



Meeting of the Board of Directors

July 15, 2020
REGULAR MEETING

Regular Session begins at 8:30 a.m.
Estimated Ending Time 11:30 a.m.

Virtual Meeting via Zoom

Call: 1-669-900-9128
Password: 885898

Web link:
<https://sonomacounty.zoom.us/j/91001551460?pwd=L05ZUVg4Y2lZRDJWUlhSFBjWGg4Zz09>

Meeting Agenda and Documents

ZERO WASTE SONOMA

Meeting of the Board of Directors

July 15, 2020

REGULAR MEETING

Regular Session begins at 8:30

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Note: This packet is 103 pages total



Zero Waste Sonoma

Meeting of the Board of Directors

**July 15, 2020
REGULAR MEETING**

Regular Session begins at 8:30 a.m.

In accordance with Executive Orders N-25-20 and N-29-20 the July 15, 2020 Board of Directors meeting will be held virtually.

MEMBERS OF THE PUBLIC MAY NOT ATTEND THIS MEETING IN PERSON

Virtual Meeting via Zoom

<https://sonomacounty.zoom.us/j/91001551460?pwd=L05ZUVg4Y2lZRDJWUlhSFBjWGg4Zz09>

Password: 885898

Number: +1 669 900 9128

PUBLIC COMMENT:

Public Comment may be submitted via recorded voice message or email prior to the Board meeting or may be shared during the appropriate public comment times during the meeting utilizing the Zoom chat box.

Voice recorded public comment: To submit public comment via recorded message, please call 707-565-2722 by 5:00 pm Tuesday, July 14th. State your name and the item number(s) on which you wish to speak. The recordings will be limited to two minutes. These comments may be played or read at the appropriate time during the board meeting.

Email public comment: To submit an emailed public comment to the Board please email leslie.lukacs@sonoma-county.org and provide your name, the number(s) on which you wish to speak, and your comment. These comments will be emailed to all Board members and can be provided anytime leading up to and throughout the meeting.



Agenda

Item

1. Call to Order
2. Agenda Approval
3. Public Comments (items not on the agenda)
4. **Consent** (w/attachments)
 - 4.1 Minutes of the May 20, 2020 Regular Meeting
 - 4.2 May, June, July, and August 2020 Outreach Calendar
 - 4.3 ZWS FY 17/18 Audit of Financial Statements [Collard]
 - 4.4 Summary and End of Home Composting Contract [Tan]

Regular Calendar

5. HHW Alternative Program Options Analysis Report [Scott]
6. Boardmember Comments – NO ACTION
7. Executive Director Report – VERBAL REPORT
8. Staff Comments – NO ACTION
9. Next SCWMA meeting: August 19, 2020
10. Adjourn

Consent Calendar: These matters include routine financial and administrative actions and are usually approved by a single majority vote. Any Boardmember may remove an item from the consent calendar.

Regular Calendar: These items include significant and administrative actions of special interest and are classified by program area. The regular calendar also includes "Set Matters," which are noticed hearings, work sessions and public hearings.

Public Comments: Pursuant to Rule 6, Rules of Governance of the Sonoma County Waste Management Agency, members of the public desiring to speak on items that are within the jurisdiction of the Agency shall have an opportunity at the beginning and during each regular meeting of the Agency. When recognized by the Chair, each person should give his/her name and address and limit comments to 3 minutes. Public comments will follow the staff report and subsequent Boardmember questions on that Agenda item and before Boardmembers propose a motion to vote on any item.

Disabled Accommodation: If you have a disability that requires the agenda materials to be in an alternative format or requires an interpreter or other person to assist you while attending this meeting, please contact the Sonoma County Waste Management Agency Office at 2300 County Center Drive, Suite B100, Santa Rosa, (707) 565-3579, at least 72 hours prior to the meeting, to ensure arrangements for accommodation by the Agency.

Noticing: This notice is posted 72 hours prior to the meeting on the internet at www.zerowastesonoma.gov



To: Zero Waste Sonoma Board Members

From: Leslie Lukacs, Executive Director

Subject: July 15, 2020 Board Meeting Agenda Notes

Consent Calendar:

These items include routine financial, informational and administrative items and **staff recommends that they be approved en masse by a single vote.** Any Board member may remove an item from the consent calendar for further discussion or a separate vote by bringing it to the attention of the Chair.

- 4.1 Minutes of the May 20, 2020 Meeting
- 4.2 May, June, July, and August 2020 Outreach Calendar
- 4.3 SCWMA Audited Financial Statements 2017-2018
- 4.4 UCMGSC Compost Report 2019-2020

Regular Calendar

5 **HHW Program Options Analysis Staff Report:** At the January 2020 ZWS Board meeting, staff presented research for a permanent HHW facility including the following key findings:

- The timeline from purchase to open is approximately 5 years.
- The expected construction budget, including land, and design is \$10-\$12 million.
- Operating costs would increase anywhere from \$350,000-\$600,000 annually.

As a result of these findings, the Board requested a report investigating HHW program option alternatives to a permanent facility as well as funding options. Staff hired Sweetser & Associates, Inc. to assist with the request. Staff will present the Zero Waste Sonoma Household Hazardous Waste Program Options Analysis report, which includes HHW program options and funding options. Considering the current pandemic and budget uncertainty, this item is informational only.



Minutes of the May 20, 2020 Meeting

Zero Waste Sonoma met on May 20, 2020, via WebEx to hold a virtual board meeting.

Board Members Present:

City of Cloverdale	Marta Cruz	City of Santa Rosa	John Sawyer
City of Cotati	Susan Harvey	City of Sebastopol	Henry Mikus
City of Healdsburg	Larry Zimmer	City of Sonoma	ABSENT
City of Petaluma	Patrick Carter	County of Sonoma	Susan Gorin
City of Rohnert Park	Pam Stafford	Town of Windsor	Bruce Okrepkie

Staff Present:

Executive Director: Leslie Lukacs

Counsel: Ethan Walsh

Staff: Xinci Tan, Karina Chilcott, Sloane Pagal, Thora Collard, Courtney Scott

Agency Clerk: Janel Perry

1. Call to Order Regular Meeting

Regular session was called to order at 8:31 a.m.

2. Agenda Approval

3. Public Comments (items not on the agenda)

Terry Harrison – In favor of Sonoma County Compost Facility

Guy Tillotson – In favor of Sonoma County Compost Facility

Lawrence Jaffe – In favor of Sonoma County Compost Facility

Park Guthrie – In favor of Sonoma County Compost Facility

Terry Taylor – In favor of Sonoma County Compost Facility

4. Consent (w/attachments)

4.1 Minutes of the April 15, 2020 Regular Meeting

4.2 April, May, and June 2020 Outreach Calendar

4.3 Third Quarter Financial Report [Collard]

Action Items:

None

Public Comments:

None

Motion: For approval of all items on the consent calendar.

First: City of Cotati – Susan Harvey

Second: City of Sebastopol – Henry Mikus

Vote Count:

City of Cloverdale	AYE	City of Santa Rosa	AYE
City of Cotati	AYE	City of Sebastopol	AYE
City of Healdsburg	AYE	City of Sonoma	ABSENT
City of Petaluma	AYE	County of Sonoma	AYE
City of Rohnert Park	AYE	Town of Windsor	AYE

AYES -9- NOES -0- ABSENT -1- ABSTAIN -0-

Motion passed.

Regular Calendar

5. Organics Budget Adjustment [Collard]

Board Comments/Action Items:

- What are C&D rates compared to Organics rates?
- Complete negotiations with all parties involved and ensure the Agency is compensated for the services it provide.

Public Comments:

None

Motion: To increase budgetary appropriations for other contract services in the organics fund by an additional \$850,000 for hauling and processing of organics.

First: City of Petaluma – Patrick Carter

Second: City of Cotati – Susan Harvey

Vote Count:

City of Cloverdale	AYE	City of Santa Rosa	AYE
City of Cotati	AYE	City of Sebastopol	AYE
City of Healdsburg	AYE	City of Sonoma	ABSENT
City of Petaluma	AYE	County of Sonoma	AYE
City of Rohnert Park	AYE	Town of Windsor	ABSTAIN

AYES -9- NOES -0- ABSENT -1- ABSTAIN -1-

Motion passed.

6. Discussion and Possible Action on the 2020/21 Final ZWS Budget [Collard]

Board Comments/Action Items:

- Identify which accounts expenditures come from
- Monitor future organics tonnage and bring back appropriation budget if needed

Public Comments:

None

Motion: Approval of 2020/21 Final ZWS Budget

First: City of Petaluma – Patrick Carter

Second: City of Cotati – Susan Harvey

Vote Count:

City of Cloverdale	AYE	City of Santa Rosa	AYE
City of Cotati	AYE	City of Sebastopol	AYE
City of Healdsburg	AYE	City of Sonoma	ABSENT
City of Petaluma	AYE	County of Sonoma	AYE
City of Rohnert Park	AYE	Town of Windsor	AYE

AYES -9- NOES -0- ABSENT -1- ABSTAIN -0-

Motion passed.

7. Boardmember Comments – NO ACTION
Comments were received by the board.

8. Executive Director Report – NO ACTION
Executive Director verbally gave report.

9. Staff Comments – NO ACTION
None

10. Next SCWMA meeting: June 18, 2020

11. Adjourn 9:20 am

Submitted by: Janel Perry



Agenda Item #: 4.2
Agenda Date: 7/15/2020

ITEM: May-June-July-August 2020 Outreach Calendar

Note: Events below shown in ~~strikethrough red~~ were cancelled due to the COVID-19 disaster. Note the addition of webinars and virtual presentations substituted for in-person outreach events.

MAY 2020 OUTREACH

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
5/1/20		10:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/2/20		10:30 AM	12:30 PM	Composting Workshop at Permaculture Skills Center	Sebastopol
5/4/20		10:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/5/20		11:00 AM	12:00 PM	Virtual Presentation: Composting Basics: Setting Up A Hot Pile	Countywide
5/5/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Guerneville)	Unincorporated area
5/7/20		10:00 AM	11:00 AM	VIRTUAL PRESENTATION: Composting Basics: Setting Up A Hot Pile SPANISH	Countywide
5/8/20		11:00 AM	12:00 PM	VIRTUAL PRESENTATION: Composting with Worms (Vermicomposting)	Countywide
5/9/20		10:00 AM	11:00 AM	VIRTUAL PRESENTATION: Composting with Worms (Vermicomposting) SPANISH	Countywide
5/9/20		11:30 AM	1:30 PM	Composting Workshop at Petaluma Bounty Farm	Petaluma
5/11/20		11:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/12/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Larkfield)	Unincorporated area
5/13/20		10:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/13/20		11:30 AM	12:30 PM	VIRTUAL PRESENTATION: Santa Rosa Junior College sustainability class panelist	Santa Rosa

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
5/15/20	5/17/20	9:00 AM	5:00 PM	E-Waste Recycling Event (Healdsburg)	Healdsburg
5/16/20		9:00 AM	5:00 PM	Mattress Recycling Event (Healdsburg)	Healdsburg
5/19/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Cotati)	Cotati
5/20/20		10:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/21/20		9:30 AM	10:30 AM	Fulton Labor Center Presentation	Unincorporated area
5/21/20		8:00 AM	9:30 AM	Healdsburg Labor Center Presentation	Healdsburg
5/26/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Oakmont)	Santa Rosa
5/27/20		11:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
5/30/20		10:30 AM	12:00 PM	Composting Workshop at Petaluma Regional Library	Petaluma

JUNE 2020 OUTREACH

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
6/2/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Sonoma)	Sonoma
6/3/20		10:30 AM	11:30 AM	Poder de Sabe Spanish Radio Program: Promoted recycling programs during broadcast	Santa Rosa
6/9/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Healdsburg)	Healdsburg
6/16/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Santa Rosa, W)	Santa Rosa
6/16/20		12:00 PM	1:00 PM	VIRTUAL PRESENTATION: Intro to Composting: Starting A Hot Pile	Countywide
6/17/20		12:00 PM	1:00 PM	VIRTUAL PRESENTATION: Composting with Worms (Vermicomposting)	Countywide
6/18/20		9:30 AM	10:30 AM	Fulton Labor Center Presentation	Unincorporated area
6/18/20		8:00 AM	9:30 AM	Healdsburg Labor Center Presentation	Healdsburg
6/19/20	6/21/20	9:00 AM	5:00 PM	E-Waste Recycling Event (Santa Rosa)	Santa Rosa
6/20/20		9:00 AM	5:00 PM	Mattress Recycling Event (Santa Rosa)	Santa Rosa
6/23/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Bodega Bay)	Unincorporated area

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
6/26/20	6/27/20	9:00 AM	1:00 PM	HazMobile (Sea Ranch)	Unincorporated area
6/25/20		5:00 PM	6:00 PM	WEBINAR Used Motor Oil and Filter Recycling. A simple Guide for Do-It-Yourselfers (English)	Countywide
6/27/20		10:00 AM	11:00 AM	WEBINAR Used Motor Oil and Filter Recycling. A simple Guide for Do-It-Yourselfers (Spanish)	Countywide
6/30/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Rohnert Park)	Rohnert Park

JULY 2020 OUTREACH

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
7/7/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Santa Rosa, E)	Santa Rosa
7/10/20	7/12/20	9:00 AM	5:00 PM	E-Waste Recycling Event (Petaluma)	Petaluma
7/11/20		9:00 AM	5:00 PM	Mattress Recycling Event (Petaluma)	Petaluma
7/14/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Boyes Hot Springs)	Unincorporated area
7/21/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Cloverdale)	Cloverdale
7/23/20		9:30 AM	10:30 AM	Fulton Labor Center Presentation	Unincorporated area
7/23/20		8:00 AM	9:30 AM	Healdsburg Labor Center Presentation	Healdsburg
7/28/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Rincon Valley)	Unincorporated area

AUGUST 2020 OUTREACH EVENTS – Events below are tentatively scheduled

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
8/4/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Sebastopol)	Sebastopol
8/11/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Windsor)	Windsor
8/14/20	8/15/20	4:00 PM	8:00 PM	HazMobile (Sea Ranch)	Unincorporated area
8/15/20	8/16/20	9:00 AM	5:00 PM	E-Waste Recycling Event (Oakmont)	Unincorporated area
8/15/20		9:00 AM	5:00 PM	Mattress Recycling Event (Oakmont)	Unincorporated area

Start date	End date (multiple day only)	Start time	End time	Event	Jurisdiction
8/18/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Oakmont)	Santa Rosa
8/20/20		9:30 AM	10:30 AM	Fulton Labor Center Presentation	Unincorporated area
8/20/20		8:00 AM	9:30 AM	Healdsburg Labor Center Presentation	Healdsburg
8/25/20		4:00 PM	8:00 PM	Household Hazardous Waste Event (Sonoma)	Sonoma



Agenda Item #: 4.3
Cost Center: All
Staff Contact: Collard
Agenda Date: 7/15/2020
Approved by: LL

ITEM: Zero Waste Sonoma FY 2017-18 Audit of Financial Statements

I. RECOMMENDED ACTION / ALTERNATIVES TO RECOMMENDATION

Staff recommends the Board accept the FY 2017-18 Financial Statements and Auditors' Report.

II. BACKGROUND

In accordance with the requirement contained in the Joint Powers Authority Agreement that the Sonoma County Waste Management Agency (also known as Zero Waste Sonoma) Board of Directors cause an independent audit to be in compliance with Government Code section 6505, Zero Waste Sonoma entered into an agreement with Maher Accountancy to audit the Agency's FY 2017-18 Financial Statements. Previously, the County of Sonoma's Auditor Controller Treasurer Tax Collector (ACTTC) department had performed those services for the SCWMA, but the past few years, the ACTTC had not been able to express an opinion on the financial statements due to "independence impairments" as the ACTTC department performed both accounting and auditing functions for the Zero Waste Sonoma.

III. DISCUSSION

Maher Accountancy expressed an opinion that the Zero Waste Sonoma's financial statements present fairly, in all material respects, the respective financial position of the Agency as of June 30, 2018, and the respective changes in financial position for the year that ended in accordance with accounting principles generally accepted in the United States of America. Audit consists of three parts: 1) the Independent Auditors' General Communication to Board, 2) Financial Statements and Auditors' Report Year Ended June 30, 2018, and 3) Zero Waste Sonoma Management Representation. The first two attachments are informational and describe the extent of the audit and the financial statements of the Zero Waste Sonoma.

IV. FUNDING IMPACT

The cost of the audit was \$17,500, which was the amount allocated in the budget for this purpose.

V. ATTACHMENTS

Independent Auditors' General Communication to Board
Financial Statements and Auditors' Report Year Ended June 30, 2018
Zero Waste Sonoma Management Representation



**FINANCIAL STATEMENTS AND AUDITORS' REPORT
YEAR ENDED JUNE 30, 2018**

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INDEPENDENT AUDITORS' REPORT

To the Board of Directors
Sonoma County Waste Management Agency

We have audited the accompanying financial statements of Sonoma County Waste Management Agency (Agency) as of and for the year ended June 30, 2018, which collectively comprise the Agency's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Agency as of June 30, 2018, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Maher Accountancy

June 19, 2020

SONOMA COUNTY WASTE MANAGEMENT AGENCY MANAGEMENT'S DISCUSSION AND ANALYSIS

The Management's Discussion and Analysis provides an overview of the Sonoma County Waste Management Agency (SCWMA) financial activities for the fiscal year ended June 30, 2018. Please read it along with SCWMA's financial statements, which begin on page 6.

FINANCIAL HIGHLIGHTS

The Agency's net position as of June 30, 2018 was \$7,814,103 an increase of \$190,851 over the prior year. Total revenues increased by \$155,646 and total operating expenses increased by \$634,390.

USING THIS ANNUAL REPORT

This annual report consists of financial statements for Sonoma County Waste Management Agency as a whole. The statement of net position and the statement of revenues, expenses and changes in net position provide information about the activities of the Agency as a whole and present a long-term view of its finances.

THE AGENCY AS A WHOLE

One important question asked about the Agency's finances is, "SCWMA better or worse off as a result of the year's activities?" The information in the basic financial statements helps answer this question. These statements include *all* assets and liabilities using the *accrual basis of accounting*, which is similar to the basis of accounting used by most private-sector companies.

The change in *net position* (the difference between total assets and total liabilities) over time is one indicator of whether SCWMA's financial health is improving or deteriorating. However, one must consider other nonfinancial factors in making an assessment of the Agency's health, such as changes in the economy and changes in its jurisdiction, etc.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
MANAGEMENT'S DISCUSSION AND ANALYSIS
(Continued)**

Changes in the Agency's assets and liabilities were as follows:

	<u>2018</u>	<u>2017</u>	<u>Increase (decrease)</u>
Current assets	\$ 8,875,518	\$ 8,573,234	\$ 302,284
Noncurrent assets	39,935	-	39,935
Total assets	<u>8,915,453</u>	<u>8,573,234</u>	<u>342,219</u>
Current liabilities	<u>1,101,350</u>	<u>949,982</u>	<u>151,368</u>
Net position:			
Net investment in capital assets	39,935	-	39,935
Unrestricted	<u>7,774,168</u>	<u>7,623,252</u>	<u>150,916</u>
Total net position	<u><u>\$ 7,814,103</u></u>	<u><u>\$ 7,623,252</u></u>	<u><u>\$ 190,851</u></u>

The Agency experienced an increase in total assets and an increase in current liabilities during the year ended June 30, 2018, as a result of normal operating activity. For noncurrent assets, the Agency acquired a vehicle during the fiscal year for its operating activities.

Changes in SCWMA's revenue, expenses and net position were as follows:

	<u>2018</u>	<u>2017</u>	<u>Increase (decrease)</u>
Revenues:			
Operating revenues			
Municipal waste management	\$ 7,377,070	\$ 7,269,373	\$ 107,697
Nonoperating revenues			
Investment income (loss)	<u>79,011</u>	<u>31,062</u>	<u>47,949</u>
Total revenues	<u>7,456,081</u>	<u>7,300,435</u>	<u>155,646</u>
Expenses:			
Operating expenses	<u>7,265,230</u>	<u>6,630,840</u>	<u>634,390</u>
Change in net position	<u><u>\$ 190,851</u></u>	<u><u>\$ 669,595</u></u>	<u><u>\$ (478,744)</u></u>

The increase in operating revenue was the result of a higher tipping fee per ton. The most significant factor contributing to the increase in operating expenses was related to increase in volume of tonnage disposed.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
MANAGEMENT'S DISCUSSION AND ANALYSIS
(Continued)**

CAPITAL ASSETS

During the fiscal year ended June 30, 2018, we purchased a vehicle at a cost of approximately \$43,000.

ECONOMIC OUTLOOK

- The Agency will continue to set aside reserve funds as part of its long-term financial planning.
- The Agency's revenue is expected to cover expenditures for all planned future projects.

REQUESTS FOR INFORMATION

This financial report is designed to provide our residents, taxpayers and creditors with a general overview of the Agency's finances and to demonstrate its accountability for the funds under its stewardship.

Please address any questions about this report or requests for additional financial information to Sonoma County Waste Management Agency, 2300 County Center Drive Ste. B-100, Santa Rosa, CA 95403.

Respectfully submitted,

Leslie Lukacs

Executive Director

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
STATEMENT OF NET POSITION
AS OF JUNE 30, 2018**

ASSETS

Current assets:	
Investment in Sonoma County Pooled Investment Fund	\$ 7,531,289
Receivables:	
Tipping and administration fees receivable	1,270,270
Due from State	51,508
Other	14,312
Prepaid expenses	8,139
Total current assets	<u>8,875,518</u>
Noncurrent assets:	
Capital assets, net of accumulated depreciation	39,935
Total assets	<u>8,915,453</u>

LIABILITIES

Current liabilities:	
Accounts payable and accrued expenses	838,648
Unearned grant advances	262,702
Total current liabilities	<u>1,101,350</u>

NET POSITION

Invested in capital assets	39,935
Unrestricted	<u>7,774,168</u>
Total net position	<u><u>\$ 7,814,103</u></u>

The accompanying notes are an integral part of this financial statement.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
STATEMENT OF REVENUES, EXPENSES
AND CHANGES IN NET POSITION
YEAR ENDED JUNE 30, 2018**

OPERATING REVENUES:

Tipping and administration fees	\$ 7,003,900
Grants from State of California	268,816
Miscellaneous fees and other revenue	<u>104,354</u>
Total operating revenues	7,377,070

OPERATING EXPENSES:

Adminstration	787,668
Program services and supplies	6,302,142
Other services and supplies	171,896
Depreciation	<u>3,524</u>
Total operating expenses	<u>7,265,230</u>
Operating income (loss)	<u>111,840</u>

NONOPERATING REVENUES (EXPENSES):

Investment income (loss)	<u>79,011</u>
Total nonoperating revenues (expenses)	<u>79,011</u>

CHANGE IN NET POSITION

	190,851
Net position at beginning of the year	<u>7,623,252</u>
Net position at end of the year	<u><u>\$ 7,814,103</u></u>

The accompanying notes are an integral part of this financial statement.

SONOMA COUNTY WASTE MANAGEMENT AGENCY
STATEMENT OF CASH FLOWS
YEAR ENDED JUNE 30, 2018

CASH FLOWS FROM OPERATING ACTIVITIES:

Tipping and administration fees	\$ 7,258,152
Grants from State of California	288,575
Miscellaneous fees and other revenue	121,204
Administration expenses	(787,668)
Program services and supplies	(6,234,809)
Other services and supplies	(162,411)
	<hr/>
Net cash provided by (used for) operating activities	483,043
	<hr/>

**CASH FLOWS FROM CAPITAL AND RELATED
FINANCING ACTIVITIES:**

Payments to acquire capital assets	(43,459)
	<hr/>

CASH FLOWS FROM INVESTING ACTIVITIES:

Investment income	79,011
	<hr/>

Net increase (decrease) in cash equivalents	518,595
Cash equivalents (Sonoma County pooled investment fund) at beginning of year	7,012,694
	<hr/>
Cash equivalents (Sonoma County pooled investment fund) at end of year	\$ 7,531,289
	<hr/>

**RECONCILIATION OF OPERATING INCOME TO
NET CASH PROVIDED BY OPERATING ACTIVITIES**
**RECONCILIATION OF OPERATING INCOME
(LOSS) TO NET CASH PROVIDED (USED)
BY OPERATING ACTIVITIES**

Operating income (loss)	\$ 111,840
Adjustments to reconcile operating income to net cash provided (used) by operating activities:	
Depreciation Expense	3,524
(Increase) decrease in receivables	219,594
(Increase) decrease in prepaid expenses	(3,283)
Increase (decrease) in accounts payable other liabilities	80,101
Increase (decrease) in unearned grant advances	71,267
	<hr/>
Net cash provided by (used for) operating activities	\$ 483,043
	<hr/>

The accompanying notes are an integral part of this financial statement.

8

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

1. DESCRIPTION OF THE ENTITY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

REPORTING ENTITY

The Sonoma County Waste Management Agency (Agency) was formed in April 1992 to assist the cities and County with the implementation of programs necessary to satisfy the requirements of the Assembly Bill (AB) 939, the Integrated Waste Management Act of 1989. This Act requires that every jurisdiction in California plan for and implement programs that reduce the amount of waste disposed in landfills by 25% by the year 1995 and 50% by 2000. The Agency was granted a three-year extension to 2003 by the State. The State has determined that the Agency has met its 2003 goal. The Agency is continuing its efforts to reduce the amount of waste disposed in landfills, beyond the current 50% required by AB939. As of the date of this report, no new laws requiring waste reduction beyond 50% have been enacted. In 2006, the California Integrated Waste Management Board changed the calculation to pounds per person per day rate to determine compliance without changing the percentage reduction, with a rate goal of 7.1. In 2018 Sonoma County's rate was 3.9.

The Agency's activities include a regional composting program, household hazardous waste collections, and countywide efforts towards waste reduction and recycling.

The Agency is governed by a ten member board of directors, with one member from nine Sonoma County cities and towns and one from the County. The Agency appoints an Executive Director who is employed through an at-will agreement with the County. Additional staffing is provided by the County through a contract with the Agency.

The Agency's programs are funded through garbage disposal fee surcharges, charges for services and grants. Each program of the Agency is accounted for with a separate cost center. The composting program is entirely funded by charges for delivery of material to its program. The household hazardous waste, education and waste diversion efforts are funded through a surcharge on garbage brought to County disposal sites along with support from State Grants.

Since its creation in April of 1992, the Agency has added two new components to its scope of work: the Planning and Diversion Programs. Planning efforts currently include preparation of Annual Reports submitted to the California Integrated Waste Management Board and is funded through the disposal fee surcharge. The Diversion Program cost center was established to track expenditures that have direct measurable diversion. However, since 2010, all diversion activities are currently operating under the Education cost center.

The County of Sonoma, through the Integrated Waste Management Division of the Department of Transportation and Public Works, tracks each load of yard and wood waste entering the county disposal system. A tonnage tipping fee is collected to pay for operating

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

1. DESCRIPTION OF THE ENTITY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

costs of the organic program. A surcharge on the solid waste tipping fee entering the county disposal system is used to fund the other programs, such as household hazardous waste, education, diversion and planning. The Agency reimburses the County for services provided by the County as outlined in a Memorandum of Understanding between the County and the Agency dated September 18, 2007. Staff services include Agency Director, professional staff, secretarial and as requested by the Agency, reasonable and necessary services from other County departments.

MEASUREMENT FOCUS, BASIS OF ACCOUNTING, AND FINANCIAL STATEMENT PRESENTATION

The financial statements are reported using economic resources measurement focus and the accrual basis of accounting. This means that all assets and all liabilities (whether current or noncurrent) associated with this activity are included on the statement of net position. Basis of accounting refers to when revenues and expenditures or expenses are recognized in the accounts and reported in the financial statements, regardless of the measurement focus applied.

The Agency's Enterprise Fund financial statements report business-type activities financed in whole or in part by fees charged to external parties for goods or services. Enterprise Funds account for operations that are financed and operated in a manner similar to private business enterprises – where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges – or where the governing body has decided that periodic determination of revenues earned, expenses incurred and/or net income is appropriated for capital maintenance, public policy, management control, accountability or other purposes.

The accrual basis of accounting is used by enterprise funds. Under this method, revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows.

Operating revenues and expenses are distinguished from non-operating items in the statement of revenues, expenses and changes in net position. Operating revenues, such as tipping fees and sales of recycled products result from exchange transactions associated with the principal activity of the funds. Exchange transactions are those in which each party receives and gives up essentially equal values. Non-operating revenues, such as investment earnings, result from non-exchange transactions or ancillary activities. Operating expenses for enterprise funds include services and supplies. All expenses not falling within these categories are reported as non-operating expenses.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

1. DESCRIPTION OF THE ENTITY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

INVESTMENT IN SONOMA COUNTY POOLED INVESTMENT FUND:

For purpose of the statement of cash flows, the Agency has defined cash equivalents to include investments within the Sonoma County Pooled Investment Fund that are not restricted as to use.

The Agency applies the provisions of GASB Statement No. 31, Accounting and Financial Reporting for Certain Investments and External Investment Pools, which require governmental entities, including governmental external investment pools, to report certain investments at fair value in the balance sheet and recognize the corresponding change in the fair value of investments in the year in which the change occurred. In accordance with GASB Statement No. 31, the Agency has stated certain investments at fair value.

Net Position Components

Net position components are classified into three components – net investment in capital asset, restricted and unrestricted. These classifications are defined as follow:

- **Investment in capital assets** (if any) - This component of net position consists of capital assets, including restricted capital assets, net of depreciation and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.
- **Restricted net position** (if any) - This component of net position consists of net position with limits on their use that are imposed by outside parties.
- **Unrestricted net position** - This component of net position consists of net position that is not restricted for any project or other purpose.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

1. DESCRIPTION OF THE ENTITY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from those estimates.

2. INVESTMENT IN SONOMA COUNTY POOLED INVESTMENT FUND

The Agency follows the County's practice of pooling cash and investments with the County Treasurer, except for a petty cash fund. Cash is pooled with the Sonoma County Treasurer, who acts as a disbursing agent for the Agency. Interest earned on investments pooled with the County is allocated quarterly to the appropriate fund based on its respective average daily balance for that quarter. The Investment Oversight Committee has regulatory oversight for all monies deposited into the Treasury Pool. The fair value of the Agency's investment in this pool is reported in the accompanying financial statements at amounts based upon the Agency's pro-rata share of the fair value provided by the Treasury Pool for the entire Treasury Pool portfolio (in relation to the amortized cost of that portfolio). The balance available for withdrawal is based on accounting records maintained by the Treasury Pool, which are recorded on an amortized cost basis.

The fair value of the Agency's cash investment with the Treasurer is \$43,904 less than the amortized cost of those investments. The amount invested in the Sonoma County Pooled Investment Fund at June 30, 2018, is as follows:

Amortized cost:	\$7,575,193
Fair value:	\$7,531,289

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

2. INVESTMENT IN SONOMA COUNTY POOLED INVESTMENT FUND (continued)

Investment Guidelines

The Agency's pooled cash and investments are invested pursuant to investment policy guidelines established by the Treasurer and approved by the Board of Supervisors. The objectives of the policy are, in order of priority: safety of capital, liquidity and maximum rate of return. The policy addresses the soundness of financial institutions in which the County will deposit funds, types of investment instruments as permitted by the California Government Code 53601, and the percentage of the portfolio that may be invested in certain instruments with longer terms to maturity.

A copy of the Treasury Pool investment policy is available upon request from the Sonoma County Treasurer at 585 Fiscal Drive, Suite 100, Santa Rosa, California, 95403-2871.

Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value is to changes in market interest rates. As a means of limiting its exposure to fair value losses arising from rising interest rates, one of the ways that the Treasury

Pool manages its exposure to interest rate risk is by purchasing a combination of shorter term and longer term investments and by timing cash flows from maturities so that a portion of the portfolio is maturing or coming close to maturing evenly over time as necessary to provide the cash flow and liquidity needed for operations.

As of June 30, 2018, approximately 50 percent of the securities in the Treasury pool had maturities of one year or less. Of the remainder, only 1 percent had a maturity of more than five years.

Disclosures Relating to Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. The Treasury Pool does not have a rating provided by a nationally recognized statistical rating organization.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

2. INVESTMENT IN SONOMA COUNTY POOLED INVESTMENT FUND (continued)

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The California Government Code and the Treasury Pool's Investment Policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for deposits or investments, other than the following provision for deposits and securities lending transactions:

- The California Government Code requires that a financial institution secure deposits made by state or local governmental units by pledging securities in an undivided collateral pool held by depository regulated under state law. The market value of the pledged securities in the collateral pool must equal at least 110% of the total amount deposited by the public agencies.
- The California Government Code limits the total of all securities lending transactions to 20% of the fair value of the investment portfolio.

With respect to investments, custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to a local government's indirect investment in securities through the use of mutual funds or government investment pools (such as the Treasury Pool).

Concentration of Credit Risk

The investment policy of the County contains no limitations on the amount that can be invested in any one issuer beyond that stipulated by the California Government Code. For a listing of investments in any one issuer (other than U.S. Treasury securities, mutual funds, or external investment pools) that represent 5% or more of total County investments, refer to the 2017-2018 Sonoma County Comprehensive Annual Financial Report.

**SONOMA COUNTY WASTE MANAGEMENT AGENCY
NOTES TO THE FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 2018**

2. INVESTMENT IN SONOMA COUNTY POOLED INVESTMENT FUND (continued)

FAIR VALUE MEASUREMENT

GASB Statement No. 72, *Fair Value Measurement and Application*, sets forth the framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. Level 1 inputs are quoted prices in an active market for identical assets; Level 2 inputs are significant other observable inputs; and Level 3 inputs are significant unobservable inputs.

The Agency's only investment is in the Sonoma County Pooled Investment Fund and is not required to be categorized under the fair value hierarchy.

3. CAPITAL ASSETS

Capital assets activity for the year ended June 30, 2018, was as follow:

	Beginning Balance	Additions	Ending Balance
Cost of depreciable assets in service			
Automobile and trucks	\$ -	\$ 43,459	\$ 43,459
Total	-	43,459	43,459
Less: Accumulated depreciation	-	(3,524)	(3,524)
Equipment, net	<u>\$ -</u>	<u>\$ 39,935</u>	<u>\$ 39,935</u>

4. RISK MANAGEMENT

The Agency is exposed to various risks for which the Agency carries insurance with coverage for bodily injury, property damage, personal injury, auto liability, and errors and omissions and cyber security. The Agency is covered through Alliant Insurance Services, Inc. for \$5,000,000 per occurrence.

5. COMMITMENTS

The Agency is obligated under several service agreements that extend beyond the fiscal year ended June 30, 2018, many of which ensure pricing per ton transported or processed.

6. RELATED PARTY TRANSACTIONS

Agency staffing, occupancy and support services are provided by the County of Sonoma, an Agency member. During fiscal year ended June 30, 2018, expenses for these services totaled approximately \$863,000.



Independent Auditors' General Communication to Board

June 19, 2020

To the Board of Directors
Sonoma County Waste Management Agency

We have audited the financial statements of the Sonoma County Waste Management Agency for the year ended June 30, 2018, and have issued our report thereon dated June 19, 2020. Professional standards require that we provide you with the following information related to our audit.

Our Responsibility under U.S. Generally Accepted Auditing Standards

As stated in our engagement letter dated May 16, 2019, our responsibility, as described by professional standards, is to express opinions about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by Sonoma County Waste Management Agency are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing policies was not changed during year. We noted no transactions entered into by the governmental unit during the year for which there is a lack of authoritative guidance or consensus. There are no significant transactions that have been recognized in the financial statements in a different period than when the transaction occurred.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. There are no significant estimates used in preparing the financial statements.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit except that it took a considerable amount of time to provide documentation regarding the Agency's Authority to receive revenue in excess of the budgeted rate.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. The adjustments made as a result of the audit were primarily reclassifications required to present information recorded in an accounting system used primarily for budgetary analysis into a format of financial statements that complies with generally accepted accounting principles for governments. ..

Any other misstatements detected as a result of audit procedures and corrected by management were immaterial, either individually or in the aggregate, to the financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated June 19, 2020.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the governmental unit's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the governmental unit's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

This information is intended solely for the use of Board of Directors and management of Sonoma County Waste Management Agency and is not intended to be and should not be used by anyone other than these specified parties.

Very truly yours,

Maher Accountancy

SONOMA COUNTY WASTE MANAGEMENT AGENCY
2300 County Center Drive, Suite B-100
SANTA ROSA, CA 95403

June 19, 2020

Maher Accountancy
1101 Fifth Avenue, Suite 200
San Rafael, CA 94901

We are providing this letter in connection with your audit of the financial statements of Sonoma County Waste Management Agency as of June 30, 2018, and for the year then ended for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position of Sonoma County Waste Management Agency and the results of its operations in conformity with accounting principles generally accepted in the United States of America.

We confirm we are responsible for the fair presentation in the financial statements of financial position and results of operations in conformity with accounting principles generally accepted in the United States of America. We are also responsible for adopting sound accounting policies, establishing and maintaining internal control, and preventing and detecting fraud.

We confirm, to the best of our knowledge and belief, the following representations made to you during your audit.

1. The financial statements referred to above are fairly presented in conformity with generally accepted accounting principles and include all properly classified funds and account groups.
2. We have made available to you all:
 - a. Financial records and related data,
 - b. Minutes of all Board meetings of Sonoma County Waste Management Agency, or summaries of actions of recent meetings for which minutes have not yet been prepared.

3. We have no knowledge of any fraud or suspected fraud affecting the entity involving:
 - a. Management,
 - b. Employees who have significant roles in internal control, or
 - c. Others where fraud could have a material effect on the financial statements.
4. We have no knowledge of any allegations of fraud or suspected fraud affecting the entity received in communications from employees, former employees, analysts, regulators, or others.
5. We have no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or fund balances.
6. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.
7. Related party transactions have been properly recorded or disclosed in the financial statements.
8. There are no material transactions that have not been properly recorded in the accounting records underlying the financial statements.
9. We have identified all accounting estimates that could be material to the financial statements, including the key factors and significant assumptions underlying those estimates, and we believe the estimates are reasonable in the circumstances.
10. Required supplementary information (RSI) is measured and presented within prescribed guidelines.
12. There have been no:
 - a. Violations or possible violations of budget ordinances, or laws or regulations (including those pertaining to adopting and amending budgets) whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency,

- b. Other material liabilities or gain or loss contingencies that are required to be accrued or disclosed by Statement of Financial Accounting Standards No. 5, *Accounting for Contingencies*,
 - c. Reservations or designations of fund equity that were not properly authorized and approved.
13. We are not aware of any pending or threatened litigation, claims, or assessments or unasserted claims or assessments that are required to be accrued or disclosed in the financial statements in accordance with Statement of Financial Accounting Standards No. 5, and we have not consulted a lawyer concerning litigation, claims or assessments.
14. Sonoma County Waste Management Agency has satisfactory title to all owned assets, and there are no liens or encumbrances on such assets, nor has any asset been pledged.
15. We are responsible for Sonoma County Waste Management Agency's compliance with laws and regulations applicable to it; and, we have identified, and disclosed to you, all laws and regulations that have a direct and material effect on the determination of financial statement amounts. We have complied with all aspects of laws, regulations, and contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
16. No events have occurred subsequent to the balance sheet date that would require additional adjustments to, or disclosure in, the financial statements.
17. There are no restrictions of the Agency's fund balance.
18. The Contract with the County of Sonoma for SCWMA staffing provides for the full cost of personnel and SCWMA full obligation, including post-retirement benefits, is satisfied by the monthly payments by SCWMA to the County. SCWMA has no future financial obligation to the County or others regarding staffing.
19. SCWMA has properly recorded revenue for fees related to SCWMA's agreement with the County of Sonoma and its contract with Republic Services.



Leslie Lukacs, Executive Director

6/19/20

Date



Thora Collard, Administrative Manger

6/19/2020

Date



Agenda Item #: **4.4**
Cost Center: Organics
Staff Contact: **Tan**
Agenda Date: **7/15/2020**
Approved By: LL

ITEM: SUMMARY AND END OF HOME COMPOSTING CONTRACT

I. RECOMMENDED ACTION / ALTERNATIVES TO RECOMMENDATION

This transmittal is for informational purposes only. No action is requested of the Board.

II. BACKGROUND

In response to the closure of Sonoma Compost in 2015, the Agency launched a home composting education program to reduce landfilling of residential organic material. Since curbside organics had to be trucked out of county for processing, home composting was also thought to have the added benefit of reducing greenhouse gas emissions related to transportation. Additionally, educating residents about the benefits of compost as a soil amendment would decrease the need for artificial fertilizers while also increasing awareness of individual actions and their connection to the climate.

The UC Cooperative Extension (UCCE) Sonoma and the UC Master Gardener Program of Sonoma County was awarded a 3-year contract in 2017 to provide education and outreach services related to backyard composting and vermicomposting to the residents of Sonoma County. Activities would take place in fairs, schools, libraries, and other community centers so that information could be disseminated to diverse audiences. Part of the outreach would include in-person workshops, at least seven per fiscal year, that were at no cost to the public. Information and all resources would be available in English and Spanish. The contract had two, 1-year extensions built in, but in anticipation of a decrease in Agency revenue due to COVID-19, staff has decided to discontinue the program for the time being.

III. DISCUSSION

The home composting program has been immensely successful during the time that the Agency has contracted with the UCCE and Master Gardener Program of Sonoma County. Over the course of three years, 21,657 people were reached through a little over 600 events, community gatherings, workshops, farmers' markets, library series talks, and the resource desk. Potentially tens of thousands more were reached through social media, radio, the UCCE's website, and the Agency's website. The variety of outlets allowed for information to be disseminated to a diverse range of audiences.

When Governor Newsom issued the first shelter in place order in March 2020 to slow the spread of COVID-19, several scheduled workshops were canceled as they were considered banned public gatherings and events. Agency and UCCE staff switched strategies and worked together to offer virtual home composting workshops as an alternative. Hosted through the

Zoom platform, these live events proved extremely popular, with attendance as high as 97 people for a single workshop. The workshop recordings were then uploaded to the UCCE YouTube account and the Agency's website as evergreen resources.

The last of the contract funds were used to update and translate two brochures: "Hints for (hot pile) Composting" and "Worm Composting". Both brochures now match the Agency's new branding style and colors. A small batch was printed, and the digital versions were uploaded online.

Staff appreciates the work accomplished through the partnership with the UCCE and Master Gardener Program of Sonoma County. Staff look forward to reinstating the home composting education program if funds are available in the near future.

IV. FUNDING IMPACT

None

V. ATTACHMENTS

Countywide Community Compost Education Program Report 2019-2020
Hints for (hot pile) Composting Brochure
Worm Composting Brochure

Countywide Community Compost Education Program Report 2019-2020



July 2019-June 2020 Annual Report

Prepared by Jennifer Roberts, Program Manager, Community Compost Education
& Mimi Enright, Program Manager,
UC Cooperative Extension Sonoma County

Countywide Community Compost Education Program

Annual Report, July 2019-June 2020

This is a report of activities associated with the Zero Waste Sonoma (ZWS), formerly known as Sonoma County Waste Management Agency, funding of the UC Master Gardener Program of Sonoma County (UCMGSC) Countywide Compost Education Program from July 1, 2019 to June 30, 2020.

Results Summary



Via all of UCMGSC's program outreach in fiscal year 2019-20, a total of 10,000 people were reached through over 300 events, community gatherings, workshops, farmers' markets, library series talks and the resource desk. Many thousands more were reached via our website and Facebook page which provide educational information on home composting and pesticide use reduction strategies as well as many other topics. One thousand seven hundred twenty three school children were also reached in school/event vermicomposting presentations.

Program Goals and Contracted Tasks

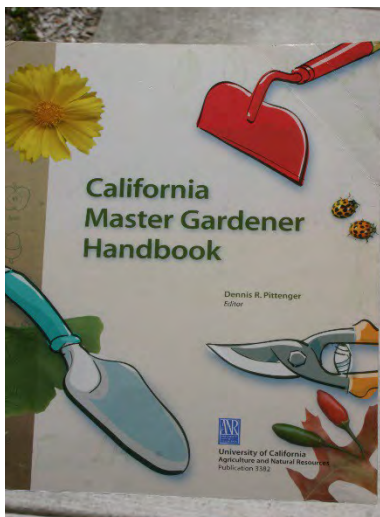
To reduce organic landfill inputs by teaching home composting through volunteer Master Gardeners (MG) at public events, schools, community gatherings, resource desks, and workshops, UCMGSC provides for composting education in each major city of Sonoma County with targeted education at major events and fairs as well as farmers' markets and libraries. The UCMGSC program utilizes composting & vermicomposting brochures in English and Spanish, to share with the public in educational outreach. UCMGSC informs Sonoma County residents of the benefits, materials, and effort involved in composting and vermicomposting at home via the following methods:

- Hold five composting workshops in English in each of the five geographic regions of the county (north, south, west, east, and central) and two Spanish language hands-on composting workshops (with the assistance of a Soluna Outreach Solutions Spanish speaking translator and presenter) in Santa Rosa and the Boyes Hot Springs area.
- Provide home composting information via direct contact with 5,000 county residents at selected major public events, including, but not limited to, the Sonoma County Fair, for a minimum of 25 event days per fiscal year.
- Create an educational demonstration garden including a compost bin at the Sonoma County Fair.
- Provide home composting and vermicomposting information and brochures via direct contact with county residents at farmers' markets and UCMGSC Library Series presentations at Sonoma County Libraries for a minimum of 200 Farmers' Market and Library Series days.
- Conduct 10 school classroom presentations per fiscal year, providing each class with worm composting materials for students and teachers to practice school waste diversion and to effect behavioral change in students at school and at home.
- Provide a resource desk and phone line to answer composting questions at the UCCE Sonoma office.

- Determine the effectiveness of UCMGSC outreach efforts (landfill tonnage reduction) through surveys sent each fiscal year to at least two hundred people who have received educational information.

In order to maximize outreach to the Spanish speaking population in Sonoma County, as part of the agreement ZWS has been paying for the services of Soluna Outreach Solutions for publicity to increase Spanish language outreach via Spanish language radio stations and other media as well as for translation services of print materials and at the Spanish language workshops. This years workshops were promoted on numerous Spanish radio shows, A PSA was created to air on two stations. El Superior and Impulso Newspapers advertised the workshop in their electronic issues. The Spanish workshops are conducted by Soluna Outreach Solutions Principal, Hugo Mata.

Background



Since 1993, the University of California Cooperative Extension (UCCE) has provided compost education for county residents with funding from the Sonoma County Waste Management Agency (SCWMA). In the last twenty years, the program has made over 750,000 contacts with composting brochures, bin distribution programs, educational booths at large public events, library talks, farmers' market information tables, workshops, and by providing a resource desk for call-in/drop-in questions in Santa Rosa. Each year large numbers of people have been reached by concentrating efforts at educational booths at well-attended public events.

From 1994-2002, surveys were conducted to document home composting by trained workshop and educational event participants, which provided the benchmark for tonnage diversion up until 2002.

According to those surveys we estimated that almost 70% of workshop contacts began or increased composting and reduced their input into the waste stream by 19.5 gallons per household per month.

In 2003-04, a short post card survey was sent to people who received information about home composting from the Master Gardener Program. This survey was designed to gather information about

the effectiveness of information disseminated on home composting from mini-demos and event booths. From survey responses we estimated that about one-quarter (23.2%) of those, who had received information on composting, started or increased their composting. Those respondents indicated that on average they were composting almost 1 gallon (0.92 gallons) of kitchen waste and almost 4 gallons (3.68 gallons) of yard waste per month. Additionally, almost one-third



(29.7%) of the survey respondents indicated that on average they were diverting 13.8 gallons per month of organic materials into the curbside pick-up containers. Similar results were obtained from surveys conducted in 2007 and 2010 in which twenty percent (20%) of the people receiving compost information from the Master Gardener Program started or increased composting. They also indicated that they were composting about 18 gallons of kitchen scraps and yard waste per month.

The 2013 survey showed that 64% of respondents had started or increased composting and that they were composting an average of 4.4 gallons of kitchen scraps and 42 gallons of yard waste per month. That is a large increase from previous surveys in past years. In 2016, the survey showed that 54% of respondents had started or increased composting and that they were composting an average of 5.6 gallons of kitchen scraps and 22 gallons of yard waste per month. Current diversion estimates are based on the 2016 survey, the results of which indicate that the educational efforts by the Sonoma County UCCE Master Gardeners are very effective and have led to a significant reduction in landfill inputs.

The Compost Education Program is operated primarily by volunteers. The budget reflects maintenance of current educational efforts. There are four unique aspects to this project:

1. Master Gardener (MG) volunteers are under the direction of the University of California Cooperative Extension and connected to UC-based research expertise.
1. Non-biased documentation of the results of educational efforts is conducted periodically in order to re-evaluate and update methodologies of the program. Landfill diversion estimates are based on statistically valid indicators of behavioral change collected from survey data.
2. Master Gardeners have a broad-based network of community projects and a reputation for providing practical science based information.
3. The volunteer nature of the program provides multiple in-person contacts for homeowners at a substantially lower cost than private contracting.



Objectives Achieved in 2019-20



Community Compost Workshop Series

This program of conducting seven workshops per fiscal year was created in reaction to the closure of Sonoma Compost in 2015. The program ran as a pilot partnership between UCSCMG, and at the time, the Sonoma County Waste Management Agency (now Zero Waste Sonoma) in 2016. After a successful pilot year program, The UCMGSC was awarded the contract to continue waste reduction education in 2017. This current contract runs August 2017- June 2020.

The primary objectives of the programs are:

- (1) to teach home gardeners about back yard composting and vermicomposting in order to ultimately reduce landfill inputs of kitchen scraps and yard waste which create climate change emissions;
- (2) to keep resources of kitchen scraps and yard waste on home gardener's sites to reduce the amount of truck trips to Transfer Stations and ultimately Composting Facilities that are currently located outside of our County;
- (3) to teach composting skills that create compost, a rich garden and soil input.

In person workshops are free, two hours long, and cover the basics of why composting is important. They also compare and contrast the two most popular systems, using a backyard pile or bin and using a worm bin (vermicomposting). Both systems are explored in detail and participants are left with an idea of which works best for them and how to get started right away.

The table below shows scheduled workshops and completed workshops (listed by location alphabetically); Three workshops were held in three of the geographic areas of Sonoma County, north, central, and east. Four others were scheduled and had to be cancelled do to COVID 19 restrictions and Shelter In Place (SIP).

Before COVID 19 (SIP) workshops in English were held in Santa Rosa, and Sonoma, a workshop in Spanish was held in Healdsburg. Table 1 below lists the workshops by city so you can see the geographic coverage in this timeframe.

Due to COVID 19 restrictions we decided to move our workshops to a virtual format. This was a first for our organization. We used the Zoom platform and created a slide presentation with many visuals to deliver the same information as is done in the in person workshops.

We decided to split the workshops into two parts, one titled Intro to Composting: Starting a Hot Pile and Intro to Composting with Worms. Each workshop was one hour long, plus time for live questions. This time frame allowed the information to be digested better as it can be harder to keep focused on a slide presentation for two hours. This also allowed participants to sign up for just one section if they weren't interested in both topics.

We coincided the launch of our virtual workshops with International Compost Awareness Week, May 3-9th, 2020. This year's theme was Soil Loves Compost.

After being in Shelter in Place just shy of a month, people were really excited to start gardening for the first time or to continue more than ever.



We had unprecedented pre-registration numbers for the initial English workshops. Approximately 175 people signed up for the Intro to Composting and 230 people sign up for Composting with Worms workshops. We had 20 people sign up for the Spanish Workshops.

Participants were told they had the option to attend the live version or to watch a recorded version later. Workshops were recorded and uploaded to our YouTube page.

All four versions of the workshops are available at <https://www.youtube.com/playlist?list=PLghaUabljrH2XE1kHU4Z0SzsfnLgl8XhX>

Links to these recorded workshops are found on the Composting page of our Website. They are also on the Home Composting page of Zero Waste Sonoma.

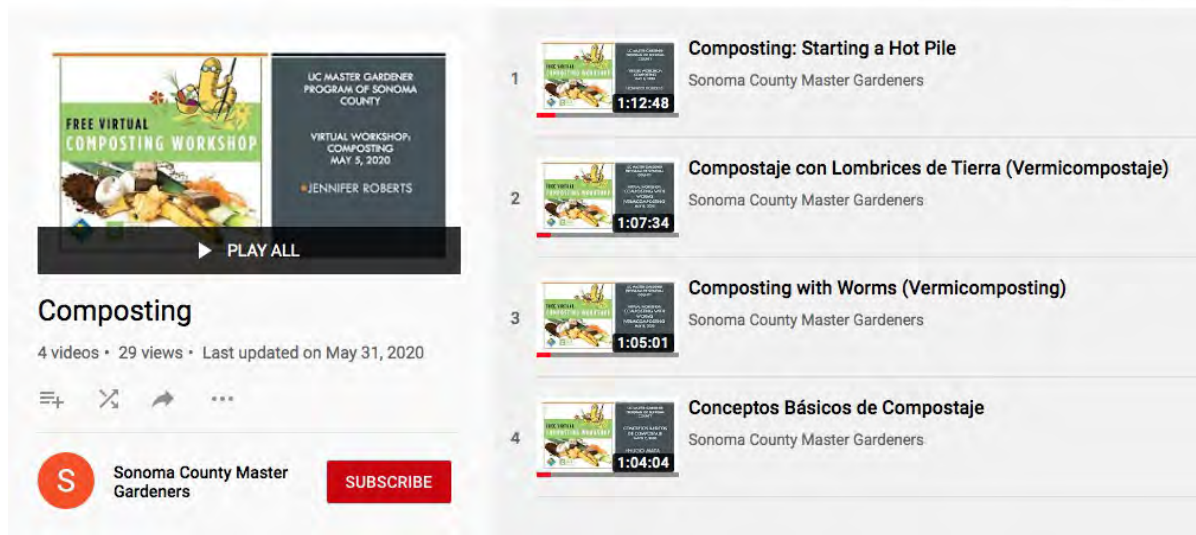
As of this writing each video on YouTube has had additional views.

Intro to Compost in English: 214

Worms in English: 66

Intro to Compost in Spanish: 19

Worms in Spanish: 17

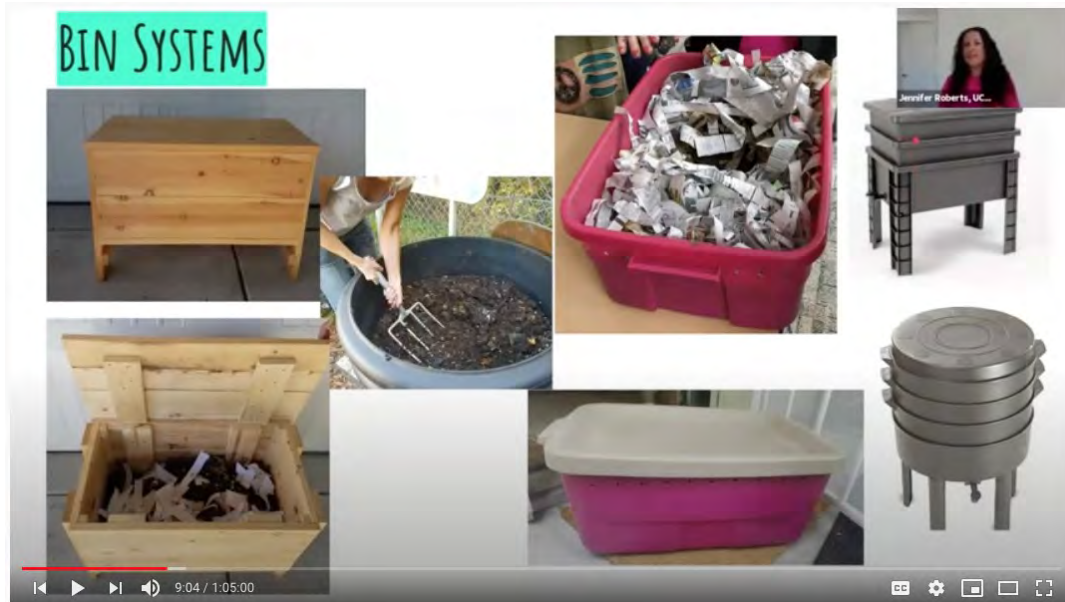


Screen Shot of the Workshop Videos on the Master Gardener YouTube.

Table 1. Master Gardeners Composting Workshops July 1, 2019- June 30, 2020

CITY	LOCATION	DATE	LANGUAGE	# CONTACTS
Sonoma	Sonoma Garden Park	09/28/19	English	7
Santa Rosa	Santa Rosa Water Department	10/21/19	English	21
Healdsburg	Healdsburg Labor Center	03/07/20	Spanish	21
Santa Rosa	Bayer Farm	3/21/20 CANCELLED	Spanish	0
Cloverdale	Cloverdale Community Garden	3/28/20 CANCELLED	English	0
Sebastopol	Permaculture Skills Center	5/2/20 CANCELLED	English	0
Petaluma	Petaluma Bounty Farm	5/9/20 CANCELLED	English	0
Virtual Workshop Regular	Zoom	05/05/20	English	97 Live
Virtual Workshop Regular	Zoom	05/07/20	Spanish	19 Live
Virtual Workshop Worms	Zoom	05/08/20	English	75 Live

Virtual Workshop Worms	Zoom	05/09/20	Spanish	9 Live
Virtual Workshop Regular	Zoom	06/16/20	English	14 Live
Virtual Workshop Worms	Zoom	06/17/20	English	9 Live



Screen Shot from Virtual Composting with Worms Presentation in English.

Total live participation at all workshops during this timeframe was 272. This makes for an average of 30 people per workshop. This is double our average from last fiscal year.



Screen Shot from Virtual Spanish Composting Workshop.

Printed brochures and Recycle Guides were available and highlighted at all in person workshops. A follow up email with the links to the recorded workshops and links to the virtual versions of the brochures was also sent to all virtual participants.

After each workshop both English and Spanish speaking participants were sent a survey that asks about their composting behavior before and after their participation in the workshop. A break down of the survey results is found later in this report.

Events, Community Gatherings, and Workshops



From July 2019 to February 2020 (No public events after February due to COVID 19) the Master Gardeners had booths at numerous large public events, community gatherings, and workshops in the county and provided information to people at these events. They distributed thousands of brochures and demonstrated home composting with display compost bins and worm boxes. We have excellent geographic coverage at events all around Sonoma County.

At one of our premier events each year, the demonstration garden at the Sonoma County Fair, we displayed a home compost bin and provided home composting brochures to many contacts. Large audiences were attracted to the garden which demonstrated sustainable landscaping practices, and many attendees received information on composting as in past years.

Other Educational Events

The Master Gardeners presented information on composting at over 300 small-scale events throughout the year. They distributed brochures, made short presentations on home composting and worm composting, and answered questions for people (at farmers' markets, demonstration gardens, garden clubs, and our Garden Sense program home visits and via our Library series).

The farmers' markets have information tables where Master Gardeners provide guidance on plant culture, pest control and composting.



The Library Series events focus on a specific gardening topic and include information and handouts on home composting and pesticide use reduction. Library Series Talks are on many topics that relate to general ideas of waste reduction including Right Plant, Right Place, Water Wise solutions and composting. Some of the library series talks specifically focus on composting or worm composting. Titles include the Wonderful World of Worms and The Single Best Thing You Can Do For Your Garden: Compost.

From July 1, 2019 to June 30, 2020, in partnership with the Zero Waste Sonoma via our Community Compost Education series, we hosted a series of 9 composting workshops as discussed previously.

We did an additional one hour compost presentation for the Cloverdale Garden Club with 45 participants.

We also had a table the Youth Climate Change Rally held in Santa Rosa. We spoke with 136 people about composting and the benefits for building soil and fighting climate change. There was a worm bin, compost examples, brochures and Recycling Guides. We advertised for our upcoming in-person workshop with 100 fliers and all were taken.

Our Garden Sense program, launched in September 2013, is a partnership with the Sonoma County Water Agency. Garden Sense volunteer consultants meet with Sonoma County residents in their gardens to discuss sustainable landscape practices, advise how to increase irrigation efficiency, reduce or remove lawns, soil health and create climate-appropriate gardens based on the client's functional needs.

School Presentations

During July 1, 2019 to June 30, 2020 Master Gardeners made 23 school presentations at 4 different Sonoma County schools. This is 19 more presentations than last fiscal year. See Chart Below with full listing.

Presentation are done in small groups from classrooms with an average of 25 - 30 students (K-12). The demonstrations were for the length of a normal class period. These are done in the classroom, or in a school garden and there is always a hands on component. They were done to develop an environmental awareness and to encourage recycling of organic materials from the classroom and school lunch/snacks.

Most presentations included the establishment of a worm box in the classroom or at the school's garden. Often the class receiving the Master Gardener presentation becomes the champion of the compost education for the rest of the school or a series of grade levels. They go on to teach other students and help develop a school wide composting program.



Flyers were given to the teachers and sent home with students to encourage parents to compost and recycle at home too.



We also have compost specific tabling efforts geared towards children at large events such as Quarry Hill Earth Day, the Heirloom Exposition and the North Bay Science Fair. See Table 2 for a list of schools and presentation dates July 1, 2019-June 30, 2020.

This fiscal year our largest children centered event was participation at the National Heirloom Exposition. We had our normal tabling presence in the main Exhibitor Hall But we were also invited to participate in the Kid's Pavilion for three day of hands on worm and compost critters activities.



Over the three day festival we had 1,159 contacts of mostly children and a few adults. Children were encouraged to look into our worm bin and compost critter plates. They could use magnifying glasses and containers to see decomposers close up. We also had a food sorting game where children could learn how to feed the worms correctly. We also had a Compost Critters poster showing the different decomposers they might meet in a compost pile or worm bin.

We were awarded an Honorable Mention Ribbon for our interactive table.

Table 2. Master Gardener School and Event Vermicomposting Presentations

SCHOOL	DATE	CONTACTS
Heirloom Exposition Kids Pavillion	09/10-12/19	1159
Westside School Healdsburg	09/25/19	43
Proctor Terrace Elementary	10/17/19	132
Steel Lane Elementary	12/11/19	159
Steel Lane Elementary	12/16/19	163
Parkside Elementary School	02/28/20	67
		Total 1,723

Resource Desks

The Master Gardeners maintain an Information Desk at the UCCE Sonoma office at 133 Aviation Boulevard, Suite 109 in Santa Rosa. We provide answers to walk-in clientele, and via e-mail and phone for gardening questions in Santa Rosa three days per week. This is one of the core functions of our organization and a key resource for educating the community. Due to COVID 19 changes we no longer are accepting walk in specimens or live requests but are still actively checking our email and phone messages and responding accordingly.

For fiscal year 2019-20 trained Master Gardeners answered questions related to home gardening from 1,696 people.

Educational Brochures

The Master Gardeners distributed copies of educational brochures about home composting at all of our major events, workshops, and schools presentations. In 2019 we revamped our Home Composting brochures with updated and simplified information. We have also translated our two most prominent brochures *Hints for Composting* and *Putting to Worms to Work* into Spanish. They will be available in hard copy and our website under our Spanish section. In 2020 Zero Waste Sonoma suggested a revamping of the brochures to fit the aesthetic of their rebranding. New brochures were created and printed using funds from the Compost Workshop grant. These brochures will be distributed at future in person events, tablings and workshops.

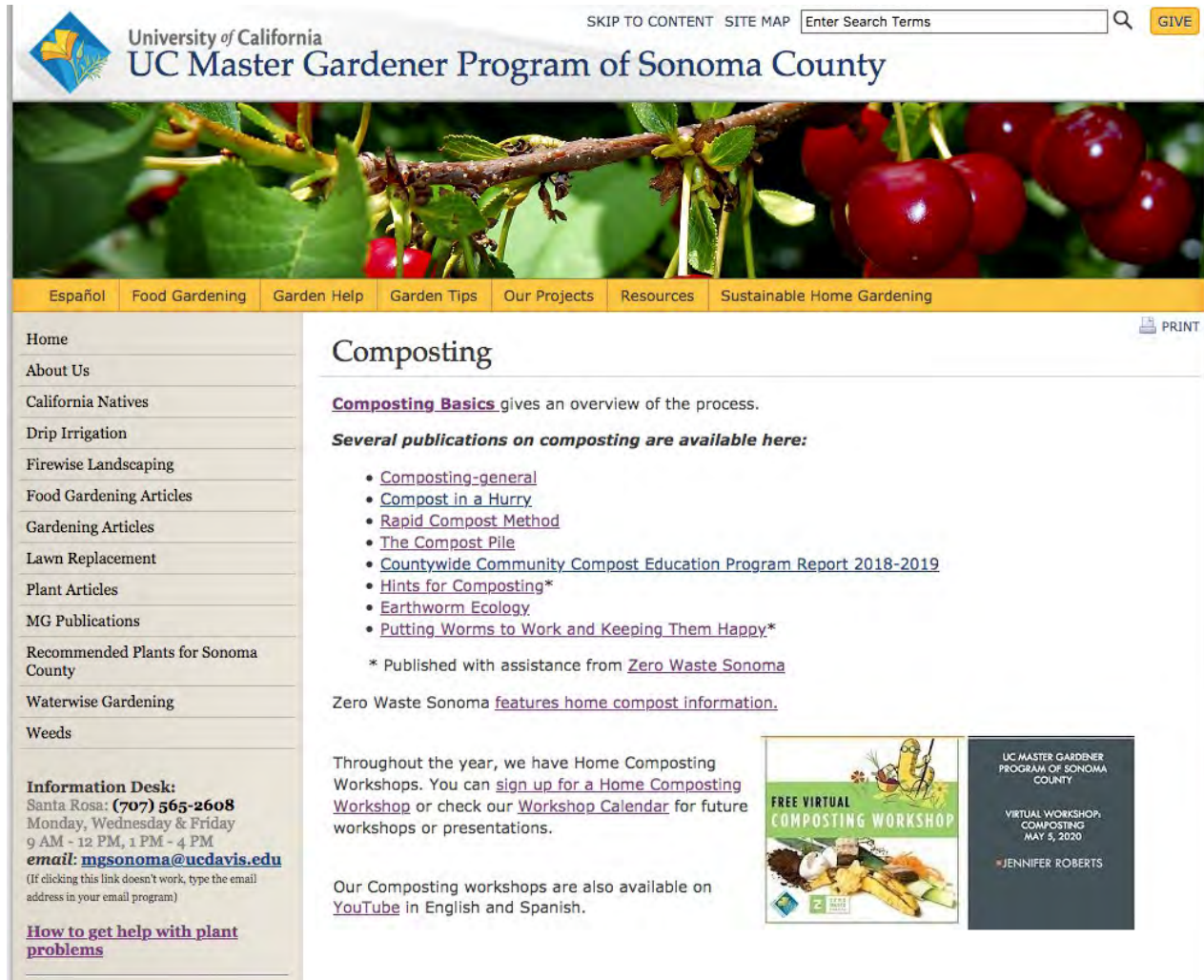
- *Hints for Composting*
- *Recycling Tips For Gardeners*
- *Home Composting in Spanish*
- *Worm Composting*

- *Putting Worms To Work And Keeping Them Happy*
- *Ponga Las Lombices de Tierra a Trabajar y Manténgalas Felices (Worm Composting in Spanish)*

In addition to our brochures, we have on hand the Zero Waste Sonoma's *Recycling Guide*. We refer to it directly during the Compost Workshops, point out the do's and don't's list. And remind participants they do not have to take a hardcopy as it is all available on the ZWS website. During the virtual workshops we introduced Zero Waste Sonoma as the county's resource for all questions related to reuse, recycling, or proper waste disposal. We displayed the logo and website and acknowledge their funding for this program and for our Worms in the Schools Program.

Master Gardener Website

The UCMGSC website (ucanr.edu/sonomamg) offers many resources for the home gardener, including a variety of composting publications that can be accessed at <http://ucanr.edu/sonomamg>.



University of California
UC Master Gardener Program of Sonoma County

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Waterwise Gardening
Weeds

Information Desk:
Santa Rosa: (707) 565-2608
Monday, Wednesday & Friday
9 AM - 12 PM, 1 PM - 4 PM
email: mgsonoma@ucdavis.edu
(If clicking this link doesn't work, type the email address in your email program)

[How to get help with plant problems](#)

Composting

[Composting Basics](#) gives an overview of the process.

Several publications on composting are available here:

- [Composting-general](#)
- [Compost in a Hurry](#)
- [Rapid Compost Method](#)
- [The Compost Pile](#)
- [Countywide Community Compost Education Program Report 2018-2019](#)
- [Hints for Composting*](#)
- [Earthworm Ecology](#)
- [Putting Worms to Work and Keeping Them Happy*](#)

* Published with assistance from [Zero Waste Sonoma](#)

Zero Waste Sonoma [features home compost information](#).

Throughout the year, we have Home Composting Workshops. You can [sign up for a Home Composting Workshop](#) or check our [Workshop Calendar](#) for future workshops or presentations.

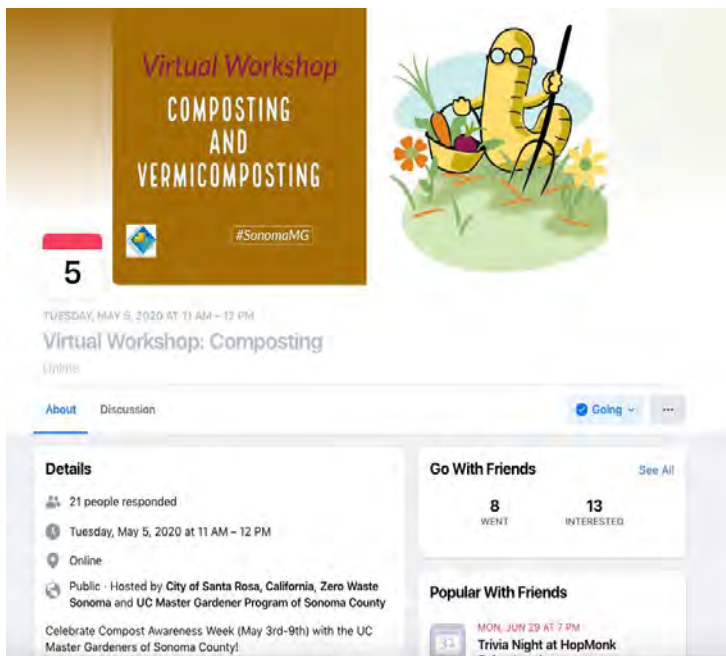
Our Composting workshops are also available on [YouTube](#) in English and Spanish.

FREE VIRTUAL COMPOSTING WORKSHOP

UC MASTER GARDENER PROGRAM OF SONOMA COUNTY
VIRTUAL WORKSHOP: COMPOSTING
MAY 5, 2020
JENNIFER ROBERTS

Facebook & Instagram Pages

The UCMGSC Facebook page was created in late 2011. Through regular posting, we have created a dedicated following on Facebook and have approximately 3,800 followers. Many posts actively promote composting and our Composting Workshops are each created as a separate event. ZWS helped to promote the workshop events on their social media platforms as well. For our partnership events with the City of Santa Rosa they helped promote by including the event information in their newsletter.



Left, Screen Shot of Facebook Event for Virtual Compost Workshop.
Right, Instagram Page with Numerous Compost Related Posts.

Our Instagram account was created in 2015. As of this writing we have 1,205 followers. It is another avenue we use to educate on basic how-to tips around waste diversion in the garden. We also use it to promote upcoming Compost Workshops, and this year's Compost Awareness Week May 3-9th, 2020. In the screenshot of the account below there are six separate postings related to compost.

This year we promoted the composting workshops heavily during Compost Awareness Week on both platforms and on the front page of our website. We attribute this promotion and new interest due to an expansion in home gardening due to SIP to the high registration numbers.

Conclusions and Recommendations

The UCMGSC home composting program has been teaching backyard composting to homeowners, apartment dwellers, and school children for more than twenty years. Each year we evaluate the program and make changes to meet the goal of reaching the largest number of people in the least time-

consuming and most rewarding ways for the participants and the Master Gardener volunteers. The group is committed to including composting and pesticide use reduction information as an essential part of gardening.

A concentration of efforts toward providing information at events where people are already present has greatly increased our numbers of contacts the last few years. Many of those contacts are made during short conversations at Master Gardener educational booths at places such as the demonstration garden and information table at the Sonoma County Fair, and weekly farmers' markets. Or through longer educational lectures or presentations at garden club talks, other fairs & festivals, community gardens, and library series presentations. A recap of our contacts for this fiscal reporting year is detailed below:

- Major Events, Information Tables, Workshops & Projects 4315
- Farmers Markets and Library Series 2292
- Information Desk, Santa Rosa 1696

- School children 1,723
- Website 284,346

TOTAL 294,372

Home composting and pesticide use reduction education has become an integral part of the Master Gardener program, and the volunteers are committed to it. A composting curriculum and an IPM (integrated pest management) program have been added to the core-training program for all new Master Gardeners, effective publications and handouts have been developed, and there is timely coordination of activities. The Master Gardeners are proud of the success of the home composting program and our outreach to the public on this topic.



Tonnage Diversion Estimates

The Master Gardeners had direct contact with 10,116 people in FY 2019-20 at large events and workshops and over 300 smaller scale events such as farmers' markets, tours, small fairs, library presentations, and resource desk. We also distributed composting brochures through educational booths, the Master Gardener desk, and through school presentations (1,723 youth). Calculations for the tonnage diversion estimates are based on direct contacts with adults only.

Our University of California survey in 2016 indicated that 54% of respondents increased or started composting. Home composters reduced their landfill inputs by 5.6 gallons of kitchen scraps and 22 gallons of yard waste per month. Based on these figures the diversion increase for FY 2016-17 due to the addition of new home composters or increased volume by those already composting was:

- $10,116 \times 54\% = 5,463$ households beginning or increasing home composting
- **Kitchen scraps*** diverted = 5.6 gallons per month/household = 30,593 gallons per month = 89 tons per month = 1,068 tons per year = 1,824 cubic yards per year
- **Yard waste*** diverted = 22 gallons per month/household = 120,186 gallons per month = 252 tons per month = 3,028 tons per year = 7,141 cubic yards per year
- **TOTAL DIVERTED = 4,096 tons per year = 8,965 yd³ per year**

* *Weight and volume calculations for kitchen scraps are based on 70% moisture (5.8 lbs./gallon) (1,171 lbs./yd³). Weight and volume calculations for yard waste are based on 50% moisture (4.2 lbs./gallon) (848 lbs./yd³).*

Home Composting Survey Fiscal Year 2019/2020 Results

Home Composting of Yard Waste and Kitchen Scraps:

A survey is conducted with participants who provide their email address a few months after they take the workshop. This gives them time to set up a new system and settle into usage. 41 participants filled out the survey for the 2019/2020 fiscal year program. 35 filled out the survey from the virtual English workshops. Five filled out the survey from the in person English workshops. One person filled out the survey from the Spanish workshops.

When asked if participants thought this workshop was an effective way to learn about composting 97% of participants answered Yes.

One participant didn't answer Yes or No.

When asked where they heard about the Workshop Series:

- Master Gardener Email/Newsletter: 15
- Another Organization's Website/Email: 10
- Master Gardener Facebook Page: 5
- Zero Waste Sonoma Facebook Page: 2
- Master Gardener Website: 2
- City of Santa Rosa Email/Postings: 2
- Newspaper: 1
- Friend: 1
- Flyer: 1
- UCANR Newsletter: 1
- Master Gardener Instagram: 1



Of the forty one returned surveys in 2019/2020 fiscal year, twenty six respondents (%) indicated that were already composting in some form before the workshop, and twelve were not. When asked if they had changed their behavior, started or increased home composting, eleven said they had not changed, but twenty six had changed or increased their behavior.

The new systems participants started:

- Compost bins and piles at home 10
- Using their Green Bin (Curbside Pick up) 5
- Worm bins 8

Of the gardeners that are composting yard waste:

- 4% are composting more than 10 gallons of yard waste per week
- 12% are composting 10 gallons of yard waste per week
- 26% are composting 5 gallons of yard waste per week
- 7% are composting about 2 gallons of yard waste per week
- 4% are composting about 1 gallon of yard waste per week
- 19% compost less than 1 gallon per week

Of the respondents who are composting kitchen scraps:

- 14% are composting 5 or more gallons of kitchen scraps per week
- 26% are composting 2 gallons kitchen scraps per week
- 19% are composting 1 gallons kitchen scraps per week
- 7% are composting 3/4 gallon kitchen scraps per week
- 7% are composting 1/2 gallon of kitchen scraps per week



Of those respondents who are not composting all yard waste or kitchen scraps in a pile or worm bin:

- 0% take the waste to the landfill on their own
- 41% use the green yard waste container
- 2% dispose of kitchen scraps in other ways (feed to chickens, bury in garden, feed to dog, etc.)
- 2% Take to other facility (Grab N' Grow)
- 0% discard their kitchen scraps into the regular trash
- 2% put it into the garbage disposal

When asked if participants wanted more information on composting 68% said Yes.

When asked how they would like to receive more information, they chose:

Video: 16

Master Gardener Website: 13

Another Workshop: 10

Master Gardener Facebook Page: 8

Brochure: 3

Conclusions:

The number of people indicating that they had started, increased and continued composting was nearly 100% of those surveyed.

This indicates that Master Gardeners continue to do a good job in reaching people one-on-one with a longer format direct message rather than just giving them a brochure about composting. There has also been a steady interest in home gardening over the last three years with a corresponding increase in interest in home composting. And during COVID 19 we have seen a very large increase in interest in home gardening topics, including how to compost.

There is a large range in the amount of yard waste composted each week by residents. But the majority report composting around 5 gallons of yard waste per week. The second largest group is less than 1 gallon per week. This is likely because they do not have a yard space and are primarily composting kitchen food scraps.



Most composters are putting about 1-2 gallons of kitchen scraps per week into compost piles or worm bin systems, with another portion putting over 5 gallons in per week.

Of the people who responded, nearly every person who was not composting at home before the workshop had changed their behavior. Those who did not change their behavior, all but one indicated they were using the Curbside Pick-up green bin.

On the average, households that the Master Gardeners have taught through compost workshops are composting 1.9 gallons of kitchen scraps and over 4.59 gallons of yard waste each week, for a total average amount of 6.49 gallons per week. That is 77.9 gallons per month – 935 gallons per year.

If you multiply this by all participants in the workshops, 272, not just those that returned surveys, we see a potential diversion of 1,765 gallons per week, and 91,795 gallons per year. This program has led to a significant reduction in landfill inputs of green waste over the last few years. UCMGSC is happy to support Zero Waste Sonoma's community education efforts to help reach Sonoma County's goal of zero waste!





HINTS FOR COMPOSTING

FOR MORE INFORMATION

WEB sonomamg.ucanr.edu
PHONE **Master Gardener Information Desk**
(707) 565-2608
EMAIL mgsonoma@ucdavis.edu

For dates and locations of compost workshops,
visit sonomamg.ucanr.edu/composting

FUNDED BY ZERO WASTE SONOMA
PRODUCED BY THE UNIVERSITY OF CALIFORNIA MASTER
GARDENERS OF SONOMA COUNTY
HOME COMPOSTING EDUCATION PROGRAM
133 AVIATION BLVD, #109 SANTA ROSA, CA 95403

Written by Rosemary McCreary
Updated by Jennifer Roberts

It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at <http://ucanr.edu/sites/anrstaff/files/215244.pdf>). Inquiries regarding ANR's nondiscrimination policies may be directed to UCANR, Affirmative Action Compliance & Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1343.



HOW TO TURN GARDEN AND KITCHEN SCRAPS INTO COMPOST IN A HURRY



THE BASICS

There are three basic principles to follow in making compost. Each one is crucial to the central activity in the compost pile — the life and activity of teeming masses of microorganisms.

Different microorganisms, mostly beneficial bacteria and fungi, are active at different temperatures, but all require a balanced diet: carbohydrates for an energy source and nitrogen for body building. The more rapidly these microbes digest organic materials, the warmer the pile becomes. When temperatures reach 130°F for three or more days, most of the pathogens and weed seeds are killed. To reach high temperatures and make finished compost in three months or less, follow these basics.

1 BALANCE THE PILE WITH DRIED BROWN AND MOIST GREEN MATERIALS

Microbes multiply fastest in compost with 25 to 30 times as much carbon (dry browns) as nitrogen (moist greens), or when the carbon to nitrogen ratio (C:N) is 25-30:1. Without measuring or calculating, you can achieve this ratio by alternating equal amounts of green and brown materials in layers as you build the pile. When two layers are complete, mix them together. Use a variety of ingredients, striving for an ideal balance. If you use tough brown carbons such as newspaper, straw, or sawdust, balance them with food scraps, grass clippings, alfalfa, or other nitrogen-rich materials. To make compost in a hurry (in 2-12 weeks), you need to build a pile large enough at one time to be self-insulating so that temperatures reach 130° or higher. This means having enough green and brown materials on hand for a pile at least 1 cubic yard (3'x3'x3') in volume.

2 REDUCE PARTICLE SIZE TO INCREASE SURFACE AREA

Small particles expose maximum surface area to microbial activity. Chop garden wastes with a flat shovel or machete; chip or shred woody materials in a shredder; or stack garden debris in a low pile and run over it with a power mower. Woody materials break down slowly, even when they are finely shredded. Still, they make good additions to the compost pile by providing air space and preventing other materials from matting together.

3 PROVIDE ADEQUATE AMOUNTS OF AIR AND WATER

The beneficial microbes depend on constant supplies of air and water. When either is lacking, microbes die, and decomposition slows or stops completely. Keep the pile evenly moist, about as wet as a wrung-out sponge. You can test for the correct moisture level by squeezing a handful of compost. If the materials remain clumped together but no water drips out, the pile is adequately moist. Be careful to avoid over-watering. Too much water blocks out air, kills the microbes, and causes unpleasant odors. Gravity and the weight of materials in your compost pile cause it to settle, forcing out air vital to microbial life and activity. Keep the compost well-aerated by turning it frequently or loosening it with a fork or special aerating tool.



TIPS FOR FASTER COMPOSTING

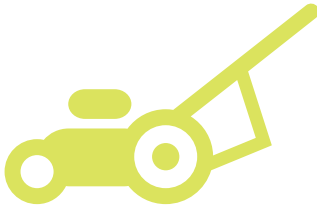
HINTS FOR USING GREENS AND BROWNS

Compost as many organic materials as you can to return their nutrients back to the earth to complete their life cycle and benefit your soil.

- **Be creative.** An old straw hat, cotton fabric, paper towels and tissues, and bits of cardboard make wonderful compost. Crumple up junk mail (no glossy paper)—wads of paper help aerate the pile. Include coffee filters, tea bags, and crushed eggshells. However, do not add meat and dairy as backyard piles are not hot enough to kill pathogens.
- **In fall, stockpile dried leaves, a bale of straw, or some decomposing wood chips.** Use these to build a pile at one time when you have large quantities of moist greens anytime of year. Collect moist green ingredients when you are ready to build a 1-cubic yard hot pile. It is difficult to store them for more than 1 week.
- **Begin a second pile** rather than adding dried browns to an active pile, upsetting the balance, and slowing down the composting process.
- **Add additional food scraps** and moist, green materials to active compost. They will decompose quickly. Be sure to bury them well inside the pile.
- **Keep wood ashes and soil out of the compost pile.** Ash is not organic and will not decompose. Both cool down the pile, add weight, and force out air.
- **Know that commercial activators are unnecessary.** Microbes abound naturally on all organic materials. Commercial products work because they contain nitrogen.



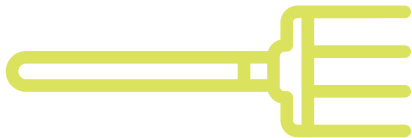
HINTS FOR REDUCING PARTICLE SIZE



- **A power lawn mower** is the easiest, fastest way to reduce particle size and increase surface area. Organics of any size will eventually decompose, but small particles make the fastest compost.
- **Sharpen your mower blade** after shredding rough, fibrous compost materials to prevent frayed cuts on your lawn grass.
- **Consider its value before investing in a chipper shredder.** Heavy-duty, expensive machines perform efficiently but are most appropriate for large-scale gardening that generates volumes of woody branches.
- **Mix grass clippings and shredded paper with leaves or straw** as you add them to the pile. Very small particles tend to mat together which slows decomposition.
- **Consider renting** equipment.

HINTS FOR WATERING AND AERATING

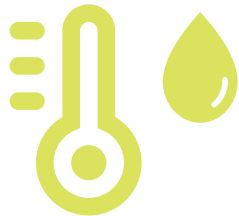
- **Locate your compost pile or bin within easy reach of a garden hose.** Keep a thin-tined compost fork or aerator tool handy for frequent turning.
- **Add water** when you mix together alternate layers of browns and greens. Use a hose spray nozzle so that all particles are lightly moistened.
- **Spray the pile** several times as you turn and rebuild it.



- **Be careful not to over water.** Green materials are 60-80% water. It is more difficult to dry out a pile than to moisten it. If the pile becomes too wet, spread it out and mix in dry materials.
- **Cover an open bin** if the compost develops a concave top that collects rain water. A freestanding pile usually sheds water like a thatched roof.
- **Turn your compost** at least three times weekly for fastest decomposition. Turning will not cool down a hot pile; instead, it adds oxygen, and heats the pile up.
- **Conserve nitrogen** by aerating the compost frequently. Anaerobic piles (lacking air) cause nitrogen to evaporate as ammonia.

MORE HINTS

Invest in an 18-inch composting thermometer to know instantly when the hot pile cools and is ready for turning. After several turnings, the temperature and the compost stabilize. Expect a host of beneficial organisms to live in your compost pile. Most are unfamiliar and microscopic, but others such as centipedes and sow bugs are easily recognized. Keep out unwanted vertebrate pests by enclosing sides, top, and bottom of the bin with 1/4-inch galvanized hardware cloth. Bury food scraps at least 12-inches in the pile to discourage flies and pests. Discourage ants by keeping the pile moist and food scraps buried. Use compost as a soil amendment rather than as a fertilizer since its nutrient content is low. The organic content, or humus, enables plants to readily take up minerals from the soil. Compost continues to decompose, so it must be renewed frequently. Observe the composting process closely and make adjustments as needed. Creating compost is an art as well as a science.



C:N RATIOS OF COMMON MATERIALS FOR COMPOST PILES

FIGURES ARE AVERAGES AS MATERIALS VARY

WOOD CHIPS	600:1
NEWSPRINT	550:1
RAW SAWDUST	500:1
CARDBOARD	400:1
AGED SAWDUST	200:1
PAPER SCRAPS	150:1
RICE HULLS	125:1
WHEAT STRAW	125:1
CORN COBS	98:1
PINE NEEDLES	98:1
STRAW	80:1
POMACE	62:1
CORN STALKS	60:1
LEAVES	60:1
ORANGE PEELS	58:1
APPLE POMACE	48:1
DRY WEEDS*	40:1
FRUIT SCRAPS	35:1
OTHER HAY	32:1
HORSE MANURE	30:1
COFFEE GROUNDS	25:1
OTHER MANURE (HERBIVORES ONLY)	20:1
GREEN GARDEN PRUNINGS	20:1
GREEN WEEDS*	20:1
SEA WEED	20:1
ALFALFA	18:1
GRASS CLIPPINGS	18:1
KITCHEN SCRAPS	15:1
VEGETABLE TRIMMINGS	12:1
POULTRY LITTER	10:1
BLOOD/BONE MEAL	4:1

* Pile must reach 131 degrees F to kill weed seeds. Otherwise, do not put weed seeds or seed heads in the pile.



A FINAL NOTE

The rapid method developed by the University of California is only one way to make compost. Organic materials simply stacked in a pile will eventually decompose. Whatever method you use, remember that compost can be made from more than garden debris. By recycling a variety of materials, you can keep organics out of the landfill and in the soil.



CONSEJOS PARA HACER COMPOSTAJE

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Para ver las fechas y lugares de los talleres de
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FINANCIADO POR ZERO WASTE SONOMA
PRODUCIDO POR EL PROGRAMA DE EDUCACIÓN DE COMPOSTAJE
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Escrito por Rosemary McCreary
Actualizado por Jennifer Roberts

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CÓMO CONVERTIR LOS DESECHOS DE COMIDA Y DEL JARDÍN EN COMPOSTA RAPIDAMENTE



LO BÁSICO

Hay tres principios básicos a seguir para hacer composta. Cada uno es crucial para la actividad central en la pila de composta - la vida y la actividad de las masas de microorganismos.

Diferentes microorganismos, en su mayoría bacterias y hongos los cuales son muy beneficiosos, operan en diferentes temperaturas, pero todos requieren de una dieta equilibrada: carbohidratos para una fuente de energía y nitrógeno para el desarrollo del cuerpo. Entre mas rápido estos microbios digieren materiales orgánicos, más caliente se pone la pila de composta. Cuando las temperaturas alcanzan los 130 grados Fahrenheit por tres días o más, la mayoría de los agentes patógenos y las semillas de malezas mueren. Para alcanzar las altas temperaturas y producir composta en tres meses o menos, siga estas recomendaciones básicas.

1 BALANCEE LA PILA DE COMPOSTA CON MATERIALES SECOS DE COLOR CAFÉ Y MATERIALES HÚMEDOS DE COLOR VERDE

Los microbios se multiplican más rápido en la composta que tiene de 25 a 30 veces más carbono (plantas secas de color café) así como nitrógeno (plantas verdes húmedas), o cuando la proporción de carbono a nitrógeno (C: N) es 25-30:1. Sin medir o calcular, usted puede lograr esta relación alternando cantidades iguales de material verde y café en cada capa, a medida que construye la pila de composta. Cuando dos capas estén completas, mézclelas entre sí. Use una variedad de ingredientes, buscando un equilibrio ideal. Si utiliza carbones duros de color café como el periódico, paja o aserrín, balancéelos con restos de comida, recortes de pasto, alfalfa u otros materiales ricos en nitrógeno. Para hacer composta rápidamente (en 2-12 semanas), usted necesita construir una pila de composta lo suficientemente grande para que produzca un autoaislamiento de manera que las temperaturas lleguen a los 130 grados Fahrenheit o más. Esto significa tener suficiente material de color verde y café a mano para hacer una pila de por lo menos 1 yarda cúbica (3'x3'x3') en volumen.

2 REDUZCA EL TAMAÑO DE LAS PARTÍCULAS PARA AUMENTAR LA SUPERFICIE

Algunas partículas pequeñas exponen la superficie máxima a la actividad microbiana. Corte los desechos de jardín con una pala plana o con un machete; quiebre o triture materiales leñosos en una trituradora, o ponga los de desechos de jardín en una pila y pase la cortadora de pasto/césped por encima de ellos. Los materiales leñosos se descomponen lentamente, incluso cuando están finamente triturados. Aún así, hacen buenas adiciones a la pila de composta, proporcionando espacio de aire y evita que otros materiales se apelmacen.

3 PROPORCIONE CANTIDADES ADECUADAS DE AIRE Y AGUA

Los microbios beneficiosos dependen de un abastecimiento constante de aire y agua. Cuando cualquiera de estos falta, los microbios mueren, y la descomposición se desacelera o se detiene completamente. Mantenga el material húmedo uniformemente, tan húmedo como una esponja exprimida. Usted puede comprobar el nivel de humedad correcta, apretando un puñado de composta. Si los materiales permanecen agrupados juntos, pero el agua no gotea, la pila está suficientemente húmeda. Tenga cuidado de no regar en exceso. Demasiada agua bloquea el aire, mata a los microbios, y causa olores desagradables. La gravedad y el peso de los materiales en su pila de composta provocan que se asiente, forzando la salida del aire el cual es vital para la actividad y vida microbiana. Mantenga la composta bien aireada volteándola con frecuencia o aflojándola con un tenedor de jardín o una herramienta especial de aireación.



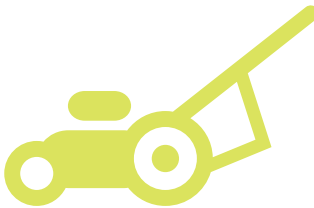
INDICACIONES PARA EL USO DE MATERIAS VERDES Y CAFÉS

Composte la mayor cantidad de materiales orgánicos que pueda, y así devolverá los nutrientes de estos materiales a la tierra completando su ciclo de vida y beneficiara a su tierra.

- **Sea creativo.** Un sombrero viejo de paja, tejido de algodón, toallas de papel y tejidos, y pedazos de cartón hacer un abono maravilloso. Arrugue el correo no deseado (sin papel brillante)-puñados de papel ayudan a airear la pila de composta. Incluya filtros de café, bolsitas de té, y cáscaras de huevo quebradas. Sin embargo, no agregue carne y productos lácteos, ya que las pilas de compostaje hechas en los patios no son lo suficientemente calientes como para matar los agentes patógenos.
- **Haga un montón con hojas secas, una paca de paja, o virutas de madera en descomposición.** Utilice estos materiales para construir una pila cuando tenga grandes cantidades de materiales verdes húmedos. Recolecte los materiales verdes húmedos cuando esté listo para construir una pila caliente de 1-yarda cúbica. Es difícil almacenarlos por más de una semana.
- **Comience una segunda pila** en vez de añadir material seco de color café a una pila ya activa, lo cual altera el equilibrio, y frena el proceso de compostaje.
- **Añada restos de comida adicionales** y materiales húmedos verdes a la composta activa. Estos se descompondrán rápidamente. Asegúrese de enterrarlos bien adentro de la pila.
- **Mantenga las cenizas de madera y la tierra fuera de lapila de composta.** Estos no son orgánicos y no se descompondrán. Estos enfrían la pila de composta, agregan peso y sacan el aire.
- **Sepa que los activadores comerciales son innecesarios.** Los microbios abundan naturalmente en todos los materiales orgánicos. Los productos comerciales trabajan debido a que contienen nitrógeno.



INDICACIONES PARA LA REDUCCIÓN DEL TAMAÑO DE PARTÍCULAS



- **Una cortadora de pasto/césped** es la manera más fácil y rápida de reducir el tamaño de las partículas y aumentar la superficie. Materiales orgánicos de cualquier tamaño eventualmente se descomponen, pero las partículas pequeñas hacen que el compostaje se más rápido.
- **Afile la cuchilla de su cortadora de pasto/césped** adespues de triturar materiales de composta duros y fibrosos para evitar cortes deshilachados en su pasto/césped.
- **Considere su valor antes de invertir en una trituradora.** Para trabajo pesado, las máquinas costosas se desempeñar con eficiencia, pero son las más adecuadas para la jardinería en grande escala la cual genera volúmenes de ramas leñosas.
- **Mezcle los recortes de hierba y papel triturado con las hojas o paja** conforme los vaya agregando a la pila de composta. Las partículas muy pequeñas tienden a apelmazarse juntas lo cual retrasa la descomposición.
- **Considere alquilar** maquinaria trituradora.

INDICACIONES PARA EL RIEGO Y LA AIREACIÓN

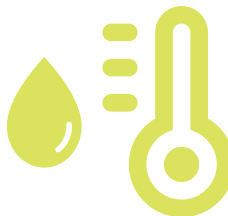
- **Coloque su pila de composta o contenedor a poca distancia de una manguera de jardín.** Mantenga un tenedor delgado de jardín o una herramienta de aireación, a la mano, para voltear la composta frecuentemente.
- **Cuando mezcle** la composta alterne las capas de materia-café y verde, añada agua. Use una manguera con boquilla de aspersión para que todas las partículas sean humedecidas ligeramente.
- **Rocíe la pila de composta** s varias veces conforme la reconstruya y le de vuelta.
- **Tenga cuidado de no añadir demasiada agua.** Los materiales verdes son 60-80% agua. Es más difícil secar

una pila de composta que humedecerla. Si la pila de composta esta demasiado mojada, extiéndala y mézclela con materiales secos.

- **Si en la composta que esta dentro de un contendor** abierto se desarrolla una tapa cóncava que recolecta agua de lluvia, entones cubra el contenedor. Una pila de composta que esta por si sola usualmente escurre el agua como un techado de paja.
- **Dé vuelta a su composta** por lo menos tres veces por semana para una descomposición más rápida. El darle vuelta no enfriará la pila caliente, sino que le agrega oxígeno, y la calienta.
- **Conserve nitrógeno** al airear la composta con frecuencia. Las pilas de composta anaeróbicas (faltantes de aire) hacen que el nitrógeno se evapore como el amoniaco.

MÁS CONCEJOS

Invierta en un termómetro de compostaje de 18-pulgadas para conocer al instante cuando se enfría la pila caliente y cuando está lista para darle vuelta. Después de varias vueltas, la temperatura y la composta se estabilizan. Cuente con una gran cantidad de organismos benéficos que vivirán en su pila de composta. La mayoría son desconocidos y microscópicos, pero otros, como los ciempiés y cochinillas se reconocen fácilmente. Mantenga fuera las plagas de vertebrados no deseados cerrando los lados, y la parte superior e inferior de la caja con una tela galvanizada de ¼ de pulgada. Entierre los restos de comida a por lo menos 12 pulgadas en la pila para desalentar las moscas y plagas. Desaliente las hormigas manteniendo la humedad de la pila y enterrando los restos de comida. Utilice la composta como enmienda al suelo, más que como un fertilizante, ya que su contenido de nutrientes es bajo. El contenido de materia orgánica o abono, permite que las plantas tomen fácilmente los minerales del suelo. La composta continúa descomponiéndose, por lo que debe ser renovada con frecuencia. Observe de cerca el proceso de compostaje y haga ajustes como sea necesario. La creación de composta es un arte, así como una ciencia.



C:N PORCENTAJES DE MATERIALES COMUNES PARA CREAR LAS PILAS DE COMPOSTA

LAS CIFRAS SON SOLO PROMEDIOS YA QUE LOS MATERIALES PUEDEN VARIAR

ASTILLAS DE MADERA	600:1
PERIÓDICO	550:1
ASERRÍN	500:1
CARTÓN	400:1
ASERRÍN AÑEJADO	200:1
RESTOS DE PAPEL	150:1
CASCARILLA DE ARROZ	125:1
PAJA DE TRIGO	125:1
OLOTES	98:1
AGUJAS DE PINO	98:1
PAJA	80:1
BAGAZO DE UVA	62:1
TALLOS DE PLANTA DE MAÍZ	60:1
HOJAS	60:1
PELADURAS DE NARANJA	58:1
BAGAZO DE MANZANA	48:1
MALEZA SECA*	40:1
RESIDUOS DE FRUTAS	35:1
OTROS TIPOS DE YERBA	32:1
ESTIÉRCOL DE CABALLO	30:1
GRANOS DE CAFÉ	25:1
OTRO TIPO DE ESTIÉRCOL (HERBÍVORO SOLAMENTE)	20:1
PODADURAS VERDES DEL JARDÍN	20:1
MALEZA VERDE*	20:1
ALGAS MARINAS	20:1
PODADURAS DE ALFALFA	18:1
RECORTES DEL JARDÍN	18:1
DESECHOS DE COCINA	15:1
PODADURAS VEGETALES	12:1
DESECHO DE AVES	10:1
SANGRE/HARINA DE HUESOS	4:1

* La pila de composta debe alcanzar los 131 grados F para matar las semillas de las malezas. De lo contrario, no ponga las semillas de malezas o cabezales de semillas en la pila de composta.

UN COMENTARIO FINAL

El método rápido desarrollado por la Universidad de California es sólo una manera de hacer composta. Los materiales orgánicos simplemente apilados en un montón se descompondrán eventualmente. Sea cual sea el método que usted utilice, recuerde que la composta también se puede hacer con otros desechos aparte de los del jardín. Al reciclar una gran variedad de materiales, usted puede mantener materiales orgánicos fuera de los vertederos y ponerlos en el suelo.



PUTTING WORMS TO WORK AND KEEPING THEM HAPPY

FOR MORE INFORMATION

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FUNDED BY ZERO WASTE SONOMA
PRODUCED BY THE UNIVERSITY OF CALIFORNIA MASTER
GARDENERS OF SONOMA COUNTY
HOME COMPOSTING EDUCATION PROGRAM
133 AVIATION BLVD, #109 SANTA ROSA, CA 95403

Written by Rosemary McCreary
Updated by Jennifer Roberts

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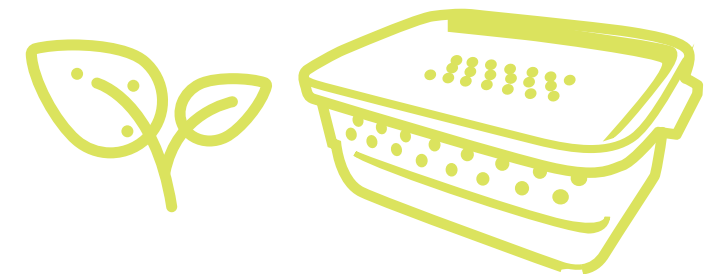


ABOUT WORMS

Worms you buy from a worm farm or supplier are generally either Red Wiggler Worms, *Eisenia fetida*, or European Night Crawlers, *Eisenia hortensis*. But many worms are called Composting Worms. The Red Wiggler, *Eisenia fetida*, is best as it lives in the top 18" of the soil and eats ½ its body weight each day in optimal conditions. These worms live just under the surface, ingesting soil along with decaying organic matter and leaving tunnels that carry oxygen to plant roots and improve drainage. This activity breaks up heavy dirt clods, and the resulting castings keep the soil loose and provide nutrients to plants. Worms multiply rapidly in 55 to 75 degree temperatures, but they will also survive in somewhat lower and higher ranges. Eight worms can produce as many as 1,500 offspring in 6 months if conditions are ideal. Worms are hermaphrodites, possessing both male and female sexual organs. Mature worms reproduce by rubbing together and exchanging sperm. Several times a week, they deposit 2-4 eggs inside a band of mucous around their upper bodies. As the worms slip out of the band, it encloses the eggs and hardens into a protective cocoon about 1/8 inch in diameter. After 3 weeks, the eggs hatch. Young worms reach maturity in another 8-10 weeks and begin reproducing.

SETTING UP A BIN

- **Use any wood or plastic containers** for housing your worms. The best bin has at least 2 square feet of surface area and is about 1 foot deep. Wood boxes generally allow a constant supply of air, and plastic bins are adequate as long as you provide air holes on the sides of the bin.
- **Build a worm bin or purchase an inexpensive plastic storage box with a solid lid** for under twenty dollars. Or, you can spend up to one hundred dollars for special commercial designs with tiers, removable trays and drip pans.
- **Keep your worm bin in a protected site** away from hot summer sun and winter rains or freeze. A heavy sheet of black plastic makes a good insulator against winter weather, but a garage or carport offers even more protection.



WARNING: Your worm box must be well ventilated. Aerobic bacteria, or those that need oxygen, slowly decompose the organic material, making it more palatable to the worms. If the environment becomes anaerobic—that is, lacking air—the bin will develop a foul odor and the worms will eventually die.



MAKING THE BED

- **Worms need bedding both under and over them.** Newspaper, office paper, and corrugated cardboard shredded into ¼ to 1-inch wide strips are commonly used materials. Immerse shredded strips in water, squeeze out excess water, then fluff them inside the bin. It is helpful to include browned leaves or decomposing wood chips. Sawdust, straw, or coconut fiber (coir) are great too. Any of these materials can be mixed together to keep the bedding fresh and airy.

Add a handful of moist soil or a sprinkle of crushed eggshells to the bedding. It provides worms with grit necessary for digesting their food.

WARNING: Drain or wring out the bedding well before putting it in your worm box. It must be able to absorb moisture from the food scraps you add. The bedding is perfectly moist if it clumps together when you squeeze it in your hand and no water drips out, like a wrung out sponge. Usually, it is unnecessary to add water to keep the bedding moist, but if it dries out, add a small amount of water at a time.

ADDING WORMS

Before you buy worms, estimate the amount of food scraps you will be adding to your worm box using this formula:

- **1 lb. of worms requires 2-4 sq. ft. of surface area** to consume 3.5-4 lbs. of food waste in 1 week.
- **If you generate more food scraps**, increase the surface area and the number of worms accordingly.

Worms are sensitive to light. When you add them to the bin, put them on a 4-6 inch layer of moist bedding material in the bottom, then cover them with another 6-inch layer of bedding.



WARNING: Until the worms adjust to their new environment, it is a good idea to feed sparingly and include plenty of bedding. After a week, they will be well-fed and acclimated to their new surroundings.

FEEDING

Begin feeding your worms soft foods for the first week or two. Soft fruits and vegetables, cereal, and bread are easiest to ingest. Later on, add crushed egg shells and tougher vegetables and trimmings along with coffee grounds, filters, and similar organic wastes.



Worms will also eat chopped leaves, grass clippings, weeds, and flower stalks. Decomposition from bacterial action is on-going in the worm bin and occurs fastest when food particles are small, but leave a few larger scraps since worms like to cluster together inside a melon or avocado shell or under a soft tomato.

WARNING: Bury all food scraps several inches under the castings and bedding to avoid odors and pests. Be careful not to overwhelm your worms with too much food. Some foods such as carrots, potato peelings, onions, and beets are eaten faster cooked than raw. Be careful about including foods cooked in oil. Worms breathe through their skin and oil clogs their pores. Also avoid feeding worms citrus, hot chili peppers, onions, meat, or dairy. Notice the worms’ habits and make adjustments accordingly. Don’t worry about feeding on any schedule. Worms are extremely adaptable and will eat bedding and castings in the absence of scraps.

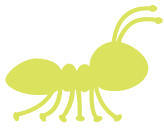
MAINTAINING THE BIN

As the bedding disappears, replace it. Try to keep some moist leaves in the bin along with shredded paper. Don’t hesitate to add bits of paper towels, tissues, junk mail, torn up paper cups and

plates (only those unlined and uncoated with plastic), and whatever other organic materials that would otherwise be wasted. The worms will readily eat paper and cardboard along with the bedding. Continue to add a handful of soil or crushed egg shells every month or two for grit.

WARNING: Keep the bedding moist but never soggy. Remember that most food is 80% water. If excess moisture develops, pour it out onto your plants and add dry bedding. Weight from excess food scraps blocks out air. Stir to aerate and cut back on adding scraps if the worms eat slowly during cool or hot weather. Don’t ignore the corners of the bin. Worms will place things that they can’t eat such as seeds that are too hard. Stir in castings that accumulate there to keep all materials well-aerated and remove rejected objects.

Pests are sometimes a nuisance. If ants enter the box, a barrier will keep them out. Be creative. Elevate the bin on supports set in water or contrive a sticky trap. Ants are attracted to dry conditions, so be sure the bedding is moist enough. Cut back on feeding until the ants leave, but provide ample shredded paper for the worms. Don’t be surprised to find harmless sow bugs or other creatures living in the worm bin. Tiny white nematode worms usually appear, often under acidic conditions. These worms are normal, but excess acidity, common with fruit debris, also attracts fruit flies. They will certainly appear if you fail to bury food scraps adequately or if top bedding is too thin. Keep dry bedding to the top of your bin’s lid to keep fruit flies at bay. They will certainly appear if you fail to bury food scraps adequately or if top bedding is too thin. Keep dry bedding to the top of your bin’s lid to keep fruit flies at bay. Soldier flies, pollinators as opposed to pests, are scavengers that breed in decaying organic matter. The gray, flattened, armadillo-like larvae may invade outdoor worm boxes and compost piles, but seldom bother bins in an inside, protected area. Screen the top of your bin to exclude flies since the larvae can feed on worm eggs. However, they are also helpful decomposers.



USING WORM CASTINGS

After 6-12 months, you will have enough castings to harvest in one of the following methods.

- **Feed the worms in one end of the bin for several weeks**, attracting all of the population to one area, then scoop out castings from the other end.
- **Stop adding scraps until all are eaten and only bedding remains.** Remove paper bedding and empty the bin onto a plastic-covered table outdoors or under a bright light. Make a long, low mound and slowly brush the castings off the top of the mound. The worms will quickly bury themselves at the bottom. Continue removing castings until the worms are left with a thin covering, then put them back into their bin with fresh bedding. If the population has exploded, begin another bin with half of the worms and new bedding.
- **Include a handful of nutrient-rich castings in potting soil** for your houseplants around your ornamental plants and underneath fruit trees. Use generously in vegetable beds. Mix the castings into the top few inches of soil and water well. There will be worm eggs and a few young worms in the castings. They can survive and enrich the soil under a mulch but it’s best to keep them. Learn to identify worm eggs and preserve them for your bin.



WARNING: Because worm castings are rich in nutrients, use no more than 5% in seed germinating mixes. You can use up to 20% castings, however, in potting soil for seedlings and mature plants.





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PONGA LAS LOMBRICES DE TIERRA A TRABAJAR Y MANTÉNGALAS FELICES

EL COMPOSTAJE CON LOMBRICES
DE TIERRA ES UNA FORMA FÁCIL Y
RELAJADA DE DESHACERSE DE LOS
RESTOS DE COMIDA Y DE
PEQUEÑOS DESECHOS DEL JARDÍN



INFORMACIÓN A CERCA DE LAS LOMBRICES DE TIERRA

Lombrices de Tierra en la Vermicultura Las lombrices de tierra que usted compra en un criadero de lombrices o con un proveedor son la misma especie de lombrices rojas californianas *Lumbricus rubellus* o *Eisenia fétida*, las cuales se encuentra al aire libre debajo de pilas frescas de composta y de hojas en descomposición. Estas lombrices viven justo debajo de la superficie, tragan tierra junto con materia orgánica y dejan túneles que transportan oxígeno a las raíces de las plantas, mejorando el drenaje. Esta actividad rompe los terrones de tierra pesados. El humus/composta de lombrices resultantes mantienen el suelo blando y proporciona nutrientes a las plantas. Las lombrices se multiplican rápidamente en temperaturas de 55 a 75 grados, pero también sobreviven en temperaturas más altas o más bajas. Si las condiciones son ideales, ocho lombrices pueden producir hasta 1500 descendientes en 6 meses. Las lombrices son hermafroditas, los cuales poseen órganos sexuales masculinos y femeninos. Las lombrices maduras se reproducen frotándose e intercambiando espermatozoides. Varias veces a la semana, las lombrices depositan de 2-4 huevos dentro de una banda mucosa alrededor de la parte superior de sus cuerpos. Una vez que las lombrices salen de la banda, esta encierra los huevos endureciéndose y formando un capullo de protección de alrededor de 1/8 de pulgada de diámetro. Los huevos de las lombrices se incuban por 3 semanas. Las lombrices jóvenes alcanzan su madurez después de otras 8-10 semanas y comienzan a reproducirse.

COMO ADECUAR UN CONTENEDOR DE COMPOSTA

- **Puede usar cualquier contenedor de madera o plástico** para alojar sus lombrices de tierra. El mejor contenedor debe tener por lo menos un área de 2 pies cuadrados y aproximadamente 1 pie de profundidad. Generalmente, las cajas de madera permiten un suministro constante de aire, pero los contenedores de plástico también son adecuados, siempre y cuando ventile el contenedor con regularidad cuando agregue restos de comida.
- **Usted puede construir un contenedor de lombrices o puede comprar una caja de plástico barata con una tapa sólida** por menos de veinte dólares, o puede gastar hasta cien dólares en un contenedor de diseño especial con niveles desmontables y bandejas de drenaje.



- **Mantenga su contenedor de lombrices en un sitio protegido y alejado** del caliente sol de verano y de las lluvias de invierno. Se puede utilizar una hoja de plástico negro pesado como aislante contra el clima de invierno, pero un garaje o cochera ofrecen aún más protección.

ADVISOR: Su caja de lombrices debe tener buena ventilación. Las bacterias aerobias, o aquellas que necesitan oxígeno, descomponen la materia orgánica lentamente, haciéndola más apetitosa para los gusanos. Si el ambiente se vuelve anaeróbico, es decir, que carece de aire, el contenedor desarrollará un mal olor y las lombrices morirán.

CONSTRUCCIÓN DE UNA CAMA DE LOMBRICES

- **Las lombrices necesitan una capa de material tanto debajo como encima de ellas.** Los periódicos, el papel de oficina y el cartón corrugado cortado en tiras de entre 1/4 a 1 pulgada de ancho son materiales de uso común. Sumerja las tiras desmenuzadas en agua, exprima el exceso de agua y colóquelas en el interior del contenedor de composta. Es útil de ancho son materiales de uso común. Sumerja las tiras

desmenuzadas en agua, exprima el exceso de agua y colóquelas en el interior del contenedor de composta. Es útil incluir hojas secas o virutas de madera en descomposición. El aserrín, la paja o la fibra de coco (coir) también son geniales. Cualesquiera de estos materiales pueden mezclarse juntos para mantener el lecho fresco y bien ventilado.

Añada un puñado de tierra húmeda o una pizca de cáscaras de huevo machacadas al lecho. Este material provee a las lombrices con arena necesaria para digerir sus alimentos



ALIMENTACIÓN

Comience a alimentar sus lombrices con alimentos blandos durante una o dos semanas. Las frutas y verduras blandas, el cereal y el pan son los más fáciles de ingerir. Después, añada más cáscaras de huevo trituradas y verduras más duras y podaduras junto con granos de café, filtros y restos orgánicos similares. Las lombrices también comerán las hojas cortadas, los recortes de pasto, las malezas y los tallos de ores.



La descomposición de la acción bacteriana es continua en el contenedor de lombrices y el proceso es más rápido cuando las partículas de alimentos son pequeñas, pero deje algunos restos de comida más grandes ya que los gusanos se agrupan dentro de una cáscara de melón o debajo de un tomate blando.

AVISO: Entierre todos los restos de alimentos a varias pulgadas debajo del humus y del lecho de material para: evitar olores y plagas. Tenga cuidado de no incomodar a sus lombrices con demasiada comida. Algunos alimentos como las zanahorias, peladuras de papa, las cebollas y la remolacha/betabel serán consumidas más rápido cuando están cocinadas. Tenga cuidado al incluir los alimentos cocinados en aceites. Las lombrices respiran a través de su piel y el aceite obstruye sus poros. También evite alimentar a los gusanos con cítricos, chiles picosos, cebollas, carnes o productos lácteos. Observe los hábitos de las lombrices y haga ajustes necesarios. No se preocupe por tener un horario para alimentarlas. Las lombrices son extremadamente adaptables y comerán material del lecho y el humus en ausencia de restos de comida.

MANTENIMIENTO DEL CONTENEDOR DE LOMBRICES

Cuando desaparezca el material del lecho, replácelo. Trate de mantener algunas hojas húmedas en el contenedor de lombrices junto con papel triturado. No dude en agregar pedazos de toallas de papel, pañuelos de papel, correo, vasos y platos rotos de papel (solamente aquellos sin forros y sin recubrimiento de plástico), y cualquier otro material orgánico que de otra manera usted desperdiciaría. Las lombrices comerán papel y cartón fácilmente junto con

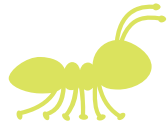
el material del lecho. Continúe agregando un puñado de tierra o una pizca de cáscaras de huevo cada uno o dos días para hacer que el material sea un poco arenoso.

AVISO: Mantenga húmedo el material del lecho, pero que nunca este empapado. Recuerde que la mayoría de los alimentos son 80% agua. Si se desarrolla un exceso de humedad, vierta el exceso de agua sobre sus plantas y añada material seco. El peso por exceso de restos de comida bloquea el aire. Revuelva el material para airearlo y disminuya la adición de restos de comida si las lombrices se alimentan lentamente durante el tiempo de frío o de calor. No ignore las esquinas del contenedor de lombrices. Revuelva el humus que se acumula en esas áreas y así mantener todos los materiales bien aireados.

Las plagas son a veces una molestia. Si las hormigas entran en la caja, una barrera las mantendrá fuera. Sea creativo. Eleve el contenedor en soportes fijos sobre agua o construya una trampa pegajosa. Las hormigas se sienten atraídas por las condiciones secas, así que asegúrese de que el material del lecho esté lo suficientemente húmedo. Reduzca la cantidad de material que agrega la caja hasta que las hormigas se hayan ido, pero proporcione suficiente papel triturado para alimentar a las lombrices. No se sorprenda al insectos inofensivos como las cochinillas de humedad u otras criaturas que viven en el contenedor de lombrices. Pequeñas lombrices nematodos blancos aparecen generalmente, y a menudo bajo condiciones ácidas. Estas lombrices son normales, pero el exceso de acidez, común con los restos de frutas, también atrae a las moscas de la fruta. Las moscas aparecerán si usted no puede enterrar los restos de comida adecuada mente o si el material en la superficie del lecho es demasiado delgado. Mantenga el lecho de la caja de lombrices de tierra seco en la parte superior de la tapa de su caja de lombrices para mantener alejadas a las moscas de la fruta. Mantenga el material en la superficie del contenedor para desalentar la cría de moscas de la fruta. Sin embargo, también son descomponedores útiles.

UTILIZACIÓN DEL HUMUS/COMPOSTA DE LOMBRIZ

Después de 6-12 meses usted tendrá suficiente humus para



cosechar siguiendo uno de los siguientes métodos.

- Durante varias semanas, alimente las lombrices poniendo los restos de comida en una de las orillas del contenedor,** atrayendo así a toda la población a una sola área; luego saque el humus/composta de la otra orilla.
- Deje de agregar los restos de comida hasta que todos hayan sido consumidos y sólo quede el material del lecho.** Remueva el lecho de papel y vacíe el contenedor en una mesa con cubierta de plástico y al aire libre o bajo una luz brillante. Moldee el material en una pila larga y delgada y poco a poco cepille el humus de la parte superior de la pila. Las lombrices se entierran rápidamente en la parte inferior. Continúe quitando el humus hasta que las lombrices se queden con una cubierta delgada, y luego regréselas de nuevo al contenedor con un lecho fresco. Si la población de lombrices ha crecido mucho, comience otro contenedor con la mitad de las lombrices y con un lecho nuevo.
- Añada un puñado de humus rico en nutrientes a la tierra** de sus plantas de casa. Espolvoree el humus alrededor de sus plantas ornamentales y debajo de los árboles frutales. Utilícelo generosa mente en los huertos de hortalizas. Mezcle el humus en la tierra a varias pulgadas de la superficie del suelo y riegue bien el área. Habrá huevos de lombrices y algunas lombrices jóvenes en el humus, pero estas sobrevivirán y enriquecerán el suelo que está debajo del mantillo. Aprenda a identificar los huevos de las lombrices y sepárelos para agregarlos a su contenedor de lombrices.



AVISO: Debido a que el humus/composta de lombrices es rica en nutrientes, no utilice más del 5% en las mezclas de germinación de semillas. Sin embargo, usted puede utilizar hasta un 20% de este humus o composta en la tierra de macetas para vástagos y plantas maduras.





Agenda Item #: 5
Cost Center: HHW
Staff Contact: Scott
Agenda Date: 7/15/2020
Approved By: LL

ITEM: HHW Program Options Analysis Report

I. RECOMMENDED ACTION / ALTERNATIVES TO RECOMMENDATION

Considering the current pandemic and budget uncertainty, this item is informational only. Staff will ask for the board's formal direction during the strategic planning sessions.

II. BACKGROUND

Over the last several years, Zero Waste Sonoma (ZWS) staff and the Board have expressed concern that the northern portion of Sonoma County has less access to household hazardous waste (HHW) programs. Similarly, the existing Permanent HHW Facility at the Central Landfill is operating at full capacity with no room to expand or collect e-waste. In an effort to address these concerns, ZWS entered into an agreement with Sweetser & Associates, Inc. on August 18, 2017 to perform an expansion analysis of the HHW program. The expansion analysis was provided to the Board on June 20, 2018 and confirmed that the northern part of the county is underserved by current HHW programs; specifically, the Santa Rosa, Healdsburg, and Cloverdale-Geyserville areas. Sweetser & Associates, Inc. suggested adding a second permanent HHW facility which could become the main HHW facility in the county.

At the January 2020 ZWS Board meeting, staff presented research for a permanent HHW facility including the following key findings:

1. The timeline from purchase to open is approximately 5 years.
2. The expected construction budget, including land and design, is \$10-\$12 million.
3. Operations costs would increase anywhere from \$350,000-\$600,000 annually.

As a result of these findings, the Board requested a report investigating HHW program option alternatives to a permanent facility as well as funding options. Staff hired Sweetser & Associates, Inc. to assist with the request.

III. DISCUSSION

The attached Zero Waste Sonoma Household Hazardous Waste Program Options Analysis report includes two main sections: additional HHW program options and funding options.

Additional HHW Program Options:

1. **Expansion of HHW Collection Events.** Though ZWS already offers one HHW event per week, the events could be modified by offering additional event days per week, extending the one-day events to two-day events, or by extending the open hours per event. All options would require more funding and a contract amendment with Clean Harbors.

- Advantages: Lower cost than permanent facility, targets underserved areas, and offers flexibility.
 - Disadvantages: Can't control venue cancellations, increased long-term labor for contractor and ZWS staff, appointments required, and residents will still have to wait between scheduled events.
2. **Mobile HHW Facility.** Similar to an HHW Collection Event, a Mobile HHW Facility utilizes a portable structure or trailers but can be operated at one location for up to three weeks at a time and up to four times a year at the same location. This program type is defined in the CA Health and Safety Code, though the Department of Toxic Substances Control (DTSC) does not have specific regulations available yet.
 - Advantages: Longer operating periods to service more residents, reduced coordination time (compared to events), could decrease event frequency, grant funding up to \$100,000 is available for set-up and operation, and ZWS could be a program pioneer.
 - Disadvantages: Uncertain regulatory process and timeline and requires a site to be available for a longer period of time.
 3. **Permanent Facility, Locker Configuration.** This is a permanent facility, however it does not require the construction of a permanent building. It generally consists of a cement floor, a roof, individual lockers inside for each waste type, and includes fencing as walls for security.
 - Advantages: Permanent and stable option for residents, less expensive than a traditional building, and flexible configuration.
 - Disadvantages: Requires land purchase or lease, harder to clean, less secure than a building, limited storage for waste, and limited ability to bulk.
 4. **Retail Take Back.** Retailers would become drop-off locations for certain types of HHW like batteries and fluorescent lamps. The program can be set up with either mandatory or voluntary participation by retailers, but ZWS can choose which costs to cover.
 - Advantages: Convenient for residents, targets most common waste types, and encourages community participation.
 - Disadvantages: Time consuming for ordinance and/or location set-up, retailers can drop out if ZWS chooses a voluntary program, will likely increase disposal costs, and does not offer a solution for all types of HHW.

HHW Program Option Recommendations:

Staff recommends building a permanent HHW facility to solve Sonoma County's HHW needs based on regular availability to customers, a location that would benefit the North County as well as the communities with the highest population, autonomy, less long-term coordination, and the ability to provide optimal disposal options.

If the board decides not to pursue a permanent facility, staff recommends two alternative programs. The first is to begin research for a Mobile HHW Facility and if feasible, then apply for a grant to pay for the equipment. The Mobile Facility could provide similar benefits to a permanent facility in terms of convenience and availability, without the need to purchase land or build a structure. The second phase of the recommendation would be to set up a Retail Take Back program after the Mobile Program is set up. The Retail Take Back program would provide permanent and convenient locations for the most common types of HHW such as batteries and

fluorescent lamps. Depending on the program types, ZWS may need to hire a part-time or full-time staff member.

Funding Options:

1. **CalRecycle HHW Grant.** CalRecycle annually offers small project and construction HHW discretionary grants. Small project grants offer up to \$100,000 for projects including Mobile HHW Facilities, EPR collections, and education. Construction grants offer up to \$250,000 for shovel-ready projects for new facilities or updates to existing structures.
2. **Extended Producer Responsibility (EPR) and Product Stewardship (PS).** ZWS can create our own local EPR ordinance or continue to support statewide and national efforts. Ordinances would require manufacturers of products sold in Sonoma County to pay for the collection and disposal of those materials.
3. **Household Chemical Manufacturer Support.** ZWS could reach out to manufacturers of products to help fund the construction or maintenance of HHW Programs. In California, a jurisdiction is required to sponsor the HHW programs but it may be possible to ask for donations as seen in Illinois. There are no current examples of this in California.
4. **Retail Business License Fee.** When a business applies for their license, an additional fee would be added to businesses that sell hazardous products with the assumption that those hazardous products will end up at the HHW facility for disposal. The State of Iowa has had success by setting up an annual Business License Fee of \$25 to fund HHW collection programs.
5. **Parcel Fee.** Parcel fees have been used in some jurisdictions in California to fully or partially fund HHW programs, including Alameda County who implemented a \$9.55/year parcel fee in 2014.
6. **Residential Service Fee.** ZWS has the option of charging residents for their use of HHW programs. Though the regulations don't prohibit residential fees, it may discourage proper disposal of HHW.
7. **Small Business User Fee Increase.** ZWS currently charges businesses to use the HHW programs with a \$25 administrative fee and by passing contractor disposal costs onto the business. An increase to the administrative fee or to the disposal costs could generate revenue while still providing the most cost-effective option to the businesses.
8. **Municipal Bonds.** ZWS can research the availability and option of municipal bonds as it relates to a joint powers authority.

Funding Options Recommendation:

Due to the economic uncertainty created by COVID-19, staff does not feel ready to make a recommendation for funding.

IV. FUNDING IMPACT

The fiscal impact of an additional HHW program varies widely depending on the type of program

chosen. Similarly, staff recommends hiring an additional half-time (\$63,621.74-\$82,028.87) or full-time (\$125,276-\$156,674) staff member depending on the selected option. All options would require either a new contract or an amended contract with a waste hauler and service provider. As indicated in the Options Analysis, the costs per program are estimated below:

Program Concept	Development Cost	Annual Cost Estimate	Time to implement
Expansion of HHW Collection Events (25-50 events/year)	\$10,000	\$54,000 - \$108,000	Few months
Mobile Household Hazardous Waste Facility (3-day event, 12-25 per year)	\$100,000	\$90,000 - \$188,000	9 months to one year
Permanent facility, locker configuration	\$2,600,000 - \$4,000,000	\$500,000 - \$550,000	One year
Renovated facility and land acquisition	\$10,000,000	\$500,000 - \$550,000	Several years
Retail Take Back	\$50,000	\$66,000 - \$100,000	9 months to one year

V. ATTACHMENTS

1. Zero Waste Sonoma Household Hazardous Waste Program – Options Analysis by Sweetser & Associates, Inc.
2. Sweetser & Associates, Inc. presentation

Zero Waste Sonoma Household Hazardous Waste Program Options Analysis



Submitted by
Sweetser & Associates, Inc.

July 2020

Zero Waste Sonoma authorized preparation of this review by

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Thanks to Doug Kobold, Executive Director, California Product Stewardship Council for assistance with Extended Producer Responsibility and Product Stewardship information. Also, thanks to Kathleen Henning, Iowa Department of Natural Resources for assistance with their Retail Business License Fee Program information.

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adhere to recycling and source reduction commitments.

Zero Waste Sonoma
Household Hazardous Waste Program



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1. EXECUTIVE SUMMARY

Zero Waste Sonoma (ZWS) sponsors the household hazardous waste (HHW) program for Sonoma County residents and small businesses. The HHW programs are popular with residents as an opportunity to safely dispose of their accumulated HHW. This valuable public service also reduces the jurisdictions potential for long-term liability as well as satisfies the CalRecycle requirement on jurisdiction to provide HHW services.

ZWS offers a variety of HHW programs including the Permanent Household Hazardous Waste Facility at the landfill, HHW Collection Events held throughout the County on a frequent schedule, the HHW Rover Pick Up Service, as well as drop-off locations for specific HHW such as used oil collection, electronics waste collection, and others. Industry sponsored architectural paint drop-off locations are also available.

In 2018, ZWS retained the services of Sweetser & Associates, Inc. to evaluate the existing HHW program and to analyze the expansion of HHW services. A report was completed in May 2018 that indicated the need to provide a more permanent means for northern county residents rather than relying on HHW Collection Events or driving 20 to 40 miles to the Permanent Household Hazardous Waste Facility at the landfill. Residents typically want to “do the right thing” but programs are most successful when options are convenient and free. That report also indicated that HHW Collection Events are significantly more expensive per participating resident and per pound collected and require significantly more planning effort by ZWS staff and HHW contractor than operation of the Permanent Household Hazardous Waste Facility. Events are operationally less efficient than a Permanent Household Hazardous Waste Facility due to the cost of mobilizing and demobilizing for each event.

Once a permanent HHW facility is built and operational, the logistics, staff, time, and costs of collection are significantly less than temporary HHW Collection Events. Property selection, purchase and construction costs are significantly higher than events, but a Facility has significantly less operations cost in the long term. An additional permanent HHW Facility is expected to lessen the reliance on and costs of the temporary HHW Collection Events, but HHW Collection Events will still be needed in outlying areas of the county. Other potential collection options than a permanent HHW Facility are available and are explored in this report.

Efforts to date on siting a permanent replacement or supplemental permanent HHW facility have been challenging due to a variety of reasons including:

- Limited property that are already developed with a warehouse and features conducive to an HHW facility.
- High market purchase price of the available facilities.
- High costs of constructing a new facility on bare ground or demolition of a current unsuitable structure and construction of a new facility.
- Inability for construction contractor to provide cost estimates on construction and design features of specific and generic retrofit costs.
- Funding future operating expenses.

As a result of these limitations, ZWS has requested this report to evaluate options to a permanent HHW building that would cost more than \$10 million.

2. CURRENT SONOMA HOUSEHOLD HAZARDOUS WASTE PROGRAM OVERVIEW

Sonoma County's extensive HHW program offers:

- Permanent Household Hazardous Waste Facility at the landfill,
- HHW Collection Events held throughout the County on a frequent schedule,
- HHW Rover Pick Up Service,
- Targeted collection of specific HHW.

The availability of these HHW program options are included below:

Table 2-1 Household Hazardous Waste Program Availability

Program	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
Household Facility (7 hours/day)				•	•	•	
HHW Events (4 hours/day)		•					
HHW Rover Pick Up Service (on call)			•				
Business disposal (5 hours/day)		•	•				
Other HHW collection	Various locations and wastes						

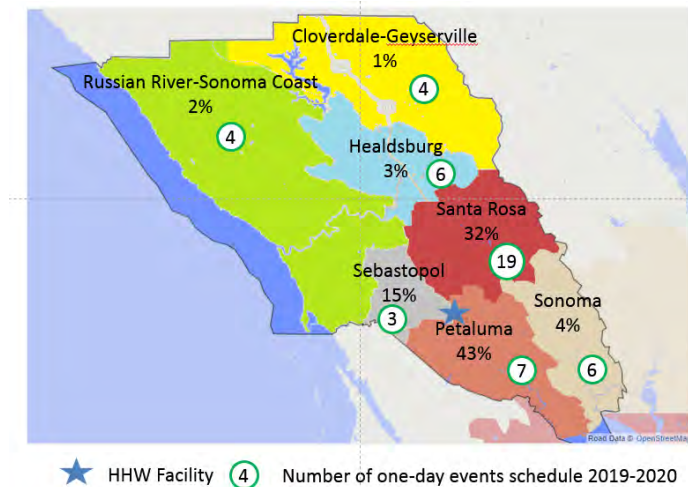
Participation by jurisdiction are listed in the table below and the figure indicates participation density.

Table 2-2 Sonoma County HHW Program Participation and Usage by Jurisdiction

Community	HHWF	VSQG	CTC	Rover	Total Participation	Households	HHW Program Usage%	Distance
Cloverdale	79	1	105	3	188	3,481	1%	44
Cotati	742	7	17	1	767	3,209	4%	5
Healdsburg	237	15	99	2	353	5,025	2%	27
Petaluma	4,848	41	51	9	4,949	23,543	25%	9
Rohnert Park	1,537	8	38	5	1,588	17,067	8%	6
Santa Rosa	5,271	89	595	29	5,984	68,927	30%	12
Sebastopol	2,584	23	115	6	2,728	3,517	14%	10
Windsor	306	14	101	1	422	9,713	2%	6
County, uninc.	2,275	41	371	21	2,708	70,494	14%	
Total	17,879	239	1,492	77	19,687	204,976		

The figure below indicates City participation at only the HHW Facility, co-located at the landfill. This table demonstrates that the majority participation is from the area surrounding the facility. The figure also indicates the number of HHW Collection Events scheduled for 2019-2020 (does not include HazMobile events in Sea Ranch operated by MendoRecycle).

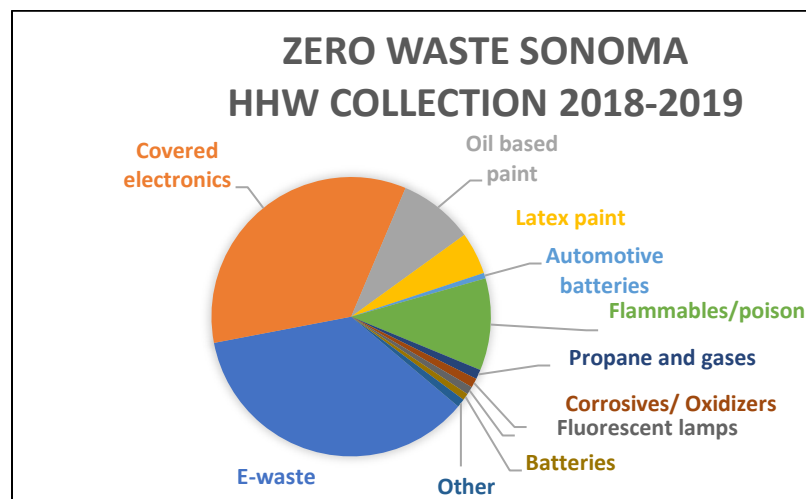
Figure 2-1 HHW Facility Participation and Event Locations by Region



The May 2018 analysis indicated the northern area, including portions of northern Santa Rosa, is underserved based on participation at the Permanent HHW Facility versus the area population. This area is a target for more HHW services.

Waste quantities for 2018-2019 are presented in the graph below.

Figure 2-2 Percentage of HHW by Category



3. ADDITIONAL HOUSEHOLD HAZARDOUS WASTE PROGRAM OPTIONS

California's regulatory framework allows for several HHW collection programs. The section below presents additional options for consideration to increase participation in areas underserved by the current Facility and estimated range of costs.

The table below indicates estimated cost increases for infrastructure, land purchase, feasibility studies, and permitting, and expected increase in usage in addition to the currently offered HHW services. The estimate considers increased staffing, disposal, and equipment. All expansion programs will increase Agency and contractor costs. Exact costs for each service cannot be determined at this time without establishing how many events are being scheduled, how many hours the event is open to residents, how many residents are provided appointments, and other variables. Ranges depict varying levels of service. Also factored in some estimates are approximate cost savings offset by fewer one-day events or reduced usage of the current permanent facility. Each of the options is discussed in following sections, except for the renovated facility option which has already been developed. Contractor labor rates are based upon the current agreement.

Table 3-1 Increased HHW Program Options Estimated Cost Ranges

Program Concept	Development Cost	Annual Cost Estimate	Time to Implement	Highlights
Expansion of HHW Collection Events (25-50 events/year)	\$10,000	\$54,000 - \$108,000	Few months	Assumes number of events increased 50-100%
Mobile Household Hazardous Waste Facility (3-day event, 12-25 per year)	\$100,000	\$90,000 - \$188,000	9 months to one year	Longer time one location. Less event costs offset with increased area participation
Permanent facility, locker configuration	\$2,600,000 - \$4,000,000	\$500,000 - \$550,000	One year	Fixed facility, simpler construction, limited storage
Renovated facility and land acquisition	\$10,000,000	\$500,000 - \$550,000	Several years	Most flexible operation highest level of service
Retail Take Back	\$50,000	\$66,000 - \$100,000	9 months to one year	Provides additional options for residents through the County.

Level of service assumptions for Increased HHW Program Options:

- Expansion of HHW Collection Events – expands current one event per week to 50% to 100% more events, continue open four hours per event.
- Mobile Household Hazardous Waste Facility – 3-day events at 12 to 25 locations, open 6 hours per day and 25% increase in collected wastes.
- Permanent facility, locker configuration – current facility open 3 days per week for residents and two days for businesses. New facility to open three days per week and two days for businesses and current facility will scale back to two days per week for residents and one day for businesses.
- Renovated facility and land acquisition – same schedule changes as Permanent facility, locker configuration.

- Retail Take Back – modeled after San Francisco and San Luis Obispo, retail partners would accept HHW such as batteries and lamps from the public. Collected wastes could be delivered or collected into the HHW facility. Start up costs would cover containers and program development costs.

The current HHW contract with Clean Harbors may not allow for fulfilling additional services and pricing and terms might need to be negotiated if programs are to be implemented prior to the June 30, 2022 expiration date. Additional HHW services should be included as an option in future HHW contract bids. Increasing the availability of any HHW services for the public will increase total contractor costs for the program. Similarly, potential Agency staffing increase is anticipated by a full-time (\$125,276-\$156,674) or half-time position (\$63,621.74-\$82,028.87) depending upon the selected option.

3.1. Expansion of HHW Collection Events

One-day HHW events continue to be offered throughout the county on nearly a weekly basis. These events supplement the permanent facility. Expansion of the one-day HHW Collection Events is an option for consideration to expand accessibility. Events are dependent on the permanent facility for waste and equipment storage. Events are typically conducted for only one day for a period of four hours. As defined, events can be operated for two consecutive days at the same site. The advantage of this extended collection is permitting, and site selection require minimal effort and collected waste can still be removed at the end of the day or safely stored overnight. Other options could range from an additional day every other week to an additional full day per week. Establishing a collection event requires significant coordination prior to the event. Development of this option will require additional Agency staff time or additional personnel to secure sites and coordinate various logistics such as insurance, agreements, and contractor coordination. The Contractor will need additional resources for maintaining the appointment system to ensure participation is controlled. Additional staff will be needed for operating the events. Education and outreach efforts would need to be significantly increased to ensure usage of events.

Table 3-2 One-day HHW Collection Events – Advantages and Disadvantages

Advantages	Disadvantages
<ul style="list-style-type: none"> • Lower cost per event than new facility construction in the short term. • Provides service to underserved areas. • Can schedule more events in different locations to meet demand. • Can accept small business waste under separate arrangement and prior approval. • Staff already accustomed to events. 	<ul style="list-style-type: none"> • Additional contractor and Agency staffing may be needed for site logistics, appointments, and collection. • More expensive than permanent options long term. • Most common complaint by residents is they missed the event and are disappointed that it is not scheduled in the immediate time frame in their area. • Requires significant agency and contractor staff time to plan, advertise, and execute events. • Requires appointment system to manage participation. • Sites typically require permit and labor fees to the host agency \$75-\$600 per event. • Site agreements and insurance indemnification required per sites.

The following table compares the availability of permanent HHW facility features to Events.

Table 3-3 Comparison HHW Events and Facility for Residents (Current Operations)

Feature	Permanent	Events
Days open per year	150 open days average 7 hours per day Total hours per year = 1,050	About 50 events per year 4 hours per event Total hours per year = 200
Participation, daily	Typically, 120 households No appointment needed.	Maximum 80 households Average 40 households Appointments need staff time.
Open hours	Thursday, Friday & Saturday 7:30 am-2:30 pm Mobilization effort is minimal.	Typically held on Tuesday early evenings Four hours for acceptance and about 2 hours each event to mobilize and demobilize the site.

HHW collected at the Events is transported to the HHW Facility for consolidation.

3.2. Mobile Household Hazardous Waste Facility

California also has provisions for a Mobile HHW Facility, which is like the HHW collection events but can operate for a longer period (up to three consecutive weeks in one location).

A Mobile HHW Facility is defined in the California Health and Safety Code, Section 25218.1 as:

(g) "Mobile household hazardous waste collection facility" means a portable structure within which a household hazardous waste collection facility is operated and that meets all the following conditions:

- (1) The facility is operated not more than four times in any one calendar year at the same location.
- (2) The facility is operated not more than three consecutive weeks within a two-month period at the same location.
- (3) Upon the termination of operations, all equipment, materials, and waste are removed from the site within 144 hours.

Inquiries of DTSC, CalRecycle, and experienced HHW professionals have concluded that California has never utilized this HHW option, which was reportedly developed in Florida in the 1990s.

A Mobile HHW Facility is a novel concept since no California jurisdiction has implemented one. Proceeding with this option will require discussions with DTSC as indicated on their website that states:

Since regulations authorizing mobile HHW facilities have not yet been promulgated, authorization for mobile facilities is currently provided under a hazardous waste variance issued by DTSC. In general, to receive a variance to operate a mobile HHW collection facility the local agency will be required to operate under the same standards as the temporary facility <https://dtsc.ca.gov/universalwaste/types-of-collection-facilities/>.

An inquiry was sent to DTSC requesting clarification on availability of this option, but they have not responded.

Mobile Program advantages and disadvantages are identified in the table below:

Table 3-4 Mobile Program advantages and disadvantages

Advantages	Disadvantages
<ul style="list-style-type: none"> • Allow longer period for operating in an area (up to three weeks) versus the current Events (2 days). • Allows residents a longer period to participate in their area rather than just that one scheduled day. • Significantly decreased time to mobilize and demobilize for HHW Events, which takes about two hours per event. • Agency staff time reduced for coordinating site logistics since less sites are utilized. • Could decrease the frequency of HHW Collection Events due to increased availability in select areas. Costs savings could be directed to Mobile events. • Can accept business waste as separate activity. • HHW could be stored on trailer for up to three weeks and/or removed as needed. • Not permanent structure. • Grant funding available up to \$100,000 for set-up and operation. 	<ul style="list-style-type: none"> • Due to the longer operational period, a secure area is needed for storage of equipment and possibly HHW. • The five county transfer stations could be adequate sites for Mobile Collection but will require cooperation of the current solid waste contractors. • Requires residents to wait longer between events. • Needs to provide secure site such as solid waste transfer stations or jurisdiction owned properties. • Uncertain regulatory process since no one has conducted a Mobile Program. This process could take a few years. • Requires staffing during all open hours which will either increase staffing costs or remove staff from permanent facility.

Costs for this option are like conducting the HHW Collection Events but require less mobilization costs than HHW Collection Events. Scheduling mobile events to operate for longer periods of time at one location can replace some HHW Collection Events resulting in reduced Agency staff time for coordination of Events.

Based on current contractor costs and assuming Mobile events replace some of the HHW Collection Events, estimated start-up costs for Mobile programs would be about \$100,000 to purchase portable storage containers or mobile storage units and operational supplies. Annual additional operating costs ranging from \$90,000 - \$188,000 primarily from increased usage.

Increased security costs may be necessary at the site since collected HHW can be stored on site. Local permits may apply to use of a site. Additional storage lockers may be required.

Mobile programs can provide greater service to select areas and even replace some of the collection events in those areas. Give the size of Sonoma County, collection events will still be needed to provide service in some areas.

3.2.1. City of Tacoma, Washington

The City of Tacoma Washington ran a mobile collection facility typically for two successive weekends at remote locations from their permanent HHW facility. The mobile facility would visit the same site two or three times per year.

It consisted of a custom designed roll-off box and a box van with lift gate. The roll off box contained a used oil tank, drums, carts, buckets, manifests, traffic cones, ramp on one end and stairs on the other end, fire extinguishers, operations plan, absorbents, PPE, and other supplies.

The mobile site would be set up by a hook truck delivering the custom roll off box to the collection site. The box van would go to the site each day with extra supplies, operating staff, and empty containers, open the roll-off box, set up the collection site and operate the collection of HHW. At the end of the day the full drums and other containers would be loaded on the box van truck and taken back to the permanent collection facility.

After the end of the second weekend, the hook truck would retrieve the custom roll-off box and deliver it back to the permanent collection facility for storage.

As indicated in the picture below, the Mobile HHW facility site layout is nearly identical to the layout for the HHW Events. A similar mobile program has been used in Iowa for many years, but they have decreased its usage in favor of permanent facilities.



Figure 3-1 Tacoma Washington Mobile Facility (left) Sonoma HHW Collection Event 2006 (right)

3.2.1. Iowa State Program

The state of Iowa has been operating fixed and mobile collection events since 2014. The mobile collection is brought to a site on scheduled dates. Staff unload vehicles and package HHW in the trailer. Collected waste is then delivered to a permanent facility.



3.2.2. Criteria for a Mobile HHW Facility

Key operational criteria for establishing a Mobile HHW Facility include:

- Not interfering with existing site operations, events are usually after hours and/or possibly weekends.

- Suitable locations may be limited since the activity will be onsite for a longer period.
- Site security is a potential concern but HHW can be removed daily and supplies can be locked away. The location for the mobile events could be at an established location with existing security.
- Potential use of trailer for short-term storage of HHW on site. If a specialized trailer is used, a location for storage when not in use.

Table 3-5 Comparison Permanent, Temporary, Mobile HHW Facilities

Program Type	Permanent HHW Facility	HHW Collection Events	HHW Mobile Program
Infrastructure	Permanent or semi-permanent structure.	None specified, typically, open area with weather coverage.	Portable structure.
Location Requirement	Fixed.	Suitable.	Suitable.
HHW Acceptance Time	Continuous, regular schedule at same location.	Not more than once for a period of not more than two days in any one month at the same location.	At same location, not more than: <ul style="list-style-type: none"> • four times in any one calendar year. • three consecutive weeks within a two-month period.
Removal Required	Within one year after collection.	All equipment, materials, and waste are removed from the site within 144 hours upon termination of operations.	All equipment, materials, and waste are removed from the site within 144 hours upon termination of operations.
Approval Process	Permit-by-Rule submittal pending authorization by CUPA.	Submit Permit-by-Rule, No CUPA authorization required. CUPA notification required.	No regulatory process defined in statute but a DTSC variance is required.

3.3. Permanent facility, locker configuration

Another option for collection of HHW is utilizing temporary lockers for waste storage on a covered concrete pad with fencing around the area.

Figure 3-2 Permanent facility, locker configuration

The locker based permanent facility is compared to the permanent facility in the table below.

Locker Based	Permanent Building
<ul style="list-style-type: none"> • Less expensive than brick and mortar building. • Limited storage for collected wastes containers. • Limited ability to bulk materials due to limited ventilation. • Flexibility in locker configurations. • Less secure than building. • Multiple satellite locations could be sited. • Expansion is easier than a building. 	<ul style="list-style-type: none"> • Allows more storage. • Accommodates bulking of wastes. • Protected from weather for workers and customers. • Longer lifespan. • Greater security.

Costs for this option would typically include multiple hazardous waste rated storage lockers and a locker for storage of supplies. The area would need to be surrounded by security fencing. Costs are estimated with purchase of land specifically for this facility.

Since the Permanent Facility is open Thursday through Saturday, the new facility could be open on days the permanent facility is not open. It might be possible to eventually replace one of the current facility's open days.

West Contra Costa County has an additional HHW Facility in El Cerrito, which is open on Tuesdays while the main Richmond facility is open from Wednesday through Saturday. Overall program participation has increased, with a slight decrease in Richmond's participation and an increase in El Cerrito's facility participation from the surrounding area. A similar pattern could be expected in Sonoma County.

3.4. Retail Take Back

Lacking national and state comprehensive manufacturer responsibility for contributing to the management of HHW programs, some jurisdictions are adopting Retail Take Back programs. Retail Take Back is a form of Extended Producer Responsibility (EPR) or Product Stewardship (PS).

These programs are offered as free services to the participants and are funded by the jurisdiction or retailer. These Retail Take Back programs focus on collection of universal hazardous wastes such as household batteries and lamps since universal waste has less stringent management requirements than other HHW. Used oil and filter collection centers are the oldest retail take back programs in that automotive oil manufacturers fund the program primarily through a surcharge on purchase of product oil by residents and businesses. These funds are reimbursed to the person upon return of used oil to a certified collection center. Used oil filters are not included in the manufacturer fee program.

Some retailers accept the programs as providing an additional service to their customers. Other retailers are resistant or do not participate due to concerns with the additional effort involved, disposal costs, lack of adequate space, requirements for training staff, and regulatory compliance hurdles. The regulatory hurdles include accountability for proper labeling of containers, onerous recordkeeping requirements, and waste packaging standards. Federal regulations require that, prior to transport, batteries greater than nine volts and all lithium batteries be protected against short circuits due to the potential for fires. There are some limited exemptions to this requirement. Increased enforcement by the state Department of Toxic Substances Control (DTSC) and the local Certified Unified Program Agencies (CUPA) raises concerns on potential violations and possible fines to the retailer.

The City and County of San Francisco and San Luis Obispo are two examples of currently active Retail Take Back programs and are presented below. Both programs have been in operation for years without any significant issues or hazardous waste incidents. Both jurisdictions fund the transportation and management costs of these programs. San Francisco's program is voluntary for businesses to participate. San Luis Obispo's program is mandatory for businesses selling certain products to host the collection container in their business.

Both programs have indicated significant amounts of waste collected by the Retail Take Back programs but the amount of HHW collected at their HHW facilities has not been offset by these Retail programs. The amount of waste collected at the HHW facilities continues to slowly increase over time commensurate with other HHW collected. Assumedly, the Retail Programs are collecting HHW that might have otherwise been stored at the residence, illegally disposed of in the solid waste, or abandoned on public and private property.

3.4.1. San Francisco Retailer Partner Program

The City and County of San Francisco has implemented a Retailer Partnership Program where retailers are recruited to become established as a Retail Partner for collection of household batteries, fluorescent lamps (both considered by California as universal hazardous wastes), and household paint. The retailers are not participating in the California Paint Stewardship program conducted by PaintCare, the CalRecycle approved stewardship organization.

This service is not mandatory on all retailers and is provided at no cost to the retailer since it is funded by the City. The number of Retail Partners scattered throughout the City are listed below:

Table 4-4 Sites City and County of San Francisco Retailer Partnership Collection Sites

Waste Type	Number of Retail Collection Sites	Annualized Pickups	Annual Pounds Collected
Household batteries	12	880	87,640
Fluorescent lamps	28	562	20,922
Oil and latex paint	12	472	140,465
Total	52	1,914	249,027

San Francisco collected over 2.6 million pounds of HHW from all programs and the Retail Partnership Program collects nearly ten (10) percent of the total HHW with collection and disposal cost estimated at \$380,000 per year for the retail program. Expenses for the retail program are not itemized and many expenses are shared with the other HHW programs.

Retail partners are provided containers for these wastes with instructions on proper management and education material for the public. The batteries and lamps are collected by Recology who is contracted by the City to operate the HHW program utilizing their HHW Door-to-Door vehicles and staff that also conduct the Door-to-Door collections.

San Francisco also concurrently offers curbside collection of household batteries by Recology's solid waste collection vehicles. San Francisco conducted a significant public outreach campaign to the targeted residential collection points – multi-family units of five or more residents. The education campaign resulted in a significant number of batteries being collected from the residential units directly

and there was a comparable decrease in the retail collection in those areas. The total amount of batteries collected by both programs was the same and there was not a significant decrease in the amount of batteries collected by the permanent facility.

3.4.2. *San Luis Obispo Take Back Program*

In 2008, the San Luis Obispo County (SLO) Integrated Waste Management Authority (IWMA) adopted a **mandatory** ordinance for the SLO Take Back Program where every retailer that sells household batteries, compact fluorescent lightbulbs (CFLs) and fluorescent tubes, mercury-added thermostats, paints, sharps and medication in San Luis Obispo County must take those items back from the public **for free**. The program information is at <https://www.iwma.com/residents/slo-take-back-program/>.

Under this program, retailers can either deliver the waste at no charge to the County's permanent HHW facilities or the IWMA will conduct a pickup for a fee to the retailer. This fee covers a significant portion of the actual cost but is not intended to cover the complete collection cost which could vary based on the amount of material collected.

The fee is a \$40 stop charge for all HHW with an additional per foot charge for fluorescent lamps. Battery collection is free. Once a month, small retailers are provided the opportunity for a free pick up by the IWMA's HHW contractor. Costs for the drive, containers and accounting services are \$78,000 per year but disposal costs are not itemized since the collected waste is included with other HHW programs.

Since 2010, San Luis Obispo has collected:

- 72,457 gallons of home-generated sharps
- 34,742 pounds of batteries
- 231,3337 compact fluorescent lamps, and
- 86,989 fluorescent tubes

4. FUNDING OPTIONS

Typically, HHW programs are funded by solid waste fees. As California's solid waste diversion efforts increases, funding from solid waste fees proportionally decreases. Jurisdictions are looking for other funding sources for diversion programs as well as HHW programs. Other potential funding sources may include:

- CalRecycle HHW Discretionary HHW Grant
- Extended Producer Responsibility and Product Stewardship
- Household Chemical Manufacturer Support
- Retail Business License Fee
- Retail Take Back
- Parcel Fee
- Residential Service Fee
- Small Business Fee Increase
- Municipal Bonds

4.1. Current funding

The current HHW program is funded by a surcharge on the solid waste tipping and gate rates.

One limitation of this analysis is that the current HHW contract does not require the contractor to provide detailed costs for each distinct service making it difficult to develop an exact cost comparison between programs, so the amounts per program are estimates.

4.2. CalRecycle HHW Discretionary HHW Grant

CalRecycle annually offers grants to jurisdictions for facility construction and small projects for HHW programs. Typically, the priority for the grants is new programs and facilities in underserved areas and for jurisdictions that have not received a grant in recent years. The grants are competitive and several times CalRecycle has resorted to a lottery system to determine awardees for the limited funds.

Table 4-1 CalRecycle HHW Grants

Grant Component FY 20/21	Cycle 34 (Construction)	Cycle 35 (Small Projects)
Due Date	July 7, 2020	July 15, 2020
Term Ends	September 30, 2025	October 2, 2024
Prerequisite	Shovel-ready	None
Uses	New or updates to the Permanent facility or Recycle-Only facility.	Education, EPR collections, temporary or mobile programs, expansion curbside and Door-to-Door programs, Minor improvements to facility.
Total funding available	\$500,000	\$1,000,000
Per grant award	\$250,000	\$100,000 regional or JPA

Information on these grant programs is located at <https://calrecycle.ca.gov/HomeHazWaste/Grants/>.

4.3. Extended Producer Responsibility and Product Stewardship¹

In California and nationally, the movement for manufacturer responsibility is increasing as indicated by the increase in EPR and PS. Several advocacy groups have been formed to address this issue including the California Product Stewardship Council (CPSC), their national organization National Stewardship Council (NSC), the Product Stewardship Institute (PSI), and others. Europe and Canada have adopted framework requirements on managing products including ones deemed hazardous.

With a few exceptions, manufacturers resist these programs for various reasons including that they create products for use and are not responsible for the end-of-life management. California's strict regulatory requirements result in more items being classified as hazardous waste upon disposal especially for the toxicity characteristic.

The terms Product Stewardship and Extended Producer Responsibility have been used interchangeably more and more over the past few years. However, there are distinct differences in the two different management structures and the end results. Each will be described below, including the pros and cons of each management type.

4.3.1. *Product Stewardship*

The term "Product Stewardship" implies someone is the designated steward of a product, in this case, at the end of the product's useful life, whether that be government, non-profit organizations, or manufacturers. In most cases, funding for the management of end-of-life costs of products are borne by local government through solid waste facility tipping fees or curbside collection rates. End-of-life costs for some products have been funded through visible consumer fees in California. These include certain electronic waste (covered electronic waste or CEW), tires, beverage containers, paint, mattresses, and carpet. All these programs have a visible consumer fee collected at the point-of-sale. Except for beverage containers, all funding for management of the products at end-of-life is derived wholly from the consumer fees. Beverage containers is different in that the charge at point-of-sale is a deposit on the container and the consumer may be able to recover that deposit if returned to a certified recycling center. Also, there is a manufacturer funded component to the beverage container program, wherein the manufacturers are supposed to pay the "Processing Fees" meant to compensate downstream entities, such as cities and counties, certified recycling centers, etc. for the lack of market value of the recycled material type. Unfortunately, these "Processing Fees" are typically paid by the beverage distributors and not necessarily charged back to the manufacturers, therefore there is no impact to the beverage container manufacturer for the choices they make when creating the beverage container.

Pros: Product Stewardship is typically politically easier to establish with a visible consumer fee type program, as most manufacturers will not necessarily object to a program, they are not funding themselves. For some products, a consumer fee makes sense if the manufacturer would not change the product design utilizing more desirable attributes. The more desirable attributes of a product include that it be more reusable, repairable, durable, and recyclable, as well as less toxic. This just may not be the case for some products.

Cons: With Product Stewardship, the manufacturers have no incentive to make their products more reusable, repairable, durable, less toxic, and recyclable. If they bear the true cost of recycling, they may think differently during product design. Further, the programs are operated very differently under the Product Stewardship model, as it is not the manufacturer's money. This is seen in the lack-luster

¹ Source: Doug Kobold, Executive Director, California Product Stewardship Council

progress of some product stewardship programs. For example, the California carpet program was created by legislation in 2010, yet there was little progress in the recycling rate for the first six years as is evidenced by the fines levied against the carpet industry by the oversight department, CalRecycle. Another example is the tires program. While many of the used tires are being collected, there is still a large quantity being landfilled in tire monofills or being processed for legal burial in Class III landfills in the state. To further confuse consumers, most tire shops show two fees on an invoice, a “tire recycling fee” (funds that go to the state to manage the tire program) and a “tire disposal fee” (funds that go to the tire retailer to cover their costs to pay for the tires to be picked up, transported, and ultimately recycled or disposed of). If the tire manufacturers were required to take back their tires at the end-of-life at no charge to the consumer, they would likely find more end markets for these materials. This leads to the next type of management strategy, Extended Producer Responsibility (EPR).

4.3.2. Extended Producer Responsibility

“Extended Producer Responsibility” or “EPR” requires the manufacturers of products to fund and manage end-of-life of their products without a visible fee consumer, in most cases internalizing the costs. While some manufacturers may just pass on these costs to the consumer in the price of the product, many may be encouraged to consider different design aspects of their products, such as using less toxic materials or ingredients, or using more recyclable materials in the production process. This gets back to the motive for the manufacturers making their products more reusable, repairable, durable, less toxic, and recyclable if they are paying for end-of-life management of their products.

Pros: Manufacturers play a significant part in the end-of-life management of the products they make. Their decisions can be as simple as choosing a slightly more expensive plastic resin when creating their packaging product. This slightly more expensive plastic resin will likely be more recyclable (have more value on the recycled commodities market) and thereby be the environmentally preferred alternative. Without EPR, the downstream end-of-life costs are still externalized, but still attributed to the product, thereby driving up the total lifecycle cost to produce the product. Those additional end-of-life costs may make a more environmentally friendly and sustainable product more competitive, or maybe even cheaper than that of the less environmentally friendly product. Because manufacturers feel the brunt of the true costs of recycling, they are bound to make better choices in product design for most products.

Cons: Most product manufacturers tend to lean toward the existing government funded management of the end-of-life costs of their products. This way they can continue to produce products without concern for environmental consequences or externalized costs. Many legislative actions to hold manufacturers accountable through EPR for their products is met with significant opposition. EPR has been labeled as unnecessary and even non-business friendly. Some manufacturers allege EPR is not needed and will drive up the costs of products, making California a harder place to do business.

While EPR is the preferred alternative to end-of-life management of products entering our waste stream, there is some room for Product Stewardship for those products that would not be changed in design or construction if the costs were associated to that product. EPR and Product Stewardship should be applied on a case-by-case basis, but should also be applied in that order, EPR first, then Product Stewardship, if necessary.

4.3.3. California Implementation

Statewide, California has adopted several HHW targeted EPR/PS programs through CalRecycle which administers the current programs that include:

- Used oil
- Architectural paint
- Rechargeable batteries (DTSC oversight)
- Covered electronic wastes (a decreasing portion of the electronics waste stream)
- Mercury thermostats (DTSC oversight)
- Home-generated sharps and pharmaceuticals program are proposed under SB 212

CalRecycle also administers EPR/PS programs on nonhazardous wastes such as tires, mattresses, and carpets. CalRecycle adopted a measure to consider development of the “Future of Electronics Waste Management in California” to address the increasing proliferation of consumer electronics and provide funding for the increasing electronics waste stream. This effort will hopefully significantly decrease costs to jurisdictions since fees are passed to the consumer or business directly as user fees. This effort will need to be adopted in statute before a program can be developed and that effort will take many years to implement.

California has not adopted a framework for EPR/PS. This “piecemeal” approach developed independently by individual waste type does help offset costs of disposal but also imposes additional recordkeeping requirements on jurisdictional programs. The current approach is inconsistent so that each product has a different recordkeeping requirement and significantly increases staff time to administer the programs. ZWS has supported these efforts.

EPR and PS programs can provide some financial support for HHW collection by material type. EPR and PS can be implemented nationally, statewide, and even locally. As indicated by Alameda County’s efforts on sharps and medications that was challenged by manufacturers all the way to the Supreme Court. The Supreme Court declined to hear the case, so the lower court ruling was upheld, and the program went into effect. Subsequently, SB 212 was approved that will provide opportunities for collection of home-generated sharps and pharmaceuticals. Unfortunately, Sonoma County’s efforts were halted by SB 212 provisions that did not allow for local ordinance.

4.4. Household Chemical Manufacturer Support

Manufacturers have typically mounted opposition to EPR/PS programs both nationally, statewide, and locally. ZWS efforts will likely encounter similar opposition if choosing to approve a local EPR/PS program. One negotiation option might be that in lieu of funding a local EPR/PS, the manufacturers, retailers, and other businesses could fund the construction and/or operation of a new HHW Facility.

California requires a jurisdiction to sponsor the HHW program. Some of the early HHW programs in other states were coordinated by industries targeting discontinued pesticides in Kentucky, Michigan, and Wisconsin or permitted hazardous waste facilities such as one in Seattle, Washington.

The Ecology Action Center in McLean County in Illinois is seeking private contributions for their HHW program. (It notes \$0 now, intriguing concept like Go Fund Me).

<https://ecologyactioncenter.org/hhw/hhw-donate/>.

4.5. Retail Business License Fee

Another option is to administer a license fee or surcharge on businesses that sell hazardous products that might eventually be delivered to the HHW facility. This concept exists as a Statewide Product Stewardship for Covered Electronics, architectural paint, and automotive batteries (about 49% of the HHW collected in 2018-2019), and motor oil. The remaining 51% of HHW is miscellaneous electronics, solvents, pesticides, propane and other gases, corrosives, household batteries, fluorescent lamps, and others and have no statewide program. Retail businesses that sell these other materials could be assessed a fee on these products.

When no longer used, these products become HHW and are delivered to an HHW facility sponsored and funded by local government. This nexus could be used to validate imposing a fee on these products. The state of Iowa imposed such a fee in the 1970s through the Household Hazardous Material Retailer Permit program. Based upon the retailers SIC code, the retailer is assessed an annual \$25 permit fee. Retailers are assessed the fee if selling products such as automotive products, solvents, pesticides, cleaners, flea treatments, hearing aid batteries, eyeglass sprays, and other products utilizing the Global Harmonization Pictographs. This fee results in an annual statewide budget of about \$350,000. These funds are used for statewide education efforts and some funding of the collection programs. Periodically, the retailers meet with the state Department of Natural Resources to review the program and make changes. More information on this program can be found at: <https://www.iowadnr.gov/Environmental-Protection/Household-Hazardous-Materials/HHM-Retailer-Permits>.

A Retail Business License Fee could be assessed on businesses that sell products that could eventually become HHW such as batteries, fluorescent lamps, pool chemicals, and automotive products. Per the 2019 Sonoma County Retail Report by the Sonoma County Economic Development Board there are 1,839 retail establishments in the County. Sonoma County, Healdsburg, Petaluma, and Santa Rosa had 2,973 businesses registered for Hazardous Materials Business Plans in the California Environmental Reporting System (CERS). CERS could be an avenue to collect the HHW fee since businesses are already assessed fees. Using these ranges and a fee of \$25.00 per business per year, there is a potential to raise \$46,000 to \$74,000 per year. There will be administrative charges to implement this fee. The specific businesses and fees can be determined if this option is selected.

4.6. Parcel Fee

Parcel fees have been used in some communities to fully or partially fund their solid waste programs including HHW programs. Calaveras County is one that uses this option.

In 2014, Alameda County adopted a \$9.55 per year parcel fee on every residential, multifamily, and single-family units. The fee provides additional funding for their HHW program rather than reliance on solid waste fees. This fee decreased over time and in 2019 was decreased to \$6.64 per year for a fixed term of five years at which time the fee will be reevaluated. This parcel fee provides additional funding of about five million dollars per year for increasing the hours at their four HHW facilities and added funding for twelve one-day events throughout the county.

4.7. Residential Service Fee

ZWS, like other California jurisdictions, does not charge residents a fee upon delivering HHW to a program. HHW programs are typically funded from solid waste fees. There is no regulatory prohibition on imposing a fee, but it may discourage usage or encourage illegal dumping. One jurisdiction imposed a fee on “residents” delivering large loads (e.g. greater than the 15 gallon or 125 pounds transportation

limit). This primarily was targeted at a participant that attests to be a household but is delivering large loads or certain types of wastes that are not typically HHW (e.g. laboratory chemicals). Some jurisdictions have considered this approach but are required to formally adopt fee increases by their elected or appointed body.

4.8. Small Business User Fee Increase

Currently, ZWS offers qualifying small businesses the opportunity for disposal of their hazardous wastes. This service is limited by California statute to those businesses generating no more than 220 pounds per month of hazardous waste and they generate no more than 2.2 pounds of acute hazardous waste (e.g. certain pesticides).

Increased regulatory scrutiny by the local CUPA and the state is enforcing the requirement for businesses to properly handle their hazardous waste. They can arrange their own disposal or use the ZWS sponsored programs if eligible.

Most HHW programs that accept CESQG waste, including ZWS, typically assess a fee to the business equal to the cost of waste disposal per pound or per gallon plus an administrative fee. The administrative fee in Sonoma is currently \$25. Facility operating costs and labor are not currently included in this business fee but could be added as an option. Assessing a fee on business usage is not a major deterrent since businesses are required to properly dispose of their accumulated hazardous wastes.

4.9. Municipal Bonds

Jurisdictions commonly issue bonds to finance infrastructure and capital projects. These bonds are commonly exempt from federal taxes. Two of the most common types of municipal bonds are general obligation bonds and revenue bonds.

General obligation bonds are issued by states, cities or counties and not secured by any assets. Instead, general obligation bonds are backed by the “full faith and credit” of the issuer, which has the power to tax residents to pay bondholders.

Revenue bonds are not backed by government’s taxing power but by revenues from a specific project or source, such as highway tolls or lease fees. Some revenue bonds are “non-recourse”, meaning that if the revenue stream dries up, the bondholders do not have a claim on the underlying revenue source.

There are some risks to using municipal bonds including increased debt to the jurisdiction and impacts to the issuing jurisdiction’s credit rating.

5. RECOMMENDATIONS

Providing more HHW services to Sonoma County and securing the requisite funding can be accomplished with a variety of options. Recommendations include short- and longer-term options.

Short term

A short-term recommendation to increase HHW services is increasing the one-day events to alleviate potential accumulation, especially in areas further from the facility, since the further residents are from the facility, the lower the participation. One of the most difficult aspects of conducting events is staff time to coordinate with property owners for use of the site. This task can be reduced by selecting sites already used and extending the collection at the same site to two consecutive days. Regulatory acknowledgement for events required 45-day prior notification.

Another advantage of increased events is that business hazardous waste can be collected under separate arrangements at the events and with prior appointments. Events targeted only at business waste can also be established.

Another option is to start the event collections earlier. Currently, events are scheduled from 4:00 pm to 8:00 pm. This start time was primarily to accommodate resident work schedules. Opening an hour earlier will allow for a 25% increase in available appointments. This increase in participation is not expected to require additional vehicles for removal of HHW from the site.

Both options would require a contract amendment with Clean Harbors and an increased budget.

Long term

Recommendations for more permanent HHW program services will take some time to implement due to budgetary and permitting concerns but planning can start as soon as those service options are approved. Services recommended include:

- Pursue establishing Mobile HHW events in select areas.
- Continue pursuing property in the Northern County for siting a Permanent Facility.
- Retail Take-Back
- Investigate establishing a Retail Business License Fee to fund programs.

Mobile events can provide increased service in currently underserved areas. Residents have more time to participate rather than limited to one day with limited appointment. This is also a more effective use of staff time in coordinating events.

A permanent HHW Facility offers the most complete option. The locker configuration Permanent facility option allows for a lower cost option of offering permanent service. Finding suitable existing building has been difficult. This option allows more flexibility to find land and establish a facility. The locker configuration can be upgraded in the future to a more traditional building in the future as funds allow.

A Retail Take Back option provides for more locations to collect certain HHW such as batteries and lamps. Staff and contractor time will be needed to recruit collection centers and manage the HHW.

Pursuing a Retail Business License Fee would provide some funding for HHW programs since the fee could be targeted at retail businesses that offer products that eventually are delivered by residents as HHW. National, statewide, and local efforts are targeting producers to accept responsibility for providing end-of-life management. The business community will need to be brought into the discussion since they typically have concerns on any fees increases.

If the Agency directs, more specific information can be provided for any selected options. Sonoma County has many opportunities to increase proper HHW management services to their residents.



Household Hazardous Waste Program Options Analysis



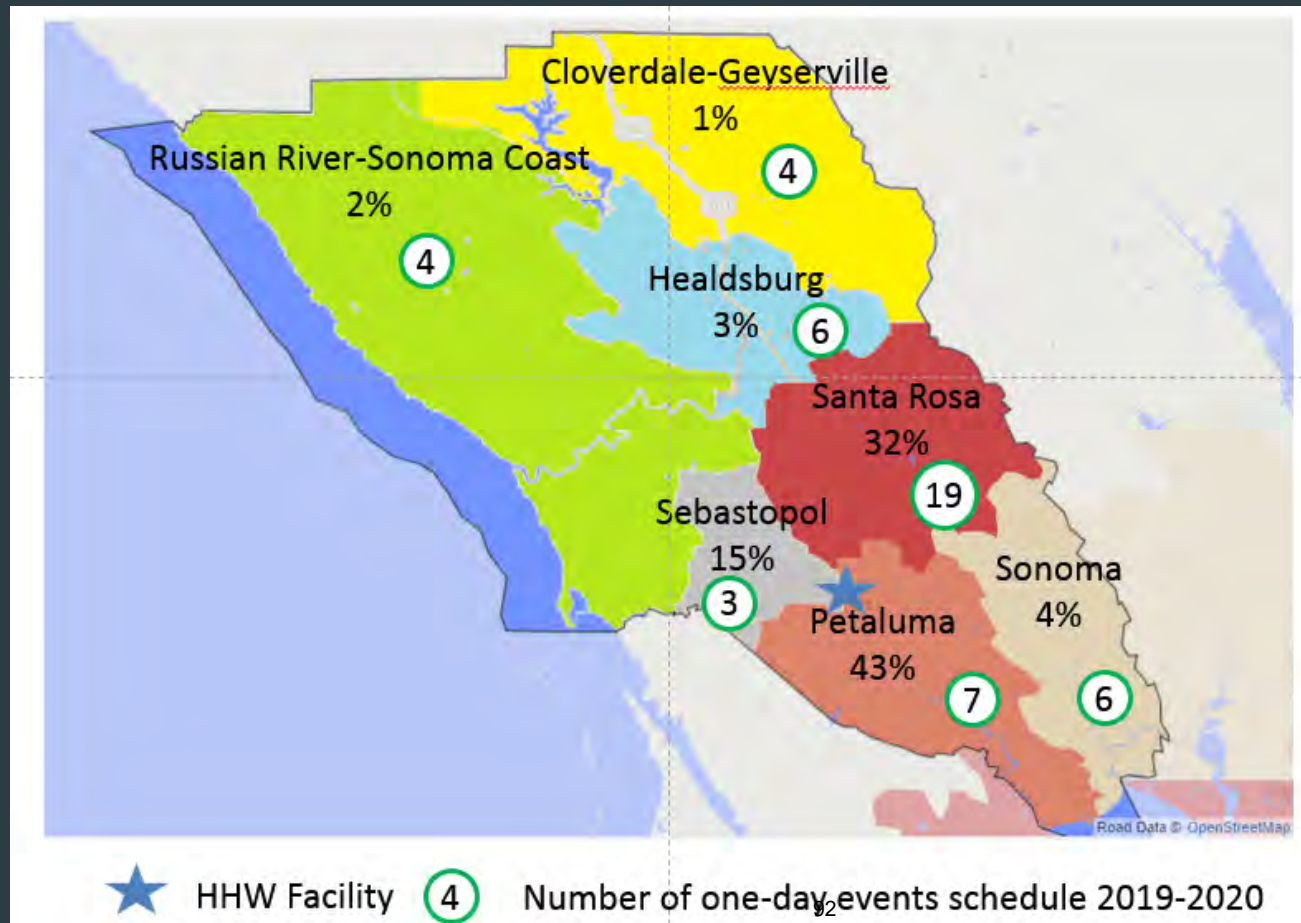
Objective

- ▶ Review current program
- ▶ Identify opportunities to expand safe HHW disposal options for Sonoma County residents

Current HHW Program Service Options

Program	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
Household Facility (7 hours/day)				•	•	•	
HHW Events (4 hours/day)		•					
HHW Rover Pick Up Service (on call)			•				
Business disposal (5 hours/day)		•	•				
Other HHW collection	Various locations and wastes						

HHW Facility Participation and Event Locations by Region



Current Participation

Community	Total Participation	Households	HHW Program Usage%	Distance to Permanent HHWF
Cloverdale	188	3,481	1%	44
Cotati	767	3,209	4%	5
Healdsburg	353	5,025	2%	27
Petaluma	4,949	23,543	25%	9
Rohnert Park	1,588	17,067	8%	6
Santa Rosa	5,984	68,927	30%	12
Sebastopol	2,728	3,517	14%	10
Windsor	422	9,713	2%	6
County, uninc.	2,708	70,494	14%	
Total	19,687	204,976		

HHW Program Expansion Options

- ▶ Expansion of HHW Collection Events
- ▶ Mobile Household Hazardous Waste Facility
- ▶ Permanent facility, locker configuration
- ▶ Renovated facility and land acquisition
- ▶ Retail Take Back

Increased HHW Program Options Estimated Cost Ranges

Program Concept	Development Cost	Annual Cost Estimate	Time to implement	Highlights
Expansion of HHW Collection Events (25-50 events/year)	\$10,000	\$54,000 - \$108,000	Few months	Assumes number of events increased 50-100%
Mobile Household Hazardous Waste Facility (3-day event, 12-25 per year)	\$100,000	\$90,000 - \$188,000	9 months to one year	Longer time one location. Less event costs offset with increased area participation
Permanent facility, locker configuration	\$2,600,000 - \$4,000,000	\$500,000 - \$550,000	One year	Fixed facility, simpler construction, limited storage
Renovated facility and land acquisition	\$10,000,000	\$500,000 - \$550,000	Several years	Most flexible operation highest level of service
Retail Take Back	\$50,000	\$66,000 - \$100,000	9 months to one year	Provides additional options for residents through the County.

Expansion of HHW Collection Events

- ▶ Currently ~50 events per year
- ▶ Significant staff and contractor time
- ▶ Known logistics
- ▶ Implement sooner
- ▶ Less served than permanent facility

Mobile Household Hazardous Waste Facility

- ▶ Similar to one-day events
- ▶ Allows longer time at one location to service more residents and businesses
- ▶ Reduced setup time
- ▶ Longer approval time from state



Permanent Facility, Locker Configuration

- ▶ Provides permanent location
- ▶ Easier operation than events
- ▶ More regular service
- ▶ Less expansive than a building



Renovated Facility and Land Acquisition

- ▶ Most versatile program
- ▶ Difficult to find property
- ▶ Most expensive short-term
- ▶ Permanent solution
- ▶ Simpler logistics, less dependent on other entities

Retail Take Back

- ▶ Builds on existing retail collections
- ▶ Expands product stewardship concepts
- ▶ Requires staff and contractor oversight
- ▶ Limited types of HHW to collect

Funding Options

- ▶ CalRecycle HHW Discretionary HHW Grant
- ▶ Extended Producer Responsibility and Product Stewardship
- ▶ Household Chemical Manufacturer Support
- ▶ Retail Business License Fee
- ▶ Retail Take Back
- ▶ Parcel Fee
- ▶ Residential Service Fee
- ▶ Small Business Fee Increase
- ▶ Municipal Bonds

Retail Business License Fee

- ▶ Assess fee to businesses selling products that become HHW
- ▶ Could be assessed through hazmat plans
- ▶ Supplements program costs
- ▶ Local product stewardship

Recommendations

- ▶ Short term
 - ▶ Increase one-day events
- ▶ Longer term
 - ▶ Establish mobile program in select areas
 - ▶ Permanent facility North County
 - ▶ Retail takeback
 - ▶ Investigate Retail Business License Fee