SONOMA COUNTY WASTE MANAGEMENT AGENCY

Meeting of the Board of Directors

September 18, 2025

REGULAR MEETING

Regular Session begins at 9:00 a.m.

Closed Session to begin immediately following Regular Session

Estimated Ending Time 11:30 a.m.

City of Santa Rosa Council Chambers
100 Santa Rosa Avenue
Santa Rosa, CA

Meeting will also streamed via Zoom:
https://sonomacounty.zoom.us/j/92248855470?pwd=OFFVNUliWVh5Wk5SSzVyWWdWbndjdz09

Webinar ID: 922 4885 5470
US: +1 669 444 9171
Passcode: 157476

Meeting Agenda and Documents

ZERO WASTE SONOMA

Meeting of the Board of Directors

September 18, 2025

REGULAR MEETING
Regular Session begins at 9:00 a.m.

Closed Session to begin immediately following Regular Session

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Note: This packet is 61 pages total

Zero Waste Sonoma

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PUBLIC COMMENT:
Public comment may be submitted via recorded voice message or email. Public comment may also be made by "raising your hand" using the Zoom platform.

Voice recorded public comment: To submit public comment via recorded message, please call 707-565-4432 by 5:00 pm Wednesday, September 17th. 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.

COMMITMENT TO CIVILITY: The ZWS Board of Directors has a commitment to civility. To assure civility in its public meetings, the public is encouraged to engage in respectful

dialogue that supports freedom of speech and values diversity of opinion. Board Members, staff, and members of the public are expected to establish and maintain a cordial and respectful atmosphere during discussions; and foster meaningful dialogue free of personal attacks. Members of the public must also adhere to the speaking time limit. Any commenters in violation of civility standards will be disconnected.

Agenda

Item

1. Call to Order

2. Agenda Approval

3. Public Comments (items not on the agenda)

Consent (w/attachments)

4.1 Minutes of the August 21, 2025 Meeting
4.2 August, September, and October 2025 Outreach Calendar
4.3 Fiscal Year 2024-25 Year-End Contingency Fund Budget Adjustment

Regular Calendar

5. COAR Design Presentation for the Pruitt Avenue HHW Facility and Options for the ZWS Headquarters [Lukacs]

6. Boardmember Comments – NO ACTION

7. Executive Director Report – VERBAL REPORT

8. Staff Comments – NO ACTION

9. Next ZWS meeting: October 16, 2025

10. Adjourn Regular Session

11. Closed Session
    CONFERENCE WITH REAL PROPERTY NEGOTIATORS (Sec. 54956.8)
    Property: 195 Concourse Boulevard, Santa Rosa, CA 95403
    Agency Negotiators: Leslie Lukacs, Ethan Walsh, Thora Collard
    Negotiating Parties: Walt Johnson
    Under Negotiation: Price and terms of payment

12. Adjourn Closed Session

2300 County Center Drive, Suite B240 Santa Rosa, California 95403 Phone: 707/565-3579 www.zerowastesonoma.gov

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/Zero Waste Sonoma, 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 Zero Waste Sonoma Office at 2300 County Center Drive, Suite B240, Santa Rosa, (707) 565-3788, 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: September 18, 2025 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 August 21, 2025 Meeting
4.2 August, September, and October 2025 Outreach Calendar
4.3 Fiscal Year 2024-25 Year-End Contingency Fund Budget Adjustment

5. COAR Design Presentation for the Pruitt Avenue HHW Facility and Options for the ZWS Headquarters
Staff requests that the Board receive the presentation from COAR on the full design of the Household Hazardous Waste (HHW) Facility and ZWS Headquarters. The presentation includes an overview of the property's existing conditions, site improvements, proposed design of the HHW facility and ZWS Headquarters, material reuse, and cost estimates. After their presentation is received, the Board will review the three options for the property and ZWS Headquarters.

- **Option 1:** Construct the HHW Facility and ZWS Headquarters as presented.
- **Option 2:** Build the HHW Facility only (with site layout modifications) and seek to purchase office space for a ZWS Headquarters.
- **Option 3:** Build the HHW Facility only (with site layout modifications) and seek leased office space for a ZWS Headquarters.

Staff Recommendation: Approve authorization for the Executive Director to implement **Option 2**.

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Agenda Item #: 4.1

Minutes of August 21, 2025 Meeting

Zero Waste Sonoma met on August 21, 2025, at the City of Santa Rosa Council Chambers, 100 Santa Rosa Ave., Santa Rosa, California.

Board Members Present:

City of Cloverdale – Andrés Marquez
City of Cotati – Susan Harvey
City of Healdsburg – Larry Zimmer
City of Petaluma – Patrick Carter
City of Rohnert Park – Emily Sanborn
City of Santa Rosa – ABSENT
City of Sebastopol – ABSENT
City of Sonoma – Jack Ding
County of Sonoma – Rebecca Hermosillo
Town of Windsor – JB Leep

Staff Present:

Counsel: Ethan Walsh
Staff: Leslie Lukacs, Thora Collard, Kristen Sales, Xinci Tan, Katherine Cushwa, Courtney Scott, Sloane Pagal, Rajesh Jyothiswaran
Agency Clerk: Amber Johnson

1. Call to Order Regular Meeting

Regular session was called to order at 9:10 a.m.

Introductions

JB Leep has a sudden contagious illness that did not occur until after the agenda had been posted. Per the Brown Act he has requested to participate in the meeting remotely. JB Leep has stated that there is no one present in the room with him at his location. He will participate in the meeting with his audio and visual technology on and working for the duration of the meeting.

Board Comment:

None

Public Comments:

None

Motion: To approve JB Leep to participate in the meeting remotely with his audio and visual on for the duration of the meeting.

First: City of Cotati – Susan Harvey
Second: City of Rohnert Park – Emily Sanborn

Vote Count:

City of Cloverdale	AYE	City of Santa Rosa	ABSENT
City of Cotati	AYE	City of Sebastopol	ABSENT

City of Healdsburg	AYE	City of Sonoma	AYE
City of Petaluma	AYE	County of Sonoma	AYE
City of Rohnert Park	AYE	Town of Windsor	ABSATAIN

AYES -7- NOES -0- ABSENT -2- ABSTAIN -1-
Motion passed.

2. Agenda Approval

3. Public Comments (items not on the agenda)

- Janice Karrman ran for district 3 city council seat in the November 5, 2024, general election. Attended the City of Santa Rosa special meeting session regarding the appeal of a gas station associated with a park and apartments. It was denied by the City of Santa Rosa planning commission in April. It was later appealed. She would like to commend Caroline Bañuelos and Victoria Fleming for voting no on the appeal.

4. **Consent** (w/attachments)
4.1 Minutes of the May 15, 2025 Meeting
4.2 June, July, August, and September 2025 Outreach Calendar

Board Comment:
None

Public Comments:
None

Motion: For approval of the consent calendar.

First: City of Cotati – Susan Harvey
Second: County of Sonoma – Rebecca Hermosillo

Vote Count:

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

AYES -8- NOES -0- ABSENT -2- ABSTAIN -0-
Motion passed.

Regular Calendar

5. California Volunteers Youth Service Corps: Budget Adjustment and Grant Agreement between Sonoma County Waste Management Authority (SCWMA) and Conservation Corps North Bay (CCNB) [Sales]

Board Comments/Action Items:

- Do we have examples of the nonprofits that have assisted with the food that was gleaned?
- Thank you for the work with CCNB. The students really appreciate the employment and skills learned.

Public Comments:
None

Motion: To approve an adjustment to the FY 25/26 Budget, adding $1,024,210 in grant funds from CalVolunteers to implement the Youth Service Corps program. In addition, approval of the grant agreement between SCWMA and CCNB for use of the CalVolunteers Youth Service Corps program, for a total of $1,020,005.

First: City of Cotati – Susan Harvey
Second: City of Sonoma – Jack Ding

Vote Count:

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

AYES -8- NOES -0- ABSENT -2- ABSTAIN -0-
Motion passed.

6. Request for Proposals to Conduct Technical Assistance for Education on Disposable Food Service Ware Ordinances in Sonoma County [Pagal]

Board Comments/Action Items:

- What is the outreach goal for technical assistance?
- How will the number of businesses contacted be determined?
- When business outreach has been completed, has there been follow up to see what progress has been made?
- Has there been outreach campaigns to advertise this program as complaint based?
- Jurisdictions may be willing to post on socials.
- How do we measure the success of this?
- If a business operator was interested in learning more, can they reach out through the online form?
- How can we encourage businesses for a job well done?
- Really appreciate the opportunity to develop a case study of five food service providers who switch from single-use food service ware items to reusable alternatives.

Public Comments:
None

Motion: To approve the public distribution of an RFP to Conduct Technical Assistance on Disposable Food Service Ware Ordinances in Sonoma County.

First: City of Cotati – Susan Harvey
Second: County of Sonoma – Rebecca Hermosillo

Vote Count:

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

AYES -8- NOES -0- ABSENT -2- ABSTAIN -0-
Motion passed.

7. Boardmember Comments

- Thank you to Sloane Pagal and Phoebe Schenker from Reuse Alliance for bringing the first repair fair to Cloverdale in March of 2026.
- Thank you staff for organizing and scheduling the June 19, 2025, special meeting. The tour of the Central Landfill and Recology Sonoma Marin MRF was very educational.
- Reuse Alliance is opening a storefront reuse and repair fair in the Petaluma Outlet Mall soon.
- The reusable purple cups and water refill stations were used at the Petaluma fair in June. Approximately 1,600 cups were washed and reused during the fair. The Petaluma music festival also used about 1,800 cups shortly after. We are planning to continue using these reusable cups for future events to keep waste out of the landfill.

8. Executive Director Report – VERBAL REPORT

9. **Staff Comments** – NO ACTION

10. Next ZWS meeting: September 18, 2025

11. Adjourn: 9:48 a.m.

Submitted by: Amber Johnson

Agenda Item #: **4.2**
Agenda Date: **8/21/2025**

ITEM: August, September, October 2025 Outreach Calendar

August 2025 OUTREACH

Start date	End date	Start time	End time	Event
8/1/25	8/10/25	12:00 PM	9:00 PM	Sonoma County Fair (Santa Rosa)
8/5/25	8/5/25	4:00 PM	8:00 PM	HHW Collection Event (Monte Rio)
8/12/25	8/12/25	4:00 PM	8:00 PM	HHW Collection Event (Petaluma)
8/15/25	8/15/25	5:00 PM	8:00 PM	Rohnert Park Seasonal Farmers Market (Rohnert Park)
8/16/25	8/17/25	9:00 AM	5:00 PM	Oakmont E-Waste Event
8/16/25	8/16/25	9:00 AM	5:00 PM	Oakmont Mattress Recycling Event
8/19/25	8/19/25	4:00 PM	8:00 PM	HHW Collection Event (Larkfield)
8/21/25	8/21/25	4:00 PM	8:00 PM	Occidental Farmers Market
8/23/25	8/23/25	8:30 AM	12:00 PM	Healdsburg Farmers Market (Healdsburg)
8/24/25	8/24/25	9:30 AM	12:30 PM	Windsor Farmers Market (Windsor)
8/26/25	8/26/25	3:00 PM	8:00 PM	HHW Collection Event (Cloverdale)

September 2025 OUTREACH

Start date	End date	Start time	End time	Event
9/2/25	9/2/25	4:00 PM	8:00 PM	HHW Collection Event (Sonoma)
9/3/25	9/3/25	4:30 PM	7:30 PM	Cotati Seasonal Farmers Market (Cotati)
9/6/25	9/6/25	10:00 AM	4:00 PM	Cloverdale Car and Motorcycle Show (Cloverdale)
9/9/25	9/9/25	2:00 PM	7:00 PM	HHW Collection Event (Oakmont)
9/12/25	9/12/25	4:00 PM	8:00 PM	Fiesta de Independencia Cloverdale Citrus Fair (Cloverdale)
9/12/25	9/14/25	9:00 AM	5:00 PM	Rohnert Park E-Waste Event
9/13/25	9/13/25	9:00 AM	5:00 PM	Rohnert Park Mattress Recycling Event
9/13/25	9/13/25	8:30 AM	12:00 PM	Healdsburg Farmers Market (Healdsburg)
9/14/25	9/14/25	10:00 AM	2:00 PM	Courthouse Square Farmers Market (Santa Rosa)
9/14/25	9/14/25	1:00 PM	7:00 PM	Fiesta de la Independencia (Mexican Independence Day Celebration) Santa Rosa
9/16/25	9/16/25	4:00 PM	8:00 PM	HHW Collection Event (Sebastopol)

9/23/25	9/23/25	3:00 PM	8:00 PM	HHW Collection Event (Windsor)
9/27/25	9/27/25	10:00 AM	4:00 PM	Elks Charity Classic Car Show (Petaluma)
9/28/25	9/28/25	10:00 AM	2:00 PM	The Springs Farmers Market (Boyes Hot Springs)
9/30/25	9/30/25	4:00 PM	8:00 PM	HHW Collection Event (Rohnert Park)

October 2025 OUTREACH

Start date	End date	Start time	End time	Event
10/7/25	10/7/25	4:00 PM	8:00 PM	HHW Collection Event (Kenwood)
10/10/25	10/12/25	9:00 AM	5:00 PM	Windsor E-Waste Event
10/11/25	10/11/25	9:00 AM	5:00 PM	Windsor Mattress Recycling Event
10/14/25	10/14/25	4:00 PM	8:00 PM	HHW Collection Event (Santa Rosa - East)
10/17/25	10/19/25	9:00 AM	5:00 PM	Cloverdale Train Depot E-Waste Event
10/18/25	10/18/25	9:00 AM	5:00 PM	Cloverdale Train Depot Mattress Recycling Event
10/18/25	10/18/25	10:00 AM	1:00 PM	Reuse & Repair Fair (Rohnert Park-Cotati)
10/21/25	10/21/25	4:00 PM	8:00 PM	HHW Collection Event (Guerneville)
10/28/25	10/28/25	4:00 PM	8:00 PM	HHW Collection Event (Healdsburg)

North Bay Zero Waste Week

October 11-18, 2025

Learn new skills, build community, and create low waste habits at free events in Sonoma, Marin, and Napa Counties!

Events Include:

- *Repair & Reuse Fair*
- *Litter cleanups*
- *Workshops*
- *Tours*
- *& more!*

SCAN ME!

ZERO WASTE MARIN

ZERO WASTE SONOMA

northbayzerowasteweek.org

Cost Center: **All**
Staff Contact**:** **Collard**
Agenda Date: **9/16/2025**
Approved by: **LL**

ITEM: Fiscal Year 2024-25 Year-End Contingency Fund Budget Adjustment

I. RECOMMENDED ACTION / ALTERNATIVES TO RECOMMENDATION

Staff recommends that the Board approve the FY 2024-25 Year-End budget adjustment, as presented on the Consent Calendar. This item requires a supermajority vote.

II. BACKGROUND

Per ZWS's reserve fund policies, any unused operating funds above required reserve minimums are transferred into the appropriate reserve funds.

III. DISCUSSION

The operating accounts for Organics, Household Hazardous Waste, and Education have established reserve thresholds for each account. At the end of the fiscal year, any excess funds should be moved into the appropriate contingency fund.

Reserve Fund Adjustments

Per ZWS's reserve fund policies, any unused operating funds above required minimums are transferred into the appropriate reserve funds. As of June 30, 2025, the following amounts exceeded the minimum thresholds:

Fund	Reserve Policy	FY 24/25 Goal	Ending Balance	Move to Contingency
Organics	25% of Operating Expenditures	$1,966,359	$3,156,470	$1,190,111
Household Hazardous Waste (HHW)	25% of Operating Expenditures	$534,660	$1,027,013	$492,353
Education	10% of Operating Expenditures	$254,865	$219,826	-

Higher-than-anticipated tonnage revenue and lower-than-projected expenditures have resulted in a larger-than-usual reserve contribution for Organics. HHW has also generated greater tonnage

revenue than expected. A budget adjustment is attached for approval, authorizing staff to transfer these surplus funds into the appropriate reserve accounts.

A comprehensive year-end report will be presented to the Board once the audit adjustment period has closed.

IV. FUNDING IMPACT

Budget amount over the reserve fund goal will be moved to the contingency fund account. The amount of $1,190,111 will be moved to the Organics Reserve Fund and $492,353 will be moved to the Contingency Fund.

V. ATTACHMENTS

Budget Adjustment Resolution

Resolution No.: 2025-12

Dated: September 16, 2025

RESOLUTION OF ZERO WASTE SONOMA (ZWS)
ADOPTING ADJUSTMENTS TO THE FY 2024/25 BUDGET FOR THE EDUCATION & OUTREACH, HHW, AND CONTINGENCY RESERVE FUND FISCAL YEAR END TRANSFERS

WHEREAS, ZWS approved Zero Waste Sonoma Fiscal Year 2024/25 Budget by Supermajority vote on February 15, 2024; and

WHEREAS, staff recommends increasing the Fiscal Year 2024/25 HHW Fund Budget for Transfers Out within a fund in the amount of $492,353 to move the excess fund reserves to the contingency fund; and

WHEREAS, staff recommends increasing the Fiscal Year 2024/25 Organics Fund Budget for Transfers Out within a fund in the amount of $1,190,111 to move contingency funds reserves to the organics reserve fund; and

WHEREAS, staff recommends increasing the Fiscal Year 2024/25 Contingency Reserve Fund Budget for Transfers In within a fund in the amount of $492,353 to receive the excess fund reserves from HHW and Education and Outreach funds; and

WHEREAS, staff recommends increasing the Fiscal Year 2024/25 Organics Reserve Fund Budget for Transfers In within a fund in the amount of $1,190,111 to receive funds from the Organics Fund; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Zero Waste Sonoma does hereby approve the adjustment to the Fiscal Year 2024-25 Budget.

MEMBERS:

- -	- -	- -	- -	- -
Cloverdale	Cotati	County	Healdsburg	Petaluma
- -	- -	- -	- -	- -
Rohnert Park	Santa Rosa	Sebastopol	Sonoma	Windsor

AYES: - - NOES: - - ABSENT: - - ABSTAIN: - -

SO ORDERED

The within instrument is a correct copy
of the original on file with this office.

ATTEST: DATE: September 16, 2025

_____

Clerk of Zero Waste Sonoma
Agency of the State of California in and for the
County of Sonoma

Agenda Item #: **5**
Staff Contact**:** Lukacs
Agenda Date: September 18, 2025
Approved By: LL

ITEM: COAR Design Presentation for the Pruitt Avenue HHW Facility and Options for the ZWS Headquarters

I. RECOMMENDED ACTION / ALTERNATIVES TO RECOMMENDATION

Zero Waste Sonoma (ZWS) Staff requests that the Board receive a presentation from COAR on the full design of the Household Hazardous Waste (HHW) Facility and ZWS Headquarters, and evaluate options for the ZWS Headquarters:

- **Option 1:** Construct the HHW Facility and ZWS Headquarters
- **Option 2:** Construct the HHW Facility and Purchase Commercial Office Space
- **Option 3:** Construct the HHW Facility and Lease Commercial Office Space

Staff Recommendation: Approve authorization for the Executive Director to implement **Option 2**.

II. BACKGROUND

Historically, concerns have been raised by ZWS staff and the Board that residents in northern Sonoma County have limited access to HHW services due to the proximity to the HHW Facility located at the Central Landfill. In addition, the HHW facility operates at full capacity, with no room to expand or to accommodate the collection of other materials like e-waste.

To address these challenges, ZWS entered into an agreement with Sweetser & Associates, Inc. on August 18, 2017, to conduct an expansion analysis of the HHW program. The findings were presented to the Board on June 20, 2018, and confirmed that the Santa Rosa, Windsor, Healdsburg, Geyserville, and Cloverdale areas are underserved by current HHW services. Sweetser & Associates, Inc. recommended establishing a new, primary HHW facility in the county. This facility would be designed to manage a broader range of materials than the current site, including e-waste, and could potentially accept other recyclables such as carpet, mattresses, solar panels, and California Redemption Value beverage containers. It would also reduce reliance on resource-intensive HHW Collection Events, which cost roughly $18,000 per stand-alone event, by providing a permanent, more accessible option for residents residing in the central to northern area of the county.

With Board approval, ZWS began a multi-year search for property. On January 29, 2024, ZWS purchased property at 5871-5895 Pruitt Ave in Windsor, CA, with the intent to develop a second, primary HHW facility. The site is situated in an industrial zone, located at 5885 Pruitt Avenue, west of Highway 101, off Shiloh Road. At its May 16, 2024, meeting, the Board authorized ZWS to enter into an agreement with Sonoma Public Infrastructure's Capital Projects Department (SPI) to manage the project, including development of relevant Requests for Proposals (RFPs).

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Upon purchase of the property, staff became aware that the County of Sonoma plans to redevelop the aging Government Center which currently houses ZWS's office. The project plans for demolition to begin in late 2026 with full completion anticipated by 2030. Although ZWS has not yet been provided a specific timeline for the demolition of its current office space, it is expected to occur within the next several years. In anticipation of this transition, staff included the design of office space adjacent to the new HHW facility to give the Board the option of considering whether to construct a dedicated ZWS Headquarters, complete with office, board, and event/educational space.

At the August 15, 2024, meeting, the Board approved the RFP for Architectural & Engineering Design Services for the new HHW facility, including the option of a ZWS Headquarters, and directed staff to release it. Following RFP process, COAR was selected as the architectural and engineering design team. COAR has completed the full facility design for the HHW Facility and ZWS Headquarters, including a detailed cost estimate. After reviewing the cost estimate for the proposed ZWS Headquarters, staff determined it would be prudent to compare the expense of constructing a new facility with the alternative options of purchasing or leasing existing commercial office space. Staff is presenting these options to the Board for consideration and direction on next steps.

III. DISCUSSION

COAR completed the 100% Schematic Design for both the HHW facility and the ZWS Headquarters, as included in the attached Bases of Design, and will present the full design to the Board. The presentation includes an overview of the property's existing conditions, site improvements, proposed design of the HHW facility and ZWS Headquarters, material reuse, and cost estimates. After their presentation is received, the Board will review the three options for the property and ZWS Headquarters.

Option 1: Construct the HHW Facility and ZWS Headquarters

Under this option, ZWS will proceed with the construction of both the new HHW Facility and a new ZWS Headquarters at 5885 Pruitt Ave. The design of the HHW Facility and ZWS Headquarters is described below:

HHW Facility: (16,167 gross square feet)
The HHW Facility is a one-story, 25-foot-high pre-engineered metal building (PEMB). Space planning is based on Zero Waste Sonoma's program requirements with waste consultant experts providing guidance on the safe function of the various spaces unique to waste facilities. The primary public entry to the waste facility building provides access to the re-use store. A separate entry for staff provides access to offices, an eight-person break and ten-person conference room, locker/changing and restrooms, and waste storage spaces. The waste storage spaces include an identification and packing area adjacent to the two-lane covered drop-off drive, universal waste storage, waste storage, latex paint mixing and bulking room. Forklift access and clearances will be incorporated in the drop-off area, loading dock, ID and packing, and storage rooms. Pallet jack access is assumed at the latex paint mixing and bulking room. The bulking room is separated from the rest of the spaces with 2-hour rated construction made of concrete masonry block, has direct access to the exterior and features

four bulking workstations and a pressure relief panel system to safely mitigate pressure build up within the room. Located on the North side of the waste facility is a covered loading dock with exterior storage.

ZWS Headquarters: (5,116 gross square feet)
The Headquarters is a one-story, 21-foot-high building. The main entry for staff is open to a lobby space with immediate access to the open office spaces, private offices, and a multipurpose room. Windows with operable shades will be provided in occupied spaces to bring in natural light. The kitchen will include an electric oven and range along with a large accessible sink, dishwasher, and refrigerator and freezer. Seating will be provided at an island and in the conference room. A storage room will be provided that is accessed from the exterior and can utilize pallet storage for events. The multipurpose room will provide flexibility for board meetings and events, utilizing movable furniture and folding glass doors for an indoor-outdoor feeling. Wall-mounted TVs and a roll-down projector screen will be provided for board meetings, along with required power and AV connections. The lobby entrance is located at the South of the building to allow public access. Exterior patios have been provided for outdoor connection to the East from the multi-purpose room and North exit from the hall. Pedestrian circulation connects all exterior patios and links to the Waste Facility Building via a secured gate.

Cost estimates provided by COAR for the full build-out of the HHW Facility are approximately $13.3 million. COAR estimates the full build-out costs for the ZWS Headquarters to be approximately $5.2 million. With the addition of $4.3 million in soft costs the total cost for option 1 would be approximately $22.8 million.

Option 2: Construct the HHW Facility and Purchase Commercial Office Space

Under this option, ZWS would proceed with the construction of the new HHW Facility at 5885 Pruitt Ave. while purchasing an existing commercial office space building to serve as the ZWS Headquarters. Staff engaged a real estate broker to identify suitable properties, and several opportunities were reviewed across Sonoma County.

Table 1 provides a comparative listing of available commercial buildings ranging in price from $147.63 to $322.03 per square foot, significantly lower than the estimated $1,200 per square foot cost of new construction. Properties vary in size from approximately 5,484 to 8,300 square feet, offering flexibility to meet ZWS's operational and administrative needs. Parking availability also ranges widely, from 20 to 76 spaces.

Based on this analysis, purchasing existing office space presents a cost-effective and practical solution compared to constructing a new headquarters building. This option balances fiscal responsibility with the agency's long-term need for a permanent administrative and board meeting location, while also ensuring the HHW Facility project can move forward without delay.

Table 1: Comparison of Available Commercial Buildings for Purchase

	Built	Land	Sq. Footage	Asking Price	Price/SF	Parking Spaces
1057 College Ave	1964	0.29	8,277	$1,395,000	$168.54	22
195 Concourse Blvd	1999	0.91	8,000	$2,100,000	$262.50	32
1363 Fulton Rd	1983	1.28	7,136	$2,298,000	$322.03	76
100 Brush Creek Rd	1983	0.28	7,588	$1,395,000	$183.84	23
456 South E St	1974	0.37	6,740	$995,000	$147.63	20

Option 3: Construct the HHW Facility and Lease Commercial Office Space

Under this option, ZWS will proceed with construction of the new HHW Facility at 5885 Pruitt Ave. while leasing commercial office space to serve as the ZWS Headquarters. Staff evaluated leasing office space as an alternative to constructing or purchasing a permanent ZWS Headquarters and worked with a real estate broker to provide comparable lease information.

Staff also toured office space at **400 Aviation Blvd.**, where Sonoma Public Infrastructure (SPI) is located. While co-location with SPI has many positive attributes, the lease cost per square foot is high relative to other options. The office space at **195 Concourse Blvd.** is available for either lease or purchase; however, staff believes that purchasing is more fiscally prudent in the long term.

Table 2: Comparative Lease Options

	Sq. Footage	Price/SF	Annual Rent
400 Aviation	7,000	$2.40	$201,600
195 Concourse Blvd	8,000	$1.95	$187,200
2160 Northpoint Pkwy	6,993	$1.65	138,461
5570 Skylane Blvd	9,544	$1.50	$171,792
3841 Brickway	10,042	$1.75	$210,882

Decision Matrix: ZWS Headquarters Options

Staff prepared the below Decision Matrix to weigh the options of building, purchasing or leasing new office space for the ZWS Headquarters based on similar key characteristics (i.e. square footage, board meeting space, offices, etc.). To ensure fiscal responsibility and long-term operational efficiency, staff recommends the Board authorize the Executive Director to implement Option 2. Purchasing an existing commercial office property offers several advantages. It provides ZWS with a stable, long-term investment, eliminates the ongoing costs and uncertainty associated with leasing, and allows the Agency to customize the space to serve dual purpose as both the ZWS Boardroom for hosting representatives from all ten member jurisdictions and as an Education Center to further public engagement in zero waste practices. This approach balances cost efficiency with the Agency's long-term mission and vision.

Criteria	Option 1: Build New HQ at 5885 Pruitt Ave (co-located with HHW Facility)	Option 2: Purchase Existing Office Space	Option 3: Lease Office Space
Cost	Very high: $1,200/SF (significant upfront capital investment)	Moderate: ~$265/SF (substantial savings vs. new build)	Lower initial cost, but ongoing lease payments
Financial Risk	High risk of cost overruns; long payback	More predictable; ownership builds long-term asset	Minimal upfront cost; subject to market-driven rent increases
Flexibility	Limited — purpose-built and harder to repurpose	Moderate — ownership allows customization and resale potential	High — easier to scale up/down or relocate
Location	Synergy of operations and HQ in one location, located next to other recycling businesses	N/A	N/A
Proximity to HHW Facility	Efficient for staff to oversee operations on-site and ensure better quality control	Separate from HHW, but manageable with visits or if space is found close by	Separate from HHW, but manageable with visits or if space is found close by
Opportunity Cost	Large portion of funds tied to construction limiting other program investments	Cost savings	Cost savings but no equity gained

FUNDING IMPACT

If the Board supports staff's recommendation of Option 2, staff further recommends that it is financially prudent to utilize existing reserve funds to finance the purchase of commercial office space. Given that the organics program represents approximately 60% of the agency's budget, staff proposes allocating 60% of the purchase funds from the Organics Contingency Reserves and 40% from the Debt Servicing Funds, which were originally established to support completion of the HHW Facility. Staff further recommends that the Board authorize the use of Contingency Reserve Funds to cover any necessary building improvements before occupancy, should this direction be approved.

Current available fund balances are as follows:

- Organics Contingency Reserve Fund: $2,393,014
- Debt Servicing Reserve Fund: $2,224,941
- Contingency Reserve Fund: $1,758,833

IV. ATTACHMENTS

COAR Basis of Design
COAR Presentation (linked)

BASIS OF DESIGN

FOR

SONOMA COUNTY HOUSEHOLD HAZARDOUS WASTE FACILITY

WINDSOR, CALIFORNIA 95492

08/15/2025

SCHEMATIC DESIGN

Prepared By:
COAR Design Group
200 E Street
Santa Rosa, CA 95404

BASIS OF DESIGN: SONOMA COUNTY HOUSEHOLD HAZARDOUS WASTE FACILTY

ARCHITECTURAL BASIS OF DESIGN

Overall Project:

The new Zero Waste Sonoma Household Hazardous Waste Facility in Northern Sonoma County will be located on approximately 4 gross acres within the Town of Windsor, CA. The site is in an industrial zone located at 5885 Pruitt Avenue west of Highway 101, off Shiloh Road, adjacent to Standard Avenue.

The project includes a 25-foot height household hazardous waste facility, with a two-lane covered material drop-off area and three bay truck docks. Adjacent to the waste facility to the West, is a 19-foot-high canopy structure that serves as a covered area for stationing six roll-off bins. To the East of the waste facility is a 21-foot high, one-story administrative building with support spaces for the waste facility and for the expanding needs of Zero Waste Sonoma. There are three patios on the Northeast corner of the administrative building for staff's daily use and for the public's use during special workshops promoting environmental education.

Site Design Concept:

Most of the site will be improved given its location within the floodplain of Pruitt Creek. The Primary public and truck access to the site is from the South via Pruitt Avenue, which runs centrally to the site between both buildings, with secondary truck access only provided on Standard Avenue. The smaller third drive is an exit for the public consumer, dropping off materials at the roll-off bins or the waste facility.

Noise mitigation and sight lines have been considered by locating the more active, noisy functions of the waste facility to the Northwest side of the site. The administration building with offices, meeting and break rooms, restrooms and multi-purpose room, takes advantage of sight lines with view of the creek and surrounding trees on the Northeast side of the site. The North and East parts of the site adjacent to the administration building have three landscaped areas for support functions of Zero Waste Sonoma's environmental education programs, workshops and staff's general use. The Southern facing, main access point to the site includes 28 parking stalls with one Ev, six future Ev mainly for staff and some for public use. There are four new accessible parking stalls; two standard van accessible stalls (one at each building), one accessible stall, and one van accessible Ev ready stall at the administration building. There is one secured van parking stall located on the administration (West) side of the central driveway provided for ZWS use adjacent the covered trash enclosure.

The central drive circulation between the buildings is the main secured public entry point from Pruitt Avenue. This entry point is for all vehicle traffic. There are three other proposed site entry / exit points. There is one exit at the North end and one entry vehicle gate on the South end of Standard Avenue that crosses a utility easement. Standard Avenue access points are mainly used for large trucks that serve the waste facility. There is one proposed exit through Pruitt Avenue, provided for county private and commercial residence utilizing the waste facility drop-off area. Ample circulation is provided throughout the site to allow for

safe vehicular movements of passenger vehicles as well as larger trucks, service vehicles, and delivery trucks.

Approximately 382 SF of the roll-off bin structure roof area is covered with photovoltaic panels and is being provided at the secure parking area south of the Administration Building. The South facing roof of the administration building also includes approximately 700 SF of photovoltaic panels.

Building Design Concept:

General:

Codes: The architectural and engineering consultant work will be designed in accordance with:

- 2025 California Building Code
- 2025 California Fire Code
- 2025 California Energy Code
- 2025 California Green Building Standards
- 2025 California Structural Code
- 2025 California Electrical Code
- 2025 California Mechanical Code
- 2025 California Plumbing Code
- Town of Windsor Municipal Code

Placement: All buildings, including the locations of accessible parking and path of travel to entrances, and all site development, are designed to meet ADA and State Building Code requirements and create a physical environment that encourages use by people of all physical and mental abilities.

Exterior Design: Exterior materials have been selected and designed to prioritize a durable and cost-effective approach for ease of maintenance while securing the building against vandalism. The materials, colors, forms and scale are consistent between buildings and are designed to complement within the industrial zone area of Windsor with a modest and clean aesthetic. T he Waste Facility Building's exterior walls are constructed primarily of a textured concrete masonry unit base with a metal panel system above. The Administration building will utilize standard wood framing with board and batten siding and a manufactured stone wainscot. Standing seam pitched metal roofs are used on all three structures of the project. Exterior walls are rectilinear in plan, with roof top to add detail and comfortable scale to the length of the buildings.

Interior Design: The interior building spaces are arranged for safety, functionality, and efficiency. Durable materials will be used throughout the waste facility with especially durable materials on floors and walls in high traffic areas. Skylights and Solatubes will be utilized to provide natural light in both buildings. Placement of circulation between interior spaces complements the functions of the exterior spaces.

Buildings:

Building A: Waste Facility: (16,167 gross square feet)

The Waste Facility is a one-story, 25-foot-high pre-engineered metal building (PEMB). Space planning is based on Zero Waste Sonoma's program requirements with waste consultant experts providing guidance on the safe function of the various spaces unique to waste facilities. The primary public entry to the waste facility building provides access to the re-use store. A separate entry for staff provides access to offices, an eight-person break and ten-person conference room, locker/changing and restrooms, and waste storage spaces. The waste storage spaces include identification and packing area adjacent the two-lane covered drop-off drive, universal waste storage, waste storage, latex paint mixing and bulking room. Forklift access and clearances will be incorporated in the drop-off area, loading dock, ID and packing, and storage rooms. Pallet jack access is assumed at the bulking room and latex paint mixing. The bulking room is separated from the rest of the spaces with 2 hour rated construction made of concrete masonry block, has direct access to the exterior and features four bulking workstations and a pressure relief panel system to safely mitigate pressure build up within the room. Located on the North side of the waste facility is a covered loading dock with exterior storage.

Building B: Administration Building: (5,116 gross square feet)

The Administration Building is a one-story, 21-foot-high building. The main entry for staff is open to a lobby space with immediate access to the open office spaces, private offices, and a multi-purpose room which converts to a boardroom, meeting room, kitchen and support spaces. Windows with operable shades will be provided in occupied spaces to bring in natural light. The kitchen will include an electric oven and range along with a large accessible sink, dishwasher, and refrigerator and freezer. Seating will be provided at an island and in the conference room. A storage room will be provided that is accessed from the exterior and can utilize pallet storage for events. The multipurpose room will provide flexibility for board meetings and events, utilizing movable furniture and folding glass doors for an indoor-outdoor feeling. Wall mounted TVs and a roll-down projector screen will be provided for board meetings, along with required power and AV connections. The lobby entrance is located at the South of the building to allow public access. Exterior patios have been provided for outdoor connection to the East from the multi-purpose room and North exit from the hall. Pedestrian circulation connects all exterior patios and links to the Waste Facility Building via secured gate.

Structures / Containers on Site:

Roll-off Bin: (2,900 gross square feet)

This structure is a 20-foot-high prefabricated metal canopy (PMC) and provides coverage for six 40-yard roll-off bin stalls for public use. The roof structure will be used to mount approximately 1,000 SF of photovoltaic panels.

Battery Storage: Self-contained unit located 3 feet away from other buildings/structures on site. To be located on loading dock but not under covered area.

Flare Storage: Self-contained unit located a minimum of 75 feet away from structures and property lines. Storage unit will be on a raised platform to be above the flood plain with a ramp to access from loading dock driveway.

Paint Storage: 40-yard container to be stored on loading dock, partially under covered overhang. Ramp to be provided for loading and unloading from trucks.

E-waste Storage: 53-foot trailer to be stored on loading dock ramp, with access from the loading dock at building height. Container to use jacks to maintain consistent level and provide access from loading dock.

FF&E:

Building A: Waste Facility: Furniture and equipment including (but not limited to) the following:

- Office desking for (1) private office and (4) cubicles
- Conference room tables and chairs (8)
- Latex paint mixing
- Flammable material bulking
- Utility carts
- Break room table and chairs (6)
- (1) Refrigerator/ freezer and (1) microwave
- Copy machine

Building B: Administration Building: Furniture and equipment including (but not limited to) the following:

- Office desking for (3) private offices and (10) cubicles
- Conference room table and chairs (10)
- Kitchen stools (3)
- Movable multipurpose room tables and chairs for board meetings and public
- Wall mounted TVS and AV system for board meetings
- Exterior patio picnic tables and benches
- Kitchen equipment including (1) refrigerator/freezer, (1) dishwasher, (1) microwave, (1) electric stove and oven
- Copy machine

Sustainable Design Strategies

Daylighting: Proposed daylighting strategies to reduce energy needs and improve user wellbeing

include the following:

- Semi-transparent panels at the bulking room pressure relief system
- Clerestory and floor level windows throughout spaces
- Tubular skylights

Reuse: Portions of the existing building will be salvaged and reused in the new facilities. The highest priority salvage items are the glulam beams and bases, cedar planks, and the wood ceiling trellis. The design team is also proposing to salvage the existing gazebo if found to be in sufficient condition for reuse.

CIVIL BASIS OF DESIGN

The civil site work will be designed in accordance with:

- 2025 California Building Code
- 2025 California Plumbing Code
- 2025 California Fire Code
- Town of Windsor Municipal Code
- 2023 Town of Windsor Design and Construction Standards
- Cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa, Sebastopol, and Ukiah, County of Sonoma, Sonoma Water and Town of Windsor Storm Water Low Impact Development Technical Design Manual.
- Sonoma Water Flood Management Design Manual
- Federal Emergency Management Agency Flood Insurance Study, Revised July 31, 2024

Site Grading Improvements: The majority of the project site is located within the floodplain of Pruitt Creek. The project site will be graded to achieve no-net-fill within the limits of the floodplain and earthen building pads will be graded to ensure that the building finished floor elevations are a minimum of 1-foot above the 100-year flood elevation of Pruitt Creek.

The site will also be graded to provide positive drainage away from building foundations and auxiliary structures for when the site is not inundated with flood waters from Pruitt Creek. For all sides, where impervious surfaces abut the building foundations, these areas are graded away at 2% for a minimum distance of 10 feet and where pervious surfaces abut the building foundations, these areas are graded away at 5% for a minimum distance of 10 feet.

All new sidewalks, site ramps, and stairs will be graded to meet ADA guidelines.

Roof drainage will be collected, routed to downspouts, and then to bioretention areas.

Parking Lot: The proposed parking lot will be located on the southerly side of the project site and will include twenty-eight (28) new standard parking stalls, three (3) accessible parking stalls, and one van compliant EV stall . Drainage from the parking lot will sheet flow to a centrally located concrete valley gutter and then flow into a bioretention area located near the southwest corner of the of the parking lot. Parking lots will be constructed with a 3-1/2” asphalt concrete over 13-1/2” class 2 aggregate base rock section.

Drive Aisles: Drive aisles will connect the parking lots, loading docks, drop-off areas, and rolloff bin areas with Pruitt Avenue. Drainage from the drive isles will be collected with curbs, gutters, and valley gutters and routed to bioretention areas. Drive isles will be constructed with a 4” asphalt concrete over 15-1/2” class 2 aggregate base rock section.

Rolloff Bin Area: Within the rolloff bin area, drainage will be collected from the roof and routed to the northerly bioretention area and areas outside of the roof area will be collected through curbs, gutters, and valley gutters and routed to the same northerly bioretention area. Pavement sections within the rolloff bin area be constructed

with a 8” asphalt concrete over 12” class 2 aggregate base rock section.

Accessible Parking: Accessible parking will be provided with three (3) new accessible parking stalls. Three (3) new accessible parking stalls, one standard and one van accessible, will be located in the parking lot in front of the Administration Building and one (1) van accessible stall will be located in the parking lot in front of Household Hazardous Waste Facility Building. The new accessible parking stalls will be constructed out of concrete to ensure that all grades meet ADA guidelines. Accessible parking will be constructed with a 6” concrete over 6” of class 2 aggregate base rock section.

Accessible Paths of Travel: For the Household Hazardous Waste Facility Building, an accessible path of travel will be provided from the accessible parking stall located in the parking lot in front of the Household Hazardous Waste Facility Building up to its public entrance and out to the public street. The accessible path of travel will also connect to the sidewalk in front of and on the westerly side of the Administration Building and to the trash enclosure located at the northeasterly corner of the Household Hazardous Waste Facility Building.

For the Administration Building, an accessible path of travel will be provided from the accessible parking stalls located in the parking lot in front of the Administration Building up to its main entrance and along its westerly and northerly sides to the rear exit door. A path of travel will also be provided from its westerly sidewalk to the trash enclosure located at the northeasterly corner of the Household Hazardous Waste Facility Building. The path of travel out to the public street will connect to the path of travel over to the Household Hazardous Waste Facility Building and, out to the public street.

Storm Drain: Storm drain improvements for the project site will connect to an existing underground storm drain system located on the westerly side of the site. The existing storm drain system collects storm water from the overall project site and outlets into Pruitt Creek at the northwesterly corner of the site.

The storm drain improvements will collect stormwater from the bioretention areas through a series of drain inlets and underground piping. A storm water pump and sump will be provided in the truck loading dock area and will outlet into the adjacent bioretention area

The storm drain improvements will be design in accordance with the Town of Windsor and Sonoma Water Standards for a 10-year storm event with exception to maintaining one (1) foot of freeboard within the drainage structures due to floodplain inundation of the adjacent Pruitt Creek.

The northerly and westerly sides of the project site will flood during storm events larger than a 10-year storm event due to the floodplain inundation of the adjacent Pruitt Creek. The facility shall have a storm water contingency management plan in place for storm events larger than a 10-year storm event.

Storm Water Management: Site drainage improvements will be routed to bioretention areas to treat storm water for quality and quantity from the project site. The bioretention areas will be designed and constructed per the Cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa, Sebastopol, and Ukiah, County of Sonoma, Sonoma Water and Town of Windsor Storm Water Low Impact Development Technical Design Manual.

There are four (4) bioretention areas. The bioretention areas will be located as follows:

- Two will be located near the southwest corner of the project site near the drop off area exit driveway;
- One located near the rear of Household Hazardous Waste Facility Building and loading dock; and

- One located at the rear of the project site near Pruitt Creek.

Water Utilities: A new combination water service will be installed per Town of Windsor standards on the southeasterly side of the project that connects to an existing 12" public water main located in Pruitt Avenue. The combination water service will consist of two (2) new 2" domestic water services, one for each building. The combination water service will then connect to a new 8" fire service main through an 8" double detector check valve that will be looped through the project site to service onsite fire hydrants and fire sprinkler services to each building, creating a private looped fire main system through the site that is connected to the new fire service located on the southwesterly side of the project.

A new fire service will be installed per Town of Windsor standards on the southwesterly side of the project that connects to an existing 12" public water main located in Pruitt Avenue. The fire water service will connect to a new 8" fire service main through an 8" double detector check valve that will be looped through the project site to service onsite fire hydrants and fire sprinkler services to each building, creating a private looped fire main system through the site that is connected to the new combination water service located on the southeasterly side of the project.

Four new private onsite fire hydrants be provided and will be serviced from the new looped 8" fire service main. The hydrants will be located as follows:

- A new hydrant will be located centrally in a landscape island between the new buildings on their southerly side.
- A new hydrant will be located in a landscape island near the southeasterly corner of the administration building.
- A new hydrant will be located centrally in a landscape are between the new buildings on their northerly side.
- A new hydrant will be located in a landscape area near the northwesterly corner on the HHWF building.

Fire sprinkler service will be provided to each building from the private looped fire service main and include a fire department connection, a post indicator valve, and backflow valve. These items will be located centrally in a landscape island between the new buildings on their southerly side and adjacent to a new hydrant.

The new combination water service will consist of two (2) new 2" domestic water services, meters, and reduced pressure backflow prevention devices. The new 2" domestic water services, meters, and reduced pressure backflow prevention devices will connect to one point on each of the buildings through 2" schedule 80 PVC piping.

Sanitary Sewer Utilities: A new public 6" sanitary sewer lateral will be installed from the existing 10" sanitary sewer main located in Pruitt Avenue up to the back of the public sidewalk adjacent to Pruitt Avenue.

The buildings will be connected to the new public sewer lateral through new private 6" private sanitary sewer laterals. The new private sewer laterals will include a cleanout at the new public sewer lateral and additional cleanouts throughout the site to meet the plumbing code.

Sprinkler Water Holding Vault: A 8,000 gallon sprinkler water holding vault will be provided at the site and located near the drop off area driveway exit of the Household Hazardous Waste Facility Building. The sprinkler water holding vault will be a double wall fiberglass reinforced tank.

LANDSCAPE BASIS OF DESIGN

The landscape site work will be designed in accordance with the following:

- 2025 California Building Code
- Town of Windsor Municipal Code
- Town of Windsor WELO requirements
- Town of Windsor Tree Ordinance
- Santa Rosa LID plant palette

Hardscape Materials:

DG/Pavers: In areas in which concrete or asphalt is not used, pedestrian paths and gathering/event areas are to be paved with permeable materials such as decomposed granite, granitecrete, or permeable pavers. Permeability allows rainwater to be absorbed back into the natural soil and prevents runoff, encouraging environmentally conscious management of water on site. During construction, ensure that there is nothing placed below the selected material that would prevent drainage into the soil.

Landscaping:

Trees: Trees shall be a mix of shade trees, street trees, and ornamental trees, and will be placed in locations that make sense for both the site and the species of tree selected. A mix of 15 gal., 24", 36", and 48" box trees will be planted throughout the site to assist with the require tree mitigation. Consider factors such as mature height, existing elements, and proximity to hardscape when determining tree locations. For trees located in bioswales, only use species from the Santa Rosa approved plant list. Areas in which trees are located at least 8' from any hardscape or buildings will require the use of linear root barriers to prevent lift of adjacent hardscape and ensure the health of the root systems.

Trees located in parking lots, pathways, or any other spaces that will be subject to regular pedestrian or vehicular traffic will be selected with vertical clearance in mind. If needed, trees placed in areas with pedestrian and vehicular traffic will be pruned to maintain comfortable clearance. In spaces where visibility is required, confirm that the canopy is not obstructing the necessary view. For extensive pruning, consult or hire an arborist to ensure proper practices.

Shrubs/Groundcovers: Plants selected for this site will be both low-maintenance and low-water use. The use of native plants is encouraged, and the plant palette is reflective of a selection of both native and native species that are adaptable to the area. Plants considered invasive or high-water use will not be planted anywhere on site. Shrubs and groundcovers will be a mixture of 1 and gallon containers.
Groundcover will be low-growing, low-maintenance, and will be planted strategically in front of taller plantings to create a lush, full look while still maintaining visibility. Groundcover plantings will be evenly spaced in a triangular pattern to ensure full coverage of the planting areas.

Mulch: Mulch shall be uniformly spread at all planting areas at a minimum of 3" deep per WELO requirements.

Mulch shall not be higher than the finished elevation of any adjacent paving to prevent mulch from collecting or washing onto hardscape areas. Unless otherwise specified, arbor mulch or an approved equal will be selected. All mulch on site will be the same product from the same vendor – do not mix mulch types.

Irrigation:

Irrigation: A deep root watering system shall be utilized for watering trees, and drip irrigation shall be used for all other planting areas. Install sleeves for laterals and mainlines in any location where piping will run under hardscape, especially in asphalt and concrete areas.
The irrigation system must have a dedicated water meter, a backflow prevention device, flow sensor, master valve, weather-based controller, and weather/soil sensor.

Site Furnishings:

Seating: Both benches and seat walls will be utilized on site to provide seating to visitors. The models of benches will be selected to reflect the style and aesthetic of the site. These seat walls will be a maximum of 24" high and a minimum of 18" to ensure a comfortable sitting height.

Picnic Tables: Picnic tables will be used as well and the model will be selected based on the style and aesthetics of the site. ADA models will be implemented as well to ensure an inclusive and ADA complaint.

Bike Storage: Bike storage will be implemented on site based on Cal Green requirements. A combination of both bike lockers and bike racks is recommended to be utilized to meet the required amount of bike storage on site. The location of these amenities will be in reasonable proximity to the path of travel and will be easily accessible to visitors. The model of these products will be chosen based on the style and aesthetics of the site.

Trash Receptacles: Trash and recycling receptacles will be utilized on site for convenience of waste disposal in lunch areas. These receptacles will be strategically placed to provide convenience to individuals using the lunch areas.

Shade Structure: A shade structure is proposed to provide shade and reduce heat island effects. It will also assist in complying with the Cal Green shade requirements. Natural or recycled materials will be the preferred materials of the shade structure.

STRUCTURAL BASIS OF DESIGN

The Zero Waste Sonoma – Sonoma County Household Hazardous Waste Facility will be located in Windsor, California. The facility will be designed in accordance with the California Building Code.

Design Criteria:

Governing Code: California Building Code (CBC) 2025

Seismic Design Parameters: ASCE 7-22 as amended by the CBC 2025

Risk Category	II, III or IV
Importance Factor (I_e)	1.0, 1.25, or 1.5
*Site Classification	To be determined by Geotechnical Engineer
*Spectral Response Accelerations	S_S = 2.10
	S_1 = 0.82
	S_{MS} = 2.06
	S_{M1} = 1.77
*Design Spectral Response Accelerations	S_{DS} = 1.37
	S_{D1} = 1.18
*Seismic Design Category (SDC)	E or F

*Note: Seismic design parameters above are from ATC Seismic Maps default site class and should be verified by the Geotechnical Engineer prior to seismic design

Wind Design Parameters: ASCE 7-22 as amended by the CBC 2025

Basic Wind Speed	92, 99, or 103 mph
Exposure Category	C

Snow Design Criteria: ASCE 7-22 as amended by the CBC 2025

Ground Snow Load (P_g)	5 psf

Deflection Criteria: All structural members will be designed to conform with CBC Table 1604.3

Non-Structural Elements: All elements will be designed for seismic forces per CBC Chapter 16 and ASCE 7-22 Chapter 13.

Structural System Description:

Hazardous Waste Facility: The Hazardous Waste Facility Building is an approximately 10,000 square foot single story building with an attached roof loading dock area and extended roof for a drop off drive through. The structure will be a pre-engineered metal building with gable roofs designed by others.

The roof is assumed to consist of light gauge metal decking over z-girt metal stud purlins at 4 to 5 feet on center, spanning between steel frames spaced at approximately 25 feet on center. Exterior walls are assumed to be framed with light gauge metal siding over z-girt metal studs spaced 5 to 6 feet on center spanning between the steel frame columns. Wind columns will be provided as needed. The lower 4 feet of wall with be a 12" CMU crash wall all four sides of the main structure.

The seismic force resisting system will most likely consist of bolted ordinary steel moment frames in one direction and lateral cable or rod x-bracing in the transverse direction.

Foundations will consist of a 6-inch-thick slab on grade reinforced with #4 at 12 inches on center each way over a 15-mil vaper barrier over 4 inches crushed rock. Special detailing may be provided at forklift drive isle pending coordination with end user. Continuous footings between pads will be 18 inches wide by 24 inches deep. Pad footings at the primary frame columns will be 7 to 10 feet square and 24 inches deep. Other pad footings not located at primary frames may be 4 to 5 feet square and 24 inches deep. All exterior and interior bathroom walls will be supported by a minimum 6-inch-tall curb. At the CMU crash wall continuous footings will be 36"-48" wide x 24" deep.

Administration Building: The Administration Building is an approximately 5,300 square foot single story building with office space, meeting rooms, storage, and restroom spaces.

The roof framing system for will be 15/32" plywood over LVL rafters at 24 inches-on-center spanning between perimeter bearing walls and interior ridge beams as occur. The perimeter walls and interior bearing/shear wall lines will be 2x6 sawn lumber studs at 16 inches-on-center. All other interior non-bearing walls will be 2x4 studs at 16 inches-on-center. Typical 6x8 to 6x12 sawn or engineered lumber headers are expected over openings. The ridge/beam lines will be 5-1/8-inch glulam beams. Structural steel may be used at strategic locations where wood posts are not sufficient. Exterior and interior bearing walls will consist of 3x sill plates anchored with 5/8" diameter anchor bolts at 48 inches-on-center to the foundation system. Anchor bolt spacing will be reduced at shear walls. Conduits and pipes will need to be coordinated with framing particularly at shear walls.

The lateral force (seismic and wind) resisting system will consist of horizontal plywood diaphragms and vertical light framed wood shear walls with holdowns each end. Strapped shear walls will be used to reduce holdowns where possible.

Foundations will consist of a 6-inch-thick slab on grade reinforced with #4 at 12 inches on center each way over a 15-mil vaper barrier over 4 inches crushed rock. Continuous footings will be 18 inches wide by 24 inches deep. Wider footings may occur at highly loaded shear walls. All exterior and interior bathroom walls will be supported by a minimum 6-inch-tall curb.

Site Structure – Canopy: The canopy is an approximately 3400 square foot single story structure covering 40 yard roll off bins. The structure will be a prefabricated metal canopy with a sloped roof designed by others.

The lateral force (seismic and wind) resisting system will be by others.

Foundations will consist of isolated square pad footings or drilled piers.

Outline Structural Material Specifications:

Concrete:	
Foundations	3000 psi at 28 days
Slabs on grade	4000 psi at 56 days
All concrete	25-35% Fly Ash Cement Replacement
Concrete Reinforcing:	ASTM A615 Grade 60
Under-slab Vapor Retarder:	ASTM E1745 Class A, 15 mil
Concrete Masonry Unit (CMU):	
CMU Blocks	2000 psi medium block
CMU Grout	2000 psi
Mortar	1800 psi min, Type M or S
Structural Steel Shapes (AISC):	
Wide Flange	ASTM A992 Gr 50
Channels, Angles and Plates	ASTM A36 or A572 Gr 50
HSS	ASTM A500 Gr C
Welding Electrodes:	E70
Bolts:	
Steel to Steel	ASTM A325
Steel to Wood / Wood to Wood	ASTM A307

ASTM A653, A1003, or A1008 with minimum yield strength of 40,000 psi

2x material	Douglas Fir Larch No. 2
4x and thicker	Douglas Fir Larch No. 1

Wood Connectors: Simpson Strong Tie

CD Exp 1 and Structural 1 per PS-1 and PS-2

Single Span Beams	24F – V4-1.8E
Multi Span Beams	24F – V8-1.8E

Redbuilt PSL, LVL, and LSL

Special Inspections: Special inspections shall be conducted per CBC Section 1705. Nonstructural special inspections are not covered below. The campus structural special inspections include:

- Steel per CBC Section 1705A.2
  - Structural Steel per CBC Section 1705.2.1
  - Steel Deck per CBC Section 1705.2.2
  - Structural welds per CBC Section 1705.2.5
  - High Strength Fasteners per CBC Section 1705.2.6
- Concrete Foundations per CBC Section 1705.3
- Concrete Masonry Units per CBC Section 1705.4
- Wood Construction per CBC Section 1705.5
  - High Loaded Diaphragms per CBC Section 1705.5.1
  - Structural glued laminated per CBC Section 1705.5.5
- Soils per CBC Section 1705.6
  - Extents of Special inspections pending geotechnical report
- Seismic Resistance (not including Mechanical/Plumbing/Electrical) per CBC Section 1705.13
  - Seismic Force-Resisting System per CBC Section 1705.13.1
  - Structural Steel per CBC Section 1705.13.2
  - Structural Wood per CBC Section 1705.13.3

FIRE PROTECTION BASIS OF DESIGN

Introduction:

Coffman Engineers, Inc. (Coffman) has prepared this Basis of Design narrative for the Schematic Design phase to summarize the requirements of the fire protection systems for the Zero Waste Sonoma Household Waste (HHW) Facility in Windsor, CA. The Authority Having Jurisdiction (AHJ) for this project are the Town of Windsor.

Project Description:

The Sonoma HHW Facility is located in Windsor, CA. The project entails the demolition of three (3) existing structures, and construction of a new administrative building alongside a new HHW Facility. The two (2) new buildings will be both single-story. The administrative building, approximately 5,000 square feet, will feature a lobby entrance, private and common offices, a multi-purpose assembly room, a break room, a meeting room, a small storage room, and several utility rooms. The new HHW Facility, approximately 10,000 square feet, will include office spaces, a conference room, a break room, utility rooms, and storage areas, including both regular and hazardous storage.

The administrative building will be classified as a mixed-use occupancy of Groups B and A-3. The HHW Facility is anticipated to be classified as a mixed-use occupancy of Groups H-2, S-1 and B.

Applicable Codes, Standards, And Guidelines:

Applicable Codes (as amended by Sonoma County)

- 2025 California Building Code (CBC)
- 2025 California Fire Code (CFC)
- 2025 California Electrical Code (CEC)
- 2025 California Mechanical Code (CMC)

Applicable Standards (as amended by the CBC and CFC)

- NFPA 13 – Standard for the Installation of Sprinkler Systems, 2025 edition.
- NFPA 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2025 edition
- NFPA 25 – Inspection, Testing, and Maintenance of Water-based Fire Protection Systems, 2013 CA edition
- NFPA 30 – Flammable and Combustible Liquids Code, 2024 edition
- NFPA 72 – National Fire Alarm and Signaling Code, 2025 edition

Fire Protection System:

The new HHW Facility shall be provided with a new automatic wet-pipe sprinkler system in accordance with the CBC 903 and NFPA 13. All areas of the buildings will be protected by the sprinkler system unless specifically exempted by the CBC, CFC, or NFPA 13. The administrative and HHW buildings will each be treated as separate sprinkler systems with separate sprinkler risers.

According to CBC 905.3.1, a standpipe system is required for buildings where the highest floor elevation is more

than 30 feet above the lowest level of fire department access or in buildings that are four or more stories in height. The highest floor elevations in the buildings are less than 30 feet above the lowest level of fire department access and the buildings do not exceed 1 story; therefore, a standpipe system is not required.

Design Criteria:

The sprinkler systems are required to be hydraulically calculated in accordance with NFPA 13. The hydraulic calculations must include a 10 percent safety factor based on reduction of the available water supply pressure. The sprinkler systems will be designed based upon occupancy hazard classifications and the associated density/area curves specified by NFPA 13 and CBC. Sprinkler system occupancy hazard classifications for various areas within the buildings will include the following:

Light Hazard
a. Offices and break rooms
b. Meeting rooms
c. Restrooms
d. Multipurpose room
e. Locker rooms

Ordinary Hazard Group 1
a. Accessory storage rooms
b. Telecommunications, mechanical and electrical rooms

Ordinary Hazard Group 2
a. Universal Waste
b. ID & Packing (outside of the oil and antifreeze storage area)
c. Acid Bay
d. Waste Storage
e. Loading Dock
f. Drive-thru Drop Off Area

Other
a. Bulking Room
b. ID & Packing (oil and antifreeze tank area)

Sprinkler system design criteria are as follows:

Light Hazard
a. Density/Area: 0.10 gpm/sq. ft. over remote area of 1,500 sq. ft.
b. Hose Stream: 100 gpm
c. Duration: 30 minutes

Ordinary Hazard Group 1
a. Density/Area: 0.15 gpm/sq. ft. over remote area of 1,500 sq. ft.
b. Hose Stream: 250 gpm
c. Duration: 60 minutes

Ordinary Hazard Group 2
a. Density/Area: 0.2 gpm/sq. ft. over remote area of 1,500 sq. ft.
b. Hose Stream: 250 gpm
c. Duration: 60 minutes

Bulking Room (Group H occupancy) – NFPA 30 Table 16.5.2.2
a. Density/Area: 0.40 gpm/sq. ft. over remote area of 3000 sq. ft.
b. Hose Stream: 500 gpm
c. Duration: 60 minutes
d. k-factor: 11.2 or greater
e. Standard response, high temperature sprinklers

ID & Packing (oil and antifreeze tank area)
a. Density/Area: 0.35 gpm/sq. ft. over remote area of 3000 sq. ft.
b. Hose Stream: 500 gpm
c. Duration: 60 minutes
d. k-factor: 8.0 or greater
e. Standard response, high temperature sprinklers

NFPA 13 Section 19.2.3.2.3.1 allows a 25 to 40 percent design area reduction in light hazard occupancies using quick response sprinklers and based on aspects of the ceiling design. The CBC amends NFPA 13 Section 19.2.3.2.3.1 through the building code to only allow the remote hydraulic area reduction when all the following conditions are satisfied:

- Wet pipe system
- Light hazard occupancy
- 20 ft maximum ceiling height
- There are no unprotected ceiling pockets as allowed by NFPA 13 Sections 10.2.9 and 11.2.7 exceeding 32 sq. ft.

As such, Ordinary and Extra Hazard occupancies will not be permitted to use the quick response sprinkler design area reduction.

Sprinklers:

Sprinklers are required to be quick-response type throughout light hazard occupancies per CBC 903.3.2.

Sprinkler guards must be installed in areas where the sprinklers are subject to mechanical damage, including but not limited to storage rooms, electrical and IT rooms, and where sprinklers are less than 7 ft above the finished floor.

The finish and type of sprinklers in public and/or finished areas must be approved by the Architect and Owner. The locations of sprinklers and associated piping are to be coordinated with other trades.

Temperature ratings of sprinklers shall comply with NFPA 13. Ordinary temperature sprinklers will be used in the majority of spaces. Intermediate and high temperature sprinklers will be used in locations as addressed by NFPA 13 and NFPA 30.

Sprinkler System Zoning:

Per NFPA 13, Section 4.4.1, the maximum protection area on any floor to be supplied by any one system riser must not exceed 52,000 sq. ft. for Light and Ordinary Hazard systems and 40,000 sq. ft. for Extra Hazard systems.

Per CBC 903.3.9, floor control valve assemblies are required at each floor in buildings where the floor level of the highest occupied story is located more than 30 feet above the lowest level of fire department vehicle access and in buildings that are two or more stories below the highest level of fire department vehicle access. Since these buildings are less than 30 feet above the lowest level of fire department access, a single sprinkler zone is permitted provided that the total area of the sprinkler system does not exceed 52,000 sq. ft for Light/Ordinary Hazard and 40,000 sq. ft. for Extra Hazard. Based on the height of the building and the total building area being less than 52,000 sq. ft. and 40,000 sq. ft., respectively, only one sprinkler zone and thus one sprinkler riser is required for each of the buildings.

A sprinkler riser room, complying with CFC 901.4.7, is planned to be provided for each building. The riser rooms will be located on the first floor, accessible from the exterior of the building, and will house the incoming fire service entrance and fire sprinkler riser. The riser room for the administrative building is currently planned in the southwest corner of the building, accessible from the exterior. The riser room for the HHW building is near the southwest corner of the building, accessible from the exterior. The size of a riser room shall be at least 3 ft. x 6 ft. A 4 ft. depth is preferable, such that the riser room is adequately sized to accommodate all required equipment per CFC 901.4.7. Each sprinkler system riser will contain a waterflow detection assembly, riser check valve, supervised indicating control valve, and test/drain assembly. The riser rooms require an identification sign per CFC 901.4.7.2, permanently installed artificial illumination per CFC 901.4.7.4, and must be sized with adequate space for all equipment and necessary clearances to allow for inspection, service, repair, or replacement of equipment.

Site Fire Protection Equipment:

The design and installation of the underground fire protection systems shall comply with the CBC, CFC, NFPA 13, and NFPA 24. Each fire water connection to the public water supply will require a backflow preventer that complies with NFPA 24 and Sonoma County requirements. Per the Civil Design, a new double check detector assembly (DCDA) backflow preventer will be installed on the incoming water supply for the fire protection systems. The backflow preventer is located south of the buildings near Pruitt Avenue.

The building fire water supply requires a listed, supervised indicating control valve in accordance with NFPA 13 and NFPA 24. In accordance with NFPA 24 Section 6.2.9, all connections to private fire service mains for fire protection systems are required to be arranged so that they can be isolated. The backflow preventer can be used as the indicating valve. Per the Civil design, the indicating valve serving the HHW Building is co-located with the fire department connection near the fire department access road in front of the building to the south. The indicating valve serving the Admin Building is co-located with the fire department connection near the fire department access road to the west of the building.

Private fire service mains shall not be installed beneath buildings, except as permitted by NFPA 24 Section 10.4.3. Private fire service mains supplying fire protection systems within the building shall be permitted to extend no more than 10 ft, under the building to the riser location, as measured from the outside of the building, per NFPA 24 Section 10.4.3.1. Based on the locations of the riser rooms, the incoming fire service main will not exceed 10 ft underneath the building.

According to the CBC amendments to NFPA 24 Section 6.6.1.1, private fire service main systems shall have sectional control valves at appropriate points to permit sectionalizing the system in the event of a break or for making repairs or extensions. Sectional control valves are not required when the fire service main system serves fewer than six fire appurtenances. Each fire hydrant or fire sprinkler system riser is considered as one fire appurtenance.

Fire Department Connections:

At least one Fire Department Connection (FDC) is required to serve the sprinkler system for each building and must comply with the CBC and NFPA 13. The location of the FDC must be approved by the AHJ and should be located along one of the fire department access roads where possible.

CBC 912 requires FDCs to be visible from the street or nearest point of fire department apparatus access, and to be located on the street side of buildings or facing the nearest approved fire apparatus access road. The FDCs shall have immediate clear access with any obstructions of fences, bushes, trees, walls or any other fixed or movable objects with a clear space of 3 ft. to either side or around the FDCs. The access to and locations of all FDCs are subject to AHJ approval.

NFPA 24 Section 5.9 permits a fire department connection to serve more than one building. Where this arrangement is desired, the FDC must be arranged such that a circulating loop cannot be created between any private fire hydrants and the FDC. A single FDC serving more than one building is also subject to AHJ approval.

Where each building requires a separate FDC, the FDCs should be located along the fire access road internal to the campus. Signage shall be provided at each FDC to indicate the appropriate building or buildings served.

Each building is being provided with a dedicated FDC. Per the Civil design, the FDC serving the HHW Building will be free standing near the fire department access road in front of the building to the south. The FDC serving the Admin Building will be free standing near the fire department access road to the west of the building.

Valves:

Valves must comply with the applicable NFPA standards and must be listed for their intended use. Valves must be located and installed in accessible locations.

NFPA 13 Section 8.1.2.1 requires a listed relief valve not less than 1/2-inch where necessary to maintain maximum working pressures in portions of the system to less than 175 psi.

All valves shall have a minimum working pressure of 175 psi and it is not anticipated that valves will be exposed to working pressures exceeding 175 psi.

Supervision And Monitoring:

All control valves must be provided with weather-resistant tamper switches to supervise valve position. Per CBC 903.4, waterflow switches and control valves for the automatic sprinkler system must be electrically supervised by the fire alarm system.

Per CBC 903.4.1, alarm, supervisory, and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station. Per CBC 903.4.2, an exterior approved audible device shall be connected to each automatic sprinkler system and actuated by the water flow switch. Actuation of the automatic sprinkler system shall actuate the building's fire alarm system.

Pipe And Fittings:

Sprinkler piping must be black steel pipe conforming to NFPA 13. Sprinkler piping shall be UL and/or FM listed conforming to NFPA 13 requirements.

Schedule 40 piping must be used for piping less than 2 1/2-inches in diameter and Schedule 10 piping is permitted for piping of 2 1/2-inches in diameter and larger. Steel piping may only be joined by means of flanges welded or screwed to the pipe, threaded fittings, or grooved couplings. Schedule 40 pipe fittings may be either threaded, roll grooved or welded, and Schedule 10 pipe fittings may be welded or roll grooved in accordance with NFPA 13 Section 7.5 and NFPA 13 Section 16.3.

Mechanically fastened tees will not be permitted in new construction except where approved by the Owner and Engineer of Record.

Where exposed to pressures exceeding 175 psi, piping and fittings must be rated for pressures that exceed the maximum working pressure per NFPA 13 Section 7.1.2; however, pressures exceeding 175 psi are not currently anticipated.

Where sprinklers are located in suspended ceilings, flexible sprinkler fittings may be used to supply the sprinkler. Where flexible sprinkler fittings are not provided, a one-inch annular clearance and oversized escutcheon are required when the system is hard piped to the sprinklers. All sprinkler piping installed in public areas or non-public areas with suspended ceilings should be concealed in the walls, ceilings, or soffits where possible. Piping in unfinished areas may be exposed.

Drains:

The system piping must be arranged to permit thorough drainage of all parts of the system to meet NFPA 13 requirements. A drain riser is required for each sprinkler system riser, sized to accommodate the full flow drain test and not less than 2 inches. The main drain(s) for the system must be directly routed to a sanitary sewer drain connection capable of handling the full flow drain test, or to a location that is approved by the Owner and/or AHJ. Inspector's test valves and drain valves must be installed in conveniently accessible locations and must discharge to the outside of the building or to a drain adequate in capacity to handle the full flow.

Structural Considerations:

The design of hangers, seismic bracing, and restraint for fire protection system piping must comply with NFPA 13 and applicable codes/standards. An approved Seismic Separation Assembly is required where system piping, regardless of size, crosses building seismic separation joints at the ground level or above.

Water Supply Discussion:

A hydrant flow test has been conducted by the Town of Windsor and provided to Coffman. The results of the hydrant flow test (readings at Hydrant No. D438) are as follows:

- Static pressure = 80 psi at 0 gpm
- Residual pressure = 66 psi at 1,139 gpm; 20 psi at 2,506 gpm

Hydraulic calculations will be performed for the project to demonstrate that the available water supply is sufficient to supply the automatic sprinkler system demands without the need for a fire pump. The calculations will incorporate a 10% reduction in the available water supply as a safety factor. If a fire pump is required, this will be coordinated with the project team as the design develops.

Secondary Containment:

As required by CFC 5004.2.2.3, indoor flammable liquid storage areas shall be designed to contain a spill from the largest vessel plus the design flow volume of fire protection water over the minimum required design area or area of the room, whichever is smaller. The design flow volume is the amount of water that flows over a 20-minute period. Per discussions with the design team, a secondary containment underground vault is being provided. The spill and fire water will drain from the room to the secondary containment underground vault.

The required capacity of the secondary containment for the Bulking Room has been calculated assuming a design density of 0.4gpm/sq. ft. over the room area of 776 sq. ft. flowing for 20 minutes. This yields a fire sprinkler water volume of 6,208 gallons. The largest container within the room is a cubic yard box, assumed to be approximately 200 gallons of material. The total volume of fire sprinkler water plus the largest container is 6,408 gallons. Applying a safety factor of 20% to account for any additional flow from sprinklers required for obstructions in the room will require a total secondary containment underground vault volume of approximately 7,690 gallons.

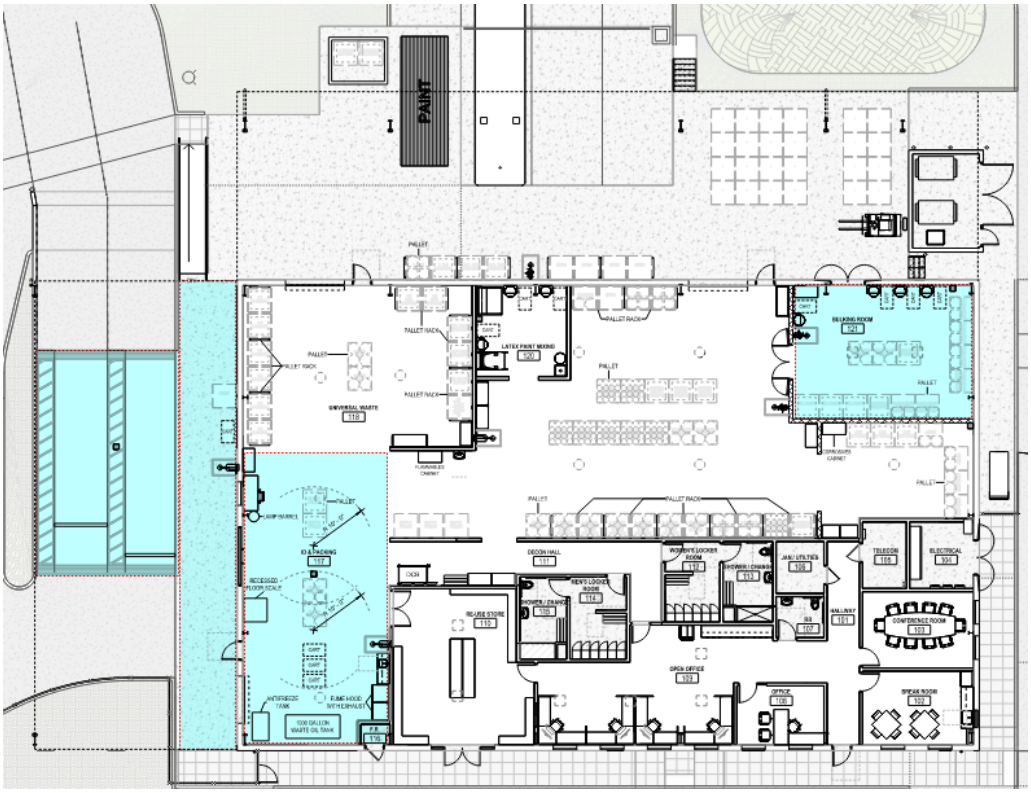
In addition to the code required secondary containment for the Group H flammable liquid storage areas, the project team has decided to provide secondary containment for the ID & Packing room as well as the drive-thru drop-off area beneath the canopy on the east side of the building.

The required size of the secondary containment for the ID & Packing room has been calculated assuming a design density of 0.2 gpm/sq. ft. over 1500 sq. ft. flowing for 20 minutes. This is a larger volume of water when compared to the 0.35 gpm/sq. ft. over 488 sq. ft. around the oil tank. This yields a total fire sprinkler water volume of 6,000 gallons. The largest container within the room is a cubic yard box in the area protected by the design density of 0.2 gpm/sq. ft., assumed to be approximately 200 gallons of material. The total volume of fire sprinkler water plus the largest container is 6,200 gallons. Applying a safety factor of 20% to account for any additional flow from sprinklers required for obstructions in the room will require a total secondary containment underground vault volume of approximately 7,440 gallons.

The required size of the secondary containment for the drive-thru drop-off area beneath the canopy has been calculated assuming a design density of 0.2 gpm/sq. ft. over 1,500 sq. ft. flowing for 20 minutes. This yields a total fire sprinkler water volume of 6,000 gallons. The largest container within this area is conservatively assumed to be 200 gallons, simulating a collection container for liquids. The total volume of fire sprinkler water plus the largest container is 6,200 gallons. Applying a safety factor of 20% to account for any additional flow from sprinklers required for obstructions in the room will require a total secondary containment underground vault volume of approximately 7,440 gallons.

Comparing the three spaces, the largest volume of secondary containment is 7,690 gallons. Assuming the containment is being sized to hold water and material from a single fire scenario, the containment underground vault should be sized to accommodate 7,690 gallons at a minimum. If desired to contain the water and material from three simultaneous fire scenarios (one fire in each of the spaces), the total volume of the secondary containment underground vault would need to be 22,570 gallons.

The areas highlighted below in light blue are the areas being provided with secondary containment.



Other System Considerations:

For buildings of combustible construction types, sprinklers will be provided in combustible concealed spaces where omissions of sprinklers are not permitted by NFPA 13 Section 9.2.1.

Sprinklers are required under exterior projections 4 ft. and wider where combustibles are stored beneath the projection per NFPA 13 Section 9.2.3.4. Otherwise, sprinklers are permitted to be omitted from under exterior canopies, roofs, or similar projections constructed of noncombustible, limited-combustible, or fire-retardant treated wood as defined in NFPA 703. Where the exterior canopies, roofs, or similar projects are of combustible construction, sprinklers are permitted to be omitted where the exposed finish material on the

projection is noncombustible, limited-combustible, or fire-retardant wood as defined in NFPA 703. The projection shall contain sprinklered concealed spaces or shall comply with one of the following:

- The combustible concealed space is filled entirely with noncombustible insulation
- In light and ordinary hazard occupancies where the noncombustible/limited-combustible ceiling is directly attached to the bottom of solid wood joists to created enclosed joist spaces 160 ft^3 or less in volume
- Concealed spaces over isolated small projections not exceeding 55 ft^2

Sprinkler piping shall not be routed through electrical rooms or IT rooms unless the piping serves those spaces.

COFFMAN ENGINEERS, INC.

Prepared By:	Reviewed By:
Richard J Petrey, P.E. Sr. Discipline Engineer, Fire Protection	Aman Shah, P.E. Principal, Fire Protection

FIRE PROTECTION BASIS OF DESIGN

Introduction:

Coffman Engineers, Inc. (Coffman) has prepared this Basis of Design narrative for the Schematic Design phase to summarize the requirements of the fire alarm system for the Zero Waste Sonoma Household Waste (HHW) Facility in Windsor, CA. The Authorities Having Jurisdiction (AHJ) for this project is the Town of Windsor.

Project Description:

The Sonoma HHW Facility is located in Windsor, CA. The project entails the demolition of three (3) existing structures, and construction of a new administrative building alongside a new HHW Facility. The new buildings will be both single-story. The administrative building, having approximately 5,000 square feet, will feature a lobby entrance, private and common offices, a multi-purpose assembly room, a break room, a meeting room, a small storage room, and several utility rooms. The new HHW Facility, having approximately 9,655 square feet, will include office spaces, a conference room, a break room, utility rooms, and storage areas, including both regular and hazardous storage.

The administrative building will be classified as a mixed-use occupancy of Groups B and A-3. The HHW Facility is anticipated to be classified as a mixed-use occupancy of Groups H-2, S-1 and B.

Applicable Codes, Standards, And Guidelines:

Applicable Codes

- 2025 California Building Code (CBC), with Sonoma County Amendments.
- 2025 California Fire Code (CFC)
- 2025 California Electrical Code (CEC)
- 2025 California Mechanical Code (CMC)
- Sonoma County Code of Ordinances

Applicable Standards

- NFPA 72 – National Fire Alarm and Signaling Code, 2025 edition

Fire Alarm System:

A fire alarm system is not required for the buildings in scope, in accordance with CBC. However, new proposed automatic sprinkler systems will be monitored by a Fire Alarm Control Panel as detailed in the next section.

Emergency Alarm System:

The hazardous materials storage rooms in the new HHW Facility shall be provided with a new manual emergency alarm system in accordance with the CFC 5004.9 and CBC 415. This system shall be initiated by

pull-stations located outside of each exit or exit access door of hazardous storage rooms. The activation of these pull-stations shall sound a local alarm to alert occupants of an emergency situation involving hazardous materials. The system shall be provided with standby or emergency power in accordance with CBC 2702.2.

An emergency responder radio coverage system shall be required for the HHW facility, unless a justification is provided stating that signals can be met throughout the building.

In addition, the HHW Facility and Office building shall be provided with an automatic sprinkler system which will be supervised and monitored, along with the emergency alarm system, by a Fire Alarm Control Panel (FACP) which will send signals to a supervising station. The FACP shall be provided in a location approved by the fire authority.

The new office building is not anticipated to require an emergency alarm system.

Supervising Station:

The location of the supervising station is to be defined in the future. The new fire alarm panel will be connected to the supervising station for response to general trouble, supervisory, and alarm conditions.

Manual Fire Alarm Boxes:

Manual fire alarm boxes (pull-stations) shall be provided outside of every exit door from hazardous materials storage rooms.

Smoke Detection:

Area smoke detection is not required, as both buildings will be provided with automatic fire sprinkler systems. A single smoke detector will be provided at the Fire Alarm Control Panel location, to comply with NFPA 72 Section 10.4.5.

Heat Detection:

Heat detection is not required and will not be provided.

Carbon Monoxide Detection:

Carbon monoxide detection is not required and will not be provided.

Gas Detection System:

A gas detection system in accordance with CBC Section 916 is anticipated to be provided in rooms classified as Group H-2 occupancy within the HHW Facility. Standby or emergency power shall be provided, unless the gas system initiates a trouble signal at an approved location if the power supply is interrupted.

The gas sensors shall be provided where leaking gases are expected to accumulate. The system is not anticipated to be connected to the Fire Alarm Panel.

Occupant Notification:

Occupant notification appliances for the new Emergency Alarm System shall include interior horns and exterior weatherproof horns. All notification appliances shall be powered from the fire alarm panel, and/or auxiliary power supply.

Design Criteria:

The system shall be designed and installed per all relevant California Building Code (CBC), California Fire Code (CFC), California Electrical Code (CEC), applicable NFPA standards and Sonoma County Code of Ordinances.

COFFMAN ENGINEERS, INC.

Prepared By:	Reviewed By:
Cinndhy Barbosa, EIT Fire Protection Engineering	Aman Shah, P.E. Principal, Fire Protection Engineering

MECHANICAL & PLUMBING BASIS OF DESIGN

GENERAL PROJECT DESCRIPTION

The Zero Waste Sonoma Household Hazardous Waste Facility consists of two new ground-up buildings that include a 6,000 square foot household hazardous waste facility (HHWF) and a 5,000 square foot single-story administration building to include office and meeting spaces for administrative functions and support. The project is in Windsor, California.

MECHANICAL SYSTEM BASIS OF DESIGN

General Requirements

Refer to Mechanical Schematic Drawings for mechanical zoning and system concept.

Environment Requirements

The following charts provide detailed information on the indoor design conditions for all spaces within the project. Requirements include Design Temperature, Relative Humidity, Occupant Densities, and Ventilation Rates for each space type. A summary of these requirements for each space type is listed below:

Indoor Environmental Requirements Summary					
Space Name	Design Temperatures and Relative Humidity		Occupancy Load (ft^2/Person)	Ventilation Rate (cfm/Person)	Remarks
	Cooling (^{0}F / %RH)	Heating (^{0}F)			
Main Entrance, Lobby & Public Restrooms	72 / 50%	70	100	15	Public restrooms to be negative pressure
Re-Use Store	72 / 50%	70	50	15	
Conference/Meeting Rooms	72 / 50%	70	20-25	15	Individual controls to be provided in each room.
Admin Offices (Open & Private)	72 / 50%	70	100	15	.
Break Room & Kitchenette	72 / 50%	70	40	15	-
Telephone Room	76 / 50%	70	-	-	Provide 24-hour air conditioning.
Mechanical, Electrical Rooms, and Utility Closets	76 / 50%	70	-	-	Ventilation Only

The outdoor design conditions are based on ASHRAE 0.5% annual cooling dry bulb and mean coincident wet bulb temperatures and the 99.6% heating dry bulb temperature.

Outdoor Design Conditions Summary

	Dry Bulb Temperature	West Bulb Temperature
Summer	96 ^{0}F	69 ^{0}F
Winter	27 ^{0}F	-

Applicable Codes and References

- 20025 California Mechanical Code
- 2025 California Energy Code
- ASHRAE 90.1-2007
- ASHRAE 62.1-2004
- ASHRAE 55.1-2004
- ASHRAE Handbook of Fundamentals

Energy Efficiency

The HVAC systems will be designed to meet or exceed the minimum State of California's efficiency standards.

Fire Protection

Combination fire/smoke dampers shall be provided at all rated Occupancy Separation Walls and Rated Shafts, typical throughout the building.

Mechanical System – General (Hazardous Waste & Administration)

Outside Air System for Conditioned Spaces

Outside air shall be introduced to all fan coils that are located in the ceiling plenum. Fresh air is provided through air intakes located on the roof or through an exterior wall louver and ducted to the return air plenum of each fan coil unit. MERV 13 filtration for improved indoor air quality shall be provided at all fan coil units.

Telecom Room

Independent ductless cooling only split system heat pump units shall be provided for all Telecom rooms. The units shall be capable of operating 24/7.

Noise Criteria

All HVAC systems to be designed in accordance with the ASHRAE acoustic guidelines and recommendations.

Air Distribution

New supply air, return air, and exhaust air diffusers/grilles shall be provided for each space. New metal insulated; galvanized steel ductwork shall be provided to connect to new diffusers/grilles. A maximum of 5 feet of flexible duct is allowed for connection to diffusers/grilles.

Air terminal devices shall be sized to meet the noise criteria (NC) levels set forth by the ASHRAE recommendations.

Ductwork Sizing Criteria

The following chart is a summary of the maximum velocities that are allowed for sizing

ductwork per the Standards. Ductwork shall also be designed to a maximum of 0.08 inch w.c. per 100 feet of duct due to friction loss.

Ductwork Sizing Criteria	
Description	Velocity
Main Supply Ducts	1,500 FPM
Branch Ducts	800 FPM
Return / Exhaust Ducts	1,000 FPM
Ducts to Room Terminal Devices	500 FPM

The supply air distribution system will consist of low pressure externally insulated galvanized steel ductwork downstream of the fan coil units to the ceiling diffusers.

Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 4% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to 5 feet in total length to minimize duct static pressure losses.

Restroom HVAC

All restrooms will be conditioned and ventilated to maintain occupant comfort, meet ventilation code requirements, and control odor and humidity. Space will be mechanically ventilated to provide a minimum of 10 air changes per hour (ACH). A combination of ducted supply air from a VRF fan coil unit and transfer air from an adjacent corridor will be provided. Exhaust airflow will exceed supply air to maintain a slightly negative condition. In-line cabinet type exhaust fans to be installed above the ceiling and discharged up to the roof or through an exterior wall louver. Fan will run continuously on an owner provided building occupancy schedule.

Electrical Room Ventilation

Ventilation will be provided by an in-line cabinet type fan located in the roof with discharge ductwork routed to the roof or exterior wall louver. Make-up air to the room will be provided by exterior door louvers. Fan will be controlled by a line-voltage thermostat located in the room.

Mechanical System – Hazardous Waste Building

Variable Refrigerant Flow (VRF) System – Heat Pump

The HVAC system serving admin support type spaces such as Re-Use Store, Open Office, Private Office, Break Room, Conference, and Restrooms will utilize a VRF heat pump system, consisting of one air-cooled outdoor condenser unit located on grade, multiple indoor ducted fan coil units located in ceiling plenums. Fan coil units will be equipped with EC blower motors with multiple speed settings. Units will also be equipped with condensate pumps and MERV 13 filters. A network of refrigerant piping, control wiring, and a centralized control system will be provided.

The VRF system provides variable capacity modulation, allowing compressors to adjust their output in real time to match building load conditions, improving energy efficiency

and occupant comfort.

Hazardous Storage Ventilation

Bulking Room (H2 Occupancy): Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- Dedicated general exhaust fan provided.
- Local exhaust provided for bulk drum hoods. Dedicated exhaust fan provided to serve all bulk drum hoods.
- Room to maintain negative pressure relative to adjacent non-hazardous spaces.
- Minimum pressure differential of 0.05 in. w.g. negative.
- High (6" below ceiling) and low (6" AFF) outside air.
- Explosion proof fans constructed of non-sparking, corrosion-resistant materials.
- No recirculated air.
- System to operate 24/7 continuously.
- Pentane gas sensors installed 6" above finished floor (AFF) connected to control panel.
- A manual shut-off control will be provided outside of the room in a position adjacent to the access door to the room or in another approved location. The switch shall be a break-glass or other approved type and shall be labelled "VENTILATION EMERGENCY SHUTOFF".
- General and local exhaust routed directly to the outdoors with discharge at roof.
- Make-up air provided by filtered (MERV 13) passive louver.

Latex Paint Mixing: Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- General exhaust fan to run continuously 24/7.
- Local exhaust provided for bulk drum hoods. Dedicated exhaust fan provided to serve all bulk drum hoods.
- No recirculated air.
- Non-combustible and corrosion resistant ductwork.
- Explosion-proof exhaust fans with non-sparking fan blades.
- Space to maintain slightly negative to adjacent spaces.
- General and local exhaust routed directly to the outdoors with discharge at roof.
- Make-up air provided by filtered (MERV 13) passive louver.

Universal Waste: Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- General exhaust fan to run continuously 24/7.
- No recirculated air.
- Space to maintain slightly negative to adjacent spaces.
- General exhaust routed directly to the outdoors with discharge at roof.
- Make-up air provided by filtered (MERV 13) passive louver.

Waste Storage: Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- General exhaust fan to run continuously 24/7.
- No recirculated air.
- Space to maintain slightly negative to adjacent spaces.
- General exhaust routed directly to the outdoors with discharge at roof.
- Make-up air provided by filtered (MERV 13) passive louver.

ID & Packing: Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- General exhaust fan to run continuously 24/7.
- Local exhaust provided for each fume hood. Dedicated exhaust fan provided for each fume hood. Fan controlled by wall switch. Ductwork shall be stainless steel or PVC-coated steel.
- Local exhaust provided for snorkel hood exhaust system. Dedicated exhaust fan provided. Snorkel system provided with two 8” arms.
- No recirculated air.
- Space to maintain slightly negative to adjacent spaces.
- General and local exhaust routed directly to the outdoors with discharge at roof.
- Make-up air provided by filtered (MERV 13) passive louver.

Decon Hall: Ventilation system to include the following:

- General exhaust provided at a minimum of 1 CFM/SF.
- General exhaust fan to run continuously 24/7.
- No recirculated air.
- Space to maintain slightly negative to adjacent office space.
- General exhaust routed directly to the outdoors with discharge at roof.

- Make-up air provided by filtered (MERV 13) passive louver.

Mechanical System – Administration Building

Variable Refrigerant Flow (VRF) System – Heat Pump

The HVAC system will utilize a VRF heat pump system, consisting of one air-cooled outdoor condenser unit located on grade, multiple indoor ducted fan coil units located in ceiling plenums. Fan coil units will be equipped with EC blower motors with multiple speed settings. Units will also be equipped with condensate pumps and MERV 13 filters. A network of refrigerant piping, control wiring, and a centralized control system will be provided.

The VRF system provides variable capacity modulation, allowing compressors to adjust their output in real time to match building load conditions, improving energy efficiency and occupant comfort.

Building Automation System

Provide a complete Direct Digital Control (DDC) system to integrate all building equipment, schedules, and sequence of operations.

PLUMBING SYSTEM BASIS OF DESIGN

General Requirements

Refer to Plumbing Bidding Documents for Schematic Drawings for plumbing routing, points of connection, and equipment locations.

Plumbing Fixtures

All fixtures shall comply with lead-free and low-flow requirements, as applicable.

Codes, Standards, & Regulations

The facility will comply with the requirements of the California Building Code (CBC), 2022 Edition; California Plumbing Code (CPC), 2022 Edition; California Energy Code (Title 24), 2022 Edition; Winsdor Municipal Code, County of Sonoma requirements, local fire department regulations, and all other jurisdictions having authority.

The design, products, and installation shall also comply with the following mechanical industry standards.

- California Administrative Code
- Title 8, General Industry Safety Order
- Title 17, Public Health
- Title 24, Building Standards
- Americans with Disabilities (ADA)
- American National Standards Institute (ANSI)
- Underwriter's Laboratories (UL)
- American Gas Association (AGA)

- American Society of Mechanical Engineers (ASME)
- American Society of Sanitary Engineers (ASSE)
- American Society for Testing and Materials (ASTM)
- American Water Works Association, (AWWA)
- National Sanitation Foundation, (NSF)
- Plumbing and Drainage Institute, (PDI)
- National Fire Protection Association, (NFPA)
- All Other Authorities Having Jurisdiction

Plumbing Fixtures

Wall mounted water closets shall be vitreous china 1.28 gpf flushometer type, with battery-powered sensor flush valve.

Lavatory shall be vitreous china lavatory and metering faucet, 0.35 gpm.

Barrier-free fixtures shall be installed to meet the criteria for the Americans with Disabilities Act.

Floor drains shall be equipped with automatic trap primers.

Floor sink shall be installed where applicable with automatic trap primers.

Water Supply & Distribution System

The piping for the potable water system shall be Type L copper above grade and Type K copper below grade.

Supply pressure shall be designed to be between 30 and 80 psi. A duplex booster pump system shall be provided if the existing street pressure is inadequate to maintain the required pressure.

All showers shall be equipped with pressure or temperature-compensating mixing valves compliant with ASSE 1016.

Water distribution piping shall be isolated using resilient mounts to limit vibration and noise transmission.

The system shall be sized to limit the water velocity to a maximum of 8 feet per second for cold water, 5 feet per second for hot water, and 2 feet per second for recirculated hot water.

A circulation pump, expansion tank, and thermostatic mixing valve compliant with ASSE 1017 shall be provided at the water heating equipment.

Domestic hot water return shall be designed for a maximum velocity of 2 feet per second at design flow conditions.

The hot water systems shall have return systems through a circulation pump designed to maintain a maximum temperature loss of 10° F.

The water heating system shall be provided with an expansion tank, circulation pump, thermostatic mixing valve, drainage pan, support stand, and temperature and pressure relief valve discharging at an approved receptor.

Hot water shall be provided by storage type electric water heaters. Temperatures to points of use are detailed below:

- 110^0F for public lavatories
- 120^0F for all other areas

Hot water shall be provided with a circulated loop from the local central water heating system to all fixtures requiring hot water.

Drainage System

To minimize noise transmission, cast iron piping shall be used for sanitary and storm water drainage piping located within the building envelope in lieu of plastic piping. Below grade piping shall be PVC where allowed by code.

If required, all pumping systems for sanitary and storm water shall be the submersible pump type with redundant capacity in a fiberglass basin having alternating controls and low- and high-level alarm limits that serve as input signals to the Building Management Control System.

Roof, drain, and overflow roof drain systems shall be sized in accordance to the CPC requirements and local rainfall rates. The overflow roof drain system shall be hard piped to a point of discharge within 1 ft of grade level.

All sanitary horizontal piping runs shall be provided with wall or floor clean-out access ports for servicing with drain-cleaning equipment.

Floor drains shall be provided in all public toilet rooms.

Hub drains shall be provided for fire protection standpipe and sprinkler drainage. Receptors will be provided for the overflow of fire water storage tanks.

Where roof drains are provided, overflow drains will be installed and drained independently by gravity through inside leaders. Overflow drains shall discharge at visible locations.

Storm drain filtration shall be coordinated with landscape BMP's and civil filtration system.

The site storm drainage to the site planters shall be by the civil engineer.

Hybrid blind sumps will be provided only at rooms, Bulking Room, ID& Packing and the exterior covered dropoff area. Piping from these sumps will be routed to the an exterior underground water vault by others.

Area/emergency drains shall be provided at other rooms as shown on the architectural drawings. These drains will be routed to the sanitary sewer system and will not require special treatment.

Condensate Waste System

A condensate drainage system shall be provided for all HVAC equipment producing condensate. Connections to the HVAC equipment shall be trapped and vented. The system shall discharge to an approved receptor.

Piping shall be Type M copper, fully insulated.

Air Equipment

Breathing apparatus and air pump shall be provided for Bulking room. Spec: Bullard – Free Air Pump Model EDP16TE – 2 airlines required.

Emergency Eyewash/Showers

Emergency fixtures shall be provided with tepid (60°F-100°F) water.

Floor drains are not required at the emergency showers and will not be provided.

Emergency fixtures shall be located as shown on the architectural drawings.

Conclusion

The mechanical (HVAC and Plumbing) system shall comply with all requirements and with the project program needs. The system shall be energy-efficient and of the most current available technology while maintaining a cost-effective initial construction. The mechanical system shall comply with all known and applicable codes and standards.

ELECTRICAL BASIS OF DESIGN

- **Electrical and Telecom Systems**
  - **Building Description**
    - The overall project will construct two buildings, a new one-story household hazardous waste facility with exterior waste and materials storage areas, and a new one-story administration building.
    - This project will provide a 16,167 SF waste facility and 5,116 SF administration building.
    - The hazardous occupancy portion of the waste facility consists of 760SF of Hazardous (H-2) Storage, and 5900SF of general open storage.
    - The waste facility will include restrooms, office, meeting rooms, break room and employee workstations.

  - **Site Electrical and Telecom Systems**
    - The building power will be supplied from the PG&E 12kV distribution.
    - The utility will supply a transformer to supply the two buildings with a 280/120V, 3 phase, 4 wire service.
    - (4)5" conduit with pull rope will be provided for the secondary electrical service for HHWF, and (1)5" conduit with pull rope will be provided for the secondary electrical service for admin. Building.
    - Available fault current will use the calculated fault on the primary based on the utility 12kV distribution.
    - The electrical system will include a 1200A, 208Y/120V three phase, four wire main service switchboard board for HHWF and a 400A, 208Y/120V three phase, four wire main service switchboard for Admin. building. The service switchboards will include utility metering, surge protection unit, line side tap for PV system and feeder circuit breakers.
    - (2)4" conduit will be provided for telecommunication facilities. Telecom service point of connection will be verified as design progresses.
    - Conduits for telecom service will be terminated in each buildings IDF.

- **Electrical Load Summary and UPS/Service Sizing**
  - Load calculation summary:

HHWF				
Site Information:				
Total	16167			
Load Description	VA/SF	Total KVA	Demand Factor	Total KVA
Lighting	0.6	9.5418	1.25	11.92725
Receptacles	3	47.709	1	10
			0.5	18.8545
HVAC Equipment	10	159.03	1	159.03
Equipment and Appliances	10	159.03	1	159.03
Subtotal	23.6			358.84175
			15% Spare	54.7073625
			Total	419.4231
			Amps @ 208V 3P 4W	1165.064201

ADMIN				
Site Information:				
Total	5116			
Load Description	VA/SF	Total KVA	Demand Factor	Total KVA
Lighting	0.6	3.2082	1.25	4.01025
Receptacles	3	16.041	1	10
			0.5	3.0205
HVAC Equipment	10	53.47	1	53.47
Equipment and Appliances	5	26.735	1	26.735
Subtotal	18.6			97.23575
			20% Spare	13.98765
			Total	107.23865
			Amps @ 208V 3P 4W	297.8851389

Hazardous Occupancy Service

Description	VA/sf		Applicable SF	Demand Load
Mechanical Equipment	5 VA	x	760	3.8 kVA
Lighting	1 VA	x	760	0.76 kVA
Plug Loads	1 VA	x	760	0.76 kVA
Equipment				10.0 kVA
Total				15.32 kVA
Total Service Load (Amps @ 208V/3ph)				43 A
EM panel size to be 100A				

- The entire H-2 occupancy space shall be backed by emergency UPS to provide continuous illumination and ventilation.
- Telecommunications, forklift charger and security system components (e.g.,
- surveillance cameras and monitors, or physical security elements), access control components shall be backed by emergency UPS to ensure uninterrupted operation during power outages.

- **Exterior Lighting**
  - Exterior lighting will utilize LED lighting with photocell and timeclock control.
  - Exterior lighting will be provided by site pole and wall mounted type fixtures.
  - Manual override will be provided on the building interior for the van access and forklift areas.

- **Interior Lighting**
  - The interior lighting systems will be in accordance with the IES recommendations and will exceed the requirements of ASHRAE.
  - Energy efficient lighting utilizing LED throughout will be used. All products will have established reliability, maintenance and performance records.
  - All spaces will be provided with ceiling or wall mounted dual technology occupancy sensors for control of lighting to shut “OFF” in not occupied spaces with the exception of mechanical, electrical and telecom spaces.
  - LED source with a color temperature of 4000 K and a minimum CRI of 80 and extended life of 50,000hours with a minimum 5 year industry standard warranty from the manufacturer at HHWF.
  - LED source with a color temperature of 2700 K on designated areas and 3500 K in general task areas and a minimum CRI of 90 and extended life of 50,000hours with a minimum of 5 year industry standard warranty from the manufacturer at administration building.
  - The emergency lighting system will consist of central battery inverter servicing emergency lighting fixtures throughout the facility to accommodate the required egress lighting. The unit will be sized to include a minimum of 25% spare capacity.

        - All interior lighting within the hazardous area shall be listed for Class 1 Div 2 locations.
        - All interior lighting shall be impact resistant.

    - **Interior Telecom and Low Voltage**
        - There will be an IDF room located at each building. Run category cable run length shall be no greater than 100m.
        - All systems low voltage systems will be installed in EMT conduit with min. 3/4'' conduit size.
        - Data shall be provided to the workstation in the nonhazardous area, as well as any phones, cameras and supporting equipment.

- **Electrical Materials and Methods**
    - **Panelboards and Switchboards**
        - Panelboards will not be installed in hazardous locations.
        - All new panelboards to have main breakers and copper bussing.
        - All panelboards and switchboards will have devices rated for the available fault. Series rating will not be allowed.
        - Branch circuit panels will be provided for lighting, power, telecom and HVAC loads with copper bussing. All panels will include bolt-on type circuit breakers.
        - Exterior weatherproof GFCI outlets will be located around the building perimeter.
        - EVSE station will be provided for the site per Cal Green requirements. Each dual EVSE will require an 80A 2P circuit breaker.

    - **Conductors**
        - Conductors will be copper with THHW-2/THWN-2 insulation. Cabling will be in conduit.

    - **Grounding**
        - The grounding and bonding system consists of a Main Electrical Grounding Busbar (MEGB) at the main distribution switchboard. Each new panelboard will be equipped with a grounding busbar.

    - **Standards of Design**
        - The Voltage drop will be kept to less than 2% for feeders and less than 3% for branch circuits. All equipment will be rated for the available fault. Available fault will utilize the infinite bus method when calculating the available fault at all equipment.

    - **Photovoltaic and Battery Energy Storage System**
        - PV and BESS are required per 2022 CEC Title 24.
        - PV and BESS will be connected to the service gear from a line side tap ahead of the service main.
        - Based on the SARA calculation for this project, the PV system capacity can be sized up to 49kWDC for administration building and up to 208kWDC for the household hazardous waste facility.

- **Hazardous Area (Class 1 Div 2)**
  - All wiring methods shall be appropriate for installation in Class 1 Div 2 spaces per the 2022 California Electrical Code.
  - All devices, light fixtures and controls within this area shall be listed for use in Class 1 Div 2 spaces.
  - All devices shall be extra duty and provided with stainless steel cover plates.
  - All devices shall be installed with a minimum of 18" AFF.
  - All conduits that penetrate the Class 1 Div 2 Space shall be provided with conduit seals and explosion resistant conduit fittings.
  - All conduits within the Class 1 Div 2 Space shall be RGS. Conduits exposed to corrosive materials shall be PVC coated RGS.