiction's compliance as part of the Jurisdiction Review scheduled every two years and four years. Additionally, CalRecycle may review whether a jurisdiction is in compliance with these requirements at any time that it receives information that a jurisdiction has not implemented, or is not making a "good faith effort" to implement, an organic waste recycling program. For this purpose, "good faith effort" means all reasonable and feasible efforts by a jurisdiction to implement its organic waste recycling program.

During its review, CalRecycle will consider various factors in its evaluation of a jurisdiction's "good faith effort", including, but not limited to the following:

1. The extent to which businesses have complied, including information on the amount of disposal that is being diverted from the businesses, if available, and on the number of businesses that are in compliance.
2. The recovery rate of the organic waste from the material recovery facilities that are utilized by the businesses, all information, methods, and calculations, and any additional performance data, as requested by CalRecycle.
3. The extent to which the jurisdiction is conducting education and outreach to businesses.
4. The extent to which the jurisdiction is monitoring businesses and notifying those businesses that are not in compliance.
5. The appropriateness of exemptions allowed by the jurisdiction.
6. The availability of markets for collected organic materials.
7. Budgetary constraints.
8. In the case of a rural jurisdiction, the effects of small geographic size, low population density, or distance to markets.
9. The availability, or lack thereof, of sufficient organic waste processing infrastructure, organic waste recycling facilities, and other nondisposal opportunities and markets.

10. The extent to which the jurisdiction has taken steps that are under its control to remove barriers to siting and expanding organic waste recycling facilities.

CalRecycle will monitor county population data with respect to rural exemptions. If a rural exemption has been granted and the population of the respective county rises above 70,000, CalRecycle will need to rescind the rural reduction.

Additionally, in an effort to determine if the statewide disposal of organic waste has been reduced to 50 percent of the 2014 disposal level, CalRecycle will be conducting statewide waste characterization studies in 2014 and 2020. If CalRecycle determines that statewide disposal of organic waste in 2020 has not been reduced to 50 percent of the 2014 disposal level, the threshold will be adjusted so that a business that generates two cubic yards or more per week of commercial solid waste shall arrange for the organic waste recycling services, and certain exemptions, previously discussed, may no longer be available if this target is not met.

Implementation Dates and Thresholds

Easing implementation and compliance, the law phases in the requirements on businesses over time based on the amount and type of waste the business produces on a weekly basis, with full implementation realized in 2019. Additionally, the law contains a 2020 trigger that will increase the scope of affected businesses, if waste reduction targets are not met. The implementation schedule is as follows:

January 1, 2016: Local jurisdictions must have an organic waste recycling program in place. Jurisdictions must conduct outreach, education to inform businesses how to recycle organic waste in the jurisdiction, and monitoring to identify those not recycling and inform them of the law and how to recycle organic waste.

April 1, 2016: Businesses that generate eight cubic yards of organic waste per week, must arrange for organic waste recycling services.

January 1, 2017: Businesses that generate four cubic yards of organic waste per week, must arrange for organic waste recycling services.

August 1, 2017 and Ongoing: Jurisdictions must provide information about their organic waste recycling program implementation in the annual report submitted to CalRecycle. (See above for description of information to be provided.)

Fall 2018: After receipt of the 2016 annual reports submitted on August 1, 2017, CalRecycle shall conduct its formal review of those jurisdictions that are on a two-year review cycle.

January 1, 2019: Businesses that generate four cubic yards or more of commercial solid waste per week must arrange for organic waste recycling services.

Fall 2020: After receipt of the 2019 annual reports submitted on August 1, 2020, CalRecycle shall conduct its formal review of all jurisdictions.

Summer/Fall 2021: If CalRecycle determines that the statewide disposal of organic waste in 2020 has not been reduced by 50 percent of the level of disposal during 2014, the organic recycling requirements on businesses will expand to cover businesses that generate two cubic yards or more of commercial solid waste per week. Additionally certain exemptions, previously discussed, may no longer be available if this target is not met.

Resources and Tools

- Find a Composter Near You. Locate compost and/or mulch facilities by county and feedstock accepted.
- CalRecycle's food scraps management site provides information by generator (e.g., household, healthcare, hotels, universities).
- CalRecycle's conversion technologies site for organics materials management has multiple resources including list of anaerobic digestion projects, guidance, a listserv, and program news. These and other resources are all accessible from CalRecycle's organics home page, which is regularly updated.
- Stay up to date on CalRecycle's proposed regulations on Compostable Materials, Transfer/Processing by signing up for the related listerv.
- USEPA Food Recovery Challenge. Participants reduce wasted food through prevention, donation, composting, and anaerobic digestion.
- USEPA's Reducing Wasted Food & Packaging Toolkit. The free toolkit includes a PDF guide and a tracking tool (Excel spreadsheet) to help food service facilities identify and implement opportunities to reduce food and packaging waste, which saves money and reduces environmental impacts.

Last updated: January 27, 2015
Contact: LAMD@CalRecycle.ca.gov (916) 341-6199

CalRecycle Compost and Mulch Facility List by County

March 9, 2014

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Alameda	Bio Fuels Systems	01-AA-0311	Livermore	Green Materials, Wood waste
Alameda	Commercial Waste & Recycling	01-AA-0300	Oakland	Green Materials, Wood waste
Butte	Chico Greenwaste Composting Facility	04-AC-0020	Chico	Green Materials, Wood waste
Butte	Earthworm Soil Factory	04-AA-0025	Durham	Green Materials, Wood waste
Butte	Town of Paradise Vegetative Waste Fac	04-AA-0026	Paradise	Green Materials, Wood waste
Colusa	Premier Mushrooms	06-AA-0024	Colusa	Agricultural, Manure
Contra Costa	Hamilton Tree Services, Inc.	07-AA-0067	Martinez	Green Materials, Wood waste
Contra Costa	Atlas Tree Service, Inc.	07-AA-0070	Concord	Green Materials, Wood waste
Contra Costa	Expert Tree Services	07-AA-0069	Orinda	Green Materials, Wood waste
Contra Costa	Fahy Tree Service	07-AA-0059	Richmond	Agricultural, Green Materials, Wood waste
Contra Costa	WCCSLF Organic Materials Processing	07-AA-0044	Richmond	Construction/demolition, Food Wastes, Green Materials, Sludge (BioSolids), Wood waste
Contra Costa	Woodmill Recycling Company	07-AA-0062	Byron	Green Materials, Wood waste
Del Norte	ECO Nutrients, Inc. Composting Operation	08-AA-0023	Crescent City	Green Materials, Wood waste
Fresno	Gallo Vineyards, Inc Compost Facility	10-AA-0182	Fresno	Agricultural, Green Materials
Fresno	Harris Ranch Feeding Company	10-AA-0193	Coalinga	Agricultural, Manure
Fresno	West Coast Waste	10-AA-0197	Fresno	Green Materials, Wood waste
Glenn	Compost Solutions, Inc.	11-AA-0034	Orland	Agricultural, Green Materials, Manure, Sludge (BioSolids)

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Glenn	Valley Gold Compost	11-AA-0019	Orland	Manure, Green Materials
Humboldt	City Of Arcata Compost Facility	12-AA-0101	Arcata	Green Materials, Sludge (BioSolids)
Humboldt	Cold Creek Compost, Inc.	23-AA-0029	Ukiah	Agricultural, Ash, Food Wastes, Green Materials, Manure
Humboldt	Eel River Disposal and Resource Recovery	12-AA-0113	Fortuna	Agricultural, Green Materials, Wood waste
Imperial	Brandt Company (Composting)	13-AA-0093	Calipatria	Agricultural, Liquid Waste, Manure
Imperial	Bull Enterprise, Inc., Moiola Yard	13-AA-0100	Brawley	Agricultural, Manure
Imperial	Bull Enterprises, Inc. El Toro	13-AA-0104	Heber	Agricultural, Manure
Imperial	Dune Spreading LLC dba Imperial Compost	13-AA-0108	Brawley	Agricultural, Green Materials, Manure
Imperial	Dune Spreading, LLC	13-AA-0095	Brawley	Agricultural, Manure
Imperial	SpreadCo. Inc.- Phillips	13-AA-0115	El Centro	Agricultural, Manure
Imperial	Superior Cattle Feeders, LLC	13-AA-0102	Calipatria	Agricultural, Manure
Kern	Community Recycling & Resource Rec Inc.	15-AA-0307	Lamont	Agricultural, Food Wastes, Green Materials, Sludge (BioSolids)
Kern	Grimmway Farms Composting - Lancaster	15-AA-0375	Rosamond	Agricultural, Manure
Kern	Liberty Composting Inc.	15-AA-0287	Lost Hills	Agricultural, Food Wastes, Green Materials, Manure, Sludge (BioSolids)
Kern	McFarland-Delano R/TS CMHO	15-AA-0387	Delano	Green Materials, Mixed municipal
Kern	Mt Vernon Ave Recycling & Composting Fac	15-AA-0311	Bakersfield	Food Wastes, Green Materials, Wood waste
Kern	South Kern Industrial Center Compost Fa	15-AA-0381	Taft	Agricultural, Green Materials, Manure, Sludge (BioSolids)
Kings	Kochergen Farms Composting	16-AA-0022	Avenal	Food Wastes, Green Materials
Lake	South Lake Resource Recovery and Compost	17-AA-0014	Clearlake	Agricultural, Food Wastes, Green Materials
Los Angeles	C&M Topsoil Inc.	19-AR-1259	Sylmar (In Los Angeles)	Green Materials, Manure
Los Angeles	Cal Blends Inc.	19-AA-1126	Irwindale	Green Materials, Wood waste

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Los Angeles	Foothill Soils, Inc.	19-AA-5608	Newhall (In Santa Clarita)	Green Materials, Wood waste
Los Angeles	Gardeners Community Service	19-AR-1248	North Hollywood (In Los Angeles)	Green Materials, Wood waste
Los Angeles	Griffith Park Composting Facility	19-AA-0855	Los Angeles (City)	Sludge (BioSolids), Manure, Green Materials
Los Angeles	Lancaster Reclaimable Anerobic Composter	19-AA-1124	Lancaster	Food Wastes, Green Materials, Wood waste
Los Angeles	Lopez Canyon Environmental Center	19-AR-1222	Los Angeles (City)	Green Materials, Manure
Los Angeles	Los Angeles Equestrian Center	19-AA-1098	Los Angeles (City)	Agricultural, Manure
Los Angeles	Ornelas Wood Recovery, Inc.	19-AA-1079	Lancaster	Green Materials, Wood waste
Los Angeles	Pebbly Beach (Avalon) Disposal Site	19-AA-0061	Avalon	Food Wastes, Green Materials
Los Angeles	Rancho Las Virgenes Composting Facility	19-AA-1037	Calabasas	Sludge (BioSolids), Green Materials, Wood waste
Los Angeles	RJ's Alondra Chipping and Grinding Op	19-AA-1116	Gardena	Green Materials, Wood waste
Marin	Point Reyes Compost Co. LLC	21-AA-0062	Point Reyes Station	Agricultural, Manure
Marin	Redwood Landfill	21-AA-0001	Novato	Food Wastes, Green Materials, Wood waste
Marin	Redwood Landfill, Inc	21-AA-0066	Novato	Food Wastes, Green Materials
Marin	Thermopile Research Composting Operation	21-AA-0061	Nicasio	Agricultural, Green Materials, Manure
Marin	West Marin Compost	21-AA-0063	Nicasio	Green Materials, Manure
Marin	WM Earthcare of Marin	21-AA-0068	Novato	Agricultural, Food Wastes, Green Materials, Sludge (BioSolids)
Mariposa	Mariposa Co. Composting Facility	22-AA-0013	Mariposa	Agricultural, Green Materials, Manure, Mixed municipal, Wood waste
Merced	Billy Wright Composting Facility	24-AA-0029	Los Banos	Agricultural, Green Materials
Merced	D.A.T.T	24-AA-0039	El Nido	Agricultural, Manure

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Merced	El Nido Composting Facility-Synagro West	24-AA-0011	El Nido	Agricultural, Manure, Sludge (BioSolids)
Merced	Foster Farms Manure Storage Facility	24-AA-0017	Atwater	Agricultural, Manure
Merced	Ken Stone #3	24-AA-0040	Merced	Agricultural, Manure
Merced	Kenneth Stone & Family Spreading Service	24-AA-0024	Winton	Manure, Agricultural
Merced	Nakashima Farms Composting #1	24-AA-0031	Livingston	Agricultural, Manure
Merced	Nakashima Farms Composting #2	24-AA-0032	Livingston	Agricultural, Manure
Merced	Stone Family El Nido Composting Facility	24-AA-0019	Merced	Manure, Agricultural, Green Materials
Merced	Valley Fresh Foods Inc.	24-AA-0023	Merced	Manure, Agricultural
Monterey	Central Coast Compost LLC	27-AA-0102	Gonzales	Agricultural, Green Materials, Manure
Monterey	Converted Organics of California, LLC	27-AA-0109	Gonzales	Agricultural, Food Wastes, Green Materials
Monterey	Eade Ranch	27-AA-0095	San Lucas	Agricultural, Green Materials, Manure
Monterey	Gabilan Ag Services	27-AA-0085	Marina	Agricultural, Food Wastes, Green Materials
Monterey	Guziks Good Humus	27-AA-0086	Gonzales	Agricultural, Green Materials, Manure
Monterey	Monterey Peninsula Landfill	27-AA-0010	Marina	Food Wastes, Green Materials, Sludge (BioSolids), Wood waste
Monterey	Salinas Mushroom, Inc.	27-AA-0101	Salinas	Agricultural, Manure
Monterey	SmartFerm Pilot Research Composting AD	27-AA-0121	Marina	Food Wastes, Green Materials
Napa	Buchli Station	28-AA-0045	Napa	Green Materials, Other designated
Napa	Clover Flat LF-Research Composting Op.	28-AA-0046	Calistoga	Food Wastes, Green Materials
Napa	Clover Flat Resource Recovery Park	28-AA-0002	Calistoga	Food Wastes, Green Materials
Napa	Grgich Hills Cellar- American Canyon	28-AA-0048	American Canyon	Agricultural, Manure, Other designated

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Napa	Joseph Phelps Vineyards	28-AA-0037	Saint Helena	Green Materials, Manure
Napa	Opus One	28-AA-0041	Oakville	Agricultural, Green Materials
Napa	Upper Valley Recycling Research Op.	28-AA-0042	Saint Helena	Agricultural, Green Materials, Manure
Nevada	McCourtney Road Large Volume T.S.	29-AA-0010	Grass Valley	Green Materials, Wood waste
Orange	Baker Canyon Green Recycling	30-AB-0390	Silverado	Green Materials, Manure
Orange	La Pata Avenue Greenwaste Facility	30-AB-0364	San Juan Capistrano	Agricultural, Construction/demolition, Wood waste
Orange	R&S Soil Products, Inc. Irvine	30-AB-0461	Irvine	Green Materials, Wood waste
Orange	Rancho Mission Viejo Compost Facility	30-AB-0448	San Juan Capistrano	Agricultural, Green Materials
Orange	Serrano Creek Ranch Composting Op.	30-AB-0405	Lake Forest	Agricultural, Green Materials
Orange	Tierra Verde Industries EcoCentre	30-AB-0403	Irvine	Food Wastes, Green Materials, Wood waste
Placer	Green Solutions and More, Inc.	31-AA-0638	Lincoln	Green Materials, Wood waste
Placer	Mallard Creek, Inc.	31-AA-0637	Rocklin	Manure, Wood waste
Riverside	A Lua Recycling, Inc.	33-AA-0308	Lake Elsinore	Green Materials, Wood waste
Riverside	Agriscape, Incorporated	33-AA-0307	Lakeview	Green Materials, Wood waste
Riverside	Edom Hill Transfer Station	33-AA-0296	Cathedral City	Construction/demolition, Green Materials
Riverside	Imperial Western Products, Inc.	33-AA-0302	Coachella	Green Materials, Wood waste
Riverside	M.B. Organics, Inc. Galway	33-AA-0310	Temecula	Agricultural, Green Materials, Manure
Riverside	Mc Anally Enterprises, LLC	33-AA-0299	Lakeview	Dead Animals, Manure
Riverside	R.A. Nelson MRF/TS Pilot Food/Green Wast	33-AA-0319	Riverside	Food Wastes, Green Materials

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Riverside	Rios Recycling Facility	33-AA-0355	Riverside	Green Materials, Wood waste
Riverside	Southern California Landscape Supply	33-AA-0326	San Jacinto	Green Materials, Manure
Riverside	Southern California Landscape Supply 2	33-AA-0345	San Jacinto	Food Wastes, Green Materials, Manure
Riverside	Southern California Recycling	33-AA-0297	Thousand Palms	Construction/demolition, Green Materials
Sacramento	Clean World Partners Anaerobic Digesters	34-AA-0230	Sacramento	Food Wastes, Other designated
Sacramento	GP Landscapes	34-AA-0222	Sacramento	Green Materials, Wood waste
Sacramento	K&M Recycling	34-AA-0191	Sacramento	Construction/demolition, Green Materials
Sacramento	Lopez Ag Service, Inc.	34-AA-0203	Sacramento	Agricultural, Construction/demolition, Green Materials
Sacramento	Nilsen Farms Composting	34-AA-0219	Sloughhouse	Agricultural, Green Materials
San Benito	Clean Green Recycling	35-AA-0029	Hollister	Green Materials, Wood waste
San Benito	Comgro, Inc.	35-AA-0026	Hollister	Agricultural, Manure
San Benito	Herbert Compost Operation	35-AA-0021	Hollister	Agricultural, Green Materials, Manure
San Benito	Phil Foster Ranch Composting Operation	35-AA-0025	Hollister	Agricultural, Green Materials, Manure
San Bernardino	Agromin Chino Green Mat. Composting Op.	36-AA-0476	Chino	Green Materials, Wood waste
San Bernardino	Artesia Sawdust Products	36-AA-0426	Ontario	Green Materials, Wood waste
San Bernardino	Beneficial Ag. Services	36-AA-0470	Ontario	Green Materials, Manure, Wood waste
San Bernardino	Ecology Auto Parts	36-AA-0457	Rialto	Green Materials, Wood waste
San Bernardino	Ft. Irwin Composting Facility	36-AA-0413	Fort Irwin (Mil Res)	Food Wastes, Green Materials, Manure, Sludge (BioSolids), Wood waste

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
San Bernardino	Inland Empire Regional Composting Fac.	36-AA-0423	Rancho Cucamonga	Green Materials, Sludge (BioSolids)
San Bernardino	Nursery Products Hawes Composting Fac.	36-AA-0445	Hinkley	Green Materials, Sludge (BioSolids)
San Bernardino	One Stop Landscape Supply Center	36-AA-0308	Redlands	Sludge (BioSolids), Agricultural, Wood waste
San Bernardino	Partida Fertilizer	36-AA-0480	Ontario	Agricultural, Manure
San Bernardino	Recycled Wood Products	36-AA-0471	Ontario	Green Materials, Manure, Wood waste
San Bernardino	RWP Recycled Wood Products Ontario 2	36-AA-0477	Ontario	Green Materials, Manure
San Bernardino	Victor Valley Regional Composting Fac.	36-AA-0403	Victorville	Agricultural, Construction/ demolition, Food Wastes, Green Materials, Liquid Waste, Manure, Mixed municipal
San Bernardino	Viramontes Express	36-AA-0441	Chino	Green Materials, Wood waste
San Bernardino	West Valley Materials Recvr y Facility	36-AA-0341	Fontana	Food Wastes, Green Materials
San Diego	El Corazon Compost Facility	37-AA-0907	Oceanside	Food Wastes, Green Materials, Liquid Waste
San Diego	Hanson Aggregates A-1 Soils	37-AA-0949	Lakeside	Agricultural, Manure
San Diego	Inland Pacific R.R. Slaughterhouse Yard	37-AA-0957	Lakeside	Green Materials, Wood waste
San Diego	Inland Pacific Resource Recovery Hwy 67	37-AA-0960	Lakeside	Green Materials, Wood waste
San Diego	Miramar Greenery	37-AB-0003	San Diego	Agricultural, Food Wastes, Green Materials, Manure, Wood waste
San Diego	Otay Mesa Compost Facility	37-AA-0988	San Diego (in County of San Diego)	Agricultural, Green Materials, Manure, Wood waste
San Diego	Plants Choice Comp Material Handling Op	37-AA-0975	Chula Vista	Green Materials, Wood waste

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
San Diego	San Pasqual Valley Soils	37-AB-0015	San Diego	Green Materials, Manure
San Diego	TreeSource Recycling	37-AA-0989	Ramona	Green Materials, Wood waste
San Joaquin	Forward Resource Recovery Facility	39-AA-0020	Manteca	Agricultural, Ash, Food Wastes, Green Materials, Liquid Waste, Manure, Sludge (BioSolids), Wood waste
San Joaquin	Green Man Materials	39-AA-0055	Stockton	Green Materials, Wood waste
San Joaquin	Haley Farms Compost Operation	39-AA-0046	Tracy	Agricultural, Manure
San Joaquin	Harvest-Lathrop	39-AA-0051	Lathrop	Agricultural, Food Wastes, Green Materials
San Joaquin	Recology Grover Environmental Products	50-AA-0020	Vernalis	Food Wastes, Green Materials
San Joaquin	Recology Stockton	39-AA-0045	Stockton	Green Materials, Wood waste
San Joaquin	SKS Enterprises	39-AA-0050	Clements	Agricultural, Green Materials, Manure
San Joaquin	Tracy Material Recovery & T.S.	39-AA-0024	Tracy	Food Wastes, Green Materials
San Luis Obispo	B. Goodrow, Inc. Composting	40-AA-0037	Creston	Food Wastes, Green Materials
San Luis Obispo	Cold Canyon Landfill GrnMatCompFac	40-AA-0017	San Luis Obispo	Agricultural, Construction/demolition, Green Materials, Wood waste
San Luis Obispo	Winsor Woodyard	40-AA-0042	Cambria	Green Materials, Wood waste
San Mateo	Redwood Debris Box Green Waste Operation	41-AA-0196	Redwood City	Green Materials, Wood waste
Santa Barbara	Engel & Gray Inc	42-AA-0053	Santa Maria	Agricultural, Food Wastes, Green Materials, Sludge (BioSolids)
Santa Barbara	Green/Wood Waste Grinding	42-AA-0073	Santa Barbara	Green Materials, Wood waste
Santa Barbara	Health Sanitation Services	42-AA-0067	Santa Maria	Green Materials, Wood waste
Santa Barbara	MarBorg Green Waste Recycling Facility	42-AA-0070	Santa Barbara	Green Materials, Wood waste
Santa Barbara	Santa Lucia Farms	42-AA-0075	Santa Ynez	Agricultural, Green Materials, Manure
Santa Barbara	Santa Ynez Valley Recycling & Trans Stat	42-AA-0063	Los Olivos	Green Materials, Wood waste

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Santa Barbara	South Coast Recycling & Transfer Station	42-AA-0014	Santa Barbara	Green Materials, Wood waste
Santa Clara	ABC Recycle, LLC	43-AN-0035	San Jose	Construction/demolition, Green Materials, Inert, Wood waste
Santa Clara	B and D Mushrooms, Inc.	43-AA-0027	San Martin	Agricultural, Manure
Santa Clara	Countryside Mushrooms, Inc.	43-AA-0028	Gilroy	Agricultural, Manure
Santa Clara	Del Toro Wood Grinding	43-AA-0033	Gilroy	Green Materials, Wood waste
Santa Clara	Global Mushrooms Farm	43-AA-0022	Gilroy	Agricultural, Manure
Santa Clara	Green Earth Management, LLC	43-AN-0030	San Jose	Green Materials, Wood waste
Santa Clara	Newby Island Compost Facility	43-AN-0017	San Jose	Food Wastes, Green Materials
Santa Clara	PSSI Ag. Material Storage / Handling Op.	43-AA-0029	Stanford	Agricultural, Green Materials, Manure
Santa Clara	Royal Oaks Mushrooms	43-AA-0024	Morgan Hill	Agricultural, Manure
Santa Clara	South Valley Mushroom Farm	43-AA-0026	Morgan Hill	Agricultural, Manure
Santa Clara	South Valley Organic Composting Facility	43-AA-0017	Gilroy	Food Wastes, Green Materials
Santa Clara	Z-Best Composting Facility	43-AA-0015	Gilroy	Agricultural, Food Wastes, Green Materials, Manure, Mixed municipal
Santa Clara	Zero Waste to Energy Development Co. AD	43-AN-0033	San Jose	Agricultural, Food Wastes, Green Materials, Mixed municipal, Wood waste
Santa Cruz	Ben Lomond LF Wood Waste Chipping Op	44-AA-0009	Ben Lomond	Green Materials, Wood waste
Santa Cruz	Buena Vista Drive Sanitary Landfill	44-AA-0004	Watsonville	Green Materials, Wood waste
Santa Cruz	City of Santa Cruz Resource Recovery Fac	44-AA-0001	Santa Cruz	Green Materials, Wood waste
Santa Cruz	City Of Watsonville Landfill	44-AA-0002	Watsonville	Green Materials, Wood waste
Santa Cruz	Rodoni Farms Agricultural Composting Op.	44-AA-0013	Santa Cruz	Agricultural, Green Materials
Solano	Biogas Energy Project	48-AA-0092	UC Davis	Agricultural, Food Wastes, Green Materials, Manure

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Solano	CCL Organics LLC	48-AA-0090	Benicia	Construction/demolition, Green Materials, Wood waste
Solano	Jepson Prairie Organics Composting Fac	48-AA-0083	Vacaville	Agricultural, Food Wastes, Green Materials
Solano	Potrero Hills Compost Facility	48-AA-0084	Suisun City	Green Materials, Wood waste
Sonoma	Atlas Tree Waste Recycling	49-AA-0393	Sebastopol	Green Materials, Wood waste
Sonoma	Carneros River Ranch	49-AA-0407	Petaluma	Agricultural, Manure
Sonoma	Dolcini Brothers Composting Operation Ag	49-AA-0395	Petaluma	Agricultural, Green Materials
Sonoma	Grab N` Grow	49-AA-0369	Santa Rosa	Agricultural, Green Materials, Manure
Sonoma	Poncia Fertilizer	49-AA-0403	Santa Rosa	Agricultural, Manure
Sonoma	Reichert Duck Farm	49-AA-0394	Petaluma	Agricultural, Manure
Stanislaus	Central Valley Agricultural Grinding,Inc	50-AA-0024	Riverbank	Green Materials, Wood waste
Stanislaus	City Of Modesto Co-Compost Project	50-AA-0018	Modesto	Food Wastes, Green Materials, Sludge (BioSolids)
Stanislaus	City of Turlock Water Qual. Control Fac	50-AA-0021	Turlock	Green Materials, Sludge (BioSolids)
Stanislaus	Gilton Resource Recovery Composting Fac.	50-AA-0016	Modesto	Agricultural, Construction/demolition, Industrial, Mixed municipal, Tires
Stanislaus	John Brichetto Compost Site A	50-AA-0029	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site B	50-AA-0030	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site C	50-AA-0031	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site D	50-AA-0032	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site E	50-AA-0033	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
Stanislaus	John Brichetto Compost Site F	50-AA-0034	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site G	50-AA-0035	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site H	50-AA-0036	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site I	50-AA-0037	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site J	50-AA-0038	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site K	50-AA-0039	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site L	50-AA-0040	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site M	50-AA-0041	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site N	50-AA-0042	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Stanislaus	John Brichetto Compost Site O	50-AA-0043	Oakdale	Agricultural, Ash, Green Materials, Manure, Other designated
Tulare	City of Porterville Grn Waste Operation	54-AA-0047	Porterville	Green Materials, Wood waste
Tulare	Harvest Power California, LLC	54-AA-0026	Tulare	Agricultural, Food Wastes, Green Materials, Wood waste
Tulare	Oakview Dairy	54-AA-0046	Tulare	Agricultural, Green Materials
Tulare	Pena`s Disposal, Inc. Green Material	54-AA-0048	Cutler	Green Materials, Wood waste
Tuolumne	Triple J Farms	55-AA-0013	Jamestown	Agricultural, Manure, Wood waste
Ventura	Agromin Organics Recy. Composting Fac.	56-AA-0165	Oxnard	Agricultural, Food Wastes, Green Materials, Manure, Wood waste
Ventura	Agromin Organics Recycling	56-AA-0138	Port Hueneme	Green Materials, Wood waste
Ventura	Agromin Organics Recycling	56-AA-0169	Oxnard	Agricultural, Food Wastes, Green

County	Facility Name	Facility (SWIS) ID	City	Feedstocks Accepted
	(SmartFerm)			Materials
Ventura	American Soil Amendment Products	56-AA-0171	Simi Valley	Manure, Wood waste
Ventura	Farm Share Playa Vista Research	56-AA-0170	La Conchita	Agricultural, Food Wastes, Green Materials
Ventura	Farm Share- Playa Vista	56-AA-0168	La Conchita	Agricultural, Green Materials
Ventura	Limoneira / Agromin Ag. Composting Op	56-AA-0147	Santa Paula	Agricultural, Green Materials, Wood waste
Ventura	McGrath Farm	56-AA-0156	Camarillo	Agricultural, Green Materials
Ventura	The California Mushroom Farm, Inc.	56-AA-0149	Ventura (San Buenaventura)	Agricultural, Green Materials
Yolo	Clean World Anaerobic Digester UC Davis	57-AA-0038	Davis	Food Wastes, Green Materials
Yolo	Northern Recycling Compost-Research Proj	57-AA-0037	Zamora	Food Wastes, Green Materials
Yuba	Feather River Organics	58-AA-0015	Marysville	Food Wastes, Green Materials
Yuba	Mushroom Adventures	58-AA-0029	Marysville	Agricultural, Manure
Yuba	Sun Gro Horticulture	58-AA-0023	Olivehurst	Green Materials, Wood waste

California Anaerobic Digestion Projects (a partial list, October 2014)

Project Name	City or County	Feedstocks	Digestion Type	Status	Project Website
East Bay Municipal Utilities District	Oakland	Food, Biosolids, & fats, oils, and grease	Wet	Operational	http://www.ebmud.com/water-and-wastewater/environment/food-scraps-recycling
Inland Empire Utilities Agency - Environ	Chino	Food Waste	Wet	Operational	http://www.cce.csus.edu/conferences/CalRecycle/lea_tts11/docs/Presentations/31_13A_AnaerobicMcNamara.pdf
Monterey Zero Waste Energy	Marina	Green and Food waste	Dry	Operational	http://zerowasteenergy.com/what-we-do/our-projects/monterey-regional-waste-management-district/
Sacramento Regional Sanitation	Elk Grove	Food waste, Biosolids, & fats, oils, and grease	Wet	Operational	http://www.regionalsan.com/biogas-enhancement-project
Clean World - American River Packaging	Sacramento	Food Waste, cardboard & other	High Solids	Operational	http://www.cleanworld.com/case-studies/
Kroger/Ralphs - Compton Distribution Center	Compton	Food Waste	Wet	Operational	http://feedresource.com/
Central Marin Food to Energy	San Rafael	Food Waste	Wet	Operational	http://baywork.org/wp-content/uploads/2013/12/Central-Marin-Food-to-Waste.pdf
Clean World - Sacramento Digester	Sacramento	Green and Food waste	High Solids	Operational	http://www.cleanworld.com/case-studies/
Zero Waste Energy Development	San Jose	Green and Food waste	Dry	Operational	http://zwedc.com/
North State Rendering	Oroville	Agricultural, food waste and grease	Wet	Operational	http://www.biogas-energy.com/
Los Angeles Sanitation Districts AD Pilot	Carson	Food waste & Biosolids	Wet	Operational	http://www.calrecycle.ca.gov/Listservs/Archive/MessageDetail.aspx?ListPostingID=8200
UC Davis Renewable Energy Anaerobic Digester	Davis	Green and Food waste & manure	High Solids	Operational	http://www.cleanworld.com/case-studies/
Blue Line Zero Waste Energy	South San Francisco	Green and Food waste	Dry	Commissioning	http://zerowasteenergy.com/what-we-do/our-projects/south-san-francisco-scavengers-blueline/
CR&R Material Recovery Facility	Perris	Green and Food waste and MRF Residuals	High Solids Plug-flow	Construction	http://www.calrecycle.ca.gov/Organics/Conversion/Events/Digesting12/Relis.pdf
Colony Energy Partners	Tulare	Waste Organics - TBD	Wet	Permitting	http://www.colonyenergypartners.com/tulare-bio-gas/
Agromin Zero Waste Energy	Oxnard	Green and Food waste	Dry	Permitting	http://zerowasteenergy.com/what-we-do/our-projects/monterey-regional-waste-management-district/
Tajiguas Landfill	Santa Barbara County	Green and Food waste	TBD	Permitting	http://www.calrecycle.ca.gov/Organics/Conversion/Events/Digesting12/Schleich.pdf
City of Napa Materials Recovery Facility	American Canyon	Green and Food waste	Dry	Permitting	http://napacity.granicus.com/MetaViewer.php?view_id=2&clip_id=1091&meta_id=63712
Anaergia - Republic Material Recovery Facility	Anaheim	Green and Food waste	Wet	Permitting	http://www.calrecycle.ca.gov/Listservs/Archive/MessageDetail.aspx?ListPostingID=8941
Tracy Material Recovery Facility	Tracy	Green and Food waste	NA	Permitting	http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=1046&aiid=958
Tulare Harvest Power	Tulare County	Green, Food and Agricultural waste	Dry	Permitting	http://harvestpower.com/ca/tulare/
Recology Hay Road AD project	Solano County	Green and Food waste	Dry	Permitting	http://www.treasurer.ca.gov/caeatfa/staff/2014/20140715/4a.pdf
Encina Waste Water Plant	Carlsbad	Food, Biosolids, & fats, oils, and grease	Wet	Permitting	http://www.prweb.com/releases/2014/01/prweb11497996.htm

For corrections and additions please contact Jacques Franco at jacques.franco@calrecycle.ca.gov

CalRecycle

Recycling Facility Financing Seminar
CalRecycle Financing Programs

CalRecycle

Policy Drivers

- **AB 939 (enacted 1989)**
  - **50% Per Capita Jurisdiction Mandate**
- **AB 341 (enacted 2011)**
  - **75% Statewide Goal**
- **AB 32 (enacted 2006)**
  - **Reduced greenhouse gas emissions**

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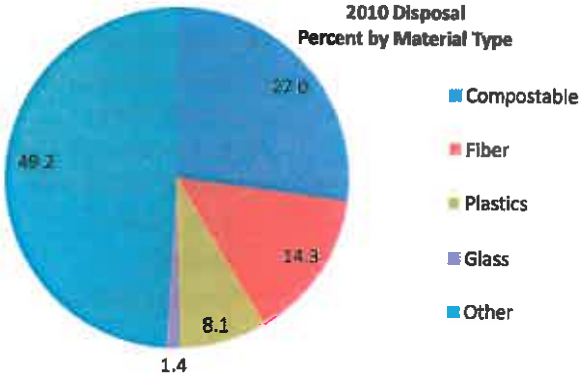
Materials Landfilled



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Projected 2020 tonnages to reach 75% recycling

CalRecycle

Greenhouse Gas Reduction Fund (FY 14/15)

Section I - Grants

- Organics Grant Program - $15 million
- Fiber, Plastic, & Glass Grant Program - $5 million

Section II - Loans

- Organics, Fiber, Plastic, & Glass Loan Program - $5 million

Recycling Market Development Zone Fund

Section III – RMDZ Loans

- Recycling Market Development Zone Loan Program - $10 million

Section I. Greenhouse Gas Reduction Grants

Competitive grant program to reduce GHGs and divert materials from landfills by expanding existing capacity or establishing new facilities in California; also address disadvantaged communities

Organics

- To reduce green materials, food materials, and/or Alternative Daily Cover sent to landfills.

Fiber, Plastics, & Glass (FPG)

- To reduce fiber, plastic, or glass materials sent to landfills.

Greenhouse Gas Reduction Grants Eligibility

Eligible Applicants

- Government entities: cities, counties, regional or local sanitation agencies, water agencies & JPAs.
- Private, for-profit entities
- Operators of composting or anaerobic digestion facilities
- Nonprofit organizations
- State agencies
- State and UC universities
- Qualifying Indian Tribes

Eligible Projects

Construction, renovation or expansion of facilities in California that process:

- Compost
- Anaerobic digestion or other related digestion or fermentation processes.
- Fiber
- Plastic
- Glass

Greenhouse Gas Reduction Grants Criteria

Use of Grant Funds:

- Purchase of equipment
- Machinery
- Real Estate improvements associated with the installation/project

Project Readiness:

- Major permits in place or underway
- Environmental review mostly completed
- Work plan
- Budget
- Fiscal soundness

Greenhouse Gas Reduction Grants Cycle 1 (FY 14/15)

$20 Million Grants
Awarded November 18, 2014
¾ in disadvantaged communities
All 8 in RMDZs

Organics ($15M):
- CR& R Inc.
- Colony Energy Partners
- Mid Valley Disposal
- Recology East Bay Organics
- Burrtec Waste Industries, Inc.

Fiber Plastic Glass ($5M):
- Command Packaging
- Peninsula Plastics Recycling, Inc.
- Sonoco Products Company

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Greenhouse Gas Reduction Grants Cycle 2 (FY 15/16)

$25 Million Proposed (~$20 Million Grants, ~$5 Million Loans)
Subject to approval of 2015/16 State Budget

Tentative Grant Dates:
- Application release Spring 2015
- Due Date early Summer 2015
- Award Date late Fall 2015
- Grant Funding early 2016

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Section II. Greenhouse Gas Reduction Loans

Loan program to reduce GHGs and divert materials from landfills by expanding existing capacity or establishing new facilities in California; also address disadvantaged communities

Organics (first call on loan $)
- To reduce green materials, food materials, and/or Alternative Daily Cover sent to landfills.

Fiber, Plastics, & Glass (FPG) (if $ available)
- To reduce fiber, plastic, or glass materials sent to landfills.

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Greenhouse Gas Reduction Loans Eligibility

Eligible Applicants
- Government entities: cities, counties, & JPAs.
- Private, for-profit entities
- Operators of composting or anaerobic digestion facilities
- Nonprofit organizations

Ineligible Loan Applicants
- State Agencies
- State and UC universities
- Qualifying Indian Tribes
- Regional or local sanitation agencies, water agencies

Eligible Projects

Construction, renovation or expansion of facilities in California that process:
- Compost
- Anaerobic digestion or other related digestion or fermentation processes.
- Fiber
- Plastic
- Glass

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Greenhouse Gas Reduction Loans Criteria

Use of Loan Funds:

- Purchase of equipment
- Machinery
- Real Estate improvements associated with the installation/project

Project Readiness:

- Major permits in place or underway
- Environmental review mostly completed
- Work plan
- Budget
- Fiscal soundness

GHG analysis required

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Greenhouse Gas Reduction Loans Cycle 1 (FY 14/15)

- Application due December 1, 2014
- Available funds $4.6 million
- Applications are under review
- Loan Committee March 12, 2015
- Awards April 2015

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Greenhouse Gas Reduction Loans Cycle 2 (FY 15/16)

Tentative

- Application release March 2015 $2.9 million
- Additional $4.6 million available July 1, 2015
- First come first serve basis
- Funding within four months for fully completed applications

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Section III. Recycling Market Development Zones

- Partnership between locals and state
- Both financial and non-financial assistance
- Business must be in one of 36 zones
- Zones cover 88,000 sq. miles from Oregon border to San Diego
- New zone applications available after March 1, 2015, for additional cities and counties to participate

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RMDZ Loans

Purpose is to divert materials from landfills by expanding existing capacity or establishing new facilities in Calif.

- Program combines recycling with economic development to site or expand facilities, create jobs, and divert waste from landfills.
- RMDZ administrators assist with local siting, permitting, feedstock, marketing, and business technical assistance.
- No GHG reduction requirement.

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RMDZ Loan Program Statistics

- Available funds – currently $10 million in FY 14/15
- Funded 181 loans to 142 companies totaling $127 million since in 1993.
- Jobs directly created from loans -- approximately 2,000 since 1993.

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RMDZ Loans Eligibility

Eligible Applicants

- Private, for-profit entities
- Operators of composting or anaerobic digestion facilities
- Nonprofit organizations

Ineligible Loan Applicants

- Government Entities
- State and UC universities
- Indian Tribes
- Regional or local sanitation agencies, water agencies

Eligible Projects

Construction, renovation or expansion of facilities in California that process:

- Compost
- Anaerobic digestion or use other related digestion or fermentation processes to turn green or food materials into value-added products.
- Fiber
- Plastic
- Glass
- Other non-hazardous waste that is landfilled in California.

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RMDZ Loans Criteria

Use of Loan Funds:

- Purchase of equipment
- Machinery
- Real Estate improvements associated with the installation/project
- Working capital
- Onerous Debt

Project Readiness:

- Major permits in place or underway
- Environmental review mostly completed
- Work plan: clear & concise
- Budget
- Fiscal soundness
- Application completeness

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RMDZ Loans
Application Dates

- Ongoing application process
- Currently $7 Million available for 2014/15

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GHG and RMDZ Loan Programs
Terms in Common

- Interest rate 4%
- Maximum loan amount: $2 million each loan, but no more than $5 million combined GHG and RMDZ loans.
- Loan terms up to 10 years, or 15 years when secured by real estate
- No prepayment penalty cost

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GHG and RMDZ Loan
Underwriting Requirements

1. Operator work and education experience
2. Ability to repay the loan
3. Adequacy of collateral
4. Business owner guarantee(s) or Letter of Credit
5. Required Match: 25%

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Contacts

- Business Assistance: Marshalle Graham
  (916) 341-6270 or marshalle.graham@calrecycle.ca.gov
  LAMD@calrecycle.ca.gov
- Loan Staff: Chris Houlemard
  (916) 341-6729 or chris.houlemard@calrecycle.ca.gov
  Loans@calrecycle.ca.gov
- Grants Staff: Davina Cadiz
  (916) 323-6029 or divina.cadiz@calrecycle.ca.gov
  Grants@calrecycle.ca.gov

- http://www.calrecycle.ca.gov/Climate/GrantsLoans/
- http://www.calrecycle.ca.gov/RMDZ/

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Agenda Item VII

SOLID WASTE REGULATORY UPDATES

03/04/2015

State to Receive $1.8 Million Settlement In Beverage Container Recycling Fraud Case

SACRAMENTO – A Los Angeles-area recycling business will pay $1.8 million in restitution to the state's Beverage Container Recycling Program as part of a settlement agreement resulting from illegal claims for refunds on out-of-state bottles and cans.

As part of the agreement with the Department of Resources Recycling and Recovery (CalRecycle), Action Sales and Metal, Inc. and owner Bruce Falk will be barred from future participation in the program. CalRecycle received $845,000 of the settlement on Wednesday, when the agreement was signed; the outstanding $955,000, seized from the business by law enforcement during two separate investigations, will be released to CalRecycle within 30 days.

The settlement comes on the heels of an investigation by CalRecycle, the California Department of Justice, and the Los Angeles County Sheriff's Department.

"CalRecycle is dedicated to protecting the Beverage Container Recycling Fund and going after people who steal from the program," CalRecycle Director Caroll Mortensen said. "These are public funds—they are owed to consumers who pay CRV when they buy beverages and then return the containers for recycling. We will vigorously pursue these investigations, and we won't back down until perpetrators are held accountable for their actions."

In 2012 the Los Angeles County Sheriff's Department's Metals Theft Unit began investigating a group that was suspected of importing used beverage containers from Arizona and redeeming them at Action Sales and Metal, in the Wilmington area of Los Angeles, for California Redemption Value refunds. During a search of an area storage facility on June 22, 2012, LACSD officers found receipts indicating Action Sales and Metal had paid more than $700,000 in CRV to the suspects for ineligible material. The group's leader, Marcos Vega, was arrested and ultimately pleaded guilty to illegal refund claims and sentenced to 90 days custody, three years' probation, and $15,000 in restitution.

While the LACSD was investigating Vega and his connection with Action Sales and Metal, the California Department of Justice was conducting a parallel investigation, based on a referral from CalRecycle, on another group of people suspected of transporting loads of aluminum and plastic beverage containers to Action Sales and Metal for illegal CRV claims.

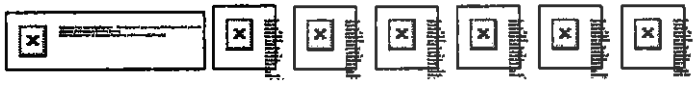
On June 21, 2012, DOJ agents followed a rental truck carrying several thousand pounds of used beverage containers from Mesa, Ariz., to a residence in Wilmington. The next day, agents observed as the load was divided into smaller quantities and taken to Action Sales and Metal, where the material was redeemed for CRV. Four people later were arrested, including recycling center owner Bruce Falk, who was held on $1 million bail.

Falk was charged with recycling fraud, conspiracy, and grand theft, and indicted by a grand jury at the Los Angeles Criminal Court. In May 2014, the jury deadlocked on the charges against Falk but found Action Sales and Metal, Inc. guilty of conspiracy to commit a crime, grand theft of personal property, and recycling fraud.

On Wednesday, Action Sales and Metal, Falk, and CalRecycle agreed to a settlement requiring Action Sales to pay CalRecycle $1.8 million in restitution and to be removed from the Beverage Container Recycling Program. As part of the negotiated settlement, the charges against Falk were dismissed.

California's bottle bill provides an incentive for beverage container recycling by establishing a CRV of 5 cents for containers less than 24 ounces and 10 cents for containers 24 ounces or larger. However, CRV only applies to beverages in qualifying containers that were purchased within California, since the recycling fee is added to the price of the beverages sold in the state. Out-of-state containers are not eligible for CRV.

CalRecycle is undertaking a major and multipronged effort to protect the recycling fund, including new approaches to curb fraud. Much of the emphasis is on preventing fraud before it occurs, such as enhanced training of recycling center owners, increased scrutiny of payment claims, and regulations that reduce the number of containers an individual can bring to a recycling center in a single day. New regulations also now require importers of out-of-state containers to enter California through California Department of Food and Agriculture agricultural inspection stations, declare they are importing empty beverage container materials, complete an Imported Material Report form and submit to an inspection by CDFA agents.

Connect with us! 

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CalRecycle is the state's leading authority on recycling, waste reduction, and product reuse. CalRecycle plays an important role in the stewardship of California's vast resources and promotes innovation in technology to encourage economic and environmental sustainability. For more information, visit www.calrecycle.ca.gov

Please direct all questions, comments, and concerns to BCRPgenerallistserv@CalRecycle.ca.gov. Unsubscribe from the Beverage Container Recycling Program: General list.

Informal Workshop To Discuss Potential Changes To Proposed Compostable Materials, Transfer/Processing Regulations in Response to Stakeholder Comments

Tuesday, March 3, 2015
1:00 p.m. – 3:00 p.m.

Cal/EPA Headquarters
Training Room 1 East/West
1001 I Street
Sacramento, California

Workshop Agenda

1. Workshop Objectives
2. Formal Rulemaking Process Update
3. Overview of Comments/Options for Response
4. Discussion/Q&A
5. Next Steps
6. Adjourn

Workshop Objectives

Provide overview of stakeholder comments on key issues

Discuss options for changes to proposed regulations in response those comments

Formal Rulemaking Process

- Economic and Fiscal Impact Analysis
- Initial Statement of Reasons
- 45 day comment period
- Public Hearing
- Text Changes In Response to Comments
- Comment Period(s)
- Adoption
- Prepare Final Rulemaking File
- Office of Administrative Law Review & Approval (October 2015)
- Regulations Become Operative

Overview of Comments/ Options for Response

17868.3.1. & 17896.61. Physical Contamination Limits

- Commenter's suggested options:
  - Remove % limit; let market decide what is acceptable
  - Phase in
  - Different limits for [compostable material applied to land] and [compost]
  - Separate limits for [film plastic] and [glass, metal, hard plastic]
  - Workgroup
  - Labels ("The percentage of physical contaminants in this material exceeds X limit")
- Other Issues:
  - Sampling and analysis concerns (reproducible; confidence level)

17852.(a)(24.5) Land Application

- Commenter's suggested options:
  - Add definition of "Food Processing By-Product" and exclude from disposal and land application definitions
  - Place responsibility for meeting metals, pathogen, and contamination limits on specific party
  - Move "Note" language in the regulation
  - Clarify depth limit applies to "surface" depth
  - On agricultural land, allow more flexibility for alternate frequencies and depths

17868.1. & 17896.58. Sampling Requirements

- Commenter's suggested options:
  - Mandate testing but do not require lab results prior to material leaving the site
  - If material leaves site prior to receipt of lab results, operator liable if results indicate non-compliance
  - Clarify verification of environmental health standards occurs once compost is removed from site or beneficially used on-site

17852.(a)(5) Agricultural Material

- Commenter's suggested options:

"Food processing byproducts include solid or semi-solid materials from fruit, nut, and vegetable processing facilities such as stems, leaves, seeds, nut hulls and shells, peels, and off-grade or over-ripe or under-ripe produce that could not be used in the finished products. The byproducts may have incidental amounts of residual soil but do not include packaging material, trash, metal, glass, or toxic materials other than in de minimis amounts. Food processing solid byproducts do not include wastewater."

17852.(a)(15) Disposal

- Commenter's suggested options:
  - Clarify storage limitations
  - Clarify subdivisions 2 and 3 apply to material stored on land other than at the point of generation

17852.(a)(20) Food Material

- Commenter's suggested options:
  - Remove proposed definition (including vegetative food material) and keep existing food material definition

17852.(a)(27.5) Nuisance

- Commenter's suggested options:
  - Remove "entire community or neighborhood" language from the definition
  - Define the term "entire community"
  - Revise definition to make consist with Health and Safety code 41700

17863.4.1. Odor Best Management Practice Feasibility Report

- Commenter's suggested options:
  - Clarify timeframe for the submittal of the Report, associated plan, and schedule
  - Specify a timeframe for the EA to review the results of the Odor Best Management Practice Feasibility Report
  - Increase the timeframe for the operator to submit the Report, associated plan, and schedule to the EA

18302. Written Complaints and Alleged Violations

- Commenter's suggested options:
  - Specify subdivision (d) applies only to odor complaints from compostable material handling operations and facilities

17862. & 17896.8. Research Composting and In-Vessel Digestion Operations

- Commenter's suggested options:
  - Allow additional extensions to research operations as determined by the EA
  - Increase the limit of two year research periods

17855. Excluded Activities

- Commenter's suggested options:
  - Increase allowable square footage for small scale, excluded activities
  - Allow excluded agricultural activities to import some food material or vegetative food material

17896.2. Definitions

- Commenter's suggested options:
  - Add definition of "Rendering"

17896.6. Excluded Activities

- Commenter's suggested options:
  - Add exclusion for Dairy In-vessel Digesters w/ WDRs that import agricultural material and/or vegetative food material; limit pre-processing

Discussion/Q&A

Next Steps

Information on Rulemaking Process

Compostable Materials, Transfer/Processing Rulemaking
http://www.calrecycle.ca.gov/Laws/Rulemaking/Compost/default.htm

Compostable Materials, Transfer/Processing Rulemaking Listserv
http://www.calrecycle.ca.gov/Listservs/

Send comments to Ken Decio at Ken.Decio@CalRecycle.ca.gov

Adjourn

Water Quality Fees Stakeholder Meeting

DATE:	Friday, February 13, 2015
TIME:	10:00 am – 12:00 pm
LOCATION:	Cal/EPA Headquarters 1001 I Street, Sacramento, CA 95814 Sierra Hearing Room, 2nd Floor
WEBCAST LINK:	http://www.calepa.ca.gov/broadcast/
QUESTIONS:	Fee_Branch@waterboards.ca.gov – Questions received prior to and during the meeting will be addressed during the meeting unless otherwise requested.

AGENDA

1. Welcome and Introductions
2. Waste Discharge Permit Fund Condition (Attachment 1)
3. Waste Discharge Permit Fund Budget Cost Drivers (Attachment 2)
4. Budget Expenditure Allocation Charts by Program (Attachment 3)
5. Presentation on State Water Board's Annual Performance Report
   http://www.waterboards.ca.gov/about_us/performance_report_1314/index.shtml
6. Open Discussion

WDPF Fund Condition ($000)

									Forecast	
	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16
BEGINNING BALANCE	$19,131	$17,288	$9,795	$8,204	$6,604	$10,774	$6,403	$3,799	$8,531	$7,718
Prior Year Adjustments[1]	$1,247	$1,807	($56)	($3,010)	$2,097	($1,913)	($713)	$1,132		
Restricted Revenue[2]								($5,016)	($229)	($229)
Adjusted Beginning Balance	$20,378	$19,095	$9,739	$5,194	$8,701	$8,861	$5,690	($85)	$8,302	$7,489
Revenue										
Regulatory Fees	$62,435	$60,958	$77,340	$74,902	$74,864	$97,064	$99,037	$117,158	$119,734	$120,176
Penalty Assesments								$1,212	$229	$229
Other[3]	$2,622	$3,038	$2,027	$900	$630	$2,647	$393	$102	$75	$75
Total Revenue	$65,057	$63,996	$79,367	$75,802	$75,494	$99,711	$99,430	$118,472	$120,038	$120,480
Expenditures										
Water Board State Operations	$67,651	$72,977	$80,597	$74,079	$72,693	$101,546	$100,480	$107,433	$118,404	$117,859
Local Assistance[4]								$1,610	$1,800	$1,800
Other State Operations[5]	$496	$319	$305	$313	$728	$623	$841	$813	$419	$543
Marijuana (Cannabis)[6]									$1,800	
Water Recycling[6]							$262	$331	$406	$408
Regional Water Planning[6]									$501	$503
Drinking Water[6]										$498
Cal/EPA[7]									$1,500	
Total Expenditures	$68,147	$73,296	$80,902	$74,392	$73,421	$102,169	$101,583	$110,187	$124,829	$121,611
Non-Fee Expenditure Adj[8]							($262)	($331)	($4,207)	($1,409)
Total Fee Program Expenditures	$68,147	$73,296	$80,902	$74,392	$73,421	$102,169	$101,321	$109,856	$120,623	$120,202
Gain/(Loss)	($3,090)	($9,300)	($1,535)	$1,410	$2,073	($2,458)	($1,891)	$8,616	($585)	$278
ENDING BALANCE	**$17,288**	**$9,795**	**$8,204**	**$6,604**	**$10,774**	**$6,403**	**$3,799**	**$8,531**	**$7,718**	**$7,767**
Fund Reserve	25.4%	13.4%	10.1%	8.9%	14.7%	6.3%	3.7%	7.7%	6.2%	6.4%

Footnotes:

[1] Most adjustments represent unspent contract dollars that revert to the Fund.

[2] Restricted revenue is revenue received from fines and penalties that must be expended on cleanup and abatement activities.

[3] Other revenue includes fines and penalties, interest from the state's pooled money investment fund, and escheat from unclaimed checks.

[4] Local Assistance for Beach Monitoring

[5] Other state operations includes appropriations for Cal/EPA, FI$CAL, and the State Controller's Office.

[6] Legislative Augmentation. Funded by revenue received from fines and penalties.

[7] Cal/EPA language penalty. No impact to fee programs.

[8] Total budgeted expenditures that do not impact fees.

WDPF Budget Cost Drivers
FY 2015-16 ($000)

WDPF Program	FY 14-15 Base Budget[1]	Staff Cost Adjustments[2]	BCP & Program Adjustments	FY 15-16 Budget[3]	Revenue Forecast FY 15-16	Forecasted FY 15-16 Revenue Increase / (Decrease)	Total Revenue FY 15-16	Average Program Percent Change
WDR	$26,887	$528	$0	$27,416	$27,147	$268	$27,416	1.0%
LD - No Tipping Fee	$11,058	$217	$0	$11,275	$11,288	($13)	$11,275	-0.1%
LD - Tipping Fee	$3,707	$73	$0	$3,780	$3,688	$91	$3,780	2.5%
401 Cert	$7,106	$131	$0	$7,236	$7,169	$67	$7,236	0.9%
NPDES	$29,626	$544	$0	$30,171	$30,022	$149	$30,171	0.5%
Storm Water	$29,559	$857	$381	$30,797	$31,998	($1,201)	$30,797	-3.8%
CAF	$4,490	$88	$0	$4,579	$4,484	$95	$4,579	2.1%
ILRP	$4,312	$94	$0	$4,405	$4,380	$25	$4,405	0.6%
TOTAL	**$116,745**	**$2,532**	**$381**	**$119,658**	**$120,176**	**($518)**	**$119,658**	**-0.4%**

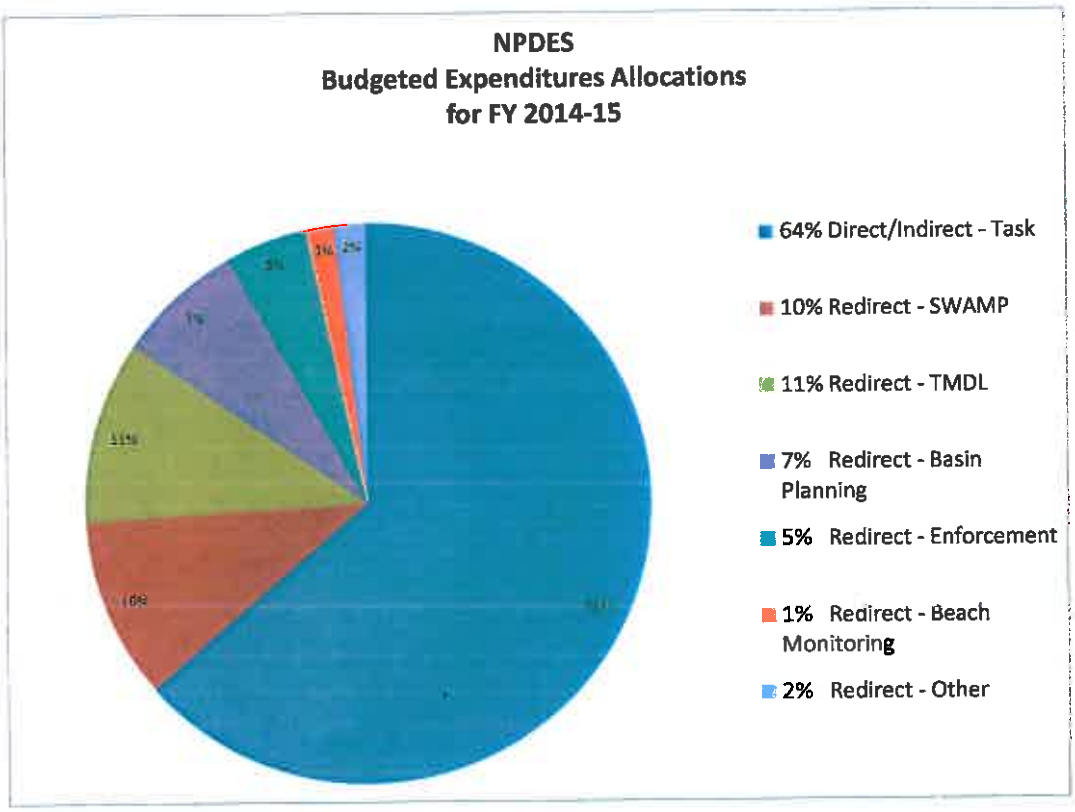
Footnotes:

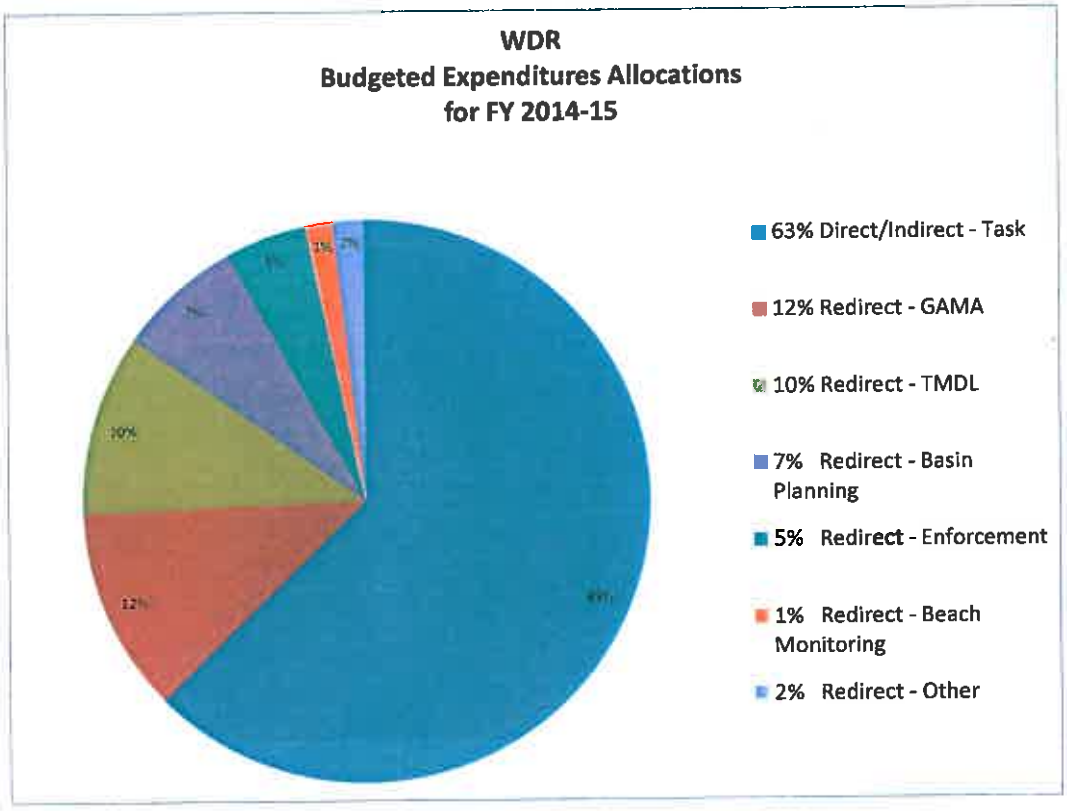
[1] Includes redirected expenditures for programs like Basin Planning, TMDL, monitoring and enforcement.

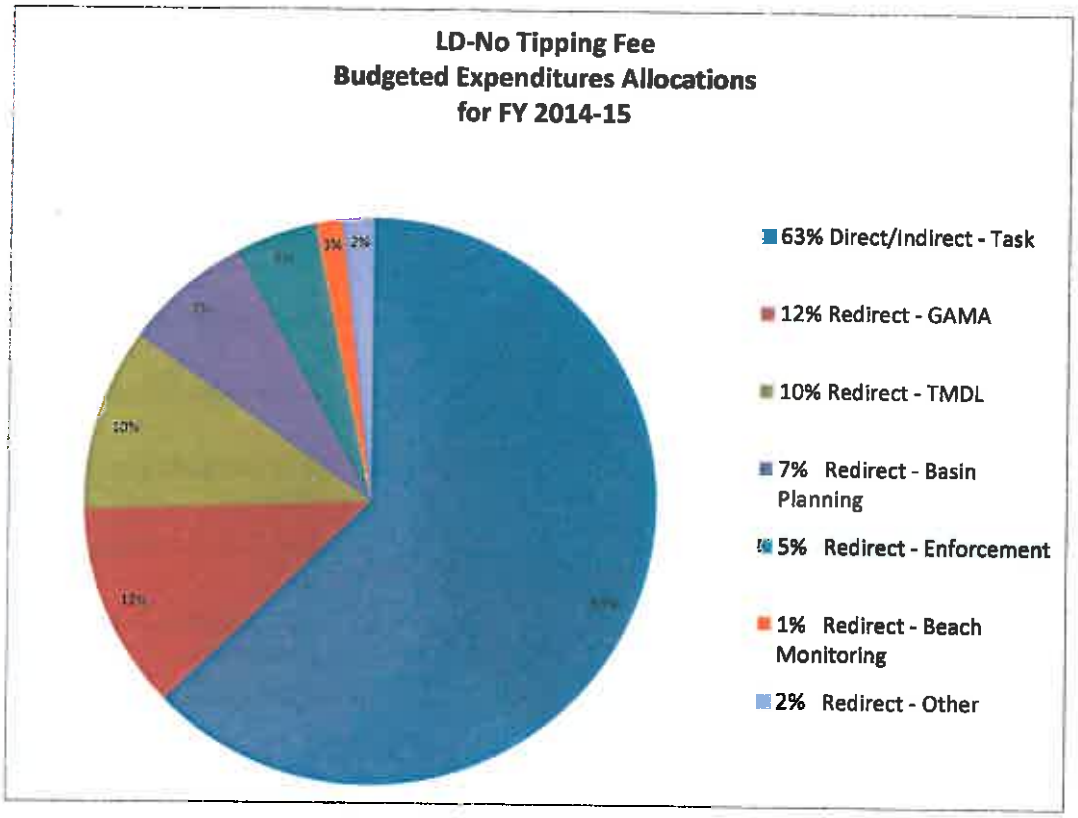
[2] Includes employee compensation, retirement, health care costs and pro rata.

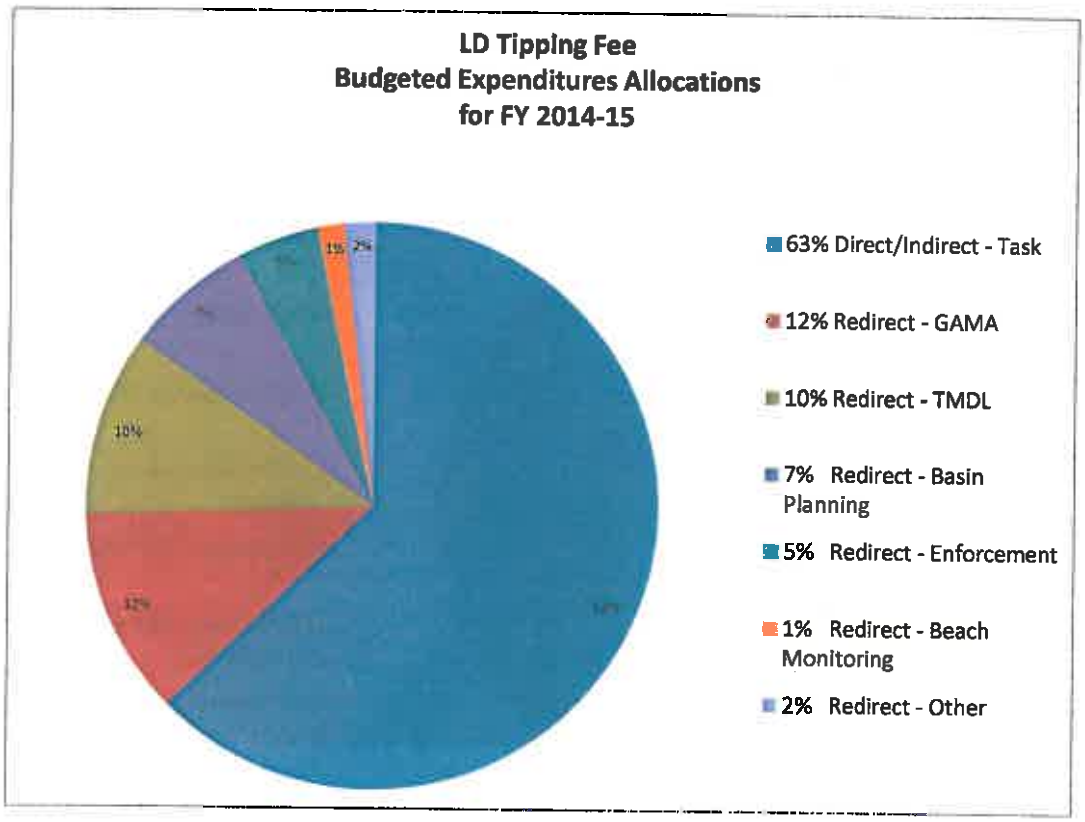
[3] Base budget plus staff cost adjustments and program adjustments.

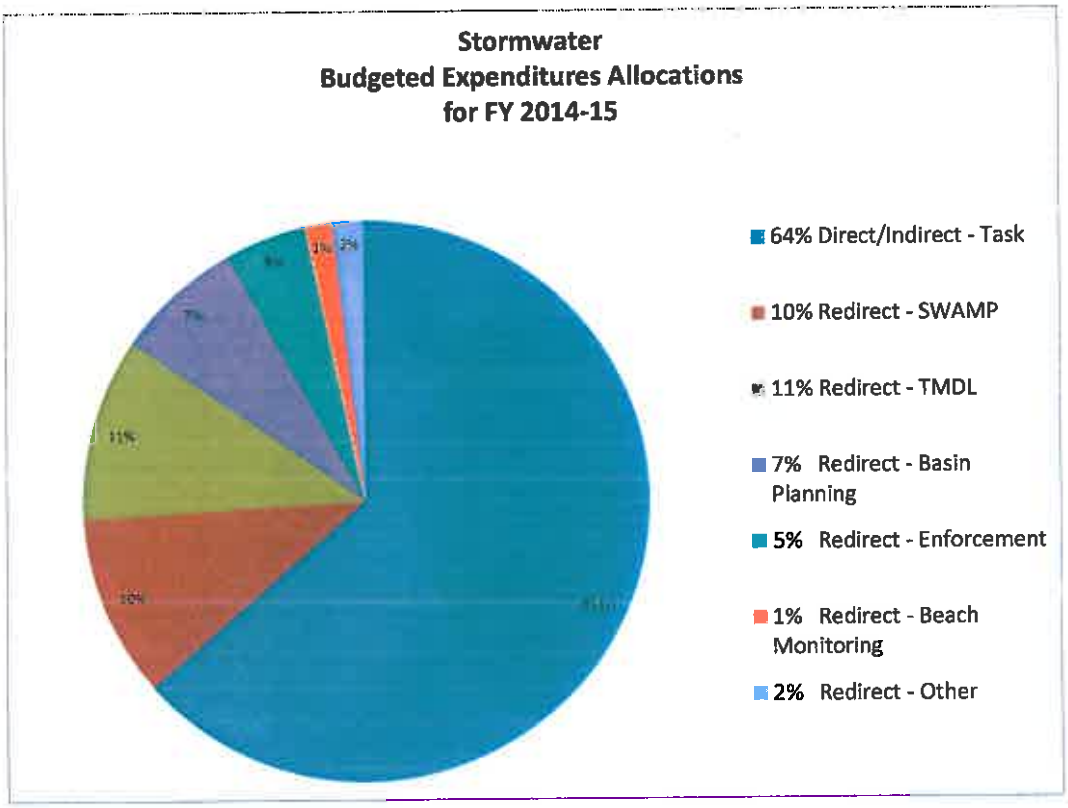
FY 15-16 Primary Expense Changes:	Change Amount:
Pro Rata/Health Care/Retirement	$2,532,000
BCP Storm Water Resource Planning	$381,000
	$2,913,000

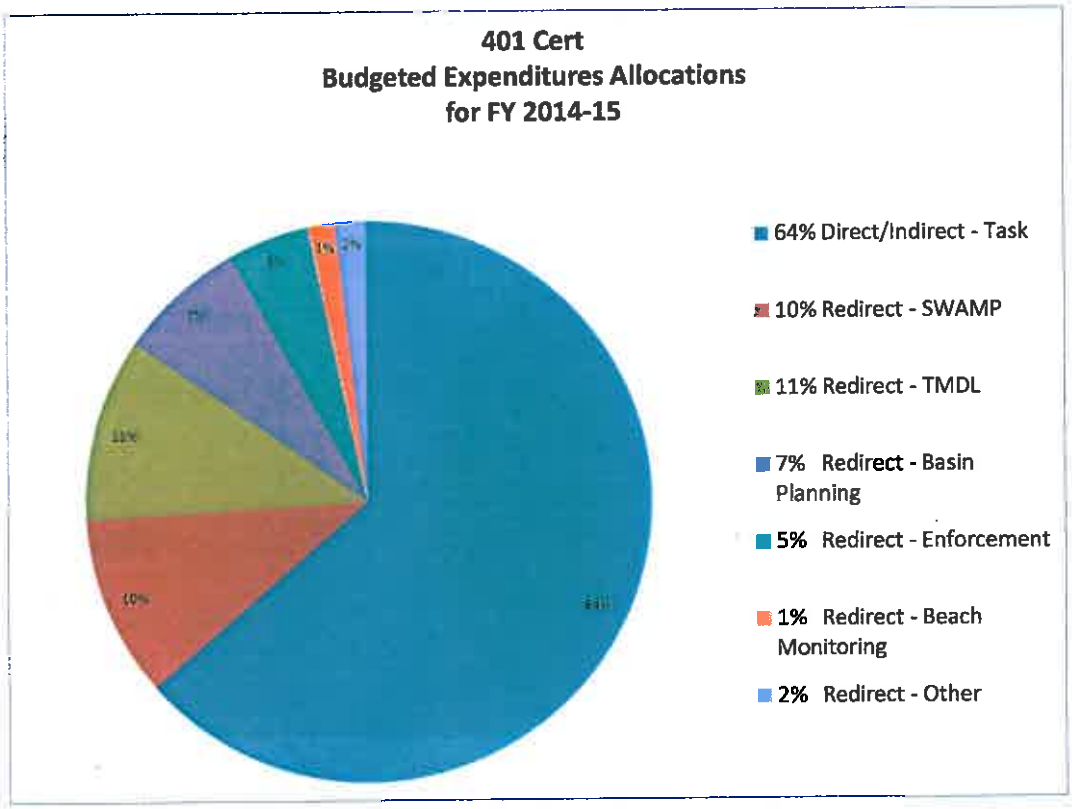

NPDES
Budgeted Expenditures Allocations
for FY 2014-15
64% Direct/Indirect - Task
10% Redirect - SWAMP
11% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other

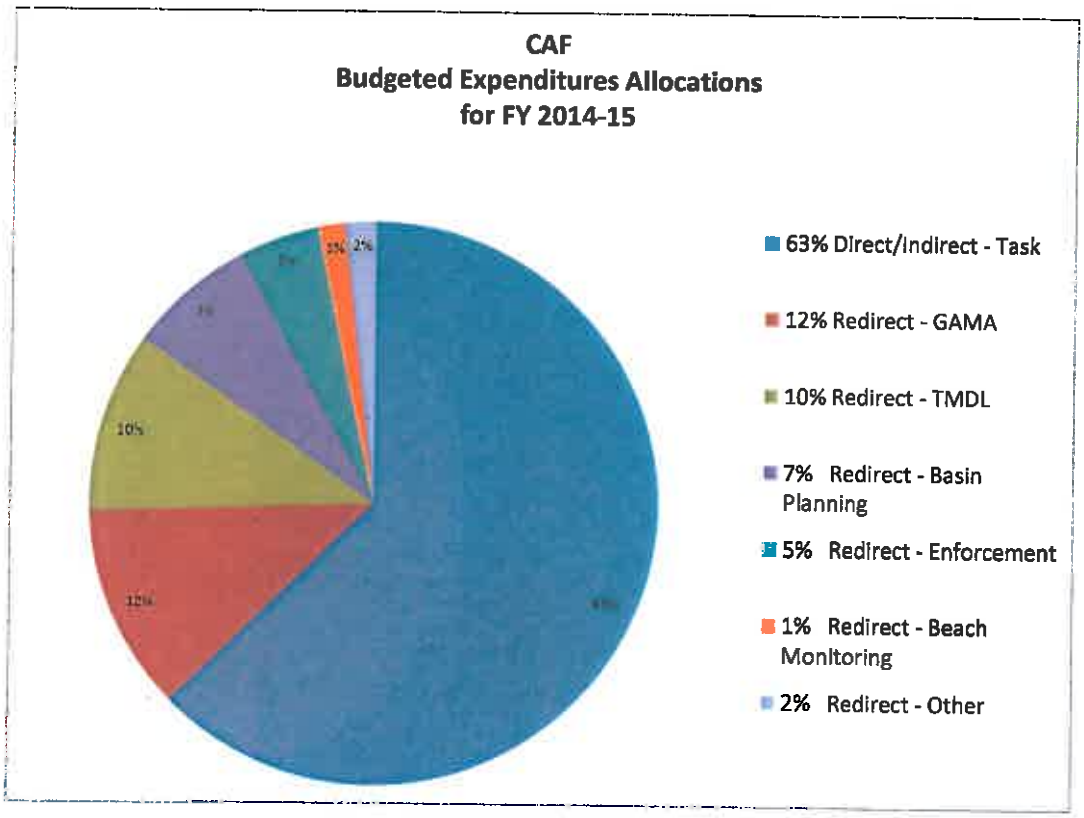

WDR
Budgeted Expenditures Allocations
for FY 2014-15
63% Direct/Indirect - Task
12% Redirect - GAMA
10% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other

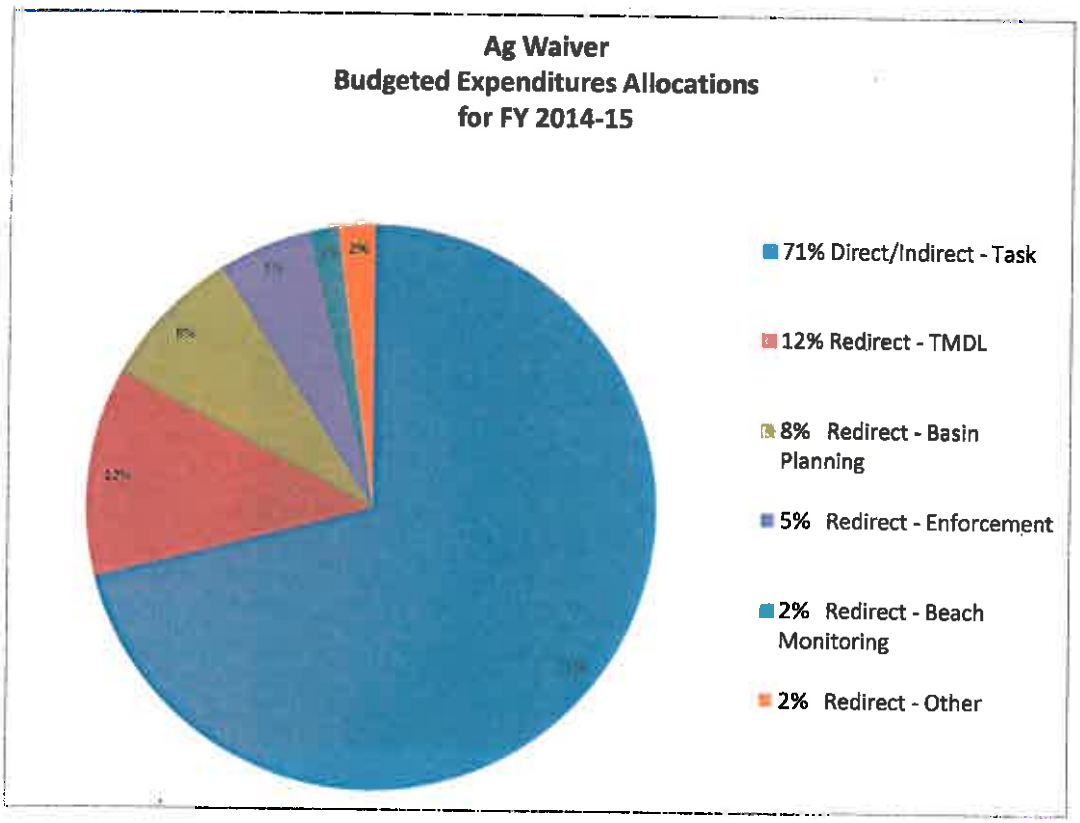

LD-No Tipping Fee
Budgeted Expenditures Allocations
for FY 2014-15
63% Direct/Indirect - Task
12% Redirect - GAMA
10% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other


LD Tipping Fee
Budgeted Expenditures Allocations
for FY 2014-15
63% Direct/Indirect - Task
12% Redirect - GAMA
10% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other


Stormwater
Budgeted Expenditures Allocations
for FY 2014-15
64% Direct/Indirect - Task
10% Redirect - SWAMP
11% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other


401 Cert
Budgeted Expenditures Allocations
for FY 2014-15
64% Direct/Indirect - Task
10% Redirect - SWAMP
11% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other


CAF
Budgeted Expenditures Allocations
for FY 2014-15
63% Direct/Indirect - Task
12% Redirect - GAMA
10% Redirect - TMDL
7% Redirect - Basin Planning
5% Redirect - Enforcement
1% Redirect - Beach Monitoring
2% Redirect - Other


Ag Waiver
Budgeted Expenditures Allocations
for FY 2014-15
71% Direct/Indirect - Task
12% Redirect - TMDL
8% Redirect - Basin Planning
5% Redirect - Enforcement
2% Redirect - Beach Monitoring
2% Redirect - Other

Industrial General Permit Overview

State Water Resources Control Board
Division of Water Quality
Industrial/Construction Storm Water Unit

Industrial Permit Timeline

- 1991 – State Water Board adopts Industrial General Permit (92-12)
- 1997 - State Water Board adopts Industrial General Permit (97-03-DWQ – "current permit")
- 2003-2005 – Prior draft IGPs, Blue Ribbon Panel of Experts address the feasibility of Numeric Effluent Limits, development of SMARTS electronic information system.
- 2011-2013 – State Water Board hearings on previous drafts of the permits
- April 1, 2014 – State Water Board adopted the Industrial General Permit
- Effective Date July 1, 2015

ELECTRONIC REPORTING AND THE PERMIT

STORM WATER MULTIPLE APPLICATION AND REPORT TRACKING SYSTEM (SMARTS)

Electronic Filing Requirements

- Effective date July 1, 2015 NOI Coverage
- October 1 2015 NEC Coverage
- Streamlined Annual Report
- Sampling and Analysis
- Technical Reports
- Terminations
- Changes of Information

Storm Water Pollution Prevention Plan (SWPPP) Requirements

Minimum Best Management Practices (BMPs) Section X.H

- Implementation of the minimum BMPs (mostly non-structural) to the extent feasible required
- Represents common practices at industrial facilities
- Basis for compliance with technology-based effluent limitations and water quality based receiving water limitations.

Advanced BMPs Section X.H.2

- Mostly structural and exceed the performance expectation of minimum BMPs
- Required to meet design storm standards
- Consists of: treatment control BMPs, exposure reduction BMPs, and storm water containment and discharge reduction BMPs
- Utilize advanced BMPs that infiltrate or reuse storm water (where feasible)

Design Storm Standards for Treatment Control BMPs Section X.H.6

- 85th percentile 24-hour storm standard for both volume- and flow-based criteria.
- LA SUSMP requirement and CASQA BMP Manual
- Requires local historical rainfall records
- Dischargers are not required to retrofit existing treatment control BMPs until possibly in Level 2

Other SWPPP Changes

- Temporary Suspension of Industrial Activities
- Monitoring Implementation Plan

Changes to Monitoring

- Monthly observations of NSWDs
- Sampling Events (including bypass and contained storm water)
- New Definition: Qualifying Storm Event

Monitoring Requirements

Sampling Protocols
Section XI.B

- Two QSEs from July 1 to December 31st and two QSEs from January 1 to June 30 of the Reporting Year
- During scheduled facility operating hours
- From each drainage location within four hours or the start of scheduled facility operating hours if the QSE occurred in the previous twelve (12) hours.

Other Monitoring Requirements

- pH screening
- Alternative Discharge Locations
- Representative Sampling Reduction
- Qualified Combined Samples
- Sample Frequency Reduction

Baseline Status

- Numeric Action Levels
- Minimum BMPs/possibly Advanced BMPs
- Inspection, Implementation, Maintenance
- Visual Monitoring
- Sample 4 qualified storm events per reporting year

Section XII Exceedance Response Actions (ERA) Process

Numeric Action Levels (NALs)

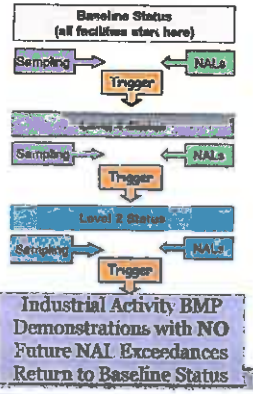
- Annual NAL exceedance

The **average** of all the analytical results for a parameter from samples taken within a reporting year exceeds an annual NAL value for that parameter

- Instantaneous maximum NAL exceedance

Two or more analytical results for TSS, O&G, or pH from samples taken within a reporting year exceed the instantaneous maximum NAL value (or is outside the NAL pH range).

EXCEEDANCE RESPONSE ACTIONS (ERAs)



Level 1 ERA Timeline

- Status changes - July 1
- Evaluation by October 1 Prior to implementation of BMPs or October 1, sampling not included in calculations for Level 2
- Level 1 Report (QISP, Evaluation, Summary Site/BMP changes in SWPPP) by January 1

Level 2 ERA Timeline

- Status changes next July 1
- Action Plan: QISP, facility plan for addressing exceedances, and a schedule - January 1
- Technical Report : QISP, Evaluation, Treatment/Structural BMPs implemented - January 1 of the next reporting year
- Implementation Extension: Regional Board approval required if over 6 months requested and submitted electronically

ERA Level 2 Demonstrations

The Level 2 ERA Technical Report can have one or more of the following:

- Industrial Activity BMP Demonstration (opportunity to return to baseline if exceedances eliminated)
- Non-Industrial Pollutant Source Demonstration
- Natural Background Demonstration

Training Qualifications
Section IX

- Dischargers shall appoint QISP – internal or external
- No prerequisites
- Training is not "intro to storm water"
- Only Dischargers with Level 1 and Level 2 status
- ERA reporting and Action Plan, New Dischargers with 303(d) impaired receiving waters

Training Timeline

- Industrial General Permit Training Team Feedback Forum February 27, 2014
- Trainers of Record July 2015
- QISP Enrollment by winter 2015

Training Qualifications
Section IX

- California licensed professional civil, industrial, chemical, and mechanical engineers and geologists
- Parallel and streamlined training process to be a QISP
- Inactive Mining Storm Water Pollution Prevention Plans (SWPPPs), NONA Technical Reports, and Subchapter N calculations

Compliance Groups
Section XIV

- Substantially similar industrial activities
- 50% sampling reduction
- Compliance Group Leaders - approved through the State Water Board approved training program "TOR"
- Inspect annually
- Prepare Level 1 and Level 2 ERA reports
- Executive Director may review the Groups

Section XIII Inactive Mining Operation Certification
SWPPP signed by a California licensed professional engineer
Certification relieves facility from monitoring, ERAs and Annual Reporting requirements
Submitted electronically, annual inspect and recertify
Significant changes to the facility require a California licensed professional engineer to sign off on the c

NONA – No Discharge Section XX.C

- Facility constructed to have no Discharge
- Facility located in a basin or other physical location that is not hydrologically connected to waters of the United States

Conditional Exclusion – No Exposure Certification (NEC) Section XVII

- Checklist - 11 categories of no exposure for industrial materials/activities
- No SWPPP or monitoring required
- Annual fee (low), inspection and recertification
- Regional Boards can deny if invalid

Total Maximum Daily Loads (TMDLs) Section VII.A

- Development of implementation language (Regional and State)
- Reopener – State Water Board to include by July 1, 2016
- Dischargers required to comply with these requirements

303(d) Impaired Water Bodies
Section VII.B

- New Dischargers ineligible for coverage unless parameter is:
  - Not exposed
  - Not present
  - Discharged but below a WQS
- Qualified Industrial Storm Water Practitioner
- Existing Dischargers – potential additional monitoring

Discharges to Areas of Special Biological Significance (ASBS)
Section VIII.B

- Dischargers granted an exception required to meet conditions in Attachment G
- Ineligible for coverage unless meet criteria

Discharges to Ocean Waters
Section VIII.A

- Dischargers with outfalls discharging to the ocean
- July 1, 2015 – develop monitoring plans, regional board assistance
- Dischargers required to comply with these requirements

Plastic Materials
Section XVIII

- AB 258 required control of preproduction plastics
- Ineligible for coverage unless criteria met virgin and recycled "preproduction" materials
- Requires containment (1 mm mesh meet peak flow rate from 1-yr 1-hour storm)
- If containment infeasible, alternative containment BMPs can be proposed
- Exemption from containment criteria (NEC, 8 BMPs)

Next Steps

- Adoption is just the beginning!
- Trainings – Water Board presentations on permit and SMARTS – Early 2015
- Re-enrolling Dischargers and PRDs
- Developing guidance (IGPTT, CASQA)
- Developing QISP Certification

Thank you

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lwarddrip@waterboards.ca.gov
916-341-5531

Regan Morey
rmorey@waterboards.ca.gov
916-323-8268

California Industrial General Permit Qualified Industrial Stormwater Practitioner (QISP) Training Program Overview

IGP WORKSHOPs 2015

TOPICS

- When is a QISP needed?
- QISP Prerequisites/Qualifications
- Training Program Development
- Timeline
- Planning Ahead
- Question and Answers

Water Boards

When is a QISP Needed?

- Dischargers shall appoint QISP – internal or external for:
  - Level 1 status reporting
  - Level 2 status reporting and Action Plan
  - New Dischargers with 303(d) impaired receiving waters

Water Boards

QISP Training Prerequisites

- No established prerequisites
- Training is not intended to cover entire IGP
- Trainees should have a good understanding of the IGP and Clean Water Act (CWA)
- Goal of trainee should be to learn more on how to implement new IGP requirements

Water Boards

Professional Engineers & Geologists

- California licensed professional civil, industrial, chemical, and mechanical engineers and geologists (CPBELSG)
  - Parallel and streamlined training process
  - No testing for becoming a QISP
- Professional Engineers required for:
  - Inactive Mining SWPPPs, NONA Technical Reports, and Subchapter N calculations

Water Boards

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QISP Training Program Development

Water Boards

Industrial General Permit Training Team (IGPTT)

- Sept 2012 – May 2013 SWRCB selected IGPTT Members through application process
- 15 IGPTT Members
- 10 – 15 Sub-Committee Seats
- 1-2 year commitment; 10 – 40 hours/month
- Regular meeting attendance
- August 1, 2013 – IGPTT Kickoff

Water Boards

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IGPTT Members

Arthur Deirke	Environmental Pollution Solutions
Brian Currier	CWP-CSUS
Calvin Noling	StormwaterR> LLC
Daniel Apt	RBF Consulting / CASQA
Geoff Brosseau	CASQA
Joan Greenwood	CSC Targhee, Inc
John Teravskis	WGR Southwest Inc
Kathleen Harrison	Geosyntec Consultants
Kelly Doyle	Rick Engineering Company
Larry Sweetser	Rural Counties ESJPA
Laurel Wardrip	State Water Board
Matt Lentz	GSI Environmental Inc/CASQA
Matthew Hoesch	CWP-CSUS
Matthew Zucca	Erler & Kalinowski, Inc
Michele Kinsan	ETIC Engineering Inc
Rich Muhl	RWQCB- 5 Sacramento
Tim Simpson	GSI Environmental Inc

Water Boards

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QISP Training Program

- QISP Training Program (non-CPBELSG)
  - Estimated 16 hours on-line, with quizzes
  - Online exam
  - 1 day classroom taught by Trainer of Record (TOR)
  - No test at completion of classroom
  - Fee for Training
  - QISP ID Number Issued
  - Recertification will likely be required

Water Boards

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QISP Training Program

- Includes photos, videos, outside resource links, quizzes
- Example "Site Scenarios" for practical application
- Completed at QISP candidate's own pace, but within 2 years of registering

Water Boards

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Classroom Training

- Review of on-line training material
- Provide opportunity for Q&A /discussion
- Demonstrations
- Case Studies

Water Boards

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QISP Examination

- Examination will address content covered during training via:
  - General questions regarding IGP
  - Questions using Site Scenarios to test practical understanding
- Examination will also test broader IGP and CWA knowledge

Water Boards

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QISP Training Timeline

- February 27, 2014 - Feedback Forum
- March 2015 – Trainer of Record (TOR)/CGLs RFQ
- June 15-16, 2015 – TOR/CGLs Training
- July 2015 - TORs/CGLs available
- Fall 2015 - Training Rollout
- Winter 2015 - QISP Enrollment

Water Boards

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Planning Ahead is Key!

- Review SWPPP and historical analytical results
- Evaluate areas for improvement
- Perform Level 1 ERA
- Implement improvements now to avoid ERA process
  - Avoid exposure
  - Avoid discharge
  - Implement minimum BMPs
  - Review sampling techniques and modify, if needed
  - Evaluate/Eliminate pollutant sources (run on, aerial deposition)

Water Boards

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Planning Ahead

- Get comfortable with electronic reporting
- Identify your team players
- Train facility staff
- Seek help!
  - Resources are available to help, not just penalize!

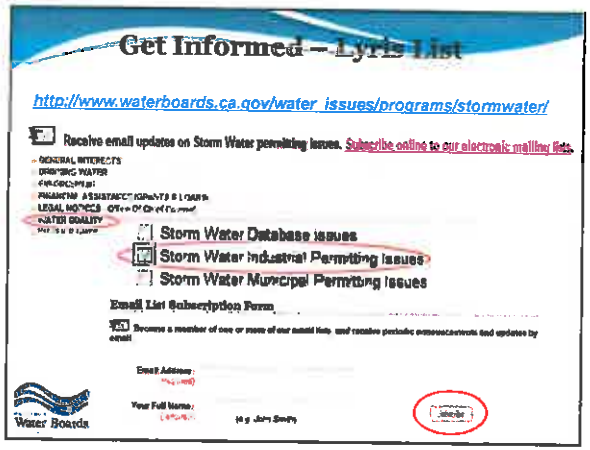
Water Boards

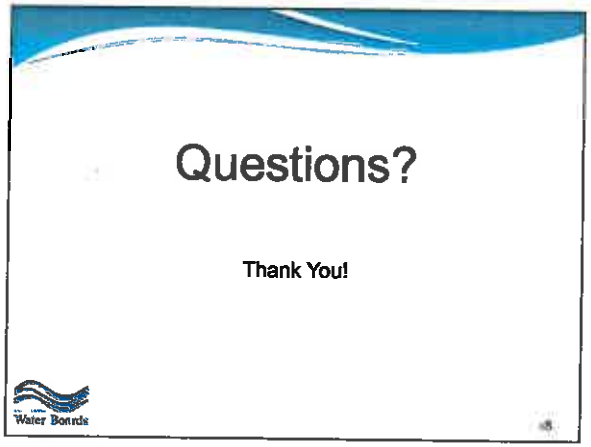
15

Contacting the Board

Water Boards

16


Get Informed – Lyris List
http://www.waterboards.ca.gov/water_issues/programs/stormwater/
Receive email updates on Storm Water permitting issues. Subscribe online to our electronic mailing lists.
WATER QUALITY
Storm Water Database Issues
Storm Water Industrial Permitting Issues
Storm Water Municipal Permitting Issues
Email List Subscription Form
Water Boards


Questions?
Thank You!
Water Boards

DRAFT REQUIREMENTS
General Waste Discharge Requirements for Composting Operations
January 6, 2015

Requirement Type	Tier I	Tier II
Applicability		
Activities not required to obtain coverage under this General Order	a. Agricultural Composting; b. Chipping and grinding facilities and operations; c. Lot clearing by local governmental agencies (i.e., grubbing, tree trimming, etc.) for fire protection; e. Composting activities that are within a fully-enclosed vessel; d. Composting operations that receive, process, and store less than 500 cubic yards (cy) of allowable materials at any given time; f. Composting operations that receive, process, and store less than 5,000 cy per year of allowable Tier I or Tier II feedstocks, additives, and amendments, and implement the following management practices: (1) Completely cover all materials during rain events to prevent the generation of contaminated non-process wastewater and leachate; and (2) Manage the application of process water to prevent the production of leachate.	
Total Facility Capacity	< 25,000 cy (combination of Tier I allowable materials received, processed, and stored: feedstocks, amendments) and meets the siting criteria below.	≥ 25,000 cy (all allowable materials received, processed, and stored: feedstocks, amendments) or < 25,000 cy which does not meet the siting criteria for depth to groundwater, distance to surface water, and distance to nearest water supply well.
Depth to Groundwater	Dependent on Soil Percolation Rate as follows (minutes per inch - MPI using percolation test): < 1 MPI : 50 feet 1 MPI - 5 MPI: 20 feet > 5 MPI - 30 MPI: 8 feet > 30 MPI : 5 feet	
Distance to Surface Water	≥ 100 feet	≥ 100 feet
Distance to nearest water supply well	≥ 100 feet	≥ 100 feet
Allowable Feedstocks	• Agricultural materials • Green materials • Paper materials • Vegetative food materials • Anaerobic digestate derived from allowable Tier I feedstocks • A combination of allowable Tier I feedstocks	• Food materials (non-vegetative) • Biosolids (Class A, B, and/or EQ) • Manure • Anaerobic digestate derived from allowable Tier II feedstocks • A combination of allowable Tier I and Tier II feedstocks
Prohibited Feedstocks	a. Animal carcasses; b. Liquid wastes other than those of food origin; c. Medical wastes as defined in the Health and Safety Code, section 117690; d. Radioactive wastes; d. Septage; f. Sludges, including but not limited to sewage sludge, water treatment sludge, and industrial sludge; g. Wastes classified as "designated" as defined in Water Code section 13173; h. Wastes classified as "hazardous" as defined in the Cal. Code Regs., title 22, section 66261.3; i. Wood containing lead-based paint or wood preservatives, or ash from such wood; or j. Any feedstock, additive, or amendment other than those specifically described in the General Order.	
Additives and Amendments	No more than 10 percent combined, on a total volume basis of the following: fertilizing material at rates that will be consumed or immobilized during composting; manure; anaerobic digestate (solid) from other feedstocks not listed in this tier; and other materials approved by the Regional Water Board.	No more than 30 percent combined, on a total volume basis of the following: fertilizing material at rates that will be consumed or immobilized during composting, liquid food material, anaerobic digestate (solid) not listed under Prohibitions section, and other materials approved by the Regional Water Board.
Prohibited Additives and Amendments	Use of biosolids as an additive or amendment is prohibited.	Use of biosolids as an additive or amendment is prohibited.

Requirement Type	Tier I	Tier II
Construction		
Pads	Surfaces must be capable of preventing degradation of waters of the state. Such structures are designed, constructed, operated, and maintained to: (1) facilitate drainage and minimize ponding by sloping or crowning pads to reduce infiltration; (2) reliably transmit any free liquid to a containment structure; and (3) prevent conditions that could lead to contamination, pollution, or nuisance.	
	Control and manage all run-on, runoff, and precipitation from all areas used for receiving, processing, or storage, under conditions of a 25-year, 24-hour peak storm event. Protect areas from inundation by surface flows associated with a 25-year, 24-hour peak storm event.	
		Working surfaces must be capable of resisting damage from movement of operating equipment and weight of piles, have a hydraulic conductivity of 1.0×10^{-5} cm/s or less, and consist of one of the following: (a) Compacted soils, with a minimum thickness of one foot; (b) Asphaltic concrete or Portland cement concrete; or (c) An equivalent engineered alternative approved by the Regional Water Board. In lieu of meeting the hydraulic conductivity requirement prescribed above, the applicant may propose to implement a groundwater protection monitoring program. If this choice is selected, the applicant must submit a Groundwater Protection Monitoring Program Plan in the Technical Report with the Notice of Intent.
Wastewater Handling System (e.g. pond, tanks)	Applicant must submit for approval a *Water and Wastewater Management Plan* that describes how the wastewater will be managed to prevent discharge. The plan must describe the design, operations, and maintenance of the systems, including water balance calculations and assumptions.	Applicant must submit for approval a *Water and Wastewater Management Plan* that describes how the wastewater will be managed to prevent discharge. The plan must describe the design, operations, and maintenance of the systems, including water balance calculations and assumptions.
	Wastewater handling system must be designed and operated to manage all wastewater from a minimum 25-year return annual total precipitation value* distributed monthly in accordance with average (mean) precipitation values or equivalent engineered alternative approved by the Regional Water Board. *http://www.dwr.water.ca.gov/floodmgmt/hafoo/csc/climate_data/#	Wastewater handling system must be designed and operated to manage all wastewater from a minimum 25-year return annual total precipitation value* distributed monthly in accordance with average (mean) precipitation values or equivalent engineered alternative approved by the Regional Water Board. *http://www.dwr.water.ca.gov/floodmgmt/hafoo/csc/climate_data/#
		Detention pond liners must meet a hydraulic conductivity of 1.0×10^{-6} cm/s or less and include of one of the following: (a) A liner system consisting of a 40-mil synthetic geomembrane (60-mil if high-density polyethylene) underlain by either one foot of compacted clay, or a geosynthetic clay liner installed over a prepared base; (b) A liner system that includes Portland cement concrete underlain by a 40-mil synthetic geomembrane (60-mil if high-density polyethylene); or (c) An equivalent engineered alternative approved by the Regional Water Board.

Requirement Type	Tier I	Tier II
Construction, continued		
Wastewater Handling System (e.g. pond, tanks)		Detention ponds must be designed and constructed with a pan lysimeter monitoring device under the lowest point of the pond or equivalent alternative approved by the Regional Water Board. In addition, ponds must be designed and operated to maintain a dissolved oxygen concentration of at least 1.0 mg/L to prevent anaerobic conditions. Tanks, if used (i.e. above or underground), must be designed, operated, maintained and monitored in accordance with applicable laws and regulations.
Drainage/Conveyance	Ditches must be sized to convey all precipitation and runoff from a 25-year, 24-hour peak storm event. Ditches must be properly sloped to minimize ponding and kept free and clear of debris to allow for continuous flow of liquid. Ditches must be inspected and cleaned out prior to the rainy season every year.	Drainage ditches must be designed to convey all precipitation and runoff from a 25-year, 24-hour peak storm event and meet a hydraulic conductivity of 1.0×10^{-5} cm/s or less, and consist of one of the following: (a) Compacted soils, with a minimum thickness of one foot; (b) Asphaltic concrete or Portland cement concrete; or (c) An equivalent engineered alternative approved by the Regional Water Board.
		Ditches must be properly sloped to prevent ponding and kept free and clear of debris to allow for continuous flow of liquid. Ditches must be inspected and cleaned out prior to the rainy season every year.
Berms	Berms must prevent run-on to and runoff from a 25-year, 24-hour peak storm event.	Berms must prevent run-on to and runoff from a 25-year, 24-hour peak storm event.
Storm Water/ Wastewater	Composting Operations may be required to enroll under the Industrial Storm Water General Permit Order 97-03-DWQ (*Industrial General Permit, new Industrial General Permit 2014-0057-DWQ will be effective July 1, 2015)* or obtain appropriate National Pollutant Discharge Elimination System (NPDES) wastewater discharge permit.	
Monitoring		
Facility Inspections	The Discharger must regularly inspect and maintain all containment, control, and monitoring structures pursuant to this General Order, the Monitoring and Reporting Program, and Notice of Applicability. Inspection frequency must be sufficient to prevent discharges of feedstocks, additives, amendments, compost, or wastewater from creating or contributing to contamination, pollution or nuisance. Dischargers must perform quarterly site inspections of the working surface, berms, ditches, facility perimeter, erosion control best practicable treatment and control, and any other operational surfaces.	
Water Quality	Wastewater Management System: perform quarterly inspections of the system, estimate available capacity and volume, and ancillary structures. If using a pond, conduct quarterly sampling of the liquid within the pond. (when there is sufficient water to sample).	
		The detention pond leak detection monitoring device (i.e., the pan lysimeter) must be checked monthly during the wet season for liquid. Upon detection of liquid, contact the Regional Water Board within 48 hours; collect a sample and analyze for the list of constituents below; remove liquid from the monitoring device; and continue to monitor weekly. If liquid reappears, collect and analyze the sample for the same list of constituents. If wastewater is confirmed, submit a *Response Action Plan* for review and approval by Regional Board staff.
		Tanks, if used, must be monitored in accordance with applicable laws and regulations.

Requirement Type	Tier I	Tier II
Monitoring, continued		
~~Constituents of Concern~~	~~Field Parameters (pH, dissolved oxygen, EC, temperature, turbidity); General (TDS, Ammonia, BOD, Nitrite, Ortho Phosphate, phosphorus, fecal coliform, TKN, total organic carbon); General Minerals (bicarbonate alkalinity, chloride, sulfate, nitrate, calcium, sodium, magnesium, potassium); Dissolved Metals (aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, thallium, vanadium, and zinc)~~	
Monitoring Requirements	**See below for revised Monitoring Requirements**	
- Pond	pH, dissolved oxygen, total dissolved solids, fixed dissolved solids, total nitrogen, specific conductance (electrical conductivity) - conducted quarterly	
- Groundwater	groundwater elevation, depth to groundwater, gradient, gradient direction, pH, TDS, nitrate as nitrogen, sodium, chloride, total coliform organism - conducted quarterly if this alternative is selected	
- Biosolids	Proof of compliance with ceiling concentrations of 40 CFR 503.13, Table 1, or conduct testing.	
Reporting		
Notice of Intent	Submit a complete Notice of Intent, including the appropriate filing fee (Cal. Code Regs., tit. 23, § 2200) and a technical report to the Regional Water Board not less than 90 days prior to commencement of a composting operation.	
Revised Notice of Intent	Submit a revised Notice of Intent at least 90 days prior to: (1) adding a new feedstock, additive, or amendment; (2) changing material or construction specifications; (3) changing a monitoring program; or (4) changing an operation or activity not described in the approved NOI and technical report.	
Technical Report	Submit a Technical Report prior to any new construction of any working surfaces, detention ponds, berms, ditches, or other water quality protection containment structure.	
Final Post-Construction Report	Submit a *Final Post-Construction Report,* including as-built plans and specifications, within 30 days of completing construction activities, to document that structures were constructed in accordance with the Technical Report.	
Monitoring Report	Submit an Annual Monitoring and Maintenance Report no later than April 1st of each year.	
Violation Notification Requirements	If a violation of requirements of this Order or MRP occurs, the Discharger must notify the appropriate Regional Water Board staff by telephone or electronic mail within 48-hours of the violation. This notification must include a description of the noncompliance and its cause, the period of noncompliance (providing exact dates and times); and if the noncompliance has not been corrected, the anticipated time to complete the corrective action. The notification must also include steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance. Depending on the severity of the violation, the Regional Water Board staff may require the discharger to submit a separate technical report regarding the violation within 10 working days of the initial notification.	
Enrollment		
New Operations	Must file a complete Notice of Intent, filing fee, and technical report not less than 90 days prior to commencement of composting operations. The Regional Water Board will issue a Notice of Applicability that, at a minimum, confirms the Discharger's Tier, timeline for compliance, monitoring requirements and methods.	
Existing Operations	Must file a complete Notice of Intent, filing fee, and technical report within one year of adoption of the General Order. The technical report shall include a schedule for full compliance and must be as short as practicable but may not exceed 6 years from the date of the NOI.	
Fees		
Annual Fees	The filing fee accompanying the NOI is the first year's annual fee. Annual fees are based on the threat to water quality (TTWQ) and complexity (CPLX) of the discharge. (Cal. Code Regs., tit. 23, § 2200.) The ratings are available at: http://www.waterboards.ca.gov/fees/docs/fy1415 wdr fees.pdf.	

Water Boards

Fact Sheet

DRAFT GENERAL WASTE DISCHARGE REQUIREMENTS FOR COMPOSTING OPERATIONS

OVERVIEW

The State Water Resources Control Board (State Water Board) is preparing an Environmental Impact Report (EIR) for General Waste Discharge Requirements for Composting Operations (General Order) that would cover facilities that collect certain organic material such as leaves, tree trimmings, grass, food leftovers, and scrap paper products to create compost. Compost contains beneficial micro-organisms that break down organics into a stable humus-rich soil amendment. Compost helps soils retain moisture and nutrients, potentially reducing runoff and irrigation needs.

Composting operations help keep organic material out of landfills and may help the state to meet its goal to recycle, compost, or reduce 75 percent of solid waste in landfills by 2020. However, composting operations have the potential to pose a threat to water quality. The State Water Board supports the goal of composting, when operated in a manner that protects water quality.

HOW DOES COMPOSTING AFFECT WATER QUALITY?

Composting piles form leachate – a liquid created when certain wastes decompose or as excess moisture flows through the pile. Depending on its source and composition, leachate can contain a wide variety of pollutants, which, if allowed to seep into groundwater or run off into surface waters, could cause water quality problems. Leachate can potentially deplete oxygen in waterways and may contain unacceptably high levels of nitrogen, phosphorus, metals, and other pollutants that could impact waters of the state.

WHO WILL BE AFFECTED BY THIS ORDER?

The proposed General Order will apply to existing and new composting operations, including commercial, agricultural, institutional, and governmental facilities. The General Order will exempt most small composting operations, such as home composting or community gardens.

The proposed General Order will set standards for the construction, operation, and maintenance of composting facilities to protect surface water and groundwater. The proposed General Order provides a number of requirements, including standards for the permeability of the ground underneath the composting piles, drainage, and specifications for leachate collection and containment. The Order will also include requirements for monitoring and reporting.

This is not a new regulatory endeavor. Regional Water Boards previously regulated composting operations under region-specific conditional waivers of waste discharge requirements or general orders. Some composting operations in California are currently operating under individual waste discharge requirements. Individual waste discharge requirements address site-specific conditions and may contain more stringent requirements than what is in the proposed General Order.

PUBLIC PROCESS

The State Water Board follows a strict, legally-mandated process when adopting general orders. There will be multiple opportunities for public comment and discussion. The Draft EIR and General Order was released for public comment on January 13, 2015. State Water Board members consider items for adoption at publicly noticed meetings that are open to the general public. The General Order will be presented to the State Water Board for consideration in June 2015.

HOW TO STAY INFORMED

To keep apprised of the status of the proposed General Order, you can sign up for State Water Board notifications at the link below, check the box for "Composting Operations."

http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml#quality

And you can get more information on the State Water Board web site:

http://www.waterboards.ca.gov/water_issues/programs/compost/

If you have any questions, you can submit them via email to Composting@waterboards.ca.gov.

(Fact Sheet updated 2.9.2015)

CALIFORNIA
Water Boards

State Water Resources Control Board

NOTICE OF PUBLIC MEETING AND CONSIDERATION OF ADOPTION

PROPOSED FINAL AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE OCEAN WATERS OF CALIFORNIA TO CONTROL TRASH AND PART 1 TRASH PROVISIONS OF THE WATER QUALITY CONTROL PLAN FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA AND PROPOSED FINAL STAFF REPORT INCLUDING THE SUBSTITUTE ENVIRONMENTAL DOCUMENTATION

NOTICE IS HEREBY GIVEN THAT the State Water Resources Control Board (State Water Board) will hold a public meeting to consider: (1) adoption of the proposed Final Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan) (collectively referred to as the "Trash Amendments"), and (2) approval of the Final Staff Report, including the Substitute Environmental Documentation. The State Water Board is not providing a written comment period for the revisions made to the proposed Final Trash Amendments and proposed Final Staff Report released on December 31, 2014; therefore written comments will not be considered. Interested parties may provide oral comments at the public meeting. The date, time, and location of the public meeting for consideration of adoption is:

Tuesday, April 7, 2015 – 9:00 a.m.
Joe Serna Jr. - CalEPA Headquarters Building
Coastal Hearing Room
1001 I Street, Second Floor
Sacramento, CA 95814

BACKGROUND
Trash is a significant pollutant in California's waters that adversely affects beneficial uses, including but not limited to uses that support aquatic life, wildlife, and public health. At present, there are 73 water bodies on the California's 2008-2010 Clean Water Act (CWA) section 303(d) list of impaired waters for trash or debris across the state. Of the 73 listings of water bodies impaired for trash or debris, only 16 Total Maximum Daily Loads (TMDLs) have been adopted. A consistent statewide approach to controlling trash discharges into waters of the state is needed.

Since 2007, the State Water Board has been developing proposed Trash Amendments with extensive public participation including: a Public Advisory Group, 14 focused stakeholder meetings, technical peer review, a public workshop on July 16, 2014, and a public hearing on

August 5, 2014. The State Water Board received 76 timely comment letters. Based on comments received during the public workshop, the public hearing, and comment letters, State Water Board distributed electronically to the public and posted to its website the proposed Final Trash Amendments and corresponding Final Staff Report on December 31, 2014.

The provisions in the proposed Final Trash Amendments include the following six elements:

(1) A narrative water quality objective,
(2) Corresponding applicability,
(3) A prohibition of discharge,
(4) Implementation provisions,
(5) A time schedule, and
(6) Monitoring and reporting requirements.

The proposed Trash Amendments will be implemented through National Pollution Discharge Elimination System (NPDES) storm water permits (Municipal Separate Storm Sewer System Phase I and Phase II, Department of Transportation, industrial General Permit, and Construction General Permit), Waste Discharge Requirements (WDRs), and waivers of WDRs. The Trash Amendments are proposed to apply to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Regional Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments. The objective for the proposed Final Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life, public health, and other beneficial uses, and to reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

DOCUMENT AVAILABILITY

The proposed Final Amendments to the Ocean Plan, Part 1 Trash Provisions of the ISWEBE Plan, and the proposed Final Staff Report are available on the State Water Board's website at: http://www.waterboards.ca.gov/water_issues/programs/trash_control/documentation.shtml. A hard copy of the proposed Final Amendments and proposed Final Staff Report can be received by mail by contacting Ms. Johanna Weston at johanna.weston@waterboards.ca.gov or (916) 327-8117.

Subsequent notice will be provided concerning the availability of the State Water Board's written responses to all written comments timely submitted.

PROCEDURAL MATTERS

At the public meeting at which the State Water Board will consider adopting the proposed Trash Amendments, interested persons will have an opportunity to comment on the proposed Final Trash Amendments and proposed Final Staff Report. Given the extensive public participation provided on the prior draft documents, **comments on the proposed Final Trash Amendments and proposed Final Staff Report will be limited to the proposed revisions made to the Draft Trash Amendments and Draft Staff Report** (distributed and posted on December 31, 2014). There will be no sworn testimony or cross-examination of participants. However, the State Water Board and its staff may ask clarifying questions.

To ensure a productive and efficient meeting in which all participants have an opportunity to participate, oral presentations may be time-limited. For other presentation recommendations, go to:
http://www.waterboards.ca.gov/board_info/meetings/board_presentations.shtml

FUTURE NOTICES

The State Water Board will hold the public meeting for the consideration of adoption at the time and place noted above. Any change in the date, time, and place of the public hearing and consideration of adoption will be noticed on the Lyris e-mail list. Any person desiring to receive future notices concerning the proposed Trash Amendments **must subscribe** to the Lyris e-mail list by marking the box for "Trash Plan" (located under the section title, "Water Quality Topics"). The subscription form is located at:
http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml.

The State Water Board encourages use of its electronic mailing list. Persons who require notice by regular mail must submit such request to the State Water Board contact identified below.

PARKING AND ACCESSIBILITY

For directions to the Joe Serna Jr. - CalEPA Headquarters Building (CalEPA Building) and public parking information, please refer to the map on the State Water Board's website at: http://www.calepa.ca.gov/EPAbldg/location.htm. The CalEPA Building is accessible to persons with disabilities. Individuals requiring special accommodations are requested to call (916) 341-5880 at least five working days prior to the meeting. TDD users may contact the California Relay Service at (800) 735-2929 or voice line at (800) 735-2922. A broadcast of the meeting will be available via the Internet and can be accessed at: http://www.calepa.ca.gov/broadcast/.

All visitors to the CalEPA Building are required to sign in and obtain a badge at the Visitor Services Center located inside the main entrance. Valid picture identification may be required. Please allow up to 15 minutes for receiving security clearance.

CONTACT INFORMATION

Please direct any questions about this notice to Ms. Johanna Weston at (916) 327-8117 or johanna.weston@waterboards.ca.gov, or Ms. Stacy Gillespie, Senior Staff Counsel, at (916) 341-5190 or stacy.gillespie@waterboards.ca.gov.

February 12, 2015
Date

Jeanine Townsend
Jeanine Townsend
Clerk to the Board

CPSC
California Product Stewardship Council

Secure Medicine Take-Back:
Local Solutions Through Extended Producer Responsibility Laws
December 2, 2014

WELCOME TO WEBINAR!

FREE webinar☺

Goal of Hosting Webinar:

Provide government & advocates with tools to advance safe med disposal w/o increasing costs

Special Thanks:
Presenters, Bob Hollis and the Mobius Network, and all of you for listening.

CPSC Board and Organization

- 14 Member Board:
  - 5 of 14 are private sector members
- Seat open – Could be local government or private sector – application process – e-mail Heidi@calpsc.org

Lynn France, Chula Vista
Chair

Sean Rigley, Roseville
Vice-Chair

Patty Garbarino, Marin Sanitary Service
Secretary

Gretchen Olsen, Stockton
Treasurer

CPSC Mission – Goals of EPR

To shift California's product waste management system from one focused on government funded and ratepayer financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability.

Connecting With CPSC

- Monthly Local Government Associates Calls
- Monthly Policy and Education Advisory Committee
- Bi-monthly Newsletters
- Listservs as Information Tool
- NGO – Lobbying limits and have "h" election
  - Mostly do project work includes studies, reports, EPR transitional projects etc...
- Website http://www.calpsc.org/about-cpsc
- Annual Report http://www.calpsc.org/admin-document-upload/doc_download/1577-cpsc-annual-report-2013-2014-final

EPR Resolutions

As of December 2, 2014
138 resolutions have been passed by local jurisdictions and organizations supporting product stewardship representing 64% of California's

Key to City & County Resolutions:

- County is a member of an association[1] that has passed an EPR resolution or policy statement, but has not individually passed an EPR resolution
- County has individually passed an EPR resolution
- ◆ City has passed an EPR resolution

Three major local government associations have all adopted resolutions in support of EPR:

- California State Association of Counties
- League of Cities
- Regional Council of Rural Counties

CPSC Partners (10/8/14)

Platinum Partners

- Edgar Institute
- Marin Sanitary Service
- Republic Services
- UltiMed

Gold Partners

- California Refuse Recycling Council
- California Resource Recovery Association
- Green Cities California
- Recology

CPSC Partners (10/8/14)

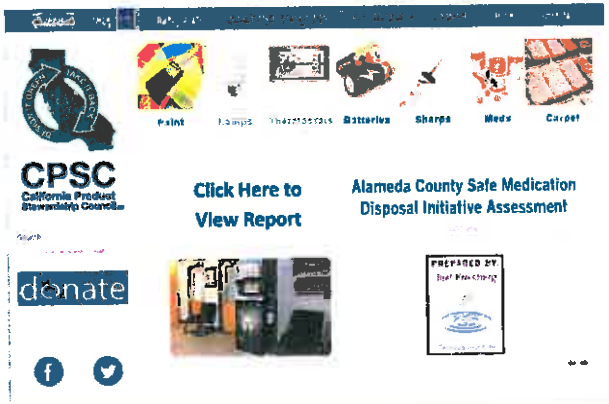
Silver Partners

- CalRecycle*
- Carton Council

Bronze Partners

- Acrylatex
- Biologic
- Ecology Action
- FlameKing
- Los Angeles Fiber
- Peninsula Packaging Company
- Potential Industries Inc.
- PSC Environmental Services
- South San Francisco Scavenger Company, Inc.
- Visions Paint Recycling, Inc.
- Zanker Disposal and Recycling

What is CPSC Doing? Education...



What is Producer Responsibility for Medicine Collection?

David Stitzal: Full Circle Environmental

- NWPSC http://productstewardship.net/
- What is Extended Producer Responsibility?

CalRecycle will ...

- "Seek statutory authority to foster cradle-to-cradle producer responsibility."
- "Develop relationships with stakeholders that result in producer-financed and producer-managed systems"

Definition of Producer

- What is a Producer?
  - It is a company that "produces" a pharmaceutical product
  - It is NOT a retail pharmacy UNLESS they "brand" a pharmaceutical product and the producer definition may instead place responsibility on the manufacturer of the store brand drug
  - Definition of producer is critical to enforcement of the ordinance!

EPR for Meds Around the World

- Canada: Health Product Stewardship Association www.healthsteward.ca
  - British Columbia: Oldest program started voluntarily in 1996, became law in 2004
- Spain: Sigre Stewardship Program Started in 2003
- France: Cyclamed Stewardship Program Started in 2007
- Mexico: Pilot in 2008, expanding countrywide in 2014 http://singer.org.mx

Appealed to Federal 9th Circuit

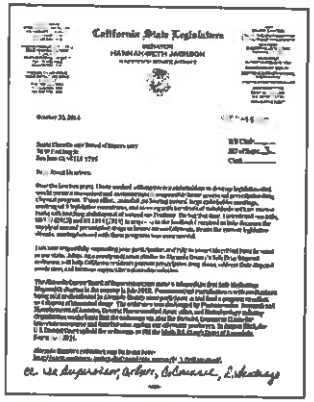
- 9th Circuit Court of Appeals - 3 judge panel – 7/11/14
- No new facts – only interpretation of law
- Judge "I have a feeling this may not be the last word on this"
- Court sides with Alameda County, upholds ruling – 9/30/14

SB 727/1014 – EPR for Medications

- Mirrored Alameda Ordinance, added OTCs
- Stakeholder negotiation meetings
- Both bills failed – need for local action
- Senator Jackson sent letter asking local govt. to consider ordinance Oct. 30, 2014
- Contact Linda Barr at Senator Jackson's office

916-651-4536 Linda.Barr@sen.ca.gov

Senator Jackson Letter to Locals


California State Legislature

Letter sent October 31, 2014 asks for local governments to consider ordinances to move the issue forward in California.

National News Attention

National Public Radio, January 2014

National News Attention

Wall Street Journal, April 2014

Alameda County Safe Drug Disposal Ordinance Legal Challenge

Kathleen Pacheco
Senior Deputy County Counsel
Alameda Office of the County Counsel

Legal Action Filed

- Lawsuit filed in federal court by pharmaceutical trade groups alleging unconstitutional burden on interstate commerce, violating the dormant commerce clause.

Pharmaceutical Research And Manufacturers Of America; Generic Pharmaceutical Association; Biotechnology Industry Organization

v.

County Of Alameda

Allegations

- Lawsuit Complaint allegations include:
  - Ordinance is an attempt to shift governmental responsibilities onto interstate commerce.
  - Complaint's statement of facts includes: "Disposal of unused pharmaceutical in household trash is safe, convenient and effective."
  - Plaintiff and its members have and will incur substantial compliance costs.
  - The ordinance violates the dormant commerce clause by discriminating against or burdening interstate commerce.

District Court Ruling

- Summary Judgment in favor of Alameda County

"Defendants have adequately shown that the Ordinance serves a legitimate public health and safety interest, and that the relatively modest compliance costs producers will incur should they choose to sell their products in the county do not unduly burden interstate commerce."

Pharma v. County Of Alameda (2013) 967 F.Supp.2d 1339, 1346.

Appeal Filed

Trade organizations appeal to the US Court of Appeals, Ninth Circuit.

- Court grants motions for Amicus Curie ("friends of the Court") briefs
- Two Amicus Curiae Brief were filed opposing the ordinance and in support the position of the trade organizations:
  - Washington Legal Foundation with the California Healthcare Institute
  - Chamber of Commerce of the Unites States
- Three Amicus Curiae Brief were filed supporting the ordinance:
  - California State Association of Counties with the League of California Cities (Drafted by Santa Clara Office of the County Counsel)
  - Natural Resource Defense Counsel
  - The California Attorney General, Kamala D. Harris

US Court of Appeals, Ninth Circuit Upholds Lower Court Decision

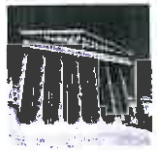
US Court of Appeals, Ninth Circuit upholds lower court (9-30-14)

"However, there is nothing unusual or unconstitutional per se about a state or county regulating the in-state conduct of an out-of-state entity when the out-of-state entity chooses to engage the state or county through interstate commerce." *Pharma. et al v. County Of Alameda (2014)* 768 F.3d 1037, 1043.

"The fact that the county could run a similar program does not nullify the program's benefits. ... Moreover, even if the Ordinance did nothing other than save the county money, that is not equivalent to "no public benefits." 768 F.3d at 1045

Current Status

- Plaintiffs have indicated they will appeal to the US Supreme Court
- Alameda County Ordinance is in place and implemented



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Senior Deputy County Counsel
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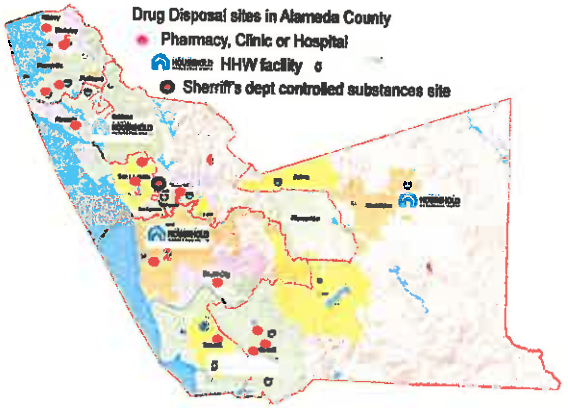
Oakland, Ca 94612
(510)272-6700
kathleen.pacheco@acgov.org

Medication Disposal in Alameda County and the Safe Medication Disposal Ordinance

Bill Pollock – Program Manager
Alameda County HHW program
bill.pollock@acgov.org

Current (pre 10/9/14 DEA reg) Disposal Infrastructure is Poorly Distributed



Medication Procurement Infrastructure

- 200 + Pharmacies
  - 40+ Hospitals comprising 100+ locations
- 30+ Veterinary clinics

Medication Disposal Infrastructure – 31

- 1 Sherriff's dept Legal Controlled site
- 2 Police Department non controlled site
- 4 HHW facilities
- 11 Hospital/Clinic sites
- 1 Xfer Station 2 fire stations 2 office buildings
- 1 Wastewater Treatment Plant
- 9 Independent pharmacies
- 2013 disposal totals 13,919 Lbs $27,838

Current Disposal Infrastructure

- Funded by Public Money reflecting multiple concerns
  - Wastewater Agencies – Environmental concerns
  - Social Service & Senior Groups– Adult use/misuse issues
  - Teen and Young adult advocacy groups Abuse among Teens issues
- Relies on voluntary hosts – chain pharmacies have not shown interest

11/2010–Legal Controlled Substances site established at Alameda County Sherriff's dept

Supervisor Miley's Senior AOD group

- AOD = Alcohol and other Drugs of concern to seniors
- Sponsored 14+ one day events 2008-11
- Concluded one day events poor substitute for permanent sites.
- 5K local Stopwaste grant for 5 permanent sites.
- Followed SF's ordinance efforts
- Committed to establishing ordinance in Alameda County

Alameda County Safe Drug Disposal Ordinance

Ordinance Basics

- Producers of ***prescription*** drugs whose product is sold in Alameda County must:
  - Create/Join a Product Stewardship organization
  - File Product Stewardship Plan describing how:
    - Establish collection sites
    - Collect all unwanted prescription products
    - Educate the public - Promote the program.
    - Support Law Enforcement for controlled substances
    - File Annual Report describing activities
    - Pay all the costs of collection and reasonable costs of regulation/oversight
    - Enforcement process, civil penalties/fines for non-compliance

Ordinance Basics (cont.)

- No line item point of sale fee
- Not covered:
  - Non prescription drugs
  - Medical devices not containing drugs when sold
  - Clinical use only drugs by Exemption process
- Hauling by Med or Haz waste hauler
- Disposal by Incineration - Med or Haz Waste
- New disposal methods by petition
  - must be equal or better than incineration
- Department has broad authority to exempt

Convenience standard

- No numerical standard
  - "Provide collection services that are reasonably convenient to the public".
  - "Scope and extent of the stewardship program are consistent with the scope and extent of the sales of covered products within the County."

Pharma's objections

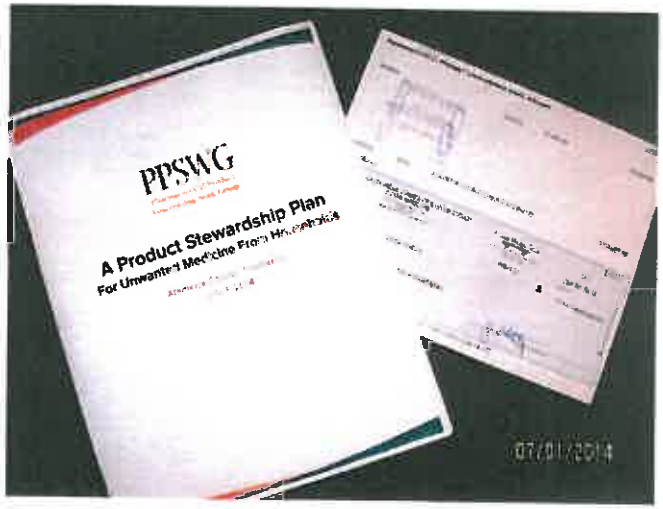
- Most drug residues in sewage comes from excretion collection will have little effect
- Landfill is OK for the environment
- Collection programs will raise prices and limit drug availability
- Possible HIPAA violation
- Difficulty in getting all drug producers in program
- Controlled substances issue - ordinance is at best premature
- Difficulty in getting Pharmacy partners
- Cannot compel pharmacies and Law Enforcement to participate
- Unfair to only hold drug manufacturers responsible "it's everyone's problem"
- Insurance and Medicare will not allow price increases

Timeline – Ordinance

- Ordinance passed July 2012
  - Industry sues County 12/2012 Court upholds ordinance Pharma appeals – County wins appeal
- Deadline for compliance extended May 1st 2014
  - May petition for extension
- Fall 2013 – Spring 2014
  - Contact with potential product stewardship organizations
    - Phone and in person meetings
- Pharmaceutical industry creates product stewardship organization
  - PPSWG (formed late 2013)
  - Pharmaceutical Product Stewardship Working Group
  - ~ 200 members =~ 60% of market
  - http://www.amsnavista.com/page03.shtml

Timeline Ordinance

- PPSWG Board
  - Big Pharma Environmental Compliance attorneys
- PPSWG–Files for extension to July 1 2014
- Other potential actors hold off filing speculative plan
- 1 lone Producer files their own plan
  - Boutique drug has single user in Alameda County
- July… 1st PPSWG files plan
- Plan Review – New DEA rules extend timeline



So… You wanna pass an ordinance

- Must haves –
  - Political "Champion" It takes a Supervisor (Politician)!
  - Real Agency support =$$, Staff time & Lawyers
  - Coalition of active supporters willing to turn out & write letters of support
  - Open Process: 3rd parties, Opponents & Industry must have their voices heard
  - Educate local leaders
  - Law Enforcement & Healthcare involvement
  - Take advantage of available resources National/International level
- Must have Media strategy and Media partner
  - CalPSC *invaluable!* – if you're not a member… Join now!
- FOIA/PRA/Discovery – be careful what you say in emails & documents.

Ordinance – Issues to Ponder…

- What Authority do you have to pass an Ord.
  - Who may have superior authority to you
- What to collect – RX only, OTC's, PCP's ?
- Who pays for what ?
- How do you define producer ?
- Multiple plans ?
- Threshold for participation ?
- Convenience standards ?
- Disposal methods:
  - Incineration – Haz Waste or Medical waste
- New Technologies:
  - Ozone, Alkaline Hydrolysis

Tools–Links

- Alameda County Safe Drug Disposal page
  - http://www.acgov.org/aceh/safedisposal/
- King County Medicine Take back page
  - http://www.kingcounty.gov/healthservices/health/RQH/MedicineTakeback.aspx
- CPSC website Meds page
  - http://c.ipsc.org/products/pharmaceuticals
- FDA site
  - http://www.fda.gov/Drugs/InformationOnDrugs/default.htm
- DEA
  - http://www.deadiversion.usdoj.gov/drug_disposal/index.html
- PSI www.productstewardship.us/
- Canadian Programs http://www.healthsteward.ca
- Bill Pollock – Program Manager
  - Alameda County HHW program
  - bill.pollock@acgov.org

King County, WA
Secure Medicine Return Regulations

Margaret Shield, PhD, Policy Liaison
Local Hazardous Waste Management Program in King County
December 2, 2014

Barriers to a Comprehensive Medicine Take-Back System in King County

1. **Challenges in collection of controlled substances** Now addressed through new DEA Rule which authorizes new options for medicine take-back, including at retail pharmacies.
2. **Convenience and access** – too few drop-off sites, too much of county unserved.
3. **Financing** – lack of dedicated & adequate funding; very limited funding for education & promotion.
4. **Lack of an efficient system** – no county-wide or state-wide coordination.

King County, WA Board of Health's Secure Medicine Return Regulations

Board of Health = elected and appointed legislative body that sets county-wide policies and regulations to protect and promote the health of residents.

- Subcommittee of the Board conducted stakeholder and policy development process, July 2012 – April 2013.
- Public hearings before full Board - May 16th and June 20th, 2013.
- Regulations adopted unanimously June 20, 2013. Effective July 20, 2013.
- Implementation under way.

Stakeholders Engaged

- Current providers or regulators of medicine take-back activities (pharmacies, law enforcement, WA Pharmacy Commission)
- Pharmaceutical manufacturers (associations and individual companies)
- Organizations representing impacted residents
- Substance abuse professionals
- Health and medical organizations
- Environmental groups
- City governments

Overview of Secure Medicine Return Regulation

Drug manufacturers whose medicines are sold in or into King County must finance and provide a county-wide secure medicine return system.

- Provide secure drop boxes in pharmacies or law enforcement offices. Or periodic collection events or prepaid return mailers.
- Accept prescription and over-the counter medicines from residential sources. Not clinical or business. Cosmetics/personal care products excluded.
- Promote program; annual reporting; periodic public awareness surveys.
- Utilize secure protocols for collection, handling, transportation of drugs according to federal & state regulations and guidelines.
- Drugs disposed at hazardous waste facility. Or approval may be granted for use of a WTE incinerator. Consistent with EPA's recommendation.

King County provides oversight to ensure compliance and safety.

Some key policy components

Producers develop stewardship plan?	Yes. All producers must work together on the "standard" stewardship plan, unless a producer(s) proposes an "independent" plan. Local agency reviews/requires changes/approves.
Covered medicines?	Prescription and Over-the-Counter drugs used in the home.
Controlled substances included?	Yes. Regulation specifies compliance with DEA rule, and all applicable federal & state laws/rules/guidelines.
Specific convenience standard?	Yes, specific minimum number of drop boxes, based on geography and population & producers must include any retail pharmacy or law enforcement agency that volunteers to have a drop box
Specific education & outreach requirements?	Yes. Promote so "widely understood". Website, phone line, materials required. Evaluation & awareness surveys required
Producers pay all costs?	Producers pay all program costs for collection supplies, transportation, disposal, promotion, and agency oversight. Except local agency funds up to 400 secure drop boxes for standard stewardship plan.

What is King County Doing to Implement the Law?

- **Explaining the Regulations to drug producers & stakeholders**
  - Developed website & email list for interested stakeholders
  - Contacting obligated entities through certified mail
  - Consultation & technical assistance
- **Identifying drug producers**
  - Drug Wholesalers required to provide list of producers to county
  - 164 drug producers complied with a Dec. 20, 2013 deadline for a "Notice of Intent to Participate in a Stewardship Plan"
- **Developed a fee schedule for recovery of agency costs for plan review and oversight.** Board of Health adopted on May 15, 2014.

7

Status of Lawsuit & Compliance Deadlines

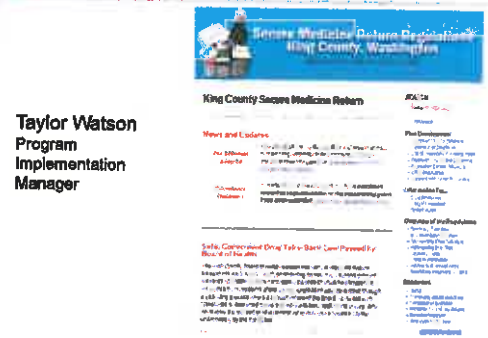
- Lawsuit filed in Nov. 2013 by 4 pharmaceutical industry associations (PhRMA, GPhA, BIO, CHPA).
- Voluntary agreement between King County and pharmaceutical associations to extend compliance deadlines until Ninth Circuit verdict on Alameda County's lawsuit
  (see deadlines in BOH Code, section 11.50.040)
- Post Ninth Circuit verdict: King County issued revised compliance deadlines for drug producers:

  Nov. 14, 2014 - (a) each producer must identify their stewardship plan operator, and (b) stewardship plan(s) must notify all retail pharmacies and law enforcement agencies in county about how to participate as a collector.

  Feb. 12, 2015 - submit a proposed stewardship plan and plan review fee.

8

www.KingCountySecureMedicineReturn.org



Taylor Watson
Program
Implementation
Manager

9

How to Get Started in Your Community?

- Engage all those who care about secure medicine take-back in your community. See coalition list at www.takebackyourmeds.org/about for ideas.
- Talk to your local government agencies – public health, law enforcement, environment, water quality. *(and they can consult their lawyers on their authority)*
- Identify Leaders on your local legislative bodies.

Boardmember
Kenmore Mayor
David Baker

Board of Health Chair
Councilmember Joe McDermott

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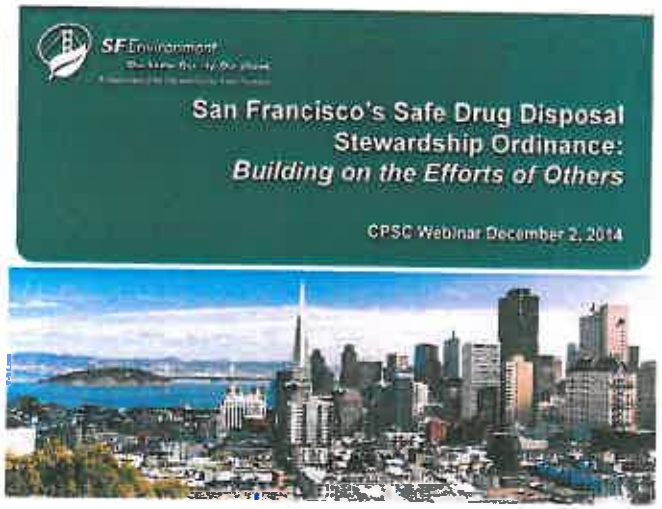
www.KingCountySecureMedicineReturn.org

http://www.kingcounty.gov/healthservices/health/BOH/MedicineTakeback.aspx
Board of Health Subcommittee Materials

www.TakeBackYourMeds.org
WA Medicine Take-back Sites & Product Stewardship Information

Margaret Shield
Local Hazardous Waste Management Program
206-477-8238 margaret.shield@kingcounty.gov



SF's 2010 EPR Ordinance for Pharmaceuticals

SF Pilot Program launched April 2012

Voluntary Collaborative Pilot Program

Collection at 12 pharmacies & 10 police stations
Using California Model Program Guidelines (SB966)

Industry Funding - $235,000
From PhRMA and Genentech through November 30, 2014

Research
Medicine Waste Characterization Study

Program Operated by Local Government Partners
Dept of the Environment, SF Police Dept, SFPUC (wastewater treatment), Mayor's Office

12 Independent Pharmacies

SF Passed Ordinance Requiring Advertising of Bin Locations by Non-Host Pharmacies

Poster for Non-participating Pharmacies

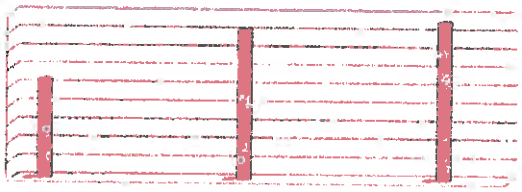
Med Waste Hauler Driver has other key

Annual Weights Collected

Launch
March-June 2012
10,647 pounds
(annualized)

Year 1
July 2012- - June 2013
16,319 pounds

Year 2
July 2013 – June 2014
17,244 pounds



A New Ordinance is Introduced in SF

10

San Francisco's Ordinance Innovations

Maggie Johnson
Residential Toxics Reduction Coordinator
margaret.johnson@sfgov.org
415-355-5006

http://www.sfenvironment.org/article/toxic-products-recycling/disposal-for-residents-toxics-health-safer-practices/safe-medicine-disposal

SF Environment
Our home. Our city. Our planet.
SFEnvironment.org • (415) 355-3700

Rose Foundation Grant

CPSC California Product Stewardship Council

Project Objectives

- Establish 6 permanent pharmaceutical collection locations in Sacramento/Yolo region with shared funding
- Educate the public and medical community about using the collection locations
  - Two key messages: (1) Do not flush, and (2) bring unused meds to collection sites for safe disposal
- Gather data to track:
  - Increase in medications collected & behavior change
  - Cost savings to local government/water treatment

Social Media

www.DontRushToFlush.org
www.facebook.com/DontRushToFlush
www.twitter.com/DontRushToFlush

Social Media

www.facebook.com/AlamedaSafeMeds
https://twitter.com/AlCoSafeMeds

Six Billboards

www.DontRushToFlush.org

Live Television

Good Day Sacramento – Jefferson Pharmacy

Prescription for Change: Sacramento Newspaper Insert

March 2014 – Meds and Sharps, Marin Dec. 4th

Thank you for your support!

Heidi Sanborn
Executive Director
heidi@calpsc.org
916-706-3420

www.CalPSC.org

Connect!

MATTRESS RECYCLING COUNCIL

February 2015

NEW LEGAL REQUIREMENTS FOR CALIFORNIA MATTRESS RETAILERS

In September 2013, California enacted the Used Mattress Recovery & Recycling Act, which requires the mattress industry to create a statewide recycling program (the Program) for mattresses discarded in the state. The Program is expected to launch in early 2016 and is funded through a recycling fee collected from consumers at retail when a mattress or box spring is sold.

Several requirements for retailers under the law are already in effect. Failure to adhere to these requirements can prohibit you from selling mattresses in the state.

The Mattress Recycling Council (MRC) is a non-profit organization established by the mattress industry to create and manage this recycling program. Using recycling fees that retailers collect from consumers, MRC will contract with service providers to administer California's mattress recycling program.

How will the Program affect mattress retailers?

Registration with MRC

Under the law, each retailer must register with MRC. Those who do not register will be prohibited from selling mattresses and box springs in the state.

Registration is simple and free of charge. Just visit the online registration portal at **www.mrcreporting.org.**

Registering with MRC will allow you to report and remit the fees you collect through a secure online portal. Further details will be provided on the reporting and remittance processes soon.

Per California law, all proprietary sales data you submit to MRC will be kept confidential. Any information MRC is required to release will only be reported as aggregate data.

Used mattress pick-up

Any retailer (or third-party working on behalf of a retailer) that delivers a mattress to a consumer in California must also offer to pick up the used mattress free of charge. The law, however, does not restrict the retailer's ability to charge for the delivery and/or set up of a new mattress. Note that even though the Program will not formally begin until 2016, the free pickup obligation is in effect now.

There are two exceptions:
1) A common carrier delivering a new mattress purchased through an online transaction is not required to pick up a used mattress.
2) A retailer may refuse pickup if "the used mattress is contaminated and poses a risk to personnel, new products, or equipment."

Fee collection

When the Program begins in 2016, retailers will collect a recycling fee on each mattress and box spring sold to California consumers.

The fee applied to each sale will be:
- A flat rate per unit. Each mattress and each box spring is considered a separate unit.
- Visible on the invoice or sales receipt provided to the customer.
- Subject to sales tax.

Fees will be remitted to MRC monthly via the online reporting portal.

Are retailers now required to recycle the used mattresses they collect from consumers?

No. The law does not require retailers to recycle used mattresses or box springs. They may voluntarily provide those products to recyclers through the Program free of charge. As a result, retailer participation in the Program can be cost effective.

MATTRESS RECYCLING COUNCIL

For assistance:
Toll Free: 1-888-646-6815
support@mattressrecyclingcouncil.org

www.mattressrecyclingcouncil.org

MATTRESS RECYCLING COUNCIL

February 2015

NEW LEGAL REQUIREMENTS FOR CALIFORNIA MATTRESS RENOVATORS

In September 2013, California enacted the Used Mattress Recovery & Recycling Act, which requires the mattress industry to create a statewide recycling program (the Program) for mattresses discarded in the state. The Program is expected to launch in early 2016 and is funded through a recycling fee collected when consumers and other end users buy a mattress or box spring.

The law requires mattress renovators to register with the Mattress Recycling Council. Renovators that fail to register are prohibited from selling mattresses in California. Register now at www.mrcreporting.org.

What is the Mattress Recycling Council?

The Mattress Recycling Council (MRC) is a non-profit organization established by the mattress industry to plan and manage this recycling program. Using recycling fees collected when end users (like consumers, hotels, universities, etc.) buy mattresses or box springs, MRC will contract with service providers to administer California's mattress recycling program.

How will the Program affect mattress renovators?

Registration with MRC

Under the law, each renovator must register with MRC. Those who do not register will be prohibited from selling mattresses and box springs in the state.

Registration is easy and free of charge. Just visit the online registration portal at **www.mrcreporting.org.**

Renovator
A person who renovates used mattresses for the purpose of sale, or offering for sale, in California.

Renovate
Altering a used mattress for the purpose of resale and includes one or more of the following: Replacing the mattress, ticking or filling; adding additional filling; rebuilding a used mattress; or replacing components with new or postconsumer materials.

Fee collection

When the Program begins in 2016, renovators that sell mattresses directly to end users in California must collect a recycling fee on each mattress and box spring sold. The fee applied to each sale will be:

- A flat rate per unit. Each mattress and each box spring is considered a separate unit.
- Visible on the invoice or sales receipt.
- Subject to sales tax.

The fee does not apply to mattresses sold to retailers.
Retailers will collect the fee when they sell to the end user. The fee must only be collected from the end user.

Fees will be remitted to MRC monthly via an online reporting portal accessible at www.mrcreporting.org.

Annual reporting

Beginning in 2017, renovators are required to submit annual reports to CalRecycle, the state agency overseeing the Program, and MRC.

Reports must include, but are not limited to, quantitative information on the number of mattresses received and recycled or renovated in the state during the preceding calendar year and any other information deemed necessary by CalRecycle

MATTRESS RECYCLING COUNCIL

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support@mattressrecyclingcouncil.org

www.mattressrecyclingcouncil.org

MATTRESS RECYCLING COUNCIL

February 2015

NEW LEGAL REQUIREMENTS FOR CALIFORNIA MATTRESS PRODUCERS AND IMPORTERS

In September 2013, California enacted the Used Mattress Recovery & Recycling Act, which requires the mattress industry to create a statewide recycling program (the Program) for mattresses discarded in the state. The Program is expected to launch in early 2016 and is funded through a recycling fee collected when consumers and other end users buy a mattress or box spring.

The law requires mattress producers and importers to register with the Mattress Recycling Council. Producers that fail to register are prohibited from selling mattresses in California. Register now at www.mrcreporting.org.

What is the Mattress Recycling Council?

The Mattress Recycling Council (MRC) is a non-profit organization established by the mattress industry to plan and manage this recycling program. Using recycling fees collected when end users (like consumers, hotels, universities, etc.) buy mattresses or box springs, MRC will contract with service providers to administer California's mattress recycling program.

How will the Program affect mattress producers and importers?

Registration with MRC

Under the law, each producer and importer must register with MRC. Those who do not register will be prohibited from selling mattresses and box springs in the state.

Registration is easy and free of charge. Just visit the online registration portal at **www.mrcreporting.org.**

Registering with MRC will also allow you to report and remit the fees you collect from your sales to end users through a secure online portal. Further details will be provided on the reporting and remittance processes soon.

Fee Collection

When the Program begins in 2016, ***producers selling directly to end users in California must collect a recycling fee on each mattress and box spring sold.*** The fee applied to each sale will be:

- A flat rate per unit. Each mattress and each box spring is considered a separate unit.
- Visible on the invoice or sales receipt.
- Subject to sales tax.

The fee does not apply to mattresses sold to retailers. Retailers will collect the fee when they sell to the end user. The fee must only be collected from the end user.

Fees will be remitted to MRC monthly via the online reporting portal accessible at www.mrcreporting.org

Are producers required to recycle used mattresses and box springs?

No. The law does not require producers to recycle used mattresses or box springs. However, they may voluntarily participate in the program to take advantage of the transportation and recycling services that MRC will provide.

MATTRESS RECYCLING COUNCIL

For assistance:
Toll Free: 1-888-646-6815
support@mattressrecyclingcouncil.org

www.mattressrecyclingcouncil.org

MEMORANDUM

To: **ESJPA Board of Directors**

From: **Larry Sweetser, ESJPA Consultant**

Date: **March 10, 2015**

RE: **ESJPA Grant Update**

Used Oil Grant
The ESJPA provided assistance with the Colusa County Farm show and had 1,847 visitors to the County Used Oil booth. ESJAP Staff is obtaining costs to remove and/or replace several used oil collection tanks in Colusa and Mariposa.

Tire Amnesty Grant Application
Tire Amnesty events are being scheduled for spring at all participating counties – Colusa, Inyo, Mariposa, Sierra, and Tuolumne. The grant will cover tire amnesty events through June 30, 2015.

USDA Training Assistance Grant
The ESJPA is scheduling the remaining trainings for the counties. Other training to be conducted include: the SWANA Manager of Landfill Operations training, and training on conducting environmental sampling for solid waste facilities. The grant term was extended through September 2015.

Our Sponsors

CURIE ENVIRONMENTAL SERVICES

YOU'RE INVITED!

WELCOME TO THE CONFERENCE!

CalRecycle is excited to welcome you to the 2015 Used Oil/HHW Training in Universal City from April 7-10, 2015, at the Sheraton Universal Hotel.

This year's theme of "The Reduced, The Reused and The Recycled" leverages the history of the conference location as well as the fundamental tenets of waste management. The conference is in the epicenter of creativity and entertainment, Universal City, California. It's where stories are turned into classics and ordinary people are turned into celebrities. Creative and workable ideas are needed more than ever to resolve the continuously evolving household hazardous waste and used oil management issues we are faced with. We hope you will be inspired not only by the venue but by the creative and enthusiastic minds around you. You will have many opportunities through trainings as well as educational keynote and workshop sessions to discuss the innovative programs you manage, learn from your talented colleagues across the state, and take some valuable resources and tools back home with you. And in your own way, through your efforts at the conference and beyond, you will become real celebrities in the eyes of the local residents that you serve.

CalRecycle continues its longstanding tradition of providing a wealth of education, information-sharing, and networking opportunities to help you improve and implement your waste management and collection activities. In particular, the workshop and training sessions will encourage interaction and skill building, while exploring a wide variety of environmental topics and challenges. And since we are in the movie capital of the world, the venue and information will be entertaining and fun and allow for many opportunities to network.

Thank you again for attending this year's conference in Universal City and making a difference for the environment. And, just like the action heroes on the movie screen, your presence here and continued efforts on behalf of household hazardous waste management and used oil and filter collection will help save the planet! We look forward to seeing you on the green carpet!

Sincerely,

Michelle Martin

Michelle Martin
California Department of Resources Recycling and Recovery

Fiscal Year 2014–15 Organics Grant Program (ORG1) Awards

Alameda County

Grantee: Recology East Bay Organics
Amount Awarded: $3,000,000.00
CalRecycle Grant Manager: Stanley Uyeda
Project Summary: Recology East Bay Organics project consists of a processing system that will leverage existing but under-utilized infrastructure to achieve greenhouse gas emissions reductions, while significantly increasing the tonnage of California-generated organic wastes diverted from landfills to anaerobic digestion at the East Bay Municipal Utility District wastewater treatment plant. Grant funds will be used to help purchase an organics extrusion press and associated equipment at its Recology San Francisco transfer station and an organics polishing system at the Alameda processing facility. The processing system is designed to extract organic material intermingled with mixed solid waste so that it can be anaerobically digested. Biomethane produced by the project will be used to power the East Bay Municipal Utility District wastewater treatment plant, with surplus power being sold to the Port of Oakland under a Power Purchase Agreement.

Fresno County

Grantee: Mid Valley Disposal, Inc.
Amount Awarded: $3,000,000.00
CalRecycle Grant Manager: Stanley Uyeda
Project Summary: Mid Valley Disposal, Inc. will construct a brand-new GORE® covered aerated static pile composting operation at its existing material recovery facility and transfer station in Kerman. The applicant will separate food and green materials from its existing collection routes in Fresno County and nearby communities, and produce compost using a process pre-certified by the San Joaquin Valley Air Pollution Control District for VOC reductions.

Riverside County

Grantee: CR&R Incorporated
Amount Awarded: $3,000,000.00
CalRecycle Grant Manager: Alex Byrne
Project Summary: The CR&R Anaerobic Digester (AD) Facility Expansion Project consists of an 83,000 ton per year addition to CR&R's AD facility that is under construction at the Perris Material Recovery Facility and Transfer Station. This addition will double the plant's processing capacity, enabling landfill diversion of an additional 229 tons of mixed municipal organics per day. This project will produce renewable natural gas transportation fuel and soil amendments.

San Bernardino County

Grantee: Burrtec Waste Industries, Inc.
Amount Awarded: $2,595,080.00
CalRecycle Grant Manager: Alex Byrne
Project Summary: The Burrtec Waste Industries projects consists of building a brand-new GORE® covered aerated static pile composting operation on property it owns in Victorville. The compost facility is the first phase of a project which includes a 500 TPD mixed waste processing facility on the site. Burrtec will source the green materials and food materials from its existing collection routes in the high desert, diverting these materials from the nearby Victorville Landfill, which will significantly reduce regional greenhouse gas and other emissions and generate compost for the region. Once the material recovery facility is built, organics residuals from that facility will also be composted.

Tulare County

Grantee: Colony Energy Partners – Tulare, LLC
Amount Awarded: $2,925,920.00
CalRecycle Grant Manager: Rhoderick Estrada
Project Summary: Colony Energy Partners, LLC project consists of a high-solids anaerobic codigestion facility that will divert more than 110,000 tons of waste annually from California's landfills in order to produce renewable biomethane. The biomethane will be fed directly into the natural gas grid via a SoCalGas transmission line adjacent to the property. The biomethane will also be supplied as a diesel alternative to San Joaquin Valley's on-road truck market through a public access Bio-CNG fueling station located on the property. The project includes a food waste prevention effort led by Fresno Metro Ministry, who will expand the Fresno Food Recovery Network and divert an additional 65 tons annually from California landfills by providing food to those in need.

Monthly Public Meeting

CalRecycle

10:00 A.M., December 16, 2014
Byron Sher Auditorium

A. DIRECTOR'S REPORT

Presentations or discussions by the Director and/or Executive Offices regarding department matters, legislative updates, public affairs or 75% initiative/legislative report.

Information Items

1. Summary of the Boles Fire Cleanup (Weed, CA) and Recognition of Team Members. Contact Heather Jones at Heather.Jones@CalRecycle.ca.gov

B. PUBLIC COMMENT*

People may speak on any matter concerning CalRecycle with the exception of items appearing elsewhere on this agenda or items related to pending adjudicative (certification or enforcement) proceedings.

*Please note that while CalRecycle affords members of the public the opportunity to participate by Webcast, CalRecycle strongly encourages public comments to be made in person.

C. GRANT AND LOAN PROGRAMS

Possible decisions or overview regarding matters related to the used oil and household hazardous waste programs.

Action Items

No actions at this time

Information Items

Nothing to report at this time

D. SOLID WASTE AND TIRE FACILITIES

Possible decisions or reconsiderations to petitions for a facility or landfill permit or modification; and, possible determinations of enforcement actions, clean-up requirements; or LEA training.

Action Items

1. Zanker Materials Facility – City of San Jose, Revised Solid Waste Facilities Permit, Action Needed January 3, 2015
   Department Staff Contact: Erik.Kirjura@CalRecycle.ca.gov
   Public Notice

2. Mecca II Sanitary Landfill – Riverside County, Modified Solid Waste Facilities Permit, Action Needed January 6, 2015
   Department Staff Contact: Dianne.Ohiosumua@CalRecycle.ca.gov
   Public Notice

3. Moreno Valley Solid Waste Recycling & Transfer Facility – Riverside County, Revised Solid Waste Facilities Permit, Action Needed January 19, 2015
   Department Staff Contact: Dianne.Ohiosumua@CalRecycle.ca.gov
   Public Notice

4. Newby Island Sanitary Landfill – City of San Jose, Revised Solid Waste Facilities Permit, Action Needed: TBD
   Department Staff Contact: Kevin.Taylor@CalRecycle.ca.gov
   Public Notice
5. New Pride Corporation – Los Angeles County, Minor Waste Tire Facility Permit, Action Needed April 28, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

6. Green World, LLC - Los Angeles County, Minor Waste Tire Facility Permit, Action Needed May 20, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

Information Items
Nothing to report at this time

E. POLICY MANDATES/WORKSHOPS/RULEMAKING PROCEEDINGS

Possible decisions or discussions by department staff regarding any order instituting a rulemaking proceeding to develop and adopt regulations and/or policy guidelines specifying the procedures to implement or revise program guidelines or requirements such as Product Stewardship, Commercial Recycling, Organics Roadmap or the 75% initiative.

Action Items
1. Approval to Formally Notice Revised Used Oil Regulations
   Department Staff Contact: Emily.Wang@Calrecycle.Ca.Gov
   Public Notice

Information Items
1. Stakeholder Workshop to Discuss Paint Stewardship Program
   January 6, 2014 - 9:00 AM – 12:00 PM, Cal/EPA Building, Byron Sher Auditorium
   Department Staff Contact: Allyson.Willsey@CalRecycle.Ca.Gov
   Public Notice

F. BEVERAGE CONTAINER RECYCLING PROGRAM

Possible decisions or announcements regarding BCRP matters including fund condition, rates, approval of new/renewed certifications, or enforcement actions.

Action Items
No actions at this time

Information Items
1. Revenue Opportunities Update
   Department Staff Contact: George.Donkor@CalRecycle.ca.gov

H. LOCAL ASSISTANCE

Possible approval or discussion of locally adopted planning documents, bi-annual reviews, compliance and enforcement actions, or other program-related proceedings.

Action Items

2. Applications To Renew The Recycling Market Development Zone (RMDZ) Designation For The Following: North San Diego County RMDZ; Sonoma/Mendocino/Lake Counties RMDZ; And Stanislaus County RMDZ
   Department Staff Contact: Mitch.Delmage@Calrecycle.Ca.Gov
   Public Notice

3. Amended Countywide Siting Element for Kern County
   Department Staff Contact: Melissa.Vargas@Calrecycle.Ca.Gov
   Public Notice

Information Items

1. Five-Year Review Report For The Countywide Integrated Waste Management Plan For The County Of Los Angeles
   Department Staff Contact: Lena-Prudence.Wiegand@Calrecycle.Ca.Gov
   Public Notice

2. Five-Year Review Report For The Countywide Integrated Waste Management Plan For The County Of Humboldt
   Department Staff Contact: Spencer.Fine@Calrecycle.Ca.Gov
   Public Notice

3. Five-Year Review Report For The Countywide Integrated Waste Management Plan For The County Of Santa Cruz
   Department Staff Contact: Melissa.Vargas@Calrecycle.Ca.Gov
   Public Notice

4. Five-Year Review Report For The Countywide Integrated Waste Management Plan For The County Of San Mateo County
   Department Staff Contact: Rhonda.Andrade@Calrecycle.Ca.Gov
   Public Notice

I. OTHER

Possible decisions or discussions regarding the development or implementation of a new or an amendment to policies and procedures for grants, loans and contracts. Please note that grants, loans, or scopes of work will be agendized specific to program area unless otherwise noted here.

Action Items

No actions at this time

Information Items

Nothing to report at this time

J. COMPLIANCE AND ENFORCEMENT HEARINGS

Hearings for Compliance and Enforcement matters and Administrative Appeals which are required to have a public hearing prior to the Department taking action

Action Items
No actions at this time

Information Items
Nothing to report at this time

We want to assure all of our stakeholders that transparency and stakeholder involvement remains a high priority for CalRecycle. In keeping with a history of providing stakeholders with information about programs, activities, and departmental decisions, CalRecycle has a public noticing site. To review Final CalRecycle Decisions and other department activities, please go to: http://www.calrecycle.ca.gov/Actions/ or http://www.calrecycle.ca.gov/BevContainer/Notices. For meeting participation, listserv, and feedback information, please go to: http://www.calrecycle.ca.gov/PublicMeeting/.

CalRecycle

10:00 A.M., January 27, 2015
Cal/EPA Building – Byron Sher Auditorium

A. DIRECTOR'S REPORT

Presentations or discussions by the Director and/or Executive Offices regarding department matters, legislative updates, public affairs or 75% initiative/legislative report.

B. PUBLIC COMMENT*

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*Please note that while CalRecycle affords members of the public the opportunity to participate by Webcast, CalRecycle strongly encourages public comments to be made in person.

C. BEVERAGE CONTAINER RECYCLING PROGRAM

Possible decisions or announcements regarding BCRP matters including fund condition, rates, approval of new/renewed certifications, or enforcement actions.

Action Items
No actions at this time

Information Items

1. Recycling Program Certification & Registration Report
   Quarterly Report on Branch workload metrics and key data.
   Department Staff Contact: George.Donkor@CalRecycle.ca.gov

2. Recycling Program Enforcement Report
   Quarterly Report on the Branch activities, including Probationary Reviews, Inspections, Investigations completed, and accusations filed. Updates will also be provided on Department of Justice/Office of the Attorney General interagency activities.
   Department Staff Contact: John.Halligan@CalRecycle.ca.gov

3. Recycling Program Operations Report
   Quarterly Report on the Branch activities will include a summary of Rate Determination Studies statistics, Market Information and Statistics and Update on Plastic Market Development Program for 2014.
   Department Staff Contact: Mike.Miller@CalRecycle.ca.gov

4. Quarterly Processing Fee and Payment Calculations
   Department Staff Contact: Mike.Miller@CalRecycle.ca.gov

5. Fraud Management Strategy
   Department Staff Contact: John.Halligan@CalRecycle.ca.gov

D. ELECTRONIC WASTE RECYCLING PROGRAM

Possible decisions or overview regarding the reuse, recycling, and handling of covered electronic devices; including matters related to fees, recyclers, enforcement, claim reviews and adjustments.

Action Items
No actions at this time

Information Items
Nothing to report at this time

E. LOCAL ASSISTANCE

Possible approval or discussion of locally adopted planning documents, bi-annual reviews, compliance and enforcement actions, or other program-related proceedings.

Action Items
No actions at this time

Information Items
Nothing to report at this time

F. GRANT AND LOAN PROGRAMS

Possible decisions or overview regarding matters related to the used oil and household hazardous waste programs.

Action Items

1. Eligibility Criteria and Evaluation Process for the Local Government Waste Tire Amnesty Grant Program (Tire Recycling Management Fund, Fiscal Year 2015–16)
   Department Staff Contact: Carla.Repucci@CalRecycle.CA.Gov
   Public Notice

Information Items

1. Recycling Market Development Zone Loan for CleanWorld SATS Biodigester, LLC (Recycling Market Development Revolving Loan Subaccount, FY 2014–15)
   Department Staff Contact: Jim.LaTanner@CalRecycle.CA.Gov
   Public Notice

2. Awards for the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program (Farm and Ranch Cleanup Account, FY 2014-15)
   Department Staff Contact: Carla.Repucci@CalRecycle.CA.Gov
   Public Notice

G. SOLID WASTE AND TIRE FACILITIES

Possible decisions or reconsiderations to petitions for a facility or landfill permit or modification; and, possible determinations of enforcement actions, clean-up requirements; or LEA training.

Action Items

1. Forward Resource Recovery Facility – San Joaquin County, Revised Solid Waste Facilities Permit, Action Needed February 9, 2015
   Department Staff Contact: Christine.Karl@CalRecycle.ca.gov
   Public Notice

2. Old Durham Wood, Inc. – Butte County, New Solid Waste Facilities Permit, Action Needed February 08, 2015
   Department Staff Contact: Marcus.Santillano@CalRecycle.ca.gov
   Public Notice

3. Newby Island Sanitary Landfill – City of San Jose, Revised Solid Waste Facilities Permit, Action Needed: February 7, 2015
   Department Staff Contact: Kevin.Taylor@CalRecycle.ca.gov
   Public Notice

4. Southeast Resource Recovery Facility – Los Angeles County, Modified Solid Waste Facilities Permit, Action Needed March 1, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

5. New Pride Corporation – Los Angeles County, Minor Waste Tire Facility Permit, Action Needed April 28, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

6. Green World, LLC - Los Angeles County, Minor Waste Tire Facility Permit, Action Needed May 20, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

Information Items

1. Waste Tire Enforcement Report
   Department Staff Contact: Bill.Albert@CalRecycle.ca.gov

H. POLICY MANDATES/WORKSHOPS/RULEMAKING PROCEEDINGS

Possible decisions or discussions by department staff regarding any order instituting a rulemaking proceeding to develop and adopt regulations and/or policy guidelines specifying the procedures to implement or revise program guidelines or requirements such as Product Stewardship, Commercial Recycling, Organics Roadmap or the 75% initiative.

Action Items

1. Consideration of Staff Recommendation Regarding Compliance of PaintCare's California Paint Stewardship Program Year 2 Annual Report
   Department Staff Contact: Allyson.Willsey@CalRecycle.Ca.Gov
   Public Notice

2. Approval of 2015 Rulemaking Calendar
   Department Staff Contact: Elliot.Block@CalRecycle.ca.gov

Information Items

1. Public Hearing for the Proposed Used Mattress Recovery and Recycling Program Regulations February 11, 2015 1:00 PM – 4:00 PM
   Department Staff Contact: Ashley.Harley@CalRecycle.Ca.Gov
   Public Notice

I. OTHER

Possible decisions or discussions regarding the development or implementation of a new or an amendment to policies and procedures for grants, loans and contracts. Please note that grants, loans, or scopes of work will be agendized specific to program area unless otherwise noted here.

Action Items
No actions at this time

Information Items
Nothing to report at this time

J. COMPLIANCE AND ENFORCEMENT HEARINGS

Hearings for Compliance and Enforcement matters and Administrative Appeals which are required to have a public hearing prior to the Department taking action

Action Items
No actions at this time

Information Items
Nothing to report at this time

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CalRecycle

10:00 A.M., February 17, 2015

Cal/EPA Building – Byron Sher Auditorium

A. DIRECTOR'S REPORT

Presentations or discussions by the Director and/or Executive Offices regarding department matters, legislative updates, public affairs or 75% initiative/legislative report.

B. PUBLIC COMMENT*

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C. BEVERAGE CONTAINER RECYCLING PROGRAM

Possible decisions or announcements regarding BCRP matters including fund condition, rates, approval of new/renewed certifications, or enforcement actions.

Action Items

No actions at this time

Information Items

1. Update on the Quality Incentive Payments for 2015.
   The Quality Incentive Payment (QIP) program is designed to improve the quality and marketability of empty glass beverage containers collected throughout the state for recycling. Pursuant to Public Resources Code (PRC) Section 14549.1 as amended by the passage of Assembly Bill 3056, the Recycling Division makes payments to eligible participants who sort and/or clean empty glass beverage containers. Recycling Division may expend up to $10 million annually for QIP payments.
   Department Staff Contact: Hieu.Le@CalRecycle.ca.gov

D. ELECTRONIC WASTE RECYCLING PROGRAM

Possible decisions or overview regarding the reuse, recycling, and handling of covered electronic devices; including matters related to fees, recyclers, enforcement, claim reviews and adjustments.

Action Items

No actions at this time

Information Items

Nothing to report at this time

E. LOCAL ASSISTANCE

Possible approval or discussion of locally adopted planning documents, bi-annual reviews, compliance and enforcement actions, or other program-related proceedings.

Action Items

No actions at this time

Information Items

Nothing to report at this time

F. GRANT AND LOAN PROGRAMS

Possible decisions or overview regarding matters related to the used oil and household hazardous waste programs.

Action Items

1. Eligibility Criteria, Evaluation Process, and Funding Allocations for the Local Conservations Corps Grant Program (California Beverage Container Recycling Fund, Electronic Waste Recovery and Recycling Account, California Tire Recycling Management Fund, and California Used Oil Recycling Fund, FY 2015-16)
   Department Staff Contact: MaryKay.Shafer@CalRecycle.CA.Gov
   Public Notice

Information Items

1. Awards for the Rubberized Pavement Grant Program (Tire Recycling Management Fund, FY 2014–15)
   Department Staff Contact: Calvin.Young@CalRecycle.CA.Gov
   Public Notice

G. SOLID WASTE AND TIRE FACILITIES

Possible decisions or reconsiderations to petitions for a facility or landfill permit or modification; and, possible determinations of enforcement actions, clean-up requirements; or LEA training.

Action Items

1. Southeast Resource Recovery Facility – Los Angeles County, Modified Solid Waste Facilities Permit, Action Needed March 1, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

2. Mariposa County Landfill – Mariposa County, Modified Solid Waste Facilities Permit, Action Needed March 13, 2015
   Department Staff Contact: Reinhard.Hohlwein@CalRecycle.ca.gov
   Public Notice

3. Napa Material Diversion Facility – Napa County, Revised Solid Waste Facilities Permit, Action Needed April 3, 2015
   Department Staff Contact: Nicholas.Oliver@CalRecycle.ca.gov
   Public Notice

4. New Pride Corporation – Los Angeles County, Minor Waste Tire Facility Permit, Action Needed April 28, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

5. Green World, LLC - Los Angeles County, Minor Waste Tire Facility Permit, Action Needed May 20, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

6. Gilton Resource Recovery/Transfer Facility – Stanislaus County, Minor Waste Tire Facility Permit, Action Needed July 8, 2015
   Department Staff Contact: Joy.Isaacson@Calrecycle.ca.gov
   Public Notice

Information Items
Nothing to report at this time

H. POLICY MANDATES/WORKSHOPS/RULEMAKING PROCEEDINGS

Possible decisions or discussions by department staff regarding any order instituting a rulemaking proceeding to develop and adopt regulations and/or policy guidelines specifying the procedures to implement or revise program guidelines or requirements such as Product Stewardship, Commercial Recycling, Organics Roadmap or the 75% initiative.

Action Items
1. First Informal Webinar workshop for the draft Tire Broker Registration rulemaking process on March 4, 2015.
   Staff Contact: Bill.Albert@CalRecycle.ca.gov

Information Items
Nothing to report at this time

I. OTHER

Possible decisions or discussions regarding the development or implementation of a new or an amendment to policies and procedures for grants, loans and contracts. Please note that grants, loans, or scopes of work will be agendized specific to program area unless otherwise noted here.

Action Items
No actions at this time

Information Items
Nothing to report at this time

J. COMPLIANCE AND ENFORCEMENT HEARINGS

Hearings for Compliance and Enforcement matters and Administrative Appeals which are required to have a public hearing prior to the Department taking action

Action Items
No actions at this time

Information Items
Nothing to report at this time

We want to assure all of our stakeholders that transparency and stakeholder involvement remains a high priority for CalRecycle. In keeping with a history of providing stakeholders with information about programs, activities, and departmental decisions, CalRecycle has a public noticing site. To review Final CalRecycle Decisions and other department activities, please go to: http://www.calrecycle.ca.gov/Actions/ or http://www.calrecycle.ca.gov/BevContainer/Notices. For meeting participation, listserv, and feedback information, please go to: http://www.calrecycle.ca.gov/PublicMeeting/.

CalRecycle

10:00 A.M., March 17, 2015
Cal/EPA Building – Sierra Hearing Room

A. DIRECTOR'S REPORT

Presentations or discussions by the Director and/or Executive Offices regarding department matters, legislative updates, public affairs or 75% initiative/legislative report.

B. PUBLIC COMMENT*

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*Please note that while CalRecycle affords members of the public the opportunity to participate by Webcast, CalRecycle strongly encourages public comments to be made in person.

C. BEVERAGE CONTAINER RECYCLING PROGRAM

Possible decisions or announcements regarding BCRP matters including fund condition, rates, approval of new/renewed certifications, or enforcement actions.

Action Items
No actions at this time

Information Items
Nothing to report at this time

D. ELECTRONIC WASTE RECYCLING PROGRAM

Possible decisions or overview regarding the reuse, recycling, and handling of covered electronic devices; including matters related to fees, recyclers, enforcement, claim reviews and adjustments.

Action Items
No actions at this time

Information Items
Nothing to report at this time

E. LOCAL ASSISTANCE

Possible approval or discussion of locally adopted planning documents, bi-annual reviews, compliance and enforcement actions, or other program-related proceedings.

Action Items

1. Approval to Initiate a Recycling Market Development Zone Designation Cycle For 2015
   Department Staff Contact: Mitch.Delmage@Calrecycle.Ca.Gov
   Public Notice

Information Items

1. Five-Year Review Report For The Regional Agency Integrated Waste Management Plan For Del Norte Solid Waste Management Authority, Del Norte County
   Department Staff Contact: Spencer.Fine@Calrecycle.Ca.Gov
   Public Notice

F. GRANT AND LOAN PROGRAMS

Possible decisions or overview regarding matters related to the used oil and household hazardous waste programs.

Action Items

1. Awards for the Tire-Derived Product Grant Program (Tire Recycling Management Fund, FY 2014–15)
   Department Staff Contact: Calvin.Young@CalRecycle.Ca.Gov
   Public Notice

Information Items

2. Awards for the Beverage Container Recycling Grant Program (California Beverage Container Recycling Fund, FY 2014–15 and 2015–16)
   Department Staff Contact: Divina.Cadiz@CalRecycle.Ca.Gov
   Public Notice

G. SOLID WASTE AND TIRE FACILITIES

Possible decisions or reconsiderations to petitions for a facility or landfill permit or modification; and, possible determinations of enforcement actions, clean-up requirements; or LEA training.

Action Items

1. Napa Material Diversion Facility – Napa County, Revised Solid Waste Facilities Permit, Action Needed April 3, 2015
   Department Staff Contact: Nicholas.Oliver@CalRecycle.ca.gov
   Public Notice

2. SA Recycling – Riverside County, Revised Solid Waste Facilities Permit, Action Needed April 18, 2015
   Department Staff Contact: Megan.Emslander@calrecycle.ca.gov
   Public Notice

3. Mariposa County Landfill – Mariposa County, Modified Solid Waste Facilities Permit, Action Needed April 19, 2015
   Department Staff Contact: Reinhard.Hohlwein@CalRecycle.ca.gov
   Public Notice

4. New Pride Corporation – Los Angeles County, Minor Waste Tire Facility Permit, Action Needed April 28, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

5. Green World, LLC - Los Angeles County, Minor Waste Tire Facility Permit, Action Needed May 20, 2015
   Department Staff Contact: Shannon.Hill@CalRecycle.ca.gov
   Public Notice

6. Gilton Resource Recovery/Transfer Facility – Stanislaus County, Minor Waste Tire Facility Permit, Action Needed July 8, 2015
   Department Staff Contact: Joy.Isaacson@Calrecycle.ca.gov
   Public Notice

Information Items

1. Awards for the Solid Waste Disposal and Codisposal Site Cleanup Program Grants (Solid Waste Disposal Trust Fund, FY 2014/2015)
   Department Staff Contact: Alan.Zamboanga@CalRecycle.ca.gov
   Public Notice

2. Approval for the Sixth Augmentation of Oakland Estuary Enhancement Project, Alameda County, Under the Solid Waste Disposal and Codisposal Site Cleanup Program (Solid Waste Trust Fund, FY 2013/2014)
   Department Staff Contact: Todd.Thalhamer@CalRecycle.ca.gov
   Public Notice

3. Approval of the Rancho Carpeta Trust Illegal Disposal Site Cleanup Project, Tehama County, Solid Waste Disposal and Codisposal Site Cleanup Program (Solid Waste Disposal Trust Fund, FY 2014/2015)
   Department Staff Contact: Stephanie.Young@CalRecycle.ca.gov
   Public Notice

H. POLICY MANDATES/WORKSHOPS/RULEMAKING PROCEEDINGS

Possible decisions or discussions by department staff regarding any order instituting a rulemaking proceeding to develop and adopt regulations and/or policy guidelines specifying the procedures to implement or revise program guidelines or requirements such as Product Stewardship, Commercial Recycling, Organics Roadmap or the 75% initiative.

Action Items

1. Adoption of the Five-Year Plan for the Waste Tire Recycling Management Program (8th Edition Covering Fiscal Years FYs 2015/16-2019/20)
   Department Staff Contact: Sally.French@CalRecycle.Ca.Gov
   Public Notice

Information Items

1. Webinars to Discuss Proposed Changes for the Local Government Tire Enforcement Agencies Grant Program, FY 2016–17
   March 18, 2015 1:30PM – 3:30PM and March 25, 2015 1:30PM – 3:30PM
   The same information will be discussed for both meetings.
   Department Staff Contact: Phanessa.Fong@CalRecycle.Ca.Gov
   Public Notice

2. Workshop to Discuss Proposed Criteria for the Greenhouse Gas Reduction Programs, FY 2015–16
   March 19, 2015 1:30PM – 4:00PM
   Department Staff Contact: Alex.Byrne@CalRecycle.Ca.Gov
   Public Notice

3. Workshop on the State of Recycling and State of Disposal in California
   March 24, 2015 9:00AM – 1:00PM
   Department Staff Contact: Mark.Umfress@CalRecycle.ca.go

4. Covered Electronic Waste Stakeholder Workshop: Managing Residual Cathode Ray Tubes
   April 13, 2015 10:00AM – 3:00PM
   Department Staff Contact: Jeff.Hunts@CalRecycle.Ca.Gov
   Public Notice

5. Local Funding and Siting: Case Studies, Samples, and Strategies ILG Webinar IV: "Streamlining the Local Planning Process for Recycling Facilities"
   April 14, 2015 10:00AM – 12:00PM
   Department Staff Contact: Christopher.Bria@CalRecycle.Ca.Gov
   Public Notice

6. Mandatory Commercial Organics Recycling (AB 1826) Stakeholder Workshop
   April 16, 2015 9:00AM – 3:30PM (Sacramento)
   The same information will be discussed in Southern California on April 28, 2015
   Department Staff Contact: Marshalle.Graham@CalRecycle.Ca.Gov
   Public Notice

7. Mandatory Commercial Organics Recycling (AB 1826) Stakeholder Workshop
   April 28, 2015 9:00AM – 3:30PM (Southern California - Tentatively in Lakewood)
   Repeat of Information from the April 16, 2015 Sacramento Workshop
   Department Staff Contact: Marshalle.Graham@CalRecycle.Ca.Gov
   Public Notice

I. OTHER

Possible decisions or discussions regarding the development or implementation of a new or an amendment to policies and procedures for grants, loans and contracts. Please note that grants, loans, or scopes of work will be agendized specific to program area unless otherwise noted here.

Action Items
No actions at this time

Information Items
Nothing to report at this time

J. COMPLIANCE AND ENFORCEMENT HEARINGS

Hearings for Compliance and Enforcement matters and Administrative Appeals which are required to have a public hearing prior to the Department taking action

Action Items
No actions at this time

Information Items
Nothing to report at this time

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2015 CFCC Funding Fairs

No Cost

Please join the California Financing Coordinating Committee (CFCC) for this no-cost event

I-BANK | Housing and Community Development | Department of Water Resources | California Water Boards | U.S. Department of the Interior Bureau of Reclamation | USDA United States Department of Agriculture

2015 SCHEDULE:

April 2, 2015
San Diego Regional Water Board
2375 Northside Drive, Suite 100
San Diego, CA 92108

May 6, 2015
Southern Ca. Edison, Energy Ed. Ctr.
4175 S. Laspina
Tulare, CA 93274

June 3, 2015
City of Eureka Wharfinger Building
1 Marina Way
Eureka, CA 95501

August 5, 2015
Truckee Town Hall—Council Chambers
10183 Truckee Airport Road
Truckee, CA 96161

September 2, 2015
City of Watsonville Community Room
275 Main Street, 4th floor
Watsonville, CA 95076

September 23, 2015 **
Sacramento County Sanitation
10060 Goethe Rd
Sacramento, CA 95827

** The Sacramento workshop will be webcast. Access will be available online at:
https://meet.saccounty.net/baileyn/9f2hjvj2

CFCC agencies fund primarily the following types of infrastructure projects:

- Drinking water
- Wastewater
- Water quality
- Water supply
- Water conservation
- Water use efficiency
- Energy efficiency
- Flood management

Some of the participating agencies also fund other types of infrastructure projects including streets and highways, emergency response vehicles, solid waste, and community facilities.

AGENDA
At each location, the Funding Fair Agenda is as follows:

Check in: ..... 8 a.m.-8:30 a.m.
Agency Presentations: ..... 8:30 a.m.-Noon
Discuss your projects: ..... Noon-3 p.m.

ATTENDEE REGISTRATION
Go to www.cfcc.ca.gov and click on **Funding Fairs**

For questions, please call (916) 447-9832 x 1029

For more information, please visit our website at: www.cfcc.ca.gov

California Financing Coordinating Committee (CFCC)

What is CFCC?

The California Financing Coordinating Committee (CFCC) was formed in 1998 and is made up of six funding members: four state, two federal. CFCC members facilitate and expedite the completion of various types of infrastructure projects helping customers combine the resources of different agencies. Project information is shared between members so additional resources can be identified. CFCC members conduct free funding fairs statewide each year to educate the public and potential customers about the different member agencies and the financial and technical resources available.

Purpose of CFCC Funding Fairs

CFCC Funding Fairs provide opportunities to obtain information about currently available infrastructure grant, loan and bond financing programs and options. Each attendee receives a copy of all slide presentations and additional useful infrastructure financing material. Funding Fairs also provide an opportunity for attendees to speak directly with program staff about specific projects and issues affecting their community.

Who should attend?

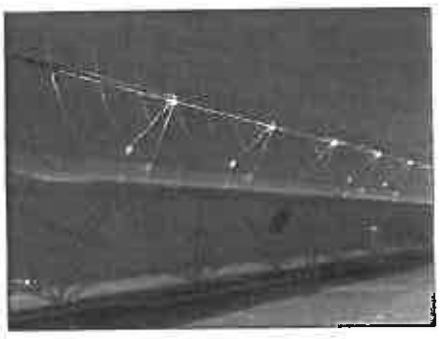
Representatives from public works, local governments, and California Native American Tribes. This includes city managers and planners, economic development and engineering professionals, officials from privately owned facilities, water and irrigation district managers, financial advisors and project consultants.

Eligible Project Types

CFCC agencies fund primarily the following types of infrastructure projects: drinking water, wastewater, water quality, water supply, water conservation water use efficiency, energy efficiency, and flood management. Some of the participating agencies also fund other types of infrastructure projects including streets and highways, emergency response vehicles, solid waste, and community facilities.

CFCC Information

Please log on to the CFCC website at www.cfcc.ca.gov for the 2015 Funding Fair schedule, CFCC Member Directory and general information.



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • P.O. BOX 2815, SACRAMENTO, CALIFORNIA 95812-2815
(916) 323-2514 • (916) 324-0908 FAX • WWW.CALEPA.CA.GOV

EDMUND G. BROWN JR.
GOVERNOR

Unified Program Newsletter
January 2015

IN THIS ISSUE:

California Environmental Protection Agency

CalEPA has Withdrawn the City of Oakland Fire Department's Certification as a Certified Unified Program Agency

On November 5, 2014, CalEPA issued a Notice of Intent to withdraw the City of Oakland Fire Department's certification as a Certified Unified Program Agency (CUPA). The Notice of Intent required the City of Oakland Fire Department CUPA to correct all program deficiencies by January 5, 2015. The City of Oakland Fire Department CUPA did not respond to the Notice of Intent nor did they correct all program deficiencies. Therefore, on January 5, 2015, CalEPA issued a notice to the City of Oakland officially withdrawing their Certification as a CUPA effective January 30, 2015. CalEPA has also officially designated the Alameda County Environmental Health Department as the CUPA for the City of Oakland jurisdiction, also effective January 30, 2015. A transition plan will be finalized to guide the transfer of implementing the Unified Program within the City of Oakland.

REMINDER: Compliance Monitoring and Enforcement (CME) Data must be entered into CERS

Starting fiscal year 2014/2015, CME data must be submitted electronically within 30 days of each completed quarter [CCR Title 27, Division 1, Subdivision 4, Section 15290(b)]. Submittal deadlines are listed below:

Fiscal Year Quarterly CME Action Occurs (including updates)	Deadline for Electronic Submittal Of Quarterly CME Data
July 1 – September 30	October **30**
October 1 – December 31	**January 30**
January 1 – March 31	**April 30**
April 1 – June 30	July 30

Beginning August 1, 2014, CUPAs will be evaluated on quarterly CME electronic reporting requirements

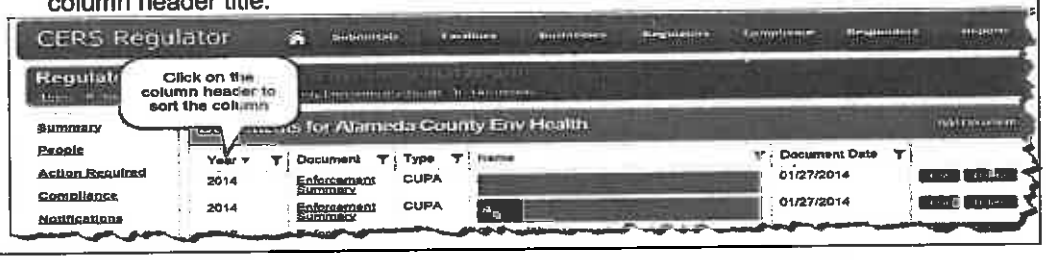
All CME data must include the complete detail record fields identified in the CERS Regulator Portal (http://cers.calepa.ca.gov/) and defined in the Unified Program Data Dictionary (www.calepa.ca.gov/LawsRegs/Regulations/T27/DataDict.pdf).

For more information, please refer to Unified Program Guidance Letter 14-02 (http://www.calepa.ca.gov/CUPA/Bulletins/2014/Jan17.pdf).

CERS Tips and Tricks
CERS Tips and Tricks include helpful explanations and resolutions regarding current issues recently received by the CERS Technical Support Team. If you have questions or concerns, please contact the CERS Technical Support Team at cers@calepa.ca.gov.

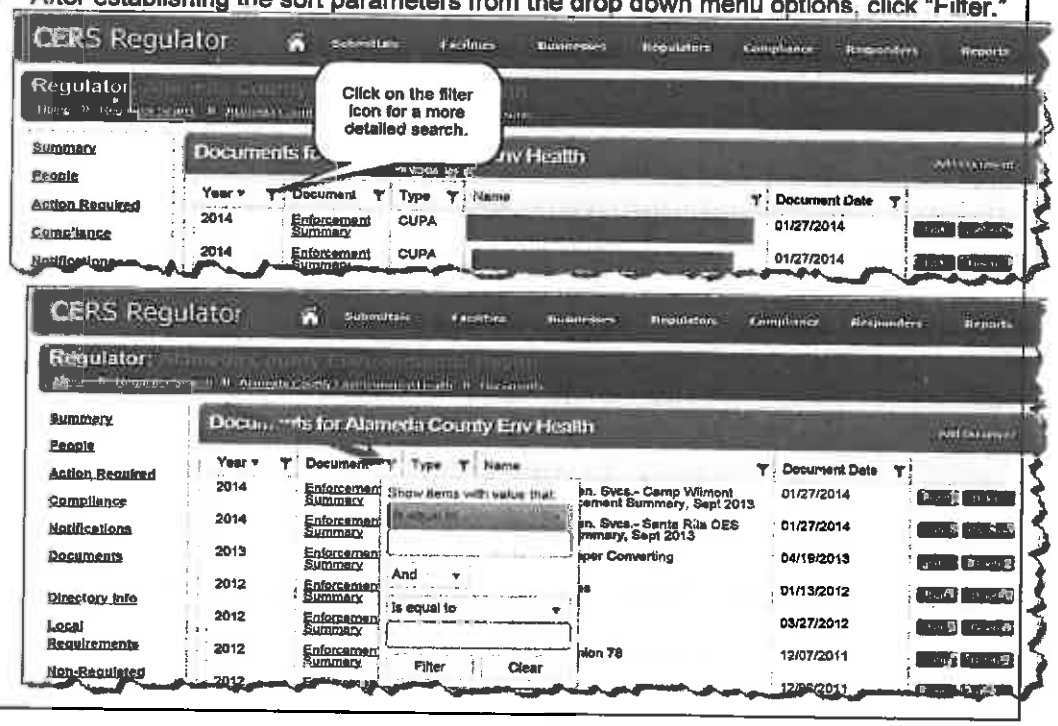
Various columns in CERS can be sorted to list documents and information in an order dependent upon the type of information contained in each column. Information can be sorted in ascending or descending order by column header titles or more extensively by using the filter icon (▼).

To sort information in any column by header title:	○ Click on the header **title**. ○ Depending on the type of data in the field, the comumn will automatically sort by date o alphabetically. ○ The order of data can be changed from ascending to descending with each click on the column header title.



To sort information in any column with the filter icon (▼):

- Click on the filter icon (▼).
- Additional sorting parameters will appear.
- After establishing the sort parameters from the drop down menu options, click "Filter."



Look for other "CERS Tips and Tricks" in next month's Unified Program Newsletter.

CERS 2.0 Updates and Version History
The CalEPA Unified Program manages the CERS web application. A general summary for each build, or update, includes the most important and/or impactful features and fixes added to CERS. These summaries are arranged by release date and are available on CERS Central at: http://cers.calepa.ca.gov/announcements/cers-version-history.

REMINDER: CERS Limited Availability, Regularly Scheduled Maintenance
CalEPA attempts to have CERS services available as much as possible, however services are not intended to be provided on a 24-hour-7-days a week basis. Limited availability to CERS Central and the Business and Regulator production portal services will occur as follows due to regularly scheduled maintenance:

WEEKLY:
- Each Friday, between noon and 1:30 p.m.
- Each Sunday, between 1:00 a.m. and 5:00 a.m.
- *Exact time to be posted on CERS Business and Regulator Portal pages two hours in advance.*

MONTHLY:
- One Monday from 7:00 p.m. – 11:00 p.m.
  - *The selected Monday will vary from month to month.*
  - *Exact time to be posted on CERS Business and Regulator Portal pages two hours in advance.*
- The third and/or fourth Sundays of each month from 7:00 a.m. - 11:00 a.m.

CalEPA requests that all users refrain from using CERS services during all regularly scheduled maintenance times.

Please refer to the CERS Availability Policy (http://cers.calepa.ca.gov/policy/availability) for more information.

Department of Toxic Substances Control

Governor Edmund G. Brown, Jr. Announces Appointment of Hazardous Waste Management Program Deputy Director on December 15, 2014
On December 15, 2014, Governor Edmund G. Brown, Jr. announced the appointment of Ms. Elise Rothschild as deputy director of the Hazardous Waste Management Program at the California Department of Toxic Substances Control. Ms. Rothschild has served as chief at the Sacramento County Environmental Management Department, Environmental Compliance Division since 2010. She previously served as deputy chief from 2006 to 2010, and was a supervising environmental specialist in the Hazardous Materials Division from 2000 to 2006. She served as a hazardous materials specialist from 1987 to 2000. She is a member of the board of Directors for the California Certified Unified Program Agencies Forum and the Bridges Professional Treatment Services Inc. She is also a member of the California Hazardous Materials Investigators Association. For additional information, please visit: http://gov.ca.gov/news.php?id=18809.

State Water Resources Control Board - None

California Office of Emergency Services - None

CAL FIRE - Office of State Fire Marshal

Aboveground Petroleum Storage Act (APSA) Program Meetings

Group	Next Meeting Date
APSA Regulations Workgroup	TBA
Tanks in Underground Areas	January 16, 2015
APSA Advisory Committee	January 20, 2015

California Environmental Reporting System (CERS) Tips
CERS Business Portal Help Materials now include the topics: Aboveground Petroleum Tank Reporting Requirements and Obsolete Fire Hazard Categories. The Aboveground Petroleum Tank Reporting Requirements document helps facilities determine if they need to submit an Aboveground Storage Tank Facility Statement to fulfill the APSA program's reporting requirement. The Obsolete Fire Hazard Categories document identifies a list of fire hazard categories that are no longer valid with the current version of the California Fire Code (CFC) 2013. Obsolete fire hazard categories will no longer be available for selection on CERS when preparing an inventory submittal. The help documents/FAQs can be found at https://cersbusiness.calepa.ca.gov/Help.

CalEPA
California Environmental Protection Agency

Edmund G. Brown Jr.
Governor
Matthew Rodriquez
Secretary for Environmental Protection

Unified Program Newsletter
February 2015

IN THIS ISSUE:

California Environmental Protection Agency

CERS Emergency Responder Module Released

The Emergency Responder feature has been released. Please review the feature in the 'Responder' tab of the Regulator portal. This feature allows first responders to search for a site or sites by address or facility name, or a portion of either, or by a City, Zip Code or CERS ID. The results display facility emergency contact information, a summary of hazardous materials by DOT hazard class and the site map. If you have comments or questions regarding this feature contact Dan Firth at daniel.firth@calepa.ca.gov.

CERS FAQ

CalEPA has posted a new FAQ for Regulators, 'Setting Accepted Submittal Status' at https://cersregulator.calepa.ca.gov/Help. This FAQ provides guidance regarding accepting submittals by completeness review or as a result of a field inspection.

Department of Toxic Substances Control

Governor Brown Appointee

Governor Brown has appointed Elise Rothschild as DTSC's Deputy Director for the Hazardous Waste Management Program (HWMP).

Ms. Rothschild comes to DTSC from the Sacramento County Environmental Management Department, where she served the past four years as the Division Chief of Environmental Compliance. She held various positions with increasing responsibilities since joining the County's Environmental Management Department in 1987.

She brings a strong environmental regulatory background to HWMP. She oversaw Sacramento County's CUPA program and enforcement, hazardous waste incident response, recycling, site cleanup and several other key functions that mirror the work at DTSC. In addition, she managed 60 staff members and a $10 million budget, in a program that implements federal, state, and local regulations and statutes. She is past chair of the California State CUPA Forum Board, and past president of the California Hazardous Materials Investigator's Association. Ms. Rothschild is a graduate of UC Davis with a degree in Environmental Policy Analysis, and is a Registered Environmental Health Specialist.

State Water Resources Control Board

When to Review UST Records
The State Water Board has issued a letter dated January 29, 2015 regarding when UST records (submitted via the California Environmental Reporting Systems (CERS) or other method) should be reviewed by the Unified Program Agency (UPA). Health and Safety Code, section 25288(a) requires all facility information to be reviewed for completeness and accuracy during the annual inspection. Therefore, the deadline for reviewing UST records is the same as the annual inspection date and should not exceed one year.

However, reviewing records only during the annual inspection may allow violations to persist, which then poses a threat to water quality. Also, statute and regulations require facilities to submit certain information in a timely manner with the assumption that it will be reviewed and acted on within a reasonable time frame by the UPA. For these reasons, the State Water Board expects UST records to be reviewed for completeness and accuracy, though not necessarily field verified, as soon as possible, but no later than 30 days after the submittal is due.

This letter will be posted on the State Water Board UST Program website Technical Notifications webpage, http://www.waterboards.ca.gov/water_issues/programs/ust/tech_notices.shtml.

See the CERS FAQs "Setting Accepted Submittal Status" and "When Can a UST Operating Permit be Issued" for more guidance on reviewing and responding to UST submittals.

New CERS FAQ – Common CERS Reporting Errors
A new FAQ regarding the most common CERS reporting errors that CUPAs and PAs see in Business submittals to CERS has been posted in the Business General Help Section of CERS, https://cersbusiness.calepa.ca.gov/Help. The most common CERS reporting errors are as follows:

1. Facility Submittal Element
   a. Partial submittals of only the facility information.
2. Hazardous Materials Inventory Submittal Element
   a. Incorrect Chemical and/or Common Name.
   b. Incorrect selection for the "hazardous materials type" data field.
3. Incorrect information reported for "maximum daily amount" field.
4. Facility marks a "no" for the first business activities form question regarding hazardous materials storage and then they are unable to submit inventory including hazardous wastes.
5. Duplicate documents in same submittal (old and revised version of same form submitted).
6. Facility creates a new duplicate facility in CERS.
7. Business site address incorrect and/or business owner information is incorrect.
8. Documents put in the wrong location. "Locally collected information" seems to be a used incorrectly.

Avoiding these types of errors when submitting to CERS or a local reporting portal will help increase the likelihood that a submittal will be accepted by your local agency, saving time and effort. This FAQ may be updated as the State Water Board receives additional feedback. See the posted FAQ for more information.

New CERS FAQ – When to Issue a UST Operating Permit
A new FAQ regarding the issuance of a UST operating permit to a facility that has not submitted electronically, or a facility that has submitted but the submittal is not accepted, has been posted in the Regulator General Help Section of CERS, https://cersregulator.calepa.ca.gov/Help. If a facility has not submitted the required information electronically through CERS or a local portal, then the UPA cannot issue that facility an operating permit. If a facility has submitted the required information electronically, but the submittal is marginally deficient, then the UPA has the ability to do one of the following:

1. Choose to 'not accept' the submittal and issue the operating permit
2. Choose to 'not accept' the submittal and NOT issue the permit
3. Choose to 'accept' with conditions that a resubmittal be made and issue the operating permit

New CERS FAQ – Setting Accepted Submittal Status
A new FAQ regarding what criteria should be considered for accepting submittal and how to report a completeness review versus site inspection verification has been posted in the Regulator General Help Section of CERS, https://cersregulator.calepa.ca.gov/Help. In CERS 2 the submittal status 'accepted' is used to include either a completeness review that is performed in the office by an inspector or other staff member that may have limited or no direct familiarity with the facility, OR a review that is based on an inspection at the facility to validate the information reported is consistent with the observations by the inspector. Because of this current limitation the comment field should be used to clarify the type of acceptance and to indicate if there are conditions associated with the acceptance. See the posted FAQ for more information.

Recent International Code Council (ICC) Changes
ICC is now issuing new membership wallet cards that can be used to demonstrate a card owner's membership and certifications. The new card includes a web address and a QR code that go directly to an individualized web page listing the owner's certifications, expiration dates, and membership status.

ICC has also introduced obtaining continuing educational units (CEUs) through their ICC Preferred Providers program and renewing online. Please note that this does not apply to the California ICC Inspector (UI) certification, which is the only UST ICC certification that can be renewed in California (all others have to be retested for). Paper applications shall continue to be used for renewing the California UST Inspector certification and methods of accruing CEUs shall continue to meet the requirements outlined in the guidance document, Implementation of Continuing Education Contact Hours for Renewal of California UST Inspector ICC Certification (revised on July 30, 2007 and can be found at http://www.waterboards.ca.gov/ust/forms/docs/icc_ust_renewal_08292007.pdf).

For more information on UST ICC certifications in California, visit the following websites;

http://www.waterboards.ca.gov/water_issues/programs/ust/training/icc_cert_info.shtml

http://www.iccsafe.org/Certification/Bulletins/UST-AST_EIB.pdf

California Office of Emergency Services

New Employee
Cal OES would like everyone to welcome Alexis Elliott to our Hazmat Section as an Environmental Scientist. Alexis served in the United States Army as a motor transport specialist with the 82nd Airborne Division and has served a tour in Iraq. Alexis earned a BS in environmental sciences in June 2014 and is new to state service.

CAL FIRE - Office of State Fire Marshal - None

Mary Pitto

From: CalRecycle Electronic Product Management ListServ [EWaste@calrecycle.ca.gov]
Sent: Wednesday, December 10, 2014 9:59 AM
To: Mary Pitto
Subject: California E-Waste Updates: Implementing the Electronic Waste Recycling Act

December 10, 2014

Dear Electronic Waste Stakeholder:

This electronic newsletter is an update on the implementation of California's Electronic Waste Recycling Act of 2003 (Act) and other electronic waste (e-waste) management developments in California.

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In this issue:

DTSC ISSUES ADVISORY TO RECYCLERS ON CRT DISPOSITION

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DTSC Issues Advisory to Recyclers on CRT Disposition

The California Department of Toxic Substances Control (DTSC) recently issued a general advisory to handlers and processors of cathode ray tube (CRT) devices and CRT glass concerning regulatory responsibility relating to the ultimate disposition of CRT glass. The content of that advisory is reprinted below.

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CALIFORNIA CRT RECYCLERS ARE STRONGLY ADVISED TO MONITOR THE MANAGEMENT OF ALL CRTs SENT OUT OF STATE FOR FURTHER PROCESSING

The Department of Toxic Substances Control (DTSC) is well aware of the impact the changing market for recovered cathode ray tubes (CRTs) and CRT glass has had on CRT handlers (particularly recyclers) in California. While DTSC continues its dialogue with industry on the development of alternative CRT recycling technologies that meet strict California standards for protecting human health and the environment, it strongly advises industry to exercise "due diligence" when sending CRTs and CRT glass out of state - particularly to intermediate facilities. California regulations [Title 22, California Code of Regulations, section 66273.72(c)(3) et seq.] hold California recyclers responsible for the ultimate disposition of California CRTs. As a California regulatory agency, DTSC lacks the legal authority to conduct a site inspection of an out-of-state facility to verify that it manages CRTs and CRT glass in compliance with the applicable laws in that state or to determine if the facility sends California CRTs and CRT glass for ultimate disposition that complies with California regulations.

A recent, large-scale effort to reroute millions of pounds of CRTs and CRT glass from an abandoned facility in Arizona has underscored the importance for California recyclers to ask hard questions of out-of-state facilities in order to avoid potentially crippling liability for material mishandled downstream. Neither DTSC or the Department of Resources Recycling and Recovery (CalRecycle) possess jurisdiction to assess the current or

future status, or viability of out-of-state companies that accept CRTs or CRT glass from California handlers. If your company is shipping CRTs or CRT glass out-of-state, you should understand the difference between a destination that remanufactures CRT glass and/or engages in lead smelting, and an intermediate facility. Most CRT processing facilities in other states are intermediate facilities. Your company bears responsibility under California law for material while it is at an intermediate facility, and until it reaches its final destination for recycling.

Over the past couple of years, some California recyclers have directly or indirectly incurred costs of up to $100,000 for sending CRTs to an intermediate facility that subsequently abandoned that material onsite. Neither DTSC nor CalRecycle can predict whether such a scenario will occur again at a different out-of-state facility. In the event that a facility owner walks away from his/her site and you do not have records specifically showing that your CRTs aren't there, your company would be responsible for identifying, recovering, and rerouting your CRTs and/or CRT glass to an appropriate disposition. This means that you would essentially be paying twice for the offsite shipment of that material. Furthermore, you may be subject to enforcement penalties from DTSC for failing to ensure that your CRTs reached an authorized CRT processing facility to begin with.

You may also be subject to enforcement action and/or cost recovery efforts from an out-of-state regulatory agency. You should be aware that most other states regard abandoned shipments of CRTs and CRT glass to be hazardous waste generated in (and shipped from) California, in violation of the Federal CRT Rule, and subject to full regulation as hazardous waste. Finally, you should understand that CalRecycle, pursuant to Title 14, California Code of Regulations, reserves the right to pursue partial or full repayment on covered electronic waste (CEW) recycling claims whose derived residual CRTs are abandoned out-of-state or otherwise non-compliantly managed.

To address these concerns, and to assist industry in making informed decisions and staying in compliance, DTSC strongly recommends the following:

- Arranging an in-person tour of your intermediate facility on a regular basis;
- Requesting copies of downstream shipment records for all material, not just a representative load, to ensure that material is moving out of the intermediate facility to the final destination on a regular and timely basis;
- Following up on the status of each load shipped to the intermediate facility within two weeks of receipt;
- Weekly phone calls to the intermediate facility to verify their operational status;
- Understanding the out-of-state facility's relationship with the final destination of your material, and requesting copies of detailed contracts and material flow;
- Contacting the final destination yourself regarding receipt of your processed material, whether or not that destination is in India;
- In general, not relying on third party information about the status of your CRT shipments sent to an out-of-state facility; and
- Complying with all of the applicable requirements found at http://www.dtsc.ca.gov/HazardousWaste/EWaste/upload/Ewaste_UW_Handlers_checklist.pdf that are not already mentioned above.

DTSC is happy to provide you with, or assist you in obtaining, publicly available information (such as recent inspection reports) on the compliance status of intermediate CRT and CRT glass facilities (as determined by the Arizona Department of Environmental Quality or other out-of-state regulatory agency). Please contact Rita Hypnarowski of DTSC at (916) 255-3699 or rita.hypnarowski@dtsc.ca.gov to inquire, or to discuss any concerns or questions regarding this advisory.

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Other Resources

Covered Electronic Waste (CEW) Recycling Program Information:
http://www.calrecycle.ca.gov/Electronics/Act2003/

CEW Recycling Payment System Regulations:
http://www.calrecycle.ca.gov/Laws/Regulations/Title14/Chap08pt2/default.htm

DTSC Universal Waste Electronics Handler and Recycler Information:
http://www.dtsc.ca.gov/HazardousWaste/EWaste/

Public Resources Code (PRC), Health and Safety Code (HSC), and other statutes:
http://www.leginfo.ca.gov/calaw.html

Please note that e-mail correspondence with the Department of Resources Recycling and Recovery (CalRecycle) related to e-waste management in general, and implementation of the Electronic Waste Recycling Act in particular, should be directed to ewaste@calrecycle.ca.gov

Also note that an archive of past distributions of this newsletter is available at:
http://www.calrecycle.ca.gov/Electronics/Act2003/Stakeholder/Updates/

Thank you for your interest in shaping California's e-waste management future.

To subscribe to or unsubscribe from the E-Waste listserv or other listservs, please go to http://www.calrecycle.ca.gov/Listservs/. For information on California's Electronic Waste Recycling Act of 2003 (SB 20) implementation efforts, as well as other relevant developments go to http://www.calrecycle.ca.gov/Electronics/.

Mary Pitto

From: CalRecycle Electronic Product Management ListServ [EWaste@calrecycle.ca.gov]
Sent: Tuesday, February 17, 2015 3:52 PM
To: Mary Pitto
Subject: California E-Waste Updates: Implementing the Electronic Waste Recycling Act

February 17, 2015

Dear Electronic Waste Stakeholder:

This electronic newsletter is an update on the implementation of California's Electronic Waste Recycling Act of 2003 (Act) and other electronic waste (e-waste) management developments in California.

In this issue:

CalRecycle Inks Interagency Agreement with CDFA to Improve Measurements

The California Department of Resources Recycling and Recovery (CalRecycle) has established a three-year interagency agreement (IAA) with the California Department of Food and Agriculture (CDFA) to boost compliance with material measurement and recordkeeping rules within the state's electronic waste recycling industry. The IAA will allow for a more thorough examination of industry practices and determine what information, education, guidance, and corrective actions may be necessary to improve compliance.

Beginning with those electronic waste recyclers approved to participate in the covered electronic waste (CEW) recycling program, the CDFA Division of Measurement Standard's Weighmaster Enforcement Program will survey, audit, inspect, and, as necessary, investigate compliance with applicable Weighmaster laws governing material transactions within the state. Using records derived from CalRecycle's administration of the CEW recycling program, CDFA will then expand its examination of the electronic waste recycling industry to upstream collectors and handlers.

More information on this initiative can be found at:
http://www.calrecycle.ca.gov/Electronics/Weighmaster/Default.htm

Reminder: Net Cost Reports Due On or Before March 1, 2015

All participants in the covered electronic waste (CEW) recycling program are required to submit Net Cost Reports to CalRecycle on or before March 1, 2015, documenting operational costs and revenues during 2014. A public notice for this requirement can be found at:
http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=1336&aiid=1211

CalRecycle provides the ability to file the Net Cost Report online. Authorized contacts for participating CEW collectors and recyclers have received an email with instructions on how to secure access to the online reporting website, as well as guidance on report preparation. (Please note: The CEW Net Cost Report should not be confused with the annual universal waste electronics handler report that was due to DTSC on or before February 1, 2015.)

More information about Net Cost Reports can be found at:
http://www.calrecycle.ca.gov/Electronics/Act2003/Recovery/NetCost/

Separately, CalRecycle is encouraging approved recyclers with experience in cancelling non-CRT CEW to compile and submit cost data specific to that activity. Existing regulations allow approved recyclers to submit tests, studies, reports, or other information to be considered by CalRecycle when evaluating the Standard Statewide Recovery and Recycling Payment Rate. Please refer to 14 CCR 18660.10(h). Supporting this invitation is the fact that approved recyclers are currently required to maintain cost information specific to each type of CEW handled and cancellation method used. Please see 14 CCR 18660.21(l)(5).

It is imperative that participants use generally accepted accounting practices when preparing their reports to ensure accuracy. CalRecycle has been assigned the authority to impose civil liabilities on any person, including collectors and recyclers, "...that makes a false statement or representation in any document filed, submitted, maintained, or used for purposes of compliance with this chapter and associated regulations..." Please refer to Public Resources Code 42474(d) and (e).

Other Resources

Covered Electronic Waste (CEW) Recycling Program Information:
http://www.calrecycle.ca.gov/Electronics/Act2003/

CEW Recycling Payment System Regulations:
http://www.calrecycle.ca.gov/Laws/Regulations/Title14/Chap08pt2/default.htm

DTSC Universal Waste Electronics Handler and Recycler Information:
http://www.dtsc.ca.gov/HazardousWaste/EWaste/

Public Resources Code (PRC), Health and Safety Code (HSC), and other statutes:
http://www.leginfo.ca.gov/calaw.html

Please note that e-mail correspondence with the Department of Resources Recycling and Recovery (CalRecycle) related to e-waste management in general, and implementation of the Electronic Waste Recycling Act in particular, should be directed to ewaste@calrecycle.ca.gov

Also note that an archive of past distributions of this newsletter is available at:
http://www.calrecycle.ca.gov/Electronics/Act2003/Stakeholder/Updates/

Thank you for your interest in shaping California's e-waste management future.

Mary Pitto

From: CalRecycle Electronic Product Management ListServ [EWaste@calrecycle.ca.gov]
Sent: Tuesday, March 03, 2015 5:51 PM
To: Mary Pitto
Subject: California E-Waste Updates: Implementing the Electronic Waste Recycling Act

March 3, 2015

Dear Electronic Waste Stakeholder:

This electronic newsletter is an update on the implementation of California's Electronic Waste Recycling Act of 2003 (Act) and other electronic waste (e-waste) management developments in California.

In this issue:

CalRecycle to Hold CEW Stakeholder Workshop April 13

The California Department of Resources Recycling and Recovery (CalRecycle) has scheduled a stakeholder workshop to focus on the subject of cathode ray tube (CRT) disposition allowances and limitations in the context of California's covered electronic waste (CEW) recycling program. The workshop will be held Monday, April 13, 2015, at the CalEPA headquarters building in Sacramento. A public notice containing more information has be posted at:
http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=1443&aiid=1311

Additional information and background documents will be posted closer to the workshop date.

Next Steps: Net Cost Reports Were Due On or Before March 1

All participants in the covered electronic waste (CEW) recycling program were required to submit Net Cost Reports to CalRecycle on or before March 1, 2015, documenting operational costs and revenues during 2014. A public notice for this requirement can be found at:
http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=1336&aiid=1211

The most recent listserv notice of this requirement can be found at:
http://www.calrecycle.ca.gov/listservs/archive/MessageDetail.aspx?ListPostingID=12304

Failure to submit a Net Cost Report is considered a prohibited activity resulting in the suspension or revocation of a CEW program participant's approval (see 14 CCR 18660.17). CalRecycle anticipates moving promptly to revoke the approval of collectors and recyclers who fail to report as required. CalRecycle is currently assessing which expected reports have been received from CEW program participants via either electronic or hardcopy submittal.

More information about Net Cost Reports can be found at:
http://www.calrecycle.ca.gov/Electronics/Act2003/Recovery/NetCost/

Other Resources

Covered Electronic Waste (CEW) Recycling Program Information:
http://www.calrecycle.ca.gov/Electronics/Act2003/

CEW Recycling Payment System Regulations:
http://www.calrecycle.ca.gov/Laws/Regulations/Title14/Chap08pt2/default.htm

DTSC Universal Waste Electronics Handler and Recycler Information:
http://www.dtsc.ca.gov/HazardousWaste/EWaste/

Public Resources Code (PRC), Health and Safety Code (HSC), and other statutes:
http://www.leginfo.ca.gov/calaw.html

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Also note that an archive of past distributions of this newsletter is available at:
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Thank you for your interest in shaping California's e-waste management future.

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To subscribe to or unsubscribe from the E-Waste listserv or other listservs, please go to http://www.calrecycle.ca.gov/Listservs/. For information on California's Electronic Waste Recycling Act of 2003 (SB 20) implementation efforts, as well as other relevant developments go to http://www.calrecycle.ca.gov/Electronics/.

Agenda Item X

ARTICLES OF INTEREST

REGULATIONS

A Landfill Game Changer

EPA proposes air standards for new MSW landfills and requests information on methods to reduce emissions from existing landfills.

On July 1, 2014, the US Environmental Protection Agency (EPA) issued notices of two proposed rules affecting municipal solid waste landfills.

The first is a proposed New Source Performance Standards (NSPS) for MSW Landfills, which will be contained within Title 40 of the *Code of Federal Regulations* (CFR), Part 60, Subpart XXX. The new requirements will apply to MSW landfills that commence construction, reconstruction, or modification after the date the proposed standards are published in the *Federal Register* (July 17, 2014). The final rule is scheduled for promulgation on March 10, 2015.

The second proposed rule is actually an Advanced Notice of Proposed Rulemaking (ANPRM), titled Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, where EPA is requesting information to assist it in a future rulemaking for existing MSW landfills under the Emission Guidelines (EG). The new EG rule would ultimately replace 40 CFR, Part 60, Subpart Cc and Part 62, Subpart GGG, and the existing federal EG rules as well as state and local EG rules. The current NSPS rule (40 CFR, Part 60, Subpart WWW) would remain in place until the new EG rule is promulgated and adopted at the state and local level.

EPA will be accepting public comment on the two proposed rules for 60 days following the July 17, 2014, publication in the *Federal Register* or by September 15, 2014. Links to the draft NSPS rule, ANPRM, and EPA factsheets on both proposed rulemakings can be found at **www.epa.gov/ttn/atw/landfill/landflpg.html**. Additional supporting documents are available in the rulemaking docket.

New Landfill Construction, Modification, and Reconstruction

The proposed NSPS (40 CFR Part 60, Subpart XXX) for new landfills would make a number of changes to the current landfill NSPS (40 CFR Part 60, Subpart WWW). The current NSPS will remain applicable to MSW landfills on which construction, modification or reconstruction was commenced on or after May 30, 1991, but before July 17, 2014 (the date of publication of the new proposal in the *Federal Register*). The current NSPS rule is being used by EPA as baseline for the creation of the new NSPS; however, the changes will only apply to new landfills as defined under 40 CFR Part 60, Subpart XXX — new landfills initially constructed after the *Federal Register* publication date and existing landfills that modify or reconstruct (i.e., increase the permitted design capacity) after the publication date. These changes include:

- ***Thresholds for Installing Controls:*** Under the current NSPS, an MSW landfill that has a design capacity of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m^3) must install and start up a gas collection and control system (GCCS) within 30 months after landfill gas (LFG) emissions reach or exceed a level of 50 Mg of non methane organic compounds (NMOCs) per year. The newly proposed rule retains the same design capacity threshold, but reduces the NMOC emission threshold to 40 Mg per year, resulting in landfills triggering the requirement to install and operate a GCCS earlier.
- ***LFG Treatment:*** EPA is addressing two issues related to LFG treatment. First, EPA is proposing to clarify that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but also allows other beneficial uses such as vehicle fuel, production of high BTU gas for pipeline injection, and use as a raw material in a chemical manufacturing process. Second, EPA is proposing to clarify what constitutes LFG treatment. For filtration (30 microns or less) and dewatering (reduction of dew point to 45°F or lower), the definition contains specific numerical values that would provide long term protection of the combustion equipment, which would support good combustion. EPA also proposes to clarify monitoring, recordkeeping, and reporting requirements for treatment systems, which would require continuous monitoring/recording with hourly and 24 hour block averages of the specific parameters for comparison to thresholds for compliance. Alternatives to the criteria or monitoring requirements, based on manufacturers' specifications, can be submitted for approval. LFG treatment criteria and monitoring procedures must also be included in GCCS design plans. The proposed numeric limits are problematic and may be difficult to meet for existing facilities that were not designed to these standards. No grandfathering was offered by EPA for existing treatment facilities, which have approved exemptions. Compliance with the new provision could be costly, including equipment retrofits, new monitoring equipment, and new reporting requirements along with the increased potential for noncompliance.
- ***Startup, Shutdown, and Malfunction (SSM):*** EPA's proposed update specifies the standards would apply at all times, including periods of startup or shutdown, and periods of malfunction. In addition, the one hour and five days criteria for control device and GCCS downtime, respectively, would be eliminated. This is a major shift from the existing NSPS, which allows rule exemptions during periods of

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SSM. EPA indicates that this change makes the landfill NSPS consistent with SSM provisions for other source categories. In order to determine the severity of an emissions excess for periods when the GCCS or a control device is not operating, the EPA proposal adds a recordkeeping and reporting requirement for landfill owners or operators to estimate excess NMOC emissions during such periods. This change could be very problematic and will create additional regulatory reporting.

Other Clarifications and Changes

EPA is proposing other clarifications to address issues that have been raised by landfill owners or operators during implementation of the current NSPS or issues that EPA believes should be addressed:

- Improvements to criteria for exempting closed areas from collection and control by allowing the use of actual flow and NMOC data to assess the 1% threshold for exemption rather than the use of LFG generation model results
- Addition of specific criteria and situations when an affected source must update its GCCS design plan
- Clarification of when landfill owners or operators must submit corrective action timeline requests for wellhead exceedances: the proposed rule would require a submittal within 15 days of the initial exceedances for instances when the exceedance cannot be remedied within 15 days and/or if something other than wellfield expansion will be the 120 day remedy.
- Removal of EPA Methods 18 and 25A as options for NMOC testing for Tier 2 studies or performance testing
- Clarification that landfills that accept only fully segregated yardwaste from households are not MSW landfills for the purposes of the rule
- Clarification that higher operating value demonstrations for wellhead criteria must be submitted to the EPA administrator or delegated state or local agency for approval prior to implementation as well as included in the GCCS design plan
- Indication that during quarterly surface emissions monitoring (SEM), all cover penetrations in regulated landfill areas must be monitored during each quarterly event
- Clarification that Tier 2 samples collected from active GCCSs must be obtained from the main header prior to the gas mover equipment and condensate knockout
- Details on EPA's proposed program for electronic submittal of performance test reports (including Tier 2s) and other compliance documents
- Clarification that for non-enclosed flare control devices, monitoring of combustion temperature is not required and, instead, alternative parameters can be used as long as they can demonstrate proper performance of the device

Information/Comment Requests

In addition to the proposed rule changes, EPA is also requesting additional information and comments on the following topics:

- Stack test data on NMOC destruction efficiency for non-flare combustion devices
- Information on open flares to demonstrate that they continue to represent the best system for emission reduction (BSER)
- Comments on the efficacy and costs of LFG collection from the leachate collection and removal system
- Comments on whether current wellhead

monitoring and SEM are sufficient to discover water logged wells
- Comments on possible enhanced SEM requirements, including tighter spacing, integrated sampling, more rigorous surface maintenance requirements, etc. (also including consideration of the provisions of the California AB 32 landfill methane rule, LMR)
- Comments on the use of wellbore seals to reduce emissions around cover penetrations
- Comments on the use of biocovers and biofilters for methane and NMOC oxidation
- Comments on shortening the initial (30 month) or expansion (two- or five-year) time lags for GCCS installation, including whether wet climate or leachate recirculation sites should be treated differently
- Information and data on any new design, operation, or control technology that would represent BSER
- Comments on alternatives for LFG treatment criteria or monitoring
- Comments on wellhead monitoring in general, including whether and why EPA might consider elimination of the temperature and oxygen criteria and/or a possible reduction in frequency
- Comments on the timeline for wellhead corrective action and suggestions for alternatives, including extending the deadline from 15 to 60 days
- Comments on the possible use of remote sensing techniques (e.g., tunable diode lasers, tracers, flux chambers, etc.) for landfills that cannot meet SEM standards
- Comments on alternative Tier 1 default parameters, including changes to the "Lo" to reflect organics diversion and adoption of the LFG modeling procedures from the federal GHG mandatory reporting rule
- Comments on a possible Tier 4 methodology for determining when a GCCS must be installed, which would include the use of SEM criteria on landfills without control, similar to what is allowed in the AB 32 LMR

Section 111 of the Clean Air Act requires EPA to review standards of performance at least every eight years and, if appropriate, revise the standards to reflect improvements in methods for reducing emissions. EPA was sued by the Environmental Defense Fund for failure to revise the existing landfill NSPS and, under a consent decree, agreed to propose and take action on new standards. The final rule is scheduled for promulgation on March 10, 2015.

ANPRM for Emission Guidelines and Compliance Times

In its ANPRM, EPA indicated its intention to consider the information received in response to the ANPRM in evaluating whether additional changes beyond those in the proposed new NSPS rule for new sources are warranted for existing sources. The ANPRM does not contain any proposed rule language; rather it is a large request for information to assist EPA in a future rulemaking.

Many existing landfills, as they are now defined (with the new rules, this would include all existing EG landfills and all landfills current subject to 40 CFR Part 60, Subpart WWW that are not subject to the new NSPS), are currently subject to control requirements in either the current NSPS, or the federal or state plans implementing the landfill EG. EPA believes that these guidelines merit review to determine the potential for additional reductions in emissions, both for

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NMOCs, as well as methane, to be consistent with the President's Climate Action Plan and accompanying Methane Strategy. In the ANPRM, EPA lays out a series of issues and questions on which it would like comments.

In addition to the same requests for information/comments on the new NSPS rule (see above), EPA is also requesting comments on the following topics:

- Explicit regulation of methane and other GHGs in the landfill air rules
- Changing the regulatory framework for the LG rule to achieve additional LFG emission reductions
- Adjustments to the design capacity threshold to regulate more MSW landfills
- Further reducing the NMOC threshold
- Best management practices and new technologies for LFG control
- Use of horizontal collectors to achieve early control of LFG
- Adjustments to how long the GCCS must remain operational including strategies for reducing emissions during the latter years of the landfill's life cycle
- Various criteria from the California AB 32 LMR, including the enhanced SEM criteria
- Early installation of final cover systems on closed and inactive areas as a means to reduce emissions and improve the effectiveness of the GCCS
- Organics diversion and source separation as a means to reduce the potential LFG generation capacity
- Monitoring and reporting flexibility, including provisions to improve the review and approval of design plans and other documents by air agencies, such as third party certification
- Making design plans and other compliance reports readily available to the public

As with the other proposal, comments must be received by EPA on or before 60 days after the publication of the ANPRM in the *Federal Register* or by September 15, 2014.

Potential Impacts on the Industry

It would appear that after 12 years of consideration for updates to the NSPS rule (the first proposed revision was in 2002), EPA has simply "kicked the can down the road" for many of the major rule revisions that were being considered. On first glance, the proposed new NSPS rule would appear to have a minor effect on the landfill industry, because it is likely to impact only a small number of future "greenfield" landfills, as well as a small percentage of existing landfills that undergo expansion in subsequent years. However, this is not the case; the proposed rule will have a major impact on the entire landfill industry in several ways.

First, any rule changes set forth in 40 CFR Part 60, Subpart XXX will almost certainly be carried forth into rules promulgated for existing landfills. As such, the landfill industry must look at the proposed NSPS rule as affecting the entire universe of new and existing landfills, not just the smaller subset that it may initially impact.

Second, many of the proposed changes to the rule will make compliance more difficult and expensive for the landfill industry, some without a requisite benefit to air quality. As an example, the change in the SSM provisions and the elimination of the one hour and five day downtime thresholds creates a situation where any or all instances of GCCS downtime may be considered violations by regulatory agencies, subject to enforcement action and fines. Further, it creates a presumption that all GCCS downtime events result in excess

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emissions, which is not true. Landfills are unique emission sources, in that when their control devices go offline, they do not immediately have excess emissions. Besides the SSM provisions, there are various other rule changes and so-called clarifications that will be burdensome to the landfill industry. In fact, very few actually improve the current situation or resolve any of the issues the landfill industry has had with rule implementation to date.

Third, the proposed NSPS rule contains a large number of requests for comment and information from stakeholders on a variety of topics. With the information submitted and considered, EPA has the ability to add further provisions to the final version of the rule, depriving the industry of the ability to comment directly on any new rule language. This makes the industry responses to these requests for comment critical in terms of helping to properly frame EPA's rulemaking process.

Beyond the new NSPS rule, with the ANPRM, the EG rule is now an open book with a huge universe of possible rule revisions and options that EPA would have at its disposal. The items upon which EPA has requested comments cover a wide range of possible issues, some of which go beyond the scope of previous rulemakings. While there is no specific rule language to comment on, it will be incumbent on the landfill industry to provide EPA with a compelling argument to support our position on the key issues. The impact of the EG rule revision is very far reaching since it will ultimately affect the entire universe of existing NSPS and EG landfills.

Industry Comments

The landfill industry is currently conducting a detailed review of the two proposed rules, as well as the accompanying documentation that EPA has placed in the docket. It is a daunting task — one that will clearly take more than the allotted 60 days. Therefore, the first comment the industry is likely to make is a request for more time.

Beyond that, the industry will update and resubmit previous comments and information on certain topics where EPA appears to have ignored what was provided to them. The general intent is to comment at the "big picture" level on the overall framework EPA has established for the rulemaking, as well as on the details of each specific rule change and request for information. The industry will be engaging other stakeholders who may hold common views to ours to show solidarity on specific comments we make, including the Small Business Administration, state and local air agencies, and such. A meeting will be requested with EPA staff to discuss some of the major issues with the proposed rule prior to the submittal of industry comments. Comments will be submitted through the Solid Waste Association of North America (SWANA), National Waste and Recycling Association (NWRA), as well as from individual public and private landfill owners/operators. This is certainly a "game changer." MSW

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The Promise of MRF Technology

One of the less noticed areas of advancement has been in the fields of environmental protection in general, and waste recycling in particular. BY DANIEL P. DUFFY

When I was a kid watching the Apollo moon landings on our old black-and-white television, I was sure we would be vacationing on Mars by now, having all our work done by friendly robots, getting our meals in pill form, and traveling in our flying cars and personal jet packs. Though the future did not turn out nearly as cool as I thought it would be, it would be a mistake to assume that technological progress has stalled. Far from it. From the high tech to the mundane, advances in machinery, electronics, power systems, artificial intelligence, and a dozen other fields have transformed how we live and work.

While not as glamorous perhaps as a new phone app, recent advances in recycling technology over time will pay far greater dividends for our environment and our economy. From integrated systems to individual pieces of equipment, recycling has increased in quantity of output, efficiency of production, and quality of final product. While market demand greatly influences which materials get recycled, it is the technology of material separation and sorting that determines how costly and profitable these materials are.

The questions, then, are these: Can these increases in productivity and efficiency be maintained? Or will they flatten out in the future or even hit a wall where additional improvement are either not possible or cost effective? Will improvements in recycling technology meet a point of diminishing returns, or will they continue in an ever-upward spiral? Will changes in waste extraction methods alter the cost equation, making certain materials more profitable to recycle than others? What does the future hold?

Wastestream Characteristics

Municipal solid waste consists of a wide variety of materials, each with its unique physical characteristics, including size, shape, weight, moisture content, electromagnetic potential, and color. Each of these characteristics determines how material is extracted from the wastestream during the recycling process. Market demand determines how it is reused, if it is extracted, and in what quantities. The following is a brief summary of MSW characteristics by waste category (USEPA 2012 data, rounded to the nearest percent):

The first category consists of organic waste. Strictly speaking, any waste material originating from plant and animal sources, such as office paper or woolen fibers, could be considered organic. However, this category includes yardwaste (grass clippings, leaves,

garden waste) and foodwaste (from homes, grocery stores, food packaging plants, and restaurants), as well as wood from various sources. On average, yardwaste consists of approximately 13% of the total wastestream by weight, with foodwaste making up another 14% and wood at 7%, for a total of 34%. Combined, these constitute over one-third of the mass of municipal solid waste. Organic waste, however, is subject to significant regional and seasonal variations, in some areas doubling in quantity during the summer and fall seasons. The difference between organic waste and the rest of the wastestream is that it is compostable instead of directly recyclable. Many communities even ban yardwaste from the wastestream, requiring individuals and businesses to compost this material or else convert it into mulch. While yardwaste is relatively easy to prevent from entering the wastestream by means of separate bagging and disposal, foodwaste is a far more difficult material to segregate from the wastestream and nearly impossible to extract. If yardwaste can be prevented from entering the wastestream in the first place, foodwaste is often what is left at the end of the recycling process and forms a large portion of the unrecyclable residue that goes into landfills.

The second waste category consists of paper of all kinds (office paper, newsprint, magazine stock, corrugated cardboard) constitutes about 27%, over a quarter of municipal solid waste. This category includes a wide variety of material types and a wide diversity of shapes, sizes, and density. Depending on market demand, this material can be reused directly as pelletized fuel, indirectly as shredded packing and shipping material, or completely restored for reuse in its original form. The types of machines used for separating out paper products from the wastestream are as varied as the types of paper materials. Old corrugated cardboard (OCC) can be removed by disc screeners (a floor covered with rotating discs of different sizes and shapes that carry large light objects like OCC to the top of the wastestream for easy removal), while lighter papers can be extracted by air separators and the more precise air knives (blowers that use parallel sheets of high-pressure air blasts to minimize swirling and remixing of waste materials).

The third category, commercial plastics (HDPE, PVC, PET, etc.), makes up approximately one-eighth of the wastestream, or 12.5%. Plastic can be separated by type and ground down by a granulator for reuse as feedstock or scrim. And since it is made from fossil fuels, plastic also has a high BTU value, making it potentially useful as fuel.

The fourth category, ferrous and nonferrous metals, represents one of the waste materials more easily removed with one of the highest market values. Representing about 9% of a typical wastestream, ferrous metals can be extracted by magnets, while nonferrous metals can be removed by eddy-current separators.

The fifth category, glass of all colors (clear, amber, brown, clear), including ceramics, makes up about 5% of the wastestream. Glass and ceramics can be recycled by color sorters, thanks to the technology of light spectrophotometry (LSP). LSP can distinguish between values colors of commercial glass (clear, amber, brown, or green) as well as cullet and ceramics. A near-infrared sensor determines what the color is and triggers a puff of air from a blower that pushes the material into the appropriate sorting bin.

The sixth and last category is a mish-mash of miscellaneous materials ("other") and clothing, including rubber, leather, and textiles, making up about 12% of household waste. This material tends to be difficult to recycle and consists of materials with marginal market

value. So it usually constitutes the bulk of the residue remaining after an efficient recycling process and is usually sent to the landfill for final disposal.

Useful Products from Recycling, Today and Tomorrow

What materials get recycled the most today, and what can we expect in the future? Oddly enough, the most recycled product is not normally part of a typical wastestream. It is the lead acid battery, the kind used in most cars and trucks. These items are recycled at an exceptional 99% rate. This is the result of legal and regulatory mandates intended to keep toxic lead out of landfills where it could possibly impact ground water through leaks and surface water by runoff.

The most recycled material, asphalt pavement, is also not part of municipal solid waste. Again, 99% of asphalt is ground up and reused to fix and build pavement. This material has the unique property of being recyclable over and over again without loss of quality or strength characteristics. Furthermore, asphalt can include a wide variety of recycled materials (ground-up roof shingles, shredded tires, crushed glass, foundry sand, and chunks of slag).

Of the main wastestream, America generated 251 million tons of MSW and recycled almost 35%, or about 87 million tons (USEPA 2012 data). But after a sharp increase in recycling rates in the decade from 1985 to 1995, increases in recycling percentages have since flattened out somewhat, with little change since 2008. The total amount of MSW recycled in tons has followed this same trajectory.

The constituents of the recycled stream vary according to the state of various extraction technologies as well as by market demand. Of the amount recycled, organic waste makes up 27% (versus 34% of waste generated), paper and cardboard are 51% (compared to 27% of generated), plastics at 3% (compared to 13%), metals at 9% (with 9% of the amount generated as well), glass at 4% (5% of generated). Other items make up almost 6% of the amount of recycled materials (12% of generated) and are mostly bulk items like salvaged furniture or clothing.

These differences between percentage of waste generated and percentage of materials recycled provide a strong indication of which materials have the strongest market demand and the technology advanced enough to allow easier recycling. By the numbers, we can see that paper and cardboard lead all other recyclables, with a recycling percentage greater than its generation parentage. Metals come in second with matching recycling and generation percentages. Every other category shows lower percentages of recyclables compared to percentage of waste generated. Plastics come in last with only 3% of the amount recycled, compared with 13% of the waste generated.

So what can we infer from this data? Obviously, market demand and technology play major roles. Population density also has an impact. This is shown by the lower recycling rates achieve by sparsely populated states like Montana compared to those of densely populated states like Connecticut. In low population areas, the costs of transporting relatively small amounts of low-density, recycled materials over long distances to MRFs, and from MRFs to markets, negatively impacts the overall cost and marketability of recyclables. As such, while major cities may achieve recycling rates of 50% or more, rural areas have little economic incentive to recycle at all except for activities like composting of organic waste, which can be done completely at the local level. For this reason alone, which is outside the control of the recycling industry, it is doubtful that America as a whole will soon achieve recycling rates greater than 50%, let alone the often-stated goal of 100%.

Of all recycled materials, metals represent the easiest materials to extract from a wastestream and provide the highest prices per ton on the scrap market. Paper and cardboard are the next most popular recycled materials. Plastics come in last due to the difficulty of extracting and sorting out the myriad types of commercially used plastics.

But recycling is now an integral part of our manufacturing base. Over three-fourths of steel produced in the US is made from scrap iron instead of iron ore (Earth Policy Institute 2006). Over 90 million tons of scrap metal (worth more than $60 billion) is recycled in the US each year. Why? Because it is very cheap and profitable to do so. The electric arc furnace allows the production of steel from scrap with only one-third of the energy used to make steel from iron ore. Aluminum recycling is nearly as high with 51 billion tons recycled annually. The American scrap-metal recycling industry by itself is now a $65 billion nationwide industry employing 50,000 people and recycling 150 million tons of scrap materials annually (Institute of Scrap Recycling Industries 2008).

Paper recycling has had a proportional equal impact on the pulp and paper industry. In the past decade, American manufacturers have built 45 pulp and paper mills that utilize recycled paper as feedstock and only a few that use virgin wood exclusively. Again, it is because using recycled paper is a cheaper and more profitable way to increase the production of pulp. In neither case does the goal of environmental protection directly affect these business decisions. But the bottom line is positively impacted by environmental protection.

Unshuffling the Deck: Sorting and Separation Technologies

Are we anywhere near the limits of separation and recovery today, and what are the barriers to increasing recovery rates? When I watched Neil Armstrong walk on the moon, recycling (if it was done at all) was done by hand. This still occurs at "clean," multistream MRFs, where presorted recyclables arrive for manual separation and stockpiling. The real technological advances have occurred at "dirty," single-stream MRFs, where the operating equipment has been specialized for separation. There are nearly 600 operational MRFs in the US processing over 91,00 tons daily. Most of them are in high population density areas such as the North East Corridor and California. The technology they employ includes the following:

- ***Magnetic separators*** extract ferrous metals from the wastestream as it moves past on a belt. These electromagnets can be set in an overhead position for direct removal, or underneath the belt, allowing the ferrous metal to stick to the belt while everything else falls off into a collection bin at the point where the belt moves past the last roller and turns under.
- ***Eddy-current separators*** remove the nonferrous metals that magnets cannot. Using rapidly rotating magnets, eddy-current separators send an electric current into nonferrous metal objects, which in turn create their own magnetic field of opposite polarity. This repulsion pushes the metal off the belt and into a collection bin.
- ***Disc screens*** are used to remove large but lightweight objects (such as cardboard). Basically, disc screens are large hoppers with floor beds lined with rotating disks of varying sizes, dimensions, and shapes (round, oval, star, etc.) whose edges are set perpendicular to the bed. As these disks rotate, the waste entering the screener is churned, and the resultant wave action carries the larger, lighter objects to the top for easy removal.
- ***Rotating trommels*** (derived from machines used to separate slag from ore in mining operations) are used to remove small

objects. These are rotating drums set at an angle whose walls have been perforated to allow small objects (fines, soil grit, shards, organics, and assorted residue) to escape from the main wastestream. The wastestream is fed into the upper end. Thanks to gravity and rotation, only large objects that can be recycled emerge from the bottom end.

- ***Air classifiers*** are basically large chimneystacks with a blower set at the top. Waste is fed into the classifier at the midpoint of the stack. The blower creates a suction that pulls lightweight paper up and out of the wastestream while heavy and large objects fall to the bottom. A cyclone separator can then further segregate paper grades by size and density.
- ***Air knives*** are a refinement on the air separation technique. They use high-velocity sheet flows (in effect, "blades" of air) from blowers operating in parallel. This arrangement prevents remixing of the separated materials. Different air velocities allow for separation of objects of only slightly different densities, such as different grades of commercial paper, newsprint, and office paper.
- ***Hydropulpers*** are another means of handling organic materials. More of a brute force method than the refined classifiers, these mechanical treatments and biological applications increase the density of absorbent materials in the wastestream. High-pressure streams of water crush and dissolve organic materials and paper, creating a wet organic residue that can be used as feedstock for anaerobic digesters.
- ***Color separators*** allow for the separation of glass and plastics by color. Originally developed by the chemical industry to allow for automated sorting of chemical by color, LSP meters read the various wavelengths of light reflected off of glass and plastic and tell a blower to blast the object with a stream of air that will propel it into an awaiting collection bin. A cousin to the LSP is the near infrared sensor, which can be used to judge the density (and therefore the type) of plastic waste object.
- ***Humans beings*** are still an important part of MRF technology. Even the most advanced MRF relies heavily on manual labor. People are essential for the first step in any recycling process, the removal of nonrecyclables at the presort stage. Often it is more economical to remove odd and hard-to-define objects like odd-shaped plastics by hand sorting.

But that is today's technology. What additions or changes to sorting and separating technology can we expect to see in the future?

Automation and System Controls

How much more technologically advanced can recycling get? While we have achieved high levels of mechanization. But what about automation? On a scale of 1 (manually picked recycling) to 10 (a science fiction scenario with fully automated robots), where do we sit in terms of automation in recovery systems? Right now, we're about at 5 and going higher.

Trends are definitely toward ever-increasing levels of sophistication of automation across all manufacturing and in all industries. There is an ongoing manufacturing renaissance occurring in America with industries returning from overseas (inshoring). But factories that used to employ thousands now only employ hundreds or dozens. "In the past decade, the flow of goods emerging from US factories has risen by about a third. Factory employment has fallen by roughly the same fraction." ("Making It In America," *Atlantic Monthly* January 2012). We can expect the same trends in the recycling industry.

The application of robotics and artificial intelligence in the recycling industry is still in its infancy. It will be more difficult to employ since, unlike other industries, there is nothing routine about the ever changing and unpredictable wastestream and its jumbled accumulation of various objects and materials. A European company, Zenrobotics is trying out a robotic arm designed to pick out different kinds of construction and demolition (C&D) debris at a facility owned by SITA Finland. C&D is a simpler wastestream than MSW, with fewer kinds of material and types of objects to sort through. But once this technique is perfected, it is only a matter of time before its application becomes widespread.

Will robots take away recycling jobs? Probably. But like all technological advances, they will create more jobs than they destroy. The job once performed by elevator operators was made obsolete by changing technology, yet nobody mourns its passing. Those who used to operate elevators are now in better and better paying jobs. So it will be with the position of waste sorter, whose job it is to pull out plastic shampoo bottles from a moving belt carrying MSW. Like those people who used to work the elevator controls, recycling workers will find newer and better employment.

Major Suppliers of Separation Equipment

Bulk Handling Systems (BHS) is a worldwide leader in the innovative design, engineering, manufacturing and installation of sorting systems for the solid waste, recycling, power generation, and C&D industries, among others. Clients around the globe choose BHS because of its experience, dedication to cutting-edge technology, quality construction and durability, and unmatched customer service. BHS has built some of the largest and most durable MRFs in the world, facilities that are achieving the highest throughput, recovery, and purity rates in the industry. BHS is unique in that it has united premium technologies—air separation from Nihot (Amsterdam), optical sorting from NRT (Nashville) and Anaerobic Digestion from Zero Waste Energy (ZWE) (Lafayette, CA)—to deliver integrated, best-in-class solutions. Whereas a dealer of equipment must rely on numerous manufacturers, BHS controls its technology and guarantees performance. BHS's companies are truly integrated, collaborating from the design phase on to offer turnkey solutions that "close-the-loop" on recovery.

CP Manufacturing offers turnkey MRFs, equipment, design solutions, and after-sale service. The company provides whole recycling facilities complete with disc screens, trommel screens, conveyor belts, bag openers, magnetic separators, eddy-current separators, optical sorters, and balers. These systems are designed for "dirty" material, and single-stream MRFs that can efficiently separate glass, mixed plastic, nonferrous and ferrous metals, and fiber (OCC and mixed paper). Their capabilities include disc screens designed to separate 2D from 3D material efficiently, requiring low maintenance to maximize operating times and increase automation. The CPScreen is used to separate small paper products from larger cardboard, and flat paper from boxes. It comes with rubber cam-style discs arranged in assemblies of five, whose consistent spacing prevents jamming. It is operated by the CP Syncdrive, which uses carbon fiber timing belts rather than chains, so it has minimal maintenance needs. The CP NEWScreen is designed to separate larger fiber objects such as newsprint from mixed paper and small objects like grit and dirt debris. It uses long-lasting finger disc technology. And like the CPScreen, it features carbon fiber timing belts and has minimum maintenance requirements. The angles of the decks are hydraulically activated and electronically controlled, allowing for adjustments depending on the incoming wastestream. This allows for maximization of removal efficiency in any situation.

The Cirrus optical sorter from MSS Inc. combines high-resolution near infrared, color, and metal sorting. It allows users to sort a wide variety of such mixed materials as plastics, metal scrap, and cartons, using advanced digital signal processing and software algorithms. All CP MRFs and equipment are controlled with intelligent automation and supervisory control and data acquisition (SCADA) solutions for the operators to be able to most effectively operate their systems.

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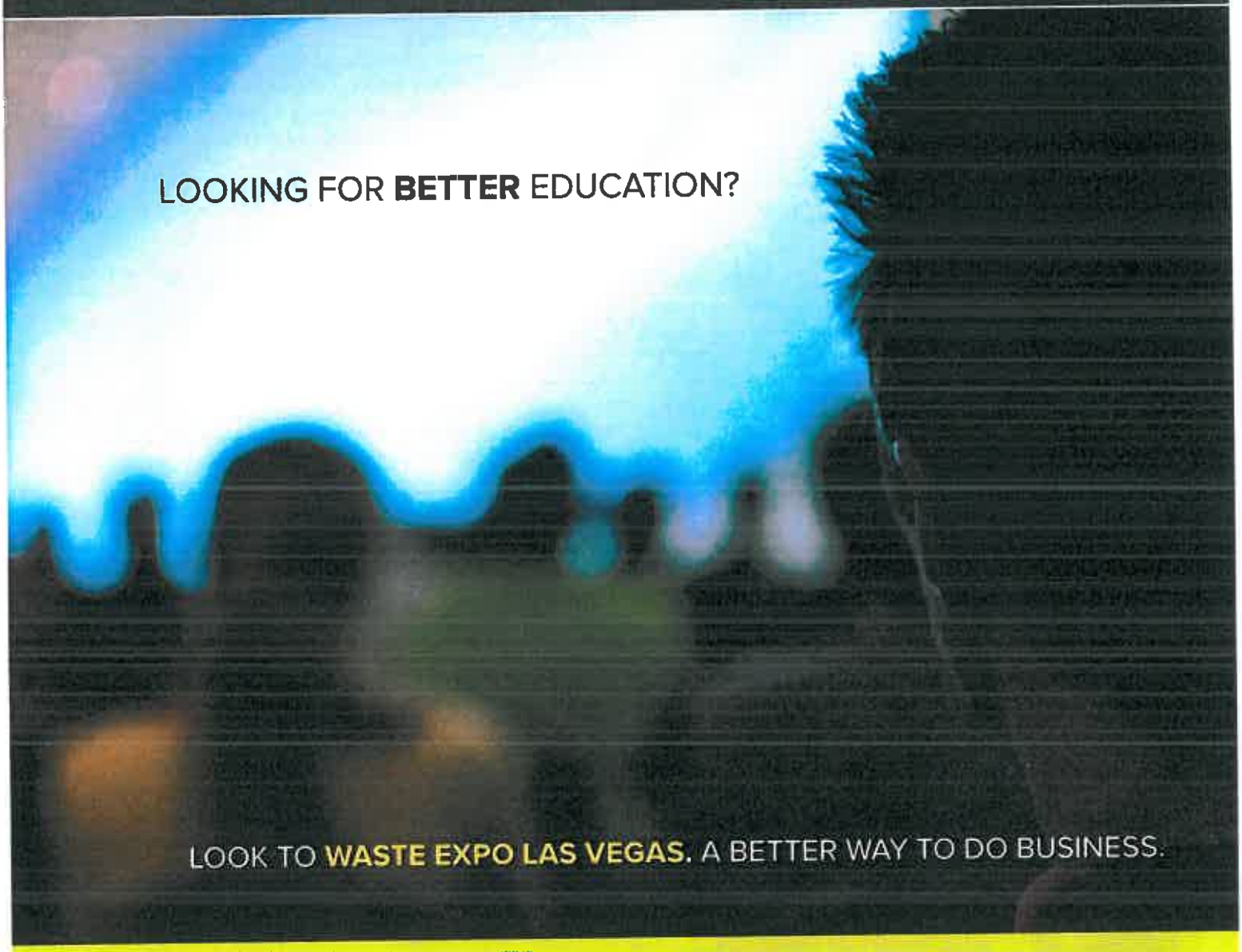

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vibratory screens called the SXS Screen. These high-stroke vibratory screens serve as an effective replacement for star screens, disc screens, and trommels. The key to their operation is the new side-by-side design. Another technological advancement is the double-stroke design that increases separation efficiency while using an energy-saving, low-horsepower drive. It is specifically designed for soft materials with low density that standard screens have trouble with. It can also be configured to process various types of materials. With low headroom requirements, the SXS Screen takes up less space, making for easy installation. Finally, it is custom-engineered to various widths and capacities for specific applications while being able to handle multiple streams (OCC, MSW, or C&D).

The Marathon Equipment Co. is a provider of a full range of solid waste recycling equipment, offering a line of separator equipment, debris screens, and sorting platforms. Both are included in the Marathon MRF System, a 10-ton-per-hour, single-stream waste and commercial processing system. In cooperation with Bulk Handling Systems and utilizing the proprietary Tri-Disk screening technology, the system includes the BHS OCC Separator, BHS Debris Roll Screen, BHS Polishing Screen, magnet, and eddy-current separators.

Bunting Magnetics manufactures magnetic cross-belt separators and eddy current magnetic separators. The magnetic cross-belt separators are positioned above the moving belt of the pick line. These magnetized belts run perpendicular to the pick line belt. The come in different sizes and strengths, but all are powerful enough to draw ferrous materials (cans, lids, tools, etc.) up and out of the wastestream. They can be customized to match the amounts of waste per minute, the width and speed of the pick line belt, and with the required elevation of the reach out. Productivity studies have shown that use of these magnetic cross-belt separators can reducing the staffing requirements of a standard pick line by two individuals, with nearly 100% effectiveness in ferrous metal extraction. The company's eddy-current magnetic separators are equally effective in removing nonferrous metals. They are especially effective at extracting aluminum materials (soda cans, beer cans, pie pans, aluminum foil, pots, pans, etc.) from the wastestream. These are usually sized the same width as the pick line conveyor belt. They are usually run at 200 feet per minute, much faster than the conveyor belt. This is done to spread the material out for effective separation, improving the purity and quality of the final product.

The Dings Co. Magnetic Group manufactures eddy-current and magnetic separators alike. The company's eddy-current separators range from the Model 9100, suitable for aluminum can recycling; the Model 9900, for electronic scrap metal processors and small particle processors; and the heavy-duty Model 9500, for auto shredding and high-volume MRFs. These are all equipped with rare-earth magnets that generate large and deep magnetic fields for increased non-ferrous metal recovery. Dings also provides self-cleaning, stationary, and severe-duty overhead electromagnets. The severe-duty model is suitable for recycling of concrete steel rebar.

The Eriez Manufacturing Co. is a supplier of multiple makes and models of magnetic separators. Always in the forefront of advances in recycling technology, Eriez has developed products for several new applications. For example, its new RevX-E eddy-current separator features an eccentric magnetic rotor. The eccentric motion increases the recovery rates of nonferrous metals in multiple industrial and waste applications. The eccentric design also reduces buildup of ferrous materials on the housing. It features a small-diameter magnetic rotor offset at the top of a large-shell enclosure. As a result, the repelling force of the rotors can focus on the point closest to the outer shell, increasing the rate of separation at this location. The positioning of its rare-earth magnet rotor can be adjusted for optimum removal with its focused magnetic field. The company's Shred1 ballistic separator represents advancement in terms of traditional separators. A ballistic separator uses either one or a series of parallel floor sections that shake in opposition to each other, creating a wave motion that flings materials to separate collection. Set at an angle, it throws lighter objects to the top, while heavier objects settle at the bottom end. The Shred1 is specifically designed to provide high-grade ferrous material by efficiently separating iron-rich ferrous from a load of mixed metals and other wastes. It produces two distinct fractions: a premium shred with less that 0.2% copper content, and a traditional grade shred. Combination with its P-Rex Permanent Rare Earth magnetic drum creates Eriez' CleanStream Process. The Eriez DensitySort recovers up to 70% of red metals (copper) and nonferrous fines and then sorts them into a light and heavy fraction. It combines controlled air blasts vibration and sloped floor to separate metals according to their specific gravities.

Machinex's Mach series ballistic separators are designed to sort 2D materials (plastic, film, cardboard) from 3D materials (containers, plastic bottles). The motion of the ballistic separator carries the lighter 2D objects to the high end of the floor while the heavier 3D objects fall back to the low end. Fines fall through the bottom screen. This ability to handle multiple types of materials gives the Machinex Mach separators a high degree of versatility. But its main feature is its rugged durability. Its heavy-duty structure can support up to two stacked separator units, minimizing floor space requirements. Its variable speed drive is driven by heavy-duty bearings and shafts. The floor paddles are covered with abrasion-resistant steel screens and liners to minimize wear and tear.

Magnetic Products Inc. manufactures a wide variety of magnetic separators for industry applications, and eddy-current separators for MSW recycling. The main components of the company's ES series are the rare earth magnets. These are the highest grade of permanent rare-earth magnet material. Using these materials ensures that it will apply a maximum magnetic field and never demagnetize. The separators come with optional ceramic coating on a fiberglass shell to resist wear and tear as the conveyor belt passes over the rotor.

Mini MRF LLC provides a complete system for the recovery of recyclable materials and can handle up to 35 tons per hour. The system consists of three separator modules. The first removes bulky items for disposal and large metal objects. The second removes small ferrous materials. And the last module handles multiple streams (scrap metal, UBC, PET plastic, and lightweight combustible materials). There are three types of optional modules that can be added to the main system to further refine the recovery effort. The fiber module recovers mixed paper or uses near-infrared sorting technology to further separate individual types of paper. The plastic module also uses NIR sorting to separate different kinds of plastics. And the EcoEngineered fuel module recovers combustible materials that can be used as a fuel source for the system itself.

The Steinert US eddy-current separator uses an eccentric pole system that prevents ferrous metals from adhering to the drum shell and a 30% increase in nonferrous metal

recovery rates. The separators are available in three configurations for differing grain sizes and anticipated sorting requirements. It can handle aluminum particles as small as 5 mm (one-fifth of an inch) while being large enough to handle low-density materials at high volume throughput rates of 40 to 80 cubic meters per hour.

West Salem Machinery's latest development is the massive Titan Trommel, which can handle an impressive 500 cubic yards per hour. Equally impressive is the variety of materials that this trommel can handle (asphalt shingles, woodwaste and bark, compost and foodwaste, glass, mulch, shredded plastic, and topsoil). The Titan is custom built for individual severe-duty applications, with an 8-foot diameter and lengths ranging from 20 feet (Model 820) to 63 feet (Model 863). It is not just its size that makes the Titan unique, it incorporates a series of unique design innovations: exclusive trommel ring assemblies, proprietary trunions, and dual-drum support wheels. Full covers allow access to multiple screen sections and making for easy maintenance, inspection, and replacement. Its severe duty structural steel frame is not just designed strong, its designed smart to minimize material accumulations.

Zimmer America Recycling Solutions (a division of ZARS–USA LLC) has formed a joint venture with Stadler Anlagenbau GmbH of Germany to create Stadler America LLC, the exclusive North American sales and distribution center for Stadler Anlagenbau GmbH. Together they bring to America one of Europe's leading manufacturers of MSW recycling systems, lightweight packaging sorting systems, and sorting systems for single-stream waste. The heart of these systems is the ballistic separator. Stadler provides whole recycling systems (bag openers, trommels, magnet and eddy-current separators, and NIR plastic sorters, which are based on their patented stacked ballistic separators. Using the ballistic separator in the recycling system, segregating 2-D/flat (paper, cardboard, and films) and 3-D/rolling objects (containers, bottles), serves to simplify the overall process. The STT 2000 models are used to extract light packaging, all mixed paper, film, and hollow bodies, all separated into fines, flats, and rolling fractions. Each ballistic separator utilizes one set of paddles (6 paddles total) protected by Hardox plating and manufactured from 4-mm steel plate. The larger STT 5500 is designed to manage industrial wastestreams, MSW, and single-stream waste. Its heavy-duty frame construction uses 40-mm-thick steel plate with 10-mm-thick screen paddles. The specialized Model PPK sorts paper products and is capable of separating cardboard from mixed paper. With smaller screen perforations, it can further refine the separation process to separate newsprint.

And so we see these companies lead the recycling industry into the future with ever more advanced technology. It will mean more effective and efficient recycling, with fewer demands on our natural resources. It will raise our standard of living while protecting the environment.

That's nearly as cool as having your own jet pack. MSW

Daniel P. Duffy, P.E., writes frequently on the topics of landfills and the environment.

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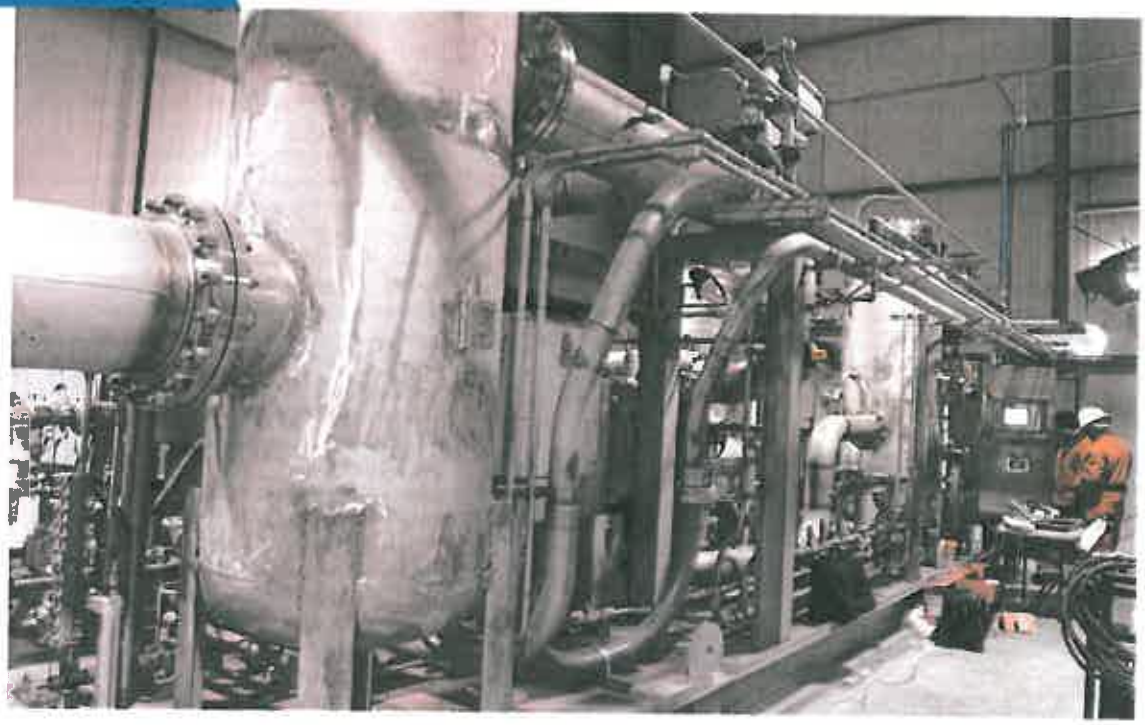

Cogeneration Is Talking Trash

Back in the 1880s, the first electric generators were powered by steam engines. The process was quite inefficient compared to today's standards, but one technique was employed back then: That was the basis for modern combined heat and power (CHP) generation. The excess waste steam was harvested for process use or to heat nearby buildings. To keep up with demand, more efficient, large steam turbine generators were created. But then, the advent of energy from burning coal came into practice. Cheap coal became the fuel of choice for generating electricity. With burning coal came coal dust and flue gas particulate emissions. That's what drove the facilities out of the cities and into more rural settings. The power plants were now too far away and too expensive to be able to capture, transport, and use any excess heat energy. So, the use of waste heat simply came to an end.

As advanced combustion turbine technology was being developed in the latter half of the 20th century, hot exhaust gases from a gas turbine, that have a relatively high energy content, can be used to make steam in a Heat Recovery Steam Generator (HRSG) . . . unlike fuel fired boilers which feed steam turbine generators. Steam for process or space heating in a CHP process can also be obtained by combining that gas turbine exhaust with a waste heat boiler.

The Public Utilities Regulatory Policies Act (PURPA) was adopted in the 1980s. It gave those who used industrial energy financial incentives to adopt CHP, and it spurred the development of even more efficient systems.

Today, there are a number of technologies and systems that are designed to accommodate the needs of the energy end user. But simply put, CHP is producing electricity and heat from a single source of fuel at the same time. Those fuels can be coal, oil, natural gas, waste heat, biomass, or biogas. Cogeneration is not considered to be a single technology. It is an integrated energy system that can be modified to fit specific needs. It can even be combined with mountains of garbage. We'll get to that later, but first things first.

For those considering CHP for a facility, US Environmental Protection Agency (EPA) is more than willing to help. The agency has created the "Combined Heat and Power Partnership." EPA's website says, "The mission of the CHP Partnership is to increase the use of cost effective, environmentally beneficial CHP projects nationwide. To accomplish this mission, the Partnership has developed resources to assist energy users to design, install, and operate CHP systems at their facilities."

Here is the basic outline of EPA's five stage project development plan:

Stage 1– Qualification. Determines whether CHP is worth considering at a candidate facility.

Stage 2– Level 1 Feasibility Analysis. Identifies project goals and potential barriers, and quantifies technical and economic opportunities,

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while minimizing time and effort.

Stage 3 – Level 2 Feasibility Analysis. Looks to optimize CHP system design, including capacity, thermal application, and operation. It also determines the final CHP pricing and return on investment (ROI).

Stage 4 – Procurement. The goal here is to build an operational CHP system according to specifications, on schedule, and within budget.

Stage 5 – Operation and Maintenance. The point where the CHP system is maintained in order to provide the expected energy savings and reduces emissions by running reliably and efficiently.

Of course, one of the most important parts of the process is determining the final pricing of the CHP system. And high on the priority list, when it comes to determining price, is finding out what kind of monetary incentives exist. On the local, state, and federal levels, there are a multitude of incentives at every level — from grants, to loans, to rebates, to taxes and utility rates.

Brian DePoute, a senior vice president at Key Equipment Finance Inc., says that when it comes to the development of a CHP project, the federal, state, and local incentives are identified very early in the process and form part of the financial analysis that is done for every site to show the value of CHP to the potential system owner. Acting fast is critical when it comes to certain incentives, because a good number of them have expiration dates, and so the process to obtain them starts as soon as possible. A lot of the times, the process begins right after the future system owner commits to a system purchase. Other incentives, such as federal tax credits, won't "kick in" until after the CHP system has been completed and put in service. Sophisticated developers and EPCs (engineering, procurement, and construction contractors) can explain incentives and their timing to a potential owner as part of the system sales process.

DePoute looks at incentives as an integral part of the financing process. "Incentives such as accelerated depreciation and tax credits can be embedded into financing solutions, such as leases or partnership flips. Other cash incentives may be pledged as additional credit support, or may remain with the system host, depending on the financing structure," he says.

That's why it's so important to have a developer, EPC, and financier who is extremely familiar with the federal, state, and local incentives . . . experts who know about upcoming changes and expirations of incentives. They're able to maximize value for their client, both in structuring efficient financing, and in getting the most financial benefit out of the system.

According to Michael Turwitt, the president and CEO of 2G Cenergy Power Systems Technologies Inc., CHP incentives are carefully looked at by all potential buyers/owners of CHP systems, and it's done early on in EPA's five stages of product development. Stage 2 is when all possible incentives, grants, tax credits, etc., are evaluated and calculated into the overall financial model, to determine the economical side of every project. Incentives can play a major role in the financing of a project, and more CHP purchases can be financed or leased up to 100%. In some cases, so-called soft costs can be included, as well as infrastructure costs related to the cogeneration system purchases.

Turwitt points to states like New York, which offers the "Combined Heat and Power Acceleration" program through NYSERDA (New York State Energy Research and Development Authority). "The

Combined Heat and Power Acceleration program provides incentives for the installation of prequalified and conditionally qualified CHP systems by approved CHP system vendors in the size range of 50 kilowatts to 1.3 megawatts," he says. "NYSERDA will accept applications only from approved CHP system vendors like 2G Cenergy, whose entire product line has been qualified and approved by NYSERDA."

As for pursuing and applying for incentives, Turwitt explains there are clearly defined processes and guidelines. But such steps and procedures are different depending on type, federal, state, or local and individual project circumstances.

Financial incentives can take a variety of forms, including direct financial grants, tax incentives, low interest loans, rebate programs, and feed in tariffs. Turwitt adds that there are also policy opportunities, such as establishing output based emissions regulations, implementing standardized interconnection requirements, and including CHP targets in stage energy and climate plans.

Ilker Budak is a Business Development manager at Dresser Rand, a company that makes and installs cogeneration systems and started developing a packaged cogeneration system in December of 2012 for the North Shore Medical Center in Salem, MA. Completion was scheduled for this summer. Budak says the system is comprised of a lean burn natural gas IC engine generator set, with associated heat recovery equipment and control/switch panel. It's housed in an enclosure that has integrated noise attenuation, ventilation, lighting, and safety systems, and ease of access for maintenance. The components include a Caterpillar 3516LE natural gas engine and a Vaporphase heat recovery steam generator. The system controller is monitored and controlled locally by a master control system that has operational and diagnostic capabilities.

The system is expected to generate approximately 40% of the Medical Center's electricity and use the waste heat to produce steam for heat and hot water.

It has been Budak's experience that, "Incentives may increase the chances of a project going forward, or may kill it right at the beginning." He echoes the sentiment that incentives need to be explored during the initial feasibility stage. And that the most important things to know about them are: when they become effective, when they expire, what are the qualifications, what is the dollar amount, and what is the payout schedule.

On a Really Large Scale of CHP...

Caterpillar not only makes bulldozers and excavators of all sizes, it's also heavily involved the business of cogeneration. Caterpillar Energy Solutions describes the penetration of CHP in North America as being "low" — something around 10% of the total generating capacity. Tim Scott, marketing manager of Caterpillar's Electric Power Division, says there are plenty of opportunities for cogeneration expansion in the food industry, manufacturing, commercial facilities, and institutions. "I'm confident that, with the right environment, the deployment of CHP in North America could approach the level already experienced by a number of countries in the European Union. That would double the penetration we have today, and I think we could grow from there."

He believes that, to accelerate CHP, some fundamental issues need to be addressed. "Here, I'm thinking about things like

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standardized and straightforward utility interconnection rules, adoption of output based emission regulatory methods, as well as modernized electric utility standby rate methodologies." Scott goes on to say that utilities usually do not have an incentive that causes them to provide enthusiastic support for CHP, which is badly needed.

Incentives at all levels play a role to help move payback periods to a level that business and industries can accept. Caterpillar Energy Solutions sees some of its large scale CHP projects move ahead with limited to no incentives. But, according to Scott, to really accelerate the growth of CHP in North America, clear investment incentives are needed.

Especially when the benefits are so obvious. One of Cat's customers, GI Energy in New York, NY, installed a state of the art 6.2 MW CHP plant into One Penn Plaza. The office building is the fourth largest in New York City. It has a total peak electrical demand ranging from 10–11 MW in the summer and 6.5–7 MW in the winter. Three Cat 3520C gas generator sets (2,035 kWe) were installed along with HRSGs that are all housed in a sound attenuated enclosure. The housing itself is two stories tall and weighs 650,000 pounds. The cogeneration plant produces just under 6 MW of power in the summer and 4.5 MW in the winter, which amounts to more than one half of the electrical demand for One Penn Plaza during the same time periods.

John Brogan, the senior vice president for GI Energy – which developed and operates the plant – says, "Waste heat from the engines is processed through the HRSGs to produce high pressure steam. The steam is used in the summer months to cool the building with steam turbine chillers. In the winter, the steam preheats domestic water and conditions the temperature of secondary water."

Caterpillar is also one of its own best customers. Cogeneration is being used at a number of Cat facilities. Scott says, "As a company, we have an objective to reduce our absolute greenhouse gas emissions from our facilities by 25% by 2020, compared to 2006."

Turwitt, of 2G Energy, looks at it this way: As abundant and numerous as they are, incentives are not the major driver of cogeneration projects. "In the majority of all cases, when site owners are interested in installing CHP systems, well designed CHP systems can easily provide huge financial advantages, significant cost savings, and a quick ROI for potential owners and CHP operators without considering any incentives at all," he says. "It all depends on individual specific circumstances, and, in the majority of cases, CHP systems are a smart investment without even including available financial incentives."

According to a recent whitepaper by ConEdison Solutions, owners of large scale properties in New York City would be wise to adopt a CHP system. It would help them achieve long term reductions in operating costs by taking heat that would otherwise have been wasted, and using it for space heating and domestic hot water.

The whitepaper presented a hypothetical example of a 1.2 million square foot, Class A office building in Manhattan. Upfront costs, including the CHP system and a backup generator, would amount to approximately $3 million. The owner would see about $480,000 in yearly savings and revenue, and receive up to $1 million in incentives that are available through the New York Independent System Operator (NYISO), NYSERDA, and Con Edison. The projected payback period for the investment would be just over four years.

Now the Trash Talk

A different kind of cogeneration is beginning to emerge. It's one that utilizes landfill gas. The landfill gas/CHP lesson is being implemented at the University of New Hampshire (UNH).

In 2000, UNH started using a cogeneration plant. The CHP facility is the primary source of heat and electricity for the Durham campus, which spans 5 million square feet. It resulted in an estimated reduction in greenhouse gas emissions of 21% in the academic year of 2006, compared to 2005. The cogen plant cost an estimated $28 million (all self financed) with an anticipated payback of about 20 years.

Then, in 2009, the university teamed up with Waste Management of New Hampshire Inc., to create a project called, "ECOLine." ECOLine piped enriched and purified gas from Waste Management's landfill in Rochester, to the Durham campus. The landfill gas replaced the commercial natural gas as the primary fuel for UNH's cogeneration plant. The landfill gas fueling the CHP facility provides the electricity and heat for the main campus buildings, which means ECOLine can provide up to 85% of the campus energy from the landfill gas.

The combination also stabilizes energy costs, provides energy security, and demonstrates environmental responsibility. The university has embarked on an aggressive climate action plan, called "WildCAP," in which it seeks to lower its emissions to basically zero. The plan calls for cutting its greenhouse gas emissions 50% by the year 2020, and 80% by 2050.

As for the ROI, ECOLine costs about $49 million. UNH expects the payback to occur within 10 years of the project. Both the cogeneration plant, and the landfill gas projects were financed by the school through borrowing. UNH began selling renewable energy certificates (RECs) in 2009. The RECs are associated with ECOLine's electricity generation and will help finance the capital costs of the project. In addition, they will help the university invest in other energy efficiency projects on campus.

The World Alliance for Decentralized Energy (WADE) Cogeneration Industries Council is expecting a bright future. It believes that cogeneration, also known as CHP, is the most economic, efficient, and reliable onsite energy option for anyone in the industrial, commercial, or institutional sectors looking to install a distributed energy system.

WADE describes itself as "a global non profit research, promotion, and advocacy organization established in June 2002 to accelerate the worldwide deployment of decentralized energy systems. WADE is the world's leading organization focused on advancing clean and efficient decentralized energy technology in developed, as well as developing, countries around the world."

The WADE Cogeneration Industries Council sees a changing market for cogen systems. It points to news that abundant natural gas supplies are expected to keep the price of fuel at multi year lows for the foreseeable future. That makes the economics of CHP development more attractive, driving interest in the technology. Add to that policymakers who now understand the air emission benefits involved.

New equipment and advancing technology, new ways to finance projects, and new government policy initiatives are all helping facilities reach the decision to install new cogeneration systems. MSW

Arturo Santiago is the assistant editor of MSW Management *magazine.*

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Bottom Lines

The most important material in a solid waste landfill one that nobody wants there: water

BY DANIEL P. DUFFY

Groundwater, rain, snow, or runoff—any water that enters a landfill violates the goal of sequestering the waste forever in a "dry tomb." Most landfills are dry tomb landfills. The dry tomb waste-disposal concept is based on the idea of isolating waste as completely as possible from the environment. This dryness is maintained by three landfill structures. The first is the leachate collection and extraction system, consisting of a series of perforated collection pipes directing leachate to recessed collection sumps for extraction via submersible pumps.

The second is the landfill's liner system, which isolates the waste from groundwater and contains any leachate within the landfill. The third is a final cover system, designed to shed water and prevent it from entering the underlying waste. In addition to these permanent structures, the waste will receive daily and intermediate cover during waste disposal operations. All of these structures have to be maintained for the duration of the landfill's operational life and its post-closure care period (30 years after closure).

Landfill Containment Structures: Liner and Final Cover

The requirements for landfill liners are mandated by Subtitle D of the Resource Conservation and Recovery Act (RCRA). The regulations required by RCRA for landfill design and construction are given in Title 40 of the *Code of Federal Regulations*, Part 258 —Criteria for Municipal Solid Waste Landfill:

> *...composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10−7 cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.*

Each MSW landfill has to have a composite liner system consisting of compacted clay layer overlain by a flexible membrane liner (FML). This FML typically consists of a 60-mil-thick, high-density polyethylene (HDPE) sheet. Above the composite liner, the landfill is equipped with a leachate collection layer. This usually consists of a layer of sand and a system of perforated pipes designed to extract and remove accumulated leachate. Sometimes, this leachate collection and extraction layer consists of a geocomposite drainage blanket (a sandwich consisting of a factory-bonded geotextile cushion below, a geonet drainage layer in the center, and a geotextile filter on top) either alone or in combination with the traditional sand and pipe system.

The last major containment structure installed on a landfill is its final cap system on top of the final waste disposal grades. This final cover is of similar construction to the liner system at the bottom of the landfill. As with liners, the requirements for landfill final covers can be found in Part 258:

> *...The final cover system must be designed and constructed to: (1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10−5[SUPER] cm/sec, whichever is less, and (2) minimize infiltration through the closed MSWLF by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and (3) minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6 inches of earthen material that is capable of sustaining native plant growth.*

These standards effectively mandate a minimum final cap-and-cover configuration consisting of (from top to bottom): a complete cover of grassy vegetation, erosion controls and surface water runoff interception and diversion structures, a protective soil layer to prevent frost penetration and provide a rooting zone for the grassy vegetation, a drainage layer (either geocomposite or granular soil) to intercept precipitation percolating through the cover, an FML, a compacted low-permeability soil layer matching the permeability and thickness of the liner, and a gas-migration control layer (which can also be either a geocomposite or granular soil) to prevent gas buildup under the cap.

LSC Environmental Products LLC

A Posi-Shell spraying

Daily and Intermediate Cover Requirements

In addition to the permanent containment structures described above (which represent a major capital cost to the landfill operator) the landfill also requires operational cover layers consisting of daily and intermediate cover. Daily cover is that layer of cover applied over the current workface at the end of each workday. It is intended to perform several tasks to preserve the hygienic and environmental safety of the landfill operations.

First, it is designed to prevent entrance to the waste by rodents, birds, insects, and other pests and potential disease vectors. Second, it prevents the escape of blown dust and debris from the deposited waste. Third, by promoting surface water runoff, it minimizes infiltration of precipitation (rainfall and snowmelt) into the underlying waste, thereby minimizing leachate formation. Fourth, by smothering the workface and reducing the entrance of oxygen into the waste mass, daily cover minimizes the potential for fire. Fifth, by covering and

obscuring the deposited waste, it makes it difficult or impossible for individuals to conduct scavenging operations on the landfill. Lastly, it minimizes the escape of odors from the waste, eliminating a significant nuisance and reducing the potential for landfill gas production. The requirements for daily cover application are also spelled out in RCRA's Subtitle D. These can also be found in Part 258:

> *Except as provided in paragraph (b) of this section, the owners or operators of all MSWLF units must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.... Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the director of an approved state if the owner or operator demonstrates that the alternative material and thickness control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.*

The second part is critical to landfill operations, as it allows for the use of alternate daily covers consisting of synthetic materials. These can consist of a wide variety of materials, including spray-on foams, reusable tarps, disposable plastic sheets, and spray-applied mortar coatings. The equipment used for applying this material is equally varied.

Intermediate cover differs from daily cover, both in physical characteristics and operational purpose. Though it has to meet all of the same performance and operational requirements of daily cover, it is not just a thicker version of daily cover. The main difference is the regulatory requirement to provide cover for those waste disposal areas that will be exposed for 30 days or longer (a requirement derived from Section 258.60). Operationally, unlike daily cover, intermediate cover must be removed prior to placement of additional waste on the covered areas, and the operator must protect intermediate cover from erosion and gully formation.

Post-Closure Care and Maintenance

Post-closure care and maintenance tasks also are listed in the code. These tasks must be performed for a care period of at least 30 years after final closure of the landfill. The owner/operator is responsible for ensuring that the landfill's structural and mechanical systems (final cover system; leachate collection, removal, and pretreatment systems; gas extraction, treatment, and monitoring systems; and groundwater monitoring systems) preserve their integrity and continue to function. This requires regular inspection and maintenance, with repairs performed as needed. Care and maintenance tasks are typically performed at least quarterly for the first five to 10 years after closure with the frequency being reduced to semiannually or even annually later on.

ADC Options: Tarps

The most innovative materials used in landfill operations are the alternate daily cover (ADC) materials that can be used in place of 6 inches of soil. ADC comes in two broad categories: tarps or sprays. Tarps include disposable sheets made from thin plastic film, reusable sheets made from more durable HDPE geomembrane, and tarps made from heavy geotextiles. Sprays include inorganic applications (various types of concrete mixtures) and organic mixes (such as pulped paper). Each has its advantages and disadvantages.

Depending on their size, tarps can be placed manually over the existing workface. But in most cases, it is easier and cheaper to use a specialized deployment mechanism to roll out the tarp. Using this equipment to roll out the tarp and (more importantly) roll it back up again at the start of the next workday, reduces wear on nondisposable tarps, greatly extending their useful lifetime and reducing operational costs. However, some degrading of the tarp material is inevitable, since waste contains many sharp and protruding objects that can catch and tear even the most carefully placed tarp. High winds can also make it difficult to deploy tarps.

On the other hand, cheap, thin, disposable plastic sheets are designed to be torn up by equipment traffic prior to the start of further waste disposal operations. In both cases (removal or destruction) the goal is to eliminate a potential barrier to the downward percolation of water/leachate through the waste mass. If left in place, these impermeable covers could cause the leachate to perch in significant quantities high in the waste mass. This could result in serious slope stability issues.

Enviro Cover System is an efficient and cost effective ADC for municipal solid waste landfills. The System consists of the Enviro Cover, a uniquely non-reusable polyethylene film developed to meet requirements for ADC. It is placed over the workface by the Enviro Cover Deployer. This is a versatile and efficient applicator for placement of Enviro Cover. Its method of application involves providing ballast and seal at panel overlaps to create a complete, conforming, continuous, impermeable barrier between waste and the surrounding environment.

J&M Industries manufactures its Airspace Saver Daily Cover system as part of a broader line of tarps used in sandblasting and paint screens, grain storage tarps, athletic field covers, nursery tarps, frost protection, and compost tarps, as well as ADC. Since a workface can vary in size, J&M provides custom manufactured daily cover tarps that can range from 25 feet by 25 feet up to 150 feet by 150 feet. The company's ADC tarps are sewn with a heavy-duty UV-resistant thread and 2-inch (6,000-pound breaking strength) UV-resistant seatbelt webbing on a double-needle lockstitch sewing machine. The lockstitch sewing pattern is a must in the rugged landfill industry. It makes the seams stronger and more resistant to wear and tear when being deployed and removed. While pulling a tarp through a landfill, it is going to encounter many objects on a workface. A lock-stitch thread can be cut and not keep pulling out. The company's ADC tarps are manufactured out of high-density woven polyethylene tapes with a low-density polyethylene coating on each side. J&M's main selling fabric is its 9.4-ounce, 24-mil-thick, flame-resistant Fabrene material. This has a 2-mil coating on each side. J&M also uses other polyethylene fabrics constructed the same way, but a little more lighter weight and economical: 7.5-ounce, 16-mil thick fabric with 2-mil coating on each side; 6.8-ounce, 14-mil-thick fabric with 2-mil coating on each side; and 6.0-ounce, 12-mil-thick fabric with 2-mil coating on each side. These fabrics can be heat-sealed in lengths up to 300 feet, with any required width. The fabrics are perfect for rain caps, intermediate cover, or compost covers, as well as any temporary cover. All of the fabrics have UV inhibitors in them, so they can last several years in direct sunlight.

Layfield Geosynthetics manufactures, fabricates, and installs a wide variety of geomembranes. With manufacturing plants at three locations in North America, Layfield makes geomembranes to requested size for landfill containment and cover systems. Leading its product line is the Enviro Liner 6000HD. This geomembrane is made with a durable lining material, NSF 61, having superior resistance to UV, temperature effects (when covered with a white surface), and weathering. Therefore, it can also be used in the roll of an ADC tarp. This material's formulation consists of a proprietary polyolefin material and UV inhibitor/antioxidant additive package. It is available in 12-foot or 22-foot-wide roll stock with thicknesses ranging from 20 mil to 60 mil.

LiteEarth is unique in that it resembles artificial turf. It is an advanced, engineered, and fully tested capping system. Consisting of a lightweight impermeable material, it exceeds the regulatory requirements for both infiltration and erosion control. It can be used for long-term closure of all types of landfills (MSW, coal-combustion residuals, monofils, mine spoils, etc.). Runoff from the LiteEarth surface is nontoxic. The use of LiteEarth eliminates maintenance costs associated with post-closure mowing and landscaping while eliminating the need for fertilizers, pesticides, and fungicides.

Reef Industries Inc. is a maker of polyethylene laminates designed for a wide range of applications and an even wider range of weights, thicknesses, and special composites. These materials are highly resistant to tears and punctures while resisting weathering, UV, and chemical contaminants. The company's Griffolyn products are used as ADC. Available in

standard 200-foot-by-200-foot sizes, they are UV stabilized with reinforced fabric. Engineered as a high-strength, durable, lightweight material, the Griffolyn 20-Mil Reinforced is manufactured from a multiple laminate combining UV-stabilized film with a high-strength cord grid. Similarly, the company's Griffolyn TX-1200 is a three-ply laminate combining two layers of linear, low-density polyethylene and a high-strength cord grid.

Southwestern Sales Co. carries a full line of ADCs for landfills under its tarpARMOR brand. The durable, easy-to-install tarps meet all of the regulatory requirements for ADC. They come in several standard finished sizes, including 48 feet by 50 feet and 96 feet by 100 feet, as well as custom-engineered designs and sizes. Also available for the company's automated tarp deployment system (TDS) with patented tarpLOX structural support. The tarps are made from durable polypropylene material weighing 6.5 ounces, 8.0 ounces, or 9.4 ounces per square yard. Each tarp is reinforced with heavy-duty seatbelt webbing or cargo strapping reinforcement with heavy pull-straps and D-rings for easy connection.

Tarpomatic manufactures a patented Automatic Tarping Machine (ATM). This is a self-contained unit that easily attaches to a piece of heavy equipment (such as a dozer, frontend loader, or tool carrier). It is engaged by a hydraulic-drive motor to wind up and place or rewind and remove. The tarp's spool can be operated with a variable-speed, 20-horsepower, electric-start Kubota diesel engine, and can be easily disconnected or reconnected. The deployment arm can be adjusted for height, tilt, and direction via a control mechanism installed in the operator's cab. This allows for easy deployment and removal even over uneven terrain. It is designed for 40-foot wide panels of various lengths, weighs 6,000 pounds, and supports a load of 2,500 pounds.

Watershed GEO is a developer of synthetic liners and covers for multiple applications. Its patented ClosureTurf is a final-cap system for landfills that meets all EPA requirements for landfill closure. ClosureTurf is somewhat of a hybrid in that it offers the protective benefits of a traditional soil cover by using a specialized turf and infill covering the membrane, but without the drawbacks of erosion and high maintenance of the traditional method of closing a landfill. It's most simply described as a "non-exposed" geosynthetic cover. At its heart is a structured geomembrane layer with studs on top to provide quick drainage even in high-intensity storms, spikes on the bottom to provide high friction that locks it into place on a prepared subgrade, and an overall thickness 20% greater than standard regulatory requirements. Its engineered cover "turf" provides structural stability and a high-friction surface while being natural in appearance and aesthetically attractive. It is a low-maintenance material, resistant to extreme weather (winds, rains, and temperatures) and long-term UV exposure. This cover is installed directly on a prepared subgrade having no special requirements beyond what the state regulatory agencies currently require.

For shorter term intermediate cover applications, Watershed Geo has developed VersaCap, another engineered turf cover with a reinforced backing made from a high-strength polymer membrane. This cover was developed to give operators the ability to provide ongoing control of gas, odors, and leachate. With a green-colored polyethylene (PE) "grass" finish, it is aesthetically pleasing as well as functional. Its impermeable surface sheds precipitation from rainfall and snowmelt, preventing it from percolating into the waste mass and producing leachate. High-strength woven geotextile under

the PE grass cover provides structural stability. Underneath the geotextile is the impermeable PE membrane barrier. Given its self weight and aerodynamic properties, it does not require anchoring with sandbags or old tires. It can also provide horizontal in-plane transmissivity to convey landfill gas, while its impermeable nature contains these gases, allowing for greater gas extraction efficiency. The cover was designed so operators can install it themselves as well as remove and relocate it to other areas if needed. It can do all of this for up to 15 years in-place, compared with standard temporary membranes that may only last few years due to wind and exposure damage. This operational lifetime can be further extended to 50 years with the addition of a proprietary pozzolan infill, HydroBinder.

ADC Options: Sprays

A radically different approach is the use of spray on cover materials. This is usually a free-flowing slurry mix of water, bulking fiber (paper pulp being common), adhesive additives, and binding agents such as cement. The material is applied by means of what is essentially a large water cannon. Once sprayed over the workface, it dries to form a hard crust. If the spray is mostly organic in makeup, it can be left in place, as it will decompose in time and remove any barrier to leachate migration. Inorganic sprays need to be broken up by sheepsfoot or tractor tread vehicles to make them permeable before the placement of additional waste. High winds also alter the efficacy of spray-on covers, as do freezing temperatures, heavy rains, hail, or any other adverse weather conditions.

Central Fiber Corp. is a manufacturer of Topcoat, a nontoxic, biodegradable, environmentally friendly cellulose fiber product that can be applied as spray-on cover. This product is made from recycled materials, primarily obtained from recovered post-consumer newspapers, magazines, and wood materials. Not only is it used as ADC on landfills, Topcoat can be used for erosion control, insulation, industrial products, and other applications. Sprayed as a slurry, Topcoat provides an alternate material that meets all of the regulatory requirements for daily cover. Its application uses a convenient one-bag system containing all of the dry chemicals and materials necessary. One simply adds water; there is no mixing time or waiting prior to application (no more than 20 minutes from mix to cover). It is applied to the waste surface with standard hydro-seeding equipment.

Finn Corp. manufactures ADC from recycled paper and wood mixed with polymers, an enzyme complex, and proprietary chemicals. Applied as a slurry by a specialized Finn landfill spray application machine, it quickly hardens to form a cement-like crust over the workface. This application machine, the LF-120 HydroSeeder, an exclusive Finn Landfill Solution, is specifically designed for use in landfill operations. It can also double as a mobile watering source to wash equipment, put out fires, water vegetation, and hydroseeding.

LSC Environmental Products LLC is the maker of the Posi-Shell Cover System, a spray-applied mortar coating for workfaces. Posi-Shell makes it possible to significantly reduce and eliminate soils in landfills through both daily workface cover and intermediate cover, freeing up cell space for revenue-generating trash. Easy to use, Posi-Shell Brown Base Mix comes in 50-pound bags that can be mixed with water or leachate. When more durability is needed, Portland cement may be added to the mixture, making Posi-Shell

ideal for ditch lining and slope retention when seeding isn't possible. The unique and versatile nature of Posi-Shell has taken it beyond the landfill to provide cover for cement clinker piles, mining applications, compost cover, contaminated soil cover, and erosion control in highway and industrial settings. Along with Posi-Shell, LSC has a family of cover products that include Posi-Cube Seed and Soil Guard, a unique blend of mineral binders and wood fibers for a seeding coat that works on the challenging slopes of landfills. Posi-Clear is a polymer-based dry powder product that mixes in a water truck or hydroseeding unit to create a liquid that bonds with the surface of roads to reduce the need for watering. And LSC's newest coating, Odor-Shell, enables managers to eliminate at the source odors emitted by sewage sludge or other odorous intake items, allowing the landfill to maintain good relations with neighbors while taking in some more challenging wastestreams.

New Waste Concepts provide a wide range of active systems for the suppression of dust, VOCs, odors, and gasses. The newest addition to its line of products includes the Typhoon Evaporation Head, which offers low-energy-use evaporation and misting technology. These systems include the indoor Cocoon Evaporation chamber, which is currently evaporating over a million gallons in three months in Tennessee. The company's odor control and leachate evaporation systems are being used by composting, oil-and-gas, utility-and-energy, construction-and-demolition, manufacturing, and livestock facilities as well as by solid waste landfills. The ProGuard spray-on ADC is a low-cost, non-cement material consisting of a blend of polymers and recycled fibers. In its SB2 version, ProGuard has an applied cost of less than a penny per square foot and can be applied using a centrifugal pump. The company's ConCover spray-on covers have higher density and higher viscosity, making them suitable for steep workfaces and interim and long-term covers. These long-lasting cover materials carry the well known name, ConCover, with the SW being used as an intermediate cover and the 180 version lasting up to 18 months.

Since 1986, Rusmar Inc. has been a full-service, specialty chemical manufacturer and a leading provider of non-hardening aqueous foam products and application equipment for the solid waste and environmental remediation industries. Its spray-on ADC products are nontoxic, biodegradable, nonhazardous, and inflammable, and they consume no valuable airspace. The company's patented AC667 Soil Equivalent Foam was designed to withstand the elements and provide cover for periods up to 72 hours. It meets all the regulatory requirements for daily cover performance. Being unaffected by ambient temperatures and moderate precipitation, it can be used year round. Rusmar's AC667-SE Soil Equivalent Foam is a liquid concentrate composed of a starch-modified, hydrolyzed protein surfactant, even providing a cinnamon scent for odor control. The company's spray foams can be used in other landfill applications besides ADC, such as landfill excavation for cell liner tie-ins, landfill-gas trenching, landfill mining/reclamation projects, and nonhazardous and hazardous waste remediation. In addition to the chemical foams themselves, Rusmar manufactures and services its application equipment. MSW

Daniel P. Duffy, P.E., writes frequently on the topics of landfills and the environment.

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Composting Renaissance

Supported by new regulations and opportunities, composting's future is brighter than ever.

BY CAROL BRZOZOWSKI

Shannon Leavitt says he can't produce enough compost to satisfy all of the customers who ask for it.

For 18 years, Leavitt has owned the Natural Fertilizer Co. in Wildorado, TX, which he says was started by Fletcher Sims, "the father of mass-production composting," in the late 1960s.

Annually, the Natural Fertilizer Co. produces an average of 40,000 tons of compost from feedlot manure in the Texas Panhandle. Leavitt says he hasn't had to actively market the product for more than a decade.

In South Carolina, Charleston County Environmental Management (CCEM) is one of the most effective municipal solid waste composting operations in North America—the largest compost producer in the state and one of the largest on the East Coast.

The county-run program takes in yardwaste from local municipalities as well as pre- and post-consumer foodwaste for feedstock for its compost operation.

The operation has gone from producing 20,000 tons per year of nutrient-rich compost in 1993 to 59,000 tons from a facility that covers 36 acres and processes 100% of the yardwaste generated.

In Killeen, TX, creating beneficial-use compost from materials previously considered a disposal challenge was the focus of a regional composting facility opened in August 2011 by the Bell County Water Control and Improvement District No. 1 (WCID No.1).

Composting is here to stay, but it takes the right system to make it work.

The US Composting Council's Conference & Trade Show in Austin, TX, gives municipal solid waste management operators an opportunity to "kick the tires" of the variety of technologies that are available, see demonstrations, and obtain input from composting experts, leading to more educated decisions, points out Rod Tyler, vice president of the US Composting Council's board of directors and CEO of Filtrexx.

At the US Composting Council's Conference & Trade Show, Morbark will be showing equipment from its Wood Hog line of horizontal grinders.

The Wood Hog is an industrial-grade grinder designed to process brush, yardwaste, debris—including storm debris, C&D waste, other mixed woody feedstocks, and asphalt shingles—into saleable products. "All Wood Hogs come standard with the Morbark Integrated Control System to maximize production and engine efficiency, a laser-cut, factory-balanced rotor for unsurpassed durability, and an aggressive feed wheel with an internal Poclain drive that has no chains or sprockets for more torque and reduced maintenance," says Chris Edmonds, industrial sales manager for Morbark's western region.

The breakaway torque limiter driveline protection system protects against catastrophic damage from contaminants, says Edmonds.

An optional Morbark Quick Switch grinder-to-chipper conversion kit enables operators to produce high-quality biomass fuel chips or sawdust, he adds.

Komptech Americas will be introducing its new direct drive Crambo. "This machine will have all of the functionality of the hydraulic Crambo like reversing shafts and programmable reversing ability, but will have increased performance with decreased fuel consumption," notes Todd Dunderdale, vice president of marketing.

Komptech's machine is designed specifically for the composting market, says Dunderdale. "We also produce high-speed grinders for the forestry market where biomass is produced. However, for composting you want a dual-shaft, low-speed shredder," he points out. "This is because this machine is designed to blend and mix the material prior to windrowing."

The machine also is designed to be resistant to the contaminants that often find their way into greenwaste, such as axe heads and other steel, Dunderdale adds. "A big concern nowadays is plastic contamination," he says. "A low-speed shredder keeps the plastic pieces bigger, allowing for easier removal during screening, whereas high-speed machines tend to grind the plastic into many small pieces that can get into the finished product."

Vermeer has a number of tier projects being engineered. Its latest introduction into the marketplace is the TR620 trommel screen, which was launched in early 2014.

Vermeer's composting equipment is designed to address the needs of waste management and provide products for applications such as top-dressing for yards and golf courses; compost socks, which consist of mesh tubes filled with compost that will slow and filter water on a construction site capturing

soil and reducing erosion; and erosion control on disturbed areas such as construction sites, development (and planting) projects and exposed stream banks, and organic fertilizer or soil conditioners.

Compost turners are designed to efficiently produce large volumes of compost by introducing oxygen into the compost pile to help speed the decomposition process.

There are two types of compost turners: drum and elevating face. Vermeer compost equipment is designed to process up to 4,000 cubic yards of compost per hour, depending on the turner's type and size.

Amadas Industries offers a trommel screen system for the final screening of material before sale of the compost. The company also offers manual bagging machinery for bagging the finished compost for retail sale. Amadas Industries may be introducing a municipal compost or mulch loader during the conference and trade show, says Tiny Andrews, industrial sales manager.

MSW operations that are not putting foodwaste into the landfill need a way to process it onsite. ALLU Group Inc. offers solutions.

The company's machinery is designed to screen, mix, aerate, and downsize foodwaste in a one-step process, says Jesse Allen, marketing manager.

ALLU Group offers two different types of buckets to do so: a screener/crusher to process material from five-eighths of an inch to a 5-inch size, and a fine screener to screen out smaller fragments, such as rocks and other debris.

The recession became a driving factor in finding ways to compost efficiently, Allen says. "When you can find ways to process this material without having to take numerous steps to do so, you'll be able to save money," he says.

While the learning curve in operating the equipment is relatively easy, Allen says, the company does train onsite. "It's not a piece of equipment with challenges," he says. "It's a piece of equipment that you can overcome challenges with."

Resource Recovery Systems International manufactures straddle-type windrow turners with a variety of options.

The company customizes the windrow turners to the owner's specifications. "They have a range in sizes and engine horsepower, four different drum styles, several tire sizes, tracks, and four-wheel drives," says Les Kuhlman, company president.

In determining what grinding equipment is best suited for composting, "you need to consider what size feedstock you will be running, such as stumps, greenwaste, or limbs, and how much throughput you want from the machine," says Michael Spreadbury, marketing manager for Peterson Pacific.

"Grinding is all about horsepower," adds Spreadbury. "A more powerful machine will reduce material a lot faster than a smaller machine. You don't want to waste time and fuel with a smaller horsepower machine when a large one can get the job done much faster."

At the 2015 US Composting Council Show, Peterson Pacific will introduce its latest grinder, the Peterson 6700D, which is the company's largest horizontal grinder. "It is designed for operations that need the most durable, highest output machine," notes Spreadbury.

Peterson specializes in developing delivery and processing equipment that turns low-grade organic materials into high-value products, he adds.

The 6700D is powered by an 1,125-horsepower, Tier II Caterpillar C32 engine or an optional Tier IVi Caterpillar C32 engine. "With a feed opening of 66 inches by 50 inches, the 6700D can even process large stumps that used to be reserved for tub grinders," notes Spreadbury. "With the R+package, the 6700D can be configured as a mid-speed grinder to handle heavily contaminated piles or a high-speed grinder for typical land clearing operations."

Peterson's three-stage grinding process, with an up-turning rotor and large grate area, enables the 6700D to produce materials to exact specifications. "Our quick-change multiple-grate system makes it easy to customize grate configurations to produce a wide variety of finished materials," says Spreadbury. "Grates are removed through an enlarged access door on the side wall of the 6700D."

The 6700D features Peterson's Adaptive Control System, which controls all components of the feed system to optimize output. "This system monitors the grinding load and varies the speed of the feed system to keep the engine working at the top of its power curve," says Spreadbury. "It automatically accelerates the feed system when the engine load is light, slows when the load is high, and reverses if the engine speed drops. It even monitors the engine temperature and varies the cooling fan speed to minimize power usage and reduce fuel consumption."

Peterson grinders feature a latching impact release system, which minimizes damage from contaminants in the feed material. "The anvil and first grate open on a severe impact, allowing the contaminant to be ejected, and then re-latch to permit continuous grinding," says Spreadbury.

Peterson horizontal grinders are operated by remote control, which is kept in the cab of the wheel loader or excavator feeding the machine, notes Spreadbury. "As the machine operates, the loader can make the necessary adjustments to the machine without leaving the safety and comfort of the cab," he says. "Daily maintenance is crucial to a long machine life."

The machine should be cleaned and inspected for damage at the end of each shift, Spreadbury says. "Depending on the material being reduced, the bits will need to be rotated or replaced as they wear, but are easily serviced with the onboard air compressor and simple pneumatic tools," he adds.

Diamond Z offers tub grinders, horizontal grinders, enclosed grinders, and solid waste grinders from 440 horsepower to 2,400 horsepower.

Diamond Z equipment is used by composting facilities in such places as San Diego and Los Angeles. "They have machines running up to 1,200 horsepower doing nothing but composting," says Jens Jensen, sales and service manager. "There are companies in Washington that are mixing food waste into it and are now having huge successes with our larger machines that are mixing soils and food waste and wood waste and anything else they can."

The most used machine in composting operations is the DZH4000. The machine features a C18 Caterpillar engine combined with a down-cut mill to deliver production rates up to 120 tons per hour. MSW operations like it because "it's a really productive machine, using less fuel, and it's lighter in weight and maneuverable on tracks," says Jensen.

Diamond Z endeavors to design machines that are uncomplicated, Jensen says, adding that the company provides startup training.

"It's easy to maintain," he adds. "That's what's most important out in the field, is that you're putting product on the ground. People don't want to work on machines; they want to grind."

The end product is being used for bulk composting for residential and commercial applications, says Jensen.

"It seems that everything is heading toward being able to better manage foodwaste, with companies all around the country figuring out ways to better deal with it without the odor issues and figuring out a way to get the right mix," notes Jim Coyne, business development manager for Ecoverse Industries, the parent company of DoppstadtUS, N40, and EnvEco.

Ecoverse Industries' Backhus line offers a line of turners for windrow widths from

9 feet to 25 feet, trapezoidal piles, agitated bay systems, and bridge turners. The company also recently acquired an interest in Harvest Quest International, which supplies microbial treatments for compost operations.

"The Harvest Quest inoculant, along with a modified static aerobic pile [MSAP] composting method speeds up the breakdown of foodwaste and biosolids while reducing odors. We have also seen our inoculant and method remediate petroleum hydrocarbons from fracking discharge material in Colorado," says Coyne.

The end product of the compost with fracking discharge has been approved in Colorado as a soil amendment, he adds.

An increasing number of states are calling for a ban on the landfilling of foodwaste. "People are starting to see how they can turn foodwaste with the composting process into an organic fertilizer that they can then sell and turn into a whole new revenue stream," says Coyne. "We're seeing huge operations that run the composting for an entire city or region to smaller operations that just have arrangements with the deals with area grocery stores.

"It's all about the microbial activity," he adds. "It's all of this natural bacteria that comes with our inoculant we have with compost piles."

Coyne explains that instead of traditional composting, which occurs from the inside out, this process starts from the outside and works its way in. "That's the way the bugs spread over the pile," he says. "It turns an area that used to have a high ammonia smell that you get in those compost windrows to more of an earthy smell. It's allowed us to spend a little bit more time getting to know what the compost industry is like."

The company also sells the Tiger HS640, which functions as a shredder, screener, and an unwrapper in one machine.

It handles both solid and liquid fractions, processing the organic wastes as they are.

The machine opens packaged organic materials and separates their organic content material from the container to ensure contamination-free feedstock introduction. "It's good for a lot of grocery chains, large distributors of packaged products or even municipalities that deal with a lot of food waste and the packaging that goes with it," says Coyne. "By being able to manipulate the controls, you get material you can put straight into an anaerobic digestion system or the same for compost. If you want to make sure there's no plastic or contaminants in your products, you can use this and come out with a leachate."

Scarab International LLLP is currently working on several different technologies that are going to enhance the performance of its windrow turner machines, says Jim Greer, sales manager for Scarab. "The changes coming include but are not limited to operator controls, wiring, and drum turning," he says.

The company's equipment is easy to operate, Greer says. "Two joysticks control the drive wheels or tracks on both sides," he says. "A person can be trained in five minutes to run a Scarab."

Jensen notes composting is getting more prevalent and will continue on a growth path, fueled by a push to become more eco-friendly. "As a whole, we continue to see the composting effort continue to evolve and grow," says Jeff Bradley, product manager for recycling and forestry with Vermeer. "That can be anything from people doing it in their backyards by creating small compost bins to large commercial-scale composting. People are seeing the benefits of it from a green initiative standpoint, doing the right thing for the environment, and we continue to see that education and knowledge base, even in the younger crowd. Schools are doing a much better job in that education piece."

Foodwaste is growing in popularity as a feedstock for compost, says Allen.

Greenwaste is the mainstay of composting, says Bradley. "It's been there for a lot of years and will continue to grow," he adds. "Foodwaste is one of those key areas where each state has its own set of regulations based on recycling rates. Quite a bit of the foodwaste is going into the compost industry as well as anaerobic digestion."

Kuhlman points out that while anaerobic digestion takes away some of the waste that is only composted, composting is "easy and a fairly low-cost process in the hierarchy of alternatives."

Tyler says he sees a bright future for composting "as most communities are trying to recover more and more of their organics to meet their recycling goals or for other reasons."

The finished product is finding its way into an increasing number of diverse applications, a trend that will continue as people becoming more cognizant of the properties in compost that help fix damaged soil.

"The markets for use of compost have always been developing," he points out. "What's interesting is the markets for using locally produced compost for things like creating

urban gardens are now becoming much more vogue than when I started in the business 25 years ago."

Tyler says he doesn't foresee urban gardens replacing conventional agricultural but that they do offer an advantage for addressing critical "food desert" locales or providing potential beneficial use for the thousands of urban lots that are vacant in such cities as Cleveland and Detroit.

The current markets for composted material include land applications for agriculture, bagged sales, erosion control, landscaping companies, compost resellers, home gardens, farming, soil remediation, and municipal solid waste cover.

"Also, there are some homes in new areas required to use compost for water-saving aspects," adds Kuhlman.

Municipal solid waste operations are challenged with looking at composting one of two ways, says Tyler. "Either they look at composting as a way to handle their wastestream with a process-oriented, get-rid-of-it mentality, or as organic recovery, an opportunity to use organic resources more sustainably locally," he adds.

The latter view allows MSW operations to offer the product for use in urban gardening, stormwater or erosion control, steep-slope stabilization, or to promote general soil health, Tyler says.

"In doing that, the whole low-impact development [LID] envelope of products and applications is available to them," he adds.

Without using compost, an LID option can be difficult to achieve, Tyler points out. "For example, Atlanta is one of the first cities to pass a law that any redevelopment has to use LID technologies. A lot of these municipalities, therefore, are challenged with the current footprint, any remaining build-out that they have, and all of the impervious surface that comes along with natural development," he says. "The only thing that counterbalances that is LID designs, in which a lot of them use compost."

For the municipal sector, an opportunity arises to consider organic residuals as a resource "so that the current pressure they have to face on infrastructure is reduced from water inflow and infiltration," says Tyler.

The use of organics in those applications creates a market for products that the MSW operations are trying to banish, he adds.

Composting is a good way for municipalities to take most of the yardwaste out of the wastestream, which translates to more available space in the landfill, says Andrews.

As CCEM managers point out, adding compost to soil increases the amount of organic matter, helping to increase nutrient levels and conserve water.

South Carolina soils typically have an organic matter content of less than 1%, insufficient for ideal water retention. Compost can hold up to 10 times its own weight in water.

Other benefits include reduced soil compaction and increased root growth, increased nutrients and beneficial soil microbes, reduced need for fertilizers, healthier plants, and more rapid growth rates.

Greer points out that composting eliminates foodwaste and yardwaste, returns oxygen and nitrogen to the earth, eliminates the need for such "unhealthy" chemicals as fertilizers and pesticides in soil, cleans up contaminated soil, prevents pollution, prevents erosion, enables manure from feedlots to be turned into compost, and promotes "green living."

If done correctly, composting is a way to repurpose the traditional wastestream to a valuable end product, says Bradley. "Along those same lines, rather than sending that to the landfill, you're actually creating an end product and reducing the greenhouse gasses while you're extending that landfill life," he adds. "Another thing you're doing on the benefit side is that you're creating a soil amendment, which actually has high levels of micronutrients and increases the water-holding capability of the soil that you put this in as you mix it in. Also, you're supplying organic farmers with a fertilizer, because this definitely does have a decent NPK value as a fertilizer."

There are, however, drawbacks to consider when producing compost. "It takes from 90 to 180 days to convert a mulch product into a compost product," says Edmonds. "There's additional equipment needed to turn the compost, to hydrate it, keep it moist and allow the compost to break down properly. There is also, in many areas, a shortened and seasonal sales cycle for compost as opposed to a year-round, constant demand for wood fuel products."

Other potential drawbacks include the amount of land required, transportation costs, regulations, time investment and equipment costs, feedstock, managing waste, and economic feasibility, says Greer.

Finding qualified personnel to run the operation is another challenge, says Edmonds. "An operation getting into composting should research and know its potential competition: Who else is in the market, and what is the scale of their operations?" he says. "Also, a composting operation requires more permitting and has more regulations to follow than many other woodwaste operations. Since the material has to sit there for a longer time while it is turning into valuable compost, there are potential runoff issues that require additional site preparation and permitting."

The biggest drawback of composting has been the increased regulation in the past years, Dunderdale adds. "All of the permits and regulation required have increased the costs to process material. If companies cannot make money composting, they won't do it."

Site layout and marketing the finished products are other challenges, Dunderdale points out.

One of the challenges inherent in working with foodwaste or biosolids is having the right mix for the process, Coyne says.

For instance, the ratio could be shifted by the presence of more biosolids than yardwaste. "A lot of operations are looking to grow big. Sometimes they just want to make the piles higher, but that will change the entire makeup of what they put into their composter," he says.

There are concerns with respect to foodwaste composting of which those planning to engage in it should be aware, Bradley says.

Primary among them is odor control.

Operators can get into trouble in a hurry if they're not educated about handling foodwaste, Bradley says. Getting foodwaste under control is worth the effort, he adds.

"That definitely is one of the biggest driving factors from an overall waste standpoint," he says. "That contributes as much as greenwaste as far as the national tonnage goes. The opportunity is huge to be able to pull that out of the wastestream and do something beneficial with that material."

The benefits of composting far outweigh any drawbacks, Dunderdale notes. "There is an urgent need to replace valuable nutrients that have been removed from our soils," he says. "Everything from reduced plant disease to increased water retention and better yields all can be obtained from using compost on the soil."

The drawbacks are not insurmountable. Bradley encourages those wanting to get into composting or expand existing operations to educate themselves on the process. "The US Composting Council offers an operators training course as well as a number of other organizations across the US, such as North Carolina State University, Iowa State University, and Cornell University. A lot of different places offer some training to minimize those issues that show up, such as an odor issue.

"We've heard a lot of those lately in the news, a few big ones in the East," he continues. "All of those things that go publicly

wrong really affect the market and the public's perception of the industry. Whatever we can do to help minimize that is definitely worth the time."

There are a number of tools online and privately for purchase where compost operations can create their own "recipe" to minimize odor and runoff issues to deal with the leachate coming out of the compost pile because it may be too nitrogen-rich, Dunderdale notes.

What each MSW operation needs to start or augment a composting program is related to the size and scope of municipal generation, says Tyler. "The needs of one that generates 10,000 yards of compost a year versus 100,000 yards of compost a year are vastly different," he points out. "The equipment that's required for those operations is vastly different."

To determine what equipment is needed for composting, customers have to determine from many different operational aspects what kind of composting operation they can handle, says Greer. "It is our belief that the fastest and best way to make quality compost is by windrow composting," he says. "Site considerations such as location, size, layout, and space limitations, as well as incoming volume, and other equipment such as screeners, crushers, or loaders help determine the size of the windrow compost turner that is needed for the individual site."

"You have to match your incoming volume allotment," says Bradley. "How much physical space you have on the site can tell you whether you need to do a windrow compost turner or a continuous stack compost turner."

Vermeer's CT10TX has a conveyer system that offers a continuous stack so there are not spaces between every windrow. "You can fit almost twice as much compost on the site as you do with the traditional windrow turner," says Bradley. "You almost have to lay it out from start to finish and understand your space and size. You also have to allow room for the receiving area, the curing pile, and loading and unloading areas. All of the space is a huge concern when you're trying to define what equipment you're going to need."

The Backhus windrow turners work well in operations constrained by their surroundings, says Coyne. "In terms of being able to do toe-to-toe composting and make sure you're getting the maximum amount of it turned and not missing the bottom layer, you're making sure that every inch is covered," he says.

"You're also looking at the long run of fuel costs, man-hour operations, and training people to use equipment," he adds. "Backhus is one of the only cabins in the market that has an ergonomic cabin in which a person can train another person in it. The jump seat gives the operator the ability to do a lot more than has ever been available in the past with windrow turners."

The Backhus, used in conjunction with the Harvest Quest, which doesn't require as much turning and cuts back on the amount of man-hours and fuel costs, presents a win-win when combined in operation, Coyne says.

Jensen concurs that throughput is one of the factors that composting operations should consider when adding equipment. "If you're going to bring in a small amount of product, you're going to look for a smaller machine," he says. "You don't want to overpurchase your machine and overburden yourself. You don't want to kill your business out the gate, but you also want to give yourself enough room to improve."

It's best to buy a machine that offers at least 10% to 15% more than what is needed to accommodate growth needs, he adds. "Have some room to expand but not overwhelming," says Jensen. "If you need 500 tons today, you don't need to buy a machine to produce 15,000, because it's just a little too much for you. There's no sense having them sitting there unused most of the time."

A number of other factors determine what an operation should consider when choosing the appropriate equipment for a composting operation, Edmonds points out.

"What feedstocks will they be processing? What is the size of the operation, and what volume of materials needs to be processed? These will help the company choose a machine and setup that will handle what they'll throw at it," he says.

Regulations on such factors as emissions are another consideration, be they local, state, or EPA. "This will help determine if they need a Tier IV engine or if they should consider electric-powered equipment," Edmonds says. "We've worked with a number of companies and municipalities to help them work through these questions and to choose the machine that will work best for their specific circumstances."

"You have to make sure all of your Is are dotted and your Ts are crossed and that you are not permitted for too small of an operation," adds Andrews. "You can find yourself really throttled by the size that you thought you were going to be versus where you need to be. Acreage or tons per day incoming is how it is regulated."

In making a choice for screening, one must first know how many yards of finished compost is being produced, says Andrews. "Secondly, you would need to know what sales are driving the requirements for the production: how much you are going to be able to sell and if you have the capacity to keep up with that. That is how you choose the size of the trommel, either by length or diameter of the drum. That typically depends on the production rates or sales requirements. Typically, our baggers will do 18 to 22 bags a minute. As fast as you can hang a bag, it will charge it."

It's critical to become educated on the process, Bradley says: "You need to understand what your finished material and use is going to be. What market are you targeting? You have to know where you want to go to figure out how you're going to get there."

An operator also needs to consider seasonal variations and the site surface, be it a hard surface or soil, Kuhlman says.

The size of the site in relation to the amount of incoming material is another consideration, he adds.

If a site is small but takes in material that would be more suitable for a larger site, "the tendency is to have a larger turner because you get more material out of a given area," he says.

Traditional bulk compost for landscapers is going to require different equipment than supplying to an agricultural application or a golf course, Bradley points out. "That determines what machinery you need on the front side, how fine you grind your material, what you screen out your material to," he says. "You don't have to screen it on the back side if you're going to an agriculture application."

Material type is another factor, Bradley adds. "Are you going to be doing logs? Utilizing a mulch product? Foodwaste, grass clippings, leaves—what are those materials that are coming in, and how are you going to have to process it? That's key to what grinder and what turner style you're going to need."

Leavitt points out that there must be a clear customer base for compost. "If you go to a lawn-and-garden place to buy compost, it can be defined as anything from a bag of leaves to a bag of raw manure and anything in-between," he says.

Leavitt says he believes compost should be a "very specific, very finished product."

"The biggest challenge to somebody making compost is to gain credibility with their customers so their customers know they're going to produce a consistent and finished product," he says. "Once those customers have that assurance, then at that point they can move forward in trying it to see how it compares to commercial fertilizer costs."

The feedstock is a critical factor in composting. Operations considering composting should make certain they have plenty of available green yardwaste, says Harvey Gibson, compost superintendent for CCEM.

"A lot of places take too much foodwaste and don't have enough of the green yardwaste to do it with the least odor problems," says Gibson. "You just naturally have problems with that. You have to have a large amount of greenwaste to start to make sure you use it as a filter, a bedding, a mix. You have to have a lot more than you ever think you would. We're fortunate that we do have that."

"If you build it, they will come," says Gibson, quoting the motion picture, *Field of Dreams*. "We started out small and tripled our size within five years. If you don't think you have that much yardwaste or foodwaste to actually build it and get it up and running, everyone comes out of the woodwork and will bring it to you."

On occasion, the Natural Fertilizer Co. receives "highly classified documents that are disintegrated from one of the weapons facilities in Amarillo," says Leavitt.

"It's paper trash, and we blend that with the manure as an added carbon source."

Additionally, the feedlot effluent is used to make the compost. "It's one of my favorite things," notes Leavitt. "We don't use good drinking water to make compost—we use the runoff water that's also a waste material that needs to be gotten rid of."

The compost product is sold mostly to large farming operations, with a small percentage of the product purchased by those wanting it for home gardening and yards. Some organic farmers in Santa Fe, NM, buy the compost for their farmers' market.

The driving factor is the production the end users get from the compost, Leavitt says. "The cost of fertilizer versus the value of the nutrients in my compost is significant," he says. "If you buy the nutrients that are in my compost—the nitrogen, phosphorus and potassium—in equal amounts as to what's in my compost, it would be double what I charge for my compost."

The biological activity is the most significant value of the compost, Leavitt says. The commercial farmers who buy the compost are getting optimal production with it, he adds.

Natural Fertilizer Co. workers begin the process by gathering the manure in the pen and stacking it in windrows with equipment that includes the 18-foot Scarab compost turner. Choices for the turner include width and height to match the required processing capacity; a standard drive system or pad saver model for toe-to-toe windrows; and Caterpillar, Cummins, Detroit, and John Deere diesel engines from 190 horsepower to 530 horsepower.

The turner has a high-capacity radiator and a selection of track- or tire-drive systems to handle adverse pad conditions, drum styles, and size to match feedstock, operating and marketing goals, and a choice of hydraulic- or belt-driven drum. A digital load controller is standard.

The Scarab turner has an open design for easy access and lower maintenance costs, a cab designed to be spacious and ergonomic with a panoramic view and three rear-facing cameras, an intuitive joystick control, and a fully lined tunnel to control dust, prevent rust, and resist tunnel cleanup problems associated with steel tunnels.

To create the compost, one must have carbon, nitrogen, oxygen, and water, says Leavitt. "The carbon and nitrogen come in the manure, the oxygen comes from the Scarab machine, and we get effluent water from the lagoon," he says.

Charleston County's original composting program was overhauled in 2009, when it banned yardwaste from the landfill, directing it to a compost facility. In 2010, the county introduced foodwaste composting. In 2011, the county instituted a yardwaste plastic bag ban; yardwaste must be placed in paper yardwaste bags to help keep plastic out of the finished compost product.

The operation starts with a Doppstadt AK 630 high-speed, high-volume grinder that processes the yardwaste brought in by municipal and commercial trucks. It is transferred to the active composting area and formed into windrows. The county's site accommodates 70 windrows spaced 4 feet apart, with 12 feet between each pair of windrows, allowing access for loader and water truck.

The AK630 uses a flail hammermill chamber suited to processing wet materials and materials with high moisture content. The screen-to-hammer ratio is adjustable to match sizing needs, infeed material or wear characteristics, allowing for precise control over machine operation for consistent delivery of accurate material specifications.

The operation also has a Doppstadt DW 3060 low-speed shredder, featuring a high-torque, single-shaft design. A breakaway comb section is designed to ensure that unshreddable material is quickly passed without interrupting

the machine and constant up time.

The fuel efficiency is designed to provide cost savings in per-yard or per-ton analysis of material processing. The windrows are monitored regularly for optimum temperature and moisture content. They are turned or watered as needed. Composted material is screened to remove oversized pieces with a trommel.

The nutrient-rich compost is produced within 90 to 120 days.

Although odor tends to be an issue with many composting operations, Gibson says his operation doesn't have that problem, thanks to its abundance of yardwaste.

CCEM uses Harvest Quest International's organic catalyst to accelerate and enhance the natural biological process of composting. The organic catalyst led to the MSAP composting method, a combination of static pile and windrow composting methods.

MSAP largely eliminates the need for mechanical turning while still maintaining aerobic conditions and optimal pathogen destruction.

The method is designed for less turning of the windrows, leading to a reduction in material moisture loss, odor production, particulate discharge, nitrogen losses through ammonia volatilization, overall composting time frame, and higher temperatures for longer time periods.

It also is designed to produce better-quality compost in less time with fewer costs. The final compost has been shown to increase numbers of beneficial bacteria in contrast to that produced with more traditional composting methods.

In the MSAP method, feedstocks are mixed using a bucket loader and placed to form windrows approximately 7 feet high by 16 feet wide.

Length is determined by material volumes using the predetermined height and width and can extend to more than 500 feet.

Basic principles of composting are followed with regards to moisture content and carbon to nitrogen ratios. Once a windrow has been constructed, a small amount of Harvest Quest's catalyst is placed on the surface or mixed into the windrow at both ends to provide two areas of concentrated microbes.

The catalyst is not required to be mixed throughout the entire windrow.

The row is then covered with a layer of finished unscreened compost, ground wood, or greenwaste to provide initial odor control and maintain moisture and heat for increased bacterial activity.

Bacteria within the catalyst spread rapidly outward from the points of application, initially populating the windrow's outer edges just beneath the capping layer. The initial temperatures on the pile's surface generally exceed regulatory requirements.

The microbes then work their way toward the windrow's center, breaking the pile down from the outside in. This action increases the windrow's natural chimney effect, allowing sufficient airflow into the pile. The biological activity in the windrow's outer layers provides an effective natural biofilter.

The temperature front moves from the windrow's outer edges towards the center of the piles. Within several days, the temperature of the entire pile will far exceed 131°F from just beneath the capping layer through to the core, and elevated temperatures will be maintained for several weeks.

The windrow remains undisturbed for an initial 30- to 45-day period. Following that, the windrow is turned for the first time to reduce compaction and redistribute moisture more evenly.

After 14 days of composting, the windrow is turned a second time, with moisture

redistributed. The windrow enters the final composting phase, which can be completed in as little as 60 days.

In Charleston County, the end product is used internally, sold, or given at no cost to such programs as Farm to School. Branches of Charleston County government receive the compost. Compost also is sold at $2 for a 2-cubic-foot bag and $10 for a loose ton.

The county's facility was the first in the state to be permitted by the Department of Health and Environmental Control to implement two major innovations: the use of compost as an alternative daily cover in the landfill and the initiation of a foodwaste composting pilot.

CCEM has garnered recognition for its efforts, having received the 2011 Outstanding Composting or Organics Recycling Program Award from the Carolina Recycling Association.

In January 2013, the program earned the United States Composting Council's Seal of Testing Assurance, attesting that the finished compost consistently meets its high-quality standards.

Clemson University has deemed Charleston County's compost suitable for organic farming.

WCID No. 1 serves more than 275,000 people in the region that includes Fort Hood, the world's largest U.S. Army base. More than 90 million gallons (340.7 ml) a day flows in and out of the water treatment plant.

Until that time, some 250 tons of Class B biosolid, or sludge, would be trucked from WCID No. 1's three wastewater plants each week to permitted land specified for biosolid disposal at a cost of $75,000 per year.

The facility also met a need for brush and greenwaste disposal for the city of Killeen, which until that time had it hauled to a landfill near a transfer station.

Jerry Atkinson, general manager for WCID No. 1, explored alternatives to the land application in 2005. The district enlisted Lockwood, Andrews & Newnam Inc. (LAN), a Houston-based environmental engineering firm with experience in the design and build of various public works and energy facilities.

LAN conducted a feasibility study that included finding an appropriate site, which turned out to be the property where the city had been disposing of its brush. The city agreed to a long-term lease for 20 acres of land for the facility.

After district and LAN staff visited other compost operations for a year, it was determined that a site layout with the least amount of impact on nearby residents was an important factor.

Safety was another factor. The brush-grinding area was placed in the facility's back corner away from traffic flows and employee work areas.

The newer windrows were located in the site's lower area to stay clear of the wind and minimize odors.

Finishing windrows were placed closer to the front for final screening and easy pickup.

The district also developed a marketing plan to build a customer base for the compost, sending information on the facility to landscapers, nurseries, and Texas DOT contractors in a 50-mile radius. News releases were sent out. A grand opening in December 2011 drew more than 100 people from around the state.

The $3.3 million project was initiated when the district had enough money to do so without additional tax dollars or raising water and waste rates. The project also included landscaping, a sprinkler system, and a working windmill in the effort to make it more attractive. F.T. Woods Construction Co. of Georgetown, TX, was chosen to provide construction services.

To equip the facility, WCID No. 1 purchased a Vermeer HG6000 grinder, a Wildcat CT718 compost turner, and a Wildcat TR521 trommel.

The district uses a ratio of 1.5:1 brush to Class B biosolids. Each day, brush is brought to the facility and processed with the Vermeer HG6000 grinder into wood mulch. Biosolids delivered from the wastewater treatment plants are placed in a holding area in another part of the facility.

The windrows are created with a layer of wood mulch followed by a layer of biosolids and then a layer of brush. The ratio is 1.5 parts mulch to one part biosolids. The windrow is mixed together with the CT718.

It takes approximately four days for the windrow to reach the appropriate temperature from 115°F to 160°F. If the temperature doesn't fall in that range, water is added to initiate the heat or else the pile is turned to reduce the heat. The windrow spends about 15 days in this "cooking" phase; then it will cure for 30 days. After 45 days, the compost is put through the trommel with a three-eighths-inch screen before it is considered finished and ready for sale.

For related articles:
www.mswmanagement.com/composting

Three types of compost in various grades are available. Contractors order compost by the trailer. Residents can help themselves to self-serve bins near the entrance. WCID No. 1's product is labeled with the US Composting Council's Seal of Testing Assurance Program as part of its certification process from the council.

Public buy-in is critical to the success of a composting program. "Public perception is very key," says Bradley. "When creating a new site or expanding an existing site, the interaction with neighbors is critical to building a successful program. Go out and proactively engage with the neighbors, get their feedback and address their concerns upfront versus on the backside. Then you're just trying to handle a bad situation, whereas if you build a relationship upfront, it's very open communication and you can work it through much easier that way."

Tyler notes that a trend is afoot among some entities to promote composting and recycling. Case in point: Ohio State University, whose Ohio Stadium is the largest stadium in the country to attempt zero waste by diverting 90% of materials—including foodwaste—from the landfill by recycling and composting.

That promotes the potential to establish positive habits in young adults, Tyler points out. "It's going to take time for the habits to change," he says. "There's no problem with people taking care of their yard trimmings, because that's separated already. It becomes an issue with commingled products."

To that end, the US Composting Council has linked with the Biodegradable Products Institute (BPI) for a greater understanding about compostable and biodegradable products in the waste stream.

The US Composting Council's training program, offered throughout the year at various locations, address some of the challenges, such as odor. "Part of that is training people to know how to manage and operate a compost facility with the understanding that if you operate it correctly, your chances to produce odors are minimized," says Tyler.

"Each municipal situation is going to have different generation amounts of different organic feedstocks. It's going to take somebody with the knowledge of composting to be able to help them decide what scale and size of facility will work best for them to generate what they want to generate without creating any issues." MSW

Carol Brzozowski specializes in topics related to waste management and technology.

The Organic Factor

How will the diversion of organics affect LFGTE projects? BY JOHN G. CARLTON

Diverting organic wastes, especially foodwaste, from landfills is a top priority of many local governments and environmental organizations. Even such federal agencies as the United States Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) support the diversion of foodwaste from landfills.

Organics are the low-hanging fruit (and vegetables) for recovery in the solid wastestream. Foodwaste is an issue that draws passionate responses from a wide variety of stakeholders, some even calling for "A War Against Food Waste" (Dylan Walsh, "A War Against Food Waste," *The New York Times*, September 15, 2011). Why would anyone be concerned about diverting of organic waste from landfills?

One group that may be concerned with organic waste diversion includes the developers of landfill gas-to-energy (LFGTE) projects. Billions of dollars have been spent on the development of LFGTE systems that include expensive piping networks, blowers, gas cleaning systems, engines, and generators. These LFGTE systems rely on an expected quantity of methane-rich landfill gas over the life of the systems. In most landfills, organic materials decompose anaerobically, creating methane. It goes without saying, therefore, that the removal of organic materials from landfills will reduce the quantity, and possibly the quality, of landfill gas. But is this, or should this be, a concern of LFGTE system owners or developers?

The goal of this article is to explore the possible implications of organics diversion on LFGTE projects. This article will consider landfill gas modeling conducted by others, and will provide insight with respect to organics diversion and landfills.

The Nature of Foodwaste

According to the *Huffington Post*, half of the world's food production, over 2 billions tons, ends up as foodwaste ("Food Waste: Half of all Food Ends Up Thrown Away," *Huffington Post UK*, October 1, 2013. Retrieved October 20, 2014). But what exactly is foodwaste? EPA defines foodwaste as "uneaten food and food preparation wastes from residences and commercial establishments such as grocery stores, restaurants and produce stands, institutional cafeterias and kitchens, and industrial sources like employee lunchrooms" ("Terms of Environment: Glossary, Abbreviations and Acronyms," USEPA, last update June 18, 2009. Retrieved October 20, 2014).

Foodwaste in the US is primarily disposed of in landfills. EPA's *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012* indicates that close to 54% of MSW ends up in landfills (USEPA, *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012*, EPA-530-F-14-001, February 2014). And the largest component of landfilled MSW is foodwaste at 21%.

With the exception of yard trimmings, efforts in the US to reduce the amount of organics in the wastestream have not been successful. In comparing waste composition from 1992 to 2012, foodwaste has actually increased substantially as a percentage of discarded materials, from 8.4% in 1992, to 21.1% in 2012 (USEPA, *Characterization of Municipal Solid Waste in the United States: 1995 Update* and USEPA, *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012*, EPA-530-F-14-001, February 2014).

State Bans on Organics Disposal

State	Year	Legislation
California	2014	Requires commercial generators of yard trimmings and food scraps to compost or anaerobically digest the materials.
Connecticut	2011	Requires commercial generators of 2 or more tons of food waste per week to recycle the organics if a recycling facility is located within 20 miles.
Massachusetts	2014	Requires commercial food waste generators of 2 or more tons per week to donate or repurpose the food instead of landfill disposal.
Vermont	2012	Similar legislation to Connecticut, except it lowers the threshold for required commercial food waste recycling to 1 ton per week, starting in 2020.

Efforts to Divert Foodwaste From Landfills

As mentioned earlier, diverting organics and especially foodwaste from landfills remains a top priority of many governments and organizations. EPA has developed a foodwaste hierarchy that, in addition to source reduction, considers the feeding of people and animals as high priorities ahead of such management methods as composting or landfilling (USEPA, *Food Recovery Challenge, www.epa.gov/foodrecoverychallenge*. Recovered October 20, 2014).

The USDA, in collaboration with EPA, has developed the US Food Waste Challenge (USDA, *US Food Waste Challenge, www.usda.gov/oce/foodwaste*. Recovered October 20, 2014). Among the goals of the challenge:

- Reduction of foodwaste by improving product development, storage, shopping/ordering, marketing, labeling, and cooking methods
- Recovery of foodwaste by connecting potential food donors to such hunger relief organizations as food banks and pantries
- Recycling of foodwaste to feed animals or to create compost, bioenergy, or natural fertilizers

Other organizations working to keep foodwaste out of landfills include the Food Waste Reduction Alliance, the US Composting Council, and the Sierra Club.

In addition to voluntary programs by the US government, several states have enacted legislation targeting food and organic waste

diversion from disposal. The states that have enacted bans on landfill disposal of organics are summarized in the table to the left. Several US cities have also enacted programs or bans on organics disposal, including New York City, Portland, San Francisco, and Seattle.

Organics and Landfill Gas

Landfill gas (LFG) is created by biological decomposition of the organic fraction of solid waste in a landfill. Bacteria decompose the organic fraction of landfill waste in four phases. The composition of the gas produced by these bacteria changes with each of the four decomposition phases (The Agency for Toxic Substances and Disease Registry, *Landfill Gas Primer: An Overview for Environmental Health Professionals*, November 2001).

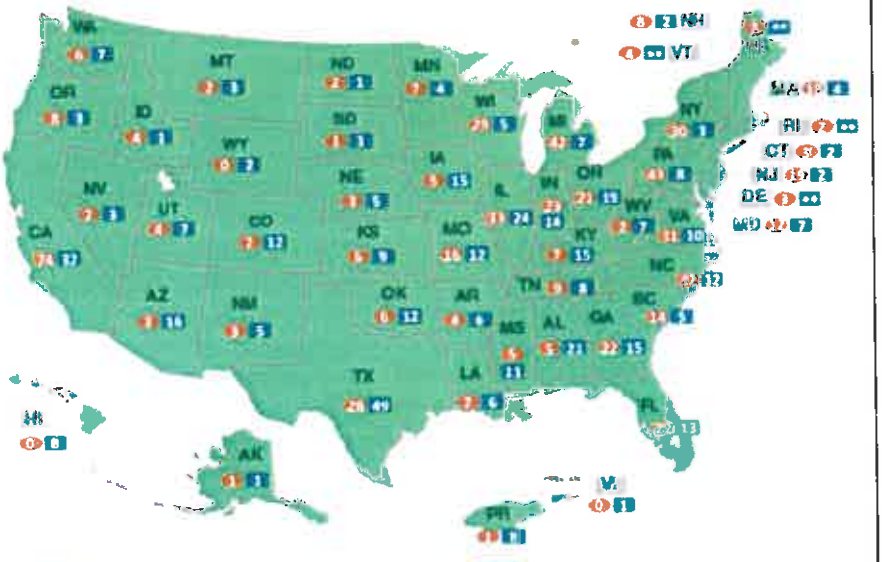
Phase I Aerobic— Phase I involves the decomposition of organic materials by aerobic bacteria (bacterial that live in the presence of oxygen). When waste is initially deposited in a landfill, it will likely contain oxygen. In addition, until the waste is buried and oxygen sources have been depleted, the aerobic bacteria will continue to live and feed on the organic materials. Phase I may last for several days or several months, depending on the amount of oxygen initially in the waste and the landfill cover material conditions.

Phase II Anaerobic (non-methanogenic)—Phase II decomposition begins after the depletion of oxygen in Phase I. In this anaerobic (without oxygen) phase, bacteria convert compounds created by aerobic bacteria primarily resulting in carbon dioxide and hydrogen.

Phase III Anaerobic (methanogenic, unsteady)—Phase III is also an anaerobic decomposition phase in which the environmental conditions support the growth of methanogenic bacteria. These bacteria in turn consume organic compounds and produce methane gas. In Phase III, the composition and production rates of LFG are unsteady.

Phase IV Anaerobic (methanogenic, steady)—During Phase IV, methanogenic bacteria continue to consume organic compounds and produce LFG in a relatively steady state. Phase IV LFG usually contains

EPA LMOP Existing and Candidate Landfill Gas to Energy Projects



OPERATIONAL PROJECTS CANDIDATE LANDFILLS*

Nationwide Summary

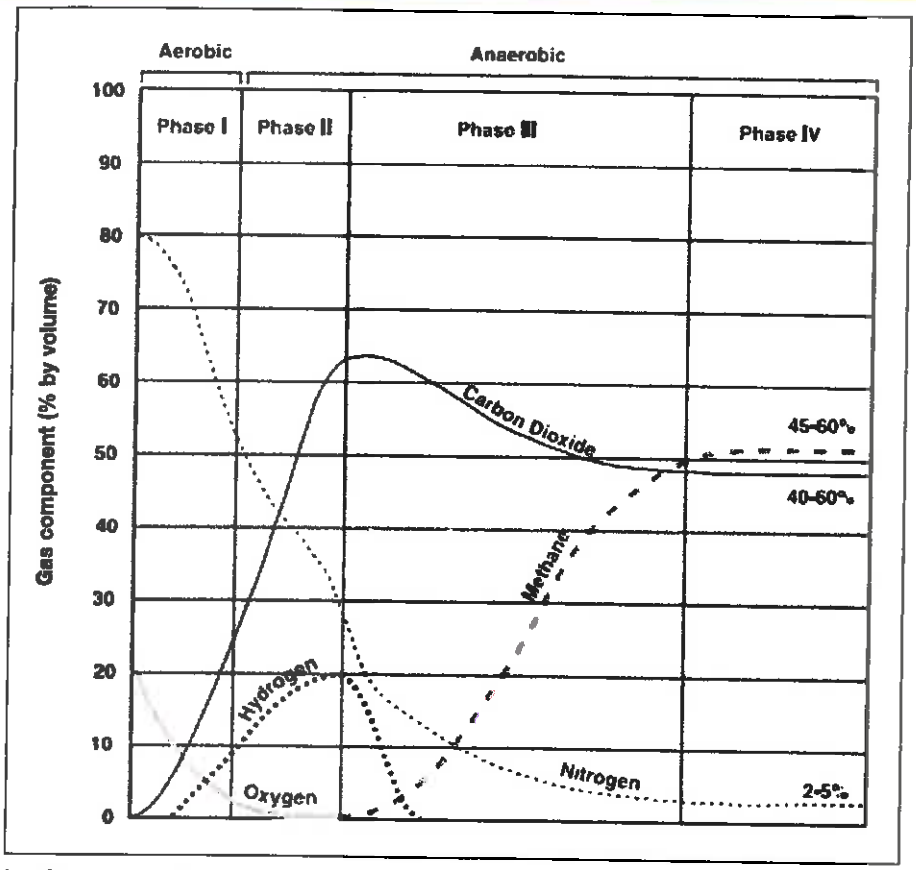
636 OPERATIONAL Projects (1,978 MW and 305 mmscfd)

~440 CANDIDATE Landfills (885 MW or 490 mmscfd, 40 MMTCO2e/yr Potential)

* Landfill is accepting waste or has been closed five years or less, has at least 1 mm tons of waste, and does not have an operational, under-construction, or planned project; can also be designed based on actual interest by the site.

These date are from LMOP's database as of July 22, 2014.

** LMOP does not have any information on candidate landfills in this state.



Landfill gas composition by phase

approximately 45% to 60% methane by volume, 40% to 60% carbon dioxide, and 2% to 9% other gases, such as sulfides. During Phase IV, LFG may be produced at a relatively steady state for approximately 20 years or more.

Landfills often accept waste over a 20- to 30-year period, so waste in a landfill may be undergoing several phases of decomposition at once. This means that older waste in one area might be in a different phase of decomposition than more recently buried waste in another area.

The Effect on LFG From Organics Diversion

Burlington County, NJ—Robert Simkins has considered the relationship of organic waste and landfills for many years. As the solid waste coordinator for Burlington County, Simkins has overseen the development of the county's comprehensive integrated solid waste program, including single-stream recycling collection and processing, biosolids composting, bioreactor landfill, and 7.1-MW LFGTE system. Burlington County invested millions of dollars in the LFGTE system, which was designed, built, and operated

by DCO Energy LLC.

Burlington County has been on the forefront of innovation with other uses of LFG for energy, including heating an onsite greenhouse and a demonstration LFG to liquefied natural gas (LNG) production and truck fueling facility. Simkins has a vision for the Burlington County Landfill to become a closed-loop solid waste system in which waste collection vehicles are fueled with biogas produced from the solid waste delivered in their trucks.

In 2008, Burlington County evaluated the potential LFG loss by a theoretical 15-year foodwaste diversion program. The county's evaluation assumed that 43,000 tons per year of foodwaste would be diverted from the county's approximate 300,000 tons per year of MSW entering the landfill. During the 15-year period, the expected LFG loss was calculated to grow from 147 cubic feet per minute (cfm) in year 1 to approximately 550 cfm in year 15. At 550 cfm of LFG, the power production could be approximately 1.3 MW, which at $40 per megawatt-hour, would result in a loss of almost $450,000 per year to the county. This loss in electricity revenues would be on top of the loss in tipping fee revenues, which at the county's current fee of $76.41 per ton equals $3.3 million per year.

> In comparing waste composition from 1992 to 2012, foodwaste has actually increased substantially as a percentage of discarded materials, from 8.4% in 1992, to 21.1% in 2012.

Landfill Gas Modeling for the US— At the 2014 Solid Waste Association of North America (SWANA) Landfill Gas Symposium, Alex Stege of SCS Engineers presented a paper titled "The Effects of Organic Waste Diversion on LFG Generation and Recovery from US Landfills." The paper investigated the effects of various organics waste diversion scenarios on LFG generation and recovery landfills in California and elsewhere in the US over a 25-year period (2000–2024).

Stege used a modified version of the Intergovernmental Panel on Climate Change (IPCC) model to evaluate LFG generation scenarios based on different organics diversion rates. The three general scenarios included (1) a baseline scenario, (2) a moderately accelerated organics diversion scenario, and (3) an aggressively accelerated organics diversion scenario. The baseline scenario assumed organics recovery and diversion consistent with trends from 2009 to 2012. The moderately accelerated organics diversion scenario assumed organics recovery and diversion between one-and-a-half and two times (depending on the organic material) the baseline recovery and diversion scenario. The aggressively

For related articles:
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accelerated organics diversion scenario assumed organics recovery and diversion two to three times (depending on the organic material) the baseline recovery and diversion scenario.

From the modeling scenarios, Stege forecasted LFG generation through 2025 and concluded the following:

- Continuing baseline organic diversion trends suggest that annual increases in LFG generation will decline over time, but continue until at least 2025.
- Moderately accelerated organics diversion will cause LFG generation to be less than baseline projections by 9% (California landfills) to 9.4% (other US landfills) by 2025. Annual increases in LFG generation are projected to approach 0% by 2025 under this scenario.
- Aggressively accelerated organics diversion will cause LFG generation to be less than baseline projections by 17.3% (California landfills) to 18.5% (other US landfills) by 2025. Annual increases in LFG generation are projected to stop after 2020, after which LFG generation is projected to slowly decline under this scenario.

The State of LFGTE in the US

EPA's Landfill Methane Outreach Program (LMOP) is a voluntary assistance program that helps to reduce methane emissions from landfills by encouraging the recovery and beneficial use of landfill gas as an energy resource. LMOP tracks operational and under-construction LFGTE projects in the US. As of July 22, 2014, there were 636 operational LFGTE systems in the US, producing 1,978 MW of electricity. There were also approximately 440 candidate LFGTE projects with an estimated 885 MW of electricity potential.

If you assume an LFGTE system capital cost at $1.5 million per installed MW, there is currently close to $3 billion in infrastructure associated with LFGTE in the US, which could grow to $4.2 billion from the candidate landfills. As an industry, we have invested a significant amount of capital investment into our LFGTE systems. Those LFGTE investments were based on anticipated LFG quantities.

The Impact on LFGTE From Organics Diversion

It is clear and intuitive that diversion of organic materials from landfills will reduce the quantity of LFG generation. LFG is only generated from the anaerobic degradation of organic materials, so removal of those material from the landfill will have the effect of reducing LFG quantities.

Stege's study demonstrated a potentially significant impact on LFG quantities from organics diversion rate increases. Moderately accelerated organics division programs would yield a 9% LFG reduction from baseline projections and aggressively accelerated organics diversion programs would yield up to 18.5% LFG reduction from baseline projections and cause LFG generation to start to decline after 2020.

When it comes to considering the impact of organics diversion on LFGTE systems, it is important to note:

- Landfills currently contain millions of tons of organic waste.
- The organic wastes currently in landfills will likely degrade over many years in the anaerobic, methanogenic, steady state.
- Organics diversion programs will likely take time to develop and mature.

It is also interesting to note that, from a policy perspective, the EPA LMOP program does not consider organics diversion and LFGTE to be in conflict. LMOP's position on the compatibility of organics diversion and LFGTE is summed up in the following statement:

> *The promotion of LFG energy is not in conflict with promotion of waste diversion and does not compete with waste reduction, recycling, and composting. LFG energy projects use methane that is generated from waste that has not been successfully diverted from landfills. The goal of LFG energy projects is to promote beneficial utilization of LFG collected from MSW landfills that have already disposed waste. It is possible to support the diversion of the organic fraction of discards from landfills so that uncontrolled methane is not generated and also support LFG energy projects that utilize methane generated from organic waste already disposed in landfills* (USEPA Landfill Methane Outreach Program, *Frequent Questions*, LFG Energy Projects, *www.epa.gov/lmop/faq/lfg.html*. Recovered October 21, 2014).

On a practical level, I agree with the LMOP position. We can, and should, embrace the foodwaste management hierarchy and find the highest and best use of foodwaste, reserving landfills as a last resort.

However, there is, and should be, a real concern about the financial security of the $3 billion that we, as solid waste management professionals, have already invested to generate renewable energy from LFG. Fortunately for the LFGTE systems we have in place, changes to organic waste diversion in the US will likely happen over time, and we can take this time to plan and adapt to the coming changes. MSW

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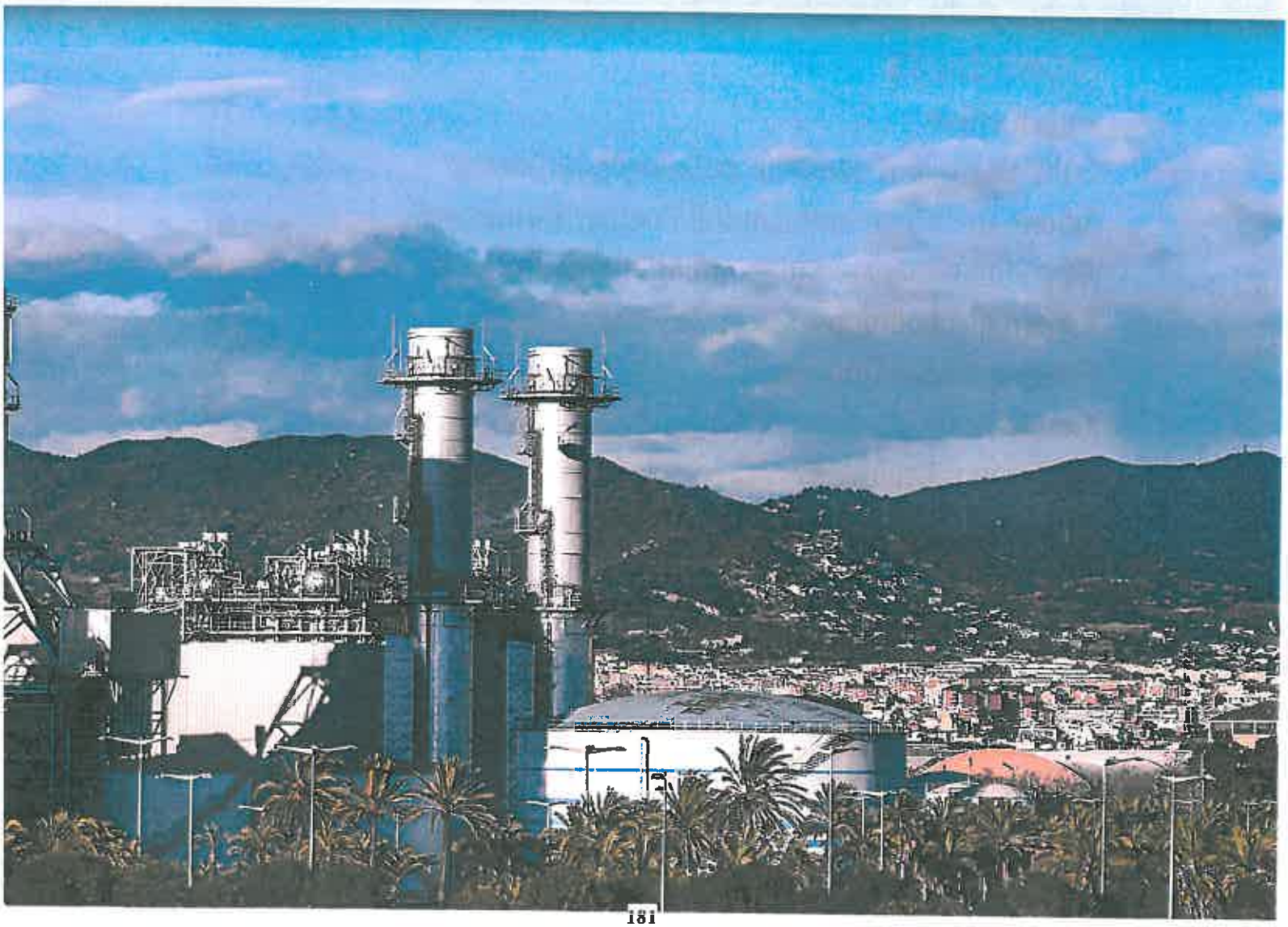
NACO National Association of Counties

FEBRUARY 2015

NATIONAL ASSOCIATION OF COUNTIES

WASTE ENERGY RECOVERY: RENEWABLE ENERGY FROM COUNTY LANDFILLS



WASTE ENERGY RECOVERY: RENEWABLE ENERGY FROM COUNTY LANDFILLS

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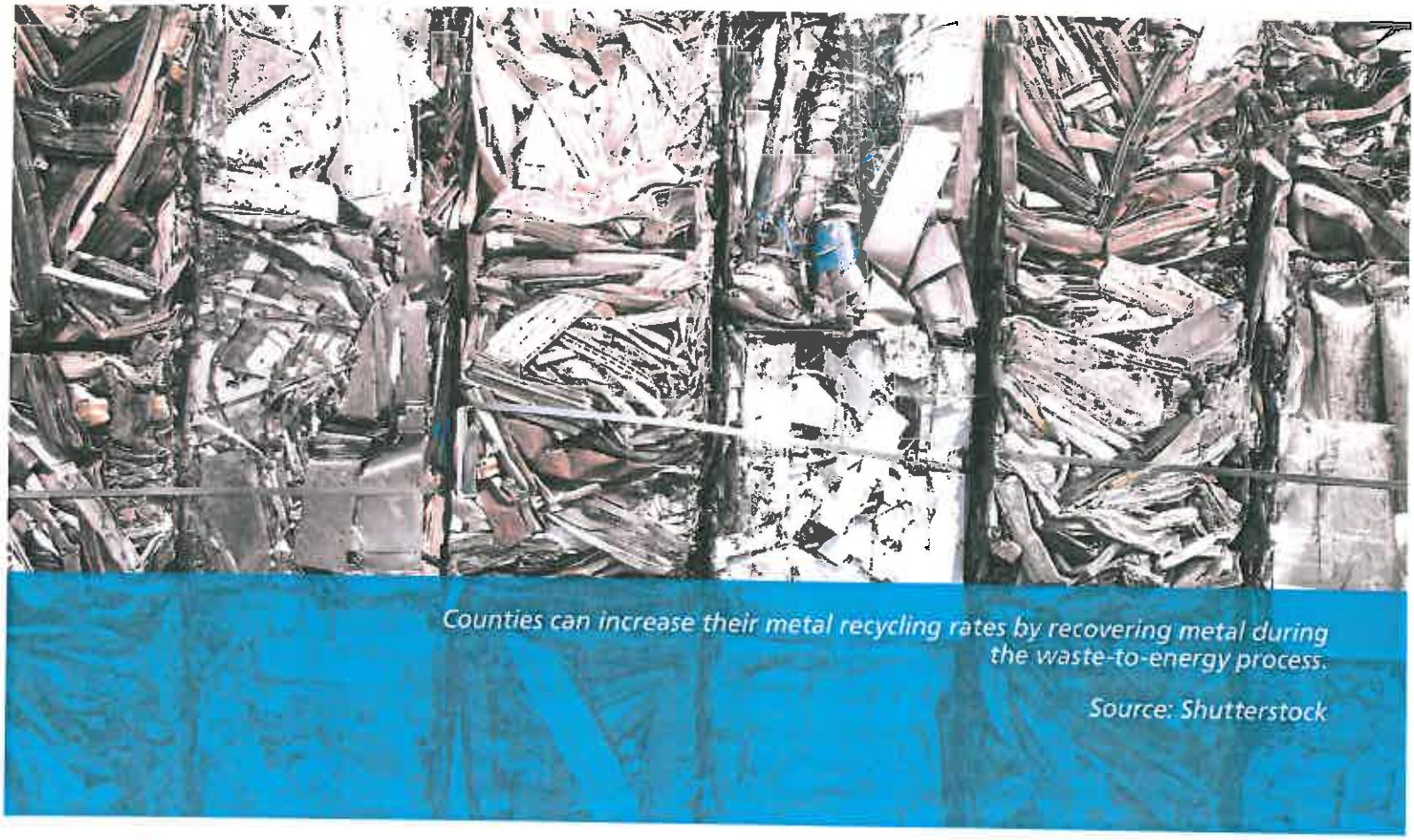


Counties can increase their metal recycling rates by recovering metal during the waste-to-energy process.

Source: Shutterstock

INTRODUCTION

Each year, Americans on average generate nearly 4.38 pounds of trash per person per day, or collectively about 251 million tons per year.[1] We recycle about 87 million tons of this waste, for a total recycling rate of around 34.5 percent, but the majority of the waste we produce ends up in county-run landfills across the country.[2] Known as municipal solid waste, this trash is composed of a variety of items that people throw away, including food waste, yard clippings, electronics, tires, furniture and more. Counties play an important role in the collection and disposal of municipal solid waste, providing regular and efficient waste collection to keep counties safe and sanitary, while ensuring that waste is properly handled at landfills to avoid environmental damage from soil and groundwater contamination.

The current recycling rate of 34 percent is the highest it has been in the U.S. since the 1980s, when it was around 10 percent.[3] Through efforts including recycling, composting and municipal solid waste incineration, we now send about 54 percent of all waste in the U.S. to landfills, compared to 89 percent in 1980.[4] Items with the highest recycling rates include lead-acid batteries (96 percent), steel cans (70.8 percent), paper (70 percent), yard waste (57 percent) and aluminum cans (54.6 percent).[5]

Despite these efforts, each year some 135 million tons of municipal solid waste are sent to landfills in counties across the country.[6] It can be expensive to create new landfills when existing ones fill up, and transporting waste to landfills in other counties or even across state lines can be cost-prohibitive. Additionally, landfills are the third-largest human-generated source of methane emissions in the U.S., threatening the local environment and air quality.[7]

Counties have turned to alternative methods of municipal solid waste disposal and handling to avoid sending unnecessary waste to their landfills and find value-added benefits from landfill waste. Methods such as landfill gas-to-energy and waste-to-energy allow counties to generate renewable heat and electricity from previously unused sources. These methods can allow counties to generate new streams of revenue through the sale of electricity and captured methane, lower their energy costs, reduce their emissions, improve local air quality and strengthen public-private partnerships. This issue brief serves as a guide for county leaders to better understand the process of recovering energy from waste, and provides resources to help counties develop and finance energy-from-waste projects.

HOW DO MUNICIPAL SOLID WASTE AND LANDFILLS PROVIDE COUNTIES WITH RENEWABLE ENERGY?

Though solar and wind power are the most common sources of renewable energy, electricity generated from municipal solid waste (MSW) accounts for nearly 14 percent of all renewable energy generated in the U.S.[8] The two main methods of producing energy from MSW are known as landfill gas-to-energy (LFTGE) and waste-to-energy (WTE).

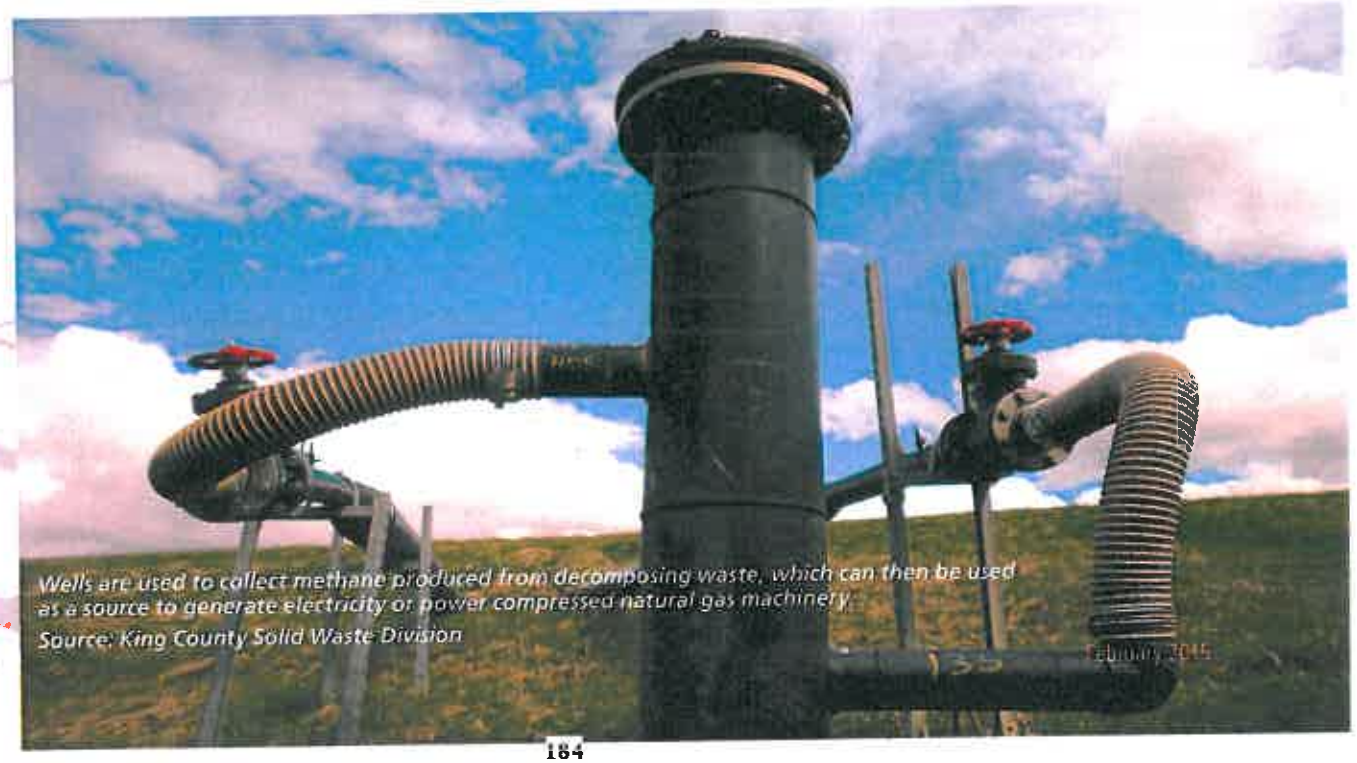
LANDFILL GAS-TO-ENERGY

When waste is deposited in a landfill, it begins to decompose and naturally produces landfill gas, or LFG, which is approximately 50 percent methane and 50 percent carbon dioxide.[9] Normally this gas is released into the atmosphere, which can lead to negative environmental and air quality impacts, but many landfills in counties across the country capture the methane and repurposing it to create electricity or use as fuel in compressed natural gas vehicles.

At LFGTE facilities, LFG is collected through a series of wells that are installed throughout the landfill, which draw out the methane gas through a vacuum process. The gas is then filtered to remove any debris and other contaminants, compressed and finally chilled to remove any remaining liquids through condensation.[10]

After it is chilled and the condensate is removed, the captured LFG is ready to be used for a variety of purposes. Counties operating LFGTE facilities take advantage of the naturally occurring methane by collecting it for a variety of uses, such as:

- powering generators on-site, or at other county facilities,
- fueling county-owned compressed natural gas (CNG) vehicles such as pick-up and garbage trucks,
- creating electricity which counties can sell to a local utility as a new source of revenue, and
- heating county-owned buildings, among other uses.



Wells are used to collect methane produced from decomposing waste, which can then be used as a source to generate electricity or power compressed natural gas machinery.
Source: King County Solid Waste Division

WASTE-TO-ENERGY

Waste incinerators were first built in the U.S. in the late 19th century and were quickly designed as power-generating facilities. Today, there are three main ways that MSW is incinerated:[11]

- **Mass Burn Facilities:** These facilities are the most common type of incineration facilities in the U.S. Waste destined for mass burn facilities is first sorted through to remove any hazardous or recyclable materials. From there, the waste is transferred into a furnace, which completely incinerates the waste at a minimum temperature of 1800 degrees Fahrenheit.[12] As the waste combusts, it releases heat which is used to convert water to steam. This steam powers a turbine generator which then produces electricity. The remaining material after the mass burn, known as ash, is collected and transferred to a landfill. The gas released from the burn passes through filters which trap more than 99 percent of the particulate matter in the gas.
- **Modular Systems:** Modular systems differ from mass burn facilities in that they are smaller and portable, and so can be moved from site to site. They are designed to burn mixed MSW, meaning the waste does not need to be pre-sorted.
- **Refuse Derived Fuel Systems:** These systems shred MSW and separate the non-combustible from the combustible materials. They convert the combustible material into pellets or briquettes which can be used in a furnace or boiler.

Regardless of the method, energy derived from MSW and LFG is considered to be a renewable resource available for counties to harness.

WHERE ARE WASTE AND LANDFILL ENERGY HARNESSED?

Landfills and MSW facilities in counties across the country are providing their residents and businesses with clean, affordable and renewable energy from their landfill operations.

LANDFILL GAS-TO-ENERGY FACILITIES

LFGTE operations are much more common in the U.S. compared to WTE, and are located in counties across the country. As of 2014, there are 621 operational LFGTE plants in the U.S., with another 450 landfills that are candidates for LFGTE operations.[13] Of these 621 facilities, counties own and often operate 145. For a full listing of the current operational LFGTE projects, visit the U.S. Environmental Protection Agency's Landfill Methane Outreach Program's project database at www.epa.gov/lmop/projects-candidates/operational.html.

Workers check on methane levels at the Cathcart landfill in Snohomish County, Wash.

Source: Snohomish County Public Works

WASTE-TO-ENERGY FACILITIES IN THE U.S.

As of 2014, there are 86 WTE facilities in 25 states in the U.S. that are capable of incinerating waste to generate heat and electricity.[14] Of these 86 facilities, counties own and operate 23. The 86 WTE facilities have the capability to produce a total of nearly 3,000 megawatts of power, or enough to power nearly one million homes in the U.S.[15]

The majority of the WTE facilities are located in the northeast portion of the country where population densities are higher, which makes the process more cost-effective. No new WTE-specific plants have been built in the U.S. since 1995, though a number of facilities in the U.S. have expanded their plants to include WTE operations, helping them both generate new sources of revenue while minimizing their environmental impact.

WHY PURSUE WASTE AND LANDFILL ENERGY PROJECTS?

GENERATE NEW REVENUE

LFGTE and WTE operations have the ability to provide counties with new sources of revenue. By selling the CNG collected and electricity generated on-site to local utilities, counties can contract with their local utilities to provide them with the renewable energy needed to meet renewable portfolio standards while collecting potentially millions in new revenue each year.

For example, Pinellas County, Fla. sells the energy created from its WTE operations to Duke Energy, the local utility provider. Duke Energy purchases around 475,000 megawatts of electricity each year, which brings in about $50 million in yearly revenue for the county.[16] Dane County, Wis., earns about $3.3 million each year from the electricity it sells to Madison Gas and Electric from its LFGTE operations at the Rodefeld Landfill.[17]

CREATE JOBS

Waste and landfill energy projects can be a boon to a county's local economy. Not only do they provide opportunities for temporary and permanent jobs during the construction and maintenance phases of the projects, but they can also serve as a new source of revenue for counties through the sale of electricity and methane.

A standard three-megawatt LFGTE project involves input from engineers, construction firms and workers, local utility providers and equipment vendors. On average, a 1,500 tons per day WTE facility leads to 248 direct jobs and 52 indirect jobs during the construction phase.[18] Once in operation, an average of 59 new direct jobs is created to operate and maintain the facility. Counties such as Frederick County, Md. are specifically pursuing WTE as an economic driver to improve the local economy with hundreds of new jobs.

INCREASE RECYCLING RATES

WTE facilities provide counties the opportunity to divert unnecessary waste from their landfills, generate a renewable source of energy, and potentially earn revenue from the sale of this energy. Additionally, WTE facilities can also improve a county's recycling rate. Normally, metals are separated out before the waste is incinerated, but sometimes not everything is sorted out. After the waste is burned, the process leaves behind ash and occasionally metal fragments. These fragments can be collected from the ash by large magnets and taken to a recycling facility for further processing.

A number of counties have recycled a significant amount of metal recovered from the WTE process. Marion County, Ore.'s WTE facility recycles nearly 4,000 tons of metal that it recovers from the WTE process each year.[19] Westchester County, N.Y.'s WTE facility recovers some 17,000 tons of metal each year.[20] The metal carries a value of about $3.4 million, half of which the county earns in revenue from scrap metal sales.

Waste energy recovery operations require high-skilled labor and can provide many new local jobs.
Source: Shutterstock

The Waste Recovery Center in York County, Pa. improves the county's local economy and environment.
Source: York County Solid Waste Authority

CASE STUDY

RESOURCE RECOVERY CENTER PROVIDES YORK COUNTY ECONOMIC AND ENVIRONMENTAL SECURITY

York County, Pa., located just north of the Maryland border, is home to approximately 438,000 residents.[21] Since 1989, the York County Solid Waste Authority, governed by a nine-member board appointed by York County commissioners, has owned the York County Resource Recovery Center, the first WTE facility in the state to include air pollution control in advance of the Clean Air Act, which has been a leader in advancing renewable energy development from MSW.

The facility currently occupies 22 acres of a total of 150 acres of land, and is rated to process 1,344 tons of waste each day.[22] It is in operation 24 hours per day, providing regular and reliable electricity generation from its WTE operations. When operating at full capacity, the Resource Recovery Center is able to produce 36-40 megawatts of electricity, enough to power nearly 20,000 homes.

The operations at the Resource Recovery Center have helped York County improve both its local environment and economy. By generating electricity from waste, the county is able to significantly reduce the amount going to its landfill, saving nearly 13 acres of landfill space, 35 feet deep each year.[23] The energy created saves the equivalent of 375,000 barrels of oil, and nearly 20,000 tons of metal are recovered from combustion ash and recycled.[24] Through the WTE operations, the county reduces its carbon footprint: for every ton of waste managed at the facility, one ton of carbon dioxide emissions is avoided. To keep the plant in operation requires 52 full-time, high-skilled jobs, providing local employment opportunities. The county also earns revenue from the sale of the electricity generated; the Resource Recovery Center uses about five megawatts of energy to operate the facility and the Management Center, with the remainder of it sold to Metropolitan Edison, the local utility provider.

Though York County Solid Waste Authority owns the facility and the land it sits on, the facility is operated by Covanta York Renewable Energy LLC. The Solid Waste Authority and Covanta have a service agreement for Covanta to maintain and operate the Resource Recovery Center through the end of 2015, and with negotiations in progress to extend the agreement. In addition, a long-term contract with Metropolitan Edison enables the utility to purchase electricity generated from the WTE operations.

With the success of the WTE operations, the Solid Waste Authority is currently planning site improvements to the Resource Recovery Center to enhance customer service and safety at the facility. The $62 million project will more than double the plant's current footprint, expanding it by 27.5 acres.[25] To fund the expansion, the Solid Waste Authority will use money from its reserve fund as well as a $10 million bank loan. The expansion will increase the size of the tipping hall where trucks drop off waste, which will allow for tractor-trailers to have separate access away from smaller trash trucks, easing congestion at the facility. The office and visitor center will also be expanded, in part to accommodate the high demand for tours (currently the center educates up to 60 people at a time). The site improvement project will require more than 26,000 man-hours of engineering work, and will generate additional jobs locally during the construction phase. Construction is expected to start in spring 2015 and take between 30 and 36 months.

DIVERT WASTE FROM LANDFILLS

One of the main concerns for landfill operators and county leaders is how to avoid quickly filling up existing landfills. Creating new landfills is expensive, and counties with limited land availability may be forced to pay to have waste transferred out of their county and into landfills elsewhere.

WTE projects are one way in which counties can avoid this situation. Westchester County, N.Y.'s WTE plant has helped the county reduce its need for landfill space by nearly 90 percent—critical for the county, as it has no space available for a new landfill.[26] By extending the life of its landfill, the county can avoid transferring its waste elsewhere, which would not only be costlier but could lead to increased traffic on local roads and greater emissions from large automotives.

IMPROVE AIR QUALITY

WTE and LFGTE projects can improve the local environment for counties by reducing emissions from fossil fuels and improving local air quality. As noted previously, landfills are the third largest human-generated source of methane emissions in the U.S. All landfills naturally produce methane as a byproduct of the breakdown of waste, so capturing that gas is a way for counties to reduce landfill emissions. Although methane has a shorter atmospheric life-span—around 10 years—compared to carbon dioxide, it is a much stronger greenhouse gas, some 20 times more potent by weight than carbon dioxide.[27] Since LFGTE projects are capable of capturing 60 to 90 percent of methane from landfills, LFGTE projects are one of the most effective ways of seeing short-term beneficial impacts to local climate.

WTE projects also allow counties to reduce their methane and carbon dioxide emissions. Instead of letting waste decompose in a landfill and producing methane, WTE facilities avoid this through incineration of non-hazardous waste, eliminating methane emissions and producing fewer carbon dioxide emissions than a landfill otherwise would.[28]

Additionally, using energy produced from waste reduces counties' reliance on non-renewable sources of energy to meet their energy needs. This can greatly reduce emissions from power plants, including carbon dioxide, sulfur dioxide, nitrogen dioxides and methane, which in high enough concentrations can lead to smog, acid rain and other issues.[29]

Anne Arundel County, Md.'s Millersville Landfill and Resource Recovery Facility has been in operation since July 2014. The LFGTE facility lowers the landfill's methane and carbon dioxide emissions by approximately 6,375 and 15,130 tons per year respectively.[30] This is the equivalent of removing some 26,500 cars from local roads, or planting nearly 29,000 acres of trees.

MEET RENEWABLE PORTFOLIO STANDARDS

Producing energy from waste can help local utilities meet existing renewable portfolio standards, or RPSs. States that have set RPSs have created legislative requirements for local utilities to generate or sell a specific percentage of their total electricity from renewable energy sources, including LFG and incineration. The percentage and eligible sources vary from state to state; however, there are currently 37 states that have enacted RPSs. All accept LFG as a source of renewable energy, and 19 accept WTE as a renewable energy source.[36] Counties in states with legislated RPSs can work with their local utilities to help them, for example, by selling methane captured at county landfills or electricity generated from LFG.

CASE STUDY

FINANCIAL AND ENVIRONMENTAL BENEFITS FROM CATAWBA COUNTY'S BLACKBURN LANDFILL

Catawba County, located in western North Carolina, is home to approximately 155,000 residents.[31] Since 1987, the county has operated its Blackburn Landfill, where it collects and processes waste and recycled materials from county residents and businesses. Since 1999, the county has operated its LFGTE facility at the Blackburn Landfill, providing the county with a steady stream of revenue from the sale of electricity generated from the captured gas and preventing methane from escaping the landfill and threatening the health and welfare of county residents.

In the 1990s, when county leaders became interested in adding WTE capacities to the Blackburn Landfill, they recognized that partnering with members of the private sector was the most financially feasible way to meet their goals. The county entered into a public-private partnership with Enerdyne Power Systems to build and operate the LFG collection and delivery system, and worked with GE Jenbacher to design and create the engines that produce electricity from the LFG collected; this helped the county avoid $2.5 million in costs to design and build the facility alone.[32]

Catawba County has seen a significant reduction in its environmental impact from its LFGTE operations. The reduction in methane and carbon dioxide are equivalent to removing 23,600 cars from the road, carbon dioxide emissions from using 14.6 million gallons of gasoline, or the amount of carbon sequestered from more than 29,000 acres of pine forest.[33]

In addition to the environmental benefits from LFGTE operations, the county has also seen a steady stream of revenue from the sale of electricity. With three 1-megawatt engines installed at the Blackburn Landfill, Catawba County generates electricity on-site and sells it to Duke Energy, the local utility provider. The LFGTE plant is able to generate enough electricity to power 1,400 average-sized homes each year, the sale of which brought in about $550,000 in revenue for the county.[34] Over a 20-year period, the county plans on purchasing two more engines, which could create enough electricity to power a total of 2,300 average-sized homes, and generate approximately $9.2 million in revenue.[35]

The revenue earned will augment the county's Solid Waste Enterprise Fund, helping maintain some of the lowest landfill tipping fees in the region. Likewise, the renewable electricity will help Duke Energy expand its renewable energy portfolio.

"Our landfill gas-to-energy project has been beneficial to Catawba County in several ways," said Catawba County Commissioner Kitty Barnes. "It's a great example of our focus on finding innovative solutions to meet challenges in ways that benefit our citizens. Our LFGTE project represented the first use of GE Jenbacher engines in the U.S., to go beyond the requirement that we merely flare the methane gas occurring naturally in landfills and use the gas to produce electricity that brings in additional revenue. The project has helped us keep landfill tipping fees stable for 16 years while we reduce an environmental hazard."

The sale of electricity generated from landfill gas by the Jenbacher engines at Catawba County's Blackburn Landfill provides the county with a reliable source of revenue from renewable energy.
Source: Catawba County

POTENTIAL CHALLENGES

WTE programs have a reputation of being "dirty" because of poor emission controls at WTE facilities during the 1970s and 1980s.[37] Standards set forth in the Clean Air Act of 1990 have since curbed WTE facility emissions, and have made WTE facilities in the U.S. among the cleanest and most well-managed in the world. The unregulated burning of waste is no longer practiced, and restrictions on particulate emissions ensure better air quality. Facilities that were not able to meet these guidelines were closed following the Clean Air Act. Despite this, the public's perception of WTE facilities has remained unchanged, a barrier that counties interested in pursuing WTE projects will need to overcome through community education and outreach.

New WTE facilities can also be costly—often $100 million or more in construction costs, and hundreds of thousands of dollars for operations and maintenance.[38] While the environmental benefits of WTE may be quickly realized, the financial benefits may take longer for counties to reap. A number of funding opportunities available to counties, from grants to loans to tax incentives, are addressed in the next section of this report.

FUNDING OPPORTUNITIES

A variety of federal and state funding opportunities exist for counties looking to pursue projects recovering energy from waste.

FEDERAL FUNDING

The federal government provides various funding opportunities and support for LFGTE and WTE projects. The Renewable Electricity Production Tax Credit is the largest incentive program offered by the federal government for the production of renewable energy.[39] The credit offers 0.9 cents per kilowatt hour of electricity generated for both LFGTE and WTE projects. What the federal government considers a renewable energy source can change from year to year, though; for example, WTE was originally not a qualified source for renewable energy. Information on the tax credit can be found at www.epa.gov/osw/hazard/wastemin/minimize/energyrec/rpsinc.htm.

Since 1994, the U.S. Environmental Protection Agency (EPA) has operated its Landfill Methane Outreach Program as a way to create partnerships among governments, energy users and providers, the LFG industry and other stakeholders. Through the Landfill Methane Outreach Program, the EPA provides a Funding Guide to help identify potential funding resources including:[40]

- Grants for direct funding support;
- Loans from lenders including government agencies and nonprofits; and
- Tax credits and exemptions.

The Landfill Methane Outreach Program's Funding Guide can be found at www.epa.gov/lmop/publications-tools/funding-guide/index.html.

WTE facilities, like the one in Kent County, Mich., follow strict emissions guidelines as set forth in the Clean Air Act.
Source: flickr user erinthomaswilson

In addition, other federal agencies beyond the EPA (including the Department of the Treasury, Department of Energy, Department of Agriculture and Department of Commerce) provide opportunities for grants, tax credits, bonds and more. To learn more about the programs offered by these federal agencies, visit the EPA's Federal Funding Resources page at www.epa.gov/lmop/publications-tools/funding-guide/federal-resources/index.html.

STATE FUNDING

Much like funding from the federal government, individual states offer financing programs for renewable energy projects, including those for LFGTE and WTE. There are incentive programs active in at least 17 states across the U.S, ranging from grants to rebates to tax credits. Information on the state incentive programs can be found at the EPA's Renewable Energy Production Incentives page: www.epa.gov/osw/hazard/wastemin/minimize/energyrec/rpsinc.htm.

The Database of State Incentives for Renewable Energy (DSIRE) also offers a comprehensive listing of incentives and other programs offered state-by-state. Managed by the U.S. Department of Energy and the North Carolina Clean Energy Technology Center, DSIRE provides up-to-date information on programs aimed to further the development of renewable energy programs in each state. For more information, visit DSIRE at www.dsireusa.org.

Trucks like these deliver municipal solid waste to Fairfax County, Va.'s Energy Resource Recovery Facility
Source: Fairfax County, Va.

CONCLUSION

Although recycling rates are at the highest they have been since the 1980s, how to handle all of the waste generated by residents and businesses is still a major concern for counties. As landfills fill up, counties are often faced with the choice to expand current landfills, create new ones or ship their waste to facilities in other counties. These options are often cost-prohibitive or logistically challenging.

Turning municipal solid waste into energy through landfill gas-to-energy and waste-to-energy projects provides counties an alternative for handling municipal solid waste. These projects enable counties to improve local air quality, lower their emissions, generate new revenue from the sale of electricity and create new local jobs. Funding programs from states and the federal government can help counties large and small, rural and urban reap the environmental and economic benefits from generating energy from waste. As these projects are becoming more common, counties are leading the way in the advancement of renewable energy development in the U.S.

ADDITIONAL RESOURCES

ANNE ARUNDEL COUNTY, MD.

- Anne Arundel County: www.aacounty.org
- Millersville Landfill & Resource Recovery Center: www.aacounty.org/dpw/wastemanagement/ml_homepage.cfm

CATAWBA COUNTY, N.C.

- Catawba County: www.catawbacountync.gov
- Catawba County Landfill Gas-to-Energy Facility: www.catawbacountync.gov/ue/cogen_links.asp

DANE COUNTY, WIS.

- Dane County: www.countyofdane.com
- Rodefeld Landfill: www.countyofdane.com/pwht/recycle/landfill.aspx

DATABASE OF STATE INCENTIVES FOR RENEWABLE ENERGY

- Database of State Incentives for Renewable Energy: www.dsireusa.org

PINELLAS COUNTY, FLA.

- Pinellas County: www.pinellascounty.org
- Pinellas County Waste-to-Energy Plant: www.pinellascounty.org/solidwaste/wte.htm

MARION COUNTY, ORE.

- Marion County: www.co.marion.or.us
- Marion County Waste-to-Energy Facility: www.co.marion.or.us/PW/ES/disposal/mcwef.htm

U.S. ENVIRONMENTAL PROTECTION AGENCY

- U.S. Environmental Protection Agency: www.epa.gov
- Energy Recovery from Waste: www.epa.gov/waste/nonhaz/municipal/wte
- Landfill Methane Outreach Program: www.epa.gov/lmop
- Landfill Methane Outreach Program Funding Guide: www.epa.gov/lmop/publications-tools/funding-guide/index.html
- Landfill Methane Outreach Program Operational Projects Database: www.epa.gov/lmop/projects-candidates/operational.html
- Renewable Energy Production Incentives: www.epa.gov/osw/hazard/wastemin/minimize/energyrec/rpsinc.htm

YORK COUNTY, PA.

- York County: www.yorkcountypa.gov/
- York County Resource Recovery Center: www.ycswa.com/york-county-resource-recovery-center

ENDNOTES

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NACo National Association of Counties

NATIONAL ASSOCIATION OF COUNTIES

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ABOUT NACo

The National Association of Counties (NACo) is the only national organization that represents county governments in the United States. Founded in 1935, NACo provides essential services to the nation's 3,069 counties. NACo advances issues with a unified voice before the federal government, improves the public's understanding of county government, assists counties in finding and sharing innovative solutions through education and research and provides value-added services to save counties and taxpayers money. For more information about NACo, visit www.NACo.org.

ABOUT THE RESILIENT COUNTIES INITIATIVE

NACo's Resilient Counties initiative serves as a catalyst between local governments and the private sector to strengthen the resilience of the nation's 3,069 counties, and create solutions for sustainable places.

In order to remain healthy, vibrant, safe and economically competitive, America's counties must be able to anticipate and adapt to all types of change. Through the Resilient Counties initiative, NACo works with counties and their stakeholders to bolster their ability to thrive amid changing physical, environmental, social and economic conditions.

Hurricanes, wildfires, economic collapse, and other disasters can be natural or man-made, acute or long-term, foreseeable or unpredictable. Preparation for and recovery from such events requires both long-term planning and immediate action. NACo works to strengthen county resiliency by building leadership capacity to identify and manage risk, and allow counties to become more flexible and responsive. Through the use of sustainable practices and infrastructure, counties will be better prepared to address these issues in a manner that can minimize the impact on local residents and businesses, while helping counties save money.

Through the initiative, NACo:

- **Develops** strategies to foster economic growth and competitiveness,
- **Educates** counties on techniques for implementing resiliency and sustainability strategies,
- **Provides** tools for counties to educate their communities on resiliency initiatives,
- **Identifies** ways to leverage changing conditions and take advantage of new technologies and innovation, and
- **Facilitates** an open exchange with the private sector.

For more information, visit www.naco.org/resilientcounties.

ACKNOWLEDGEMENTS

This report was researched and written by Rob Pressly, NACo Program Manager, with guidance from Dan Gillison, Director of County Solutions and Innovation, and Kathy Nothstine, NACo Program Director. Additional thanks to Katy Solomon, Graphics Assistant.

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- Barry Edwards, Director of Utilities and Engineering, Catawba County, N.C.
- Ellen O'Connor, Community Services Division Manager, York County Solid Waste Authority

For more copies of this report, please contact Rob Pressly, NACo Program Manager, rpressly@naco.org, (202) 942-4224

Environmental Services Joint Powers' Authority
Board of Directors' Meeting

Thursday, March 19, 2015

Technical Advisory Committee

Breakout Session

Stormwater Multiple Application & Report Tracking System SMARTS

Patrick Ohuji
pohuji@waterboards.ca.gov
State Water Resources Control Board
Division of Water Quality

What is SMARTS?

- **Purpose:**
  Provide a platform where dischargers and regulators, can enter and track storm water data including NOIs, NOTs, NECs, Annual Reports, compliance, and monitoring data.
- **Internet-based**
  - Best used with Internet Explorer
- **Reports**
  - SWRCB/RWQCB prioritize regulatory tasks (i e inspections, view trends in compliance, provide data to the Legislature and EPA)
  - Public reports - NOI, Inspections, Violations, Enforcement, and monitoring data.

Timeline for Implementation

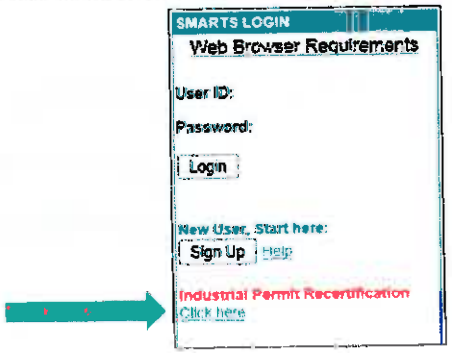
- **December 2014/January 2015**
  - Notification mailed to Existing 97-03-DWQ dischargers to recertify under new General Permit
  - Notification includes the WDID and a Secret Code Number
  - Dischargers begin the recertification process
- **January – April 2015**
  - SMARTS development of new permit functions
- **April – June 2015**
  - SMARTS beta testing
  - External users can test and submit feedback

Timeline for Implementation

- **July 1, 2015**
  - July 1st effective date of Permit and recertification process complete
  - SMARTS system ready to accept new applications and reports: NOI, NEC, NONA, monitoring data
  - WDID numbers not recertified are "Expired"
- **July – October 2015**
  - Water Boards sends Notices of Non-Compliance
- **July 15, 2016**
  - 1st Annual Report due via SMARTS

Recertification in SMARTS

https://smarts.waterboards.ca.gov



Recertify existing WDID Numbers

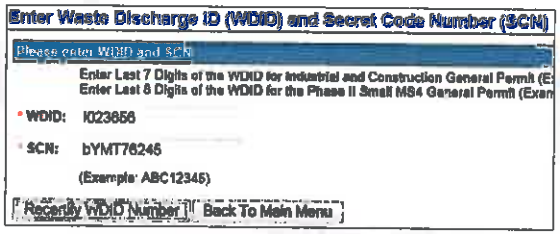
- Things you will need:
  - Access to the internet
  - SMARTS Legally Responsible Person (LRP) User Account
  - WDID Number
  - Secret Code Number
  - Storm Water Pollution Plan
  - Facility Site Map

Step 1 – Account Set Up

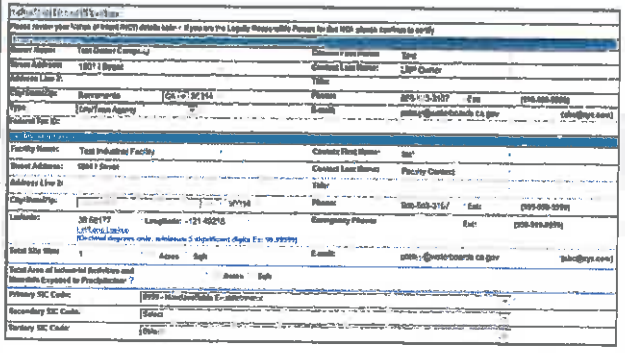
- The Discharger's Legally Responsible Person to log into SMARTS to complete the process
  - Select Yes to use an existing LRP user account
  - Select No to create new LRP user account

Step 2 – Log In

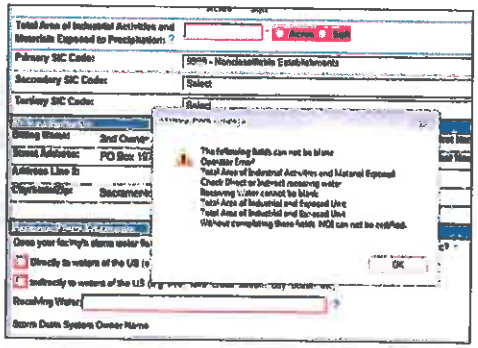
- Enter the WDID number and SCN



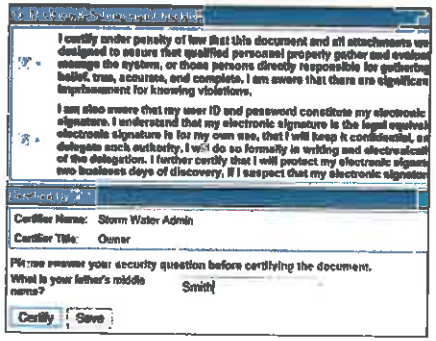
Step 3 – Verify NOI Information



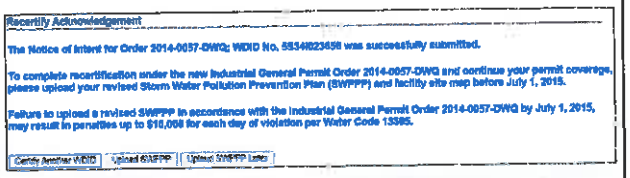
Step 4 – Correct any errors



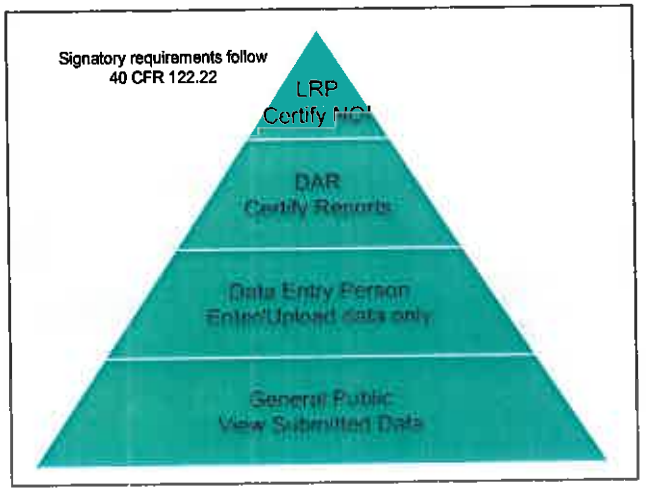
Step 5 – Certify NOI



Step 6 – NOI Submitted

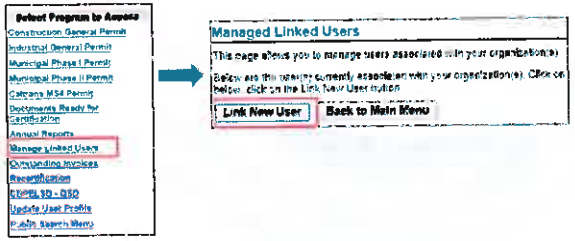


- Revised SWPPP & map must be uploaded prior to July 1, 2015



Step 7 (optional) – Linking Users

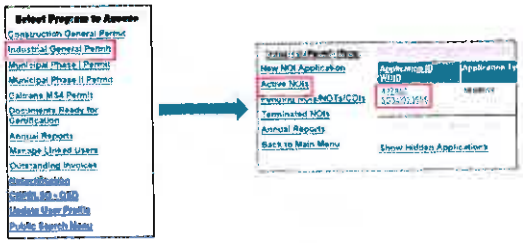
- Log In and go to Manage Linked Users



- All persons must have their own User ID
- Roles: LRP, Duly Authorized Representative, Data Entry Person

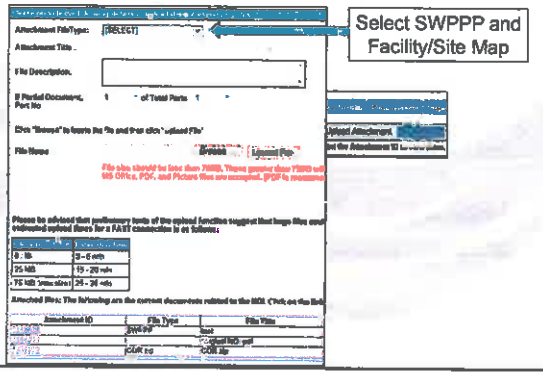
Step 8 - Upload SWPPP & Map

- Log In and Open WDID number



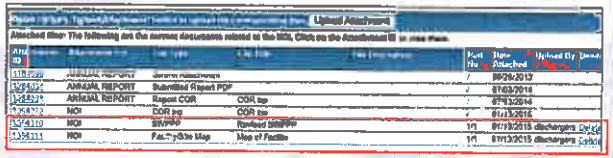
Step 8 (Continued) Upload SWPPP & Map

- Go to the NOI Attachment tab



Step 8 (Continued) Upload SWPPP & Map

- Verify documents **are uploaded**

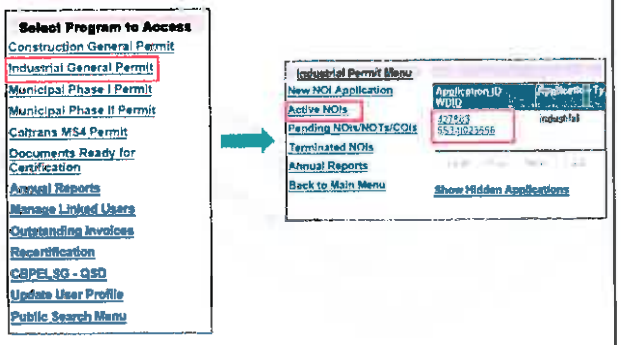


What happens if I do not complete the Recertification by July 1, 2015?

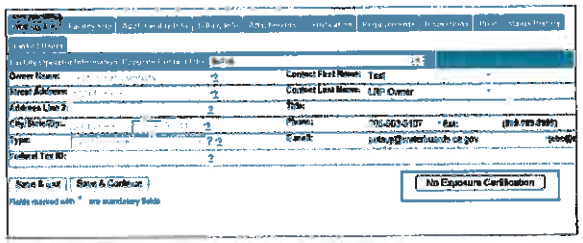
- Facility does not have permit coverage under new General Permit
- Water Boards will send out Notice(s) of Non-Compliance If permit coverage is not obtained a Mandatory Minimum Penalty of at least $5000 is issued
- If the facility discharges without permit coverage a penalty up to $10,000 per day per violation and $10 per gallon for discharges over 1,000 gallons

No Exposure Certification for Existing Dischargers

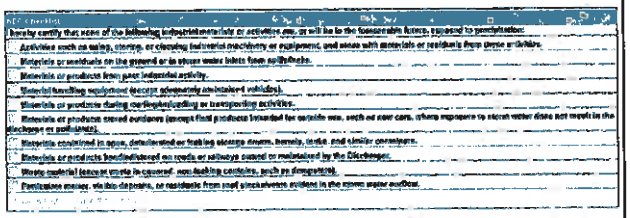
Step 1 – Log in and open WDID number



Step 2 – Start NEC checklist

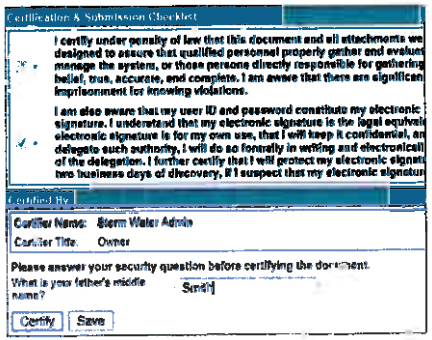


Step 3 – Complete NEC checklist



- **Facility site map is required if not already uploaded**

Step 4 – Certify NEC



Step 5 – Send Payment

- Pay by Check
  - Mail check to the Water Boards
- Pay by Electronic Fund Transfer
  - Pay online from a checking account

Annual Report/Monitoring

Step 6 – Water Boards process the NEC

- NEC ID assigned
- Existing WDID Number is Terminated
- Invoices associated with the NOI issued within 90 days of filing the NEC will be refunded (if paid) and canceled
- NEC is recertified annually

Annual Report/Monitoring Data Entry

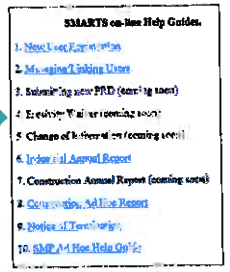
- Annual Report
  - Due July 15th each year
  - SWRCB still programming SMARTS
  - Target date: July 2015
  - Streamlined - Forms 2 through 5 no longer apply
- Monitoring Data Entry
  - Separate from Annual Report
  - On screen data entry or
  - Parameter Entry Tool
    - Facilities with many discharge points
    - Download pre-formatted MS Excel template
    - Upload template when complete

Other Functions Being Developed

- Notice of Termination
- Compliance Groups
- Notice of Non-Applicability
- Exceedance Response Action (ERA) Tracking
- Find Your Receiving Water Tool
- QISP Tracking & Look up Tool
- Temporary Suspension

Resources

- SMARTS Help Link

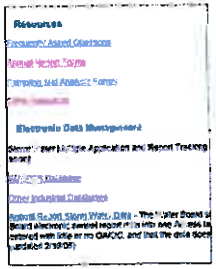


Resources

- Storm Water Internet Page

http://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.shtml

  - Downloadable Instructions
  - Videos



Storm Water Help Desk

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