



Z O N I N G A D J U S T M E N T S B O A R D S T A F F R E P O R T

FOR BOARD REVIEW AND COMMENT
SEPTEMBER 14, 2023

1201 Second Street / 669 Gilman Street

Public Scoping session for the Environmental Impact Report (EIR) and Project Preview for Use Permit #ZP2021-0215 to inform and solicit comments from the community, public agencies, and the Zoning Adjustments Board (ZAB) for the project. The project proposes to demolish the existing City of Berkeley Solid Waste and Recycling Transfer Station (SWRTS), including 11 non-residential main buildings/structures, accessory structures, and equipment; and to construct and install buildings, structures, and equipment for a new SWRTS facility. The project consists of two main building clusters with accessory structures, totaling approximately 114,380 square feet of gross floor area, approximately 195,300 square feet of unenclosed and paved area, and approximately 32,200 square feet of landscaped area.

Project Site Parcels (Addresses and Assessor's Parcel Numbers):

- 1203 Second Street / 60-2362-1-8
- 1199-1231 Second Street / 60-2362-1-9 and 60-2362-1-11
- 669 Gilman Street / 60-2362-1-10
- 1101 Second Street / 60-2382-1-2
- 1101 Second Street / 60-2382-3-3
- No Address / 60-2382-3-1 (Target ownership)

I. Background

A. Land Use Designations:

- General Plan: M – Manufacturing
- Zoning: M – Manufacturing District

B. Zoning Permits Required:

- Use Permit under BMC Section 23.326.070(A) to demolish non-residential buildings
- Use Permit under BMC Section 23.206.030(A) to create new floor area of 40,000 square feet or more
- Administrative Use Permit under BMC Section 23.206.020(B) to construct a Material Recovery Enterprise
- Administrative Use Permit under BMC Section 23.206.020(A) to construct a Recycling Materials Processing facility that is more than 20,000 square feet and less than 40,000 square feet

C. CEQA Recommendation: The City of Berkeley, as the lead agency, is preparing a Draft Environmental Impact Report (Draft EIR) for the proposed 1201 Second Street/699 Gilman Street project (Use Permit #ZP2021-0215). The City published the Notice of Preparation (NOP) on August 31, 2023, to provide responsible and trustee agencies, organizations, and interested parties with a description of the proposed project and information on its potential environmental effects. The City requests comments that focus on the scope and content of the environmental information of the EIR for the project. All comments on environmental issues received during the public comment period will be considered when preparing the Draft EIR. Due to the time limits mandated by State law, the NOP will be circulated for a 30-day review period, which will extend from August 31, 2023 to September 30, 2023. (The NOP is included as Attachment 2.)

D. Parties Involved:

- Applicant / Owner City of Berkeley Public Works Department, 2180 Milvia Street Ste. 3, Berkeley, CA 94704

E. Application Materials, Staff Reports and Correspondence are available on the Internet:

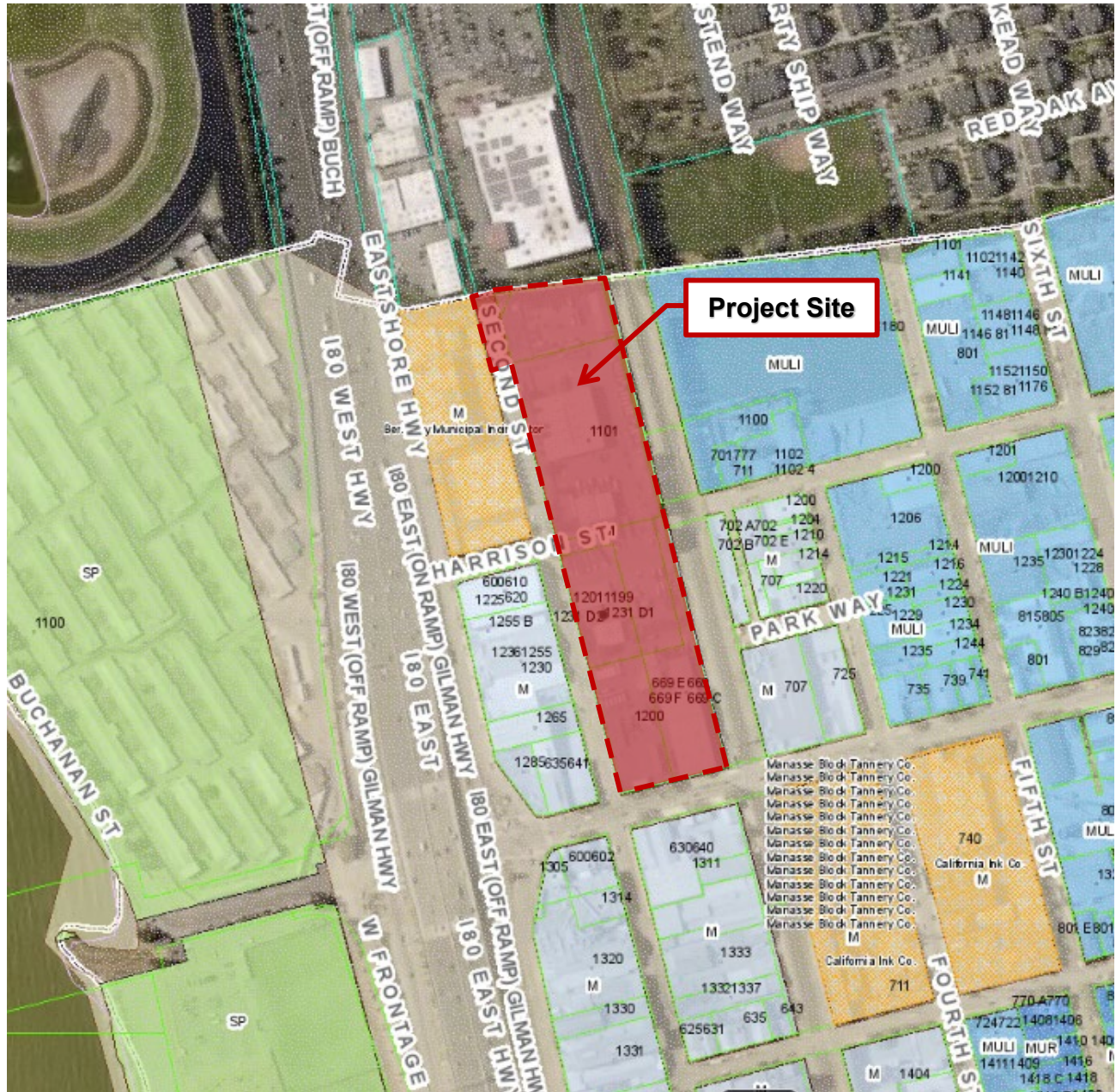
<https://aca.cityofberkeley.info/citizenaccess/Default.aspx>

<https://cityofberkeley.info/your-government/boards-commissions/zoning-adjustments-board>

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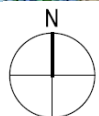
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Figure 1: Zoning Map



Legend

- M: Manufacturing District
- MU-LI: Mixed-Use - Light Industrial District
- MU-R: Mixed-Use - Residential District
- SP: Specific Plan District (Waterfront-Marina)



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Table 1: Land Use Information

Location		Existing Use	Zoning District	General Plan Designation
Subject Property		City of Berkeley Solid Waste Transfer and Recycling	M	M
Surrounding Adjacent Properties	North	Retail (City of Albany)	N/A	
	East	Railroad Tracks	N/A	N/A
	East	Harrison Park / Industrial / Manufacturing	MU-LI/M	OS/M
	South	Vacant (Former Pacific Steel Casting)/Office	M (Re-zone to M-RD pending)	M
	West	Public Storage / Auto Repair / Industrial / Gilman Street Interchange Improvement Project	M	

Table 2: Special Characteristics

Characteristic	Applies to Project?	Explanation
Affordable Child Care Fee & Affordable Housing Fee for qualifying non-residential projects (Per Resolutions 66,618-N.S. & 66,617-N.S.)	Under Review	These fees apply to projects with more than 7,500 square feet of net new non-residential gross floor area. Staff is reviewing the project for applicability. These fees may apply to the project.
Affordable Housing Fee for qualifying non-residential projects (Per Resolution 66,617-N.S.)		
Inclusionary Housing provisions (Per BMC Chapter 23.328)	No	The project is not a housing development project as defined in BMC 23.328 as it does not include the new construction of any dwelling unit, therefore it is not subject to the Inclusionary Housing provisions of BMC Chapter 23.328.
Alcohol Sales/Service	No	The project is not proposing alcohol sales or service with this permit.
Coast Live Oaks	No	There are no oak trees on the project site.
Creeks	Yes	Cordoncres Creek borders the north portion of the project site – APNs 60-2382-3-1 and 60-2382-3-3 are within the creek buffer. Creek Protection documentation has been submitted to Public Works for review.
Density Bonus	No	The project is not a Housing Development as defined by State law, and does not utilize State Density Bonus.

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Characteristic	Applies to Project?	Explanation
Green Building Score	Yes	The project is voluntarily designed to achieve a LEED Gold rating.
Historic Resources	Yes	The project would involve the demolition of nine non-residential buildings or structures that are over 40 years old (two buildings are under 40 years old). An Historic Built Environment Assessment, dated September 8, 2021, was submitted indicating that none of the buildings or structures are eligible for the State or local historic registers. The demolition referral will be reviewed by the LPC. Staff is unaware of any other cultural resource on the site.
Housing Accountability Act (Govt. Code 65589.5(j))	No	The project is not a "housing development project" and is not subject to the HAA.
Public Art on Private Projects (BMC Chapter 23C.23)	Yes	The project is subject to the Percentage for Public Art on Private Projects Ordinance. The applicant is electing to comply by providing publicly accessible on-site art valued at (1.75% of total building permit valuation) paying the remainder in fee.
Rent Controlled Units	No	The project involves the demolition of non-residential structures; no rent-controlled units would be demolished.
Residential Preferred Parking	No	The site is not located in an RPP zone. Also, the project does not involve the construction of any residential units and RPP would not apply.
Seismic Hazards (SHMA)	Yes	The project site is located in an area susceptible to liquefaction, as defined by the State Seismic Hazards Mapping Act (SHMA). The applicant has submitted a geotechnical report that has been peer reviewed by the City's consultant, and the applicant is working to achieve compliance.
Soil/Groundwater Contamination	Yes	The project site is located within the City's Environmental Management Area, and is listed on the State's Cortese List. The Phase I submitted by applicant found eight Recognized Environmental Conditions at the site, as well as several hazardous conditions which warranted mention. The report recommended subsurface sampling and testing prior to any ground disturbance/redevelopment activities. The Applicant will work with the Toxics Division and other appropriate agencies to ensure compliance.
Transit	Yes	The nearest bus stop to the project site is four blocks east on Gilman Street, the end stop of Line 12, which has 6 AM to 12:30 AM service with 20-30 minute frequency to Oakland's Jack London Square. The site is approximately 1.9 miles from the North Berkeley BART Station.

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Table 3: Project Chronology

Date	Action
December 21, 2021	Use Permit Application submitted
August 31, 2023	Notice of Preparation of EIR published / Public scoping period begins
August 31, 2023	Public hearing notices mailed/posted
September 14, 2023	ZAB Public EIR Scoping/Preview Meeting
September 30, 2023	Public scoping period ends

Table 4: Development Standards

M District Standards		Existing	Proposed	Permitted/Required
Lot Area (sq. ft.)		325,820 (7.48 acre)	325,820 (7.48 acre)	20,000
Gross Floor Area (sq. ft.)		71,760	114,380	n/a
Unenclosed Floor Area ¹ (sq. ft.)		1,400	9,320	n/a
Total Floor Area of Use		73,160	123,700	n/a
FAR		0.21	0.38	2.0
Building Height	Maximum	36'-0"	45'-0"	45' max.
	Stories	1 to 2	1 to 3	n/a
Building Setbacks	Front (Gilman)	n/a	9'	0' min.
	Street Side (Second)	n/a	9'	0' min.
	Interior Side (Railroad)	n/a	32'	0' min.
	Rear	n/a	125'	0' min.
Lot Coverage (%)		22	32	100 max.
Usable Open Space (sq. ft.)		n/a	n/a	n/a
Vehicle Parking		34 (20 employee/ public + 14 public)	35 (14 employee + 21 public)	24 (per parking study)
Bike Parking (Short Term)		0	64	62 (1 spaces/2000sq.ft.)
Bike Parking (Long Term)		0	4	4 (1 spaces/30,000sq.ft.)
Abbreviations: s.f.= square feet; min.=minimum; max.=maximum				
¹ Includes functional, accessory use areas, whether covered or not, i.e. buyback area (no canopy), bin repair (canopied), and free drop-off area (canopied).				

II. Project Setting

- A. Neighborhood/Area Description:** The project site is located within the Manufacturing District (M), in the West Berkeley Area Plan. The neighborhood surrounding the site is mostly occupied by one- and two-story industrial buildings containing uses such as manufacturing, auto repair, warehouse, car rental, or offices. Exceptions to this general fabric of uses are: self-storage buildings up to four-stories in height and a City Landmark, Berkeley Municipal Incinerator to the west of the site; vacant buildings formerly occupied by Pacific Steel Casting to the south (proposed rezoning to the new M-RD, Manufacturing – Research and Development District); artist studios and art galleries in the City Landmark sites formerly occupied by California Ink Company to the southeast; on the other side of the railroad tracks to the east is Harrison Park (Gabe Catalfo Fields) and Berkeley Skatepark; and to the north is the Target store, on the other side of Cordornices Creek and the City border with the City of Albany.

Access to public transit is limited in the area, the closest bus stop is located four blocks east on Gilman Street which serves as the end stop of Alameda County (AC) Transit Line 12. The nearest North Berkeley BART station is almost two miles northeast of the site, but is not readily accessible via public transit. Line 12, the closest bus line, stops at Ashby BART station, nearly four miles away to the southeast.

The Gilman Street Interchange Improvement Project (GSIIP), currently under construction, is located one block to the west. Implementation of the GSIIP would result in the construction of two roundabouts at the Gilman Street intersections on both sides of Interstate 80 (I-80). The project also includes new pedestrian and bicycle facilities at and near the interchange, to increase safety and improve street navigation, mobility and traffic operations in the area. For more information and updates on the GSIIP, see the project website:

<https://www.alamedactc.org/programs-projects/highway-improvement/i80gilman>

- B. Site Conditions/Background:** The project site consists of six parcels, covering 7.48 acres of land. The five City-owned parcels are developed with the City of Berkeley Transfer Station facility, which has been in operation since 1982, materials recovery facility, and the Trillium Incorporated, Compressed Natural Gas fueling station (operated independently of the City facilities). The existing Transfer Station facility consists of approximately 71,760 square feet of gross floor area in eleven buildings and accessory structures, including: the transfer station and tipping floor building, vehicle maintenance facility, truck wash building, two administrative buildings, Ecology Center Administrative Office, Community Conservation Center Administrative /Buyback office, storage/bin repair, scale house, and associated equipment. Existing buildings and structures measure up to 36 feet and two stories in height.

A 60-foot-wide land area (approximately 15,660 square feet) that was formerly a portion of Harrison Street was vacated by the City in 1957, divided in two portions, and added to the abutting parcels. A 10-foot-wide sewer/storm drain/utilities easement

traverses the north side of the vacated area.¹ The north terminus of Second Street abuts Cordornices Creek and serves as one of the driveway entries to the Public Storage facility on the parcel abutting the road to the west.

III. Project Description

- A. Background.** The proposed Solid Waste & Recycling Transfer Station (SWRTS) project is in the entitlement stage; internal staff review of the application materials is still in progress. In February 2019, the applicant, the City's Public Works Department, Zero Waste Division (ZWD), completed a Site Conditions Review and Assessment of all existing buildings and above ground infrastructure and reviewed current operations for improvement recommendations. Nine public meetings/workshops were held between November 2018 to May 2019. The SWRTS Feasibility Study, completed in October 2019 (see Attachment 3), described two conceptual schemes for the City's consideration – Concept A and Concept B. The applicant is developing Concept B, the two-building design, to undergo environmental review (under CEQA) and to bring forward to entitlements.
- B. Parcel Merger.** As described previously, the project site is comprised of six parcels. Five parcels are owned by the City of Berkeley, and the sixth is owned by Target Corporation. The applicant intends to purchase the parcel from Target, and merge all six parcels to create a 7.48-acre project site. The use permit would include a Condition of Approval requiring proof of ownership of APN 60-2382-3-1 (currently owned by Target) prior to issuance of any building permits.
- C. Site Design.** The proposed project would demolish all of the buildings and structures (and remove all equipment, pavement, and landscaping) on the project site, merge the six parcels, and construct a new solid waste and recycling facility.

The project proposes a two-building design with the transfer station building, truck scalehouse facility, and vehicle maintenance facility on the north half of the site, and the Materials Recovery Facility (MRF) building, city administrative offices, and public buyback and recycling drop-off area on the south half of the site. Truck and trailer parking would be in the center of the site, between the two main function areas. Bin repair and storage areas would be west of the truck parking area, along the western property line. Also concentrated along the western property line are parking areas for the public and facility employees. The main truck entry would be at the northwest corner of the project site. (See Figure 2 Site Plan).

Approximately 11,710 square feet of the north terminus of Second Street (at Cordornices Creek) would be repaved and developed as the main truck entry, while maintaining public access to the driveway of the adjacent property to the west

¹ Per Ordinance #3601 N.S., ordering the vacation of the portion of Harrison Street, pertaining to the sewer, storm drain, and public utility easement, no buildings or excavation shall occur on any part of the easement, or subsurface structures made within two feet of the easement, except with the consent of the City through a Council Resolution.

(currently Public Storage), and relocating the public vehicle turnaround area to the south of its existing location. This portion of Second Street would remain as public right-of-way and would be an off-site improvement that would require an encroachment permit from the Public Works Department.

The proposed SWRTS facility would include the following programmatic elements:

- Public Buyback and Drop-off Center
- Walk-in Service
- Information Kiosk
- Education Center
- MRF
- Bin Repair
- Process Equipment
- Transfer Station:
 - Bulky Item Drop-off Area
 - Salvage Items
 - Loadout/Transfer Areas
 - Main Public Entry and Scale Facility
 - Vehicle Maintenance, Truck Wash, and Truck Parking
- Administrative/Employee Support Areas
- Contractors
- City Administrative Offices

The following table lists the main built components that would accommodate the programmatic elements and their gross floor area:

Table 5: Project Main Components

Component	Height (stories/feet)	Gross Area (square feet)
Transfer Station	1	45,500
Materials Recovery Facility (MRF)	1	35,000
Vehicle Maintenance Building	2	14,000
Truck Wash Building	1	1,900
Information Kiosk	1	120
Scalehouse Facility	1	160
Administration Buildings (Office)	3	17,700
Total Enclosed Building Area	n/a	114,380

Component	On-site Area (square feet)	Off-site Area (square feet)
Public Buyback Area	1,680	-
Free Recycle Drop-off Area (covered)	4,140	-
Bin Repair (covered)	3,500	-
Vehicle Paving (includes parking areas and circulation)	166,700	9,800
Other Paving (includes pedestrian walkways, loading docks, bin repair and storage, fuel islands, and scale house median)	19,280	6,700
Total Unenclosed Structure and Paved Area	195,300	16,500
Creek Landscape Restoration (south of the fence)	8,400	2,100
Creek Landscape (to remain, north of the fence)	7,700	-
Ornamental Landscape	16,100	2,900
Total Landscaped Area	32,200	5,000

IV. Community Discussion

A. Neighbor/Community Concerns: Around the time of application submittal to the City on December 21, 2021, the applicant installed yellow Proposed Development Project signs at the project site.

As described previously, nine public meetings/workshops were held between November 2018 to May 2019 to obtain feedback on the project concept. Public comments had direct bearing on the project programming and design.

On August 31, 2023, the City mailed public hearing notices to property owners and occupants, and to interested neighborhood organizations, and posted notices within the neighborhood in three locations. No further communications regarding the project were received as of the writing of this staff report.

B. Design Review Committee Review: The project is subject to Design Review by the Design Review Committee (DRC). A Preliminary Design Review meeting will be scheduled in the future.

C. Landmarks Preservation Commission Review: For the demolition of eleven non-residential buildings over 40 years old, the project is subject to a demolition referral review before the Landmarks Preservation Commission (LPC). A demolition referral meeting will be scheduled in the future.

A Historic Resource Evaluation, dated September 8, 2021, was prepared for the project site which concluded that none of the existing buildings to be demolished are eligible for state or local listing on a historical resource register.

V. Environmental Review

A. CEQA Approach: As noted above, an EIR is being prepared for this project to evaluate potential impacts on the environment. This scoping session is being conducted pursuant to CEQA Guidelines Section 15083 (Early Public Consultation). The purpose of this scoping session is to solicit input from the ZAB and other interested parties regarding possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the proposed project. It is anticipated that the proposed project may result in potentially significant environmental impacts to the following environmental topic areas, which will be evaluated further in the Draft EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emission
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Tribal Cultural Resources
- Transportation
- Utilities and Service Systems

As noted in the NOP (Attachment 2), CEQA allows a lead agency to limit the detail of discussion of environmental effects that are not considered potentially significant (PRC Section 21100, CCE Sections 15126.2[a] and 15128). CEQA requires that the discussion of any significant effect on the environment be limited to substantial, or potentially substantial, adverse changes in physical conditions that exist within the affected area, as defined in PRC Section 21060.5 (statutory definitions of "environment"). Environmental issue areas with no impact or less than significant impacts, and that are scoped out of the EIR include:

- Agriculture and Forestry Resources
- Mineral Resources
- Population and Housing
- Recreation
- Wildfire

Also, in accordance with California Code of Regulations Section 15126.6, the Draft EIR will describe a reasonable range of alternatives to the proposed project that are capable of meeting most of the project's basic objectives and that would avoid or substantially lessen any of the significant effects of the proposed project. The Draft EIR will also provide an analysis of the CEQA-mandated No Project Alternative.

VI. Issues and Analysis – Staff will provide a full analysis of the following issues and permit findings for ZAB consideration at the project's decision hearing, to be scheduled at a future date.

A. Use Permit for Demolition of Commercial Structures: Pursuant to BMC Section 23.326.070(A), in order to approve a Use Permit to demolish a commercial structure, the Board must make the findings in BMC Section 23.326.070(D)(2), including the finding that the demolition would not be materially detrimental to the commercial needs and public interest of any affected neighborhood of the City, and if demolishing a building more than forty years old, the LPC, upon review, does not recommend against granting the permit.

B. Findings for Use Permits in Manufacturing Districts: Pursuant to BMC Section 23.206.100(A), in order to approve any Use Permit in a Manufacturing district, the Board must make the findings that the proposed use or structure:

1. Is consistent with the purposes of the district;
2. Is compatible with the surrounding uses and buildings;
3. Complies with the adopted West Berkeley Plan; and
4. Meets any applicable performance standards for off-site impacts.

In addition, Pursuant to BMC Section 23.206.100(B), in order to approve any Use Permit in the M (Manufacturing) district, the Board must make the findings that the project:

- a. Is unlikely, under reasonably foreseeable circumstances, to induce a substantial change of use in buildings from manufacturing, wholesale trade, or warehousing uses; and
- b. Is designed in such a manner to be supportive of the industrial character of the district. Such physical compatibility shall include materials used; facade treatments; landscaping; lighting; type, size and placement of awnings, windows, and signs; and all other externally visible aspects of the design of the building and site.

- C. Parking:** Parking is not evaluated under CEQA, but the City has requirements in its municipal code. Pursuant to BMC Section 23.322.030(C)(3), the parking requirement in Manufacturing Districts for Industrial and Heavy Commercial Uses is determined by the Board, based on the amount of traffic generated by the use and the number of spaces required for other similar uses. A Transportation Analysis dated September 7, 2022 was prepared, and analyzed the results of the parking assessment that was conducted for the uses proposed on the site. The assessment considered the existing parking demand and existing on-street and off-street parking availability for the Transfer Station; on-street parking that would be eliminated by the project designs as well as those that would be eliminated by the Gilman Street Interchange Project; and future on-street parking demand.

The memo concluded that: 1) ample parking would be available on the blocks within 500 feet of the project site; 2) the maximum observed parking demand at the existing Transfer Station facility is 24 vehicles, and parking demand at the site is expected to remain the same in the future; and 3) the on-site parking supply provided – 35 spaces (14 employee + 21 public) – would adequately accommodate the parking demand for the proposed facility.

- D. General Non-Detriment Finding:** BMC Section 23.406.040 states that before the ZAB approves an application for a Use Permit, it must find that the project, under the circumstances of this particular case existing at the time at which the application is granted, would not be detrimental to the health, safety, peace, morals, comfort, and general welfare of the persons residing or working in the neighborhood of such proposed use or be detrimental or injurious to property and improvements of the adjacent properties, the surrounding area or neighborhood, or to the general welfare of the City.

VII. Recommendation

Staff recommends that the ZAB hold a public hearing to 1) to provide interested parties, public agencies, and members of the public with an opportunity to comment on the scope and content of the Draft EIR (comments should focus on the scope and content of the environmental information of the EIR for the project; all comments on environmental issues received during the public comment period will be considered when preparing the Draft EIR); 2) provide advisory comments and direction regarding project design and compatibility with the neighborhood; and 3) provide advisory comments regarding additional issues and analysis the next staff report should address.

Attachments:

1. Notice of Preparation of an Environmental Impact Report
2. Project Site Plan, received August 28, 2023
3. Solid Waste Recycling Transfer Station Feasibility Study, October 2019
4. Notice of Public Hearing

Staff Planner: Sharon Gong, sgong@berkeleyca.gov, (510) 981-7429



Planning and Development Department
Land Use Planning Division

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING FOR THE SOLID WASTE AND RECYCLING TRANSFER STATION PROJECT

DATE: August 31, 2023

TO: State Clearinghouse, Responsible Agencies, Trustee Agencies, Organizations, and Interested Persons

PROJECT TITLE: Solid Waste and Recycling Transfer Station Replacement Project

PROJECT LOCATION: The project site is located at 699 Gilman Street; 1101, 1199-1231, 1201, and 1203 Second Street; and an unaddressed parcel on Second Street; in the City of Berkeley, within the West Berkeley Plan area. The site is bound by Codornices Creek (Creek) riparian corridor to the north, the Union Pacific Railroad right-of-way and tracks to the east, Gilman Street to the south, and Second Street to the west (Exhibit 1 and Exhibit 2).

PROJECT APPLICANT: City of Berkeley Public Works Department, Zero Waste Division (Division), 1201 Second Street, Berkeley, CA 94710

PURPOSE OF NOTICE: The City of Berkeley, as the lead agency, is preparing a Draft Environmental Impact Report (Draft EIR) for the proposed Solid Waste and Recycling Transfer Station Project (proposed project). In accordance with the provisions of the California Environmental Quality Act (CEQA) Guidelines, California Code of Regulations Section 15082(a), this Notice of Preparation (NOP) provides responsible and trustee agencies, organizations, and interested parties with a description of the proposed project and information on its potential environmental effects. The City also invites input and/or comments from public agencies on the scope and content of the environmental information that will be studied in connection with the proposed project.

EXISTING CONDITIONS

Land Use Activities

The 7.48-acre project site consists of six parcels, as shown in Exhibit 3 and Table 1.

Table 1: Existing Parcels

Assessor's Parcel Number	Address	Ownership	Acreage ¹
60-2362-1-8	1203 Second Street	City of Berkeley	0.92
60-2362-1-9 & 60-2362-1-11 ^{2,3}	1199–1231 Second Street		2.03
60-2362-1-10	669 Gilman Street		1.09
60-2382-1-2	1101 Second Street		2.48
60-2382-3-3	1101 Second Street		0.94
60-2382-3-1	unaddressed parcel, Second Street	Target	0.02
Total			7.48 acres
Notes: ¹ Rounded to the nearest hundredth. ² According to the topographic survey, "60-2362-1-9 & 60-2362-1-11" are within the same legal parcel. For the purposes of the EIR, they will be considered as one legal parcel and denoted as "60-2362-1-9 & 60-2362-1-11." ³ According to the topographic survey, there is 0.02 acre of land that is identified as both "60-2362-1-9 & 60-2362-1-11" and 60-2362-1-10. For the purposes of the EIR, this portion will be considered to be part of "60-2362-1-9 & 60-2362-1-11." Source: City of Berkeley 2023.			

The project site is relatively flat (approximately 6 to 13 feet above mean sea level) with a slight gradient descending toward the west. The project site is developed and is occupied by: the existing solid waste transfer station, originally constructed in 1982; the Trillium, Inc. Compressed Natural Gas (CNG) fueling station, which is fenced and separated from the existing transfer station operations; the existing materials recovery facility (MRF); and ancillary buildings to support both the solid waste transfer station and MRF operations.

Aside from the existing building footprints, the site is generally paved with asphalt (Exhibit 4). In various areas within the northern portion of the site, former building foundations remain, and excess materials or stockpile debris are stored uncovered on the asphalt paving. The Codornices Creek riparian corridor borders the northern boundary of the project site. The project site is accessible via paved access driveways located along Second Street and Gilman Street.

The project site is on a hazardous materials list compiled pursuant to Section 65962.5 of the Government Code (Cortese List).

PROJECT DESCRIPTION: The proposed project would merge the six parcels into one; demolish the existing solid waste transfer station and MRF on the project site, including buildings, accessory structures, equipment and paving; and construct new buildings, accessory structures, equipment, and paving for a new solid waste transfer station

facility and MRF. The proposed project would remove the existing shrubs and groundcover on the site, while protecting trees that would not conflict with proposed utilities, grading, stormwater treatment facilities, and architectural improvements. The existing Codornices Creek landscaping (approximately 7,700 square feet) to the north of the existing fence would remain.

The project proposes a two-building design with the transfer station building, truck scales, and vehicle maintenance facility on the north half of the site, and the MRF building, City offices, and public drop-off area on the southern half of the site. Truck and trailer parking would be in the center of the site, between the two main function areas. Bin repair and storage areas would be west of the truck parking area, along the western property line. Also concentrated along the western property line would be parking areas for the public and facility employees. The main truck entry would be at the northwest corner of the project site.

Approximately 11,710 square feet (existing) of the northern portion of Second Street would be repaved and redeveloped as the main truck entry, while maintaining public access to the driveway of the adjacent property to the west, and relocating the public vehicle turnaround area to south of its existing location. This redevelopment would also include pedestrian walkways and replacement of paving with ornamental and Creek landscape (See Exhibit 3 through Exhibit 5). This portion of Second Street would remain as public right-of-way and would be an off-site improvement.

The proposed project would be net zero energy and Leadership in Environmental Design (LEED®) certified, per City requirements.

Table 2 provides the gross square footage of each project component, and Exhibit 5 provides the proposed site plan. The total gross building area would be 114,380 square feet.

Table 2: Proposed Project Gross Area

Component	Gross Area (in square feet) ¹	
	On-site Improvements	Off-site Improvements
Transfer Station (combined for residential and commercial refuse recycling and green/food waste drop-off) (one story)	45,500	—
Materials Recovery Facility (MRF) (one story)	35,000	—
Vehicle Maintenance Building (two stories)	14,000	—
Truck Wash Building (one story)	1,900	—
Information Kiosk (one story)	120	—
Scalehouse Facility (one story)	160	—
Administration Buildings (Office) (three stories) ²	17,700	—
Total Building Area	114,380	—

Component	Gross Area (in square feet) ¹	
	On-site Improvements	Off-site Improvements
Vehicle Paving (includes parking areas and circulation)	166,700	9,800
Other Paving (includes pedestrian walkways, loading docks, bin repair and storage, fuel islands, and scale house median)	19,280	6,700
Public Buyback Area	1,680	—
Free Recycle Drop-off Area (canopied)	4,140	—
Bin Repair (canopied)	3,500	—
Total Paved Area	195,300	16,500
Creek Landscape Restoration (to the south of the fence)	8,400	2,100
Creek Landscape (to remain, to the north of the fence)	7,700	—
Ornamental Landscape	16,100	2,900
Total Landscape Area	32,200	5,000
Notes:		
¹ Values are rounded to the nearest whole number.		
² The 1,100-square-foot office is included in the Administration Building total.		

ENVIRONMENTAL IMPACT REPORT: Pursuant to CEQA (Public Resources Code [PRC] § 21000 *et seq.*) and California Code of Regulations Section 15064, the discussion of potential effects on the environment in the EIR shall be focused on those impacts that the City has determined may be potentially significant. The Draft EIR will also evaluate the cumulative impacts of the proposed project when considered in conjunction with other related past, current, and reasonably foreseeable future projects. The City has determined that the proposed project could result in potential environmental impacts in the following topic areas, which will be evaluated further in the Draft EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emission
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Tribal Cultural Resources
- Transportation
- Utilities and Service Systems

CEQA allows a lead agency to limit the detail of discussion of environmental effects that are not considered potentially significant (PRC § 21100; CCR §§ 15126.2(a) and 15128). CEQA requires that the discussion of any significant effect on the environment

be limited to substantial, or potentially substantial, adverse changes in physical conditions that exist within the affected area, as defined in Public Resources Code Section 21060.5 (statutory definitions of “environment”). Environmental issue areas scoped out of the Draft EIR are listed below with an explanation of why there would not be an impact to these resource areas:

- **Agriculture and Forestry Resources**—The project site has operated as a transfer station building and recycling center for more than 35 years. The project site does not support agricultural activities or forest uses and is in an urbanized area. The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) maps the project site as “Urban and Built-up Land,” which is a nonagricultural designation,¹ and the site and surrounding areas are not eligible for Williamson Act Contract. The project site is zoned as Manufacturing (M), a nonagricultural or forest zoning district. As such, it is anticipated that the proposed project would not result in significant effects related to agriculture and forestry resources.
- **Mineral Resources**—There are no mineral resources within the City of Berkeley or within the project site or its vicinity.² Furthermore, implementation of the proposed project would not result in the loss of a locally important mineral resource recovery site delineated by an applicable land use plan. A Mineral Resource Zones and Resources Sectors map prepared by the California Geological Survey indicates that the project site is located outside of known mineral deposits of significance.³ The project site does not contain any known mineral resources. In addition, the project site is currently zoned for Manufacturing (M). As such, no known mineral resources would be impacted by the proposed project.
- **Population and Housing**—Because the proposed project would involve the replacement of the existing facility with a proposed facility that is designed to enhance recycling and solid waste operations and the site does not currently include residential uses, the proposed project would not require the removal of any occupied residential structures and would not involve the construction of housing.

While construction workers would be required to construct the proposed project, it is expected they would be from the local labor force and would not move to the area for this project. The proposed project does not propose any increase of tonnage at the proposed facility or additional hours from what is allowed under

¹ California Department of Conservation. 2022. California Important Farmland Finder. Website: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed June 27, 2023.

² City of Berkeley. 2001. Berkeley Draft General Plan EIR. Chapter VI CEQA-Required Assessment Conclusions.

³ California Department of Conservation. 2022. CGS Information Warehouse: Mineral Land Classification. Website: <https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc>. Accessed June 27, 2023.

the current California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Facility Permit (SWFP), and no additional employees are anticipated. Once the new facility is operational, if a small number of new employees are required, it is expected that the local labor force would be the primary source for new workers. Therefore, the proposed project would not lead to a significant, unplanned increase in population. As such, it is anticipated that the proposed project would not result in significant effects related to population and housing.

- **Recreation**—While construction workers would be required to construct the project, it is expected they would be from the local labor force and would not move to the area for this project. As discussed above, the proposed project does not propose any increase of tonnage at the proposed facility or additional hours from what is allowed under the current SWFP, and no additional employees are anticipated. Once the new facility is operational, if a small number of new employees are required, it is expected that the local labor force would be the primary source for new workers. Therefore, because the proposed project is not expected to result in a significant increase in population, the proposed project would not result in a change of the existing ratio of parks to residents. As such, it is anticipated that the proposed project would not result in significant effects related to recreation.
- **Wildfire**—The project site is located in a Local Responsibility Area (LRA), and it is not located in a Very High Fire Hazard Severity Zone (VHFHSZ).⁴ The nearest VHFHSZ is located approximately 1.6 miles northeast of the project site. It is anticipated that the proposed project would not result in significant effects related to wildfire.

ALTERNATIVES TO BE EVALUATED: In accordance with California Code of Regulations Section 15126.6, the Draft EIR will describe a reasonable range of alternatives to the proposed project that are capable of meeting most of the project's basic objectives and that would avoid or substantially lessen any of the significant effects of the proposed project. The Draft EIR will also provide an analysis of the CEQA-mandated No Project Alternative.

PUBLIC REVIEW AND COMMENT PERIOD: The City requests written comments that focus on the scope and content of the environmental information of the Draft EIR for the proposed project. All comments on environmental issues received during the public comment period will be considered when preparing the Draft EIR. Because of the time limits mandated by State law, this NOP will be circulated for a 30-day review period,

⁴ California Department of Forestry and Fire Protection (CAL FIRE). 2022. Fire and Resource Assessment Program (FRAP) Fire Hazard Severity Zone (FHSZ) Viewer. Website: <https://egis.fire.ca.gov/FHSZ/>. Accessed: June 27, 2023.

which will extend from August 31, 2023 to September 30, 2023. Responses to this NOP must be received by **5:00 p.m. on September 30, 2023**. Please send your written or electronic responses, with appropriate contact information to:

Sharon Gong, Senior Planner
Planning and Development Department
1947 Center Street, 2nd Floor, Berkeley, CA 94704
or
Email: SGong@berkeleyca.gov

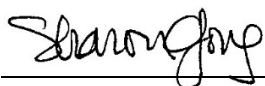
For email communication, please include a subject line indicating "Scoping Comments: Solid Waste and Recycling Transfer Station Replacement Project."

EIR PUBLIC SCOPING MEETING: The City of Berkeley will hold a public scoping meeting to inform interested parties about the project and to provide agencies and the public with an opportunity to comment on the scope and content of the Draft EIR. The meeting will be held at a regularly scheduled Zoning Adjustments Board Hearing. The meeting time and location is included below:

Date: September 14, 2023
Time: 7:00 p.m.
Location: 1231 Addison Street, Berkeley, CA 94702
(School District Board Room)

This meeting will be conducted in a hybrid model with both in-person attendance and virtual participation. To access the meeting remotely, please visit the Zoning Adjustments Board web page to confirm the virtual meeting link and instructions on joining the meeting:

<https://berkeleyca.gov/your-government/boards-commissions/zoning-adjustments-board>

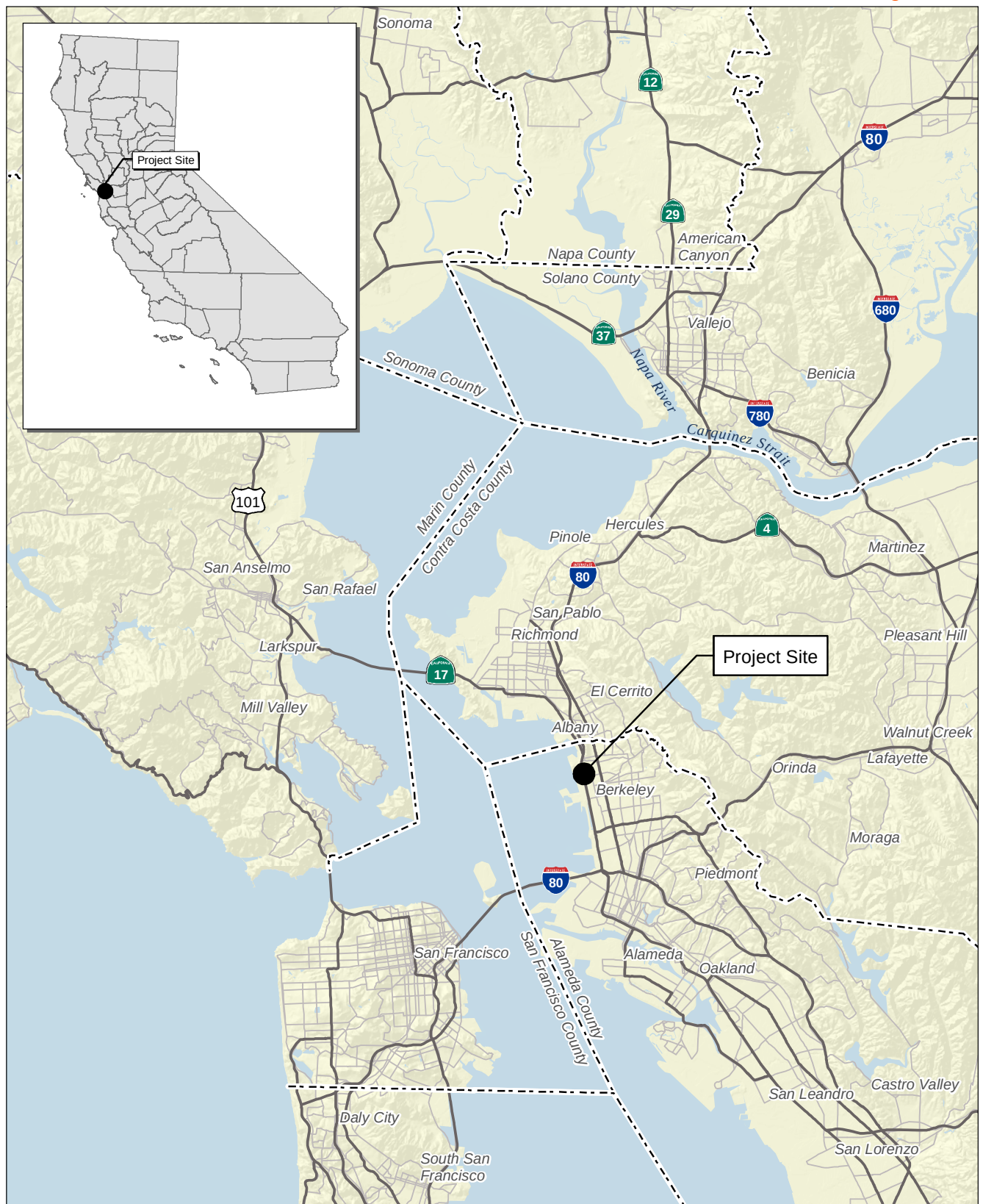


Sharon Gong, Senior Planner

Date of Distribution: August 31, 2023

Attachments:

Exhibit 1: Regional Location Map
Exhibit 2: Local Vicinity Map
Exhibit 3: Existing Parcel Map
Exhibit 4: Existing Site Conditions Map
Exhibit 5: Site Plan

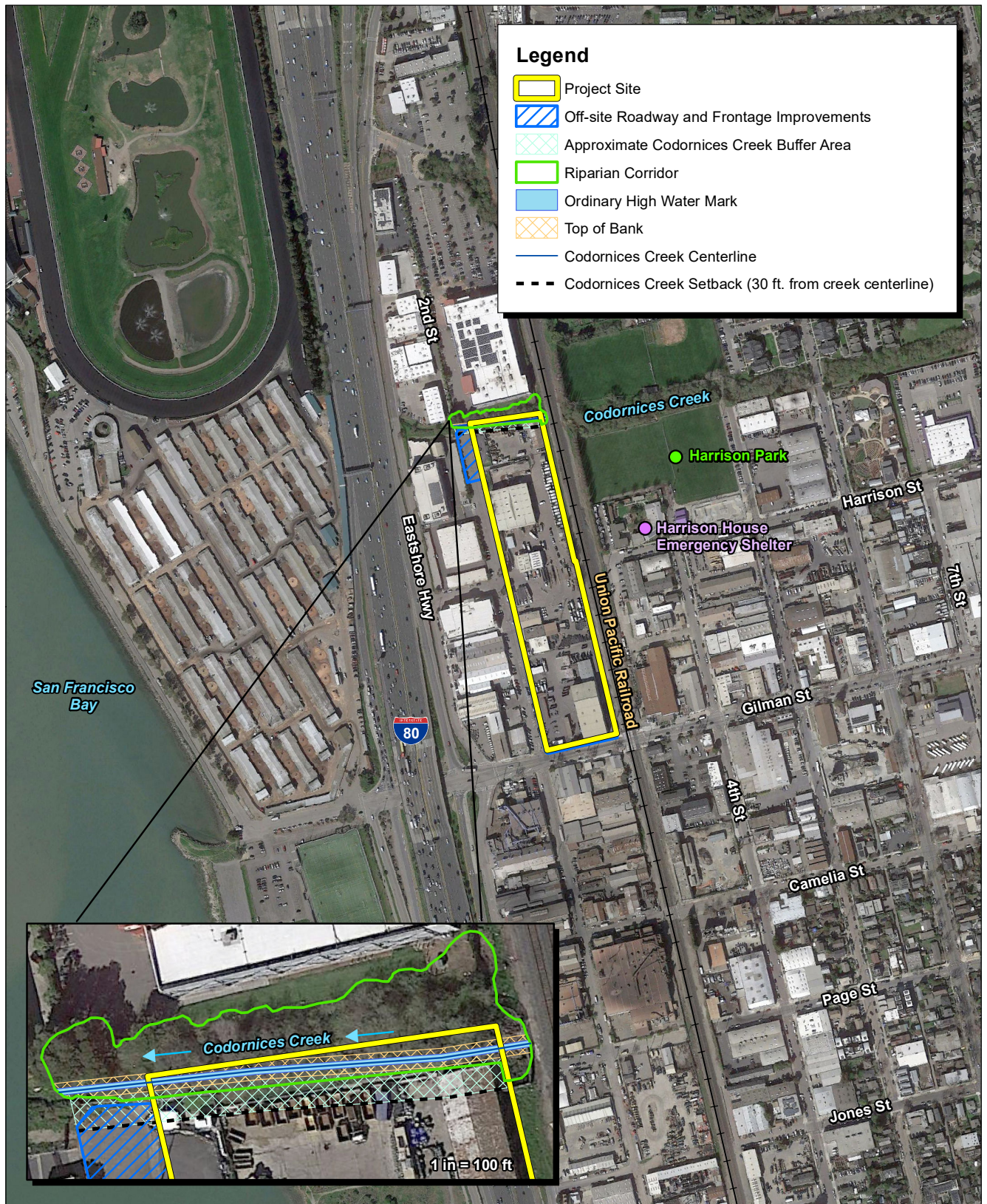


Source: Census 2000 Data, The California Spatial Information Library (CaSIL).



Exhibit 1

Regional Location Map



Source: Google Earth Aerial Imagery, 02/2021. MNS Engineers Inc., June 5, 2023. JRMA Architects | Engineers, August 2023.

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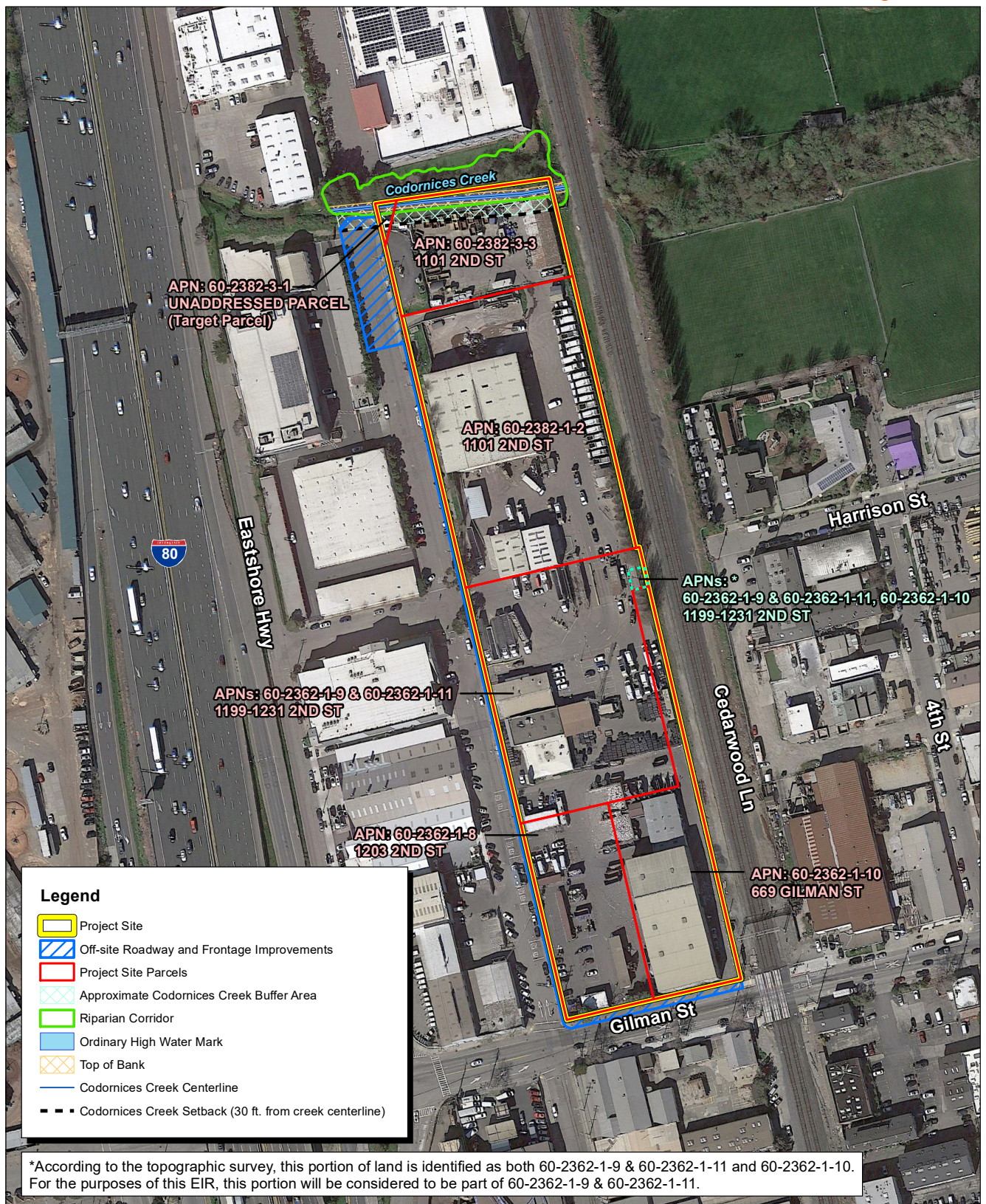


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Exhibit 2 Local Vicinity Map

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CITY OF BERKELEY
BERKELEY SOLID WASTE AND RECYCLING TRANSFER STATION REPLACEMENT PROJECT
NOTICE OF PREPARATION



Source: Google Earth Aerial Imagery, 02/2021. MNS Engineers Inc., June 5, 2023. JRMA Architects | Engineers, August 2023.

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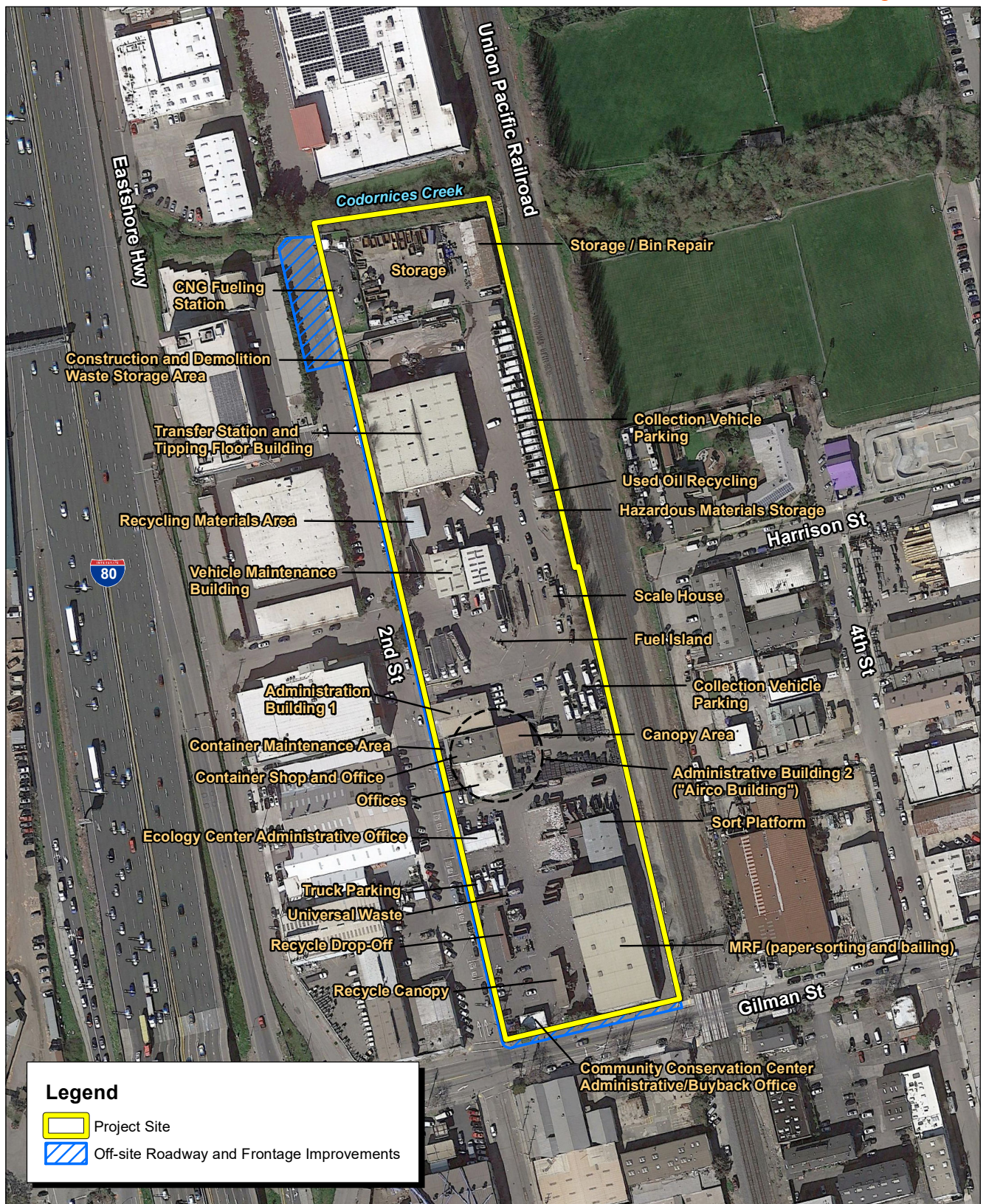


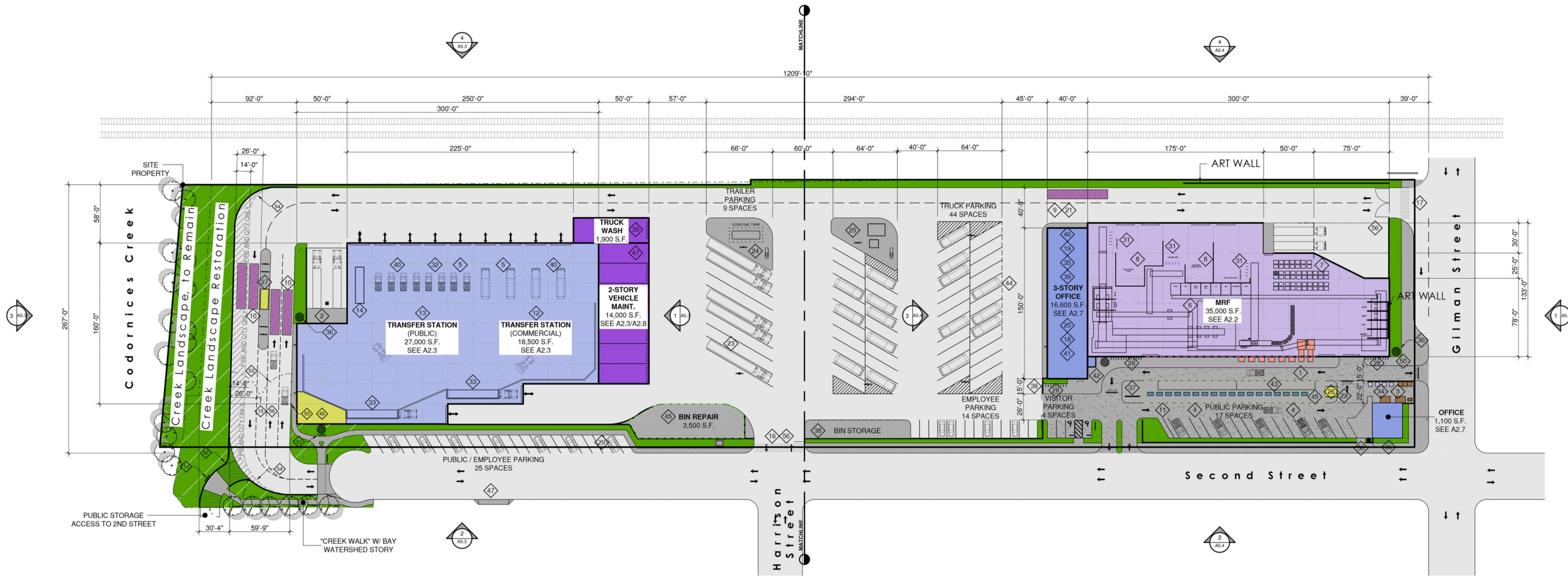
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Exhibit 3 Existing Parcel Map

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CITY OF BERKELEY
BERKELEY SOLID WASTE AND RECYCLING TRANSFER STATION REPLACEMENT PROJECT
NOTICE OF PREPARATION





KEYNOTES

- 1 PUBLIC BUY BACK AREA
- 2 BULKY ITEM LOADOUT AREA
- 3 UNIVERSAL WASTE DROP-OFF
- 4 FREE DROP-OFF AREA
- 5 ORGANICS TIPPING
- 6 MRF PROCESSING AREA
- 7 BALE STORAGE/SHIPPING
- 8 MRF TIPPING
- 9 70' SCALE
- 10 40' SCALE
- 11 MOTORCYCLE PARKING
- 12 COMMERCIAL TIP FLOOR
- 13 SELF HAUL TIP AREA
- 14 SALVAGE TRAILER
- 15 PUBLIC ENTRYWAY FOR MAIN SCALES

- 16 TRANSFER TRAILERS AND COMMODITY TRUCKS ENTRYWAY
- 17 CITY VEHICLES, RECYCLING ROUTE AND COMMODITY TRUCKS ENTRYWAY
- 18 CONTRACTOR'S OFFICE (1st FLOOR)
- 19 MRF OPERATION OFFICE (2nd FLOOR)
- 20 CITY OFFICE (2nd FLOOR)
- 21 RFID STATION
- 22 INFORMATION KIOSK - 120 S.F.
- 23 SEMI TRAILER/TRUCK PARKING
- 24 FUEL ISLAND (DIESEL)
- 25 CNG STATION
- 26 PAYMENT STATION
- 27 SCALEHOUSE - 160 S.F.
- 28 BICYCLE PARKING (64 STALLS / 32 RACKS)
- 29 TRANSFORMER

- 30 TRUCK WASH
- 31 INFEEED CONVEYORS
- 32 C&D TIPPING
- 33 LOADOUT
- 34 E-WASTE
- 35 EMPLOYEE BREAK ROOM (1st FLOOR)
- 36 RAINWATER TANK
- 37 INFO SIGN
- 38 ROLLING GATE
- 39 MEETING ROOM 2B (3rd FLOOR)
- 40 SOLID WASTE TIPPING
- 41 MEETING ROOM 2A (3rd FLOOR)
- 42 ELEVATOR
- 43 BUYBACK SORTING
- 44 CONTRACTOR CURBSIDE TRUCKS

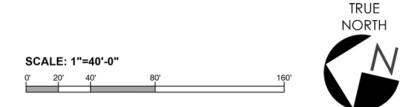
- 45 CANOPY ABOVE
- 46 MEETING ROOM 1 / VIEWING AREA (3rd FLOOR)
- 47 PUBLIC STORAGE DRIVEWAY
- 48 ACCESS TO OFFICE & PARTS (SECOND FLOOR)
- 49 SCALEHOUSE RESTROOM - 1170 S.F.
- 50 PEDESTRIAN ACCESS
- 51 EDUCATIONAL SIGNAGE
- 52 LOW 3' TALL FLOOD WALL MADE OF DECORATIVE MASONRY
- 53 SECURITY GATE
- 54 FIRE AND CITY ONLY LANE
- 55 FIRE KNOX BOX
- 56 AUTOMATIC GATE FOR FIRE

LEGEND

- AUXILIARY BUILDINGS
- ADMINISTRATION BUILDINGS
- MAINTENANCE BUILDINGS
- MRF BUILDING
- TRANSFER STATION BUILDING
- SCALES
- DROP-OFF AND BUY BACK AREAS
- CANOPIED AREAS
- CONCRETE SIDEWALK/PAVING
- PERVIOUS PAVING
- SITE & STREET PAVING
- ORNAMENTAL LANDSCAPE
- ENVIRONMENTAL LANDSCAPE/FEATURE

SITE SUMMARY

GROSS BUILDING AREAS:	
TRANSFER STATION:	45,500 S.F.
MATERIAL RECOVERY FACILITY:	35,000 S.F.
VEHICLE MAINTENANCE BUILDING:	14,000 S.F.
TRUCK WASH BUILDING:	1,900 S.F.
INFORMATION KIOSK:	120 S.F.
SCALE HOUSE:	160 S.F.
ADMINISTRATION BUILDING :	17,700 S.F.
TOTAL :	114,380 S.F.
UNENCLOSED GROSS FLOOR AREA:	
BIN REPAIR (CANOPIED):	3,500 S.F.
FREE DROP-OFF AREA (CANOPIED):	4,140 S.F.
BUY BACK AREA:	1,680 S.F.
TOTAL :	9,320 S.F.
TOTAL GROSS FLOOR AREA:	123,700 S.F.

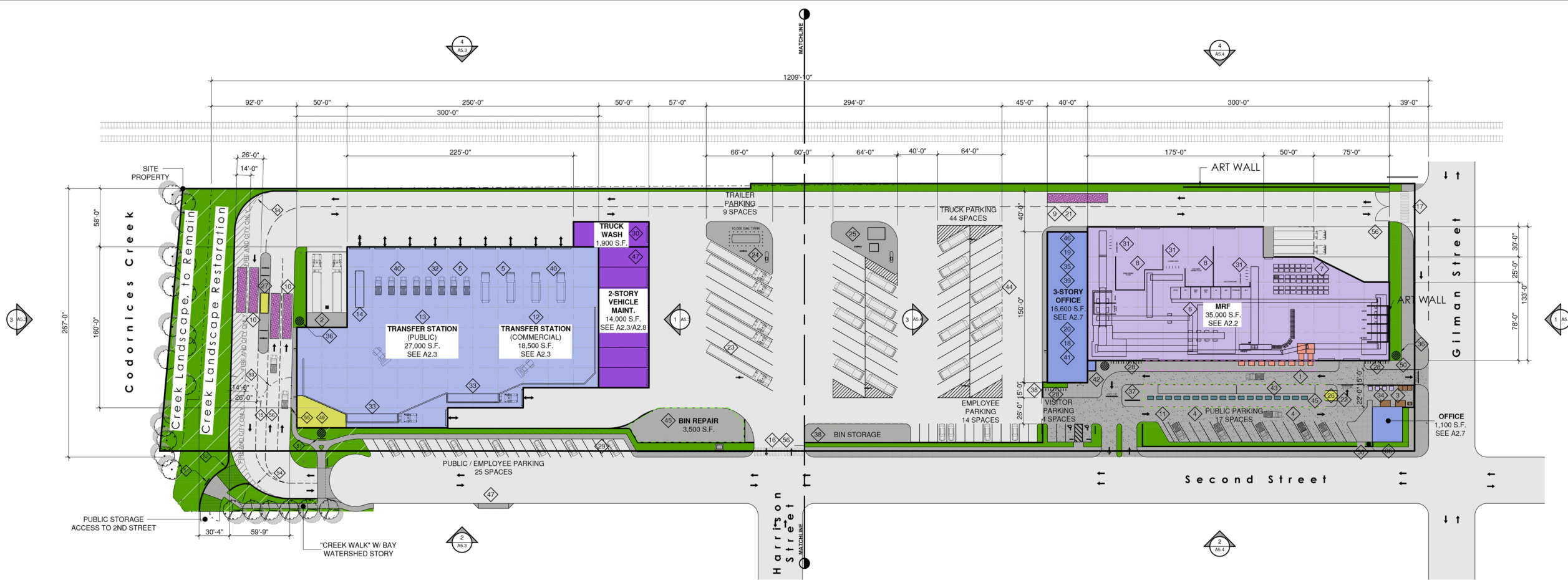


Source: Zero Waste Collaborative & City of Berkeley, July 2023.



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Exhibit 5
Site Plan



KEYNOTES

- 1 PUBLIC BUY BACK AREA
- 2 BULKY ITEM LOADOUT AREA
- 3 UNIVERSAL WASTE DROP-OFF
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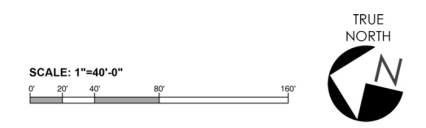
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Source: Zero Waste Collaborative & City of Berkeley, July 2023.



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Exhibit 5
Site Plan

ATTACHMENT 1



Solid Waste & Recycling Transfer Station

Feasibility Study (18-11171-C) Final Report

Prepared By:





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Executive Summary

Overview

This Solid Waste & Recycling Transfer Station Feasibility Study (Study) for the City of Berkeley provides a vision for a new green infrastructure to meet the City's zero waste goals, create new opportunities for community member engagement and collaboration, enhance operational efficiencies and model best practices in lower carbon emission operations. Through active collaboration and exhaustive community member and stakeholder engagement consisting of nine public meetings/workshops held between November 2018 to May 2019 (see Section 2 of the Report for more details), the City and its diverse community of stakeholders have developed a consensus around two conceptual facility designs (Concepts A and B) which are environmentally sound, safe and accessible for all users of the facility and compatible with the surrounding neighborhood.



Figure ES-1: Concept B - Public Education Center Entrance

This Feasibility Study evaluates the anticipated space needs for the City's various recycling and solid waste operations, site access and circulation, building structure requirements, and conceptual-level costs for such improvements along Second Street north of Gilman Street.

Proposed conceptual designs for the facility focused on a holistic approach to integrating all current recycling and solid waste activities, inclusive of the public buyback center and recyclables processing operation, City contracted curbside recycling vendors offices, Transfer Station, scale house, City administrative and employee offices, truck parking and related operations. **Figure ES-2** on the next page provides an aerial overview of existing solid waste and recycling activities along Second Street.



Figure ES-2: Aerial Overview of Existing Recycling and Solid Waste Operations on 2nd St.

The City of Berkeley Solid Waste and Recycling Transfer Station currently includes the following types of material handling, processing and/or transfer operations as depicted in the color graphic below:

Overview of the Transfer Station

- Self-haul transfer
- Refuse, organics, & construction debris transfer
- Motor oil, mattresses, tires, white/brown goods drop-off
- Reuse salvage
- City collection fleet & admin.
- City contractor for residential recycling fleet & admin.
- City contractor for recyclables processing, recycling & universal waste drop-off, buyback & administration



The Solid Waste and Recycling Transfer Station complex is managed by the Zero Waste Division (Division) of the City of Berkeley Public Works Department with its 90+ employees and 83 vehicles, including tractor/transfer trailers and the City's collection fleet. Operations also include the Public Works Department's Equipment Maintenance building that services the Division's collection and service vehicles, and the City's large vehicles, such as fire department,



and public works vehicles; heavy equipment/large rolling stock maintenance garage; truck wash rack; and fueling station (two underground diesel storage tanks requiring replacement by 2025).

The Division also directs and oversees a number of subcontractors for program and service delivery that operate out of the facility, including:

- Residential curbside recycling collection is operated by and currently contracted with the Ecology Center (EC); eight (8) collection trucks and more than twenty (>20) employees that collect residential recycling materials for properties with up to nine (9) residential units;
- MRF and buyback center is operated by and currently contracted with the Community Conservation Center (CCC); also processes and markets recyclable materials collected from the residential and commercial sectors with approximately 20+ employees; and
- Reuse salvage/collection is operated by and currently contracted with Urban Ore, having two (2) to three (3) employees, which operates a salvage and diversion program for reusable goods delivered to the floor of the Transfer Station that can be reused for their originally intended purpose or repurposed while in their originally manufactured form.

Summary of Two Proposed Concepts

The two proposed conceptual designs will transform the 7.45-acre site from an outdated and highly fragmented operation with significant traffic back-ups to a modern state-of-the-art Solid Waste and Recycling Transfer Station facility that will deliver quality service to the City's diverse community in an innovative and cost-effective manner. The future facility will showcase the City's commitment to global leadership in addressing climate change, advancing environmental justice, environmental stewardship, and protecting the environment.

As documented in the following report (see more details in Section 3.6 of the Report), both conceptual facility designs will incorporate a diverse array of sustainability features including but not limited to:

- Photovoltaic panels on roof structures and canopy structures
- Elevated wind turbines for the on-site production of power
- Provide future flexibility to incorporate new material handling practices
- Rainwater capture and reuse features
- Public kiosks with information on zero waste and sustainable living tips
- Creek walk (pathway) with educational kiosks and watershed art on Codornices Creek
- Community art with environmental themes
- Environmental education center and public tour program



Figure ES-3: Concept A - Public Buyback and Drop-off Center View from Gilman St. @ Second St.

The facility is being designed to be a net zero energy facility and is intended to achieve a Leadership in Energy and Environmental Design (LEED) certification.

As illustrated throughout this document and specifically in greater detail in Sections 3.3 and 3.4, the proposed facility improvements will include the following:

- Larger public buyback and drop-off center located in close proximity to Gilman Street @ Second Street
- New building and equipment for the dual stream recyclables processing area (known as a Materials Recovery Facility)
- New larger, fully enclosed transfer station building to ensure flexibility to accommodate the reduction of incoming refuse and increase in recyclable materials
- Larger scale house and entrance area for public customers and a separate scale entrance for larger city collection vehicles to eliminate current traffic back-ups and unsafe mixing of smaller public vehicles with larger commercial collection vehicles
- Community amenities including an environmental education center, community meeting room, public tour space, a creek walk area, and local artisan spaces
- New employee and administrative offices
- New vehicle maintenance facility and related operations

Preliminary concept plans, exterior elevations, and 3D design modeling were prepared by the Zero Waste Collaborative (ZWC) team to help visualize the proposed improvements in more detail.

Initial Project Research

Site & Facility Conditions Assessment

In February 2019, ZWC completed a Site Conditions Review and Assessment (see **Exhibit 4**) of all existing buildings and above ground infrastructure. In addition to an overall site and facility conditions review, the ZWC Team reviewed current operations. The operations review identified



potential long-term recommendations for improvements as well as making immediate improvements (over a two to three-year period) to enhance safety and efficiency.

A key element of the Assessment was the consideration of on-site traffic and access to the site including:

- The future traffic roundabout at Gilman Street and I-80 intersection.
- The queueing issues that extend down Second Street on peak usage days.
- Onsite and offsite safety and efficiency and the mixing of larger commercial trucks and public vehicles
- Assess potential improvements for public access.

The Assessment also identified potential planning and zoning issues and initiated the facility programming process.

Interstate 80 /Gilman Street Interchange (Gilman Interchange)

The planned roundabout at the east side of Interstate 80 (I-80) at Gilman Street (see <https://www.alamedactc.org/programs-projects/highway-improvement/i80gilman/>) will significantly improve traffic mobility at the intersection of Gilman Street and the Eastshore Highway. Eastshore Highway is a frontage road and an important exit path for traffic leaving the facility from Harrison Street; this traffic can turn right (northbound) or left (southbound) back to Gilman Street. From Gilman Street, traffic can turn left eastbound back to toward Berkeley or right for access to I-80. This intersection at Eastshore/Gilman Street poses delays as well as safety risks for crossing. Relief of congestion here will impact access to and from the site in a very positive manner. The proposed roundabout along with the planned signal at 4th Street will result in better traffic flow, safer turning, and less queueing. It can be assumed then that less queueing and fewer turning conflicts will result in less public user frustration and encourage return visits.

The Gilman Interchange is designed to accommodate all categories of California legal tractor-semitrailers: "Black" CA legal 65 FT trucks, "Green" STAA-56 FT trucks, and WB-67D double-bottom combination trucks.

The proposed improvements also include a two-way cycle track on Gilman Street and Bay Trail gap closure. As part of the City's Climate Action Plan, the Zero Waste Facility will encourage bicycle access.

The roundabout and related improvements are being implemented by the Alameda County Transportation Commission with a construction to begin in 2020 and the estimated completion will be prior to the start of construction of the Solid Waste and Recycling Transfer Station facility improvements.



Figure ES-4: I-80 / Gilman Street Roundabout Improvements

Zero Waste Goals

The current recycling and solid waste operations do not provide an environment for the optimal diversion and recycling of incoming materials, and on-site traffic flow. The focus of this Study has been to define new facility improvements that meet or exceed the following goals for the City of Berkeley.

State-of-the-Art Solid Waste and Recycling Transfer Station

- Maximize recovery and diversion of materials transported to the landfill.
- Facility that provides a maximum amount of space for the separation of materials for recovery.
- Eliminate double handling and minimize material movement onsite.

Maximize Recovery of Reusable and Recyclable Materials

- Provide a public buyback center that encourages use by both drive-in customers and walk-in customers.
- Create a new inviting environment for public drop-off that's easy to use and encourages more separation of recyclables and recoverables.
- Provide more technologically efficient processing systems that will maximize the recovery of high value paper (fiber) and containers.
- New diversion opportunities to improve recovery of materials from construction and demolition (C&D) waste and self-haul materials delivered to the facility.
- Overall, to develop a facility that encourages an ethos of material recovery commerce in the community.

Highest and Best Use of Recovered Materials

- Provide a facility that offers flexibility and can encourage the identification and separation of materials for other uses.

User-friendly for Customers, City Staff, and City Contractors

- The facility should be an attractive and welcoming hub for the citizens of Berkeley.
- Access should be a very positive experience.



Sensitive to Potential Neighborhood and Environmental Impacts

- Provide a facility that promotes sustainable resources (e.g. water conservation, recycled material in the development of the facility, etc.).
- Support greenhouse gas (GHG) emissions reduction targets per the City's goal of reducing greenhouse gas emissions by 80% by 2050 by examining the carbon neutrality of any renovation.
- Design for future electrification of the collection fleet
- Develop a solid waste facility that will optimally mitigate negative impacts typically associated with this type of facility (i.e., noise, dust, odor, traffic).
- Create a new inviting environment through architectural design for public drop-off that will be considered a community amenity.
- Provide spaces for educational opportunities that will enhance the community's effectiveness in a sustainable world.
- Design renewable energy strategies that will minimize the facility's carbon footprint.
- Bring the facility into compliance with future expected Bay Area Air Quality Management District (BAAQMD) rules (e.g., Regulation 13 Rule 2).

Environmental Health and Safety of the Workers/Visitors

- To replace a facility that may have challenges to the health and safety of the public and the staff with a new design that
 - Provides better separation of operations from public activities
 - Provides enclosed spaces which have better lighting and air quality.

Stakeholder & Public Engagement

Introduction

The City and the ZWC conducted an extensive outreach process to ensure that preliminary transfer station and recycling operation designs reflected the desires of the community. Nine public meetings were held, three at each stage of the process as detailed below.

Three "Listening Sessions" were held throughout the City in Fall 2018 (November 7th 1:30 p.m. - 3:30 p.m., November 28th 6 p.m. - 9 p.m., and December 1st 1 p.m. - 4 p.m.) to get early input from community members and stakeholders. The sessions were scheduled in different neighborhoods to be accessible to the public in different geographic areas of the City.

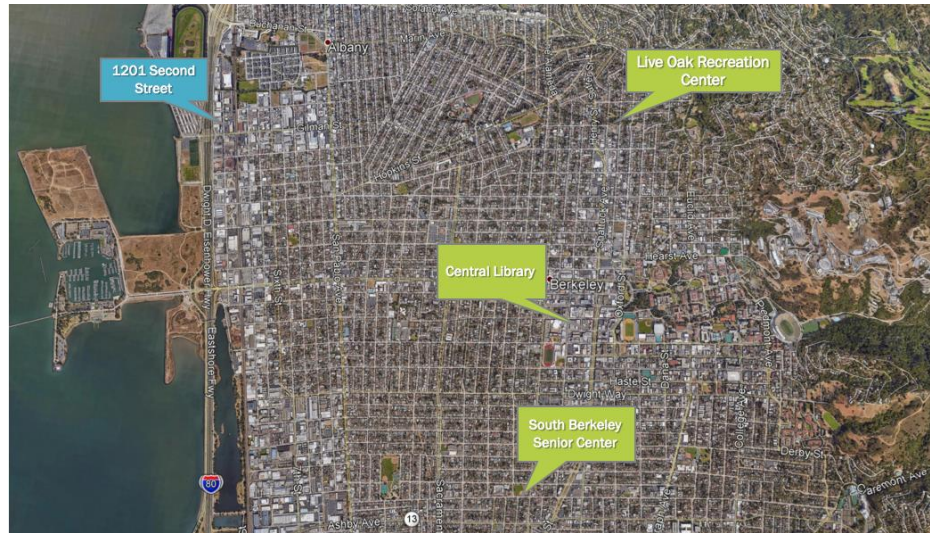


Figure ES-5: Map Showing the Location of the Transfer Station and Listening Session Meeting Locations

The purpose of these initial listening sessions was to present the current status and use of the existing Solid Waste and Recycling Transfer Station and request community member input to re-imagine the facilities needed to meet the City's Zero Waste goal.

Listening Session Summary

Key Take-Aways:

- Form follows policy; City policy drives what facility improvements are needed
- Highest and best use of recovered materials
- Reduce overall waste generation
- Facility needs to accommodate multiple user types

Desired Transfer Station Features

Participants in the Listening Sessions provided input into a list of desired program features as summarized in **Table ES-1** on the next page.



Table ES-1: List of Desired Program Features from Listening Session Participants

Buyback Center	Berkeley Recycling has the only buyback in Berkeley, Albany and Emeryville. Very important regional asset. Needs to accommodate both pedestrian and vehicle customers. Could be more user-friendly. Might want to consider a “bottle drop.”
Free Material Drop-off	Would like a configuration that is more “casual user friendly” similar to the El Cerrito Recycling Center. Expand materials types to include everything that can be marketed, including aseptic, flat glass, bicycle parts, electronics, corks, Styrofoam blocks. Potentially allow for licensed scavengers (similar to El Cerrito Recycling Center).
Reuse Exchange	As part of the drop-off or education center. A clean, dry place for free “put and take” (household goods, books, magazines).
Education Center	Classroom space, community meeting space, educational displays and a catwalk through the facility for tours.
Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.
Breakroom, locker room, showers	Possible to have two separate spaces for the workers? Might be desirable for them to be together and build trust. Need discussion with labor representatives.
Self-haul	Systems needs to enhance recovery. Most desirable is to have serial drop-off and require separation by material type (yard trimmings, lumber, scrap wood, fixtures, scrap metal, cardboard, furniture, household goods). Alternatively, could be picking line like Davis Street or Recology SF. Urban Ore scavenging function desirable. Could have Goodwill trailer as well and other reuse and repair vendors.
Recyclables Processing	Maintain dual stream processing. Co-located with buyback and drop-off. Need indoor storage for some materials.
Organics	Assumed to be primarily a transfer function. Residential food co-collected with yard trimmings transferred to compost facilities. Some interest in source-separated commercial organics to anaerobic digestion at EBMUD. Might require pre-processing. Some concern about co-digestion of food with sewage.
Trash	Assumed to be primarily a transfer function. Some interest in reserving space for future processing of mixed waste.
C&D	Assumed to be primarily a transfer function. Some interest in some C&D processing for highest and best use. Source-separation also desired. Keeping some load separate (such as asphalt shingles) can enhance recovery.
HHW and Universal Waste	Desirable to have fully functioning Household Hazardous Waste (HHW) facility (perhaps everything except paint). Paint is typically the largest category of material at HHW facilities. Keeping it separate and addressed at paint stores (through stewardship organizations) could reduce space needs. Could consolidate HHW and Universal Waste drop-off.
Other bulky items	Carpet and mattress recycling desired (through product stewardship organizations). [Mattress recycling is an existing program and carpet recycling is being implemented.]
Other desired program features	• Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space). • Maker area • Social services for vulnerable populations • Needle exchange • Supplemental Nutrition Assistance Program (SNAP) program applications • Food pantry • Landscaping • Sculpture garden • Compost demonstration



January 2019 Design Charrette Process

The Listening Sessions provided critical insights to the community members' needs. The ZWC team used these insights to prepare for the three-day Design Charrette held January 16-18, 2019 at the James Kenney Community Center. The goal for these three sessions was to fully flesh out at least two options for the City's new Solid Waste & Recycling Transfer Station with potential facility and equipment layouts.

The Design Charrette approach assists the project team in efficiently evaluating the current solid waste and recycling management system, identifying state-of-the-art new programs and facilities, and ensuring that the final recommendations and guiding principles for the project are truly a shared community vision.

Design Charrette Session 1

The purpose of the first session was to get community members' ideas for the current solid waste and recycling transfer station on to paper. During the first session, ZWC provided an overview of the current transfer station, a summary of the Listening Sessions, and draft layout concepts.

Participants then worked together on a team exercise. Using a site plan map of the transfer station, each team worked with building pieces to create different layouts for the solid waste and recycling transfer station.



Figure ES-6: Session 1 Team Exercise



Design Charrette Session 2

The second session of the Design Charrette analyzed the outcomes from the first session. ZWC synthesized the layouts created from the team exercise and created two layouts that were presented to the community members during the second session.

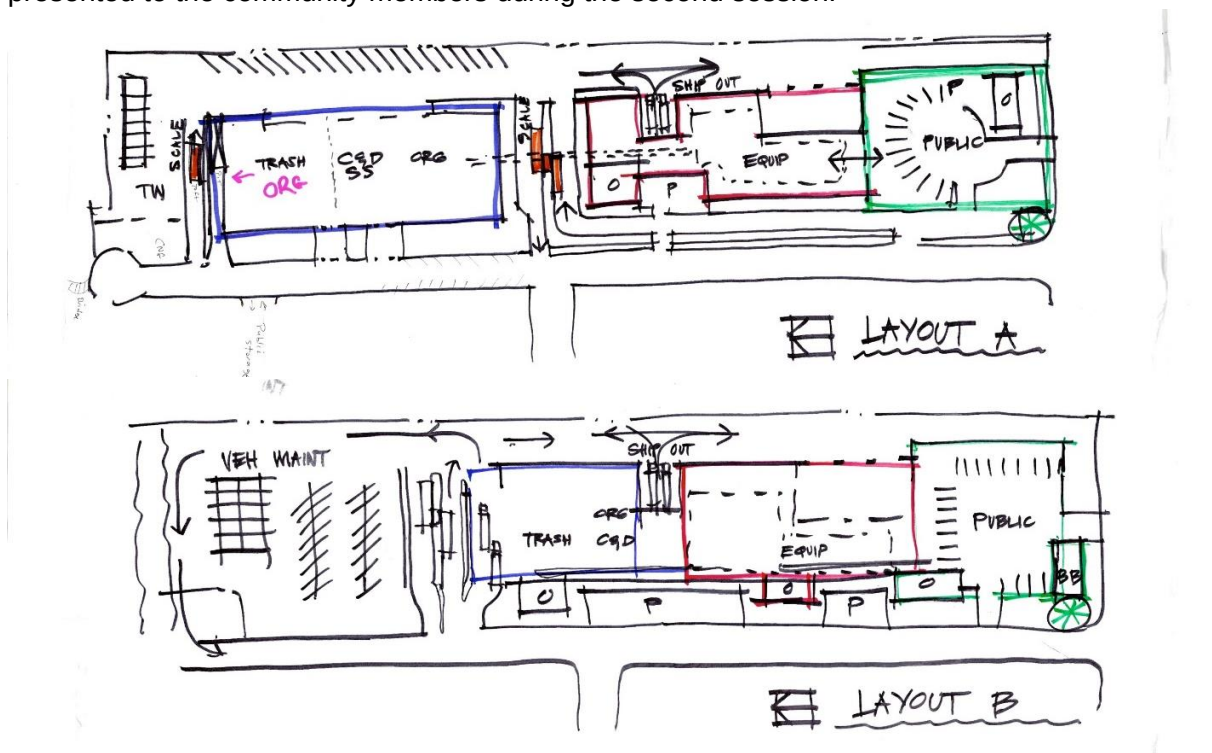


Figure ES-7: Draft Layouts from Session 1 Presented at Session 2

The two layouts depicted different configurations for traffic flow, vehicle parking, drop-off areas, and building functions.

- Layout A shows a two-building concept with the transfer station building separated from the recyclables processing area by a public scale. This layout includes a drop-off area in a circular pattern similar to the El Cerrito Recycling Center.
- Layout B shows the two buildings conjoined and the drop-off area reconfigured to include more areas for unloading.

Design Charrette Session 3

During the last session of the Design Charrette, participants provided feedback on the most promising layout options. Participants discussed:

- Advantages and disadvantages of separating the buildings and having them conjoined.
- Advantages and disadvantages of the circular pattern at the El Cerrito Recycling Center.
- Potential names for the future facility, including the “Berkeley Resource Recovery Center.”

During the March workshops, three concept plans were presented. These concept plans included a public drop-off area that included both the traditional drop-off and buyback materials (glass, metal, paper, and plastic) and the bulky items (carpet, mattresses, and salvaged items). The community members provided feedback that the drop-off area needed to be simplified and the bulky items should be handled in the transfer building.



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design over another, the resulting concept plans meet the needs and reflect the vision of the community members that gathered together to support the City as it moves forward to develop a state-of-the-art facility designed to help the City achieve its Zero Waste goal.

In addition to the public meetings, the Zero Waste Collaborative representatives met separately throughout the community engagement and conceptual design process with the City's current transfer station and recycling contractors:

- **Community Conservation Center** – operates the recycling center, including the drop-off, buyback, universal waste collection and recyclables processing facility
- **Ecology Center** – provides residential curbside collection services
- **Urban Ore** – conducts the salvaging operation from the self-haul area of the transfer station

Initial Site Programming

A critical aspect of the initial site programming was to document the existing space allocation (measured in square footage) for key operations/functions (e.g., transfer station, materials recovery facility, buyback center, etc.) and then establish a new baseline for what future space allocation should be given existing site constraints. **Table ES-2** on the following page details a summary of the space allocation with baseline (minimum) and optimal space assumptions shown with current space as applicable noted in parenthesis under baseline.



Table ES-2: Operational Space Analysis

<u>Operation/Function</u>	<u>Baseline</u>	<u>Optimal</u>
Transfer Station	41,000 sf (34,300)	45,000 sf
MRF	32,000 sf (28,600)	35,000 sf
Truck Wash	2,000 sf (2,100)	2,000 sf
Bin Repair	1,000 sf (6,400)	2,000 sf
City Administration City Staff Support Area	2,000 sf (1,500)	2,500 sf
Contractor 1 Administration Contractor Staff Support Areas	800 sf (792)	1,200 sf
Contractor 2 Administration Contractor Staff Support Areas	800 sf (918)	1,200 sf
Vehicle Maintenance and Parts Supply	7,000 sf (5,316)	8,000 sf
Office	1,500 sf	1,500 sf
Staff Support	1,500 sf (1,200)	1,500 sf
Public Education Center	800 sf (N/A)	1,000 sf
Community Room	1,000 sf (N/A)	1,000 sf
Artisan Space	1,000 sf (N/A)	1,000 sf
Scale house	200 sf	200 sf
Vehicles:		
Route Trucks parking spaces	44	48
Transfer Trailer Trucks parking spaces	9	11
Staff Parking spaces	40	50
Drop-off Parking	17	30
Visitor Parking	8	15



Detailed Concept Development

Introduction

This Feasibility Study established as a goal, the development of two viable facility design concepts for further consideration in the California Environmental Quality Act (CEQA) review process. These two facility design concepts were developed from valuable input gathered from a proactive and lengthy public engagement process with community members and stakeholders as well as programming input from City staff for current and future requirements. From the design process, a vetting cycle eliminated more than dozen iterations that were not viable from the standpoint of inefficient circulation, limited capacity, and/or significant cost impacts.

A key goal in having two concepts was to demonstrate an alternate scenario for discussion and input but also assure that both concepts were viable for future implementation. In fact, the two options have much in common and both received support from key stakeholders in the process.

Concept A & Concept B

Design Layout Characteristics in Common

- Self-haul queuing capacity at the north end of Second Street based on repositioning of the cul-de-sac.
- Public buyback and drop-off center close to the corner of Gilman Street and Second Street to facilitate the heavy use from pedestrian walk-in customers.
- Primary truck circulation is at the east side of the facility facing the railroad right-of-way which minimizes any mixing with public self-haul customers entering from the northwest corner of the site. The truck scale will be RFID compatible so collection vehicles can avoid having to weigh out using the public scale.
- Provide a remote RFID scale to separate the collection trucks from the public vehicle circulation.
- Each concept also has the same public amenities and sustainability features.

Each Concept was developed with preliminary level plans, elevations, and sections (see **Exhibits 3-26**). **Sections 3.3 – 3.6** provide a detailed description of each design concept.

Concept A

The key difference between Concept A and Concept B, is that it provides a singular large structure that consolidates the functions of the MRF, transfer station, and vehicle maintenance facility as depicted in **Figure ES-9** and the site plan (see **Figure ES-10**) on the following page.

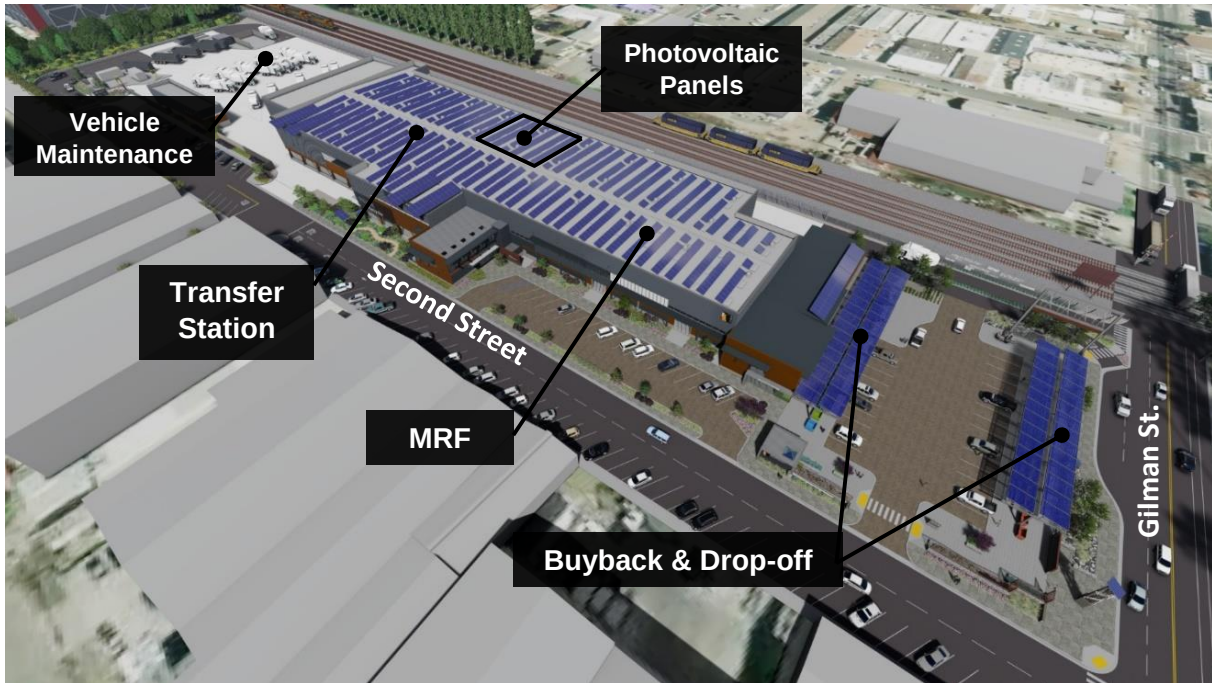


Figure ES-9: Concept A - Rendering Aerial View

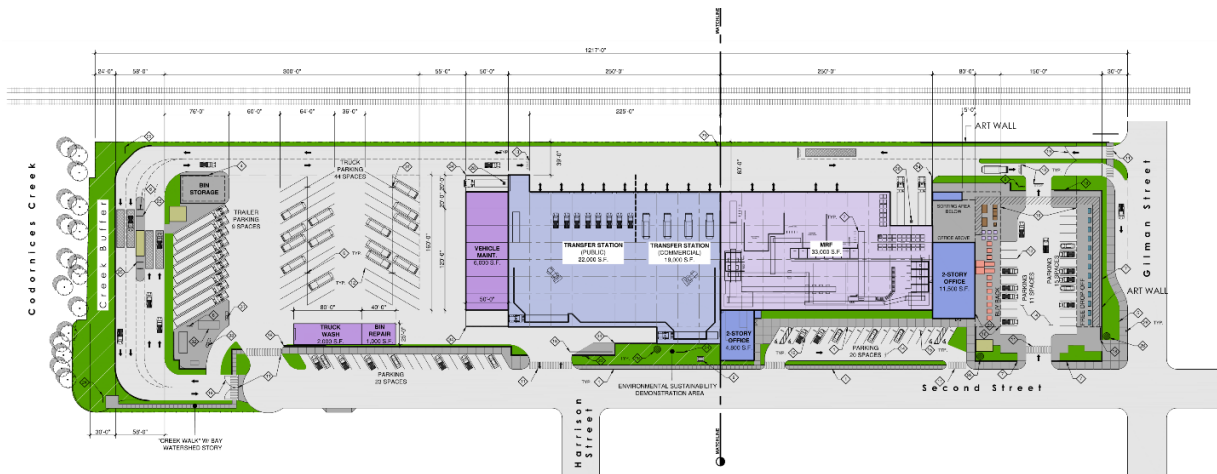


Figure ES-10: Concept A - Site Plan

In comparing the square footage of the two concepts, there are some differences as shown in the **Table ES-3** on the next page. Overall, the total building square footage in Concept A is about 8% smaller with a smaller transfer station and Materials Recovery Facility (MRF), but more square footage allocated to education and community space. ZWC and City staff are confident both options provided sufficient space for the transfer station and MRF. The current MRF square footage is approximately 28,620 and the Transfer Station is 34,700 (inclusive of the outdoor tipping area for C&D materials).



Table ES-3: Square Footage (sf) Comparison Between Concept A & B

<u>Operation/Function</u>	<u>Concept A</u>	<u>Concept B</u>
Transfer Station	41,000 sf	46,000 sf
City Administration & Staff Support	4,800 sf	8,000 sf
MRF	33,000 sf	35,000 sf
Education Center/Community	700 sf / 1,400 sf	500 sf / 800 sf
Artist Studio	1,100 sf	840 sf
Information Kiosk	280 sf	120 sf
Cashier	760 sf	960 sf
Contractor 1 Administration & Staff Support	2,500 sf	2,300 sf
Contractor 2 Administration & Staff Support	2,500 sf	2,300 sf
Vehicle Maintenance	6,000 sf	7,000 sf
Vehicle Maintenance Admin & Staff Support	3,300 sf	1,100 sf
Truck Wash	2,000 sf	1,900 sf
Bin Repair	1,000 sf	2,000 sf *
Other **	270 sf	
Total Building Area	100,300 sf	108,000 sf
* Canopy-covered		
** Scale house, scale support		

Concept B

Concept B presents a two-building approach in contrast to Concept A. This site layout separates the Transfer Building and MRF with the truck maintenance and truck parking area in the center of the site. The MRF is situated where the existing recycling building is today. However, the primary distinction between old and new is that the truck access has been moved from the west side to the east side. **Figure ES-11** on the next page provides an aerial view of Concept B.

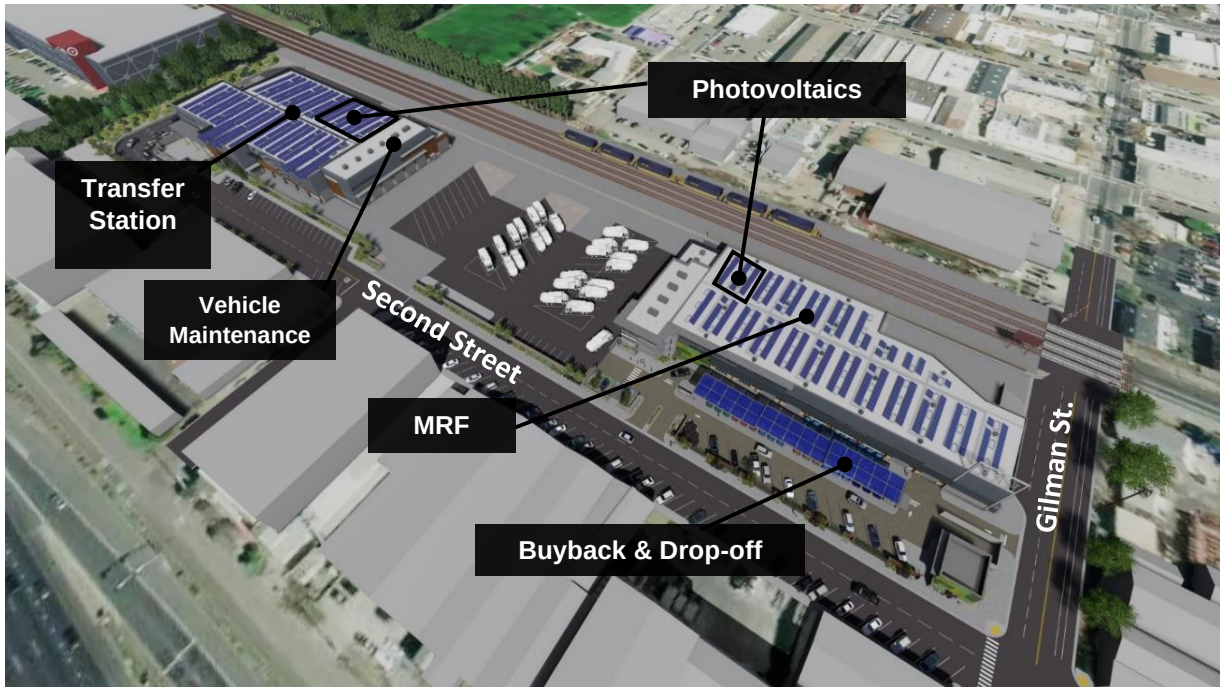


Figure ES-11: Concept B - Rendering Aerial View

Codornices Creek

The north boundary of the site is adjacent to the Codornices Creek which currently is an unused segment south of the railroad easement (no contiguous trail connection at this date). As part of a natural environment restoration strategy, the Codornices Creek will be provided with a minimum 30 ft. buffer that will be sloped at 5% to a berm wall (north curb line of public driveway) and planted with native grasses and shrubs consistent with the Creek. Future civil engineering, as a selected design is developed, will take into consideration the flooding potential along the Creek and provide mitigating measures at that time. Both Concepts A and B provide a northerly berm wall to redirect occasional creek surges and prevent flooding in this area. It should be noted Concept A has very limited structures at the north end of the site offering alternate access to the facility if the Creek experiences minor flooding at the scale entry and with the 100 ft. of the structure. Although limited, the remote scale could provide emergency access and use of the facility.

Sharing the main public entry will be a pedestrian access path that will have a low wall separating the walkway from the vehicle lane. The paving would be decomposed granite with a solidifier to create a pervious but accessible "trail" to a small respite area that would feature an informational podium display on Bay Area watershed and a dedication by Friends of Five Creeks. The plantings here would feature native riparian species. The buffer would be modestly sloped up away from the creek flowline the integration of a berm for flow control. An opportunity also exists for placement of watershed focused art features in this area.



Architectural Design

The overall architectural objective is to suggest contextually sensitive and visually attractive structures. The intent will be to have the design participate in the neighborhood themes but also stand out and be memorable for its unique purpose.

The use of gray metal panel cladding reflects the visual cues from neighboring buildings and stays within the boundaries of an eclectic neighborhood with an old industrial past. An alternate shade of gray as well as a bold “dark red cedar” accent color will be used to highlight different functions of the structures. Structure is expressed as an accent in specific areas (i.e. bracing, canopy supports, or the expression of the Photovoltaic system) by extending the panel system past the building wall. See **Figure ES-12** below for an architectural rendering.



Figure ES-12: Concept B - Architectural Rendering

City of Berkeley Climate Action Plan

Central to the project's development goals will be how the new facility can contribute to the City's 2009 Climate Action Plan which targets a reduction in greenhouse gas (GHG) emissions, specifically a 33% reduction from 2000 GHG levels. Programming strategies for the new facility which will be central to that contribution include:

Waste Reduction & Recycling Features

With landfills as a GHG generator, reducing the volume of material that is transported to the landfill along with the associated vehicle emissions is fundamental to the purpose of this facility and its ability to reduce that volume. Key programming elements which contribute to that reduction are as follows:

- Enhanced options for customers to separate materials at drop-off.
- Larger Transfer Station floor area for separation of tipped bulky and organic materials and enhanced recovery.
- Improved recovery volume from improved MRF processing equipment technology.
- Improved quality of recovered materials from new MRF equipment technology.



- Enhanced public education re: waste reduction, reuse, recycling, and composting via onsite information kiosks and an environmental education center.

Community Outreach & Empowerment Features

The purpose and function of the facility (recycling and reuse of materials) offers special opportunities to engage the community with environmental education. This facility will have:

- An Environmental Education Center to present the precepts of GHG emissions, climate change and environmental stewardship. In addition to educational displays, an actual MRF viewing experience will be available.
- A Community and Artisan space for learning opportunities that explore common sense activities for less waste and creative reuse.
- Provide an attractive environment for community recycling events.

Land Use

Creek restoration is a critical component of the overall enhancements to Bay watershed environmental quality. A 30 ft. buffer zone will be dedicated. This zone will be planted with native species appropriate to a Bay Area riparian habitat. The buffer zone will be modestly sloped toward the natural flowline of the creek to encourage natural drainage to the creek-bed and away from the site proper. The low retaining wall transition to the entry road at the south end of this berm is proposed to be rubble masonry made from repurposed concrete slab.

LEED

The Zero Waste Collaborative team reviewed each of the Site Concepts A & B for environmental performance with respect to the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) design, construction and operation framework. It should be noted that LEED, "the most widely used green building rating system in the world" provides an effective benchmark toward a design fulfilling the City's Climate Action Plan and Net Zero Energy goals. This initial evaluation utilized the LEED v4.1 for BD+C New Construction and Major Renovation Checklist (see **Exhibit 28**). This checklist is a recognized guide and first step in establishing a project design's sustainability and capability in reducing GHG emissions. The checklist provides three outcomes for a conceptual level review:

- **Yes**, for achievable active or passive responses in the design
- **Maybe**, for potential feasibility but only established during final design and engineering (and affirmation of commitment by the Owner)
- **No**, not considered feasible usually due to the nature of the site and/or use. Some examples are indicated below.

The review of both facility concepts determined that a LEED Gold certification was achievable as delineated by City initiatives and ordinances. A strong commitment to renewable energy, water conservation as well as innovation will serve as the core basis for gaining this level of certification.



It should be noted that the higher Platinum level was problematic due to some key credits that are not feasible due to the location of the site and use. As an example, the first credit in the “Location and Transportation” credit section is “LEED for Neighborhood Development Location” providing 16 potential credits. This category is aligned with new planned mixed-use community developments; the Berkeley Solid Waste and Recycling Transfer Station site would not be a candidate for achieving any of these credits. The “Access to Quality Transit” (5 potential Credits) is linked to local neighborhood transit; not the Amtrak line with station nearby which provide broader Bay Area access.

Programming Assumptions

The ZWC team reviewed and completed more than a dozen concept plans to try and address future project goals and community input. The bullet points below summarize some of the iterations and design concepts considered.

- In order to create larger tipping floor areas for site operations, the design team considered an additional level for vehicle parking and/or operations. However long ramps and turn constraints posed some significant challenges to this approach. Also, any uses on the upper level posed large load capacity requirements which in turn required columns at the lower level. The columns restrict operations and vehicle maneuvering. These factors in addition to the significant cost ramifications excluded this approach from further consideration.
- The vehicle maintenance was considered for placement off-site since it placed a significant impact on space needs on the site’s capability to support additional MRF and Transfer Station capacity. After considering very limited options on handling this activity at another location, it was reintroduced to the program.
- Some staff parking will be utilized along Second Street as it is today at the north portion of the street.
- Initial site concept iterations considered reuse of the existing outdoor loadout tunnel. However, this location severely compromised the most viable layouts. Retaining the existing loadout tunnel was eliminated.
- Floor level loadouts were chosen considering the volume of loadout that is typically accommodated with a “lift-and-load” operation where the wheel bucket loader can drop material into a tractor trailer similar to the loading of a dump truck. The push wall is configured with sloped steel backboard that directs material into the trailer and minimizes spillage around the trailer. Using this type of loadout in lieu of a 16 ft. deep tunnel eliminated excessive ramp conditions which consume valuable site area.
- A pedestrian bridge was suggested in public meetings which would provide a connection over the Codornices Creek from Second Street to the Target store property to the north. The City determined that this proposal extended beyond the purview of this study and was not included.
- Building foundations and below ground detention as required will be feasible with the site soil conditions and water table. A geotechnical investigation will have to be performed to confirm the viability of subsurface construction.
- On-site processing of organics was not considered due to space requirements for typical equipment processing systems. Also, odor treatment could be problematic



considering the site's context in the neighborhood and adjoining uses, wind direction, etc.

- The Facility Designs A & B as presented in this document conform to the City's zoning requirements and would be acceptable in concept to the City Planning review process as a significant improvement to existing conditions. Final approvals would be contingent on specific Conditions of Approval, potential variances, etc.

Environmental Considerations

In redeveloping the Solid Waste & Recycling Transfer Station, the City will want to mitigate any negative environmental impacts associated with the project. These can include:

- Traffic – Second and Gilman streets is a busy intersection and vehicles entering and exiting the drop-off, recycling and buyback and transfer station can impact this intersection and the surrounding side streets.
- Water quality – the facility is located next to Codornices Creek and activities at the facility could impact this fragile eco-system.
- Noise and air quality – the facility has neighbors, including Gabe Catalfo Fields, Harrison Park and the Berkeley Skate Park. These neighbors can be considered "sensitive receptors" and are potentially impacted by noise, odor and particulates that can be emitted through activities at the site.

The new design will address these potential impacts and the redeveloped facility should have potentially fewer impacts than the current facility.

The California Environmental Quality Act (CEQA) is a California statute that requires local agencies to identify any significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

The purpose of CEQA is to: disclose to the public the significant environmental effects of a proposed discretionary project, through the preparation of an Initial Study (IS), Negative Declaration (ND), or Environmental Impact Report (EIR).

- An initial study is a preliminary analysis conducted by the lead agency to determine if a project may have a significant effect on the environment. The initial study also aids in determining what type of environmental document to prepare.
- A Negative Declaration is a document that states upon completion of an initial study, that there is no substantial evidence that the project may have a significant effect on the environment.
- An Environmental Impact Report (EIR) is an informational document which provides public agencies and the general public with detailed information about the effect that a proposed project is likely to have on the environment. The EIR also lists the ways in which these environmental effects might be minimized and whether there are any alternatives to such a project.



CEQA prescribes specific timeframes for noticing the public and the state and regional agencies of the release of the environmental documentation.

City staff determined that it would be appropriate to wait to initiate the environmental review process once this feasibility study was complete and the City Council has authorized City staff to move forward to the CEQA phase of the project.

Development of Cost Analysis Framework

Scope of Future Cost Analysis/Estimate

Based on the two concepts developed and presented in this report, a future cost analysis should be in conformance with Class 4 estimate guidelines as defined by the Association for the Advancement of Cost Engineering (AACE). The ZWC Design Team developed plans, sections, and elevations with dimensions and keynote information which can be used in the future to develop a preliminary cost estimate.

- A cost analysis should include a base cost for site and building improvements to incorporate features associated with LEED, project sustainability, and net zero energy. The Project Cost Analysis should include the following components:
- Site Improvements
 - Contractor construction mobilization
 - Existing site conditions and demolition
 - Utilities relocation and undergrounding
 - Grading and paving
- Building Improvements
 - Scale house and scales
 - Transfer Station
 - Material Recovery Facility (MRF)
 - Administration office
 - Vehicle Maintenance
 - Ancillary support facilities
- Facility Equipment
 - MRF sorting and processing
- Facility and Energy Sustainability
 - Providing infrastructure for electrification of collection fleet
 - Photovoltaic panels
 - Rainwater harvest tanks
 - Wind turbines
 - Pervious paving
 - Additional sustainability improvements to be determined to meet net zero energy standard and LEED certification



- Contractors' indirect costs (overhead and profit)
- Design Contingency design cost per the AACE International Design Practices
- Contraction Planning permits and construction inspection/compliance

Project Permitting Costs

ZWC has been advised by Department of Public Works that the following costs have been included in the ongoing Rate Study in development with HF&H, Inc. and projected Zero Waste Division budgets:

- Solid Waste & Recycling Feasibility Study - \$500,000 (FY2019/2020)
- California Environmental Quality Act (CEQA) study - \$5,000,000 (FY2020 through FY2025)
- Geotechnical site investigation - \$1,000,000 (note, to be conducted in conjunction with the separate CEQA process through FY2021/2022)
- Final Design, and Plans & Specifications engineering - \$3,000,000 (FY2026/2027)

Potential Financial Model

A financial model should be developed to identify the source of funds (revenues) and associated cash flow needs to ensure the Zero Waste Enterprise Fund can appropriately pay for the project cost estimates. There are four potential sources of revenues for the City to pay for project permitting, design and construction costs as follows:

- Tipping fees charged to self-haul (public) customers using the Berkeley Transfer Station
- Collection rates charged to residential and commercial customers in the City of Berkeley
- Zero Waste Fund Balance - capital reserve
- Debt financing through issuance of solid waste revenue bonds

Collection rates revenues should include sufficient funds in the future projected collection rate model specifically for the replacement of the Berkeley Solid Waste & Recycling Transfer Station. These collection rate revenues should cover the cost of this Feasibility Study, and future work related to the CEQA costs, needed site geotechnical investigation, and facility design/engineering.

Tipping fee revenue scenarios should reflect tipping fee adjustments over the next five to seven years for public customer rates and consideration for internal processing and disposal rates for city collected tonnages (i.e., refuse, and organics).

The amount of debt financing through issuance of revenue bonds should reflect the remaining project funding required after considering tip fee revenues, collection rate revenues (earmarked for this project), and Zero Waste Fund balance transfers.



1.0 Background

1.1. Introduction

This Solid Waste & Recycling Transfer Station Feasibility (Study) Study for the City of Berkeley provides a vision for a new green infrastructure to meet zero waste goals, create new opportunities for community engagement and collaboration, enhance operational efficiencies and model best practices in lower carbon emission operations. Through active collaboration and exhaustive community engagement, the City and its diverse community of stakeholders have developed a consensus around two conceptual facility designs which are environmentally sound, safe and accessible for all users of the facility, and compatible with the surrounding neighborhood.

The two proposed conceptual designs will transform the 7.45-acre site from an outdated and highly fragmented operation with significant traffic back-ups to a modern state-of-the-art Solid Waste and Recycling Transfer Station facility designed to meet the current and future service needs of the City's diverse community. The future facility will showcase the City's commitment to global leadership in addressing climate change, advancing environmental justice, and demonstrating environmental stewardship.

As documented in the following report, both conceptual facility designs will incorporate a diverse array of sustainability features including but not limited to:

- Photovoltaic panels on roof structures and canopy structures
- Elevated wind turbines for the on-site production of power
- Provide sufficient flexibility to incorporate future handling changes for incoming materials
- Rainwater capture and reuse features
- Public kiosks with information on zero waste and sustainable living tips
- Creek walk (pathway) with educational kiosks and watershed art on Codornices Creek
- Community art with environmental themes
- Environmental education center and public tour program

The facility is being designed to be a net zero energy facility and is intended to achieve a Leadership in Energy and Environmental Design (LEED) certification.

These conceptual designs for the facility are focused on a holistic approach to integrating all current recycling and solid waste activities on Second Street off Gilman Street, inclusive of the public buyback center and recyclables processing operation, City's contracted curbside recycling vendors' offices, Transfer Station, scale house, City administrative and employee offices, truck parking and related operations. Please see **Figure 1-1** on the next page for an aerial overview.

As illustrated throughout this document and specifically in greater detail in **Sections 3.3 and 3.4**, the proposed facility improvements will include the following:

- Larger public buyback and drop-off center
- New building and equipment for the dual stream recyclables processing area (known as a Materials Recovery Facility)
- New larger, fully enclosed transfer station building to ensure flexibility to accommodate the reduction of incoming refuse and increase in recyclable materials



- Larger scale house and entrance area for public customers and a separate scale entrance for larger city collection vehicles
- Community amenities including an environmental education center, community meeting room, public tour space, a creek walk area, and local artisan spaces
- New employee and administrative offices
- New vehicle maintenance facility and related operations

Preliminary concept plans, exterior elevations, and 3D design modeling were prepared by the Zero Waste Collaborative (ZWC) to help visualize the proposed improvements in more detail.

1.1.1. Study Purpose

This Feasibility Study evaluates the anticipated space needs for the city's various recycling and solid waste operations, site access and circulation, building structure requirements, and conceptual-level costs for such improvements along Second Street near Gilman Street.

1.1.2. Existing Site

The project site is approximately 7.45 acres, located on Gilman Street and Second Street with Union Pacific/Amtrak rail right-of-way on the east side. With Gilman Street as an arterial feeder street to the community, the facility has a prominent location for traffic traveling between I-80/I-580 and northwest area of Berkeley. This will be an important basis of design criterion for site access as well as community visibility. A key design factor is providing positive visibility to establish and maintain the new facility's success and compatibility with the surrounding neighborhood.



Figure 1-1: 2nd Street Aerial Photograph of Existing Recycling and Solid Waste Operations

Interstate 80 /Gilman Street Interchange (Gilman Interchange)

The CalTrans planned roundabout at the east side of Interstate 80 (I-80) at Gilman Street (see <https://www.alamedactc.org/programs-projects/highway-improvement/i80gilman/>) is designed to improve traffic mobility at the intersection of Gilman Street and the Eastshore Highway. Eastshore Highway is a frontage road and an important exit path for traffic leaving the facility from Harrison



Street; this traffic can turn right (northbound) or left (southbound) back to Gilman Street. From Gilman Street, traffic can turn left eastbound back to toward Berkeley or right for access to I-80. This intersection at Eastshore/Gilman Street poses delays as well as safety risks for crossing. Relief of congestion here will impact access to and from the site in a positive manner. The proposed roundabout along with the planned signal at 4th Street will result in better traffic flow, safer turning, and less queuing. It can be assumed then that less queuing and fewer turning conflicts will result in less public user frustration with long queue lines and encourage return visits.

The Gilman Street/I-80 interchange is designed to accommodate all categories of California legal tractor-semitrailers: "Black" CA legal 65 FT trucks, "Green" STAA-56 FT trucks, and WB-67D double-bottom combination trucks.

The proposed improvements also include a two-way cycle track on Gilman Street and Bay Trail gap closure. As part of the City's 2009 Climate Action Plan, the Zero Waste Facility will encourage bicycle access.

The roundabout and related improvements are being implemented by the Alameda County Transportation Commission with a construction to begin in 2020 and the estimated completion will be prior to the start of construction of the new Solid waste and Recycling Transfer Station facility improvements.



Figure 1-2: I-80 / Gilman Street Roundabout Improvements

1.2. Site & Facility Conditions Assessment

In February 2019, ZWC completed a Site Conditions Review and Assessment (see **Exhibit 1**) of all existing buildings and above ground infrastructure. In addition to an overall site and facility conditions review, the ZWC Team reviewed current operations. The operations review identified potential long-term recommendations for improvements as well as making short-term improvements (over a two to three-year period) to enhance user experience and efficiency.

A key element of the Assessment was the consideration of on-site traffic and access to the site including:

- The future traffic roundabout at Gilman Street and I-80 intersection.
- The queueing issues that extend down Second Street on peak usage days.
- Onsite and offsite safety and efficiency and the mixing of larger commercial trucks and public vehicles
- Assess potential improvements for public access.

The Assessment also identified potential planning and zoning issues and initiated the facility programming process.



1.3. Zero Waste Goals

The current recycling and solid waste operations do not provide an environment for the optimal diversion and recycling of incoming materials, and on-site traffic flow. The focus of this Study has been to define new facility improvements that meet or exceed the following goals for the City of Berkeley.

1.3.1. State-of-the-Art Solid Waste and Recycling Transfer Station

- Maximize recovery and diversion of materials that would be otherwise sent to the landfill.
- Facility that provides a maximum amount of space for the separation of materials for recovery.
- Eliminate double handling and minimize material movement onsite.

1.3.2. Maximize Recovery of Reusable and Recyclable Materials

- Provide a public buyback center that encourages use by both drive-in customers and walk-in customers.
- Create a new inviting environment for public drop-off that's easy to use and encourages more separation of recyclables and recoverables.
- Provide an efficient processing system that will maximize the recovery of high value paper (fiber) and containers.
- New diversion opportunities to improve recovery of materials from construction and demolition (C&D) waste and self-haul materials delivered to the facility.
- Overall, to develop a facility that encourages an ethos of material recovery commerce in the community.

1.3.3. Highest and Best Use of Recovered Materials

- Provide a facility that offers flexibility and can encourage the identification and separation of materials for other uses.

1.3.4. User-friendly for Customers, City Staff, and City Contractors

- The facility should be an attractive and welcoming hub for the citizens of Berkeley.
- Access should be a very positive experience.

1.3.5. Sensitive to Potential Neighborhood and Environmental Impacts

- Provide a facility that promotes sustainable resources (e.g. water conservation, recycled material in the development of the facility, etc.).
- Support greenhouse gas (GHG) emissions reduction targets per the City's goal of reducing greenhouse gas emissions by 80% by 2050 by examining the carbon neutrality of any renovation.
- Develop a solid waste and recycling management facility that will optimally mitigate negative impacts typically associated with this type of facility (i.e., noise, dust, odor, traffic).
- Create a new inviting environment through architectural design for public drop-off that will be considered a community amenity.
- Provide spaces for educational opportunities that will enhance and expand the community's effectiveness in a sustainable world.
- Design renewable energy strategies that will minimize the facility's carbon footprint.



- Bring the facility into compliance with future expected Bay Area Air Quality Management District (BAAQMD) rules (e.g., Regulation 13 Rule 2).

1.3.6. Environmental Health and Safety of the Workers/Visitors

- To replace a facility that may have challenges to the health and safety of the public and the staff with a new design that
 - Provides better separation of operations from public activities
 - Provides enclosed spaces which have better lighting and air quality.

2.0 Stakeholder & Public Engagement

2.1. Introduction

The City and the Zero Waste Collaborative (ZWC) conducted an extensive outreach process to ensure that preliminary transfer station and recycling operation designs reflected the desires of the community. Nine public meetings were held, three at each stage of the process as detailed below.

Fall 2018 Listening Sessions

- November 7th 1:30 p.m. - 3:30 p.m.
Berkeley Central Library, 3rd Floor Community Room, 2090 Kittredge Street
- November 28th 6 p.m. - 9 p.m.
South Berkeley Senior Center, 2939 Ellis Street
- December 1st 1 p.m. - 4 p.m.
Live Oak Community Center, 301 Shattuck Avenue

January 2019 Design Charrette Process

All sessions held at: James Kenney Community Center, 1720 8th Street

- Session 1: Ideas to paper
January 16th 6:00 p.m. - 8:00 p.m.
- Session 2: Analyze first night's outcomes
January 17th 6:00 p.m. - 8:00 p.m.
- Session 3: Recap
January 18th 10:00 a.m. - 12:00 p.m.

Spring 2019 Workshops

- March 14th 6:00 p.m. - 8:00 p.m.
James Kenney Community Center, 1720 8th Street
- March 15th 2:00 p.m. - 4:00 p.m.
North Branch Public Library, 1170 The Alameda
- May 22nd 5:00 p.m. - 7:00 p.m.
Berkeley Public Library - West Branch, 1125 University Avenue



2.2. Fall Listening Sessions

Three “Listening Sessions” were held throughout the City in Fall 2018 to get early input from community members and stakeholders. The sessions were scheduled in different neighborhoods to be accessible to the public in different geographic areas of the City.

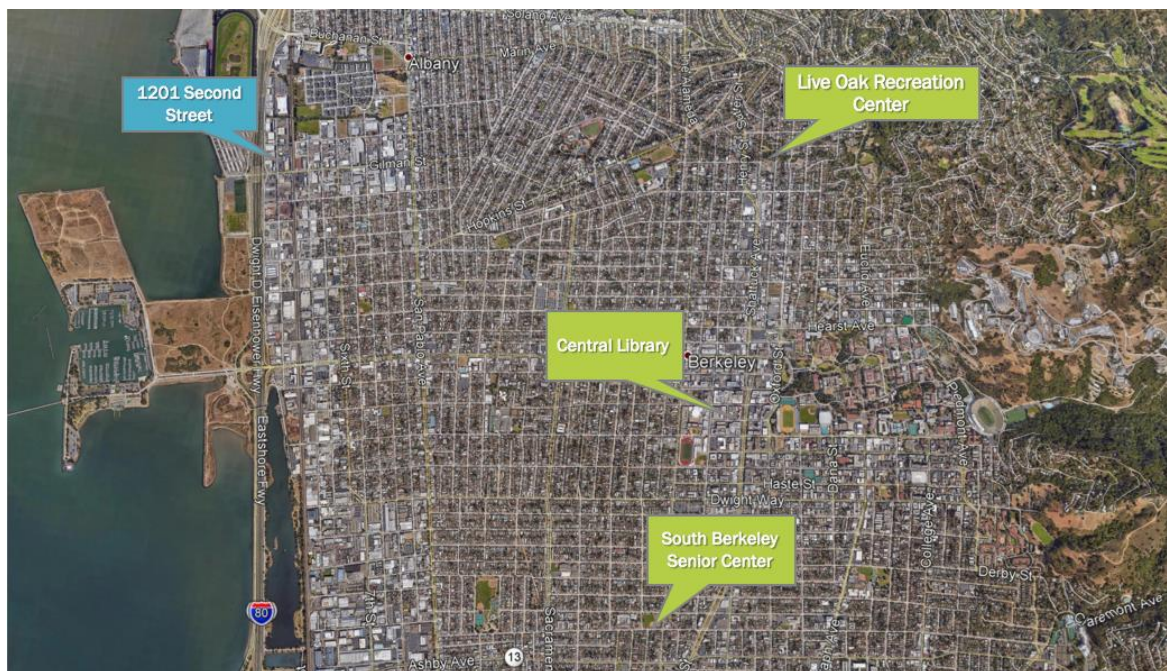


Figure 2-1: Map Showing the Location of the Transfer Station and Listening Session Meeting Locations

The purpose of these initial listening sessions was to present the current status and use of the existing Solid Waste and Recycling Transfer Station and request community member input to re-imagine the facilities needed to meet the City’s Zero Waste goal.

In addition to the public meetings, the Zero Waste Collaborative representatives met separately throughout the community engagement and conceptual design process with the City’s currently contracted recycling services providers:

- **Community Conservation Center (CCC)** – operates the recycling center, including the drop-off, buyback, universal waste collection and recyclables processing facility
- **Ecology Center (EC)**– provides residential curbside collection services
- **Urban Ore** – conducts the salvaging operation from the self-haul area of the transfer station

2.2.1. Listening Session Summary

Key Take-Aways:

- Form follows policy; City policy drives what facility improvements are needed
- Highest and best use of recovered materials
- Reduce overall waste generation



- Facility needs to accommodate multiple user types

Information Needs:

- Tonnage by facility user types (City fleet, City contractors, self-haul at transfer station, drop-off, buyback, Berkeley self-haul vs. other, drop-off, buyback, etc.)
- Self-haul composition (contractor vs. “mom and pop”)
- New policies and programs (that affect facility design):
 - Food ware and litter reduction ordinance (could require more compost capacity)
 - Enforcement of mandatory recycling and composting (will decrease refuse, increase recycling and composting)
 - Deconstruction and source-separated C&D recycling ordinance (will increase need for source-separation at site, could decrease overall C&D tonnage – may not need to go through transfer station site)
 - Flow control
 - Neighborhood scale composting at schools and community gardens (will reduce organics tonnage)

2.2.2. Desired Transfer Station Features

Participants in the Listening Sessions provided input into a list of desired program features as summarized in **Table 2-1** below.

Table 2-1: List of Desired Program Features from Listening Session Participants

Buyback Center	Berkeley Recycling has the only buyback in Berkeley, Albany and Emeryville. Very important regional asset. Needs to accommodate both pedestrian and vehicle customers. Could be more user-friendly. Might want to consider a “bottle drop.”
Free Material Drop-off	Would like a configuration that is more “casual user friendly” similar to the El Cerrito Recycling Center. Expand materials types to include everything that can be marketed, including aseptic, flat glass, bicycle parts, electronics, corks, Styrofoam blocks. Potentially allow for licensed scavengers (similar to El Cerrito Recycling Center).
Reuse Exchange	As part of the drop-off or education center. A clean, dry place for free “put and take” (household goods, books, magazines).
Education Center	Classroom space, community meeting space, educational displays and a catwalk through the facility for tours.
Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.
Breakroom, locker room, showers	Possible to have two separate spaces for the workers? Might be desirable for them to be together and build trust. Need discussion with labor representatives.
Self-haul	Systems needs to enhance recovery. Most desirable is to have serial drop-off and require separation by material type (yard trimmings, lumber, scrap wood, fixtures, scrap metal, cardboard, furniture, household goods). Alternatively, could be picking line like Davis Street or Recology SF. Urban Ore scavenging function desirable. Could have Goodwill trailer as well and other reuse and repair vendors.
Recyclables Processing	Maintain dual stream processing. Co-located with buyback and drop-off. Need indoor storage for some materials.
Organics	Assumed to be primarily a transfer function. Residential food co-collected with yard trimmings transferred to compost facilities. Some interest in source-separated commercial organics to anaerobic digestion at EBMUD. Might require pre-processing. Some concern about co-digestion of food with sewage.
Trash	Assumed to be primarily a transfer function. Some interest in reserving space for future processing of mixed waste.



C&D	Assumed to be primarily a transfer function. Some interest in some C&D processing for highest and best use. Source-separation also desired. Keeping some load separate (such as asphalt shingles) can enhance recovery.
HHW and Universal Waste	Desirable to have fully functioning Household Hazardous Waste (HHW) facility (perhaps everything except paint). Paint is typically the largest category of material at HHW facilities. Keeping it separate and addressed at paint stores (through stewardship organizations) could reduce space needs. Could consolidate HHW and Universal Waste drop-off.
Other bulky items	Carpet and mattress recycling desired (through product stewardship organizations). [Mattress recycling is an existing program and carpet recycling is being implemented.]
Other desired program features	• Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space). • Maker area • Social services for vulnerable populations • Needle exchange • Supplemental Nutrition Assistance Program (SNAP) program applications • Food pantry • Landscaping • Sculpture garden • Compost demonstration

2.3. January 2019 Design Charrette

The Listening Sessions provided critical insights to the community members' needs. The ZWC team used these insights to prepare for the three-day Design Charrette held in January 2019. The goal for these three sessions was to fully flesh out at least two options for the City's new Solid Waste & Recycling Transfer Station with potential facility and equipment layouts.

The Design Charrette approach assists the project team in efficiently evaluating the current solid waste and recycling management system, identifying state-of-the-art new programs and facilities, and ensuring that the final recommendations and guiding principles for the project are truly a shared community vision.

2.3.1. Design Charrette Session 1



Figure 2-2: Session 1 Team Exercise

The purpose of the first session was to solicit community members' ideas for the solid waste and recycling transfer station on to paper. During the first session, ZWC provided an overview of the current transfer station, a summary of the Listening Sessions, and draft layout concepts.

Participants then worked together on a team exercise. Using a site plan map of the transfer station, each team worked with building pieces to create different layouts for the solid waste & recycling transfer station.



2.3.2. Design Charrette Session 2

The second session of the Design Charrette analyzed the outcomes from the first session. ZWC synthesized the layouts created from the team exercise and created two layouts that were presented to the community members during the second session.

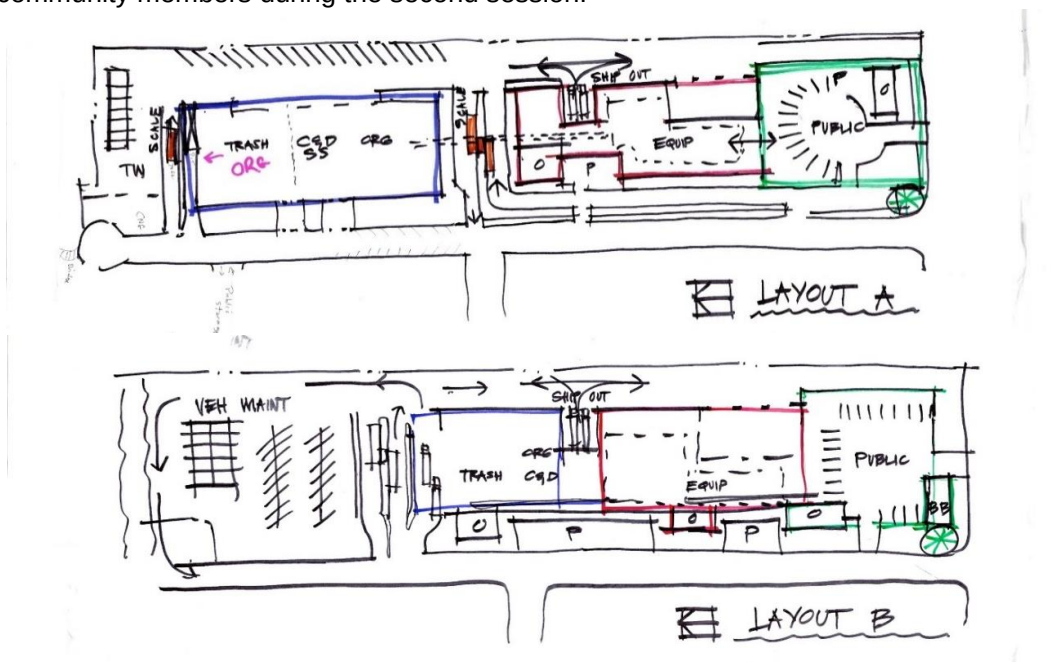


Figure 2-3: Draft Layouts from Session 1 Presented at Session 2

The two layouts depicted different configurations for traffic flow, vehicle parking, drop-off areas, and building functions.

- Layout A shows a two-building concept with the transfer station building separated from the recyclables processing area by a public scale. This layout includes a drop-off area in a circular pattern similar to the El Cerrito Recycling Center.
- Layout B shows the two buildings conjoined and the drop-off area reconfigured to include more areas for unloading.

2.3.3. Design Charrette Session 3

During the last session of the Design Charrette, participants provided feedback on the most promising layout options. Participants discussed:

- Advantages and disadvantages of separating the buildings and having them conjoined.
- Advantages and disadvantages of the circular pattern at the El Cerrito Recycling Center.
- Potential names for the future facility, including the “Berkeley Resource Recovery Center.”

2.4. Spring 2019 Workshops

The City conducted three workshops during Spring 2019 to obtain community members’ feedback and additional input on three primary concept plans that reflected input from the Design Charrette.



2.4.1. March Workshops

During the March workshops, three concept plans were presented. These concept plans included a public drop-off area that included both the traditional drop-off and buyback materials (glass, metal, paper, and plastic) and the bulky items (carpet, mattresses, and salvaged items). The community members provided feedback that the drop-off area needed to be simplified and the bulky items should be handled in the transfer building.

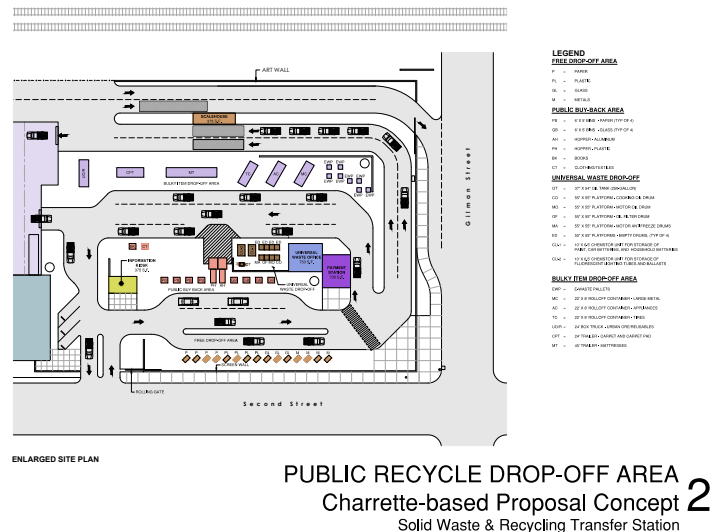


Figure 2-4: Public Recycling Drop-off Area Proposal Concept

These concept plans also assumed that the vehicle maintenance facility could be located off-site. The participants concluded that it would be better to keep the vehicle maintenance function on-site.

2.4.2. May Workshop

At the May workshop, the ZWC team presented the concept plans that were revised to reflect the input from the community members and stakeholders at the March workshops. These concept plans (described in detail in **Section 3**) reflect the work undertaken by the stakeholders and the public over the six-month public input process. The concept features reflect the early input from the Listening Sessions and the design concepts include ideas incorporated from the January 2019 Design Charrette and the 2019 Spring Workshops. While workshop participants may favor one design over another, the resulting concept plans meet the needs and reflect the vision of the community members that gathered together to support the City as it moves forward to develop a state-of-the-art facility designed to help the City achieve its Zero Waste goal.



3.0 Programming & Concept Development

3.1. Programming

This section describes the operational programming work (i.e., development of the site plans and site plans elements) in the initial stages of the project through the community members' engagement process.

The ZWC team provided questionnaires to City staff to provide input on current needs as well as provide additional input on desired project design elements or capacities (see **Exhibit 2**). The survey results coupled with site conditions assessment described in **Section 1.2** formed the basis for initial site concept plans that evolved throughout the community engagement process.

3.1.1. Site

Land Use/Site Design

Following the initial site assessment and initial conversations from the Public Listening meetings, it became apparent that the facility's location is well-known; it has a historical context as City infrastructure that helps the community to identify with its purpose.

3.1.2. Access/Traffic

Vehicle circulation to and from the site are defined by Second Street. The one-way direction (south to north) of Second Street on the southern portion between Gilman and Harrison streets establishes some basic rules for accessing the site. Minimizing the vehicle stacking on this portion of the street will have a positive effect on the neighboring businesses as well.

The eastern boundary is defined by the railroad right-of-way with the Gilman Street at grade crossing. The mix of public and commercial traffic accessing the site in the future is not anticipated to change much. Increases in vehicle quantities and frequency are addressed with the redesign of scale queuing including improvements in transaction cycle time.

Internal (onsite) traffic patterns are not ideal with significant intermixing of small public vehicles and larger commercial vehicles like the City's refuse collection trucks. All vehicle types use the same scales to enter and exit the property with vehicle back-ups before and after the scales. Each of the proposed site concepts will significantly improve internal traffic flow through separate scale entrances for small and large vehicles, minimal overlap of internal circulation patterns and an increase in the number of scales and scale queue area.

The roundabout planned to serve the interchange between I-80 and Gilman Street is in the final design process. Planned and designed by the California Department of Transportation (CalTrans), it will replace the existing five-way stop sign access to and from the Eastshore Highway. This junction is used by City's collection and tractor trailer transfer vehicles and the public using the Transfer Station facility which is difficult to navigate. The roundabout should have a positive impact on traffic flow.



3.1.3. Facility Overview

The City of Berkeley Transfer Station and Recycling Center currently includes the following types material handling, processing and/or transfer operations as depicted in the color graphic below:

Overview of the Transfer Station

- Self-haul transfer
- Refuse, organics, & construction debris transfer
- Motor oil, mattresses, tires, white/brown goods drop-off
- Reuse salvage
- City collection fleet & admin.
- City contractor for residential recycling fleet & admin.
- City contractor for recyclables processing, recycling & universal waste drop-off, buyback & administration



The Solid Waste and Recycling Transfer Station complex is managed by the Zero Waste Division (Division) of the City of Berkeley Public Works Department with its 90+ employees and 83 vehicles, including long haul tractor/transfer trailers and the City's collection fleet. Operations also include the Public Works Department's Equipment Maintenance building that services: the Division's collection and service vehicles, the City's large vehicles, such as fire department, and public works vehicles; heavy equipment/large rolling stock maintenance garage; truck wash rack; and fueling station (two underground diesel storage tanks requiring replacement by 2025).

The Division also directs and oversees a number of subcontractors for program and service delivery that operate out of the facility, including:

- Residential curbside recycling collection is operated by and currently contracted with the Ecology Center, Inc. (EC); eight (8) collection trucks and more than twenty (>20) employees that collect residential recycling materials for properties with up to nine (9) residential units;
- Materials Recovery Facility (MRF) and buyback center is operated by and currently contracted with the Community Conservation Centers, Inc. (CCC); also processes and markets recyclable materials collected from the residential and commercial sectors with approximately 20+ employees;
- Reuse salvage/collection is operated by and currently contracted with Urban Ore, having two (2) to three (3) employees, which operates a salvage and diversion program for reusable goods delivered to the floor of the Transfer Station that can be reused for their originally intended purpose or repurposed while in their originally manufactured form;
- Third party provided long haul and composting for the City collected green and food materials;



- Third party provided long haul and sorting for the recycling of construction and demolition materials; and
- Third party hauling and recycling of metal and appliances.

3.1.4. Minimum Operational and Site Space Needs Analysis

A critical aspect of the initial site programming was to document the existing space allocation (measured in square footage) for key operations/functions (e.g., transfer station, MRF, buyback center, etc.) and then establish a new baseline for what future space allocation should be given existing site constraints. **Table 3-1** details a summary of the space allocation with baseline (minimum) and optimal space assumptions shown with current space as applicable noted in parenthesis under baseline.

Table 3-1: Operational Space Analysis

<u>Operation/Function</u>	<u>Baseline</u>	<u>Optimal</u>
Transfer Station	41,000 sf (34,300)	45,000 sf
MRF	32,000 sf (28,600)	35,000 sf
Truck Wash	2,000 sf (2,100)	2,000 sf
Bin Repair	1,000 sf (6,400)	2,000 sf
City Administration City Staff Support Area	2,000 sf (1,500)	2,500 sf
Contractor 1 Administration Contractor Staff Support Areas	800 sf (792)	1,200 sf
Contractor 2 Administration Contractor Staff Support Areas	800 sf (918)	1,200 sf
Vehicle Maintenance and Parts Supply	7,000 sf (5,316)	8,000 sf
Office	1,500 sf	1,500 sf
Staff Support	1,500 sf (1,200)	1,500 sf
Public Education Center	800 sf (N/A)	1,000 sf
Community Room	1,000 sf (N/A)	1,000 sf
Artisan Space	1,000 sf (N/A)	1,000 sf
Scale house	200 sf	200 sf
Vehicles:		
Route Trucks parking spaces	44	48
Transfer Trailer Trucks parking spaces	9	11
Staff Parking spaces	40	50
Drop-off Parking	17	30
Visitor Parking	8	15



3.2. Concept Development

3.2.1. Introduction

This Feasibility Study established as a goal, the development of two viable facility design concepts for further consideration in the California Environmental Quality Act (CEQA) review process. These two facility design concepts were developed from valuable input gathered from a proactive and lengthy public engagement process with community members and stakeholders as well as programming input from City staff for current and future requirements. From the design process, a vetting cycle eliminated more than dozen iterations that were not viable from the standpoint of inefficient circulation, limited capacity, and/or significant cost impacts.

A key goal in having two concepts was to demonstrate an alternate scenario for discussion and input but also assure that both concepts were viable for future implementation. In fact, the two options have much in common and both received support from key stakeholders in the process.

Concept A & Concept B

Design Layout Characteristics in Common

- Self-haul queuing capacity at the north end of Second Street based on repositioning of the cul-de-sac.
- Public buyback and drop-off center close to the corner of Gilman Street and Second Street to facilitate the heavy use from pedestrian walk-in customers.
- Primary truck circulation is at the east side of the facility facing the railroad right-of-way which minimizes any mixing with public self-haul customers entering from the northwest corner of the site. The truck scale will be RFID compatible so collection vehicles can avoid having to weigh out using the public scale.
- Provide a remote RFID scale to separate the collection trucks from the public vehicle circulation.
- Each concept also has the same public amenities and sustainability features.

Each Concept was developed with preliminary level plans, elevations and sections (see **Exhibits 3-26**).

The following section provides an overall description of each design concept.



3.3. Concept A

The key difference between Concept A and Concept B, is that it provides a singular large structure that consolidates the functions of the MRF, transfer station, and vehicle maintenance facility as depicted in **Figure 3-1** below and the site plan (see **Figure 3-2**).

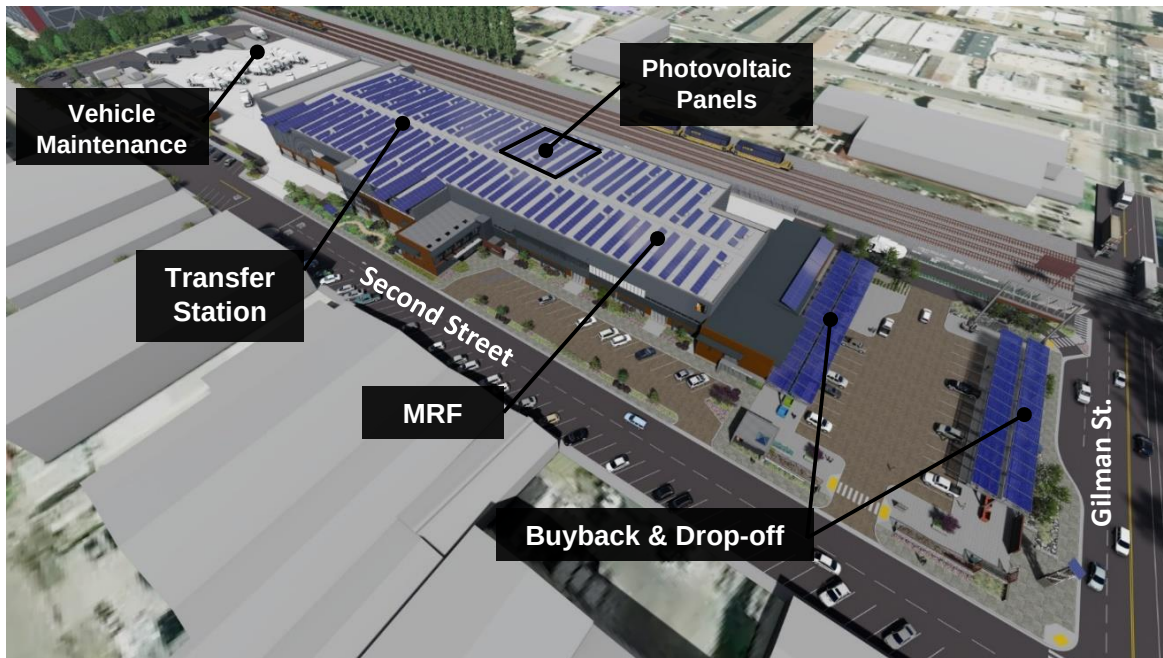


Figure 3-1: Concept A - Rendering Aerial View

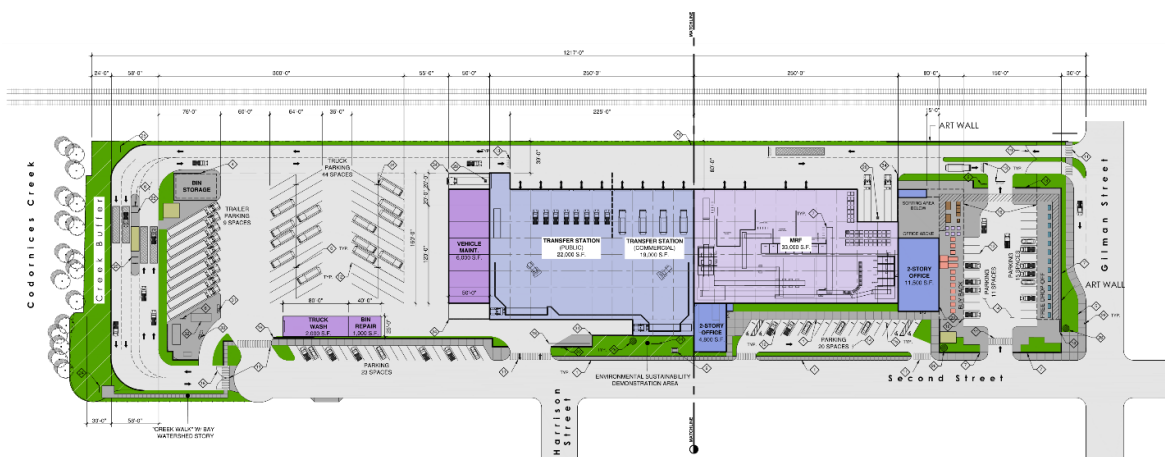


Figure 3-2: Concept A - Site Plan



In comparing the square footage of the two concepts, there are some differences as shown in the table below. Overall, the total building square footage in Concept A is about 8% smaller with a smaller transfer station and MRF, but more square footage allocated to education and community space. ZWC and City staff are confident both options provided sufficient space for the transfer station and MRF. The current MRF square footage is approximately 28,620 and the Transfer Station is 34,700 (inclusive of the outdoor tipping area for C&D materials).

Table 3-2: Square Footage (sf) Comparison Between Concept A & B

<u>Operation/Function</u>	<u>Concept A</u>	<u>Concept B</u>
Transfer Station	41,000 sf	46,000 sf
City Administration & Staff Support	4,800 sf	8,000 sf
MRF	33,000 sf	35,000 sf
Education Center/Community	700 sf / 1,400 sf	500 sf / 800 sf
Artist Studio	1,100 sf	840 sf
Information Kiosk	280 sf	120 sf
Cashier	760 sf	960 sf
Contractor 1 Administration & Staff Support	2,500 sf	2,300 sf
Contractor 2 Administration & Staff Support	2,500 sf	2,300 sf
Vehicle Maintenance	6,000 sf	7,000 sf
Vehicle Maintenance Admin & Staff Support	3,300 sf	1,100 sf
Truck Wash	2,000 sf	1,900 sf
Bin Repair	1,000 sf	2,000 sf *
Other **	270 sf	
Total Building Area	100,300 sf	108,000 sf
* Canopy-covered		
** Scale house, scale support		



3.3.1. Public Buyback and Drop-off Center

The south portion of the site is anchored with the Public Buyback and Drop-off Center (Public Recycling Center). Facing Gilman Street, this location will be prominent visually to Gilman traffic which is a major “feeder” thoroughfare to and from north, west and central Berkeley. The proposed Gilman Street frontage would have new landscaping and sidewalk improvements as well as a decorative screen wall that would provide site security and a “canvas” for potential local art placement. On this wall/fence, local artisans could present works inspired by recycled materials. The street corner could also feature a bold landmark feature that becomes a visual touchstone for the facility, possibly something that boldly signifies the City’s leadership in sustainable practices.



Figure 3-3: Concept A - Public Buyback and Drop-off Center Entrance off Second Street



Figure 3-4: Concept A - Public Buyback and Drop-off Center View from Gilman Street at Second Street

The Public Recycling Center is planned as a wide plaza with a one-way entry driveway from Second Street. Upon entry, the customer is encouraged to maneuver slowly and park. Once parked, the customer can move between the appropriate bins for drop-off items on the south side of the plaza and on the north side for buyback items. A pedestrian entrance will be at the southwest corner of Gilman Street and Second Street.

The Public Recycling Center provides 26 covered spaces. Steel framed canopies with embedded photovoltaics (“PV Glass”) will provide weather protection not available at the site today. The canopies will be located on the south and north sides of large vehicle plaza. Each canopy will have large



signage for easy identification of the various types of materials collected. The signs will be moveable to allow flexibility for reorganizing the bin areas based on customer use trends.

3.3.2. Public Buyback Area

The Buyback area will be on the north side of the Public Recycling Center. Central to this area, will be a cashier for transactions and staff to answer customer questions.

3.3.3. Free Recycle Drop-off Area

This area located at the south side of the Public Recycling Center and will include bins and/or carts for paper, plastic, glass, metals, clothing/textiles, and books. Providing additional bin area here, which exceeds current conditions, will allow additional differentiation for public sorting on-site. This line of bins and/or gaylords will have a staff aisle behind the bins for carting and forklifting collected materials to the sorting area near the main building on the north side of the Public Recycling Center.



Figure 3-5: Concept A - Public Buyback Area

3.3.4. Universal Waste Drop-off Area

At the east end of the north side of the Public Recycling Center, a universal waste drop-off area will be included to accept limited quantities of oils, paints, batteries, e-waste, and fluorescent tubes. This area will have a pull-over curb space and is in a direct line of site from the Cashier operations office. It is also shared with the material consolidation and sorting area (for the buyback area) which would be staffed for customer assistance.

3.3.5. Walk-in Service

Pedestrian access is provided by two wide gate access points from the Gilman and Second Street intersection. These gates would roll back for business hours and rolled closed at closing. These access points will have good visibility for staff from the Information Kiosk (see picture on the next page).

Ideally, security fencing would be a combination of masonry walls and decorative fencing that could be fabricated from recycled construction materials (e.g., steel rebar, angle and sheeting by local artisans). Portions of the fence could provide space for community art projects.

When exiting the Public Recycling Center right turn onto westbound Gilman Street, the customer that needs to return has an opportunity to turn right (north) on Second Street to return to the Center.



Figure 3-6: Concept A - Second Street View of Entrance to Public Recycling Center



Customers can also continue to the Public Scale Entry at the north end of Second Street for items not accepted at the Public Recycling Center such as bulky drop-off items. See **Figure 3-14** on page 27 for a rendering of the Main Public Entry and Scale Facility.

3.3.6. Information Kiosk

Informed facility users (customers) are essential to a more efficient operation which promotes higher levels of recycling. The Information Kiosk, a small gatehouse structure at the entry, will provide a waystation for addressing customer questions and also an opportunity to provide a wide variety of information including: 1) rates and how to use the facility 2) recycling tips to better equip the user for the next visit and 3) community recycling events. The Information Kiosk may also be the “home base” for a staffer or volunteer that roams the Public Recycling Center with a tablet for transactions. See the rendering on the next page.



Figure 3-7: Concept A - Public Recycling Center Information Kiosk

3.3.7. Education Center

Within 25 ft. of the Information Kiosk is a public lobby entrance for stair and elevator access to the Education Center, Artisan workshop, and Community Room. Located on the second floor, the Education Center will provide informative environment for the public to connect with key goals of the facility such as eliminating waste, greater recycling and reuse. Space will be available for displays and exhibits that can engage all ages. This room will have soundproof windows for public viewing of the materials recovery processing systems. Adjacent to this room, visitors can interact with local artisans creating works from recovered materials, learning more about environmental stewardship. In addition to recycling and reuse, these spaces can showcase water conservation and renewable energy.

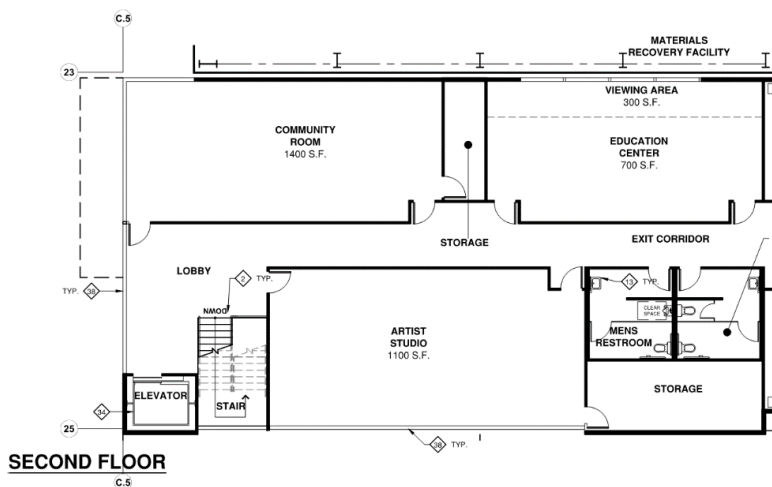


Figure 3-8: Concept A - Floor Plan for Education Center and Community Space



3.3.8. Materials Recovery Facility (MRF)

The MRF is a fully enclosed 33,000 sf structure dedicated to the processing of recyclables and the temporary staging of the recovered materials for shipping to commodity markets. This building will have multiple large overhead doors facing the east side of the facility for access by recyclables collection trucks. Recyclables collection trucks will weigh in at the RFID scale located near these doors. These trucks can maneuver to this scale multiple times as needed depending on the truck configuration and related weigh-in. The trucks will unload in three tip floor areas: 1) paper (fiber) 2) containers (bottles and cans) and 3) clean cardboard and commercial mixed paper. A front-end wheel loader would move the material to three separate infeed conveyors for paper, containers, or direct to a baler.

MRF Process Equipment

From the infeed locations, a new dual stream processing system would process approximately 10-15 tons per hour (tph). This process rate would depend on the inbound material and final staffing of the hand-sort platforms. Additional staffing will increase the processed upgraded fiber over typical mixed paper grade throughput. The scalping screen and old corrugated cardboard (OCC) screens will improve material flow speed and improve quality of recovered material. More details on the sorting lines can be found below.

Fiber Line - The proposed processing system would provide the following benefits:

- Double current fiber production rate.
- Improve high value cardboard yield (capture rate) on the fiber line via mechanical cardboard capture.
- Improve ability to make a #56 grade (sorted residential paper) vs a #54 mixed fiber grade. Typically, there is a premium for #56 grade fiber.
- The equipment could be upgraded later for optical sorting of high value white, sorted office paper (SOP) and sorted white ledger (SWL).
- Layout allows for the robust collection of more commercial fiber streams from businesses.

Container Line - The proposed processing system would provide the following benefits:

- System production rates should improve by 2-3 tons per hour over current run rates.
- First pass capture rate will improve which should decrease residue (materials that are disposed).
- Increased blended value (commodity streams) produced "per ton" should increase.

Overall Plant Flow (including baling) - The proposed system would improve the following:

- Reduced handling costs with less double handling of "to be baled" commodities.
- Increased area for bringing in greater volumes of commercial fiber from businesses.
- Better inbound outbound material flow and temporary staging capabilities.
- Decreased safety risks with better flow and less handling.

The south portion of the MRF floor plan will have four bunkers for glass (green, brown, clear, and 3-color mix). A forklift aisle will provide access to the bunker for removal of the glass. This area of the building will also have a temporary staging area for baled materials which will open to a two-bay shipping dock, as compared to one currently. Here, adjacent to this area, will be a 10 ft. x 10 ft. overhead door for access to the covered Buyback area where collected items can be consolidated.



The west wall of the MRF will have overhead doors which will serve as maintenance access for service on the equipment and removal of components when needed.

The north wall of the MRF will be a steel-framed full-height non-rated partition which will provide separation from the Transfer Station area. This partition, called an environmental wall, provides control of air volumes and dust.

3.3.9. Transfer Station

3.3.9.1. Overview

The Transfer Building is a large fully enclosed space providing with an open floor area for the varied types of material arriving and will provide multiple opportunities for the separation of materials for reuse. Although the Transfer Station shares the same structure with the MRF, these two areas are distinct and separated by a full height “environmental wall” which is steel framed with metal sheeting. This partition provides controlled air in each space and improves noise control. It can also be deconstructed if required if the future MRF and Transfer Station space needs to be modified.

The 41,000-sf transfer station floor area will have a minimum clear height is 30 ft. which allows space for a large tip floor (unloading and material handling) area that will be shared by public customers as well as City collection trucks. Moveable barriers can be used to define these working areas both inside the structure and at the exterior doors. The overhead vehicle access doors will be 18 ft. x 25 ft. and fast roll to control air flows and odor migration and any fugitive dust.

3.3.9.2. Bulky Item Drop-off Area

The first bay at the north end of the floor area is a dedicated area for the public to unload larger items such as appliances, mattresses, carpet, tires, etc. This area is approx. 1,500 sf and has direct access to a 2-bay loading dock area. This interior area has sufficient space for large roll-off boxes or containers which can be picked up when loaded. This is a significant improvement over current operations which are outdoors and in multiple areas.

3.3.9.3. Salvage Items

At the Main Entry public scale house, the customer may offer (or the scale operator may identify) salvageable items. With direction from the scale operator, the customer would proceed to the first station at the north end of the Transfer Building where a City partner / contractor can collect/salvage reusable items and store them in transportable boxes. This area is approximately 1,500 sf and has direct access to a 2-bay loading dock area. This interior area (see rendering below) has space for large roll-offs or containers which can be picked up when loaded.



Figure 3-9: Concept A - Public Tipping Area



Overall, the transfer station has nine (9) deep interior bays which can be organized based on need. The public access would extend to the first northernmost 5-6 bays. Based on day of the week, season, etc., additional bays (and tip area) may be assigned to specific types of incoming loads (e.g. construction and demolition debris (C&D) or green and food waste). Larger than the existing transfer station by approx. 20%, this expanded floor area will provide additional opportunities to segregate materials thereby enhancing diversion rates. An example would be having an area for a separate pile of clean demolition lumber.

In addition to assistance from floor staff such as a “spotter”, public access would be enhanced with large wayfinding graphics (e.g. numbered stations and color coded for direction). When commercial collection trucks are not active (e.g. weekend vs. weekdays schedules), self-haul customers can use additional access doors at the south end of transfer building. The public tipping area is approx. 150 ft. deep (east/west direction) by 150 ft. long. On low-to-moderate volume days, this depth can provide sufficient interior maneuvering area for cars and pickups with only two doors for access. After unloading, customers return to the north and the two exit scales at the main scale house to complete the transaction and leave the site back to Second Street.

The commercial side of the Transfer area floor at the south end of the structure will have 3-4 bays with an area of approx. 150 ft. deep (east/west direction) by 100 ft. long. The receiving floor is designed to accommodate delivery of materials from various types of collection vehicles, including front-end, side and rear-end loaders and roll-off trucks. Commercial customers that have a recorded tare weight (i.e., truck weight when empty) are not required to rescale upon exiting. All Transfer Station overhead doors will be 18 ft. x 25 ft. and will be fast-acting (opening and closing) doors activated by proximity sensors.

3.3.9.4. Loadout/Transfer Areas

Tractor trailer trucks will remove refuse and transport to the landfill. These trucks will access the site at “staff-only” driveway at Second Street across from the Harrison Street intersection. Once on site, a transfer truck and trailer can use one of the two loadout positions at the west side of the Transfer Station. The transfer of material to the trailer will take place at floor level with a wheeled loader lifting material into the truck trailer. The trailer will be under a 3-sided steel backboard hopper to conduct material into the trailer. Each loadout will have an in-ground 70 ft. scale with a weight display located on the building wall above the loadout position. The trailer will be subsequently tarped prior to leaving the site. Trucks will leave the site via the Second Street driveways and use Harrison Street to the Eastshore Highway.

The tip floor will have a zoned misting system which will control dust in active areas of material consolidation and loading.

3.3.9.5. Main Public Entry and Scale Facility

The scale facility is located at the north end of the site providing optimal queuing capacity. In order to provide this queueing capability, the north portion of the Second Street right-of-way would be vacated, and the cul-de-sac reconstructed approximately 100 ft. south of its current location. This new entry gate position provides additional on-site vehicle stacking in front of the scale house. From the gate to the scale position, 11 spaces at the inside lane are available for waiting vehicles. The outside lane with a RFID/card reader would offer queuing for an additional 5 light duty trucks. South of the gate, Second Street provides additional capacity for high volume days. Since this portion of Second Street



(north of the Harrison intersection) has minimal usage, additional waiting capacity is available for approximately 12 additional vehicles. At the main gate, a digital display is proposed which could provide wait time information that may encourage customers to try another time and help level demand flows.

The scale house will provide counter space for two weighmaster staff for inbound and outbound traffic. A separate staff support structure will be within 30 ft. of the scale house. This building may be prefabricated/modular in construction and would provide an all gender bathroom, lockers and a small break area. Two 70 ft. scales at inbound lanes and two 70 ft. scales at outbound lanes will be installed in pits level with the adjacent road surface grade. Stop/Go signals will be placed in front of the scales in both directions. Rate & Rules signage will be placed in the median on the approach.

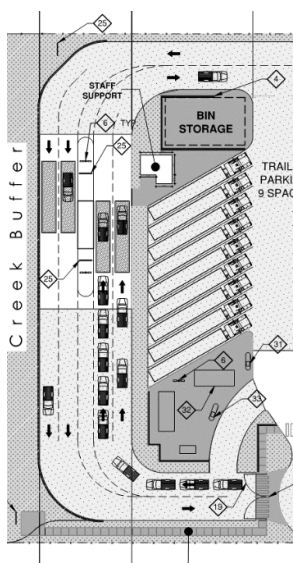


Figure 3-10: Concept A - Main Public Scale Entry

3.3.9.6. Vehicle Maintenance, Truck Wash, and Truck Parking

The vehicle maintenance facility will provide six (6) – 20 ft. wide by 50 ft. deep truck service bays with 20 ft. height clearance and is column-free between bays. The end wall (south wall in **Exhibit 5** - A2.1, Line 3) provides floor space for toolboxes and workbenches.

Interior lighting will be high bay LED style light fixtures. Translucent wall panels over each door will provide daylighting. Overhead doors are 16 ft. wide by 20 ft. tall. Equipment inside the facility will include pneumatic wrenches, tire changing equipment, floor-mounted lifts, jib cranes, carbon monoxide systems, diagnostic equipment, etc.

A lobby stair and elevator will provide access to the second floor which includes 3,300 sf of administrative offices, staff restrooms and lockers. A lockable parts area will have rack storage for small parts that can be restocked via hand cart or dolly using the elevator. A through-floor lift is proposed for supplying the service bays with larger items such as tires, etc. The second level will also include a compressor room to serve pneumatic systems at ground level service bays. This room would have floor vibration isolation and exterior wall sound control louvers.



A truck wash structure with attached bin repair area is located at the Second Street (west) side of the truck parking area. The truck wash has a single bay 25 ft. x 80 ft. for larger trucks e.g. 65 ft. semi-tractor trailer truck and will be accessed from the north end.

The truck parking area will provide 44 spaces for collection-type trucks and 9 spaces for semi-tractor trailer trucks. The fueling area is consolidated in the northwest corner of the parking area and will have a driveway connector from the main Public Scale Entry driveway with a security gate. This gate could provide card key access for City users. The main driveway, approx. 20 ft. to the south will be approx. 40 ft. wide and designed to accommodate large vehicle access and turns.

3.3.10. Administrative/Employee Support Areas

3.3.10.1. Contractors

Located at the south end of the Transfer Station/MRF structure and facing Gilman Street, administrative office space has been provided for two City recycling contractors at the second floor. Access to this level is provided at the west and east end of the structure. Each suite has matched spaces including two (2) enclosed offices, four (4) workstations, one (1) receptionist, meeting/breakroom and copy area, and visitor wait area (approx. 900 sf for each suite).

At the ground floor, staff support areas (for MRF and Public Recycling Center workers) include restroom/locker rooms as well as a break room that can be used for informal training activities. Each staff support area is approx. 1,200 sf and has direct access to the exterior as well as the MRF.

On-site staff parking is located along the west side of the MRF building. The twenty spaces will initially provide EV and accessible parking and has north-to-south one-way circulation allowing the driver to return as needed.

3.3.10.2. City Administrative Offices

Located facing Second Street approximately halfway along the west side of the MRF/Transfer Station structure, this two-story administration facility will provide offices for City staff on the second floor and will include enclosed offices, conference room and staff workstations (approx. 1,900 sf total).

The ground floor will have direct access to a staff breakroom and restroom/locker rooms (approx. 1,500 sf). This area (for all workers) will also have direct corridor access to the Transfer Station and MRF through a "air/sound lock" vestibule.

Staff parking is provided along Second Street (23 spaces) in a configuration similar to the existing on-street parking used by staff.



3.4. Concept B

Concept B presents a two-building approach in contrast to Concept A. This site layout separates the Transfer Building and the MRF with the truck maintenance and truck parking area in the center of the site. The MRF is situated where the existing recycling building is today. However, the primary distinction between old and new is that the truck access has been moved from the west side to the east side.

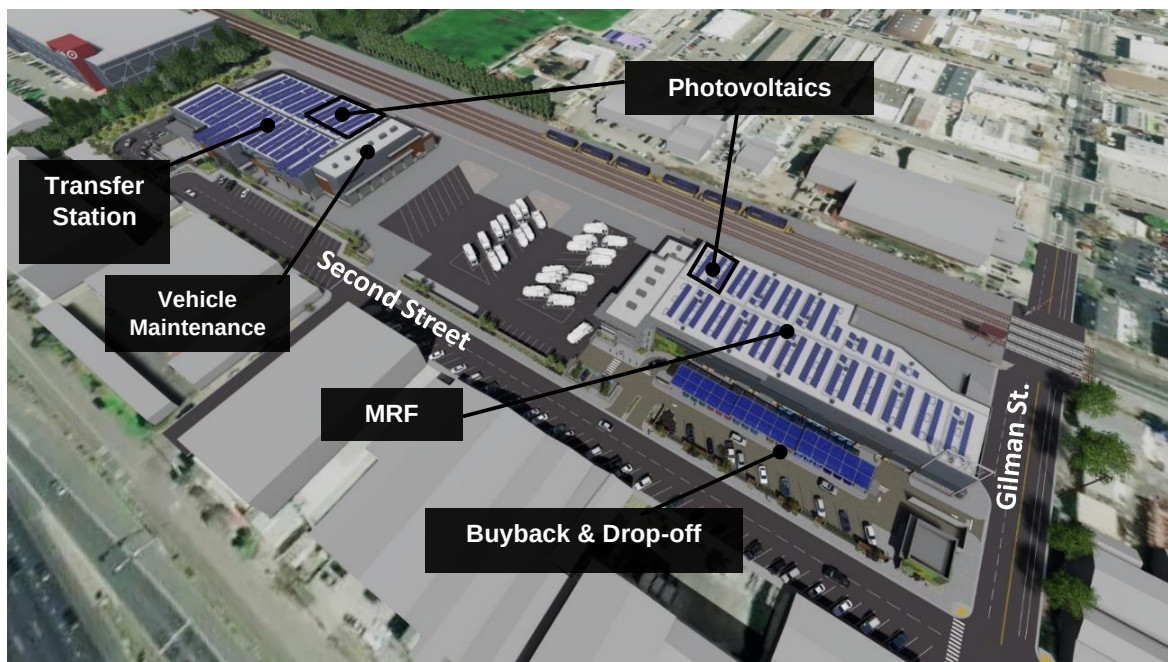


Figure 3-11: Concept B - Rendering Aerial View

3.4.1. Public Buyback and Drop-off Center

Similar to Concept A, the Public Recycling Center (inclusive of the buyback and drop-off area) is located at the south portion of the site and prominent to Gilman Street traffic. Unlike Concept A, the Gilman Street frontage is shared with the MRF structure with the Public Recycling Center located adjacent to the western side of the MRF building facing Second Street. This places the entrance driveway further north along Second Street as compared to Concept A.

The Public Recycling Center is planned as a one-way drive with parking on the right and bins on the left. Upon entry, the customer is encouraged to maneuver slowly and park. Once parked, the customer can use both the Free Recycle Drop-off or the Buyback and cashier.



Figure 3-12: Concept B - Public Drop-Off Area



Steel-framed canopies with embedded photovoltaics will provide weather protection for the drop-off bins which are in a center island. These canopies will also have large signage for various types of materials. The signs will be moveable to allow flexibility for reorganizing the bin areas based on customer preferences/trends.

3.4.2. Public Buyback Area

The Buyback area will be on the south end of the Drop-off area. Central to this area, will be a cashier for transactions and to answer customer questions.

3.4.3. Free Recycle Drop-off Area

This area located at the center island will include boxes for paper, plastic, glass, metals, clothing/textiles, books, etc. This line of bins and gaylords will have a staff aisle behind the bins for carting and forklifting collected materials to the sorting area near the MRF building.

3.4.4. Universal Waste Drop-off Area

Adjacent to the cashier office at the south end of the site, a universal waste drop-off area will accept limited quantities of oils, paints, batteries, e-waste, and fluorescent tubes. This area is in a direct line of site from the cashier operations office and the Information Kiosk. It is also adjacent to the one-way (right turn) exit to Gilman Street.

3.4.5. Walk-in Service

Pedestrian access is provided through an entrance at the northeast corner of Gilman Street and Second Street. This entrance would be opened for business hours and connect directly to the cashier and Buyback area. Access points have good visibility for staff from the Information Kiosk as well (see **Figure 3-13**).

Security fencing would be a combination of masonry walls and decorative fencing that could be fabricated from recycled construction materials (e.g. steel rebar).



Figure 3-13: Concept B - Pedestrian Access to Public Recycling Center

3.4.6. Return Circulation

Exiting the Drop-off area to westbound Gilman Street, the customer has an opportunity to turn right (north) on Second Street to return to the Public Recycling Center or continue to the Public Scale Main Entry at the north end of Second Street. Customers with other materials such as bulky items (e.g., furniture, appliances, mattresses, carpet, tires, etc.), construction and demolition materials, yard waste or refuse, would also proceed directly down Second Street to the main entry gate at the end of the street (see **Figure 3-14** below).



Figure 3-14: Concept B - Main Public Entry



3.4.7. Information Kiosk

An Information Kiosk is located at the entrance to the Public Recycling Center which is near the majority of customer activities. It will be staffed to help the user with general and specific information on 1) rates and how to use the facility 2) recycling tips to better equip the customer for the next visit and 3) community recycling events. The Information Kiosk may also be the “home base” for a staffer or volunteer that roams the Public Recycling Center with a tablet for transactions.

3.4.8. Education Center

At the north end of the Public Recycling Center is the public lobby entrance for stair and elevator access to the Education Center, Artisan Workshop, and Community Room. The location (see **Figure 3-15**) of the Education Center offers prominent visibility as a community amenity. The Education Center is on the third floor and will provide space for displays and exhibits that promote the key goals of the facility such as eliminating waste, greater recycling and reuse. This room will also have soundproof windows for public viewing of the materials recovery processing systems. Facing the street, a separate community room will provide meeting space with views of the site. An artisan workspace adjacent to the community room will provide visitors opportunities to interact with local artisans creating works from recovered materials while learning more about environmental stewardship. In addition to recycling and reuse, these spaces will offer display areas as a showcase for water conservation and renewable energy.



Figure 3-15: Concept B - Public Education Center Entrance



3.4.9. MRF

The 35,000 sf MRF building will have multiple large overhead doors facing the east side of the facility. Recyclables collection trucks will weigh in at the remote RFID scale at this side which is near the doors. These collection trucks will unload in three tip floor areas: 1) paper (fiber) 2) containers (bottles and cans) and 3) clean cardboard and commercial mixed paper. A front-end wheel loader would move the material to three separate infeed conveyors (for paper, containers, and direct to a baler).

3.4.9.1. Process Equipment

From the infeed locations, a new dual stream processing system would process approximately 10-15 tons per hour (tph). This process rate would depend on the inbound material and final staffing of the hand-sort platforms. Additional staffing will increase the processed upgraded fiber over typical mixed paper grade throughput. The scalping screen and old corrugated cardboard (OCC) screens will improve material flow speed and improve quality of recovered material. More details on the sorting lines can be found below.

Fiber Line - The proposed processing system would provide the following benefits:

- Double current fiber production rate.
- Improve high value cardboard yield (capture rate) on the fiber line via mechanical cardboard capture.
- Improve ability to make a #56 grade (sorted residential paper) vs a #54 mixed fiber grade. Typically, there is a premium for #56 grade fiber.
- The equipment could be upgraded later for optical sorting of high value white, sorted office paper (SOP) and sorted white ledger (SWL).
- Layout allows for the robust collection of more commercial fiber streams from businesses.

Container Line - The proposed processing system would provide the following benefits:

- System production rates should improve by 2-3 tons per hour over current run rates.
- First pass capture rate will improve which should decrease residue (materials that are disposed).
- Increased blended value produced (commodity streams) per ton should increase.

Overall Plant Flow (including Baling) - The proposed system would improve the following:

- Reduced handling costs with less double handling of "to be baled" commodities.
- Increased area for bringing in greater volumes of commercial fiber.
- Better inbound outbound material flow and temporary staging capabilities.
- Decreased safety risks with better flow and less handling.

The south portion of the MRF floor plan will have four bunkers for glass (green, brown, clear, and 3-color mix). A forklift aisle will provide access to the bunker for removal of the glass. This area of the building will also have a temporary staging area for baled materials which will open to a two-bay shipping dock, as compared to one currently. Here, adjacent to this area on the west wall, will be a 12 ft. x 14 ft. overhead door for access to Buyback and Drop-off area where collected items can be consolidated. The west wall of the MRF will also have additional overhead doors which will provide interior areas for the collection of smaller bins and totes from the Drop-off area as needed. These



doors will also serve as maintenance access for service on the equipment and removal of equipment components when needed.

3.4.10. Transfer Station

3.4.10.1. Overview

The 46,000 sf Transfer Station Building is a separate and fully enclosed space providing a large open floor area for the varied types of material arriving and will provide multiple opportunities for the separation of materials for reuse. The floor area will have a large tip floor area that includes nine (9) interior bays which can be organized based on need. Overhead doors will be 18 ft. wide x 25 ft. high and fast rollup doors with proximity sensors to control air flows and odor migration and any fugitive dust.

In addition to assistance from floor staff such as a “spotter”, public access will be enhanced with large wayfinding graphics (e.g. numbered stations and color coded for direction). The south bays would be used by commercial collection trucks as needed and can be separated from the public with moveable vehicle barriers. The public tipping area is in the northern half of the building approximately 150 ft. deep (east/west direction) by 125 ft. long (north/south direction). On low to moderate volume days, this depth can provide sufficient interior maneuvering area for cars and pickups with only two doors for access. After unloading, customers return to the north and the two exit scales at the scale house to complete the transaction. An additional area at the north side of the floor area provides space for material separation or staging for loadout or shipping (approx. 60 ft. deep by 40 ft. long).

When commercial collection trucks are not active (e.g. weekend vs. weekday schedules), self-haul customers can use the additional access doors and tip floor area at the south end of the building.

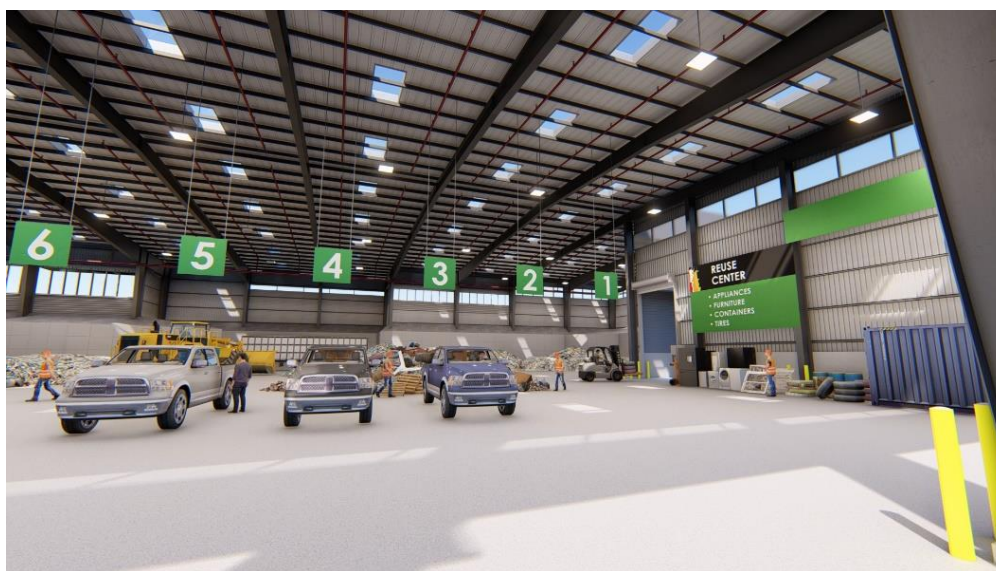


Figure 3-16: Concept B - Public Tipping Area

The commercial side of the transfer station floor at the south end of the structure will have an area of approx. 150 ft. deep (east/west direction) by 100 ft. long. The receiving floor is designed to accommodate delivery of materials from various types of collection vehicles, including front-end, side



and rear-end loaders and roll-off trucks. Commercial customers that have a recorded tare weight (i.e., truck weight when empty) are not required to rescale upon exiting.

3.4.11. Bulky Item Drop-off Area

The first bay at the north end of the tip floor area is a dedicated space for the public to unload larger items such as appliances, mattresses, carpet, tires, etc. This area is approx. 3,000 sf and has direct access to a two-bay loading dock area. The loading dock can provide parking for direct load to a trailer for large items. This interior area can also offer space for roll-off boxes or shipping containers which can be picked up when loaded. This is a significant improvement over current operations which are outdoors and in multiple areas.

3.4.12. Salvage items

At the Main Entry public scale house, the customer may offer (or the scale operator may identify) salvageable items. With direction from the scale operator, the customer would proceed to the first station at the north end of the Transfer Building where a City partner / contractor can collect/salvage reusable items and store in transportable boxes or placed directly into a trailer.

3.4.13. Loadout/Transfer Areas

Tractor trailer trucks will remove refuse and transport to the landfill. These trucks will access the site at "staff-only" driveway at Second Street across from the Harrison Street intersection. Once on site, a transfer truck and trailer can use one of the two loadout positions at the west side of the Transfer Station. The transfer of material to the trailer will take place at floor level with a front-end wheel loader lifting material into the trailer. The trailer will be under a 3-sided steel backboard hopper to conduct material into the trailer. Each loadout will have an in-ground 70 ft. scale with a weight display located on the building wall above the loadout position. The trailer will be subsequently tarped prior to leaving the site. Trucks will leave the site via the Second Street driveways and use Harrison Street to the Eastshore Highway.

The tip floor will have a zoned misting system which will control dust in active areas of material consolidation and loading.

3.4.14. Bin Repair Facility

Located at the northwest corner of the Transfer Building and adjacent to the main public entry to the scales, this canopied area will provide weather protection for bin repair activities. The staff support area in the Transfer Building provides access to this area as well. The repair area is not proposed to be enclosed but could be modified for this in the future. The facility will also have storage capacity and will have a 10 ft. tall security wall that will screen the facility from the public in the queue line for the main scales.

3.4.15. Main Public Entry and Scale Facility

Similar to Site Concept A, the scale facility is located at the north end of the site providing optimal queuing capacity. From the gate to the scale position, approx. 11 spaces are available for waiting vehicles. South of the gate, Second Street provides additional capacity for high volume days. Since this portion of Second Street (north of the Harrison intersection) has minimal usage 12 vehicles could queue here without disrupting through traffic to Harrison Street. At the main gate, a digital display is



proposed which could provide wait time information that may encourage customers to try another time and help level demand flows.

The scale house will provide counter space for 2 weighmaster staff for inbound and outbound traffic. A separate staff support area will be within 30 ft. of the scale-house located within the north side of the Transfer Station building. This area would provide a restroom, lockers and a small break area.



Figure 3-17: Concept B - Main Public Scale Area

Two 70 ft. scales at inbound lanes and two 70 ft. scales at outbound lanes will be installed in pits level with the adjacent road surface grade. Stop/Go signals will be placed in front of the scales in both directions. Rate & Rules signage will be placed in the median on the approach.

3.4.16. Vehicle Maintenance, Truck Wash, and Truck Parking

The vehicle maintenance facility will provide (6) - 20 ft. wide by 50 ft. deep truck service bays with 22 ft. height clearance and is column-free between bays. The back wall (north wall) provides floor space for toolboxes and workbenches.

Interior lighting will be high bay LED style fixtures. Translucent wall panels over each door will provide daylighting. Overhead doors are motorized and 16 ft. wide by 20 ft. tall. Equipment inside the facility will include pneumatic wrenches, tire changing equipment, floor-mounted lifts, jib cranes, carbon monoxide systems, and diagnostic equipment.

A lobby stair and elevator will provide access to the second floor which includes 3,500 sf administrative offices, staff restrooms and lockers. A lockable parts area will have rack storage for small parts that can be restocked via hand cart or dolly using the elevator. A through-floor lift is proposed for supplying the service bays with larger items such as tires, etc. The second level will also include a compressor room to serve pneumatic systems at ground level service bays. This room would have floor vibration isolation and exterior wall sound control louvers.

A truck wash structure is located at east side of the Vehicle Maintenance building. The truck wash area has a single bay 25 ft. x 80 ft. for larger trucks (e.g., 65 ft. semi-tractor trailer truck) and will be accessed from the north end.

The truck parking area, adjacent and to the south of the Vehicle Maintenance building, will provide 44 spaces for collection-type trucks and 9 spaces for semi-tractor trailer trucks. The fueling area, separate stations for diesel and CNG, is located on the east side of the truck parking area. In these areas additional electrical conduit will be installed to support future EV infrastructure.



3.4.17. Administrative/Employee Support Areas

Located at the north end of the MRF structure, a three-story structure provides consolidated office and staff support for the City and City Contractors. Similar to Concept A, administrative office space has been provided for two city contractors at the second floor (approx. 900 sf each). Elevator and stair access to this level is provided at the west and east end of the structure to provide a separate but equal access design. Each suite has matched spaces including two (2) enclosed offices, four (4) workstations, one (1) receptionist, meeting/breakroom and copy area, and visitor wait area.

At the ground floor, the City Contractors have separate staff support accommodations that include restroom/locker areas as well as break rooms that can be used for informal training activities (approx. 1,200 sf each). This area has direct access to the exterior as well as the MRF operations floor.

The third floor will provide have controlled access for the Education Center, Artisan workshop, and Community Room.

Staff parking is provided along Second Street in the same location as it is today (25 spaces).

3.5. Design Elements Common to Both Concepts A & B

3.5.1. Structure

Pre-engineered metal building (PEMB) is proposed for the larger structures of the facility based on efficiency and life cycle cost for long clear spans in a non-combustible environment. The PEMB will provide primary framing with a minimum clear height of 30 ft. Light gauge steel wall framing is used for secondary support of specific panel types and translucent glazing.

The foundations will be pile-supported. The Transfer Station and MRF will be a pre-engineered metal building structure. Adjacent and joining structures such as the 2-story City Administrative offices and the 2-story Administration/Education Center at the south end of the facility will have conventional steel frame and a seismic gap separation. This combination/hybrid grouping of structure types is the most cost-effective approach as well as providing flexibility for phasing structures.

Note: Geotechnical investigations have not been performed as of this writing. Based on the site location near the San Francisco Bay, it is assumed that an extensive pile foundation approach is required for Bay mud subsoil conditions. Coordination with the geotechnical engineer to select foundation types will be required in a future project development phase.

The Transfer Station building should be designed for immediate occupancy IBC criteria for occupancy Category IV, Essential Facility. This occupancy category would have an importance factor of 1.5 for seismic (American Society of Civil Engineers [ASCE] 7, Table 11.5-1) and 1.15 for wind (ASCE 7, Table 6-1).

The Transfer Station building will have a minimum roof clearance of 30 ft. to accommodate the tipping position of commercial route trucks. The Occupancy Type would be F-1, Factory and Industrial classification and the Building Construction Type will be II-B. Walls and roof assemblies will be non-combustible construction complying with Type II-B Construction Type.



3.5.2. Walls

Low precast concrete walls are proposed in operational areas where potential abuse from vehicles and bins is likely. Metal wall panels will be used for the primary cladding based on economy, aesthetics and durability.

Interior wall facing would be provided for enclosing wall framing to assist with overall cleanliness as well as a deterrent for rodent access and bird nesting. This material will be a light gauge metal panel with a rib profile and silicone polyester factory-applied paint finish.

Push walls are proposed to be steel 14 ft. tall with a 12 ft. high limit line per code for temporary staging of materials. An angled heavy gauge steel cover will be provided at the gap from the top of the push wall to the building wall to prevent material from collecting behind push walls.

The roof system for the Transfer Station, MRF and Vehicle Maintenance buildings will be a standing seam metal roof with roof walks to all air handlers. Administrative/Staff support buildings will have single ply EPDM roof membrane system.

3.5.3. Ventilation / HVAC / Odor Control

The Transfer Station as a fully enclosed building will have code compliant mechanical ventilation. The ventilation system will be based on a negative air flow approach with fresh air drawn in through openings (e.g., wall louvers) and pulled to the roof to roof mounted exhaust fans with MERV 8 filtration media. The filtered air will be discharged vertically which follows an air quality model used for South Coast Air Quality Management District Rule 410 and consistent with potential regulatory changes from the Bay Area Air Quality District (BAAQMD). Multiple variable drive exhaust fans (10,000 to 20,000 cfm each) will provide approximately 4 air changes per hour.

The tip floor area loading zone will have an overhead misting system which will mitigate airborne dust from loader activity. The misting system will also have an integrated odor neutralizer.

All mechanical ventilation and heating and cooling will be electric systems (combustion systems will not be used).

HVAC for conditioned workspaces will be based on electric heat pump unit approach.

Emergency eye wash stations will be located in staff and public areas. These stations are also provided with an alarm to SCADA when ESEW flow switches are activated to alert facility operator. The roof will be provided with automatic smoke vents per code requirements.

All larger structures (PEMB) will have standing seam metal roofs. The adjacent smaller structures (e.g. Administrative and Vehicle Maintenance) will have a single ply EPDM membrane roof system. Roof areas will be provided with walkway surfaces to air handlers for maintenance personnel. A roof perimeter fall protection system will be provided for any low parapet areas. The roof areas will typically have a perimeter parapet with interior gutters. All roof drains and overflows will be internal to the site storm drainage system or recovery cisterns.

3.5.4. Electrical

Buildings will be equipped with smart energy meters to measure, monitor, record and display energy consumption data for each energy source and end use category to enable efficient energy management.



The overall building design will promote daylighting to reduce use of artificial lighting. Highly efficient LED interior and exterior lighting fixtures will include manual and automated lighting controls and include a smart energy metering system.

Power distribution will be provided by a new pad-mounted transformer and main service entrance switchboard with primary distribution, equipment and conductors provided by PG&E. Distribution will be provided to separate subpanels and meters for:

- Transfer Station & Scale house
- MRF & Buyback/Drop-off
- Vehicle Maintenance
- City Administration Offices
- City Contractor Office 1
- City Contractor Office 2

The existing overhead power line that extends from west to east across the mid-point of the site will be relocated to an underground conduit which will pass through the truck parking area with pull box covers as required.

3.5.5. Site Lighting

Exterior lighting will be provided by a combination of pole-mounted and building mounted LED-type fixtures which will minimize light trespass beyond the site boundary. These fixtures will be activated by light sensor (with manual overrides) and will provide a minimum of 0.5-foot candles. Some pole-mounted lights may be self-sufficient with its own PV.

Interior lighting will be energy efficient LED luminaires. Interior staff areas will have occupancy sensors.

3.5.6. Fire Protection

Fully automatic wet pipe fire sprinkler system, in conformance with NFPA 13. Fire hose boxes will be provided at the east wall near vehicle access points. It is assumed that approximately two additional fire hydrants and/or standpipes will provide exterior site protection.

A fire alarm system as required by the IFC and NFPA will include a Fire Alarm Control Panel (FACP), remote Fire Alarm Annunciators (FAA), initiating and notification devices. The fire alarm and detection system will be a complete, supervised, Class B fire alarm system.

Initiating devices will include:

- Manual pull stations by exit doors;
- Smoke/heat and detection;
- Sprinkler system waterflow, tamper, low air switches;
- Notification devices will include horns, strobes, and combination horn/strobes.



3.6. Environmental Strategies/Sustainability Features

3.6.1. Energy

The design concept has targeted a net zero energy approach with maximizing use of renewable energy strategies including wind and solar.

All buildings on-site will be equipped with smart energy meters to measure, monitor, record and display energy consumption data for each energy source and end use category to enable efficient energy management

3.6.2. Solar Energy

Each concept is designed for extensive presence of photovoltaics (PV). PV panels will be placed on the roof with support framing that will assure the optimal positioning. Although this system can power the facility, extended use of the high demand processing equipment will require on-site battery systems. The final extent of this will be determined with future engineering assessment and will be designed for grid harmonization as part of the LEED certification. Photovoltaics will also be imbedded in the canopy structures used in the Public Recycling Center to produce power while also providing shade and shelter features from a typical canopy structure.

3.6.3. Electric Charging Stations for Staff Vehicles

On-site charging stations will be installed for staff vehicles. Dedicated double 4-inch conduit has been planned for extensive site coverage toward a future total electrification of the site. This will accommodate a low impact conversion to charging stations in the truck parking areas for a future electric collection and transfer vehicle fleet.

3.6.4. Wind Energy

Gilman Street provides an effective wind corridor for easterly Bay breezes which is the predominant wind direction. To take advantage of this natural resource, the design proposes a 40 ft. tall steel frame structure supporting four helical wind turbines which together, can produce approximately 5 kilowatts of energy at peak capacity. This energy will be combined with on-site photovoltaic arrays to provide a comprehensive renewable energy response for this site which will significantly offset the facility's demand.

3.6.5. Water Conservation

Rainwater harvesting will be used on-site to capture sufficient quantities of rooftop rainwater and store for non-potable uses such as landscape irrigation and wash down of operational area paving. Uses of this water are fairly localized so each tank system (cistern) will have some minor filtration and an integrated solar-powered pump. Cisterns are assumed to be no larger than 2,500-gallon capacity. Rainwater exceeding the cisterns capacity will be directed to the stormwater conveyance system.

Low water usage fixtures will be used for all public and staff restrooms.

3.6.6. Recycled Materials

Steel used for structure beams, columns and exterior wall cladding will have a high percentage of recycled steel content as defined by LEED certification requirements.



Recycled materials from deconstruction: deconstruction of existing site structures and infrastructure will generate large quantities of materials. Items that have potential reuse/resale will be quantified accordingly for third party resellers and/or stored off-site. This would include process equipment, modulars, etc. Demolition concrete will be processed for use as site base gravel and new concrete slabs and flatwork (as it complies with design specifications). Demolition slab concrete will be sorted for select piecework for rubble masonry low landscape walls.

3.6.7. Daylighting

- Daylight conduit systems e.g. Solatube® will be used in office and public areas specifically to bring daylight to lower floors.
- Rooftop acrylic skylights (curbed with fall protection) will be used throughout all operational areas.
- Glass will be used in the Transfer station and the MRF to provide maximum natural light. Vision glass also provides views of the sky which enhances the interior (livability) environment for visitors and staff, a feature that is somewhat atypical of waste-handling facilities.
- Daylighting wall panels; translucent polycarbonate panels will be used at the west side integrated with the glass daylighting; this system is mounted in an aluminum frame, is smooth white and provides optimal durability, etc. For material cost economy purposes, white fiberglass translucent panels will be used at the east side facing the railroad right-of-way.
- Adequate daylight harvesting and dimmable LED lighting for safe operations.

3.6.8. Site Hydrology

Surface water controls will be installed in accordance with National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Plan (SWPPP) drainage requirements. Site grades will flow to east and west with a bioswale at east property line and smaller landscaped bioswales at the west boundary.

The project will use best management practices (BMPs), such as pervious pavement, rainwater harvest and reuse, and compost-amended soils where feasible. Additional flow control measures will include an underground detention. Media filter treatment vaults will have a vault filter chamber for treating runoff prior to exiting the vault.

Overall, the surface water management system includes:

- Conveyance facilities, including pipes, ditches, and perimeter swales.
- Impacted (non-storm) water management including floor drains/collection trenches, curb and gutter, piping, treatment that will be discharged to the City of Berkeley sanitary sewer in conformance with City code.
- Permanent flow control facilities, including two rainwater harvest and reuse cisterns, pervious pavement, compost amended soils, and a below-grade detention vault.
- Permanent treatment facilities, including a media filter treatment vault.
- All treated runoff will be connected to the existing pipe conveyance system in Second Street.



3.6.9. Codornices Creek

The north boundary of the site is adjacent to the Codornices Creek which currently is an unused segment south of the railroad easement (no contiguous trail connection at this date). As part of a natural environment restoration strategy, the Codornices Creek will be provided with a minimum 30 ft. buffer that will be sloped at 5% to a berm wall (north curb line of public driveway) and planted with native grasses and shrubs consistent with the Creek. Future civil engineering, as a selected design is developed, will take into consideration the flooding potential along the Creek and provide mitigating measures at that time. Both Concepts A and B provide a northerly berm wall to redirect occasional creek surges and prevent flooding in this area. It should be noted Concept A has very limited structures at the north end of the site offering alternate access to the facility if the Creek experiences minor flooding at the scale entry and with the 100 ft. of the structure. Although limited, the remote scale could provide emergency access and use of the facility.

Sharing the main public entry will be a pedestrian access path that will have a low wall separating the walkway from the vehicle lane. The paving would be decomposed granite with a solidifier to create a pervious but accessible "trail" to a small respite area that would feature an informational podium display on Bay Area watershed and a dedication by Friends of Five Creeks. The plantings here would feature native riparian species such as willow, sedges, etc. The buffer would be modestly sloped up away from the creek flowline the integration of a berm for flow control. An opportunity also exists for placement of watershed focused art features in this area.

3.6.10. Utilities

Utility service connections for water, sanitary sewer, storm sewer, electricity, telephone, and data are assumed to be similar in capacity if not less than existing conditions. New connections to the public right-of-way will be in compliance with requirements from the respective utility. Adequate offsets from easement boundaries and utility lines will be followed based on utility company requirements. The facility will meet the City of Berkeley design requirements including relevant criteria for water and sewer design and service connections, surface water drainage, clearing and grading, building, zoning, transportation and street frontage, right-of-way, and fire protection. Fire suppression will be supported by on-site hydrants with locations as approved by the local fire authority.

3.6.11. Vehicle Access

Site access and roadways will be designed for self-haul vehicles with trailers, residential and commercial collection trucks, roll-off trucks, and transfer vehicles, as applicable to the various parts of the site. The following criteria will be met for roadways and maneuvering areas:

- Turning radius for self-haul vehicles with trailer is 24 feet.
- Turning radius for residential and commercial collection truck is 42 feet.
- Turning radius for transfer vehicle is 45 feet.

Transfer truck and trailer circulation was tested using AutoTurn® software and drive aisles provide adequate drive length for vehicles to straighten out before and after scales and entering and exiting all buildings.

No dead-end drive lanes are on-site providing loop access lanes for fire and emergency equipment which will be dedicated as approved by the Berkeley Fire Department.



3.6.12. Other Design Features

- Buildings design life will be 50 years. Structures will be non-combustible with a preference for materials that have maximum durability and minimal maintenance for the expected life span of the structure.
- Insulation will be used for optimal R-value as well as recycled material content.
- Pedestrian exit doors and signage will be placed for egress code compliance.
- Structural elements such as columns will be provided with heavy duty steel bollard protection.
- Overall site organization of structures shall present a sequence that is efficient as well as intuitive for customers.
- Vehicle doors are predominantly facing the east side of the site at the railroad right-of-way.
- In addition to optimal functional placement of structures, solar orientation for energy conservation and natural lighting will be important considerations.

3.7. Architectural Design

The overall architectural objective is to suggest contextually sensitive and visually attractive structures. The intent will be to have the design participate in the neighborhood themes but also stand out and be memorable for its unique purpose.

The use of gray metal panel cladding reflects the visual cues from neighboring buildings and stays within the boundaries of an eclectic neighborhood with an old industrial past. An alternate shade of gray as well as a bold “dark red cedar” accent color will be used to highlight different functions of the structures. Structure is expressed as an accent in specific areas (i.e. bracing, canopy supports, or the expression of the Photovoltaic system) by extending the panel system past the building wall. See **Figure 3-18** below for an architectural rendering.



Figure 3-18: Concept B - Architectural Rendering



3.7.1. Landscape

Landscape shall be used to meet City of Berkeley zoning requirements and enhance street frontages while considering least-maintenance options that will assure the landscape installation's success over time. Planting will be drought-tolerant and native to minimize maintenance needs once the plantings are fully established. Recovered materials incorporated into site construction features will be a priority where feasible. This includes the use of recovered demolition slab concrete for low landscape walls. Decorative fencing made from recycled rebar and construction steel are proposed based on the availability of local artisans for fabrication.

The hardscape, particularly at key public pedestrian access points will stress accessibility, stormwater permeability but also offer varied paving materials and patterns for an organically inspired design. Vertical sculpture and available decorative surfaces using recycled materials will be used as dramatic emblems for reuse possibilities.

3.7.2. City of Berkeley Climate Action Plan

Central to the project's development goals will be how the new facility can contribute to the City's 2009 Climate Action Plan which targets a reduction in greenhouse gas (GHG) emissions, specifically a 33% reduction from 2000 GHG levels. Programming strategies for the new facility which will be central to that contribution include:

3.7.2.1. Waste Reduction & Recycling Features

With landfills as a GHG generator, reducing the volume of material that is transported to the landfill along with the associated vehicle emissions is fundamental to the purpose of this facility and its ability to reduce that volume. Key programming elements which contribute to that reduction are as follows:

- Enhanced options for customers to separate materials at drop-off.
- Larger Transfer Station floor area for separation of tipped bulky and organic materials and enhanced recovery.
- Improved recovery volume from improved MRF processing equipment technology.
- Improved quality of recovered materials from new MRF equipment technology.
- Enhanced public education re: waste reduction, reuse, recycling, and composting via onsite information kiosks and an environmental education center.

3.7.2.2. Community Outreach & Empowerment Features

The purpose and function of the facility (recycling and reuse of materials) offers special opportunities to engage the community with environmental education. This facility will have:

- An Environmental Education Center to present the precepts of GHG emissions, climate change and environmental stewardship. In addition to educational displays, an actual MRF viewing experience will be available.
- A Community and Artisan space for learning opportunities that explore common sense activities for less waste and creative reuse.
- Provide an attractive environment for community recycling events.



3.7.2.3. Energy

The facility design will integrate technology that will promote a Net Zero Energy capability and provide a significant component to reducing the Berkeley community carbon footprint. This will include:

Solar

Renewable energy including extensive use of photovoltaic power. With close to 30,000 sf of PV panel mounted at roof level, this capability is planned to completely power the facility other than some peak operating periods of the MRF. Added battery storage capability may provide leveling for this as well as power back to the community grid (i.e. grid harmonization).

Wind

Renewable energy utilizing helical wind turbines. Elevated 40 ft. above ground level, these vertical turbines will capture the breeze corridor coming from the Bay eastward along Gilman Street.

Other Energy-related Design Features:

- Energy management technology
- LED lighting throughout (interior and exterior)
- Extensive daylighting
- High efficiency motors used with mechanical ventilation and MRF equipment
- All-electric mechanical air systems and water heating equipment (no fossil fuel/natural gas)

3.7.2.4. Transportation

The facility is and will be used by a wide variety of vehicles both public and private, both cars and trucks. How the site is used by vehicles was an important consideration in the planning of the facility:

- Reduced wait times from more efficient state-of-the-art scale house technology and queuing design will translate to less idling of gas engines (less consumption and emissions).
- Charging stations for electric cars will be provided. A charging station will be provided in the operations area for trailer "mule," a tractor for towing trailers on site. Conversion to electric collection trucks charging would be planned.
- Promote a "cycle-share" program with on-site bicycle access that will integrate with the proposed interchange improvements that include connections to the City's bicycle paths.

3.7.2.5. Land Use

Creek restoration is a critical component of the overall enhancements to Bay watershed environmental quality. A 30 ft. buffer zone will be dedicated. This zone will be planted with native species as appropriate to a Bay Area riparian habitat. The buffer zone will be modestly sloped toward the natural flowline of the creek to encourage natural drainage to the creek-bed and away from the site proper. The low retaining wall transition to the entry road at the south end of this berm is proposed to be rubble masonry made from repurposed concrete slab.



3.7.2.6. LEED

The Zero Waste Collaborative team reviewed each of the Site Concepts A & B for environmental performance with respect to the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) design, construction and operation framework. It should be noted that LEED, "the most widely used green building rating system in the world" provides an effective benchmark toward a design fulfilling the City's Climate Action Plan and Net Zero Energy goals. This initial evaluation utilized the LEED v4.1 for BD+C New Construction and Major Renovation Checklist (see **Exhibit 28**). This checklist is a recognized guide and first step in establishing a project design's sustainability and capability in reducing GHG emissions. The checklist provides three outcomes for a conceptual level review:

- **Yes**, for achievable active or passive responses in the design
- **Maybe**, for potential feasibility but only established during final design and engineering (and affirmation of commitment by the Owner)
- **No**, not considered feasible usually due to the nature of the site and/or use. Some examples are indicated below.

The review of both facility concepts determined that a LEED Gold certification was achievable as delineated by City initiatives and ordinances. A strong commitment to renewable energy, water conservation as well as innovation will serve as the core basis for gaining this level of certification.

It should be noted that the higher Platinum level was problematic due to some key credits that are not feasible due to the location of the site and use. As an example, the first credit in the "Location and Transportation" credit section is "LEED for Neighborhood Development Location" providing 16 potential credits. This category is aligned with new planned mixed-use community developments; the Berkeley Solid Waste and Recycling Transfer Station site is not a candidate for achieving any of these credits. The "Access to Quality Transit" (5 potential Credits) is linked to local neighborhood transit; not the Amtrak line with station nearby which provide broader Bay Area access.

3.8. Land Use/Site Design

3.8.1. Site Challenges

Although a geotechnical investigation was not available for this evaluation, it is assumed that the structures will need to be built on a foundation supported by deep piles. This is based on the site's proximity to the Bay and the likely presence of bay mud. Our design team has experience with transfer station/MRF facilities built in similar locations in the Bay Area, so comparable structures were referenced for this Study. A geotechnical investigation is recommended for next steps in the development of this facility since unknown subsurface issues are present (e.g. a 2-ft deep lime cap and a high-water table). Overall, preparation of the site for new structures may have a significant cost impact which are not within the Scope of the Study.

3.8.2. Access/Traffic

Vehicle circulation to the site and for departures are defined by Second Street. The one-way (south to north) direction of Second Street on the southern portion between Gilman and Harrison streets



establishes some basic rules for accessing the site. Minimizing the vehicle stacking on this portion of the street will have a positive effect on the neighbors as well.

The eastern boundary is defined by the railroad right-of-way with the Gilman Street at grade crossing. Types of public and commercial traffic accessing the site is not anticipated to change. Increases in vehicle quantities and frequency should be addressed with the redesign of scale queuing including improvements in transaction cycle time. Accordingly, the new facility master plan should primarily mitigate and improve current queuing and access issues.

3.8.3. UP/Amtrak

The UP/Amtrak right-of-way defines the eastern edge of the site. This corridor through West Berkeley is an important link in the region's freight and passenger rail network. The railroad's at grade crossing at Gilman Street will soon have a center barrier on the west side preventing turns from the site to the eastbound side of Gilman Street (toward Berkeley). Access to and from the site was planned with this in mind. The proposed access from primarily collection trucks traveling westbound on Gilman Street may be delayed by the at grade crossing when the train is passing (the gates are down an average of 30-40 seconds). Likewise, trucks approaching the site from the west would plan to take nearby streets (e.g. Cedar Street to Sixth Street) to make the east approach avoiding the left turn from Gilman Street to Second Street. The entry drive is designed for one-way access for multiple trucks to clear the Gilman Street right-of-way as well as the at-grade crossing.

3.8.4. Second Street

Second Street is currently a one-way street (south to north) from Gilman Street to the Harrison Street intersection to the north. This intersection is approximately the midpoint of the site in the north-south direction. The north remainder of Second Street (Harrison Street north) is two-way and primarily serves access to Public Storage property on the west in addition to the site on the east side. Since there is no indication that the one-way portion of Second Street will change to 2-way street in the future, this became a key traffic determinant in how vehicles would access the site, particularly the public user. Basically, all actions by a customer would need to consider reentering this street and continuing either to the north portion of the site or exiting via Harrison Street and continuing around the block.

Circulation from the intersection at I-80 and Gilman Street will improve with the completion of the planned roundabout which is in final design. Planned by the California Department of Transportation (CalTrans), it will replace the existing stop sign access from the Eastshore Highway. This junction used by Division, City contracted vendors, and the public vehicles using the Solid Waste and Recycling Transfer Station facility is difficult if not dangerous to navigate. The roundabout should have a positive impact on traffic flow at the facility when it is complete.

3.9. Programming Assumptions

The ZWC team reviewed and completed more than a dozen concept plans to try and address future project goals and community input. The bullet points below summarize some of the iterations and design concepts considered.

- In order to create larger tipping floor areas for site operations, the design team considered an additional level for vehicle parking and/or operations. However long ramps and turn constraints posed some significant challenges to this approach. Also, any uses on the



upper level posed large load capacity requirements which in turn required columns at the lower level. The columns restrict operations and vehicle maneuvering. These factors in addition to the significant cost ramifications excluded this approach from further consideration.

- The vehicle maintenance was considered for placement off-site since it placed a significant impact on space needs on the site's capability to support additional MRF and Transfer Station capacity. After considering very limited options on handling this activity at another location, it was reintroduced to the program.
- Some staff parking will be utilized along Second Street as it is today at the north portion of the street.
- Initial site concept iterations considered reuse of the existing outdoor loadout tunnel. However, this location severely compromised the most viable layouts. Retaining the existing loadout tunnel was eliminated.
- Floor level loadouts were chosen considering the volume of loadout that is typically accommodated with a "lift-and-load" operation where the wheel bucket loader can drop material into a tractor trailer similar to the loading of a dump truck. The push wall is configured with sloped steel backboard that directs material into the trailer and minimizes spillage around the trailer. Using this type of loadout in lieu of a 16 ft. deep tunnel eliminated excessive ramp conditions which consume valuable site area.
- A pedestrian bridge was suggested in public meetings which would provide a connection over the Codornices Creek from Second Street to the Target store property to the north. The City determined that this proposal extended beyond the purview of this study and was not included.
- Building foundations and below ground detention as required will be feasible with the site soil conditions and water table. A geotechnical investigation will have to be performed to confirm the viability of subsurface construction.
- On-site processing of organics was not considered due to space requirements for typical equipment processing systems. Also, odor treatment could be problematic considering the site's context in the neighborhood and adjoining uses, wind direction, etc.
- The Facility Designs A & B as presented in this document conform to the City's zoning requirements and would be acceptable in concept to the City Planning review process as a significant improvement to existing conditions. Final approvals would be contingent on specific Conditions of Approval, potential variances, etc.

3.10. MRF/Transfer Station Programming

3.10.1. MRF Equipment Processing Area

In conformance with the City's and City Council's directives to maintain and operate a dual stream recyclables collection and processing systems, the programming considered possible footprint limitations for the overall system. This equipment configuration design process paralleled initial site and building concept iterations as test-fit scenarios for an equipment footprint that would be appropriately accommodated by the building enclosure and provide adequate clearances for maneuvering, material handling and maintenance. The design presents a preferred layout but not a



final engineered design. Therefore, the adaptability of the conceptual layout to the specifications of multiple equipment supplier/bidder was a criterion in the programming.

3.10.2. Transfer Station

Increasing the size of the Solid Waste and Recycling Transfer Station would benefit the facility's ability to serve the community. But this would also require updates to the operating permits (CalRecycle and BAAQMD). The proposed design includes consideration for an expansion of operating hours and an increase tonnage from 560 tons per day to 620 tons per day (ongoing at this writing) that would be integral with that updated permits.

3.10.3. Design Charrette Programming Criteria

The Public Design Charrette provided a collaborative setting open to many and varied community members to participate in a planning exercise to establish some guiding concepts for the facility design. From a broad variety of comments and ideas, a basic consensus or common ground was established and can be summarized as the following principles:

- **Traffic Separation:** Public customers would be able to enter the site, complete their activity and leave the site with the minimal amount of sharing circulation areas with commercial trucks. The general consensus from the Charrette participants was that trucks should predominantly use the east side of the site.
- **Facility Awareness and Identification:** Strong feedback determined that the Public Buyback and Drop-off be close to Gilman Street, as current, where the predominant traffic visibility will provide strong user identification as well as convenient access.
- **Facility Pedestrian Access:** The Buyback and Drop-off areas should be in close proximity to the Gilman Street corridor providing accessibility to walk-ins that may or may not have cart or bicycle.
- **Facility Site Orientation:** Place the facility so that the operations side faces the railroad right-of-way and away from Second Street.
- **One Building or Two Buildings:** The Design Charrette provided two options that identified a singular building that was discussed as providing potential flexibility and the potential to reduce the transfer area in lieu of the recycling area. The two-building alternate proposed a separate transfer building that could be reconfigured as well for other types of recovery operations.



Charrette sketches derived from layout discussion topics:

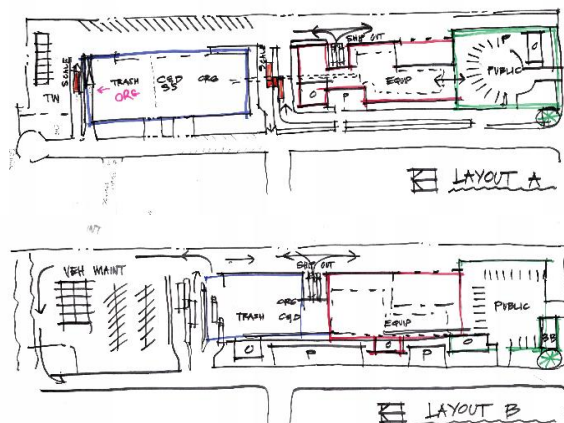


Figure 3-19: Concepts A and B Charette Sketches

Following the Public Design Charrette, the initial design process initiated an extensive number of layouts. These layouts were vetted in collaborative review process with key City Zero Waste Division staff. This required a continual process of challenging assumptions for desired building sizes and paved areas. The preferred concepts represent the fulfillment of that process with Concept A and Concept B.

3.11. Construction Phasing

The following provides background on the potential development scenario for both Site Concept A and Site Concept B. Final sequencing and coordination is subject to review by the City's contracted Construction Management professional in collaboration with the selected General Contractor.

Situations where structures are developed separately will require separate utility (temporary and/or permanent) and will require approval by the building department.

It should be noted that Site Concept A will require the relocation of an overhead utility line to an underground upgrade (Site Concept B could have the overhead remain in place). For Site Concept B, the MRF footprint overlays the existing recycling building which will require the City to procure an off-site processing solution for an interim period.

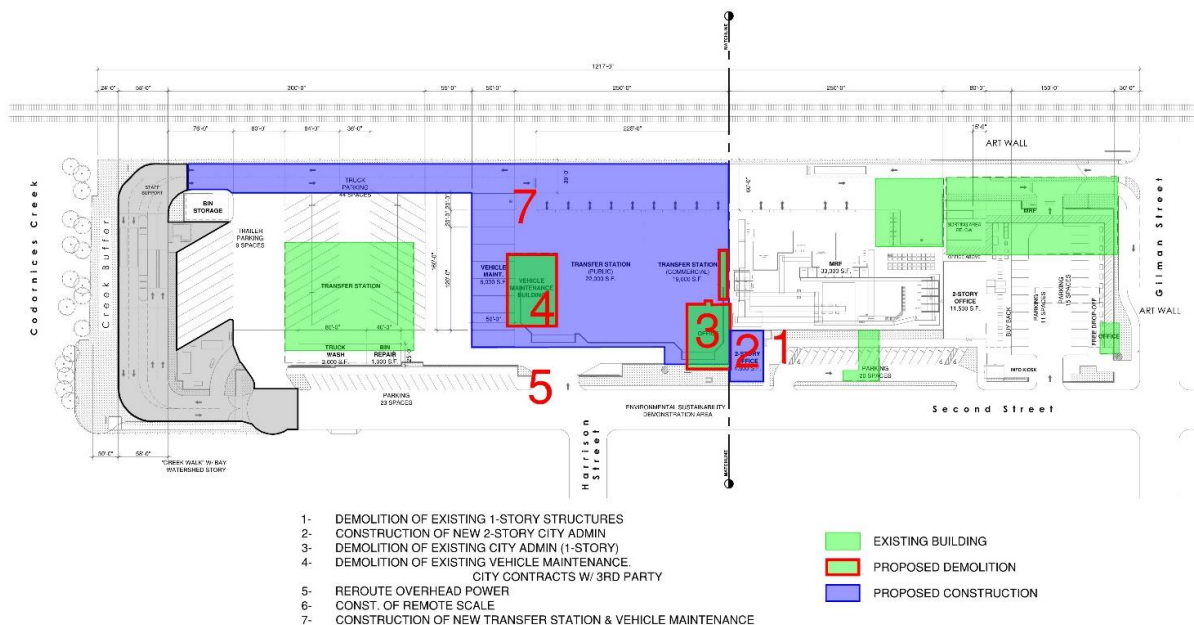
1- CONSTRUCTION OF NEW SCALE FACILITY (DEMO STORAGE BIN REPAIR)
 2- RECONSTRUCTION OF CUL-DE-SAC
 3- DEMO OF EXISTING SCALE FACILITY
 4- RELOCATION OF CNG & DIESEL FUELING

EXISTING BUILDING
 PROPOSED DEMOLITION
 PROPOSED CONSTRUCTION

- 47



CONCEPT PLAN A – PHASE 2

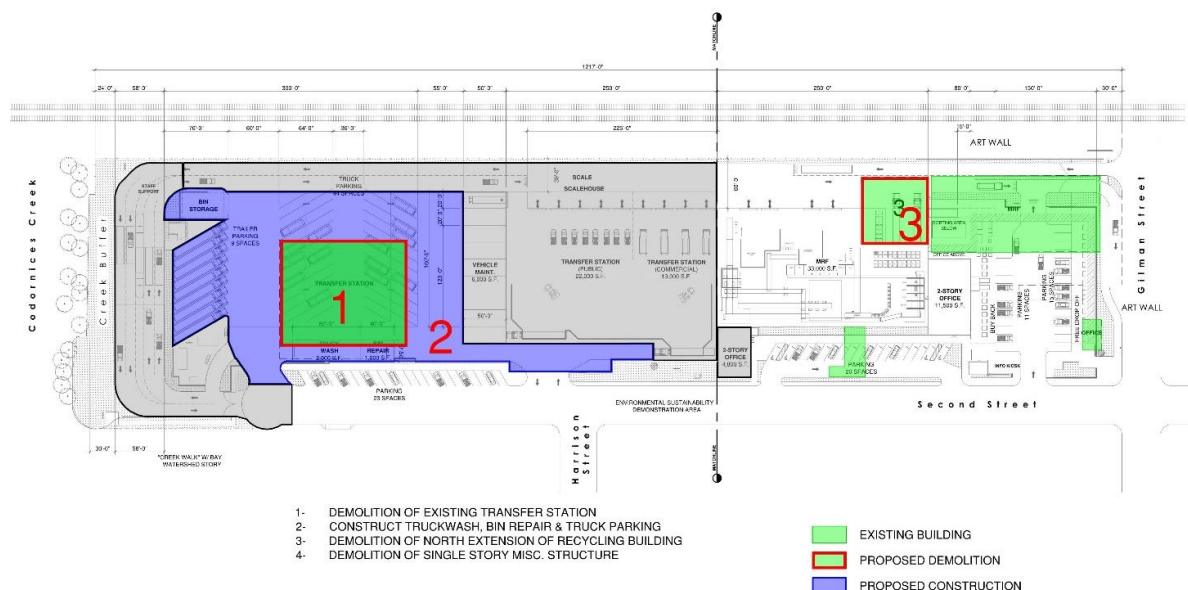


- 1- DEMOLITION OF EXISTING 1-STORY STRUCTURES
 - a. Purpose is to prepare site pad for new City Admin.
 - b. May require temporary storage for office files, equipment, etc..
- 2- CONSTRUCTION OF NEW 2-STORY CITY ADMIN. BUILDING
 - a. New structure is adjacent to existing requiring some delay with wall finishes at north side.
 - b. Staff move when complete.
- 3- DEMOLITION OF EXISTING CITY ADMIN. BUILDING (1-STORY)
 - a. Removal/demolition of relocatables (including Conf Room trailer)
 - b. Relocation or decommission of radio antenna.
 - c. No impact to public access with use of new main entry.
 - d. Temporary parking needed for staff vehicles.
- 4- DEMOLITION OF EXISTING VEHICLE MAINTENANCE (CITY CONTRACTS W/ 3RD PARTY)
 - a. Purpose is to allow construction of a new facility (existing building footprint overlaps new vehicle maintenance footprint).
 - b. Truck washdown area may require temporary relocation.
 - c. Transfer trailer truck parking is displaced and will require parking trucks as available on-site as determined by operations staff.
 - d. West pavement demolition would be clear of transfer truck access to Transfer Station loadout tunnel.
 - e. Shutdown of operations and continuation with off-site contractor.
- 5- REROUTE OVERHEAD POWER.
 - a. New underground trenching and paving may require temporary disruption of site circulation. Alternate routes are likely available but will require close coordination with operations staff.
- 6- CONSTRUCTION OF NEW REMOTE SCALE
 - a. Serves collection truck weighing prior to construction of new Transfer Station.
 - b. Option: Collection trucks could use main scale entry at north end of the site following construction of new Transfer Station.



- 7- CONSTRUCTION OF NEW TRANSFER STATION & VEHICLE MAINTENANCE BUILDINGS
 - a. The Transfer Station and the Vehicle Maintenance building are adjacent but separate structures. The Vehicle Maintenance bays could be delayed in order to provide better access to the existing transfer station.
 - b. Includes new paving for public access at east side.
 - c. Includes new paving to loadout bays.
 - d. Construction of Transfer Station main power infrastructure i.e. transformer and switchgear.

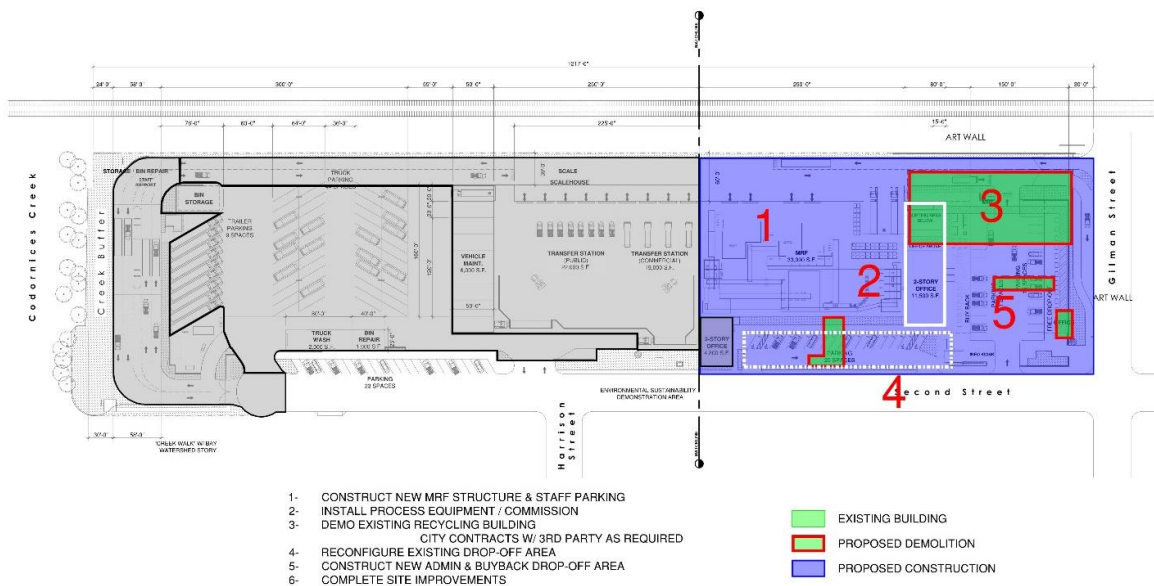
CONCEPT PLAN A – PHASE 3



- 1- DEMOLITION OF EXISTING TRANSFER STATION BUILDING
 - a. Demolition of interior loadout and exterior.
 - b. Investigate on-site processing of demolition materials e.g. concrete for base.
- 2- CONSTRUCT TRUCKWASH, BIN REPAIR & TRUCK PARKING
- 3- DEMOLITION OF NORTH EXTENSION OF RECYCLING BUILDING
 - a. Confirm structural separation for deconstruction.
 - b. Requires relocation or off-site contractor processing of glass.
 - c. Some minor modification of equipment may be required.
 - d. Bunkers and structure would be removed to open site area for new MRF structure.
- 4- DEMOLITION OF SINGLE STORY MISC STRUCTURES
 - a. Clears site for new MRF building.
 - b. Provides more temporary area for public drop-off and buyback. Provide relocatables/trailers to provide staff support areas for City Contractors until new Administrative Building is complete.



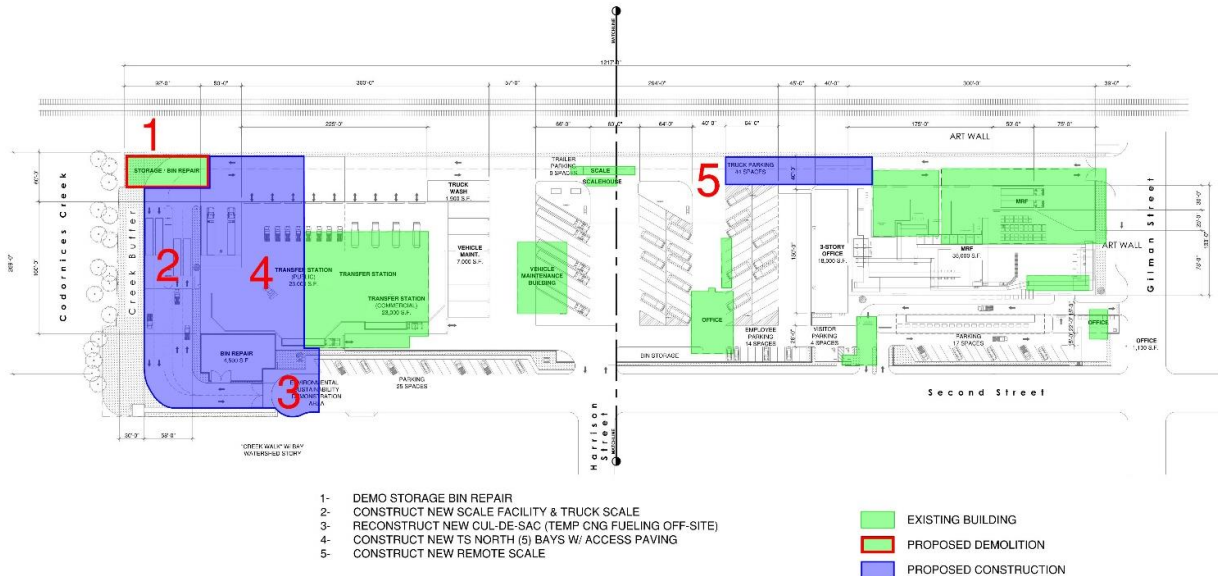
CONCEPT PLAN A – PHASE 4



- 1- CONSTRUCT NEW MRF BUILDING & STAFF PARKING
- 2- INSTALL PROCESS EQUIPMENT / COMMISSION
 - a. Follows completion of MRF structure
- 3- DEMO EXISTING RECYCLING BUILDING (CITY CONTRACTS W/ 3RD PARTY AS REQUIRED)
 - a. Required for construction of Drop-off and Buyback Center.
 - b. Contractor can use drive at SE corner near grade-crossing for access.
- 4- RECONFIGURE EXISTING DROP-OFF AREA
 - a. Area to the west of demolition could be maintained for public drop-off access;
 - b. Truck parking area near Second St and/or past new scales could be used as an interim drop-off or buyback
- 5- CONSTRUCT NEW ADMIN & BUYBACK DROP-OFF AREA
 - a. Canopies could be added later when not open to the public.
- 6- COMPLETE SITE IMPROVEMENTS
 - a. Landscape improvements
 - b. Off-site improvements such as public sidewalks



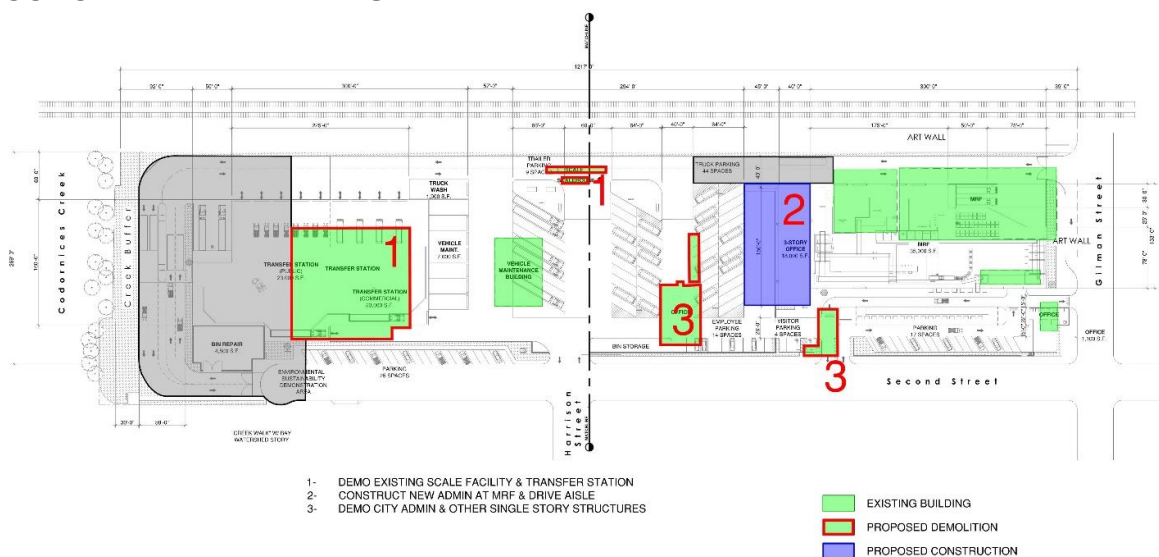
CONCEPT PLAN B – PHASE 1



- 1- DEMO STORAGE BIN REPAIR
 - a. Relocation of some minor open-air storage.
 - b. Requires consideration for other locations on site for bin repair.
- 2- CONSTRUCT NEW SCALE FACILITY & TRUCK SCALE
- 3- RECONSTRUCT NEW CUL-DE-SAC (TEMP CNG FUELING OFF-SITE)
 - a. Demolition of existing cul-de-sac
 - b. Deconstruction of CNG fueling and relocation to future site. Future site is near existing Scale house and may have impact on public exit traffic.
 - c. Deconstruction of exterior loadout pit.
 - d. Work may impact some staff parking at Second Street in order to provide an interim turnaround as may be required by the City of Berkeley Fire Department.
- 4- CONSTRUCT NEW TRANSFER STATION NORTH (5) BAYS W/ ACCESS PAVING
 - a. Transfer station PEMB frames span in the east-west direction allowing the sectioning of the main building. Requires special erection coordination but would permit the placement of a partial new Transfer Station (5 bays) for use until the existing transfer station is demolished and the south portion of the new Transfer Station is constructed.
 - b. Limited capacity floor area of 17,000 sf.
 - c. Limitations on transfer truck access for lift and load operation.
- 5- CONSTRUCT NEW REMOTE SCALE
 - a. Allows collection truck access prior to demolition of existing scales.



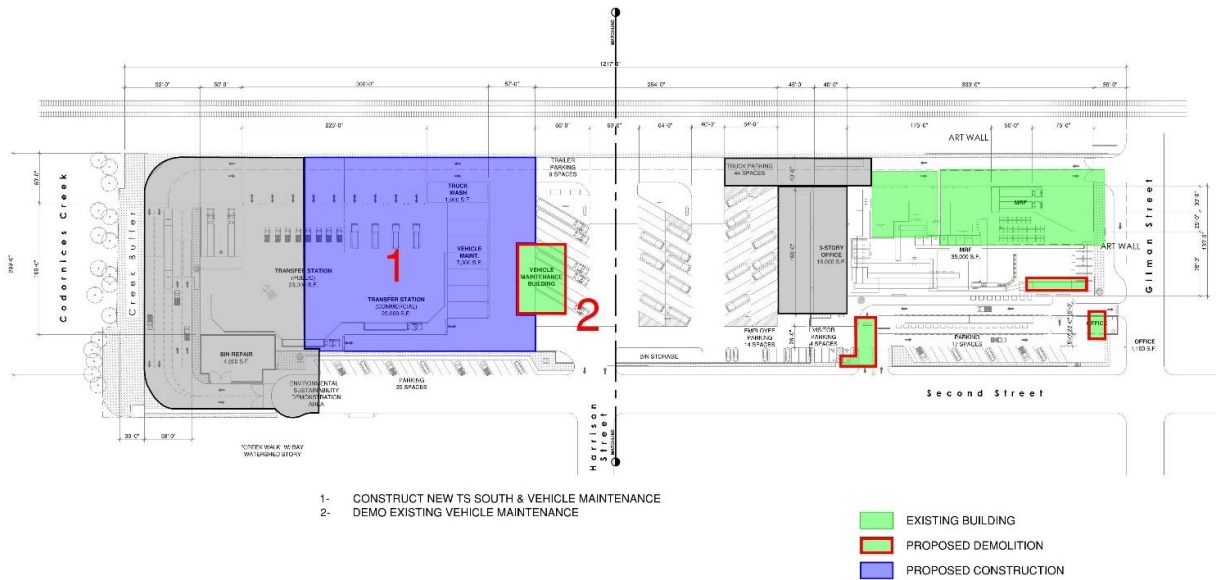
CONCEPT PLAN B – PHASE 2



- 1- DEMO EXISTING SCALE FACILITY & TRANSFER STATION
 - a. Assumes new main entry scales are operational.
- 2- CONSTRUCT NEW ADMIN. BUILDING AT MRF & DRIVE AISLE
 - a. This area of the existing site has limited structures and obstacles. Some coordination of relocated items per operations staff will be required.
 - b. This 3-story building, although adjacent to the MRF, is an independent steel-framed structure and can be built separately.
- 3- DEMO CITY ADMIN. BUILDING & OTHER SINGLE-STORY STRUCTURES
 - a. Relocate City administrative and staff support functions
 - b. Relocate City Contractor admin and staff support functions



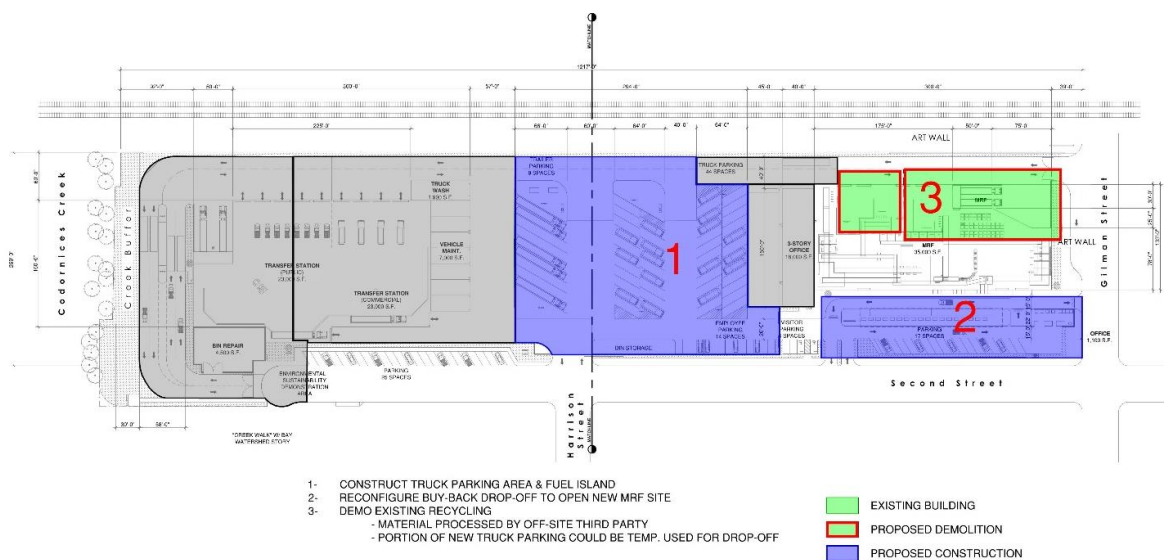
CONCEPT PLAN B – PHASE 3



- 1- CONSTRUCT NEW TRANSFER STATION SOUTH & VEHICLE MAINTENANCE
 - a. Completes new Transfer Station Building including loadout bays.
 - b. New Vehicle Maintenance facility can be built; existing stays operational.
 - c. Some limitations on north side access to existing vehicle maintenance bays for new paving construction (requires construction sequencing coordination).
- 2- DEMO EXISTING VEHICLE MAINTENANCE BUILDINGS
 - a. Assumes new Vehicle Maintenance building is operational.



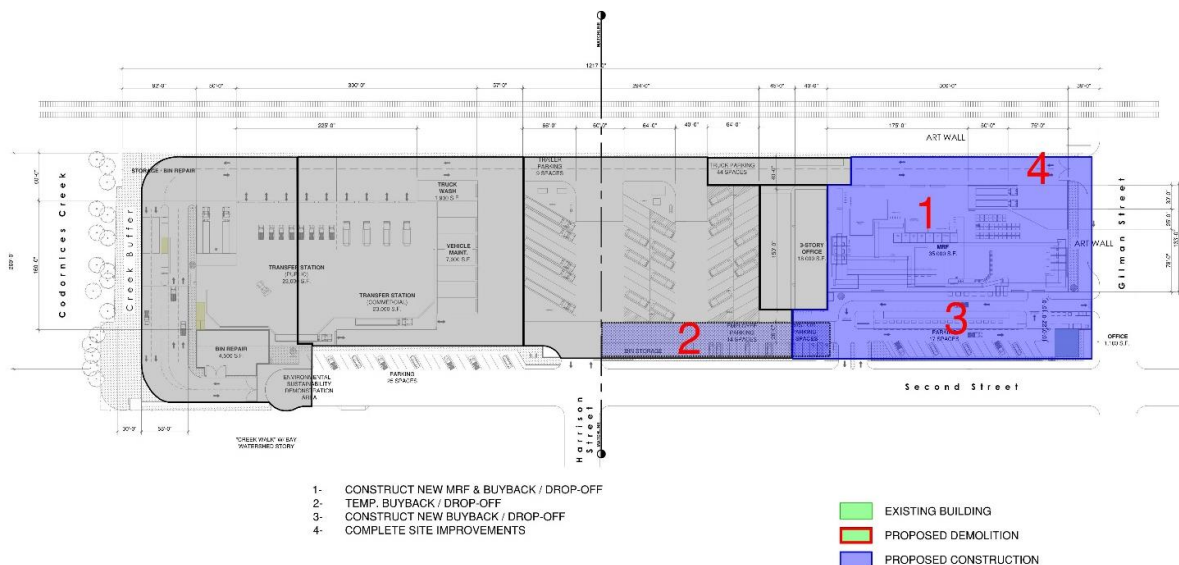
CONCEPT PLAN B – PHASE 4



- 1- CONSTRUCT TRUCK PARKING AREA & FUEL ISLAND
 - a. Relocate overhead power to underground.
- 2- RECONFIGURE BUY-BACK DROP-OFF TO OPEN NEW MRF SITE
 - a. Area defined by new Drop-off and Buyback would remain in use; move boxes as needed. This may require removal of existing canopies.
- 3- DEMO EXISTING RECYCLING BUILDING
 - a. Materials processed here would need to be processed off-site for interim until new MRF is operational.
 - b. Truck parking area near Second St and/or past new scales could be used as an interim drop-off or buyback



CONCEPT PLAN B – PHASE 5



- 1- CONSTRUCT NEW MRF & BUYBACK / DROP-OFF
 - a. Off-site recycling is required until the new MRF is completed and equipment is operational.
- 2- TEMPORARY BUYBACK/DROP-OFF
 - a. Opens site area for new construction.
 - b. Some impacts to parking and circulation.
- 3- CONSTRUCT NEW BUYBACK/DROP-OFF
- 4- COMPLETE SITE IMPROVEMENTS
 - a. Landscape improvements
 - b. Off-site improvements such as public sidewalks



4.0 Environmental Considerations

In redeveloping the solid waste and recycling transfer station, the City will want to mitigate any negative environmental impacts associated with the project. These can include:

- Traffic – Second and Gilman streets intersection is a busy intersection and vehicles entering and exiting the drop-off, recycling and buyback and transfer station can impact this intersection and the surrounding side streets.
- Water quality – the facility is located next to Codornices Creek and activities at the facility could impact this eco-system.
- Noise and air quality – the facility has neighbors, including Gabe Catalfo Fields, Harrison Park and the Berkeley Skate Park. These neighbors can be considered “sensitive receptors” and are potentially impacted by noise, odor and particulates that can be emitted through activities at the site.

The new design will address these potential impacts and the redeveloped facility should have potentially fewer impacts than the current facility.

The California Environmental Quality Act (CEQA) is a California statute that requires local agencies to identify any significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

The purpose of CEQA is to: disclose to the public the significant environmental effects of a proposed discretionary project, through the preparation of an Initial Study (IS), Negative Declaration (ND), or Environmental Impact Report (EIR).

- An initial study is a preliminary analysis conducted by the lead agency to determine if a project may have a significant effect on the environment. The initial study also aids in determining what type of environmental document to prepare.
- A Negative Declaration is a document that states upon completion of an initial study, that there is no substantial evidence that the project may have a significant effect on the environment.
- An Environmental Impact Report (EIR) is an informational document which provides public agencies and the general public with detailed information about the effect that a proposed project is likely to have on the environment. The EIR also lists the ways in which these environmental effects might be minimized and whether there are any alternatives to such a project.

CEQA prescribes specific timeframes for noticing the public and the state and regional agencies of the release of the environmental documentation.

City staff determined that it would be appropriate to initiate the environmental review process once this feasibility study was complete and the City Council has authorized City staff to move forward to the CEQA phase of the project.



Environmental Process

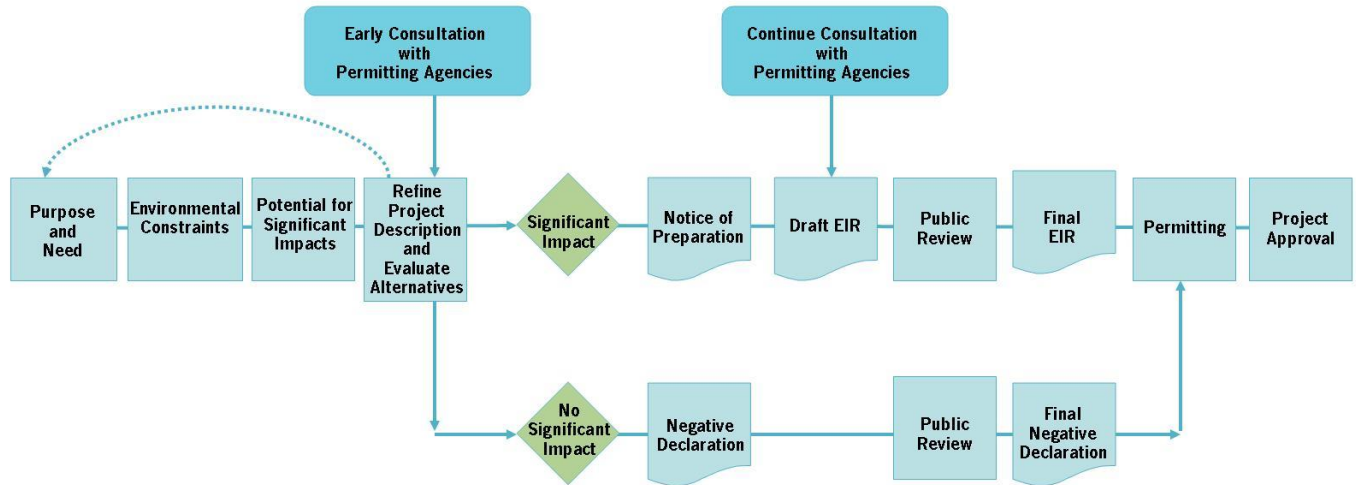


Figure 4-1: Environmental Review Process



5.0 Development of Cost Analysis Framework

5.1. Scope of Cost Analysis/Estimate

Based on the two concepts developed and presented in this report, a future cost analysis should be in conformance with Class 4 estimate guidelines as defined by the Association for the Advancement of Cost Engineering (AACE). The ZWC Design Team developed plans, sections, and elevations with dimensions and keynote information which can be used to develop a preliminary cost estimate.

- A cost analysis should include a base cost for site and building improvements to incorporate features associated with LEED, project sustainability, and net zero energy. The Project Cost Analysis should include the following components:
- Site Improvements
 - Contractor construction mobilization
 - Existing site conditions and demolition
 - Utilities relocation and undergrounding
 - Grading and paving
- Building Improvements
 - Scale house and scales
 - Transfer Station
 - Material Recovery Facility (MRF)
 - Administration office
 - Vehicle Maintenance
 - Ancillary support facilities
- Facility Equipment
 - MRF sorting and processing
- Facility and Energy Sustainability
 - Providing infrastructure for electrification of collection fleet
 - Photovoltaic panels
 - Rainwater harvest tanks
 - Wind turbines
 - Pervious paving
 - Additional sustainability improvements to be determined to meet net zero energy standard and LEED certification
- Contractors' indirect costs (overhead and profit)
- Design Contingency design cost per the AACE International Design Practices
- Construction, permitting and planning process for permits and construction inspection/compliance



Project Permitting Costs

ZWC has been advised by Department of Public Works that the following costs have been included in the ongoing Rate Study in development with HF&H, Inc. and projected Zero Waste Division budgets:

- Solid Waste & Recycling Feasibility Study - \$500,000 (FY2019/2020)
- California Environmental Quality Act (CEQA) study - \$5,000,000 (FY2020 through FY2025)
- Geotechnical site investigation - \$1,000,000 (note, to be conducted in conjunction with the separate CEQA process through FY2021/2022)
- Final Design, and Plans & Specifications engineering - \$3,000,000 (FY2026/2027)

6.0 Potential Financial Model

A financial model should be developed to identify the source of funds (revenues) and associated cash flow needs to ensure the Zero Waste Enterprise Fund can appropriately pay for the project cost estimates. There are four potential sources of revenues for the City to pay for project permitting, design and construction costs as follows:

- Tipping fees charged to self-haul (public) customers using the Berkeley Transfer Station
- Collection rates charged to residential and commercial customers in the City of Berkeley
- Zero Waste Fund Balance - capital reserve
- Debt financing through issuance of solid waste revenue bonds

Collection rates revenues should include sufficient funds in the future projected collection rate model specifically for the replacement of the Berkeley Solid Waste & Recycling Transfer Station. These collection rate revenues should cover the cost of this Feasibility Study, and future work related to the CEQA costs, needed site geotechnical investigation, and facility design/engineering.

Tipping fee revenue scenarios should reflect tipping fee adjustments over the next five to seven years for public customer rates and consideration for internal processing and disposal rates for city collected tonnages (i.e., refuse, and organics).

The amount of debt financing through issuance of revenue bonds should reflect the remaining project funding required after considering tip fee revenues, collection rate revenues (earmarked for this project), and Zero Waste Fund balance transfers.



Exhibits

Part 1

- 1 BTS TS & Recycling Center Site Assessment
- 2 MRF Programming Questionnaire
- 3 A1.1 SITE PLAN – CONCEPT A
- 4 A1.2 SITE PLAN – CONCEPT B
- 5 A2.1 OVERALL FLOOR PLAN – CONCEPT A
- 6 A2.2 FLOOR PLAN CONCEPT B – MRF
- 7 A2.3 FLOOR PLAN CONCEPT B – TS
- 8 A2.4 ADMIN FLOOR PLAN CONCEPT A
- 9 A2.5 ADMIN FLOOR PLAN CONCEPT A – VM BLDG
- 10 A2.6 MISC. FLOOR PLANS CONCEPT A
- 11 A2.7 ADMIN FLOOR PLAN CONCEPT B
- 12 A2.8 ADMIN FLOOR PLAN CONCEPT B – VM BLDG
- 13 A4.1 ROOF PLAN CONCEPT A
- 14 A4.2 ROOF PLAN CONCEPT B – TS
- 15 A4.3 ROOF PLAN CONCEPT B – MRF
- 16 A5.1 EXTERIOR ELEVATIONS CONCEPT A
- 17 A5.2 EXTERIOR ELEVATIONS CONCEPT A
- 18 A5.3 EXTERIOR ELEVATIONS CONCEPT B

Part 2

- 19 A5.4 EXTERIOR ELEVATIONS CONCEPT B
- 20 A6.1 BUILDING SECTIONS CONCEPT A
- 21 A6.2 BUILDING SECTIONS CONCEPT B – TS
- 22 A6.3 BUILDING SECTIONS CONCEPT B – MRF
- 23 L1.1 LANDSCAPE SITE PLAN – CONCEPT A
- 24 L1.2 LANDSCAPE SITE PLAN – CONCEPT A – ENLARGED
- 25 L1.3 LANDSCAPE SITE PLAN – CONCEPT B
- 26 L1.4 LANDSCAPE SITE PLAN – CONCEPT B – ENLARGED
- 27 EXISTING SITE PLAN
- 28 LEED Checklist
- 29 Berkeley Listening Session Summary
- 30 Berkeley Transfer Station Public Meeting Notes
- 31 Berkeley Zero Waste Programs
- 32 Community Conservation Centers (10/15/18)
- 33 Ecology Center (10/15/18)
- 34 Urban Ore Meeting (10/18/18)
- 35 Vendor Meeting (1/17/19)
- 36 Vendor Meeting (5/22/19)
- 37 Phasing Plans
- 38 BTS Schedule (1/31/2019)
- 39 Feature Comparison Table



Z O N I N G A D J U S T M E N T S B O A R D

NOTICE OF PUBLIC HEARING

1201 Second Street / 669 Gilman

Public Scoping session for the Environmental Impact Report (EIR) and Project Preview for Use Permit #ZP2021-0215 to inform and solicit comments from the community, public agencies, and the Zoning Adjustments Board (ZAB) of the project. The project proposes to demolish the existing City of Berkeley Solid Waste and Recycling Transfer Station (SWRTS), including non-residential main buildings/structures (eleven), accessory structures, and equipment; and to construct and install buildings, structures, and equipment for a new SWRTS facility. The project consists of two main building clusters with accessory structures, totaling approximately 114,380 square feet of gross floor area, approximately 195,300 square feet of unenclosed and paved area, and approximately 32,200 square feet of landscaped area.

The Zoning Adjustments Board of the City of Berkeley will hold a public hearing on the above matter, pursuant to Zoning Ordinance Section 23.404.

When: Thursday, September 14, 2023, 7:00 pm

Where: Berkeley Unified School District meeting room, 1231 Addison Street, (wheelchair accessible) with remote/hybrid option (via Zoom).

Please visit: <https://berkeleyca.gov/your-government/boards-commissions/zoning-adjustments-board> and click on the hearing date to access the most up-to-date meeting information, or call the Land Use Planning division (510) 981-7410.

PUBLIC ADVISORY: THIS MEETING WILL BE CONDUCTED IN A HYBRID MODEL WITH BOTH IN-PERSON ATTENDANCE AND VIRTUAL PARTICIPATION AVAILABLE FOR MEMBERS OF THE PUBLIC.

For in-person attendees, face coverings or masks that cover both the nose and mouth are encouraged. If you're feeling sick, please do not attend the meeting in-person as a public health precaution.

Currently, there are no physical distancing requirements in place by the State of California or the Local Health Officer for an indoor event similar to a Commission meeting. However, all attendees are requested to be respectful of the personal space of other attendees. An area of the public seating area will be designated as "distanced seating" to accommodate persons that need to distance for personal health reasons.

A. Land Use Designations:

- General Plan: M – Manufacturing
- Zoning: M – Manufacturing District

B. Zoning Permits Required:

- Use Permit under BMC Section 23.326.070(A) to demolish non-residential buildings
- Use Permit under BMC Section 23.206.030(A) to create new floor area of 40,000 square feet or more
- Administrative Use Permit under BMC Section 23.206.020(B) to construct a Material Recovery Enterprise
- Administrative Use Permit under BMC Section 23.206.020(A) to construct a Recycling Materials Processing facility that is more than 20,000 square feet and less than 40,000 square feet

C. CEQA Recommendation: The City of Berkeley, as the lead agency, is preparing a Draft Environmental Impact Report (Draft EIR) for the proposed 1201 Second Street/699 Gilman project (Use Permit #ZP2021-0215). The City published the Notice of Preparation (NOP) on August 31, 2023, to provide responsible and trustee agencies, organizations, and interested parties with a description of the proposed project and information on its potential environmental effects. The City requests comments that focus on the scope and content of the environmental information of the EIR for the project. All comments on environmental issues received during the public comment period will be considered when preparing the Draft EIR. Due to the time limits mandated by State law, the NOP will be circulated for a 30-day review period, which will extend from August 31, 2023 to September 30, 2023.

D. Parties Involved:

- Applicant / Owner City of Berkeley Public Works Department, 2180 Milvia Street Ste. 3, Berkeley, CA 94704

Further Information:

All application materials are available online at:

<https://aca.cityofberkeley.info/CitizenAccess/Welcome.aspx>.

The Zoning Adjustments Board final agenda and staff reports will be available online 6 days prior to this meeting at: <https://berkeleyca.gov/your-government/boards-commissions/zoning-adjustments-board>.

Questions about the project should be directed to the project planner, Sharon Gong, at (510) 981-7429 or sgong@cityofberkeley.info.

Written comments or a request for a Notice of Decision should be directed to the Zoning Adjustments Board Secretary at zab@cityofberkeley.info.

Communication Disclaimer:

Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board, commission or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission or committee for further information.

Written Comments, Communications, and Reports:

Written comments must be directed to the ZAB Secretary at the Land Use Planning Division (Attn: ZAB Secretary), or via e-mail to: zab@cityofberkeley.info. All materials will be made available via the Zoning Adjustments Board Agenda page online at this address: <https://berkeleyca.gov/your-government/boards-commissions/zoning-adjustments-board>

All persons are welcome to attend the hearing and will be given an opportunity to address the Board. Comments may be made verbally at the public hearing and/or in writing before the hearing. The Board may limit the time granted to each speaker.

Correspondence received by 5:00 PM, eight days before this public hearing, will be provided with the agenda materials provided to the Board. Note that if you submit a hard copy document of more than 10 pages, or in color, or with photos, you must provide 15 copies. Correspondence received after this deadline will be conveyed to the Board in the following manner:

- **Correspondence received by 5:00 PM two days before** this public hearing, will be conveyed to the Board in a Supplemental Communications and Reports, which is released around noon one day before the public hearing; or
- **Correspondence received after 5:00 PM two days before** this public hearing will be saved in the project administrative record.



Accessibility Information / ADA Disclaimer:

To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6342 (V) or 981-6345 (TDD) at least three business days before the meeting date.

SB 343 Disclaimer:

Any writings or documents provided to a majority of the Commission regarding any item on this agenda will be made available to the public. Please contact the Land Use Planning Division (zab@cityofberkeley.info) to request hard-copies or electronic copies.

Notice Concerning Your Legal Rights:

If you object to a decision by the Zoning Adjustments Board regarding a land use permit project, the following requirements and restrictions apply:

1. If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a "taking" of property for public use without just compensation under the California or United States Constitutions, the following requirements apply:
 - A. That this belief is a basis of your appeal.
 - B. Why you believe that the decision or condition constitutes a "taking" of property as set forth above.
 - C. All evidence and argument in support of your belief that the decision or condition constitutes a "taking" as set forth above. If you do not do so, you will waive any legal right to claim that your property has been taken, both before the City Council and in court.