

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT
JOINT POWERS AUTHORITY

Board of Directors Meeting
Thursday, July 18, 2013
Marin Municipal Water District
220 Nellen Avenue, Corte Madera
9:00 – 10:00 AM
AGENDA

Call to Order.

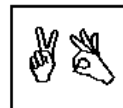
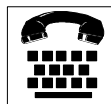
Regular Agenda

1. JPA Board Meeting Minutes from May 16, 2013. (Action)
2. JPA Response to Grand Jury Report “Garbology.” (Action)
3. JPA Response to Grand Jury Report “Holding the Bag.” (Action)
4. Update on Single Use Bag Project. (Update)
5. The next JPA Board Meeting is scheduled for: October 17, 2013.

Agendas & staff reports available at:

<http://zerowastemarin.org/who-we-are/2013-jpa-agendas-and-minutes/>

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Contact the County's Waste Management Division, at (415) 473-6647 for more information

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DRAFT

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Board of Directors Meeting
Thursday May 16, 2013
Marin Municipal Water District
220 Nellen Avenue, Corte Madera
9:00 – 10:00 AM

MINUTES

MEMBERS PRESENT

Matthew Hymel, County of Marin
Jim McCann, Mill Valley
David Bracken, Corte Madera
Debra Stutsman, San Anselmo
Margaret Curran, Tiburon
Mary Neilan, Belvedere
Michael Frank, Novato
Garret Toy, Fairfax
Dan Schwarz, Larkspur

Members Absent

Nancy Mackle, San Rafael
Adam Politzer, Sausalito
Rob Braulik, Ross

STAFF PRESENT

Michael Frost, JPA Staff
Steve Devine, JPA Staff
Alex Soulard, JPA Staff
Kiel Gillis, JPA Staff

OTHERS PRESENT

Dee Johnson, Novato Sanitary District
Kaoru Cruz, CalRecycle
Sam Ferrero, CalRecycle
Kathy Wall, Marin Sanitary Service
Steve Rosa, Marin Sanitary Service
Kim Scheibly, Marin Sanitary Service
Tracy Keough, O'Rorke Inc.
Connie Zhang, O'Rorke Inc.
John Maher, Maher Accountancy
Emiko Hashisaki, O'Rorke Inc.
Grier Matthews, O'Rorke Inc.
Alex Stadtner, JPA LTF (San Rafael)
Courtney Bell, San Rafael Fire
Jim Schutz, City of San Rafael
Jim Iavarone, Mill Valley Refuse

Call to Order: The JPA Board meeting came to order at 09:04 AM.

Regular Agenda

1. JPA Board Meeting Minutes from February 28, 2013

M/s Curran/Neilan to approve the minutes from the February 28, 2013 JPA Board meeting. The motion passed unanimously.

2. FY 13-14 JPA Budget and Assessment Schedule

Staff overviewed the JPA Budget & Assessment Schedule, summarized the three budget centers (Administration, Household Hazardous Waste and Zero Waste), noting proposed changes over the previous year's budget, delays of the Paint Care program implementation, and described the Budget Subcommittee and Executive Committee recommendation process. Staff fielded questions from the Board Members which included a review of the Single Use Bag Ordinance funding. No public comments were heard. M/s Schwarz, Curran to adopt the FY 13-14 Budget and Assessment Schedule and to Authorize JPA Chair to sign Budget Resolution No. 2013-03. The motion passed unanimously.

3. Presentation by O'Rorke Inc. on Stakeholder Interview Findings

JPA Zero Waste Outreach contractor O'Rorke, Inc. provided an update and summary of stakeholder interviews which consistently showed the need to expand food scrap and composting outreach as well as ample positive feedback for the services and efforts made by the haulers to the public. O'Rorke staff provided an overview of the Zero Waste outreach plan given the findings. They described planned efforts to implement a pilot food scrap and composting program with San Rafael condominium owners, a commercial food scrap collection program at Mill Valley restaurants, use of banners and signage in select communities, school newsletters outreach, working with KMWR radio for advertising and working with local grocery stores to discourage consumers from purchasing food in quantities that often result in waste. O'Rorke staff fielded questions from the Board Members, which included clarification of how the firm will reach the various demographics of Marin residents and encourage smart food consumption. No public comments were heard. No action was required.

Consent Calendar

4. Authorization for Contract with Evergreen Environmental for Bulb and Battery Program.
5. Authorization for Contract with C2 Alternative Services for Oil Payment Program.
6. Authorization for Contract with Brad Damitz for Oil Payment Program.
7. Authorization for Contract with Marin Resource Recovery for Oil Payment Program.
8. Signature Authority for Marina Agreements for Oil Payment Program.
9. Signature Authority for Marin Waste Hauler for Oil Payment Program.
10. Five Year Regional Agency Integrated Waste Management Plan Review Report Submittal.
11. Approval of the Third Cycle Zero Waste Grant Program and Forms.
12. HD-20 Grant Acceptance.

Staff submitted a revised edition of Item 4. M/s Schwarz, Curran to;

Authorize Executive Officer signature authority to enter into bulb and battery recycling service contracts not to collectively exceed \$45,000

And

Authorize the Executive Officer signature authority to enter into contract with C2 Alternative Services, not to exceed \$40,000 for the Oil Payment Program (OPP3)

And

Authorize the Executive Office signature authority to enter into contract with Bradley Damitz, not to exceed \$15,000 for OPP3

And

Authorize the Executive Office signature authority to enter into contract with Marin Resource Recovery Service, not to exceed \$12,500 for OPP3

And

Authorize the Executive Officer signature authority to enter into agreements with the participating OPP marina locations for OPP3

And

Authorize the Executive Officer signature authority to enter into a contract with a disposal/recycling hauler (to be determined) not to exceed \$10,000 for OPP3

And

Authorize the Executive Officer to enter into JPA Zero Waste Grant Agreements with Member Agencies and approve discretionary adjustments to the grants during the grant term

And

Direct Executive Officer to sign the HD-20 grant agreement, accept the grant funding, and authorize your Executive Officer to make necessary budget adjustments to execute the grant.

The motion passed unanimously.

End Consent Calendar

13. Audit and Financial Statements for Year Ending June 30, 2012

Staff summarized the FY11/12 Audit conducted by Maher Accountancy, introduced John Maher the accountant, and summarized the audit findings. Staff briefly reported the County SAP accounting software follows accounting principles different from the auditor which causes challenges in ensuring costs and revenue are logged into the appropriate fiscal year. These challenges are exacerbated by the speedy closure of accounts at the end of the fiscal year. Mr. Maher stated that all three accounts (Administration, Household Hazardous Waste, and Zero Waste) are reconciled with this audit and that accounts hold a positive fund balance reinforced by strong SAP budgetary control procedures. No public comments were heard. M/s Schwarz, Curran to accept the financial statements and auditors report for year ending June 30, 2012. The motion passed unanimously.

14. Presentation by CalRecycle on Site Visits to Cities and Towns

Staff summarized upcoming changes with the way the JPA and member agencies interact with CalRecycle, noting that in the past JPA Staff have generally been the sole contact working with CalRecycle since its predecessor, the CIWMB, recognized the JPA as a Regional Agency in 1997. Staff reported that moving forward CalRecycle will be asking to work with each of the 12 member agencies individually in order to implement further waste reduction programs. CalRecycle staff commended the JPA for meeting the AB939 waste reduction requirement, noting however that with the implementation of SB1016 CalRecycle

will be looking to each member agency to implement further reduction programs and will shift the reporting requirement from every two to every four years, but will meet with each member agency annually to conduct site visits. CalRecycle staff identified these annual city and town visits will be preceded by a conference call with jurisdiction staff and a hauler representative, followed by visits at 1-2 locations such as a local school, shopping center or government facility. CalRecycle will require a representative of the member agency and a hauler representative present. CalRecycle further explained the information collected in these site visits will feed into the annual report that is submitted by the JPA to CalRecycle. No public comments were heard. No action was required.

15. Recommendation by Local Task Force for the JPA to Prepare a Five Year Budget and Strategic Plan

Staff reported that during the May 1, 2013 the LTF passed a unanimous recommendation made by Alex Stadtner to request the JPA develop a five-year funding and strategic plan. Staff interpreted the recommendation and developed a fact finding strategy of reviewing the JPA's Zero Waste Feasibility to report back on implementation, analyzing the Annual Report figures in August, and developing future cost estimates for some programs. Staff will report back late in 2013 with a recommended approach. LTF Member Stadtner commended the JPA and Staff for their work but noted that a 5 year plan would keep the work more finely focused and on track. Staff fielded questions from the Board and clarified that a strategic plan can developed after we get a sense of how close to the Zero Waste goals we have come and long term budgetary recommendations are likely, but multiyear budgets are unlikely. M/s McCann, Curran for Staff to further evaluate the need of a 5 year plan. The motion passed unanimously

16. Staff Report on Recent and Ongoing Activities

Staff noted the success of 10 local locations that participated in the Drug Enforcement Agency National Drug Take-Back day and reported on the grant awarded to the JPA for resources that will further HHW and Sharps programs. Staff summarized the recently released Grand Jury reports on single use bags ("Holding the Bag"), and the overall status of waste in Marin County ("Garbology") and noted that there are requirement for various agencies, including the JPA, to formally respond to the reports. Staff will work with JPA Chair to draft responses and bring them forward for approval and submittal. The motion passed unanimously.

17. Open Time.

No public comments were heard.

18. The next scheduled JPA Meetings are: Executive Committee: 7/18/2013 and Full JPA Board 11/21/2013.

MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere:
Mary Neilan

Date: July 18, 2013

Corte Madera:
David Bracken

To: JPA Board Members

County of Marin:
Matthew Hymel

From: Michael Frost, Executive Officer

Fairfax:
Garrett Toy

Re: JPA Response to Grand Jury Report – “Garbology”

Larkspur:
Dan Schwarz

Attached is the Marin County Grand Jury’s “Garbology” report which requires a response from the Marin County Hazardous and Solid Waste Management Joint Powers Authority.

Mill Valley:
Jim McCann

Also attached is a proposed response for the Board’s consideration.

Novato:
Michael Frank

Recommendation

Adoption of a motion authorizing and directing the Board Chair to tender the attached, proposed response to the Marin County Grand Jury’s “Garbology” Report.

Ross:
Rob Braulik

Attachments.

San Anselmo:
Debbie Stutsman

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San Rafael:
Nancy Mackle

Sausalito:
Adam Politzer

Tiburon:
Margaret Curran

MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere:
Mary Neilan

July 18, 2013

Corte Madera:
David Bracken

The Honorable Judge James Ritchie
Marin County Superior Court
P.O. Box 4988
San Rafael, CA 94913-4988

Rich Treadgold, Foreperson
Marin County Grand Jury
3501 Civic Center Dr., Rm. 275
San Rafael, CA 94903

County of Marin:
Matthew Hymel

Fairfax:
Garret Toy

SUBJECT: Grand Jury Report – Garbology in Marin: Waste Energy

Larkspur:
Dan Schwarz

Dear Judge Ritchie and Foreperson Treadgold:

Mill Valley:
Jim McCann

Please find the enclosed required responses to the Grand Jury Report – ‘Garbology in Marin: Wasted Energy’ from the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA).

Novato:
Michael Frank

This response was reviewed and approved by the JPA’s Board of Directors at their publicly noticed meeting conducted on July 18, 2013.

Ross:
Rob Braulik

Thank you for the opportunity to respond to this report, and should have you have any questions please contact our staff at (415) 473-2711.

San Anselmo:
Debbie Stutsman

Respectfully Submitted,

San Rafael:
Nancy Mackle

Nancy Mackle
Board Chair

Sausalito:
Adam Politzer

Tiburon:
Margaret Curran

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RESPONSE TO GRAND JURY REPORT FORM

Report Title: Garbology in Marin: Wasted Energy

Report Date: May 8, 2013

Public Release Date: May 14, 2013

Response By: *Marin County Hazardous and Solid Waste Management Joint Powers Authority*

FINDINGS

- We agree with the findings numbered: *F1, F4, and F7.*
- We disagree with wholly or partially with the findings numbered: *F2, F3, F5, and F6.*

See attached statements.

RECOMMENDATIONS

- Recommendations numbered: NONE have been implemented.
- Recommendations numbered: NONE have not yet been implemented, but will be implemented in the future.
- Recommendations numbered: R1, R2, R3, R4 require further analysis.
- Recommendations numbered: R5 will not be implemented because it is not warranted or are not reasonable.

See attached explanations.

See attached explanation.

Date: July 18, 2013. Signed: _____

Number of pages attached: 3.

STATEMENTS FOR “DISPUTED” FINDINGS:

- Restatement of Finding F2 for reference:

“Redwood Landfill, as currently permitted, has a finite life and therefore, alternate methods of waste diversion need to be explored.”

Statement for “dispute” of Finding F2:

Overall the Marin County Hazardous and Solid Waste Joint Powers Authority (JPA) agrees with this statement; however we believe that alternative methods of waste diversion and waste disposal need to be explored. The Grand Jury report finding only makes note of exploring alternative methods of waste diversion. In addition it will be important to focus on “upstream” waste minimization strategies such as the concept of “Extended Producer Responsibility” in which manufacturers and designers of products take responsibility for those products from cradle to grave.

- Restatement of Finding F3 for reference:

“Waste-to-Energy Plants can be a solution to limited landfill space.”

- Statement for “dispute” of Finding F3:

Overall the JPA agrees with this statement – and the JPA’s Zero Waste Resolution (Resolution No. 07-01) does not contain language specifically excluding the use of “Waste to Energy Plants” however many advocates of the zero waste concept strongly object to any form of conversion technology and this would be a very difficult project to permit in Marin County. As with landfills, Waste to Energy plants, also have their pros and cons – which need to be evaluated.

- Restatement of Finding F5 for reference:

“Marin County waste disposal has diminished by over 27% since 1995 due to the passage of AB 939 in 1989 and public awareness.”

Statement for “dispute” of Findings F5:

The JPA cannot verify the assertion in this Finding due to a lack of footnoting the end date of when this calculation covers and notes that multiple factors have gone into the reduction of waste disposal.

- Restatement of Finding F6 for reference:

“Redwood Landfill has seen a waste reduction of 24% during the same time period as a result of less out-of -county disposal in the Marin landfill and the effects of diversion awareness.”

Statement for “dispute” of Findings F6:

The JPA cannot verify the assertion in this Finding due to a lack of footnoting the subject time period. Also, this information is best confirmed with Redwood Landfill.

EXPLANTIONS REGARDING RECOMMENDATIONS

- Restatement of Recommendation R1 for reference:

"The Grand Jury recommends that the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) and Local Enforcement Agency (LEA) meet with Redwood Landfill as soon as feasibly possible to gain assurances that the landfill methane gas-to-energy plant will become a reality."

Explanation for Recommendation R1:

The JPA would be pleased to meet with the LEA and Redwood Landfill. Overall the JPA is supportive of the landfill methane gas-to-energy plant, but does not have legal or regulatory authority regarding this project. Timeline: No later than October 31, 2013.

- Restatement of Recommendation R2 for reference:

"The Grand Jury recommends that the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) and Local Enforcement Agency (LEA) ensure that Redwood Landfill completes the Construction and Demolition sort line."

Explanation for Recommendation R2:

Overall the JPA agrees with the recommendation and a Construction and Demolition debris recycling facility at the site would be very beneficial in helping Marin reach its zero waste goal. However the JPA does not have legal or regulatory authority to require this of Redwood Landfill. The JPA can commit to meeting with these parties to help encourage the project, but cannot ensure that that the project is completed. Timeline: Meeting no later than October 31, 2013.

- Restatement of Recommendation R3 for reference:

"The Grand Jury recommends that the Marin County Public Works Department, Local Enforcement Agency (LEA) and Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) work with Redwood Landfill to ensure the building of an anaerobic digester for food waste, the energy from which can be added to the methane gas-to-energy plant."

Explanation for Recommendation R3:

The JPA would be pleased to participate in a meeting with Marin County Public Works, the LEA and Redwood Landfill regarding this or any matter. That said, the JPA recognizes that there are pros and cons to various technologies and cannot commit to strictly advocating for the anaerobic composting technology versus other composting systems at this time. Alternative composting and digestion technologies have different emissions, water impacts and cost related issues which may dictate which technology or technologies are practical. Timeline: Meeting no later than October 31, 2013.

- Restatement of Recommendation R4 for reference:

"The Grand Jury recommends that the Marin County Public Works Department, Local Enforcement Agency (LEA) and Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) work with Redwood Landfill to explore all options for minimizing future disposal through some cost effective, least polluting form of waste gasification, such as Microwave Plasma Gasification."

Explanation for Recommendation R4:

The JPA would be pleased to participate in a meeting with the LEA, JPA and Redwood Landfill regarding this or any matter. That said, the JPA recognizes that there are pros and cons to various technologies and cannot commit to strictly advocating for the waste gasification technology for waste reduction. Due to the current high costs and limited applications of this technology in the US, this technology is one of several that should continue to be monitored for its practicality in our community. Timeline: Meeting no later than October 31, 2013.

- Restatement of Recommendation R5 for reference:

"The Grand Jury recommends that Local Jurisdictions holding MSW franchise agreements mandate, through revisions to the agreements, that haulers dispose of all MSW generated in Marin County in Marin County."

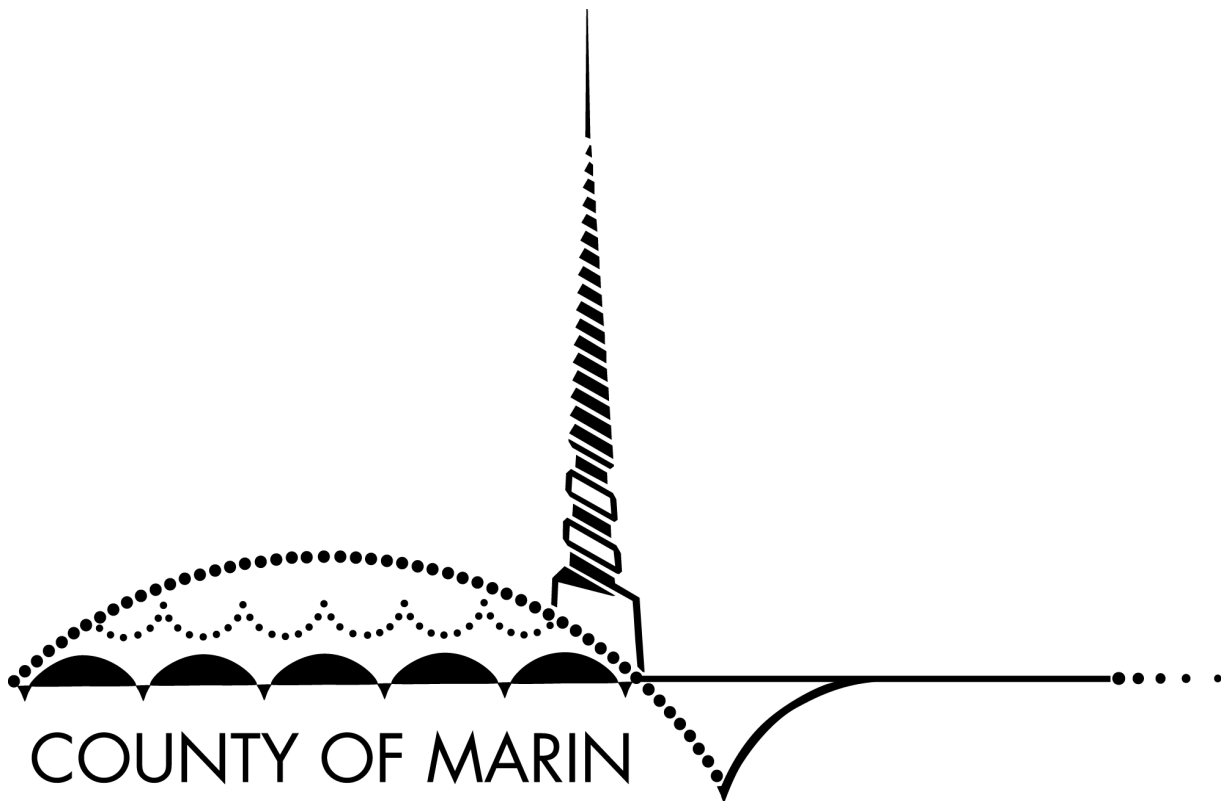
Explanation for Recommendation R5:

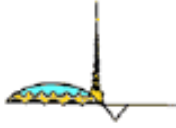
The JPA does not manage solid waste collection franchises. Directing all municipal solid waste (MSW) to in-County Marin landfill(s) would entail environmental, economic and legal complexities which would need policy direction and consideration to ensure all factors are weighed in determining the highest benefit. Timeline: Not applicable.

2012/2013 MARIN COUNTY CIVIL GRAND JURY

Garbology in Marin: Wasted Energy

Report Date - May 8, 2013
Public Release Date – May 14, 2013





GARBOLOGY IN MARIN: WASTED ENERGY

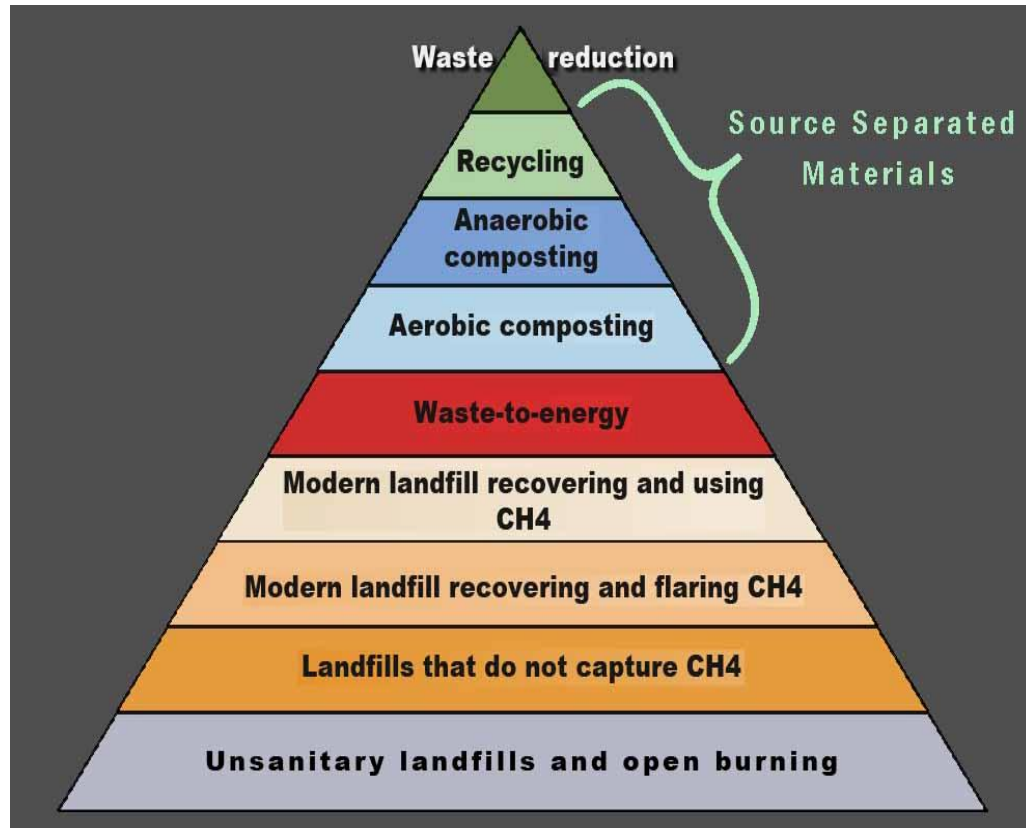
SUMMARY

Redwood Landfill Inc. (RLI), Marin County's only solid waste landfill, is nearing the end of its useful life. Based on a 2008 Environment Impact Report (EIR), the landfill applied for and received a new Solid Waste Facility Permit in 2008 (the 2008 PERMIT), but the validity of the EIR and the 2008 PERMIT were successfully challenged in court. If the appeal currently pending is denied, the landfill will be forced to operate under its 1995 PERMIT, thereby reducing the maximum allowable disposal, which could force its closure within 7-9 years, (2020-2022).¹

Depending on the outcome of the appeal, these are the three alternative outcomes:

- 1) If the landfill appeal is denied, a new EIR will be required for RLI to receive an updated permit. This process could take years to complete - the 2008 EIR, which was the basis for the 2008 PERMIT was started in 2003. RLI could take on this process, although it has expressed no certainty that it will do so.
- 2) If the landfill appeal is denied, RLI could decide not to pursue a new permit, and simply close the landfill when it reaches the maximum disposable amount under the 1995 PERMIT. In that event;
 - Marin will need to find another landfill, a problematic issue since County officials have stated that it will be impossible to find an alternate site within the County. Not finding an alternate site in Marin County means our trash becomes another county's problem and increases our carbon footprint.
 - Marin would also lose RLI's proposed landfill gas-to-energy plant. Such a plant could possibly create enough electricity to supply approximately 6,000 to 8,000 Marin County homes with renewable green energy.
- 3) If RLI prevails in its appeal and the life of the landfill is extended, the 2008 PERMIT would extend the useful life for a minimum of approximately 19 years (to 2032). In addition, if RLI were to build the proposed landfill gas-to-energy plant, the landfill could also move up one tier in the "Hierarchy of Waste Management" (see illustration below) by producing energy from landfill gas.

¹ The final date would be determined by waste settlement and compaction.



Waste to Energy Research and Technology Council (WERT)

The pyramid illustrates a spectrum of ways to deal with waste from the least to most desirable. Marin County is striving to reach a landfill diversion rate of 94% (i.e. transporting only 6% of waste to the landfill while 94% is diverted to resource recovery facilities) by 2025². With measures in place, and others outlined in the 2008 PERMIT implemented, RLI could substantially help the County achieve that goal if it wins its appeal.

At the current time, Redwood Landfill is a “modern landfill recovering and flaring CH₄” (Methane Gas) - the third tier from the bottom in the above diagram. As part of its operation, the landfill also composts yard waste and converts construction rubble into reusable construction material. The landfill has committed to moving up to the fourth tier by constructing a landfill gas-to-energy facility if the lawsuit appeal is granted.

There are additional ways of extending the useful life of the landfill by:

- Constructing a waste-to-energy (WTE) facility

² Final Draft Zero Waste Feasibility Study Presented by R3 Consulting Group December 2009

- Exploring possible other biomass conversion (e.g., Anaerobic composting) in sufficient quantities to contribute to Marin's renewable energy needs. Were this implemented, the landfill would move up even further on the waste pyramid.

The Marin County Civil Grand Jury supports the extension of the landfill's life regardless of the outcome of the legal proceedings and hopes that we will not end up with Wasted Energy.

BACKGROUND

Marin County's one remaining landfill originated in 1958 on property owned by Jordon Smith (for whom Smith Ranch Road received its name). Between 1972 and 1998 many significant events occurred relating to the landfill and the handling of solid waste, which are detailed below:

Historical Events

1972	In 1972, California enacted The Solid Waste Management and Resource Recovery Act (Chapter 342, Statutes of 1972) and established the Solid Waste Management Board to create policies for solid waste handling and disposal. Each of the 58 counties was given the task of developing and submitting its long-term solid waste management and resource recovery plans to the Board by January 1, 1976.
1976	The Legislature created a permitting and enforcement program for solid waste facilities to be overseen by local enforcement agencies (LEAs).
1978	Redwood Landfill received its first Solid Waste Facility Permit (PERMIT) to accept sludge and solid waste.
1989	With the threat of running out of landfill space, Californians saw the enactment of AB 939 in 1989. This Act mandated goals of 25 percent diversion of each city and county's waste from disposal by 1995 and 50 percent by 2000. With this legislation the board was reconstituted and named the California Integrated Waste Management Board (CIWMB). This new board regulated landfills and the law required significant investments by operators to meet the new standards.
1990	In 1990, realizing that it would be mutually beneficial to jointly prepare the Integrated Waste Management Plan, Marin's cities and towns and the County entered into a Memorandum Of Understanding (MOU). http://zerowastemarin.org/who-we-are/about-the-jpa/
1991	Jordon Smith sold Redwood Landfill to Sanifill, Inc.

1992	In November 1992, Marin County Environmental Health Services was re-designated as the solid waste Local Enforcement Agency (LEA) ³ for Marin County by the eleven cities and County of Marin and subsequently certified by CIWMB. CIWMB became known as CalRecycle effective 2010.
1995	Sanifill received a new PERMIT, incorporating the changes required by AB 939.
1996	<p>The Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA), was formed to help ensure the County's compliance with AB 939 and now oversees the disposal of solid waste and hazardous materials in Marin County. The JPA is comprised of the County of Marin and the cities and towns of Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, and Tiburon.</p> <p>During the same year, USA Waste of California purchased Sanifill, Inc. and the ownership of Redwood Landfill was included. With the new ownership, Redwood Landfill (RLI) instituted additional diversion activities including composting of yard waste, grinding of concrete and asphalt for base rock and gravel, and setting aside metals and appliances delivered by self-haulers for recycling.</p>
1998	Waste Management, Inc. (WM) merged with USA Waste and became the current owner and operator.

Unfortunately, the landfill sits on a 600-acre parcel of land that is surrounded on three sides by the Petaluma River Estuary and Marsh. When RLI requested a new Permit in 1999 to allow for increased landfill capacity and operational changes, the LEA prepared an environmental impact report (EIR). An initial study concluded that substantial changes proposed in 1995 concerning issues related to the proximity of the landfill to water sources and other issues had not been addressed. Once these items had been rectified, a draft EIR was prepared in 2003 and the initial final EIR approved in 2005. The final EIR was twice amended and finally completed in October 2008. With CalRecycle's concurrence, a new Permit was issued to RLI boosting capacity by 9.3 million cubic yards to a total of 26 million cubic yards and allowing continued operation for at least another 19 years.

The NO WETLANDS' Petition

In June 2008, an organization called No Wetlands Landfill Expansion (NO WETLANDS), filed a petition for a writ of mandate not only claiming the right to appeal the EIR certification to the County Board of Supervisors (BOS) but also claiming the EIR was inadequate. The Superior Court issued a judgment in March 2011 on the first issue directing the BOS to hear an administrative appeal. The First Appellate Court reversed

³ See Appendix A for duties and responsibilities of the LEA

that decision in March 2012 saying the LEA was a legal entity distinct from the county and the BOS had no authority to approve or disapprove the project. By not ruling on the other issues brought forth by NO WETLANDS, the lawsuit was heard by Judge Duryee who ruled in favor of NO WETLANDS on December 11, 2012. RLI, joined by County Counsel, has filed an appeal.

If RLI is unsuccessful in overturning the ruling, the permit from 1995 will remain in force. What this means to the residents of Marin County is the following:

- The landfill may choose not to proceed with plans to build a methane gas-to-energy plant, which can substantially reduce current greenhouse gas admission and may provide enough electricity to power 6,000-8,000 Marin County homes.
- Under the 1995 permit, the landfill is allowed 19 million cubic yards; as of March 2012 the landfill had 2.2 million cubic yards remaining. At the current rate, RLI could be forced to close within seven to nine years, thus requiring Marin County solid waste to be trucked out of county and increasing rather than reducing our carbon footprint and making our waste some other county's problem.
- According to County officials, siting a new landfill in Marin will be impossible.

Marin's Diversion Rate

In 2008, SB 1016 was enacted to make the process for measuring disposal compliance simpler by changing from a diversion-based indicator to a per capita disposal rate (with 50 percent of generation as the goal). For 2007, the JPA had a disposal target of 7.6 pounds per person per day. The actual result was 4.9 pounds. This is the equivalent of 68 percent diversion. For 2011, the result was 3.8 pounds, or the equivalent of 75 percent diversion. The JPA's stated goal was to achieve 80 percent diversion by 2012 and reach zero waste by 2025.⁴ Essentially, zero waste means that approximately 94 percent of waste will be diverted, but that there will still be residual waste after diversion processing. While the size of the annual waste stream is decreasing due to recycling efforts and the recent downturn in the economy, there is just one landfill in Marin County and it may reach capacity and close as early as 2020 if the pending appeal is denied. Several actions, if taken, can extend the useful life of the landfill, namely: reduce the amount of waste deposited, increase the recycling rate, increase the allowed capacity of the fill area, and convert the materials at the fill into alternate forms (such as green waste into compost and methane into electricity).

There are some indications that the JPA goal of 80% diversion by 2012 might not have been achieved. If so, this failure may be due to all of the following:

- A planned residential food waste implementation took longer than expected due to a lack of regional composting facilities such as RLI

⁴ The 2012 actual results will be available in the JPA's Annual Report due in August.

- A planned joint project between Marin Sanitary Service and Central Marin Sanitation Agency for processing of commercial food scraps through anaerobic digestion to produce methane generated energy has been delayed
- The lack of other facilities for processing commercial food scraps - one potential facility being RLI
- The JPA's new Construction and Demolition (C&D) Ordinance has not been approved by all municipalities, and
- RLI has postponed its planned construction and demolition facility due to the lawsuit

The Grand Jury is concerned about the potential loss of the landfill and its ability to help Marin County achieve its desired 94% diversion rate. In addition, the potential loss of the proposed methane gas-to-energy plant means that we would lose the ability to provide renewable energy to 6,000-8,000 Marin County homes.

The purpose of this report is twofold: 1) Review the current diversion programs in place, and 2) examine ways of converting waste to energy that might help the County achieve zero waste by utilizing the remaining 6 percent residual, thus reducing stored waste and extending the life of the landfill.

APPROACH

The Grand Jury began its investigation by touring Redwood Landfill and conducting interviews with RLI, County Counsel, the LEA, and the JPA. In these interviews, we discussed the pending appeal, the impact if the appeal is not granted, the tonnage currently going to RLI and the possible alternatives if the appeal is denied. In addition, we interviewed Marin Clean Energy to verify the viability of using methane gas-to-energy as a renewable energy source.

Following our initial interviews, we arranged a tour of the Marin Sanitary Service complex where we observed their current resource recovery operations and received information regarding their anaerobic digestion joint venture with Central Marin Sanitation Agency, which should be operational by early 2014. In addition to our interviews, we reviewed the 2008 EIR report, the 2008 PERMIT, the NO WETLANDS lawsuit and Judge Duryee's ruling. We reviewed articles on landfill use, waste-to-energy technologies, current and past Marin County waste tonnage reports and greenhouse gas emission standards.

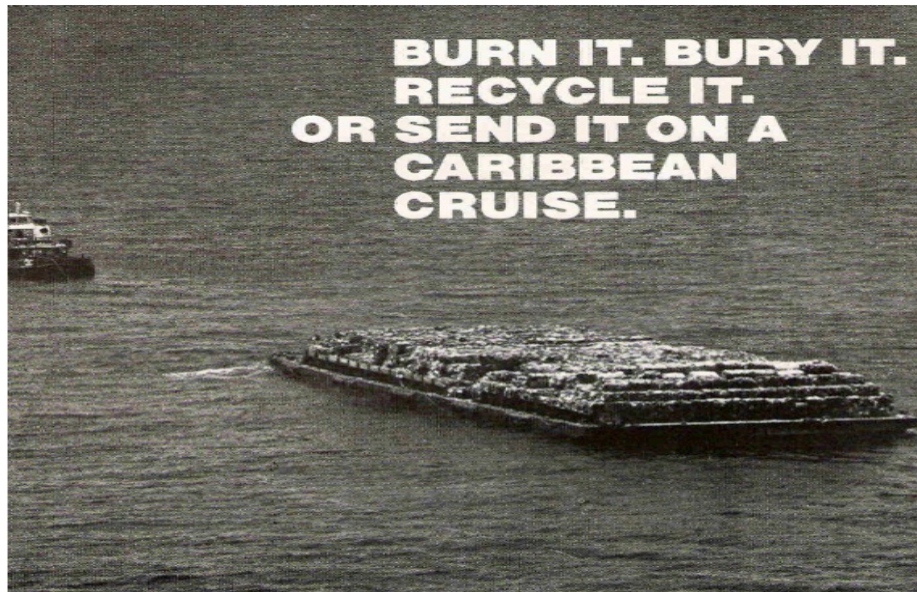
DISCUSSION

Trash is not a typical dinner party topic. Dumping the leftovers in the trashcan and placing it at the curb, or even having it conveniently picked up in the backyard by the friendly garbage man was a way of life for most Americans by the end of WWII. Who cared where it ended up; it wasn't our collective problem. It was out of sight and no

thought was given to the consequences of mounds of garbage growing in the local landfill.

A Short History of Garbage Disposal

The ZeroWasteMarin website states that for most of the first half of the twentieth century, as a nation, we recovered for reuse about 75 percent of the waste generated. In the 1970s that figure had dropped to 7.5 percent. Concerns were raised about landfill shortages. The 1987 "garbage barge", which left Long Island, New York in search of a final disposal site, became a rallying cry that shifted the national focus to Municipal Solid Waste (MSW) management.



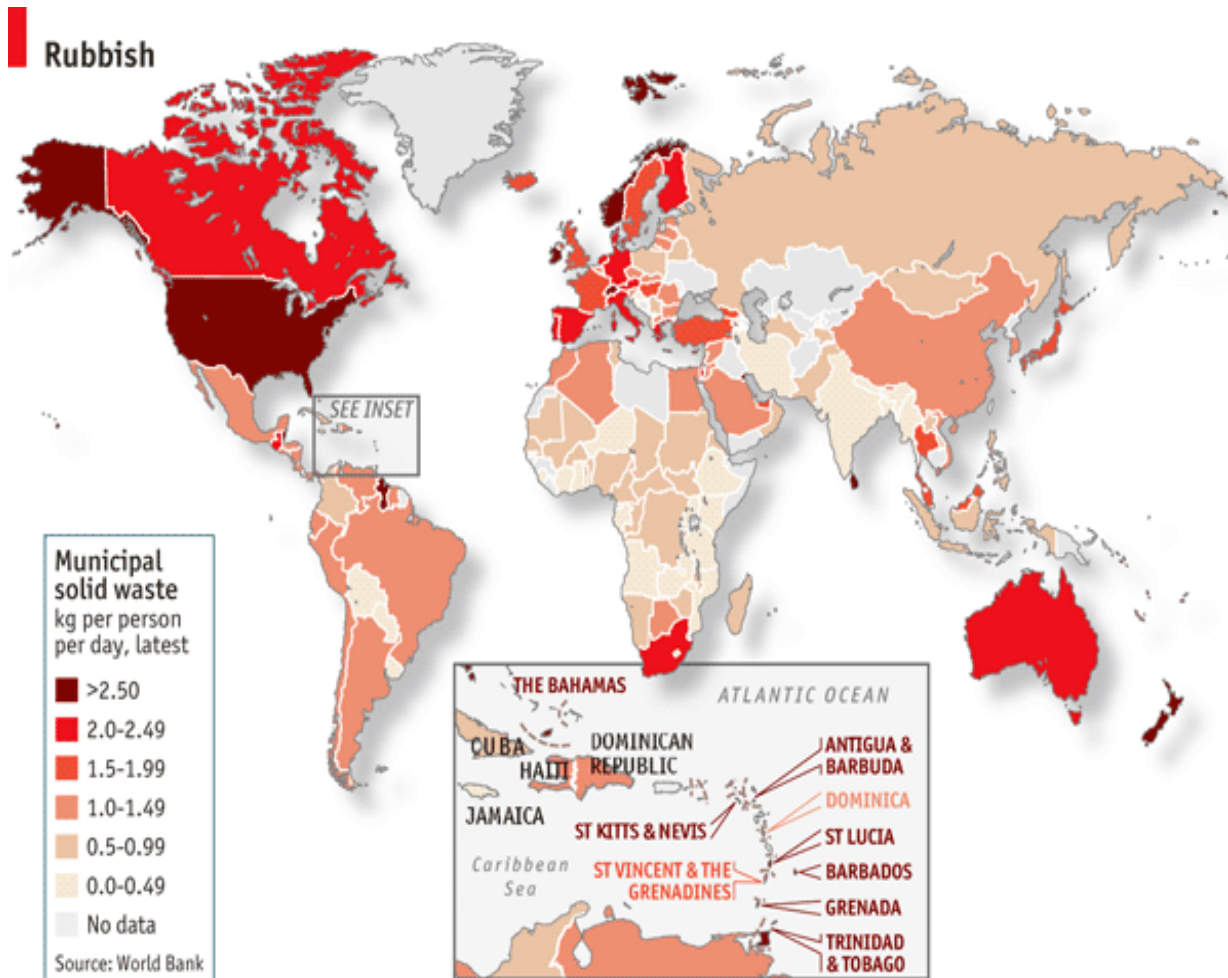
The Islip, N.Y., garbage barge spent much of Spring, 1987 toting 3,128 tons of smelly refuse from state to state and country to country. The town's dump was full, and Florida, North Carolina, Alabama, Mississippi, Louisiana, Texas, Mexico, Belize and the Bahamas refused to take delivery.⁵

In his book, *Garbology, Our Dirty Love Affair with Trash*, Edward Humes says "*Americans make more trash than anyone else on the planet, throwing away about 7.1 pounds per person per day, 365 days a year.*⁶ *Across a lifetime that rate means, on average, we are each on track to generate 102 tons of trash. Each of our bodies may occupy only one cemetery plot when we are done with this world, but a single person's 102-ton trash legacy will require the equivalent of 1,100 graves.*"

⁵ http://articles.orlandosentinel.com/1990-07-29/news/9007290361_1_barge-garbage-islip

⁶ "This calculation is derived from the most recent and most accurate data on America's annual municipal waste generation, the biannual study by Columbia University and the journal BioCycle, which put the nation's trash total at 389.5 million tons in 2008. The population of the country was put at 301 million that year by the U.S. Census, which yields a daily waste generation amount of 7.1 pounds per day."

Humes goes on to state, “Americans have ‘won’ the world trash derby without really trying, making 50 percent more garbage per person than other Western economies with similar standards of living (Germany, Austria and Denmark, among others), and about double the trash output of the Japanese.”



The Rubbish Map- Jun 7th 2012, 15:51 by The Economist online

A more recent calculation in 2012, illustrated above by The Economist, would put the U.S. at 5.5 pound per person per day, a reduction of 1.6 pounds since 2008. As discussed in the Background section above, Marin County has achieved a much greater reduction than the national average, showing 3.8 pounds per person for 2011.⁷ Several factors contributed to the changes in volume of trash headed to landfills:

- Prior to about 1960, Garbage haulers were known as scavengers because they sorted through the trash and removed bottles, cans, rags, etc. for recycling. With

⁷ This calculation is based on JPA data using 2011 Marin County population of 253,512 and 175,810 tons of Marin County waste equaling 0.6935 tons equaling 1,387 pounds per person per year, or 3.8 pounds per person per day.

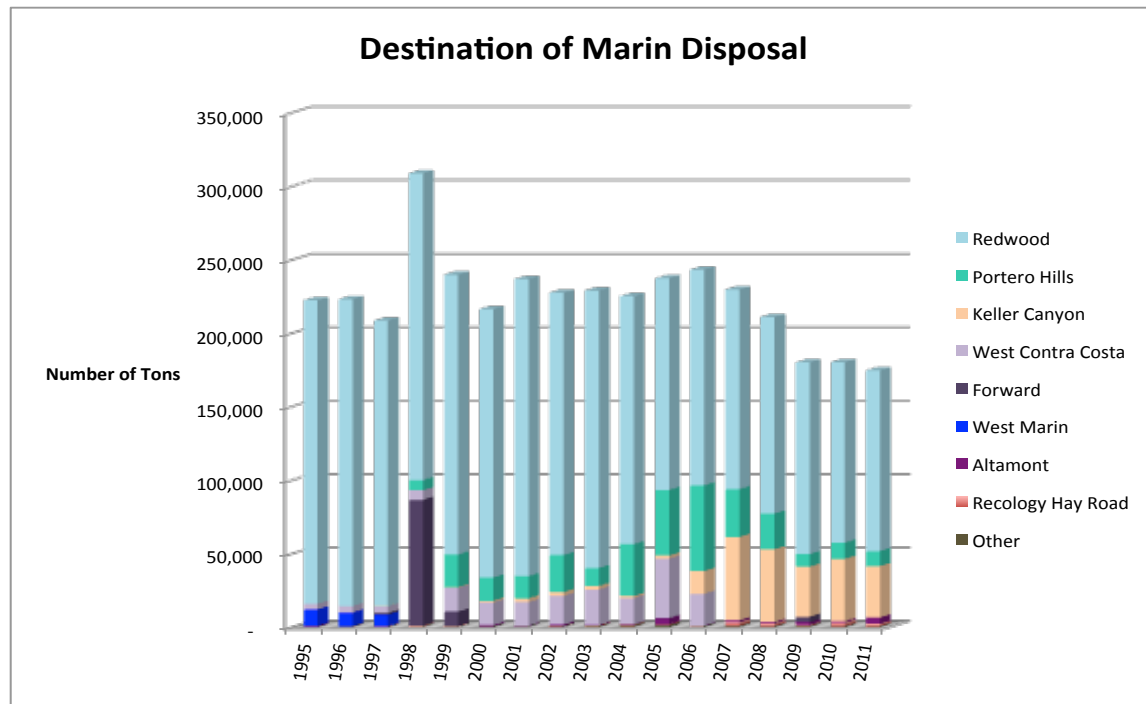
the advent of the compacting garbage truck, this was no longer possible, and everything ended up in the landfill.

- As a result of The Clean Air Act of 1970, the backyard incinerator was banned.

Marin County's awareness of the need to divert tonnage going to the landfill began even before the advent of AB 939 in 1989. Curbside recycling was instituted in the mid-'80's with bottles, cans, paper and cardboard, then progressed to green waste and household food waste and now, mandatory commercial recycling,⁸ including commercial food waste.

A certain amount of the reduction in waste tonnage can be attributed to the recent economic downturn. However, the Marin JPA's policies and procedures, outlined in a 2009 Zero Waste Feasibility Study, prepared by R3 Consulting Group, have set the County on a course for reaching the desired 94% recovery rate. Exhibit 1 illustrates the 27% decline in Marin County tons disposed between 1995 through 2011. Destination of disposal is determined by the landfill contracts negotiated by the local haulers. Most of Southern Marin's waste is taken to out-of-county landfills.

Exhibit 1



California Department of Resources Recycling and Recovery (CalRecycle)
Disposal Reporting System (DRS)

⁸ "With the passage of Assembly Bill (AB) 341, businesses and public entities that generate four cubic yards or more of waste per week and multifamily units of five or more are required to recycle. Businesses are required to recycle on and after July 1, 2012."

Determining Landfill Life

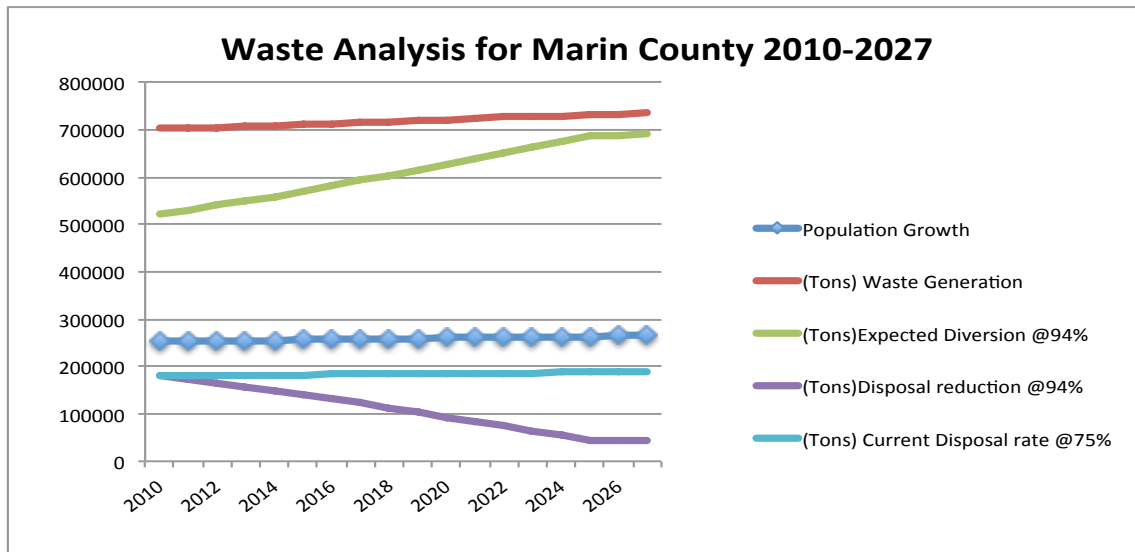
Of major concern to the JPA is the potential impact if the pending appeal of the NO WETLANDS lawsuit is denied and RLI has to revert to its 1995 PERMIT. The JPA, along with the LEA, monitors the anticipated "site life" of the landfill as part of statutory and regulatory requirements.⁹ One requirement is the siting of a new landfill if there is less than 15 years of site life.

As of March 2012, under the 1995 PERMIT, RLI has available capacity for another 2.2 million cubic yards (CY). Between April 2011 and March 2012 RLI took in 263,000 CY, or about 231,500 tons of Municipal Solid Waste (MSW), meaning that at the current rate, which is one-half of their allowed yearly capacity, the landfill will reach capacity in 2020-2022, or a little more than 7-9 years from now. This means that the County would need to immediately look for alternate disposal sites.

The JPA retained Environmental Science Associates (ESA) to prepare an analysis of the landfill's site life in 2012. Their analysis, based on the 2008 PERMIT, and the County's achievement of 94% diversion rate by 2025, concluded that there would be 3.1 million tons or 3.5 million CY of capacity remaining in RLI by 2027 (15 years).¹⁰

In the study prepared by ESA, many factors were used to determine the landfill closure scenarios, including expected population growth, waste generation, diversion at expected 94%, disposal reduction at 94% diversion and disposal at current 75% diversion. Exhibit 2 illustrates the expected results.

Exhibit 2



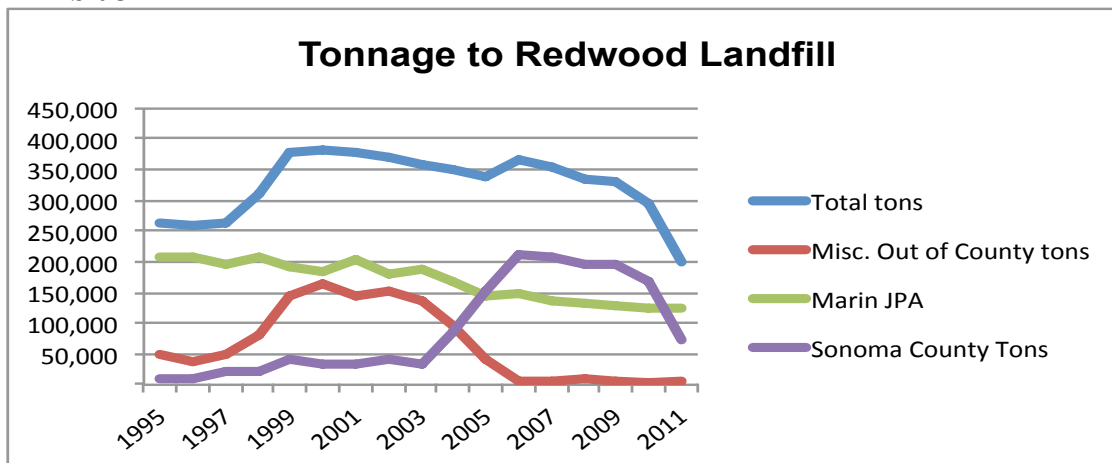
Prepared by ESA for the Marin County Hazardous and Solid Waste Management Joint Powers Authority 2/09/12

⁹ PRC Sections 41700-41721.5 and 14CCR Section 18755-18756.7 -See Appendix B

¹⁰ County Counsel has advised the JPA that RLI should operate under the 2008 PERMIT until the appeal is heard.

Since early 2000, the total tonnage going to RLI has diminished, particularly during recent years. As shown in Exhibit 3 below, there was a spike in disposal at RLI in 2005 when the Sonoma County Landfill reached capacity. In 2011, the Sonoma County landfill reopened, reducing the MSW going to RLI.

Exhibit 3



California Department of Resources Recycling and Recovery (CalRecycle)
Disposal Reporting System (DRS)

Note: above chart excludes "Alternate Daily Cover" (ADC), which amounted to 31,234 tons in 2011

If RLI prevails in the appeal, the allowable capacity under the 2008 PERMIT would leave nearly 9.3 million CY of capacity or a closure date of approximately 2049, based on the current rate of disposal. If the landfill's maximum fill rate is attained each year, then the landfill would reach capacity in 2032.

Exhibit 4 represents the year the maximum landfill capacity will be reached under the 1995 permit and under the 2008 permit with three scenarios: 1) maximum allowed fill rate per year, 2) current fill rate per year, and 3) fill rate if 94% diversion is attained.

What the Exhibit clearly illustrates is that our one landfill, despite all interventions, has a finite life, based on its current usage.

Exhibit 4

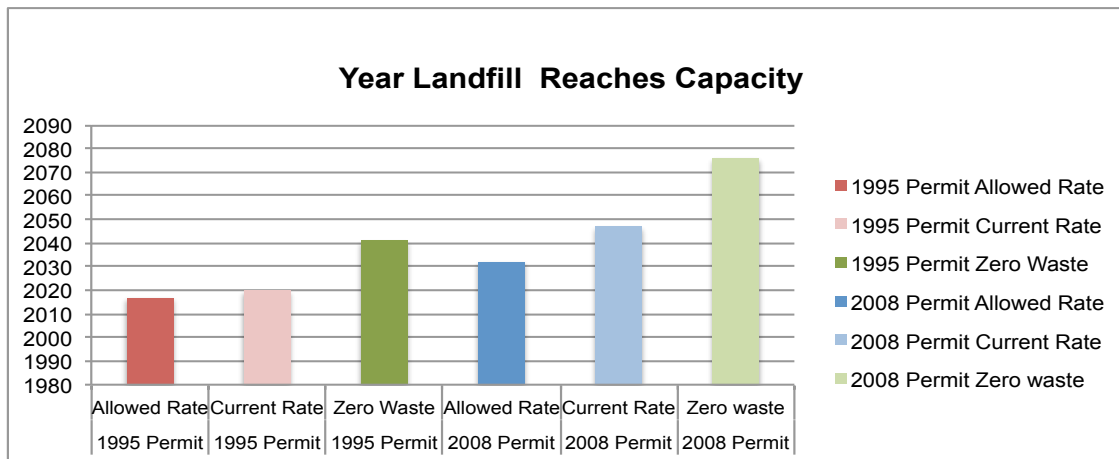


Table prepared from data shown in the ESA study and Redwood landfill statistics

Comparing 1995 PERMIT vs. 2008 PERMIT

In 2003, 180 acres of the original 600-acre site were restored to wetland status in partnership with the Marin Audubon Society. The 1995 PERMIT permitted footprint covers 210 acres of the remaining 420 acres and limits the total landfill capacity to 19,000,000 CY, which will be reached within the next 7-9 years at current rates. Of major concern to the NO WETLANDS group is the fact that the Petaluma River Estuary and Marsh surround the landfill on three sides. Although RLI has made significant improvements to levees to control leachate,¹¹ NO WETLANDS believes there is still a major threat of leakage into the estuary if there is a 100-year flood or an earthquake.¹² The 1995 PERMIT does not address waste diversion programs, which RLI wants to implement, nor does it address the issues raised by NO WETLANDS.

The 2008 PERMIT expands the capacity to 26,077,000 CY and limits the permitted area to 222.5 acres for disposal and 7 acres for composting. Extending the slope of the landfill mound (see illustration below) rather than adding to the footprint while maintaining the current maximum elevation will achieve the pertinent disposal expansion requirements.



As stated previously, over 10 years were spent developing the 2008 PERMIT with many adjustments and concessions on the part of RLI. The LEA's requested changes to the permit request, - "Mitigated Alternatives", are outlined in the 2008 approved EIR¹³.

¹¹ **Leachate** is any liquid that, in passing through matter, extracts solutes, suspended solids or any other component of the material through which it has passed. Leachate is a widely used term in the [environmental sciences](#) where it has the specific meaning of a liquid that has dissolved or entrained environmentally harmful substances, which may then enter the environment. It is most commonly used in the context of land-filling of putrescible or industrial waste. <http://en.wikipedia.org/wiki/Leachate>

¹² Bruce Baum, chairman of No Wetlands Landfill Expansion's board of directors, said, "*Our concerns continue around the lack of a liner and inadequate levees.*"

Marin judge finalizes ruling voiding new permit for Redwood Landfill *Richard Halstead Marin Independent Journal*

¹³ The fundamental basis for the Mitigated Alternative is stated in the description of this alternative on page 5-31 of the FEIR: [Under the Mitigated Alternative,] Redwood Landfill would shift its emphasis from waste disposal to material and energy recovery. Instead of placing emphasis on increasing waste disposal capacity, Redwood Landfill would develop processes and methods aimed at increasing diversion of materials from landfill, and increasing energy production at the site. This would result in several benefits, including preservation of landfill capacity; increasing diversion and reducing landfilling of wastes in this environmentally sensitive location; reducing the need for certain project mitigation measures described in the analysis; providing justification for Overriding Considerations for significant unavoidable impacts of the project; helping to counterbalance or avoid altogether the significant unavoidable effects of the proposed project; maximizing consistency with County Integrated Waste Management Plan policies and County energy policies; and providing long-term protection of the environment in accordance with California Public Resources Code (PRC) § 440127.

Looking at the Global Warming Potential - Net Emissions less offset, the mitigations result in a reduction of nearly 2.2 million Mg eCO₂ (greenhouse gas emissions) or a reduction of 33.4 % between 1998 through 2098.¹⁴ It should be noted that when the landfill does reach capacity and is closed, RLI is required to maintain the site for at least 30 additional years and must set aside funds for the post-closure maintenance, which includes monitoring greenhouse gas emissions. The Mitigated Alternatives also meet the requirements of the Marin County Greenhouse Gas Reduction Plan - October 2006. The final EIR dated March 2008, including responses to comments, contains 558 pages. The report includes in-depth discussions of greenhouse gas emissions, leachate control, traffic, landfill slope, and revised flood mitigation.

In the December 11, 2012 Superior Court ruling, Judge Duryee found that the 2008 EIR inadequately discussed the following:

- Cumulative effect of the Project's greenhouse gas emissions.
- The possible increased *non-cancer* health impacts from air pollutant emissions.
- Mitigation measures to reduce the impact to the Project from potential flooding and groundwater contamination.
- An alternate off-site location.

The following is taken from Will Landfill Expansion be Scrapped? Dated December 20, 2012 in the Pacific Sun, "*Rebecca Ng, deputy director of county environmental health services and the county's solid waste supervisor, says the lawsuit is the cause of stopping many protections from going into effect. In her role with environmental health services, she is the head of the LEA. The environmental report includes '60 pages plus of mitigation measures' that will not go into effect if the report gets tossed and the permit rescinded. With Judge Duryee's ruling, says Ng, the landfill will fall back to its 1995 solid-waste facilities permit. And the mitigation measures targeting greenhouse gas emissions, building a resource recovery center and a gas-to-energy plant also will fall away. 'We think the solid waste facilities permit that was issued in 2008 is far superior in terms of protecting the environment.' Ng says the county is trying to get those projects through a separate environmental review track so they might proceed.*"

A February 15, 2013 article in the Petaluma Patch entitled Landfill at Edge of Bay Pits Environmentalists against Waste Hauler, states:

"Waste Management has appealed the ruling and says opponents simply want to export their garbage out of the area.

'This is a highly regulated site with a lot of reporting and a lot of verification going on every single day,' said Osha Meserve, an attorney representing Waste Management. 'The fears that have been expressed by the petitioners are just that, they are not founded on any fact and we think they are probably based more on NIMBYism in that they would rather see their waste go to other locations than keep the waste locally.'

¹⁴ Mg=Million grams (1 million grams=1 metric ton) eCO₂= carbon dioxide equivalent

The landfill is working to bring down its greenhouse gas emissions to pre-1990 standards and has two levees that can be raised as needed, according to Meserve. And there is no alternate site for the garbage, meaning it would have to be trucked to another county, increasing emissions and possibly rates.

Dan North is the district manager at Redwood and says the landfill has worked hard to create an operation tailored to the green future Marin leaders have envisioned. ‘The county has set forth a zero waste goal by 2025 and we need to support that goal,’ he said. ‘So it’s not just about the expansion of the landfill, which is a service that is demanded by our customers, but it’s also augmenting it with more recycling and more diversion.’

But opponents insist another site be found. They say Waste Management has plans to take in garbage from beyond Marin and Sonoma counties and is luring business by keeping prices low. They also point out that the landfill is surrounded by levees on three sides and that there are former stream channels underneath that make it easy for groundwater to get contaminated during high tides.

‘Plenty of Marin County residents drive Priuses and profess to be environmentalists,’ said Brent Newell, the attorney for the group opposing the expansion. ‘There is no reason they shouldn’t support to pay a couple of dollars more for the proper handling of their garbage.’”

The Grand Jury is not in a position to argue for or against the ruling. However, we do believe that Marin County citizens should be responsible for their own waste and not haul it to a landfill outside of Marin, thereby making it another county’s problem.

There are three very critical aspects to the issue:

1. If the appeal is lost, RLI could close the landfill when it reaches its 1995 PERMIT capacity.
2. If RLI is nearing the 1995 PERMIT capacity, RLI may feel that they will not recover the costs of their proposed resource recovery capital expenditures. If no further 2008 PERMIT capital expenditures are made:
 - Marin loses the opportunity to have a WTE plant and RLI will simply continue to flare the landfill methane
 - Marin may lose expanded composting operations, which would change from the current windrow composting operation to Covered Aerated Static Pile (CASP) Composting. A CASP is designed to reduce methane production and volatile organic compound emissions as much as possible. This process could achieve up to an 80% reduction in emissions when compared to the current process
 - RLI will not build a proposed Reuse Center (Reusable items diverted from the scale house to charity)

- A C&D recovery operation may be lost
3. Marin's carbon footprint will increase and rates may also be raised if our waste is hauled to more distant landfills.

All of the above remains unknown until the outcome of the appeal is heard sometime next year, and until we know RLI's response if the appeal is denied. The Grand Jury hopes that RLI will continue to enhance its operations in Marin County regardless of the outcome.

Successful Diversion Alternatives

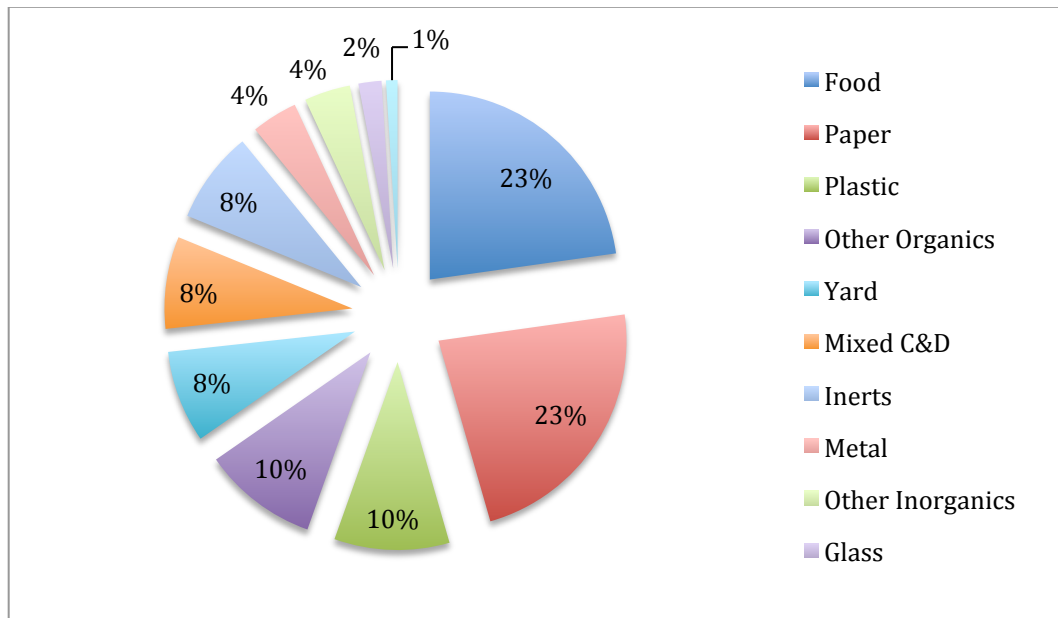
What we do know is that a currently operating landfill gas-to-energy plant is successful. The Ox Mountain Landfill in Half Moon Bay is one of California's largest renewable energy projects having a landfill gas-to-energy station that is supplying 11% of the energy needs for the City of Alameda and is projected to supply 4% of the energy needs of Palo Alto.¹⁵ We also know that Marin Clean Energy would be very willing to purchase the energy output from RLI's proposed landfill gas-to-energy project at appropriate financial terms, which can provide renewable energy to at least 6,000 Marin County homes.

Marin County has had an exemplary record for achieving waste diversion from the landfill - reaching 75% diversion in 2011 and the expectation of reaching 80% at the end of 2012. The JPA has promoted many new programs to enhance recovery in an effort to meet or exceed the stated goal of 94% diversion by 2025. These include not only the recovery of household food waste, but now mandatory commercial recycling, including commercial food waste.

A 2009 Zero Waste Feasibility Study, prepared by R3 Consulting Group, recommended that the *"Down-stream programs include increasing the types of materials collected by haulers (e.g., food), revising franchise agreements and ordinances to reflect industry standards and establish waste reduction and diversion requirements, implement food waste digestion and composting, etc.... Approximately 56 percent or 128,000 tons of food, yard, organic waste, inerts, and mixed C&D were disposed at landfill. In order to meet the Zero Waste Goals, reduction and processing of these targeted materials is critical. However, currently there is insufficient capacity for the facilities located within the County to process these materials and it may be necessary to transport these materials to out-of-county facilities."*

Exhibit 5 breaks out the various components of waste disposed by percentages.

¹⁵ <http://www.environmentalisteveryday.org/solid-waste-management/green-waste-industry-professionals/Alameda-housing.php>

Exhibit 5**Figure ES-1-Materials Disposed- 2009 Zero Waste Feasibility Study**

In addition to the potential for providing sustainable methane gas-to-energy for approximately 6,000-8,000 homes, RLI can play a vital role in helping to achieve the diversion goal if they continue with plans for an expanded composting operation, complete a C & D processing line, and possibly install an anaerobic digestion system to convert food waste to energy.

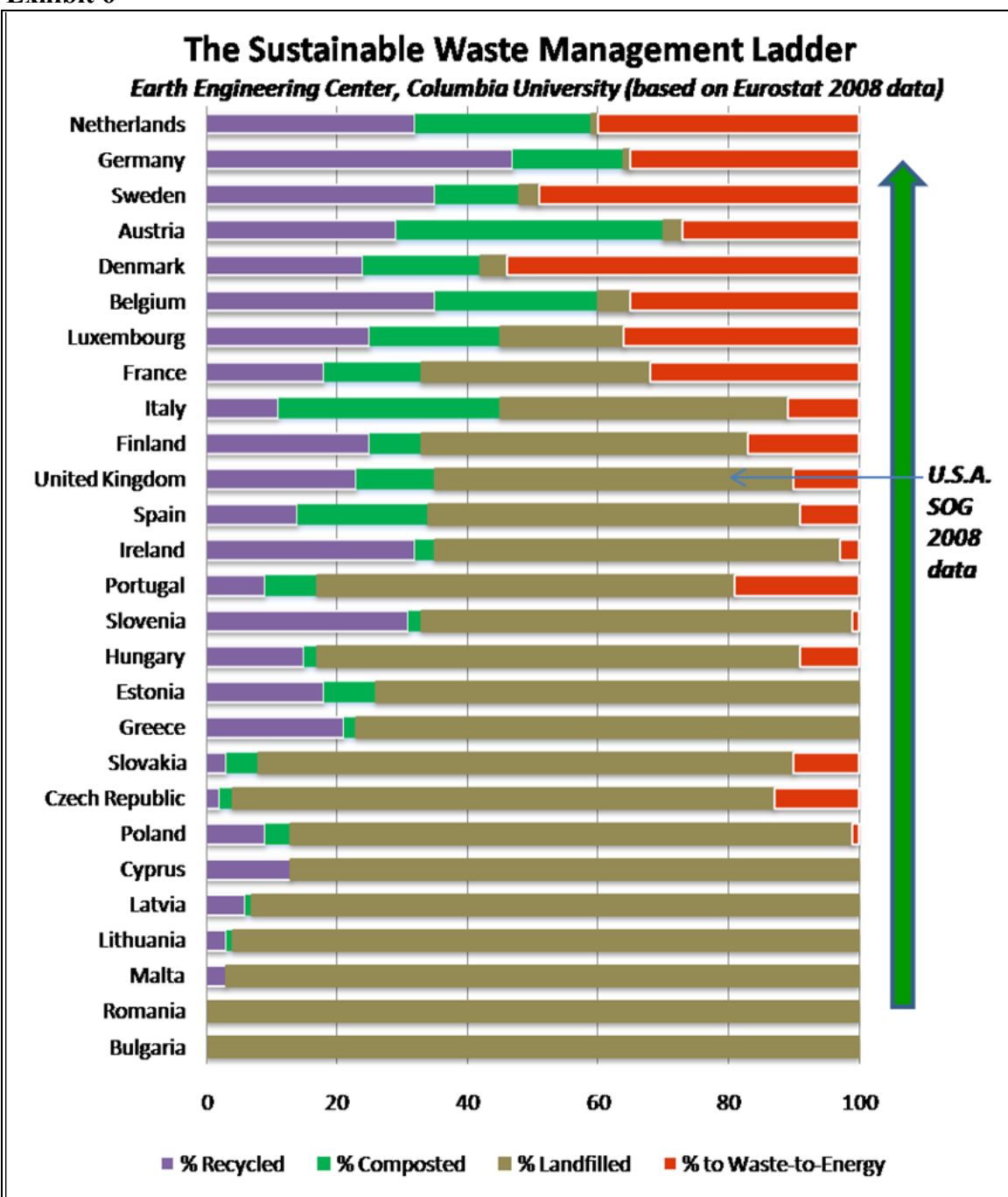
The JPA has encouraged and endorsed the Marin Sanitary Service/ Central Marin Sanitation District's Anaerobic Digestion system, called the Food to Energy (F2E) program. This program is designed to divert commercial food waste but may be expanded to include residential food waste once the public has accepted the concept. (See Appendix C)

Further Diversion Alternatives

To understand further diversion possibilities, the Grand Jury has researched methods used in other countries, which include forms of waste incineration or plasma gasification of waste. There are many dissenters when the word "incineration" is used because the immediate vision is of smoke stacks spewing a toxic stew into the atmosphere. Another argument against this approach is that people will simply not recycle if given this option.

However, that is not necessarily the case. Exhibit 6 illustrates that many countries with substantial waste to energy programs, nevertheless continue to recycle a substantial portion of their waste.

Exhibit 6



The United States is about on par with the United Kingdom according to the above diagram. The Netherlands and Germany lead the way with less than 2% of their waste being landfilled. Denmark is highly advanced in its use of waste for energy. Using Copenhagen as an example, Edward Humes states,¹⁶ *“This city recycles trash at twice the U.S. average, its residents create less than half the household waste per capita, and the community philosophy holds that dealing with and solving the problem of trash must be a*

¹⁶ Excerpt From: Humes, Edward. “Garbology.” Avery, 2012-04-19. iBooks.

local concern, even a neighborhood concern. When it comes to waste, NIMBY (Not in My Backyard) is not a factor, as shipping trash off to some distant landfill—making it disappear for others to manage—is considered wasteful, costly and immoral. Not that such out-of-sight, out-of-mind garbage treatment is much of a consideration here: only 3 to 4 percent of this city’s waste ends up in landfills, compared to the U.S. average of 69 percent....And the secret sauce for that city and the entire nation of Denmark, at least on the waste disposal front, is its mastery of turning trash into a renewable energy source.

‘They are the model, along with Japan and a number of other countries in Europe,’ says Nickolas Themelis of Columbia University, America’s engineer-apostle of the untapped power of garbage. ‘They put these waste-to-energy plants right in their neighborhoods. They become part of the fabric of the community. There’s none of the fear and misinformation about waste energy that we have in the U.S. They are clean and efficient, and many of them are quite attractive. The people are proud of them.’ Denmark’s strategy has been to build trash-burning, power-generating plants on a relatively small scale. No behemoths burning 2,000, 5,000 or 10,000 tons of garbage a day, such as those proposed for Los Angeles in the seventies and eighties.”

Humes continues his argument that burning does not diminish recycling by stating “*The cities and nations that have made trash burning a key part of their energy and waste strategies—Denmark, Germany, Austria, Japan, the Netherlands—all have robust recycling programs that not only recycle as much as or more than the amount of trash that is burned, but they all also recycle at a much higher percentage than the U.S. has been able to accomplish. It’s the landfilling that diminishes when waste-to-energy becomes a strong option, not recycling. Germany, for instance, burns 34 percent of its municipal waste and it recycles the rest, an impressive 66 percent. That’s not just one super-green city, like San Francisco, but an entire country of 82 million people, the powerhouse economy of Europe. Almost none of its municipal waste gets landfilled.*”

Most WTE opponents assume that only massive, expensive, utility-scale trash power plants can be used to produce energy. Currently there are 86 facilities in the United States for the combustion of MSW, all of which were built prior to 1995.¹⁷ There are three WTE plants in California. Two are in Southern California; Long Beach and Commerce, and the other is in Stanislaus County. The Stanislaus Resource Recovery Facility began commercial operation in January 1989. This Waste-to-Energy facility, operating as Covanta Stanislaus, processes 800 tons per day of solid waste, which generates up to 22.5 megawatts of renewable energy that is sold to Pacific Gas and Electric Company.¹⁸ But the less costly, community-based plants that Denmark is using are the most successful use of the WTE technology right now. For a description of the various forms of WTE technologies please refer to Appendix D.

Once the energy crisis of the 1980s was resolved in the United States, the public lost interest in the WTE technology. Interest has been revived as landfills reach capacity and newer methods of extracting energy from waste are being developed. One of the most

¹⁷ Energy Recovery from Waste/Municipal Solid Waste/ US EPA

¹⁸ <http://www.covantaenergy.com/en/facilities/facility-by-location/stanislaus.aspx>

promising is Plasma Gasification, which contains the waste in a sealed container, thus limiting environmental exposure. Please see Appendix E for a description of one form of Plasma Gasification. Other methods are being developed including Microwave Plasma Gasification.¹⁹ While these methods are still very expensive due to development costs, once the technology is perfected, and demand increases, costs will decrease and they will become viable alternatives to waste disposal.

Waste Management - owner of RLI - is well aware that as the newer waste diversion techniques become increasingly more affordable, landfills will become a thing of the past, and in their 2012 Sustainability report, C.E.O. David P. Steiner wrote: *"We are committed to finding the 'next big things' or even the small profitable things — that will relegate the landfill to the last resort for waste after all possible value has been extracted. We recognize that it takes time to develop the innovative technologies necessary to derive new uses for waste streams, and we are realistic about the challenge of finding the right innovations. That is why we have invested in a portfolio of more than 30 partnerships focused on alternative energy technologies. In this way, we function as venture capitalists for entrepreneurs looking for new ways to transform waste into useful products such as fuels and chemicals. As we work together, we gain insights from what fails as well as what succeeds"*

The Grand Jury urges the LEA, JPA, and the County Public Works Department to explore additional methods for keeping Marin County waste in the county including turning the 6% residual after diversion into energy and possibly achieve 100% landfill diversion. Our hope is that we will not have any Wasted Energy.

FINDINGS

- F1. Redwood Landfill's 2008 EIR is being challenged in court, thereby jeopardizing its 2008 Solid Waste Facility Permit, which has delayed the construction of the methane gas-to-energy plant and the Construction and Demolition sort line.
- F2. Redwood Landfill, as currently permitted, has a finite life and therefore, alternate methods of waste diversion need to be explored.
- F3. Waste-to-Energy Plants can be a solution to limited landfill space.
- F4. A portion of Marin County MSW is being sent to out-of-county landfills, increasing our carbon footprint and making our waste another county's problem.
- F5. Marin County waste disposal has diminished by over 27% since 1995 due to the passage of AB 939 in 1989 and public awareness.
- F6. Redwood Landfill has seen a waste reduction of 24% during the same time period as a result of less out-of-county disposal in the Marin landfill and the effects of diversion awareness.

¹⁹ <http://www.waste-management-world.com/articles/print/volume-12/issue-6/features/microwave-plasma-gasification-heats-up-in-the-us.html>

- F7. CalRecycle statistics prove that waste diversion in Marin County is much higher than the national average due to concerted efforts by the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) and local waste haulers to educate the public.

RECOMMENDATIONS

- R1. The Grand Jury recommends that the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) and Local Enforcement Agency (LEA) meet with Redwood Landfill as soon as feasibly possible to gain assurances that the landfill methane gas-to-energy plant will become a reality.
- R2. The Grand Jury recommends that the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) and Local Enforcement Agency (LEA) ensure that Redwood Landfill completes the Construction and Demolition sort line.
- R3. The Grand Jury recommends that the Marin County Public Works Department, Local Enforcement Agency (LEA) and Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) work with Redwood Landfill to ensure the building of an anaerobic digester for food waste, the energy from which can be added to the methane gas-to-energy plant.
- R4. The Grand Jury recommends that the Marin County Public Works Department, Local Enforcement Agency (LEA) and Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) work with Redwood Landfill to explore all options for minimizing future disposal through some cost effective, least polluting form of waste gasification, such as Microwave Plasma Gasification.
- R5. The Grand Jury recommends that Local Jurisdictions holding MSW franchise agreements mandate, through revisions to the agreements, that haulers dispose of all MSW generated in Marin County in Marin County.

REQUEST FOR RESPONSES

Pursuant to Penal code section 933.05, the grand jury requests responses as follows:

From the following individuals:

- Operations Manager, Redwood Landfill Inc. to Findings F1-F4 and F6 and all Recommendations.
- Deputy Director, Environmental Health Services-Community Development Environmental Health Services Administration to Findings F1-F6 and all Recommendations.
- Director, Department of Public Works, to Findings F1-F4 and Recommendations R3 & R4.
- Deputy Director, Department of Public Works - Waste Management to All Findings and Recommendations.

- Program Manager Department of Public Works-Waste Management Division to All Findings and Recommendations.

From the following governing bodies:

- The Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) to all Findings and Recommendations.
- County Counsel to Finding F1 and Recommendation R4 & R5
- Board of Supervisors to Finding F2-F4 and all Recommendations
- Marin Energy Authority to Recommendations R 1, R3 & R4
- The City Council, City of San Rafael to Recommendation R 5
- The Town Council, Town of Ross to Recommendation R 5
- The City Council, City of Larkspur to Recommendation R 5
- The City Council, City of Sausalito to Recommendation R 5
- The Town Council, Town of Tiburon to Recommendation R 5
- The City Council, City of Belvedere to Recommendation R 5
- The City Council, City of Novato to Recommendation R 5
- The Town Council, Town of Corte Madera to Recommendation R 5
- The City Council, City of Mill Valley to Recommendation R 5
- The Town Council, Town of San Anselmo to Recommendation R 5
- The Town Council, Town of Fairfax to Recommendation R 5

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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- <http://www.covantaenergy.com/en/facilities/facility-by-location/stanislaus.aspx>
- <http://www.environmentalistseveryday.org/solid-waste-management/green-waste-industry-professionals/Alameda-housing.php>
- <http://www.nytimes.com/2012/09/11/science/plasma-gasification-raises-hopes-of-clean-energy-from-garbage.html>
- <http://www.waste-management-world.com/articles/print/volume-12/issue-6/features/microwave-plasma-gasification-heats-up-in-the-us.html>
- *Is It Better To Burn or Bury Waste for Clean Electricity Generation?* P. Ozge Kaplan, Joseph DeCarolis, and Susan Thorneloe VOL. 43, NO. 6, 2009 / ENVIRONMENTAL SCIENCE & TECHNOLOGY 9 1711
- *Landfill at Edge of Bay Pits Environmentalists against Waste Hauler*, Petaluma Patch, February 15, 2013.
- No Wetlands Landfill Expansion et al., vs. County of Marin et al.- First Appellate Court District Division Four #A131651 filed 3/20/12
- No Wetlands Landfill Expansion et al., vs. County of Marin et al.- Superior Court of Marin, Case No: CV090198 RULING 12/11/12
- *Per Capita Disposal and Goal Measurement (2007 and Later)*- <http://www.calrecycle.ca.gov/lgcentral/Basics/PerCapitaDsp.htm>
- Redwood Landfill, Solid Waste Facility Permit: December 18, 2008
- Redwood Landfill Final Environmental Impact Report – Response to Comments Amendment ESA/ March 2008
- Siedman, Peter. *Will Landfill Expansion be Scrapped?* Pacific Sun, December 20, 2012
- The History of the California Environmental Protection Agency- <http://www.calepa.ca.gov/about/history01/ciwmb.htm>
- *The State of Garbage in America*, BioCycle, October, 2010
- <http://zerowastemarin.org/the-2025-goal/our-mission/>

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury.

GLOSSARY

C & D - Construction and Demolition

CY - Cubic Yard

EIR-Environmental Impact Report

EPA- Environmental Protection Agency

ESA - Environmental Science Associates

LEA – Local Enforcement Agency (See Appendix A for full definition)

JPA – Marin Hazardous and Solid Waste JPA (Joint Powers Authority)

MSW – Municipal Solid Waste

PERMIT – Solid Waste Facility Permit

RLI – Redwood Landfill Inc.

WM – Waste Management Inc.

WTE- WASTE-TO-ENERGY

APPENDIX A

Solid Waste Local Enforcement Agency (LEA) Duties and Responsibilities of the LEA

Summary of Duties and Responsibilities specific to the Marin County LEA

1. Routine Landfill Inspections
There are two landfills in Marin County, which are inspected at least monthly.
2. Routine Transfer Station/Materials Recovery Facility Inspections
Marin Sanitary Service's transfer station and resource recovery building are inspected monthly.
3. Closed Landfill Inspection
The LEA is required by current regulations to perform quarterly inspections at the 14 closed landfills in Marin County
4. Abandoned Site Inspections
Abandoned sites are required to be inspected quarterly. There are no known abandoned sites in Marin County.
5. Illegal Site Inspections
The LEA is responsible for investigation of alleged illegal dumping sites. Confirmed illegal sites are required by regulation to be inspected monthly depending abatement by enforcement action. Currently, there is one known illegal site, which has been referred to the County Counsel.
6. Compost Facility Inspections
The LEA performs monthly inspections of the Redwood Landfill Biosolids Compost Facility.
7. Sites Exempted Pursuant to 27 CCR 21565
Exempted sites shall be inspected quarterly. Currently no exemptions exist within Marin County.
8. Facility Complaint Inspections
If a complaint cannot be resolved off-site, the LEA will respond by inspection
9. Demonstration Projects
When a landfill operator proposes to use an alternative daily cover (ADC) for refuse not within one of the categories listed in 27 CCR 20690(b)(1-10), or an ADC material from one of the above categories, but used differently than specified in the aforementioned section, a site-specific demonstration project must be conducted. In such instances, the LEA may require that the project be subject to performance standards, as specified in 27 CCR 20695. Sites operating under performance standards are inspected by the LEA on a weekly basis.
10. Refuse Collection Vehicle Inspections
There are ten recognized refuse collection service operators in Marin County responsible for approximately 105 collection vehicles. The LEA performs annual inspections of each vehicle.

11. Non-Facility Complaint Inspections

Complaints regarding the storage, handling or disposal of solid waste at undeveloped properties, non-food related businesses, and residences other than multiple-family dwellings are investigated by the LEA.

12. Permits

The LEA evaluates, writes and processes new solid waste facility permits and revisions of existing permits in coordination with the CIWMB. New permits are required for facilities that have never operated, facilities which did not previously required a solid waste facility permit, or facilities with a new operator. After issuance, a permit is required to be reviewed every five years. This is also done by the LEA, in conjunction with the CIWMB.

A permit revision is required whenever a change in the design or operation of a facility is proposed that has potential for resulting in a physical change to the environment directly or ultimately. A revised permit must be reviewed by the LEA within five years of reassurance.

13. Permit Exemptions

The LEA reviews applications and documentation to determine if proposed solid waste facilities can be exempted pursuant to 27 CCR 21565. A staff report is generated and LEA staff facilitates a public hearing.

14. CEQA Process

The LEA reviews applications for solid waste facility permits or exemptions for completeness and accuracy. During the review, California Environmental Quality Act (CEQA) compliance must be assessed and if the project is not exempt, an Environmental Impact Report (EIR) may be required. In such cases, the LEA often acts as the lead agency for the EIR.

APPENDIX B

Siting Element References

Cal. Pub. Res. Code § 41701.

Each countywide siting element and revision thereto shall include, but is not limited to, all of the following:

- (a) A statement of goals and policies for the environmentally safe transformation or disposal of solid waste that cannot be reduced, recycled, or composted.
- (b) An estimate of the total transformation or disposal capacity in cubic yards that will be needed for a 15-year period to safely handle solid wastes generated with the county that cannot be reduced, recycled, or composted.
- (c) The remaining combined capacity of existing solid waste transformation or disposal facilities existing at the time of the preparation of the siting element, or revision thereto, in cubic yards and years.
- (d) The identification of an area or areas for the location of new solid waste transformation or disposal facilities, or the expansion of existing facilities, that are consistent with the applicable city or county general plan, if the county determines that existing capacity will be exhausted within 15 years or additional capacity is desired.
- (e) For countywide elements submitted or revised on or after January 1, 2003, a description of the actions taken by the city or county to solicit public participation by the affected communities, including, but not limited to, minority and low-income populations.

Section 18744. Facility Capacity Component.

(a) For the initial SRRE the Solid Waste Facility Capacity Component shall identify and describe all existing permitted solid waste landfills and transformation facilities within the jurisdiction. This description shall contain the following:

- (1) identification of the owner and operator of each permitted solid waste disposal facility;
- (2) quantity and waste types of solid waste disposed;
- (3) permitted site acreage;
- (4) permitted capacity;
- (5) current disposal fees; and
- (6) for solid waste landfills, remaining facility capacity in cubic yards and years.

(b) The Solid Waste Facility Capacity Component shall include a solid waste disposal facility needs projection which estimates the additional disposal capacity, in cubic yards per year, needed to accommodate anticipated solid waste generation within the jurisdiction for a 15-year period commencing in 1991.

(1) The solid waste disposal facility capacity needs projection for the initial SRRE shall be calculated based upon the solid waste generation projection conducted in accordance with section 18722, of Article 6.1 of this Chapter.

(2) The disposal capacity needs projection for the 15 year period shall be calculated using the following equation:

ADDITIONAL CAPACITY Year

$$n = [(G + I) - (D + TC + LF + E)] \text{Year } n$$

where:

G = The amount of solid waste projected to be generated in the jurisdiction;

I = The amount of solid waste which is expected to be imported to the jurisdiction for disposal in permitted solid waste disposal facilities through interjurisdictional agreement(s) with other cities or counties, or through agreements with solid waste enterprises, as defined in section 40193 of the Public Resources Code.

D = The amount diverted through successful implementation of proposed source reduction, recycling, and composting programs.

TC = The amount of volume reduction occurring through available, permitted transformation facilities.

LF = The amount of permitted solid waste disposal capacity which is available for disposal in the jurisdiction, of solid waste generated in the jurisdiction.

E = The amount of solid waste generated in the jurisdiction which is exported to solid waste disposal facilities through interjurisdictional agreement(s) with other cities, counties or states, or through agreements with solid waste enterprises, as defined in section 40193 of the Public Resources Code.

n = each year of a 15 year period commencing in 1991. [iterative in one year increments]

(c) The Solid Waste Facility Capacity Component shall include discussions of:

- (1) The solid waste disposal facilities within the jurisdiction which will be phased out or closed during the short-term and medium-term planning periods and the anticipated effect from such phase-out or closure on disposal capacity needs of the jurisdiction.
- (2) Plans to establish new or expanded facilities for the short-term and medium-term planning periods and the projected additional capacity of each new or expanded facility.
- (3) Plans to export waste to another jurisdiction for the short-term and medium-term planning periods and the projected additional capacity of proposed export agreements.

Note:

Authority cited:

Section 40502 of the Public Resources Code.

Reference:

Sections 41260, 41460 and 41821 of the Public Resources Code.

Section 18788. Five-Year Review and Revision of the Countywide or Regional Agency Integrated Waste Management Plan.

APPENDIX C



APPENDIX D

The follow describes the methods used to turn various types of waste into energy:

THERMAL TECHNOLOGIES

Gasification—uses heat, pressure and steam to convert organic or fossil-based materials directly into a gas composed mainly of carbon monoxide, hydrogen and carbon dioxide, otherwise known as syngas. Typical raw materials used in gasification are coal, petroleum-based and organic materials. The technology requires an energy source to generate heat and to begin processing. Hydrocarbon buildup, a main contributor to plant failures, is a significant problem. In addition, the cost of requirements to operate the plant has made it commercially unviable.

Microwave Plasma Gasification- plasmatron guns are strategically pointed to saturate matter with microwaves at an angle, creating an efficient vortex flow that starts the gasification process at the core, making this a more effective process. In addition, the microwave plasma gasification reactor does not react violently with any material as feedstock, and it is not as sensitive to moisture as other technologies are. For this and many other reasons, microwaves gasification can be considered as the leading emerging technology in the waste to energy field.²⁰

Pyrolysis—burns wet MSW in an oxygen and water free environment and generates substantial amounts of condensable hydrocarbons, which make operating the plant difficult and inefficient. The solids resulting from pyrolysis are highly contaminated and need further treatment. The additional process requires more energy than the original pyrolysis procedure.

Plasma Arc Gasification—uses electricity passed through graphite or carbon electrodes to convert organic materials to syngas; inorganic materials are converted to solid slag. Main disadvantages include large initial investment costs relative to current landfills, large electrical energy input, frequent maintenance of the highly corrosive plasma flame and highly toxic waste water. There are no tars or furans. At extremely high temperatures all metals become molten and flow out the bottom of the reactor. Inorganics such as silica, soil, concrete, glass, gravel, etc. are vitrified into glass and flow out the bottom of the reactor. There is no ash remaining to go back to a landfill –See Appendix E

Thermal Depolymerization—uses waste plastic, tires, wood pulp, medical waste, turkey offal and sewerage sludge to produce crude oil products as kerosene, naphtha and light crude oil. Methane, an additional byproduct, is collected and used to power turbine generators that produce electricity either for the facility or for resale.

²⁰ <http://www.linkedin.com/groups/Microwave-plasma-gasification-vs-other-1978778.S.95759190>

NON-THERMAL TECHNOLOGIES

Fermentation production—uses waste cellulose or organic material to create ethanol for use in motor vehicles. The fermentation process is the same general procedure used to make wine.

Esterification—uses recycled vegetable oil, virgin oil and/or tallow to create biodiesel. The recycled oil is processed to remove impurities and virgin oil is refined. The amount of oil in the feedstock and the transportation distance determine the effectiveness of the technology.

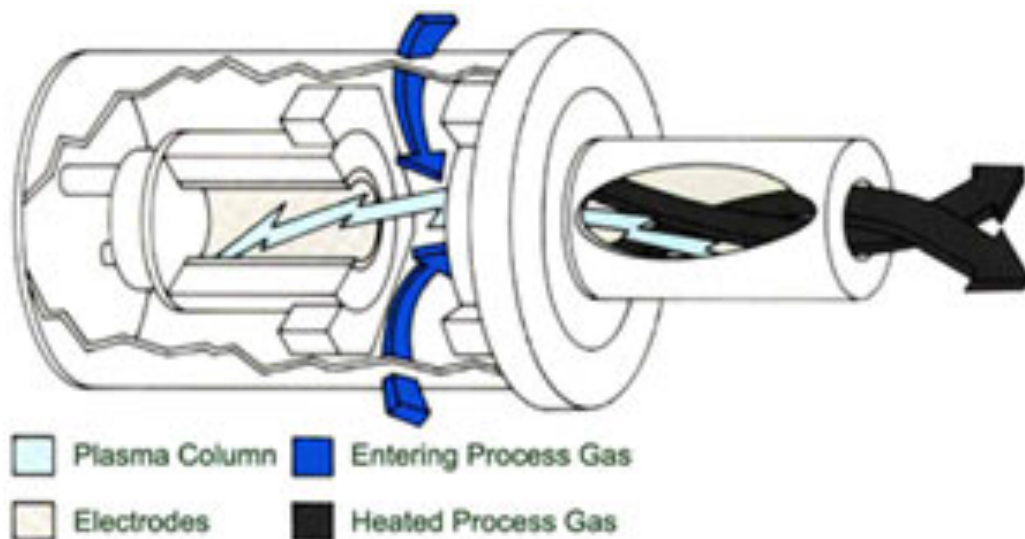
Anaerobic Digestion—uses bacteria to break down food waste and release methane gas as a byproduct that can be used for electricity/energy generation. The organic residue can be used as a soil amendment.

APPENDIX E

DISCUSSION ON PLASMA GASIFICATION

Plasma gasification is the gasification of matter in an oxygen-starved environment to decompose waste material into its basic molecular structure. Plasma gasification does not combust the waste as incinerators do. It converts the organic waste into a fuel gas that still contains all the chemical and heat energy from the waste. It converts the inorganic waste into an inert vitrified glass.

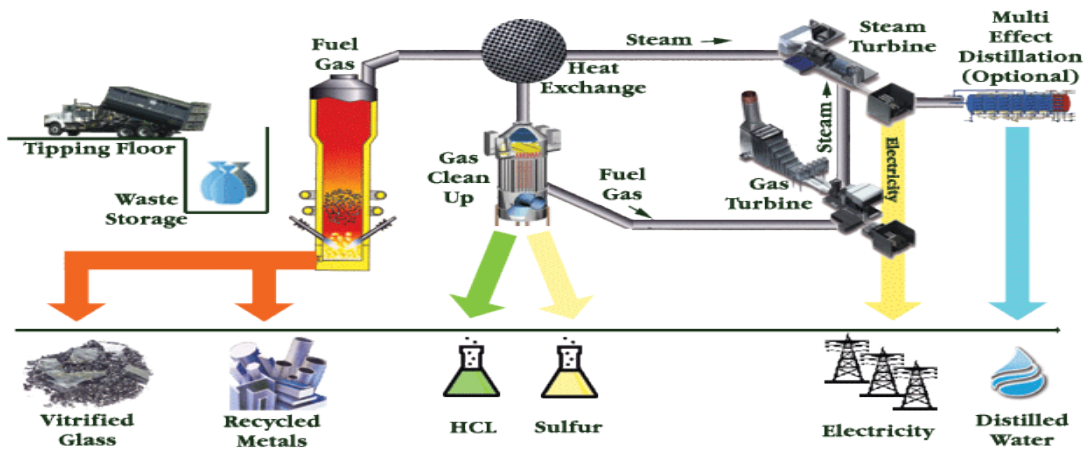
Plasma is considered a 4th state. Electricity is fed to a torch, which has two electrodes, creating an arc. Inert gas is passed through the arc, heating the process gas to internal temperatures as high as 25,000 degrees Fahrenheit. The following diagram illustrates how the plasma torch operates.



The temperature a few feet from the torch can be as high as 5,000-8000° F. Because of these high temperatures the waste is completely destroyed and broken down into its basic elemental components. There are no tars or furans. At these high temperatures all metals become molten and flow out the bottom of the reactor. Inorganics such as silica, soil, concrete, glass, gravel, etc. are vitrified into glass and flow out the bottom of the reactor. There is no ash remaining to go back to a landfill.

PROCESS FLOW DIAGRAM- Plasma Gasification

http://recoveredenergy.com/d_plasma.html



MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere:
Mary Neilan

Date: July 18, 2013

Corte Madera:
David Bracken

To: JPA Board Members

County of Marin:
Matthew Hymel

From: Michael Frost, Executive Officer

Fairfax:
Garrett Toy

Re: JPA Response to Grand Jury Report – “Holding the Bag”

Larkspur:
Dan Schwarz

Attached is the Marin County Grand Jury’s “Holding the Bag” report which requires a response from the Marin County Hazardous and Solid Waste Management Joint Powers Authority.

Mill Valley:
Jim McCann

Also attached is a proposed response for the Board’s consideration.

Novato:
Michael Frank

Recommendation

Adoption of a motion authorizing and directing the Board Chair to tender the attached, proposed response to the Marin County Grand Jury’s “Holding the Bag” Report.

Ross:
Rob Braulik

Attachments.

San Anselmo:
Debbie Stutsman

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San Rafael:
Nancy Mackle

Sausalito:
Adam Politzer

Tiburon:
Margaret Curran

MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere:
Mary Neilan

July 18, 2013

Corte Madera:
David Bracken

The Honorable Judge James Ritchie
Marin County Superior Court
P.O. Box 4988
San Rafael, CA 94913-4988

Rich Treadgold, Foreperson
Marin County Grand Jury
3501 Civic Center Dr., Rm. 275
San Rafael, CA 94903

County of Marin:
Matthew Hymel

Fairfax:
Garret Toy

SUBJECT: Grand Jury Report – Holding the Bag

Larkspur:
Dan Schwarz

Dear Judge Ritchie and Foreperson Treadgold:

Mill Valley:
Jim McCann

Please find enclosed required responses to the Grand Jury Report – ‘Holding the Bag’ from the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA).

Novato:
Michael Frank

This response was reviewed and approved by the JPA’s Board of Directors at their public noticed meeting conducted on July 18, 2013.

Ross:
Rob Braulik

Thank you for the opportunity to respond to this report and should you have any questions, please contact our staff at (415) 473-2711.

San Anselmo:
Debbie Stutsman

San Rafael:
Nancy Mackle

Respectfully Submitted,

Sausalito:
Adam Politzer

Tiburon:
Margaret Curran

Nancy Mackle
Board Chair

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RESPONSE TO GRAND JURY REPORT FORM

Report Title: Holding the Bag

Report Date: May 8, 2013

Public Release Date: May 14, 2013

Response By: *Marin County Hazardous and Solid Waste Management Joint Powers Authority*

FINDINGS

- We agree with the findings numbered: F1, F2, F3 and F4.
- We disagree with wholly or partially with the findings numbered: NONE.

RECOMMENDATIONS

- Recommendations numbered: NONE have been implemented.
- Recommendations numbered: NONE have not yet been implemented, but will be implemented in the future.
- Recommendations numbered: R1, R2, and R3 require further analysis.

See attached explanations.

- Recommendations numbered: NONE will not be implemented because it is not warranted or are not reasonable.

Date: July 18, 2013 Signed: _____

Number of pages attached: 2.

STATEMENT REGARDING FINDINGS

No disputes with findings.

EXPLANATIONS REGARDING RECOMMENDATIONS:

- Restatement of Recommendation R1 for Reference:

"The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) prepare the Model Single-Use Bag Ordinance to implement the strictest rules possible and encourage all agencies to adopt the Ordinance with minimal changes. A ban on single-use plastic carry-out bags should be imposed in all grocery stores, convenience stores, pharmacies and restaurants within the County and apply to all establishments, no matter how large or small."

- Explanation for Recommendation R1:

The Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) is in the process of preparing a Model Ordinance and associated CEQA analysis for use by Marin's Cities and Towns. The CEQA analysis will explore the impacts of ordinances that ban single use plastic bags at restaurants – but cannot guarantee that individual jurisdictions will do so. The JPA desires to promote bag ordinances that are highly beneficial to the environment – but cannot guarantee that ordinances will follow the "strictest rules possible." Timeline: CEQA completion expected October/November 2013.

- Restatement of Recommendation R2 for Reference:

"Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members educate the public on the benefits of reusable bags. Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members develop standardized educational guides for all public schools showing the environmental harm done by plastic single-use carry-out bags. Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members develop educational materials and distribute them at public events such as farmers' markets and street fairs."

Explanation for Recommendation R2:

The Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) will endeavor to facilitate a robust educational campaign (addressing the reduction of single use bag and the benefits of reusable bags) that will involve as many outreach channels as possible including schools, stores, farmers markets and various other public events. The JPA will also work closely with the JPA's membership to also promote single use bag reduction with a cohesive theme that can leverage across City and Town borders since many shoppers do not necessarily buy many or most of their goods in their own community. Timeline: CEQA completion expected October/November 2013 – City and Town adoption and implementation timeline is To Be Determined.

- Restatement of Recommendation R3 for Reference:

"Marin Towns and Cities adopt an ordinance to ban all single-use plastic carry-out bags using the Model Single-Use Bag Ordinance with minimal, or no, changes, in order to create a true County-wide ordinance."

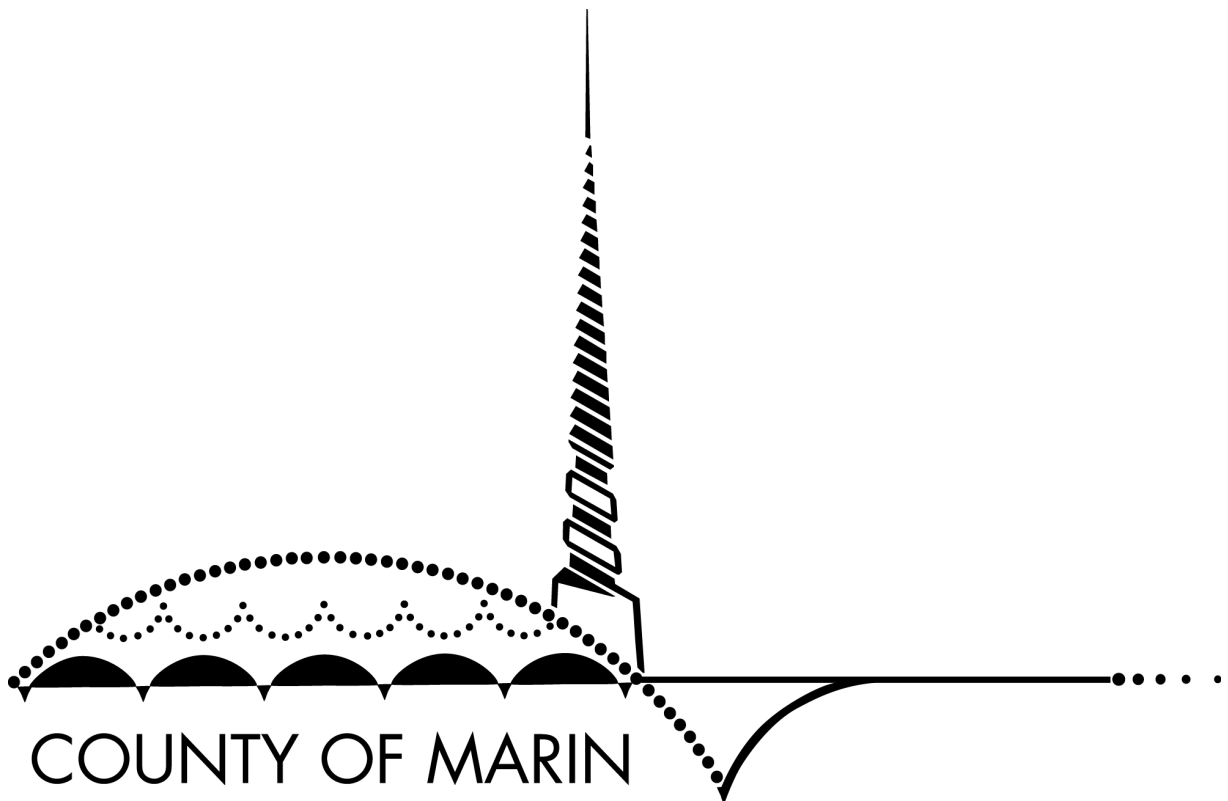
Explanation for Recommendation R3:

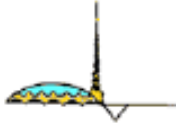
A main goal of the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) developing a Model Ordinance is to promote consistency, however because each City and Town needs to adopt an ordinance individually – the JPA cannot guarantee there will be absolute consistency between the ordinances. There may be some Cities or Town that desire to have more aggressive ordinances than others. Timeline: CEQA completion expected October/November 2013 – City and Town adoption and implementation timeline is To Be Determined.

2012/2013 MARIN COUNTY CIVIL GRAND JURY

Holding the Bag

Report Date -May 1, 2013
Public Release Date -May 7, 2013





HOLDING THE BAG

SUMMARY

As the garbage truck tipped its load, hundreds of plastic bags wafted from the opening and sailed across the flat plains of the dump. There is so much incoming plastic waste that many landfills set up trash nets and employ a fulltime person just to catch the sailing bags and papers before they escape into the surrounding environment.



**Plastic bags
adrift at the
Redwood
Landfill**

A global movement to ban or discourage the use of plastic bags is growing and many communities are starting to take action. Plastic bags use up natural resources, consume energy to manufacture, create litter, choke marine life and add to landfill waste. Since plastic bags essentially never break down, once they are littered, they become a permanent environmental problem.

Scientific results from a voyage led by a group of graduate students from Scripps Institute of Oceanography at UC San Diego reveal the infiltration of human pollution in an area of the ocean commonly referred to as the "Great Pacific Garbage Patch." During their 2009 voyage aboard the Scripps research vessel, *New Horizon*, the students collected fish specimens, water samples and marine debris at depths ranging from the sea surface to thousands of feet depth. *"About nine percent of examined fishes contained plastic in their stomach. That is an underestimate of the true ingestion rate because a fish may regurgitate or pass a plastic item, or even die from eating it. We didn't measure those*

rates, so our nine percent figure is too low by an unknown amount," said Davison, one of the main Scripps researchers.¹

Members of the Marin County Civil Grand Jury were aware of the potential for environmental damage from plastics, but during our field trip to the Redwood Landfill, the sight of plastic bags blowing in the wind really brought the message home. We wondered what Marin County was doing to stem the tide of plastic bags, and how serious a problem they pose.



Trash-catching net in action

We found that although the problems posed by plastic bags are only part of a much larger problem of worldwide waste and the consequent environmental damage, they are problems that we can address at our local level.

As a result of our research, we found a lot of local interest in banning not just plastic carry-out bags, but all single-use bags². The Town of Fairfax, citing its "*duty to protect the natural environment, the economy, and the health of its citizens*,"³ was the first town in California to enact a plastic bag ban through a community effort ballot measure. The Fairfax ordinance became effective May 2009 and amended the town code to: "*(1) require the use of recyclable paper and/or reusable checkout bags by all shops, stores, eating places, food vendors and retail food vendors located in the Town of Fairfax, and (2) provide penalties for violations.*" For Marin's unincorporated areas, Marin County banned plastic carry-out bags at grocery stores, pharmacies and convenience stores of at least 10,000 square feet and imposed a 5-cent fee on paper bags in January 2012. We have learned that most of the remaining towns and cities in Marin plan to adopt their version of a single-use bag ordinance in the near future.

¹ Scripps Institute of Oceanography, Scripps News, June 30, 2011 <http://scrippsnews.ucsd.edu/Releases/?releaseID=1174>

² Single-use bags are bags of any material that are designed to be used only once and are typically not brought back to the store for re-use.

³ The Town of Fairfax Code, Chapter 8.18.010 FINDINGS (u)

The Grand Jury strongly advocates the adoption of ordinances throughout Marin County to eliminate all single-use plastic carry-out bags. In addition, the Grand Jury recommends extending the ban as far as realistically possible to all commercial establishments regardless of size.

BACKGROUND

California, through the Integrated Waste Management Act of 1989, mandated a goal of 50% diversion of its disposed waste stream by 2000 for each city and county in California. The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) was formed in 1996 to ensure Marin's compliance with the California Integrated Waste Management Act and its waste reduction mandates. The JPA is comprised of 12 Member Agencies: Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, Tiburon and unincorporated Marin County. The Regional Agency status of the JPA allows Member Agencies to report to the State as one political body instead of 12.

In 2006, the JPA began an initiative called **ZERØWASTE MARIN** with the goal of reaching zero waste disposal by 2025. (Zero waste is defined as a 94% diversion rate with only 6% remaining waste.) The JPA prepared the "Zero Waste Feasibility Study"⁴ to establish programs and policies to strengthen the countywide framework for meeting its Zero Waste Goal. Efforts to reduce or eliminate single use bags, plastic or otherwise, will help the JPA meet that goal.

According to Californians Against Waste (CAW), Californians use approximately 14 billion plastic bags every year,⁵ which equates to about 400 bags per second. Plastic bags are a primary source of litter because they are light and aerodynamic. Plastics, including plastic bags, essentially never biodegrade; instead, they break down into tiny particles that become part of the soil and water. Only about 3% of the plastic bags used in California are recycled.⁶

There has been extensive news coverage lately about plastic bags and waste reduction. Due to a growing concern over litter and marine debris, many communities are taking a stand against single-use plastic carry-out bags. To date, 72 California cities or counties have adopted ordinances to ban or restrict the use of plastic carry-out bags. The City and County of San Francisco became the first in the nation to adopt a ban on plastic shopping bags in April 2007, and in February 2012, voted to expand the ordinance to include all

⁴ The full study can be found on JPA ZERO WASTE MARIN website page:
<http://zerowastemarin.org/zero-waste-101/zero-waste-feasibility-study/>

⁵ Californians Against Waste website <http://www.cawrecycles.org/issues/plasticbagcampaign>

⁶ CalRecycle, At-Store Recycling Program 2009 Statewide Recycling Rate for Plastic Carryout Bags
Calrecycle.ca.gov/plastics/atstore/default.htm

retailers citywide. More recently, several cities, including Half Moon Bay, Menlo Park and Mountain View, have adopted ordinances, effective 4/22/13, to prohibit stores from using single-use plastic carry-out bags and allow stores to charge a small fee for paper or reusable bags. The following CAW website lists each California jurisdiction along with the synopsis of its action as every new ordinance is passed:

http://www.cawrecycles.org/issues/plastic_campaign/plastic_bags/local

The Grand Jury was interested to learn what has been done and what is being considered to reduce plastic bag litter in Marin County. We wanted to know the extent of the problem and what options are available at the local level to reverse the effects of plastic bag pollution.

Although we found reason for environmental concern over the littering of all types of plastic bags and containers, this investigation is primarily concerned with the effects of single-use plastic carry-out bags. We believe that the elimination of these types of bags may open the door to broader bans in the future.



APPROACH

The Grand Jury:

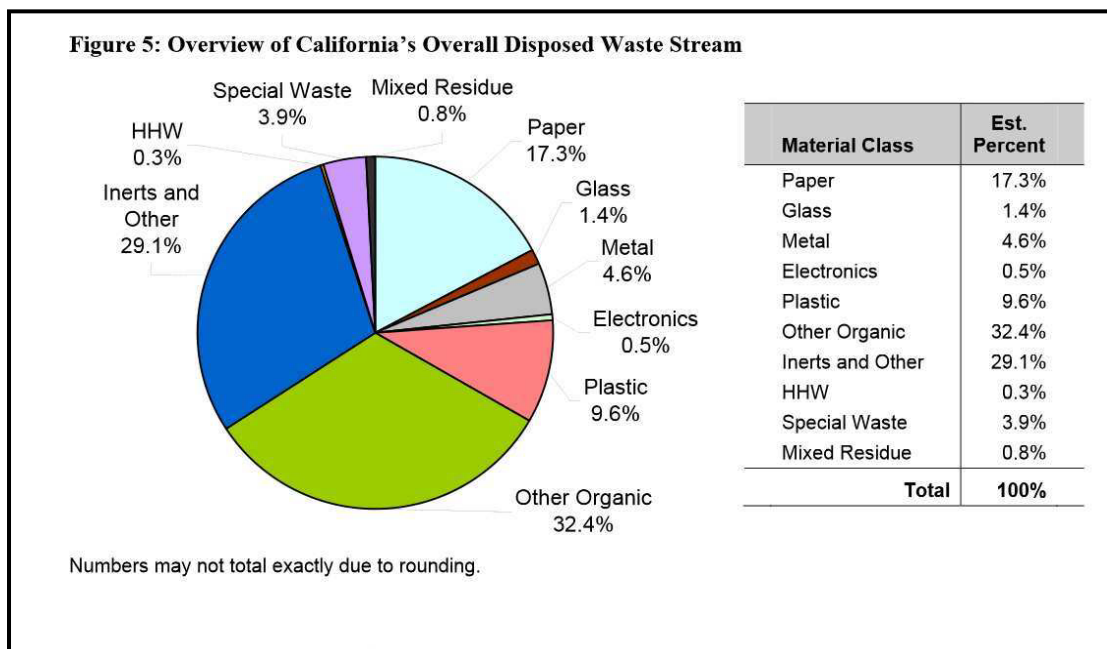
- Interviewed members of the JPA to determine not only what Marin County is doing to reduce waste, but also to determine the JPA's interest and position on the issue of plastic single use carry-out shopping bags.
- Contacted the administrative body of each City and Town in Marin County to determine what, if anything, each plans to do to reduce the use of single use carry-out plastic bags.
- Researched various websites, papers, and agencies for the history and extent of problems caused by single use bags in the world, in California, and in Marin.
- Compared the properties of various types of shopping bags.

DISCUSSION

In 2008, California undertook a Statewide Waste Characterization Study⁷ to determine the types and amounts of waste entering California's waste stream. Plastics make up approximately 9.6% of California's overall disposed waste stream, as indicated in Exhibit 1 below.

The 9.6% plastic waste stream was further broken down into types of plastic. Plastic bags compose approximately 1.2 % of California's total waste stream. This could be considered a small amount when compared to the overall quantity of waste. However, many properties of plastic bags make them especially harmful for the environment.

Exhibit 1 **Figure from California 2008 Statewide Waste Characterization Study**



Note: *HHW under Material Class in the figure above stands for Household Hazardous Waste*

Plastic bags can be recycled for other uses, such as plastic lumber, but only a small percentage is actually recycled. Estimates of the recycle rate range from 3% (per CAW) to 9% from the US Environmental Protection Agency (EPA) of the 14 billion plastic bags distributed annually in California. The rest end up in landfills or as litter on land or in the ocean.

⁷ California 2008 Statewide Waste Characterization Study
<http://www.calrecycle.ca.gov/Publications/Documents/General%5C2009023.pdf>

The concerns most often cited by local governments as reasons to restrict or ban plastic bags are discussed below.

Reasons given by governmental bodies for adopting restrictions:

■ **Harm to wildlife**

Plastic bags are now ubiquitous in our environment, and strangle, choke and kill animals both on land and in water. Plastic bags are one of the most common debris item found on beaches, according to the Ocean Conservancy. During the 2009 International Coastal Cleanup Day, 1,126,774 plastic bags were picked up on ocean beaches worldwide.

Planet Ark, an international environmental group, estimated that worldwide, 100,000 whales, seals, turtles and other marine animals are killed each year by consuming plastic garbage. Plastic bags still containing food will attract animals, and many will eat the plastic along with the waste food. Plastics cannot be broken down by the stomach, so they can build up inside the animal and give a false sense of fullness, leading to malnutrition and death by starvation. Animals can also choke to death if the plastic blocks their airflow.

In 2011, the death of a whale in Puerto Rico was blamed on plastic bag pollution⁸. Biologists found over 10 pounds of plastic in the whale's stomach and believed the plastic caused the animal to die of starvation or malnutrition.

Plastic bags are the fifth most common debris item found on beaches.



⁸ News Review article dated 5/26/2011
<http://www.newsreview.com/chico/plastic-bags-threaten-whales/content?oid=2148890>

■ Litter on land and in the ocean

Marine litter poses environmental, economic, health, and aesthetic problems globally. Most marine litter has a very slow rate of decomposition, leading to a gradual, but significant accumulation in the coastal and marine environment.

"Marine litter is symptomatic of a wider malaise: namely, the wasteful use and persistent poor management of natural resources. The plastic bags, bottles, and other debris piling up in the oceans and seas could be dramatically reduced by improved waste reduction, waste management and recycling initiatives," said Achim Steiner, Executive Director of the United Nations Environment Programme. *"Some of the litter, like thin film single-use plastic bags, which choke marine life, should be banned or phased out rapidly everywhere—there is simply zero justification for manufacturing them anymore, anywhere."*

According to information provided by the National Oceanic and Atmospheric Administration (NOAA), plastic comprises the vast majority of marine debris. Scientists have collected up to 1.9 million bits of plastic per square mile of the Great Pacific Garbage Patch. (The Great Pacific Garbage Patch, also known as the North Pacific Gyre, is a swirling sea of plastic bags, bottles and other debris that is trapped in the central North Pacific Ocean by the vortex of ocean currents.)



Plastic debris in the Great Pacific Garbage Patch has increased 100 times over in the past 40 years. Two graduate students with the Scripps Environmental Accumulation of Plastic Expedition (SEAPLEX) found evidence of plastic waste in more than 9% of the stomachs of fish collected during their scientific voyage to study garbage accumulation in the North Pacific Gyre.^{9,10}

⁹ Scripps Institute of Oceanography, Scripps News, June 30, 2011 <http://scrippsnews.ucsd.edu/Releases/?releaseID=1174>

¹⁰ For information about the North Pacific Gyre, see Charles Moore article titled "Trashed - Across the Pacific Ocean, Plastics, Plastics, Everywhere" in Natural History v.112, n.9, Nov03 <http://www.mindfully.org/Plastic/Ocean/Moore-Trashed-PacificNov03.htm>

In a November 2008 report,¹¹ the California Ocean Protection Council (OPC) stated that 80% of the ocean litter problem comes from land based sources and that the majority of ocean litter is composed of plastic. OPC calls for actions to prevent and control ocean litter. One of the four Priority Actions in the report, Priority Action #2, calls for a fee on or the prohibition of single-use products such as single-use plastic bags and other packaging where a more feasible and less damaging alternative is available.

Plastic bag use is now so prolific around the world that the bags have become a major source of litter. Plastic bags blowing around streets in China were so common they earned the name "white pollution."¹² And in South Africa, the bags littering the countryside are called "national flowers." In some African areas, people are even "harvesting" the plastic bags to make bags, hats and other crafts.



Plastic bags have been one of the top items collected on California Coastal Cleanup Day.

■ High costs to clean up

The EPA estimates that West Coast cities spend \$13 per resident to combat and clean up trash, much of which would otherwise end up as marine debris.¹³ For California, the overall cost to protect our waters from litter is over \$412 million each year.¹⁴

¹¹ An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter http://www.opc.ca.gov/webmaster/ftp/pdf/opc_ocean_litter_final_strategy.pdf

¹² China banned free plastic shopping bags and called for a return to cloth bags two months before the 2008 Beijing Summer Olympic Games. According to a government official with the China's National Development and Reform Commission, after four years of the ban, the nation had saved 4.8 million tons of oil.

¹³ "The Cost to West Coast Communities of Dealing with Trash, Reducing Marine Debris," prepared for the US EPA, September 2012

¹⁴ CAW, The Problem of Plastic Bags
http://www.cawrecycles.org/issues/plastic_campaign/plastic_bags/problem

Between 8% and 25% of the litter is attributable to plastic bags alone, according to clean up data from San Jose and Los Angeles County. Based on this information, an estimated \$33 million to \$103 million is spent each year to manage plastic bag litter in our state.

Moreover, cities and other recyclers spend an exorbitant amount of time and money removing plastic bags from their recyclables stream. Plastic bags often jam recycling machinery, thus adding to the manual labor costs of recycling. After estimated losses of \$1 million each year for plastic-bag related repairs to machinery in their recycling facility, the City of San Jose no longer collects single-use plastic bags at curbside. And in early 2013, it was reported that workers in Sacramento's waste transfer station shut down their machinery multiple times a day to remove bags clogging the conveyors.¹⁵

■ Depletion of natural resources

The most common plastic bags are made from polyethylene. This material is made from crude oil and natural gas, both non-renewable resources. The manufacture of plastic bags contributes to our consumption of diminishing natural resources and to ongoing damage to the environment from petroleum extraction.

It takes the equivalent of 12 million barrels of oil to produce the estimated 100 billion plastic shopping bags the US uses per year.¹⁶ Reducing plastic bag production means reducing our dependence on petroleum.

The free rider problem

A free rider is a party who enjoys a benefit earned from a collective effort, but who contributes little or nothing to the effort. A ban enacted by one local government but not enacted by surrounding areas can attract lawsuits and negative publicity to that community. And if surrounding areas keep a stream of plastic flowing, a free-rider problem is created in which the community enacting the ban pays for the environmental benefits while other neighboring communities enjoy the benefits at no cost.

The California Grocers Association cautions that some cities with bans have experienced a loss of grocery business when neighboring communities do not have bans. *"When we do see stores that are close to these jurisdictional lines, we are seeing consumers flock to the non-regulated stores,"* said Tim James, the association's manager of local government relations. The president and chief executive of the California Grocers Association, Ron

¹⁵ The Sacramento Bee article, "Plastic bag ban could be in Sacramento's future," dated February 9, 2013

¹⁶ These figures are widely quoted and can be found on many websites. Two examples are: (1) Facts About the Plastic Bag Pandemic at <http://www.reuseit.com/learn-more/top-facts/plastic-bag-facts> and (2) The Energy Consumed to Use Paper and Plastic Bags at <http://ezinearticles.com/?The-Energy-Consumed-to-Use-Paper-and-Plastic-Bags&id=1601578>

Fong, was quoted in a 2/22/13 Los Angeles Times article as supporting statewide regulation of carry-out bags. *“Our industry supports efforts to achieve a statewide solution to single-use carry-out bag regulation in California,”* Fong said. *“With a patchwork of more than 60 local ordinances, compliance becomes a challenge for grocery retailers, and consumers become confused about their options at the check stand.”*

Many local governments would like a unified regulation of plastic carry-out bags that applies the same rules to all of California. However, attempts to ban or reduce plastic bags on a statewide level have been met with opposition from the Save the Plastic Bag Coalition and the American Chemistry Council (ACC). Despairing of a solution, many local communities are acting independently.

Comparison of bag alternatives

There are alternatives to single-use plastic bags. This section of the report compares the pros and cons of single-use plastic bags with these alternatives.

Single-use plastic bags are made from nonrenewable resources such as petroleum and natural gas, and provide an inexpensive, lightweight, and convenient way to carry goods.

Plastic bags do not biodegrade, but photodegrade into microscopic granules when exposed to ultraviolet radiation from the sun. Scientists are not sure if these granules ever degrade fully into carbon dioxide, water and inorganic molecules (a process called mineralization). Based on research to date, plastic bags do not mineralize in the ocean but instead break down into smaller and smaller pieces. Some scientists fear that the buildup of such particles in marine and terrestrials environments will lead to an infiltration of toxic plastic particles into every step of the food chain.

Plastic bags can be recycled, and materials from post-consumer plastic bags and product

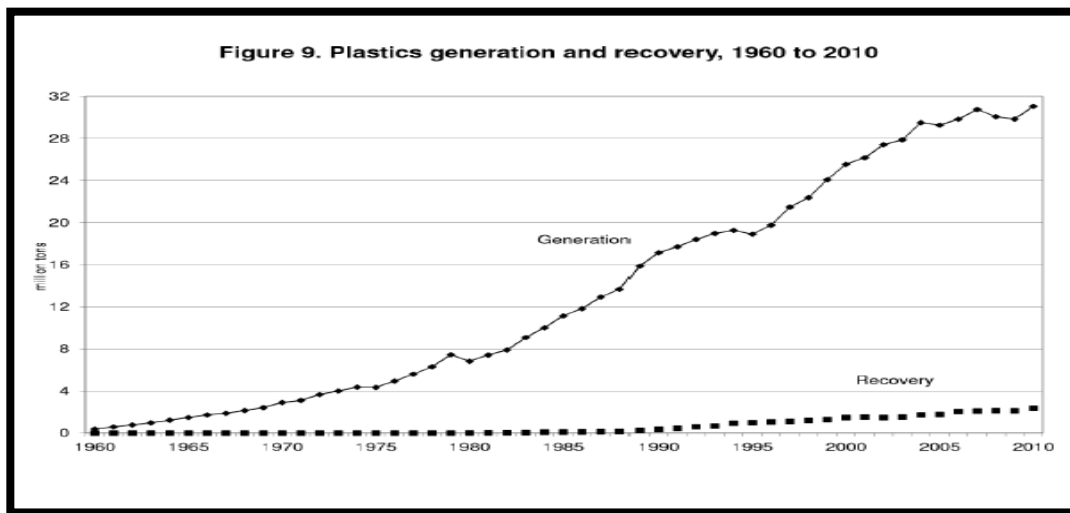
***Many plastic bags
become litter. Their
light weight makes
them often land in
trees or
waterways.***



wraps are used to make lumber for backyard decks and fences, lawn and garden products, pallets, crates, containers, piping, automotive applications and new plastic bags. The recycling process mandates the exclusive use of dry, clean, and empty bags, and any bag exposed to food cannot be recycled. Some plastic bags are recycled, but most ultimately end up in landfills or as litter on land and waterways.

The ACC, one of the major proponents of plastic bag manufacture and use, recently reported an increase in plastic bag recycling of 27% in 2010 over 2009.¹⁷ But this figure is dwarfed by the EPA's reported 220 million pound growth in plastic bag generation during the same period.¹⁸

Exhibit 2 RATE OF PLASTICS GENERATION EXCEEDS RATE OF RECOVERY



From Municipal Solid Waste Generation, Recycling, and Disposal in the United States (Tables and Figures for 2010)

The cost of energy to recycle plastic bags is more than the value of the recycled bag and is also more than the cost of making new bags. It costs roughly \$4,000 to process and recycle one ton of plastic bags, which can then be sold for only \$32 on the commodities market.¹⁹ Also, as plastic bags are melted down for re-casting, the polymer chains often break, leading to a lower quality plastic. When high cost and low quality outcomes are

¹⁷ 2010 National Postconsumer Plastic Bag and Film Recycling Report, prepared by Moore Recycling Associates Inc. for the American Chemistry Council January 2012.

¹⁸ EPA Municipal Solid Waste Generation, Recycling, and Disposal in the United States, Tables and Figures for 2010 Office of Resource Conservation and Recovery, November 2011

¹⁹ Clean Air Council, Waste and Recycling Facts <http://www.cleanair.org/Waste/wasteFacts.html>

added to other problems associated with the recycling process, such as the tendency of plastic bags to jam machinery, recycling plastic bags becomes even less desirable.

Biodegradable plastic bags are often made from farm products like cornstarch, which will break down relatively quickly under the right conditions,. To meet international standards, bags must compost within 12 weeks and fully biodegrade within 6 months. According to the Biodegradable Plastics Society, when these plastics are composted, they break down into water and carbon dioxide. However, independent research is needed to confirm whether this is true under all environmental conditions.

It is possible that biodegradable plastics do not break down fully, especially under conditions that are not ideal for composting and leave non-degradable constituents, some of which may be equally, if not more, hazardous.²⁰ And, as noted in a study sponsored by the United Nations Environment Programme (UNEP), developing "litter-friendly" materials will send the wrong signal to people, and go against efforts to change behaviors. *"If contaminating the environment with 'litter-friendly' waste is considered acceptable, it will be difficult to draw the line and accomplish any consistent change in attitude and behavior."*²¹ Biodegradable bags are costly to produce and are not suitable for recycling.

Compostable bags are very similar to biodegradable bags but "greener." For plastic to be considered compostable, it must be able to break down into carbon dioxide, water and biomass at the same rate as paper. It should look like compost, should not produce any toxic material and should be able to support plant life. Compostable plastic (also called "bioplastic") is made from plant materials such as corn, potato, cellulose, soy and sugar. One of the problems involved with creating bioplastics is the amount of energy needed in production, which is more than what is necessary to create an equivalent petroleum based plastic product. Compostable bags cost three to six time more than "traditional" plastic bags. Three times the raw materials are used to produce a truly compostable bag (one that biodegrades in compost).²² Also, the rate at which bioplastics break down is too fast to be included with the plastics sold to the recycling market, and too slow to be considered suitable for composting.

Reusable bags are made from renewable materials, and conserve resources by replacing paper and plastic bags. Such reusable bags are convenient and come in a variety of sizes, styles and materials. The average reusable bag has a lifespan equivalent to using seven hundred disposable plastic bags. Over an average lifetime, use of reusable bags by just one person would save over 22,000 plastic bags.

²⁰ Plastic Debris in the World's Oceans GREENPEACE

²¹ Page 8 Marine Litter An Analytical Overview, 2005 2005 United Nations Environment Programme

²² Biodegradable Bags Confuse the Public, February 2008 at <http://www.icis.com/Articles/2008/02/11/9099296/biodegradable-plastics-confuse-the-public.html>

Paper bags, which many people consider a better alternative to plastic bags, result in their own set of environmental problems. For example, according to the American Forest & Paper Association, the U.S. alone uses around 10 billion paper grocery bags each year, representing a lot of trees.²³

The plastic industry maintains that plastic bags are better for the environment than paper bags. And this appears to be partly true. We are no better off (and may actually be worse off) using paper bags rather than plastic ones. According to the EPA, (1) paper bags are more likely to be recycled (nationwide, about 20% of paper bags are recycled, compared to about 9% of plastic bags²⁴), and (2) the trees from which paper bags are made are a renewable resource, whereas plastic bags are made from non-renewable resources. However,

- Paper bags take up more landfill space (2,000 plastic bags weigh just 30 pounds, whereas 2,000 paper bags weight 280 pounds).
- Paper bags in landfills do not break down much faster than plastic bags (because they're not exposed to water, light, oxygen and other elements that they need to biodegrade).²⁵
- It takes more than 4 times as much energy to manufacture a paper bag as it does a plastic bag.²⁶
- It takes 98 percent less energy to recycle a pound of plastic than it takes to recycle a pound of paper.²⁷
- The manufacture and distribution of paper bags generate 70 percent more air pollution and 50 times more water pollutants than plastic bags.²⁸

Therefore, it is not necessarily better to switch from plastic bags to paper ones. Paper bags still account for a huge amount of wasted energy and excess refuse.



²³ This figure is attributed to the American Forest & Paper Association (AF&PA). Current data from the AF&PA is difficult to find, as the AF&PA is interested in promoting its recycling success to the public over its production figures.

²⁴ EPA data from article "Paper Grocery Bags Require More Energy Than Plastic Bags", The Reason Foundation 2008

²⁵ Paper or Plastic? More than Meets the Eye, Washington Post 2007

²⁶ Ibid

²⁷ Ibid

²⁸ Comparison of the Effects on the Environment of Polyethylene and Paper Carrier Bags," Federal Office of the Environment, August 1988

Neither paper nor plastic

Is it better to use paper or plastic? The best answer is neither. Both paper and plastic bags come at a cost to the environment. The production, shipping and disposal of both kinds of bags contribute to resource depletion and the pollution of land and water. Both paper and plastic bags use up a lot of energy and a lot of natural resources. Proper recycling of both requires attention and diligence from consumers, waste collectors, and recycling companies. The potential for lack of interest, knowledge, or attention by any party along the recycling route, creates many potential barriers that can lead to low recycling rates.

In our opinion, the best alternative is the combination of reusable bags and education. Many organizations have created educational materials about the problems created by plastic bags as well as possible solutions. Just a few examples are websites and publications by the Smithsonian,²⁹ UNEP,³⁰ and JPA.³¹ Marin governmental agencies can find solid, reliable information to assist them to educate and encourage the public to stop using carry-out plastic bags and start using cloth or other reusable bags. Most of the recent bag ban ordinances in California ban carry-out plastic bags and charge a fee for paper bags. This encourages reusable bags and reduces the total number of single-use carry-out bags provided. By choosing reusable bags, consumers can save thousands of plastic or paper bags. Education is vital. In 2011, the City of San Rafael conducted a survey of local merchants to obtain feedback on a potential citywide ban on single-use carry-out bags. Opinions were mixed, with slightly more in support than in opposition toward the idea of the ban. Some objections against a ban were actually objections against governmental regulations: *"Too much 'Big Brother'."* *"...How can the city tell you what to charge for?"* *"Too much government intervention on trivial things."*³²

A part of the solution to a global problem

Plastic bags are just one part of a larger problem. A very low percentage of the products we buy are still in use 6 months after purchase. Even though California's local governments have made extensive recycling efforts to reach our current 58% diversion rate, state residents still sent about the same amount of waste to the landfill in 2009 as they did in 1990 - 40 million tons.

²⁹ Smithsonian National Museum of Natural History <http://ocean.si.edu/conservation/pollution>

³⁰ United Nations Environment Programme
<http://www.unep.org/regionalseas/marinelitter/publications/default.asp>

³¹ Marin JPA, ZEROWASTEMARIN <http://zerowastemarin.org/take-a-challenge/>

³² City of San Rafael Staff Report for March 5, 2012 Study Session on Single-Use Plastics: Analysis of Alternative Approaches to Eliminating Single-use Plastics

The Grand Jury recognizes that action is required at the local level through the adoption of a Zero Waste Strategy that aims to progressively reduce all waste streams. The ultimate end goal of such a strategy is to have no material discarded. Fundamental components would include a program of waste reduction, reuse and recycling as well as a call for producer responsibility. The best solution is to prevent waste from being generated in the first place unless it can be reused or recycled. Widespread adoption of the Zero Waste Strategy would contribute to ongoing reductions of all garbage, including plastics.

Hawaii is the first state in the nation to have a statewide ban on plastic bags at checkout. When the Honolulu County Council approved a ban in 2011, it joined its neighbor island counties, and made Hawaii the only state where every county has plastic bag legislation. Supporters of the Hawaiian ban believe that Hawaii may be more directly exposed to the impacts of plastic pollution and the damage it does to the environment, as the islands are in an accumulation area for marine debris from sources across the greater Pacific Ocean.

What is happening in California?

Virtually every California municipality adopting a bag ban was sued or threatened with litigation by groups related to the plastic bag industry (primarily, the Save the Plastic Bag Coalition). The lawsuits were brought by the groups in the "public interest" - arguing that the municipality is required to complete an EIR under the California Environmental Quality Act (CEQA) before a plastic bag ban can be enacted. These suits delayed the enactment of bans as well as intimidated local municipalities. Because EIRs are often prohibitively expensive, the suits effectively eliminated many local plastic bag bans.

San Francisco In 2007, San Francisco enacted the Plastic Bag Reduction Ordinance (Ordinance), which became the nation's first ban on non-compostable carry-out plastic bags in large supermarkets and pharmacies.³³ The Ordinance was expanded in October 2012 to ban plastic bags at all retail stores and impose a 10-cent fee for each bag provided to customers. (Restaurants, bakeries, and take-out establishments are included in the Ordinance beginning October 2013.) The Ordinance is citywide and covers any retail establishment located within the geographical limits of the City and County of San Francisco.

Adoption of the Ordinance expansion followed close on the heels of a September 2012 ruling by Superior Court Judge Teri Jackson upholding it. Judge Jackson rejected the Save the Plastic Bag Coalition's argument that a full EIR was required prior to adoption of the Ordinance. There are ongoing issues concerning the Ordinance, including a lack of uniformity with the law due to permissible exceptions such as packaging for dry cleaning, bulk candy and "doggy bags" used to take home leftover food at restaurants.

State California state law preempts municipalities from charging a fee for plastic bags at checkout, leaving local governments attempting to stop the overflow of plastic bags no

³³ San Francisco Environment Code, Chapter 17: Plastic Bag Reduction Ordinance, Sections 1701-1709

alternative other than to ban the bags outright. Most governmental agencies within California express a preference for a statewide ban over enacting separate local legislation. California has backed away from taking the lead in this issue, but there are several current proposals before the legislature that may help lead to a statewide reduction in plastic bag use. In January 2013, Assemblyman Marc Levine, D-San Rafael, announced a proposal to ban all single-use plastic bags in California grocery stores. Levine's proposal, AB 158, revives a similar proposal that passed the Assembly in 2010 but failed in the Senate.

State Senator Alex Padilla, D-Pacoima, has introduced legislation that would prohibit large retail stores throughout California from providing single-use carry-out bags to customers, starting in 2015. Starting in July 2016, the ban would extend to convenience food stores, food marts and other smaller businesses under SB 405. Another legislative proposal, SB 529, introduced in February 2013 by State Senator Mark Leno, D-San Francisco, would prohibit fast food facilities from distributing disposable food packaging or single-use bags to customers on and after July 1, 2016.

What is happening in Marin?

Both Fairfax and the unincorporated area of Marin County have approved plastic bag bans. Other cities and towns are exploring their options.

Fairfax The Town of Fairfax adopted a plastic bag ban in August 2007. A group that called itself the North Bay Coalition to Support Plastic Bag Recycling (NBCSPR) sued the town. Fairfax circumvented CEQA requirements by adopting a ban via voter initiative in November 2008.

Marin County On January 25, 2011, the Board of Supervisors (BOS) approved an ordinance banning plastic bag distribution in the unincorporated areas of the County. The ban applies to most grocery stores, pharmacies and convenience stores and requires a fee of five cents for paper bags. The County's ordinance was adopted with a categorical exemption under CEQA, finding that it would have no environmental impact. Litigation was filed against the County's action, with the County prevailing in Superior Court, but the case is currently under appeal.

JPA In an effort to promote consistency countywide, the Joint Powers Agency (JPA) is developing a model ordinance for single use bags that can be used (and modified to fit, if desired) by each city and town in Marin. The current schedule indicates that the Ordinance will be available in late 2013. Adoption of the Ordinance opens the possibility for the entire County to be on the same playing field. The JPA will also prepare a California Environmental Quality Act (CEQA) document to address the impacts of the Ordinance. *The JPA anticipates that the Ordinance will:*

- Apply to all retail establishments, including grocery stores, department stores, retail businesses and convenience stores, but not to restaurants.

- Prohibit the distribution of single-use carry-out plastic bags.
- Place a fee on carry-out paper bags to be charged to the customer.
- Allow for some variation in local interpretation, since each member agency may wish to customize the Ordinance for its community.
- Be considered by 10 of the 12 members of the JPA (excluding Marin County and the City of Fairfax as these members have existing bag ordinances in effect).

Other Marin Cities and Towns The Grand Jury contacted all JPA members to find out what each was doing or planned to do regarding reduction of waste due to single use or throw-away bags. A majority responded that they will consider and probably enact a single-use bag ordinance based on the JPA Ordinance. Exhibit 3 below lists each Marin County agency and briefly shows what action each plans for adoption of a ban on single-use carry-out bag.

Exhibit 3 CURRENT AND FUTURE BAG ORDINANCES IN MARIN COUNTY

AGENCY	ORDINANCE IN PLACE?	FUTURE PLANS REGARDING SINGLE-USE BAGS
<i>Unincorporated MARIN COUNTY</i>	YES	Helping fund the JPA Ordinance Has had plastic bag ban since January 2012
<i>FAIRFAX</i>	YES	Has had plastic bag ban since May 2009
<i>BELVEDERE</i>	NO	None
<i>CORTE MADERA</i>	NO	JPA model once completed
<i>LARKSPUR</i>	NO	Staff "anticipate presenting an ordinance to the Larkspur Council that is similar to the one adopted by the County"
<i>MILL VALLEY</i>	NO	Ban AFTER lawsuit is resolved; working with JPA on model; watching Levine's State efforts
<i>NOVATO</i>	NO	Will participate in JPA Model Ban
<i>ROSS</i>	NO	Has only one store in Ross and plans no plastic bags policy
<i>SAN ANSELMO</i>	NO	Expects to participate in JPA's model single use bag project
<i>SAN RAFAEL</i>	NO	Will adopt ordinance similar or same as JPA Ordinance WOULD LIKE A STATEWIDE SOLUTION
<i>SAUSALITO</i>	NO	Expects to participate in the JPA Ordinance
<i>TIBURON</i>	NO	Town Council may revisit the issue once JPA Ordinance is available

The Grand Jury strongly supports the adoption of an ordinance to ban single-use plastic carry-out bags that will apply to all establishments of all sizes across all areas of Marin County.

FINDINGS

- F1. Single-use plastic carry-out bags cause harm to the environment and wildlife.
- F2. Reduction or ban of single-use plastic carry-out bags will help Marin County reach its zero waste goal.
- F3. Reduction or ban of single-use plastic carry-out bags will help keep the land and waters of the County cleaner.
- F4. Most Marin County governments do not currently have bans against single-use plastic carry-out bags. However, most are responsive to enacting policies against single-use plastic carry-out bags.

RECOMMENDATIONS

The Grand Jury recommends that:

- R1. The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) prepare the Model Single-Use Bag Ordinance to implement the strictest rules possible and encourage all agencies to adopt the Ordinance with minimal changes. A ban on single-use plastic carry-out bags should be imposed in all grocery stores, convenience stores, pharmacies and restaurants within the County and apply to all establishments, no matter how large or small.
- R2. Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members educate the public on the benefits of reusable bags. Marin County and Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members develop standardized educational guides for all public schools showing the environmental harm done by plastic single-use carry-out bags. Marin County and The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) Members develop educational materials and distribute them at public events such as farmers' markets and street fairs.
- R3. Marin Towns and Cities adopt an ordinance to ban all single-use plastic carry-out bags using the Model Single-Use Bag Ordinance with minimal, or no, changes, in order to create a true County-wide ordinance.

REQUEST FOR RESPONSES

Pursuant to Penal code section 933.05, the grand jury requests responses as follows:

From the following individuals:

- Deputy Director, Department of Public Works-Waste Management Division to All Findings and Recommendations

- Program Manager Department of Public Works-Waste Management Division to All Findings and Recommendations

From the following governing bodies:

- Marin County Environmental Health Services to all Findings and Recommendations
- Marin County Board of Supervisors to all Findings and Recommendations
- The Marin Hazardous and Solid Waste Joint Powers Authority (JPA) to all Findings and Recommendations
- City of San Rafael to all Findings and Recommendations
- Town of Ross to all Findings and Recommendations
- City of Larkspur to all Findings and Recommendations
- City of Sausalito to all Findings and Recommendations
- Town of Tiburon to all Findings and Recommendations
- City of Belvedere to all Findings and Recommendations
- City of Novato to all Findings and Recommendations
- Town of Corte Madera to all Findings and Recommendations
- City of Mill Valley to all Findings and Recommendations
- Town of San Anselmo to all Findings and Recommendations

The governing bodies indicated above should be aware that the comment or response of the governing body must be conducted subject to the notice, agenda and open meeting requirements of the Brown Act.

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[SEAPLEX](#). Scripps Institution of Oceanography at University of California, San Diego

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Civil Grand Jury.
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MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere:
Mary Neilan

Date: July 18, 2013

Corte Madera:
David Bracken

To: JPA Board Members

County of Marin:
Matthew Hymel

From: Michael Frost, Executive Officer

Fairfax:
Garrett Toy

Re: Update on Single Use Bag Project

Larkspur:
Dan Schwarz

At the JPA Board's February 28, 2013 meeting, the Board elected to contract with Rincon Consultants to assist with the development of a model single use bag ordinance and associated CEQA analysis.

Mill Valley:
Jim McCann

On July 9, 2013 the JPA conducted a Scoping Meeting to kick-off the solicitation of public input for the model single use bag ordinance project.

Novato:
Michael Frank

The project is proceeding as planned – with an expectation that the CEQA analysis will be completed in October/November, and be ready for Cities and Towns desiring to utilize the model and associated CEQA analysis in December/January for consideration of adoption.

Ross:
Rob Braulik

In light of the June 25, 2013 ruling in favor of the County of Marin related to its single use bag ordinance, Staff and Counsel will provide the Board an update on recent developments.

San Anselmo:
Debbie Stutsman

San Rafael:
Nancy Mackle

Recommendation

Receive updates on recent developments with litigation between the County of Marin and the Save the Plastic Bag Coalition.

Sausalito:
Adam Politzer

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Tiburon:
Margaret Curran