

**PROCLAMATION  
CALLING A SPECIAL MEETING OF THE  
BERKELEY CITY COUNCIL**

In accordance with the authority in me vested, I do hereby call the Berkeley City Council in special session as follows:

**Tuesday, November 5, 2019**

**6:00 P.M.**

**SCHOOL DISTRICT BOARD ROOM - 1231 ADDISON STREET, BERKELEY, CA 94702**

JESSE ARREGUIN, MAYOR

Councilmembers:

DISTRICT 1 – RASHI KESARWANI  
DISTRICT 2 – CHERYL DAVILA  
DISTRICT 3 – BEN BARTLETT  
DISTRICT 4 – KATE HARRISON

DISTRICT 5 – SOPHIE HAHN  
DISTRICT 6 – SUSAN WENGRAF  
DISTRICT 7 – RIGEL ROBINSON  
DISTRICT 8 – LORI DROSTE

**Preliminary Matters**

**Roll Call:**

**Worksession**

- 1. Solid Waste and Recycling Transfer Station Feasibility Study Presentation**  
**From: City Manager**  
Contact: Phillip Harrington, Public Works, (510) 981-6300
- 2. Development of a Vision Zero Action Plan**  
**From: City Manager**  
Contact: Phillip Harrington, Public Works, (510) 981-6300

**Public Comment - Items on this agenda only**

**Adjournment**

I hereby request that the City Clerk of the City of Berkeley cause personal notice to be given to each member of the Berkeley City Council on the time and place of said meeting, forthwith.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the official seal of the City of Berkeley to be affixed on October 31, 2019.



Jesse Arreguin, Mayor

Public Notice – this Proclamation serves as the official agenda for this meeting.

ATTEST:



Date: October 31, 2019  
Mark Numainville, City Clerk

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Office of the City Manager

WORK SESSION  
November 5, 2019

To: Honorable Mayor and Members of the City Council  
 From: Dee Williams-Ridley, City Manager  
 Submitted by: Philip Harrington, Director, Public Works  
 Subject: Solid Waste and Recycling Transfer Station Feasibility Study  
 Presentation

SUMMARY

On July 24, 2018 by Resolution No. 68,555 – N.S<sup>1</sup>, the City Council authorized the City Manager to retain Zero Waste Collaborative, Inc. (Collaborative) to conduct a Solid Waste & Recycling Transfer Station Feasibility Study (Study). The Study's goal is the development of conceptual layouts (minimum of two concepts) for the complete replacement and integration of all recycling materials processing; transfer of refuse for disposal, recyclable materials for off-site remanufacturing and green/food waste materials for composting and all associated operations.

This City Council Work Session will review these preliminary concepts (Attachment 1), solicit feedback and direction on the replacement of the Solid Waste & Recycling Transfer Station (SW&RTS) located at 1201 Second Street. The two (2) concepts proposed to replace the current SW&RTS (7.45 acres) are:

**Concept A:** Material Recovery Facility (MRF) & Transfer Station is one (1) building that includes:

- |   |                |
|---|----------------|
| • Drop-off and California Redemption Value Buyback  | 32,000 sq. ft. |
| • Material Recovery Facility (MRF)  | 33,000 sq. ft. |
| • Transfer Station (combined for residential & commercial refuse recycling and green/food waste drop-off) | 41,000 sq. ft. |
| • Landscaping and Codornices Creek walk   | 49,000 sq. ft. |
| • Admin. Office with Education Center, classrooms   | 7,300 sq. ft.  |
| • Vehicle Maintenance Building  | 6,000 sq. ft.  |
| • Vehicle parking (110+ service vehicles)   | 62,000 sq. ft. |
| • Permeable paved area  | 22,000 sq. ft. |
| • Sidewalks   | 39,500 sq. ft. |
| • Asphalt and concrete (AC) paving area   | 82,000 sq. ft. |

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<sup>1</sup> [City Council: 07-24-2018 - Regular Meeting Agenda - City of Berkeley, CA](#)

**Concept B:** MRF & Transfer Station in separate buildings that includes:

• Drop-off and California Redemption Value Buyback	24,000 sq. ft.
• MRF	35,000 sq. ft.
• Transfer Station (combined for residential & commercial refuse, recycling and green/food waste drop-off)	46,000 sq. ft.
• Landscaping and Codornices Creek walk	42,000 sq. ft.
• Admin. Office with Education Center, classrooms	9,100 sq. ft.
• Vehicle Maintenance Building	7,000 sq. ft.
• Vehicle parking (110+ service vehicles)	79,000 sq. ft.
• Permeable paved area	14,000 sq. ft.
• Sidewalks	39,500 sq. ft.
• AC paving area	85,000 sq. ft.

## The current SW&amp;RTS facilities consist of:

- The Solid Waste receiving Transfer Station opened in 1983, handling both City curbside collected and self-haul refuse 20,700 sq. ft.
- In the late 1980s, Berkeley's Recycling relocated to the site, currently operated by Community Conservation Center, includes:
  - 1) MRF 21,900 sq. ft.
  - 2) Recyclable material drop-off 4,400 sq. ft.
  - 3) Universal Waste<sup>2</sup> drop-off 700 sq. ft.
  - 4) California Redemption Value (CRV) Buyback Center 6,600 sq. ft.
- In the 1990's, residential recyclable collection vendor, Ecology Center, was allocated an area for its operation yard and office building. 6,000 sq. ft.

These facilities are not integrated and operations are not coordinated to provide the facilities' customers ease of use, access or drop-off of materials. These facilities do not meet current seismic requirements and have not been upgraded or improved since constructed. These buildings and support facilities have exceeded their serviceable life and cannot support the City's Zero Waste Goal.

Since the early 2000s and with guidance of City Council approved efforts, ordinances, and new City collection and diversion programs; community members and businesses have successfully slashed the tonnage of materials being landfilled by more than a third. However and even with this significant reduction of landfilled materials, the facility is handling the same total incoming tonnage today of refuse, recyclables, compost (green and food waste) and miscellaneous materials combined, 130,000+ tons annually, that it received in 2011<sup>3</sup>.

<sup>2</sup> [https://www.acgov.org/forms/aceh/DTSC\\_FactsheetUniversalWaste.pdf](https://www.acgov.org/forms/aceh/DTSC_FactsheetUniversalWaste.pdf)

<sup>3</sup> [https://www.cityofberkeley.info/uploadedFiles/Public\\_Works/Level\\_3\\_-\\_Solid\\_Waste/Zero%20Waste%20Division%20Metrics%20Presentation%20Zero%20Waste%20Commission%2010.22.18.pdf](https://www.cityofberkeley.info/uploadedFiles/Public_Works/Level_3_-_Solid_Waste/Zero%20Waste%20Division%20Metrics%20Presentation%20Zero%20Waste%20Commission%2010.22.18.pdf)

The incoming volume materials (2017 data) received at the TS consist of: refuse (78,000 tons), construction and demolition (15,000 tons), and compostable organic materials (33,000 tons). The MRF annually accepts, processes and markets approximately 15,000+ tons of mixed paper; cardboard; rigid plastics; and plastic, aluminum, steel and glass containers. An integrated facility would ensure the City's flexibility to accept a variety of materials and provide the ability to increase diversion. In addition, it would ensure environmentally compliant methods will be implemented for the handling and processing of: refuse; fiber and container recyclables; and compostable materials not only for today but for many decades to follow.

The primary goal of the Study was to solicit extensive community members' and stakeholders' ideas, direction and input to provide a vision for a Material Resource Park (name to be determined by community members with City Council input and concurrence). With these meetings held throughout the City, the varied and exhaustive community members' vision and input for facility options was provided. With this community members' input, the Study was tasked to visualize these community members concept(s) into two on paper concepts that will provide an at least ten (10) percent design level of layouts. With the level of design for both concepts, preliminary cost estimates and potential financing options can be developed within the scope of a subsequent study.

This community members' and stakeholders' envisioned facility will allow the City to divert materials that is currently being landfilled for reuse or recycling. These concepts presented are the result of many hours of input by City staff, community members (Attachment 2) and business members, and vendors (that are contracted with the City through the Zero Waste Division's operations). These listening and input sessions and meetings included:

- September 27, 2018: Zero Waste Collaborative, Inc., presented to the Interim Deputy City Manager: Public Planning, Finance and Information Technology Department Directors and/or staff the Study's goals and time line.
- November 7 and 28 and December 1, 2018: Community member and stakeholder initial visioning and listening sessions to solicit input on their ideas for the facility's development to meet zero waste goals (totaling 8 hours).
- January 16, 17 and 18, 2019: Presentation of the facility's development options based on the input from the initial listening sessions followed with extensive community members' and stakeholders' input on the facility's development options (totaling 9 hours).
- March 14, 15 and 22, 2019: Presentation to all community members and stakeholders based on the January 2019 input and revisions of facility's development options (totaling 8+hours).
- June 24, 2019: Presentation of the finalized facility's development options and potential environmental impacts to the Zero Waste Commission.

For the City to sustain or expand the infrastructure required to support the City's zero waste efforts and to meet its Zero Waste Goal (Goal), the City will need to replace these significantly aged facilities that currently operate as distinct and separate entities. To maximize these program services and infrastructure flexibility, these facilities need to be integrated and function seamlessly together to support the City's Climate Action Plan and Zero Waste Goal.

### CURRENT SITUATION AND ITS EFFECTS

These conceptual plans for the replacement of the Solid Waste & Recycling Transfer Station is a Strategic Plan priority project to advance the City's goals to:

- Provide state-of-the-art, well-maintained infrastructure, amenities, and facilities,
- Be a global leader in addressing climate change, advancing environmental justice, and protecting the environment, and
- Be a customer-focused organization that provides excellent, timely, easily-accessible services and information to the community.

Without the replacement of the existing facilities, the City will not be able to meet its Zero Waste or 2009 Climate Action Plan goals. The existing facilities are beyond their projected life span and do not meet today's environmental permitting requirements and safe operational standards<sup>4</sup>. With the Zero Waste Commission support (Attachment and City Council input and direction, the City can hopefully commence the next step in the process to replace these facilities with a Request for Qualifications (RFQ) and Request for Proposals (RFP) solicitation for consultant(s) to comply with the California Environmental Quality Act (CEQA) requirements.

### BACKGROUND

In the mid-1970's, Berkeley recognized the need to develop environmentally compliant alternative(s) versus the continuing utilization of the Berkeley Landfill, now known as Caesar Chavez Park. It was proposed to use available industrial zoned property (6.45 acres) bounded by the Santa Fe Railroad (now BNSF Railroad) ROW on the east, Gilman Street on the south, 2<sup>nd</sup> Street on the west and, at the time, industrial business on the north (1 acre), to consider the following:

1. Transfer Station with Energy Recovery or the following alternatives
2. Transfer Station Only
3. Transfer Station with Enhanced Materials Recovery
4. Transfer Station with Enhanced Energy Recovery

The Transfer Station was proposed as a receiving and transfer station for an energy recovery facility utilizing solid waste incineration in the Draft EIR (February 1979). With extensive and intense public input on the Proposed Transfer Station with Energy

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<sup>4</sup> <http://www.stopwaste.org/sites/default/files/CoIWMP%20update%202017%20Final%201.pdf> (Section V, pages V-2 and V-3, Promote Environmental Quality)

Recovery, the City Council passed Ordinance No. 19.24 requiring a five year local moratorium on the construction of garbage incineration facility. Given that the existing City owned landfill needed to be closed, the City selected the Transfer Station Only option.

In the Berkeley Solid Waste Management Center Environmental Impact Report (Spectrum Northwest, March 1980 Final EIR) Chapter VI (Alternatives) for a Transfer Station Only project, it notes “The objective of the proposed project is the development of a mid-to-long-term solid waste management facility capable of accommodating Berkeley’s solid waste stream through the year 2000.”

Through the City’s Request for Proposal process, the City selected a firm (BFI Industries, Inc.) to construct and initially operate a Transfer Station (TS). At the time, the TS conformed to current Alameda County Solid Waste Management Plan policy to develop Medium and Long Term Facilities Plan for Berkeley, San Leandro, Hayward and Fremont. Based on available records, the TS was constructed and commenced acceptance of materials in 1983.

During the 1980’s, the City supported individuals and nonprofit groups’ efforts to collect, sort and market recyclable materials, such as old corrugated cardboard, and aluminum and glass containers to ensure these materials were not landfilled. During this time frame, the City acquired the adjacent industrial business on the north side of the TS and expanded from 6.45 acres to its current 7.45 acres.

In the 1990’s, the City committed to expanding community member participation in recycling by ongoing financial and sole sourced contract support of nonprofit groups, such as Ecology Center, Inc. (EC) and Community Conservation Centers, Inc. (CCC). These non-profit recycling-focused groups were allocated City property, at no cost, on the southern portion of Second and Gilman streets areas for their operations and offices.

EC’s collection efforts expanded from a few hundred tons per year to its current 8,000+ tons annually collected from single and multi-family residences, 9 units or less. CCC accepts both the Zero Waste Division (multi-family, 10 units or more, and commercial business) and EC collected recyclables. CCC sorts and markets approx. 15,000+ tons of recyclables annually.

These two (2) non-profits are separate and distinct operations and are not integrated with the Zero Waste Division’s operations. This segregation of Zero Waste Division, EC and CCC operations requires customers to access the operations via separate gates, scaling of materials and drop-off locations.

#### ENVIRONMENTAL SUSTAINABILITY

The proposed conceptual plans will ensure that as an enterprise funded operation, the City’s Public Works Zero Waste Division will have state-of-the-art facilities to support:

- The expansion of the City's efforts to meet its Zero Waste Goals which are a key component of the 2009 Climate Action Plan,
- Compliance with legislation to enhance recycling; organic diversion and composting; single use foodware and litter reduction,
- To handle all residential, multi-family and commercial materials collection, material processing, or marketing,
- Solid Waste and Recycling Transfer Station replacement, and
- Flexibility to handle anticipated long-term market volatility in the recycling commodity markets.

#### POSSIBLE FUTURE ACTION

Based on Council feedback and direction at the Work Session, staff will be returning to Council for authorization for the following process milestones:

- Submit Information Calendar Report on the finalized Study by the end of 2019.
- Approval and release of an RFP to conduct and finalize the CEQA review process.
- Approval and release of an RFP for an in-depth geotechnical study of the site's subsurface conditions to support the CEQA process and facility engineering.
- Approval of final engineering design for the project and develop the project's plans and specifications.
- Approval and release of RFPs for the permitting, construction management and construction for the new Solid Waste & Recycling Transfers Station.

With the completion of all the above, a community envisioned and visionary Material Resource Recovery Park (or as named by the City's community members with City Council input and concurrence) will be in place to serve Berkeley's needs to meet its Zero Waste Goals for many years to come. The facility design and subsequent construction will allow flexibility to adjust to the City's evolving zero waste goals and aspirations.

#### FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

The funding of the CEQA permitting, geotechnical study and design engineering for the construction of an integrated Solid Waste & Recycling Transfer Station.

- Finalized Study by the end 2019; \$500,000 included FY2019/2020 budget.
- RFP to conduct and finalize the CEQA review process. CEQA is anticipated to take 3 – 4 years with an estimated cost of up to \$5 million during FY2020 through FY2025.
- RFP for an in-depth geotechnical study of the site's subsurface conditions to support the CEQA process and facility engineering. Estimated cost up to \$1,000,000 during FY2021 through FY2022.
- Final engineering design for the project and to develop the project's plans and specifications. Estimated cost of up to \$5,000,000.

As the City's residential and commercial community members continue to reduce the volumes of materials being landfilled or move recyclable materials from the refuse



carts/bins to the recycle carts/bins, the City's infrastructure is in drastic need of replacement to support the City's efforts to continuously reduce waste volumes, increase diversion of waste from landfills, and move the City toward its Zero Waste Goal with sustainable and environmental compliant structures.

CONTACT PERSON

Greg Apa, Solid Waste & Recycling Manager, Public Works – Zero Waste, 981-6359

Attachments:

1. Solid Waste and Recycling Transfer Station Feasibility Study by Zero Waste Collaborative, Inc.
2. Summary of Community Members' listening sessions and input
3. Summary of City's contracted vendors listening sessions and input
4. Zero Waste Commission July 22, 2019 Memorandum



# 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 2<sup>nd</sup> 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 queuing. It can be assumed then that less queuing 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 7<sup>th</sup> 1:30 p.m. - 3:30 p.m., November 28<sup>th</sup> 6 p.m. - 9 p.m., and December 1<sup>st</sup> 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	<ul style="list-style-type: none"> <li>• Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>• Maker area</li> <li>• Social services for vulnerable populations</li> <li>• Needle exchange</li> <li>• Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>• Food pantry</li> <li>• Landscaping</li> <li>• Sculpture garden</li> <li>• Compost demonstration</li> </ul>





### **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.

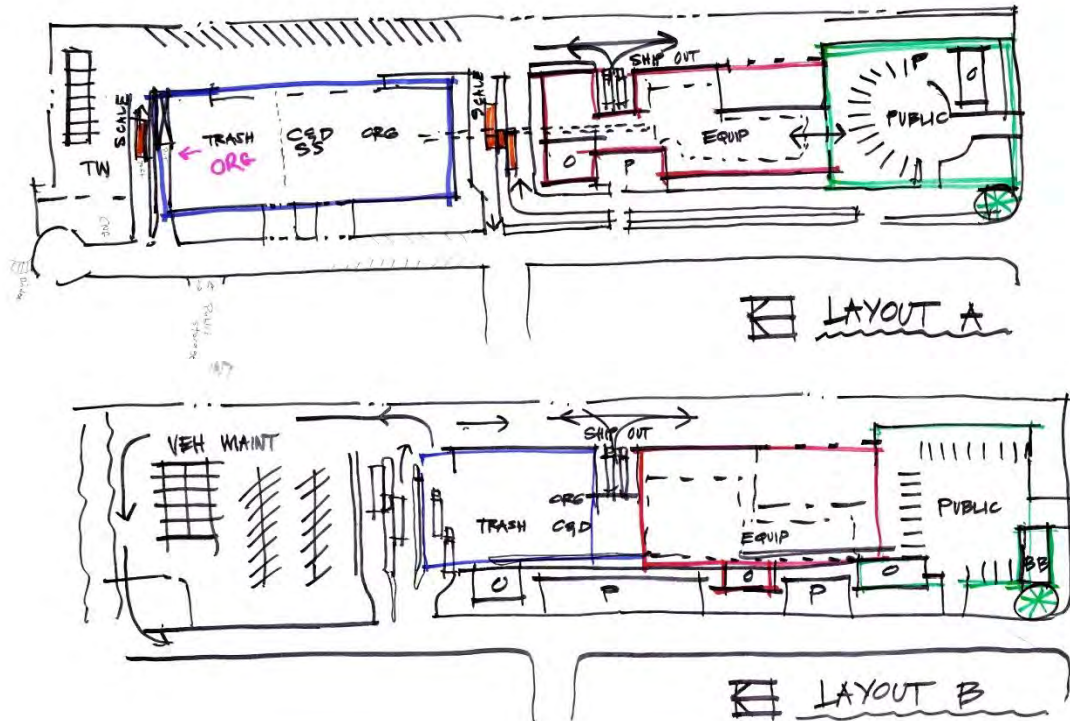


**Figure ES-6: Session 1 Team Exercise**



## 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.”

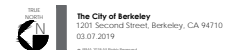
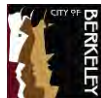
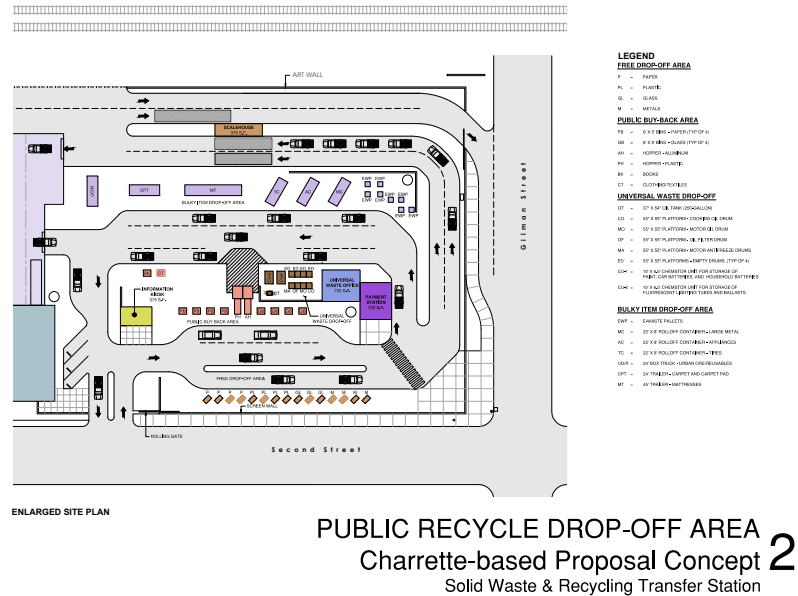


**Spring 2019 Workshops**

The City conducted three workshops during Spring 2019 (March 14<sup>th</sup> 6:00 p.m. – 8:00 p.m., March 15<sup>th</sup> 2:00 p.m. – 4:00 p.m., and May 22<sup>nd</sup> 5:00 p.m. – 7:00 p.m.) to obtain community member feedback on three primary concept plans that reflected input from the Design Charrette.

**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 ES-8: 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.

**May Workshop**

At the May workshop, the ZWC 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 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.

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
<b>Vehicles:</b>		
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.



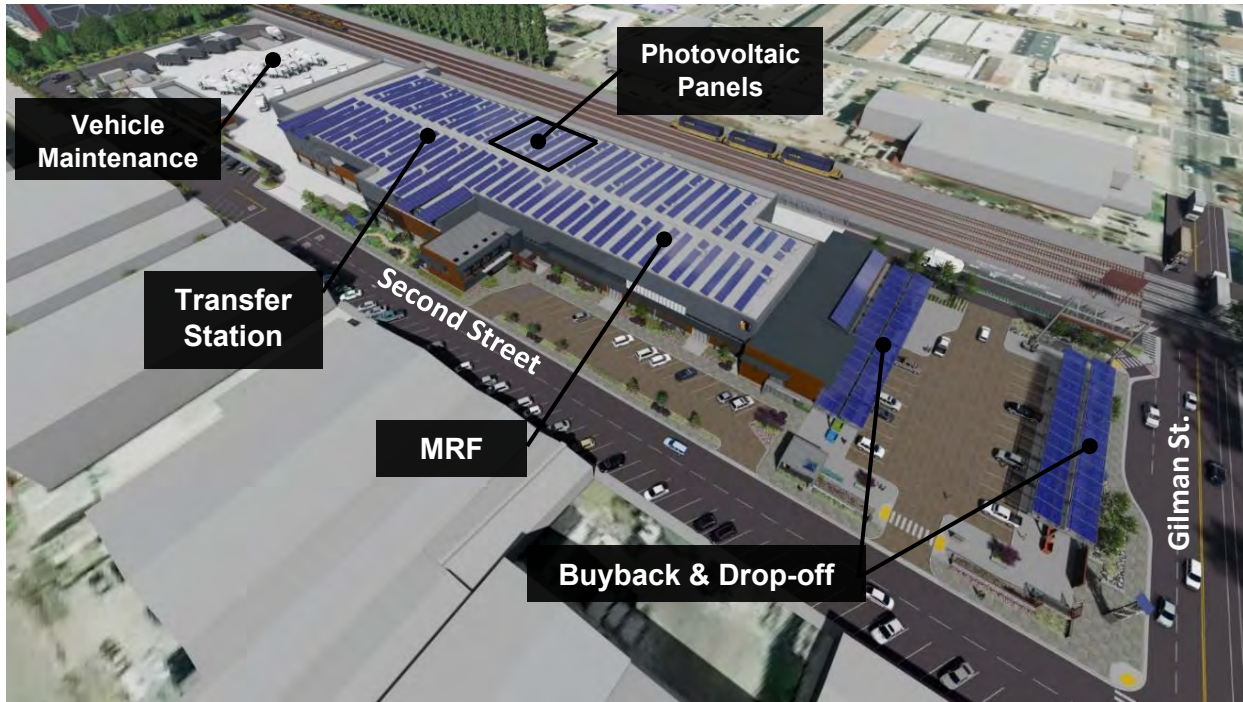


Figure ES-9: Concept A - Rendering Aerial View

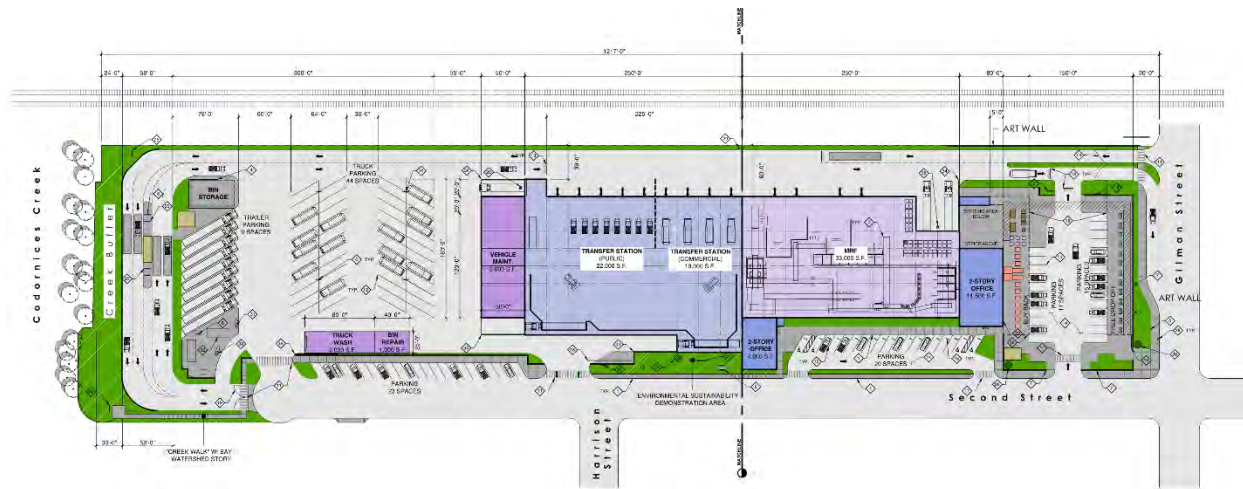


Figure ES-10: Concept A - Site Plan

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 &amp; 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	
<b>Total Building Area</b>	<b>100,300 sf</b>	<b>108,000 sf</b>
* 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.



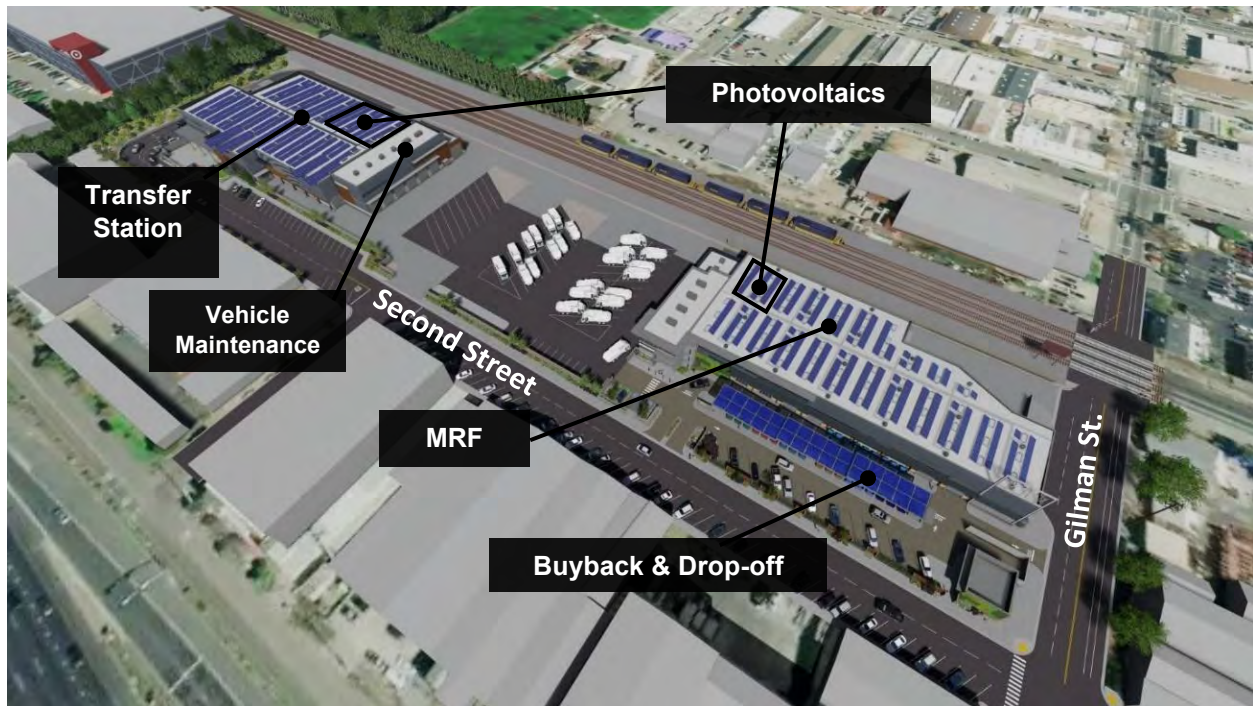


Figure ES-11: Concept B - Rendering Aerial View

### 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: 2<sup>nd</sup> 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 4<sup>th</sup> 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 7<sup>th</sup> 1:30 p.m. - 3:30 p.m.  
Berkeley Central Library, 3rd Floor Community Room, 2090 Kittredge Street
- November 28<sup>th</sup> 6 p.m. - 9 p.m.  
South Berkeley Senior Center, 2939 Ellis Street
- December 1<sup>st</sup> 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 16<sup>th</sup> 6:00 p.m. - 8:00 p.m.
- Session 2: Analyze first night's outcomes  
January 17<sup>th</sup> 6:00 p.m. - 8:00 p.m.
- Session 3: Recap  
January 18<sup>th</sup> 10:00 a.m. - 12:00 p.m.

#### Spring 2019 Workshops

- March 14<sup>th</sup> 6:00 p.m. - 8:00 p.m.  
James Kenney Community Center, 1720 8th Street
- March 15<sup>th</sup> 2:00 p.m. - 4:00 p.m.  
North Branch Public Library, 1170 The Alameda
- May 22<sup>nd</sup> 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	<ul style="list-style-type: none"> <li>• Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>• Maker area</li> <li>• Social services for vulnerable populations</li> <li>• Needle exchange</li> <li>• Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>• Food pantry</li> <li>• Landscaping</li> <li>• Sculpture garden</li> <li>• Compost demonstration</li> </ul>

## 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.

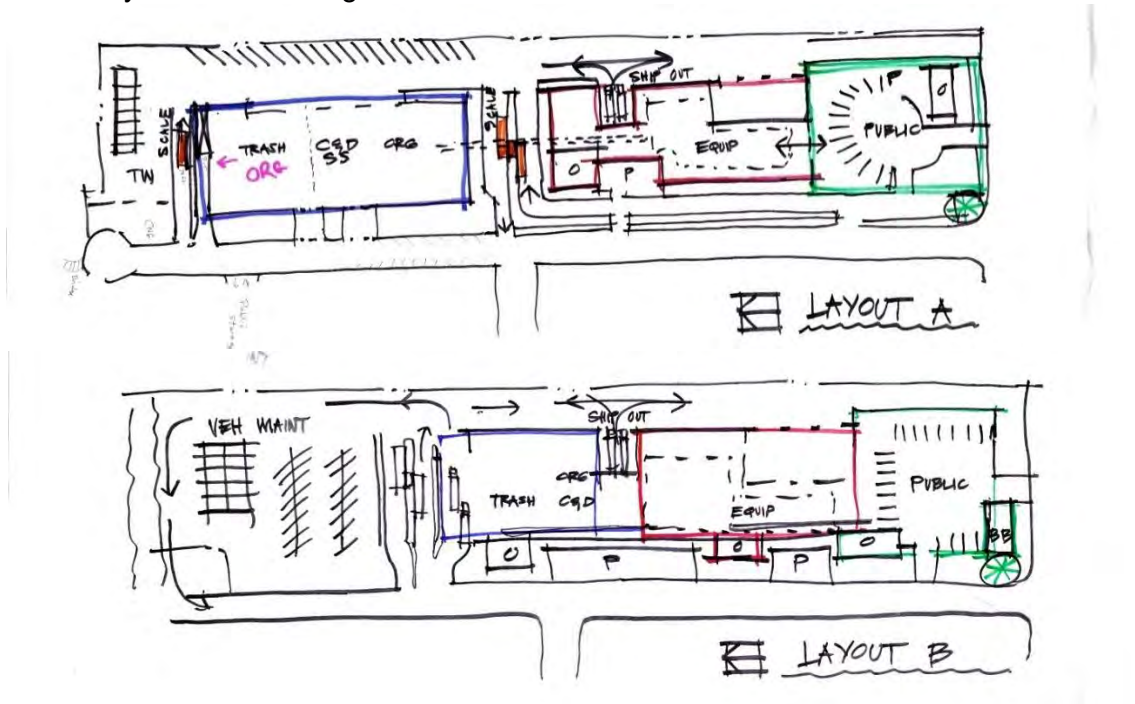


Figure 2-3: Draft Layouts from Session 1 Presented at Session 2

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.





## 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
<i>Vehicles:</i>		
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**).

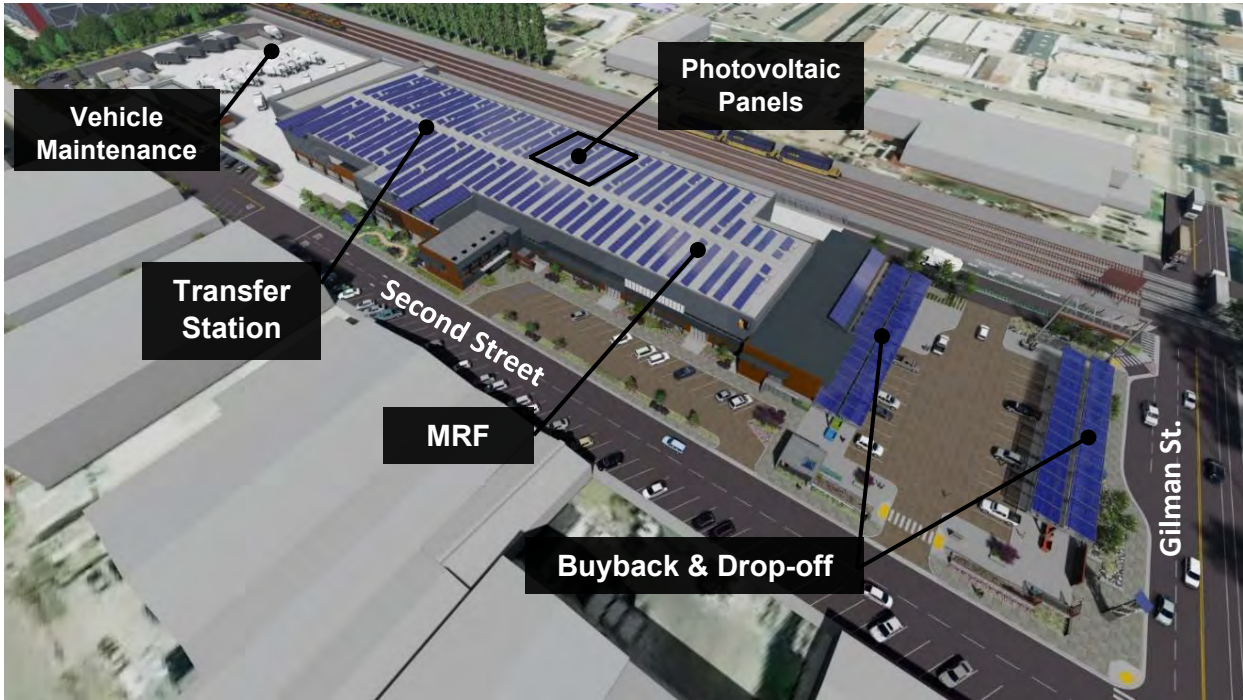


Figure 3-1: Concept A - Rendering Aerial View

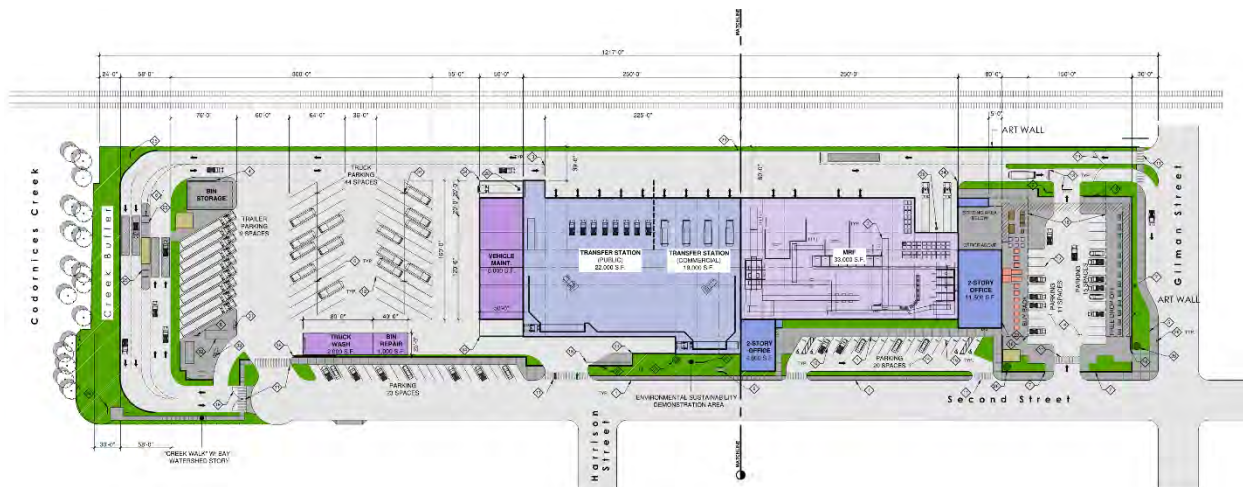


Figure 3-2: Concept A - Site Plan



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	
<b>Total Building Area</b>	<b>100,300 sf</b>	<b>108,000 sf</b>
* 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

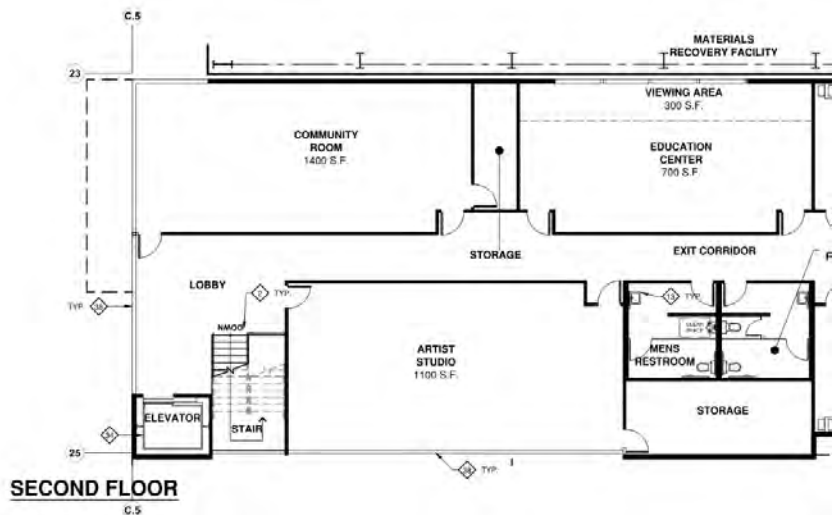
Informed facility users (customers) are essential to a more efficient operation which promotes higher levels of recycling. The Information Kiosk, a small gatehouse structure at the entry, will provide a waystation for addressing customer questions and also an opportunity to provide a wide variety of 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 queuing 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.

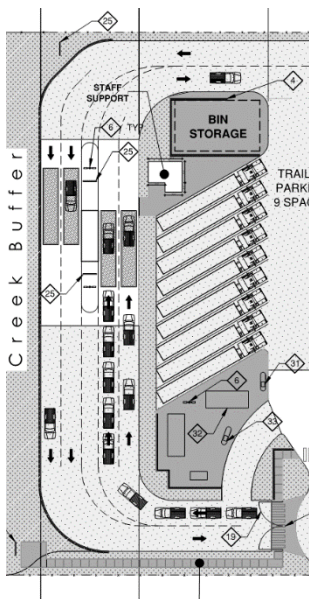


Figure 3-10: Concept A - Main Public Scale Entry

### 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:

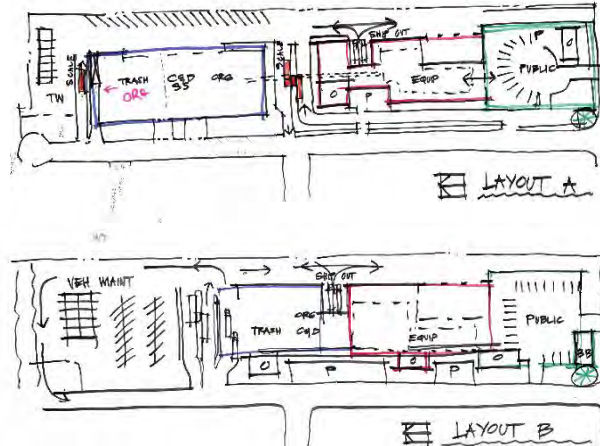


Figure 3-19: Concepts A and B Charette Sketches

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

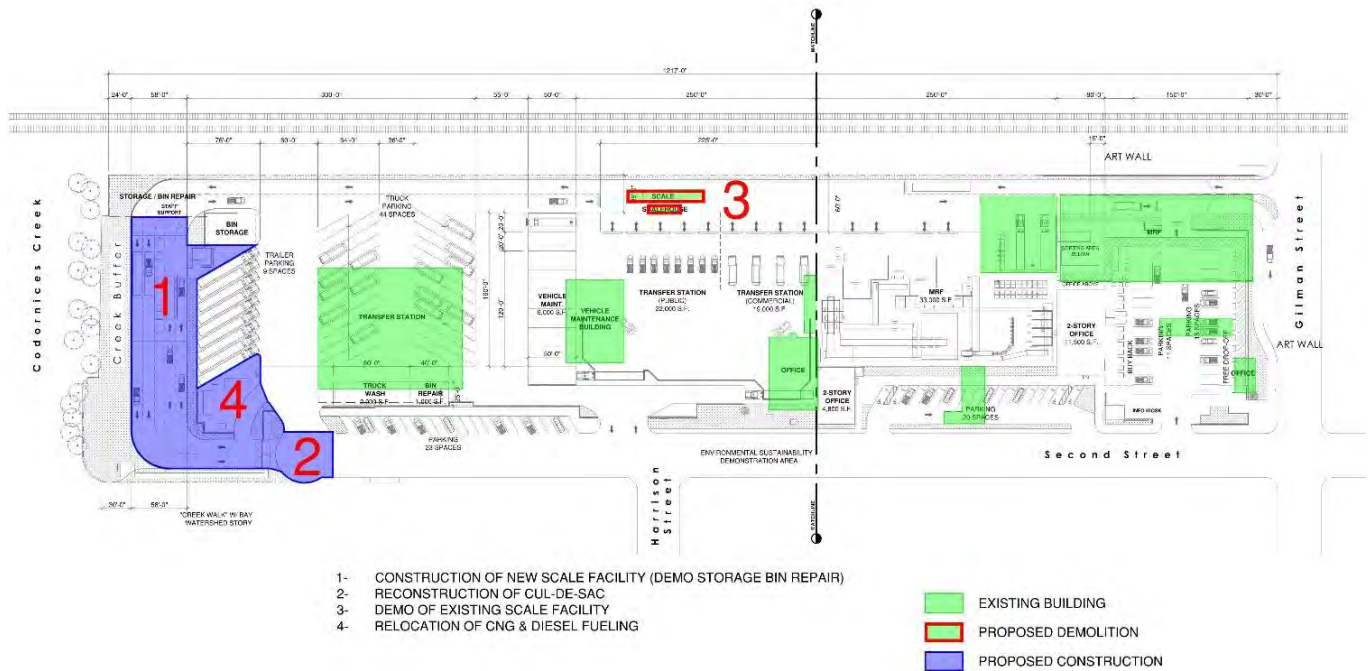
The following provides background on the potential development scenario for both Site Concept A and Site Concept B. Final sequencing and coordination is subject to review by the City's contracted Construction Management professional in collaboration with the selected General Contractor.

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.



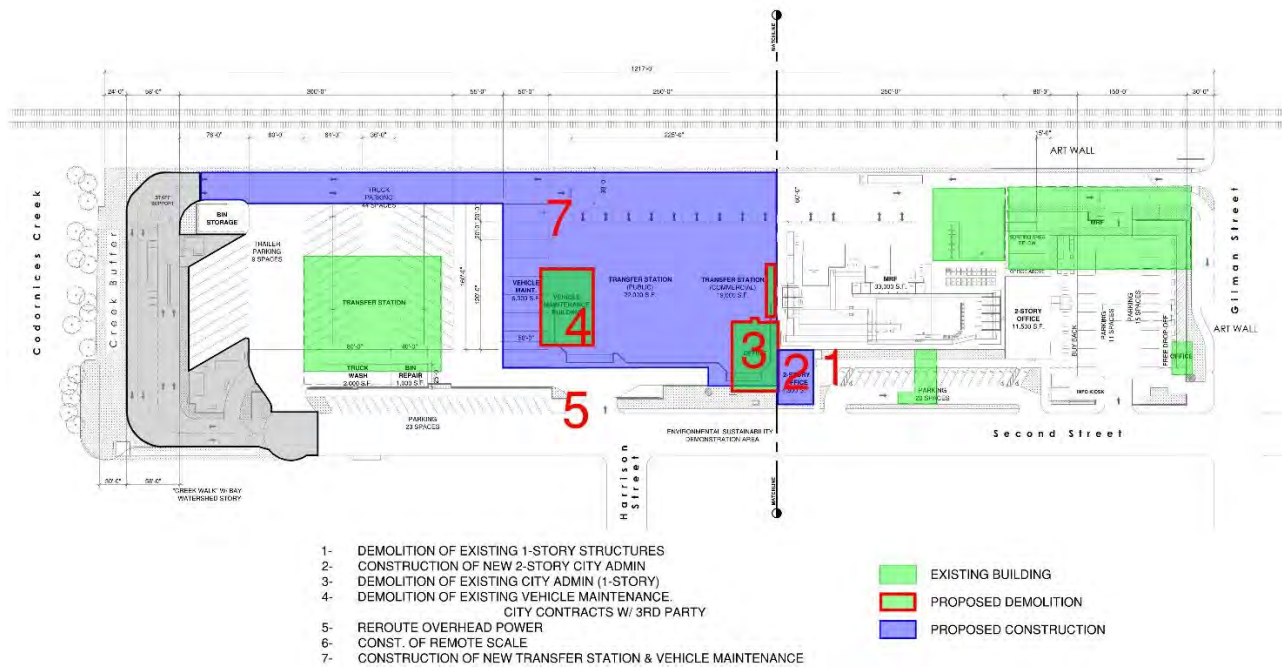
CONCEPT PLAN A – PHASE 1



- 1- CONSTRUCTION OF NEW SCALE FACILITY (DEMO STORAGE BIN REPAIR)
  - a. Relocation of some minor open-air storage.
  - b. Requires consideration for other locations on site for bin repair.
- 2- RECONSTRUCTION OF CUL-DE-SAC
  - a. Demolition of existing cul-de-sac
  - b. Interim access to CNG fueling from on-site could be provided prior to shut down for relocation.
  - c. Work may impact some staff parking at Second Street in order to provide an interim turnaround as may be required by the fire department.
- 3- DEMOLITION OF EXISTING SCALE FACILITY
  - a. New scales and entry must be operational with adequate clear paved access to east side of Transfer Station
- 4- RELOCATION OF CNG & DIESEL FUELING
  - a. Adjacent but separate to main entry.



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.

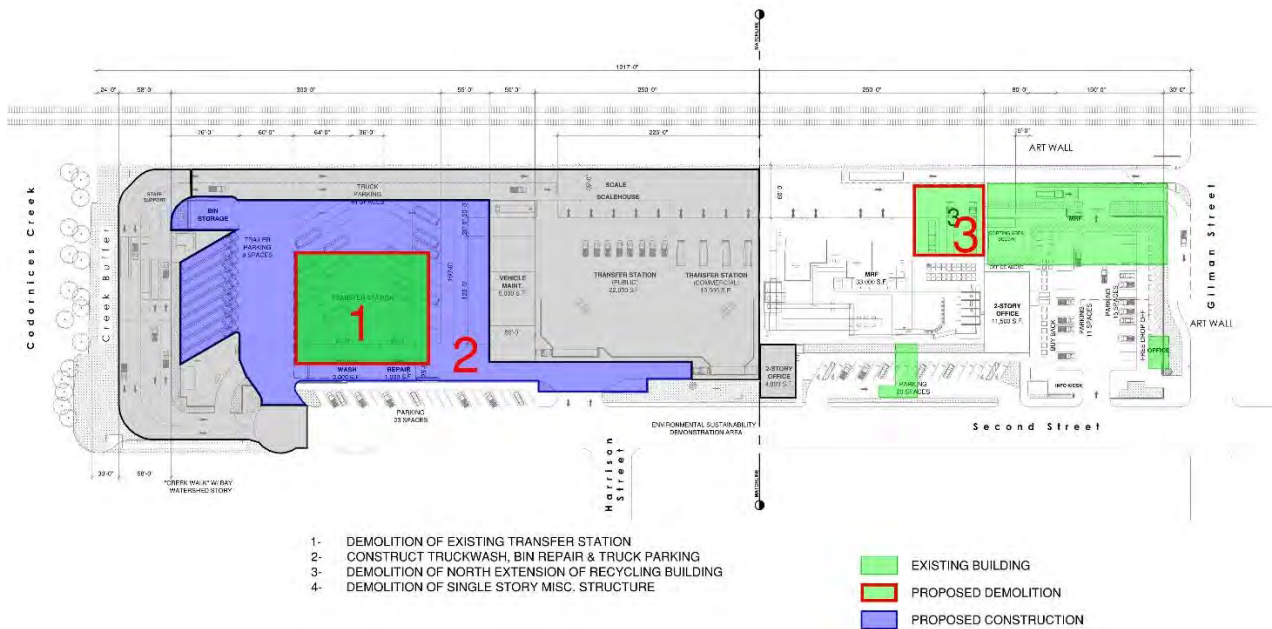




7- CONSTRUCTION OF NEW TRANSFER STATION & VEHICLE MAINTENANCE BUILDINGS

- 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.

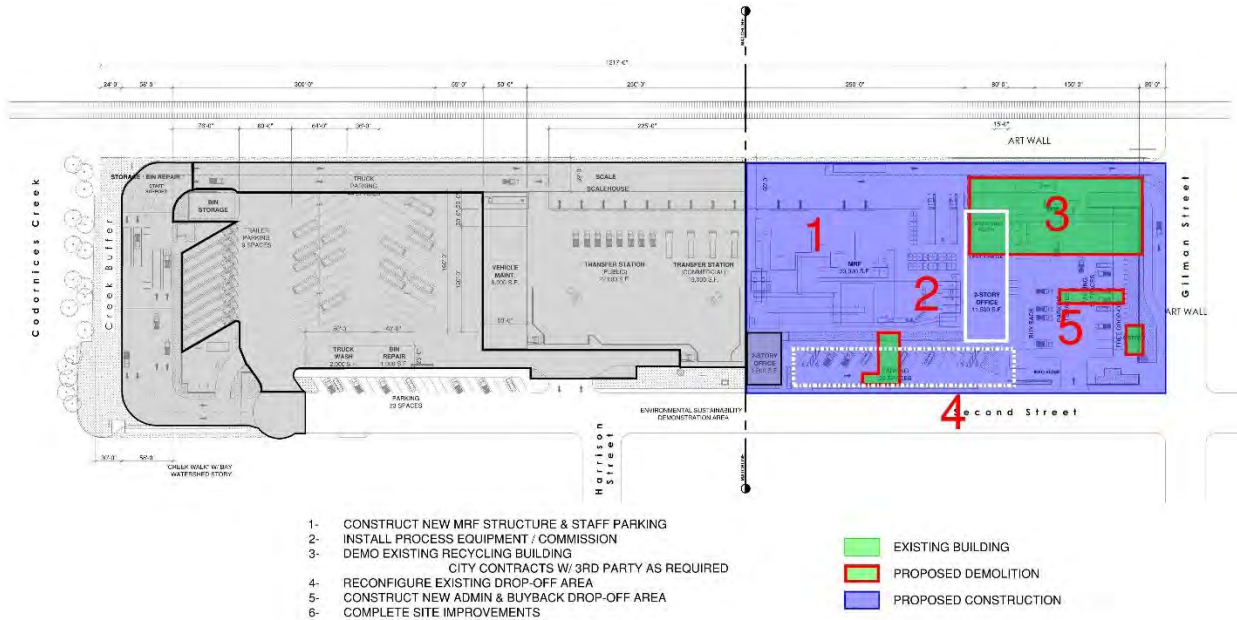
4- DEMOLITION OF SINGLE STORY MISC STRUCTURES

- 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.





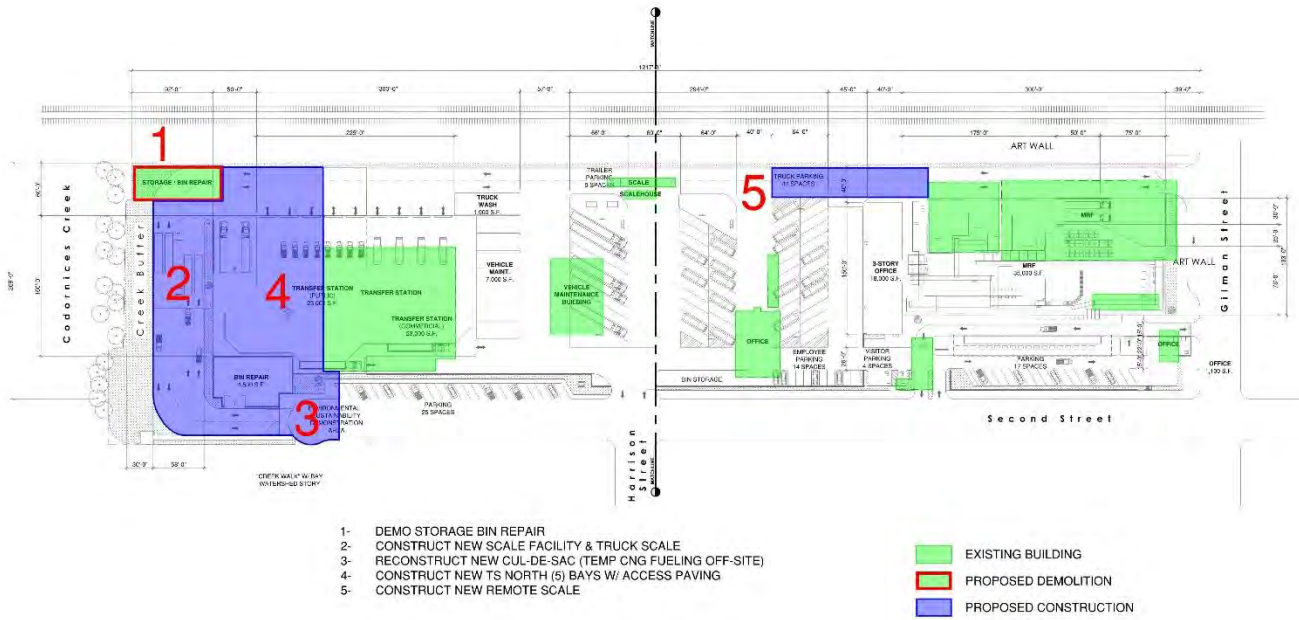
**CONCEPT PLAN A – PHASE 4**



- 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/ 3<sup>RD</sup> 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



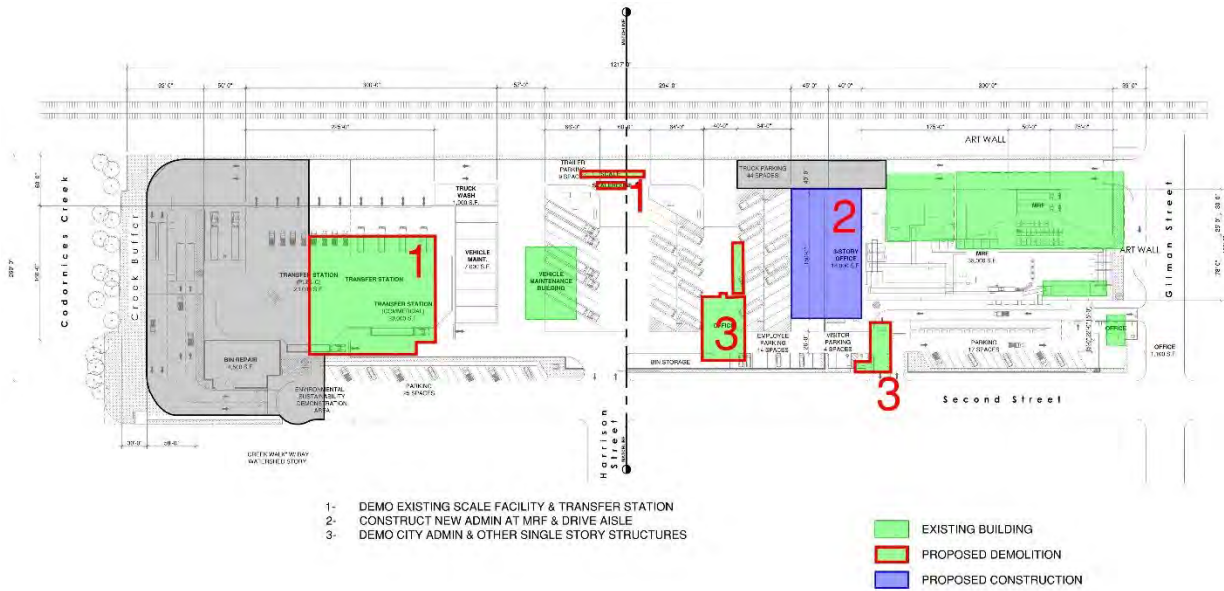
CONCEPT PLAN B – PHASE 1



- 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.



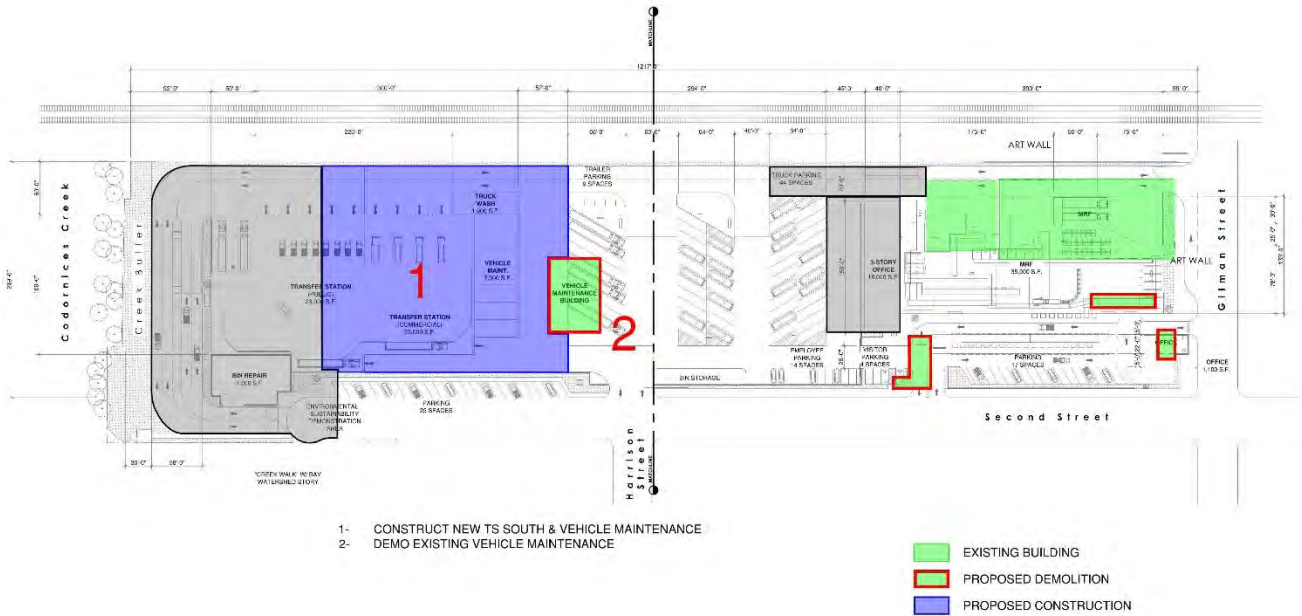
**CONCEPT PLAN B – PHASE 2**



- 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



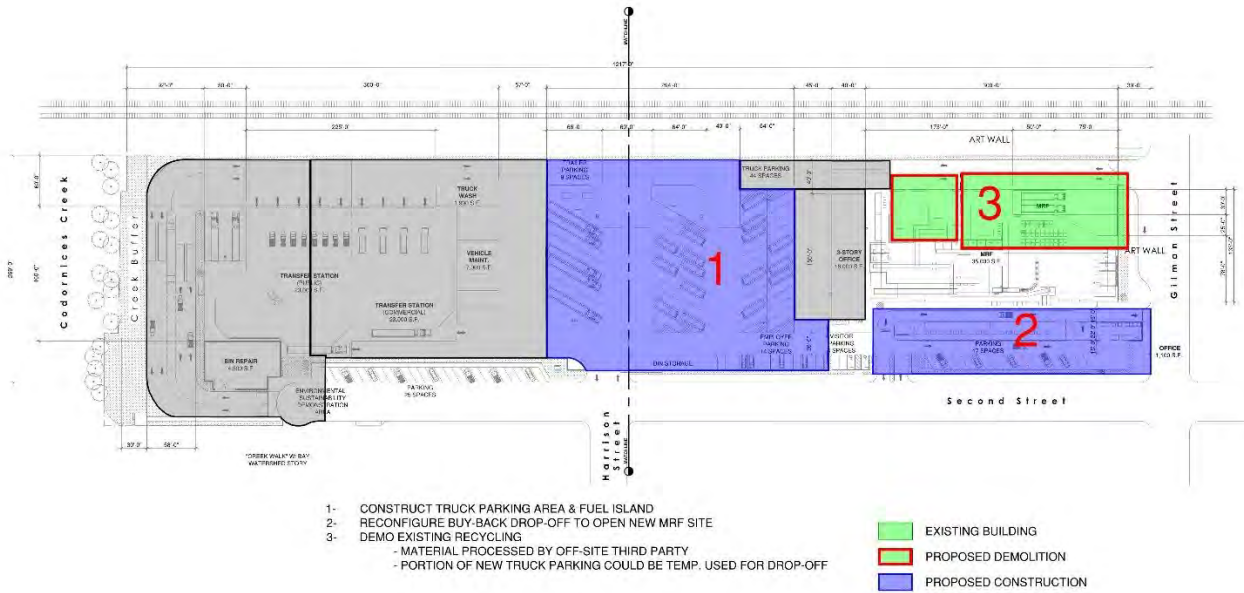
**CONCEPT PLAN B – PHASE 3**



- 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

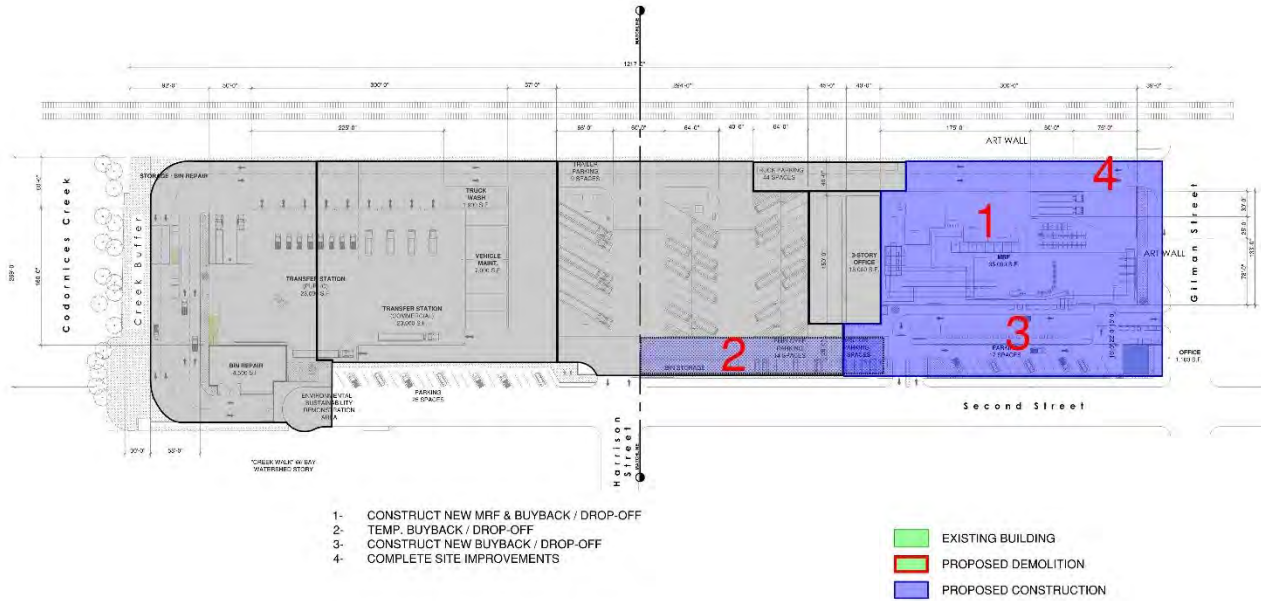


- 1- CONSTRUCT TRUCK PARKING AREA & FUEL ISLAND
  - a. Relocate overhead power to underground.
- 2- RECONFIGURE BUY-BACK DROP-OFF TO OPEN NEW MRF SITE
  - a. Area defined by new Drop-off and Buyback would remain in use; move boxes as needed. This may require removal of existing canopies.
- 3- DEMO EXISTING 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.





## 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)
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- 34 Urban Ore Meeting (10/18/18)
- 35 Vendor Meeting (1/17/19)
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- 37 Phasing Plans
- 38 BTS Schedule (1/31/2019)
- 39 Feature Comparison Table



# **Exhibit 1**

## **BTS TS & Recycling Center Site Assessment**

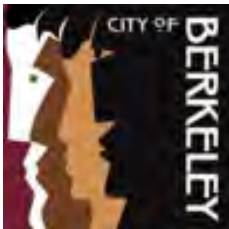


# City of Berkeley

## Solid Waste and Recycling Transfer Station

### Site Conditions Review & Assessment

#### DRAFT



Prepared by Zero Waste Collaborative  
City of Berkeley Contract No. 10986



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# Section 1: Overview

1201 Second St. 7.45 acres; reference Exhibit D.

## Site General Context

Located on Gilman Street and Second Street with frontage immediately west of the SP/BART rail crossing, the facility has a prominent location for traffic traveling between I 80/I 580 and downtown Berkeley. This will be an important basis of design criterion for site access as well as community visibility. Positive visibility as a design factor can have a key role in establishing and maintaining the new facility's success within the neighborhood.

It should be noted that all "adjacent" uses on Second Street are light industrial commercial. They include:

- Public Storage (at Harrison St)
- BMW Collision Center (main entrance faces west at Eastshore Hwy)
- Airgas Store
- Red-D-Arc Welder rentals



Figure 1: View to businesses on Second St.



Figure 2: View of SW corner of site

These businesses all use grey metal siding reminiscent of older industrial buildings (the Target store also uses grey metal siding but in a more contemporary architectural approach). City of Berkeley Principal Planner, Shannon Allen was contacted regarding the architectural context and any particular mandates or design guidelines. Ms. Allen said there are no West Berkeley Design Guidelines, however there is a strong interest in maintaining the light



industrial/manufacturing history and future of this part of the City. (see West Berkeley Plan Area project below)

The northerly portion of the site includes a Trillium CNG fueling facility recently constructed and will share the boundary of the cul-de-sac right-of-way. The northerly neighbor is a two-story Target store located on the parcel to the north of Codornices Creek and will be visible from the site as well as vehicles traveling north on Second Street.

The north boundary of the site is defined by Codornices Creek. This creek is part of the Codornices Watershed in accordance to the City of Berkeley's 2011 Watershed Management Plan and the Draft Watershed Hydrology Report. A required buffer zone of 30' to the Creek will be part of the planning for the facility (see Section 6). Although Lower Codornices Path provides public access due east of the rail lines, discussions with the City initially indicates that there is no additional planning for an extension of the public access.

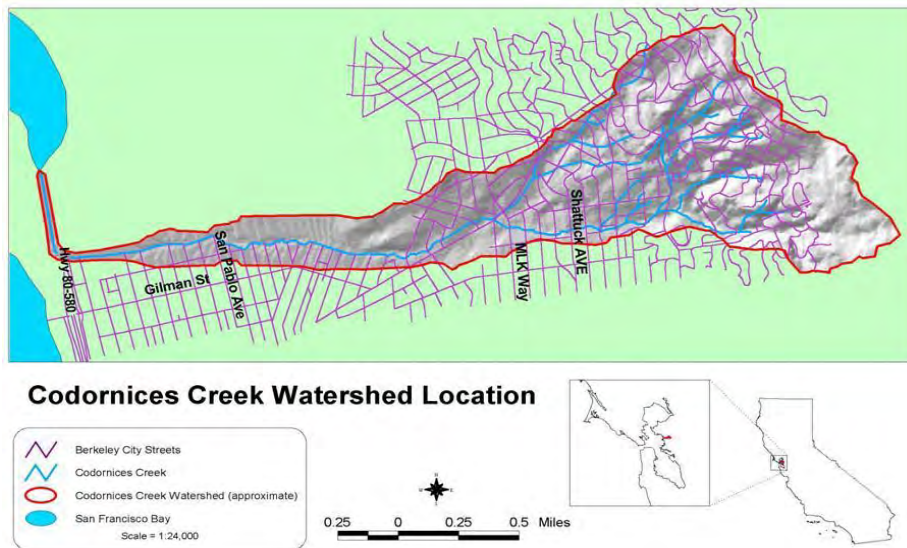


Figure 3: Codornices Creek Watershed Map



Figure 4 & 5: Southern Pacific Rail Crossing (view north from Gilman St.)

The east boundary of the site is established by the Southern Pacific / BART rail right-of-way with a grade crossing at Gilman Street. Although the grade crossing accommodates 4 tracks, only 2 tracks appear to be active as main lines. The southeast corner of the site has an existing service alley (for commodity related trucks) but it's close proximity to the crossing would require coordination with the City Transportation Division and Southern Pacific for a future driveway accommodating more traffic.

East of the rail lines and parallel to the north end of the site, Harrison Park aka Gabe Catalfo Fields and the Berkeley Skate Park are actively used by the public. To the north (of the Skate Park) is Fielding Field and University Village Community Garden which are home to outdoor activities. All of these community amenities should be carefully considered for noise and air quality impacts from the proposed facility improvements. Other properties east of the railroad and towards Gilman are located on Cedarwood Lane which provides minimal paved access to business yard areas.

The west boundary of the site has sidewalk improvements as well as street parking that serves the site. Maintaining these features will be considered in the master planning process.

## Off-Site Considerations

### Off-site Improvements: Proposed Traffic Circle

Caltrans in collaboration with Parsons Corporation has prepared detailed plans (2016) for the development of a traffic circle at the intersection of Gilman Street and the Interstate. The intent of the roundabout (Exhibit C) will be to mitigate the hazards of multiple access points in this intersection.

- Further information on the construction schedule
- Impacts to Eastshore Highway and how this will affect use of this street for the Transfer Station
- Vehicle stacking east of the circle that may impact site access.

The I80/Gilman Street Interchange Project sponsors, Caltrans and Alameda CTC, released the Initial Study with Proposed Negative Declaration/Environmental Assessment on December 15, 2018 for general public input through February 5, 2019. Project sponsors anticipated Final NEPA/CEQA certification by mid-2019. Final design by spring 2020 and construction start in late 2020/early 2021 with estimated 2<sup>1</sup>/<sub>2</sub> year construction time line.

Across the Gilman Street to the south, Pacific Steel Castings has vacated the property. This parcel is significant in size and has relevance to what is accomplished at the Recycling Center & Transfer Station site at the Gilman frontage. City of Berkeley Principal Planner, Shannon Allen, AICP indicates that a visioning process has been started and is likely to establish guidelines for a light industrial /manufacturing use consistent with current zoning and not indicative of any potential redevelopment overlay initiatives at this time.

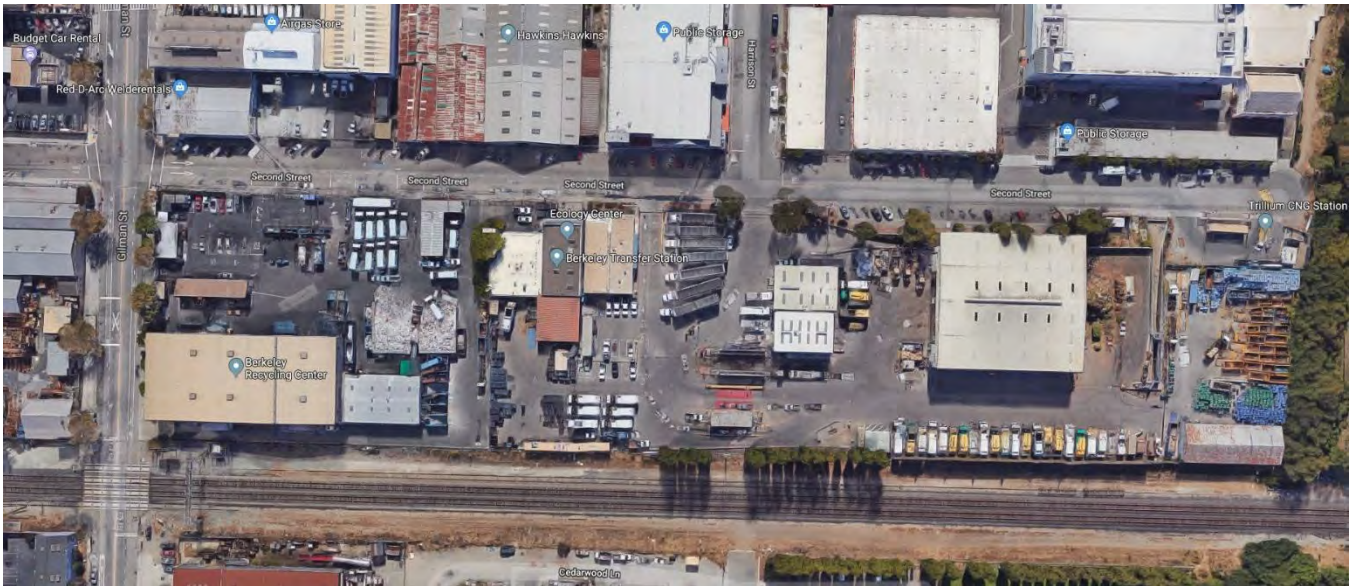


Figure 6: Aerial View of the Berkeley Transfer Station

## Other Considerations



Figure 7: Power Lines Parallel to Harrison Street

**Electrical** Power and telephone lines are all overhead with poles per visual survey (Exhibit D). An overhead line transects the site parallel to Harrison Street in an East West direction (at the Scalehouse). Review of the available survey information does not represent any easements at this location, therefore it will not be considered as a restriction in the conceptual site planning process until further information indicates otherwise. Main electrical service is available at the Gilman St. frontage (ref. existing transformer per Survey Exhibit D) but should be reviewed with all other Second Street points of connection with PGE for consolidation of service and metering. This should be done following the conceptual identification of main power loads for the proposed MRF facility and potential renewable energy offsets for net connected load from the grid.





### Stormwater Management

The overall site currently is composed of 6 parcels and will require a comprehensive design approach for stormwater drainage following a formal parcel/lot consolidation process. It should be noted that each of the existing parcels shows evidence of surface drainage flow characteristics specific to each parcel. Paving varies in wear-and-tear condition and in almost all conditions will required replacement. It should be noted that the current facility as well as the potential improvements may have higher percentages of roof area and paving versus permeable groundscape. These factors indicate that all future planning should consider a robust approach to stormwater detention via bioswales and below-ground structures.

### On-site Tunnel Feature

The open-air top load ramp and trailer pit north of the Transfer Station is in good condition and should be considered for adaptation to the new planned site configurations. Originally planned for the incinerator burn facility that the City Council and community members rejected, this feature secures any subsurface conditions that may be compromised if moved or removed (see soil conditions discussed below).

### Potential Risk Design Factors

EIR historical documents (1980) provided by the City of Berkeley to the Design Team were used for reference to identify potential risks as design factors for any future planning. They include but are not limited to:

- Subsurface artificial fill and caustic lime bed areas.
- 100-year flood hazard area and impact to critical City waste transfer operations.
- Soils liquefaction alluvial fill limiting foundations for lighter structures.
- Air quality affected by 180/1580 pollutants (reference BAAQMD Richmond Station monitoring).

These issues will require to be addressed during any site planning and environmental study phases.

# Section 2: Site & Facility Assessment

## Transfer Station and Recycling Center Site Assessment – Operations

A Transfer Station and Recycling Center site assessment was conducted by Jack Isola and Kevin McCarthy on October 18<sup>th</sup>, 2018. Mr. Isola took the lead on the assessment with observations and analysis also conducted by Mr. McCarthy. Below are notes and pictures, as applicable, with our site observations and recommendations for short and long-term improvements within specific operational areas of the Transfer Station complex (Transfer Station, scale house, C&D drop-off area, miscellaneous public drop off areas (waste oil, mattresses, appliances, e-waste, etc.), and ops. support areas (maintenance building, truck wash, fueling, truck parking, etc.)

### 1. Scale House Observations

- Current rates with a relatively low minimum weight threshold (i.e., >330 lbs. in load must be weighed) encourages more weighing of loads; this means weighed customers must tare out using a designated outbound scale creating a backup on outbound scale. A third scale is used for inbound City route trucks and as overflow outbound for public. To an irregular user of the TS, this system can be confusing and potentially create dangerous vehicle interactions.



Figure 1: Scale House





See table below for comparison of minimum load requirements at some other Bay area Transfer Station facilities.

**Table 1:** Transfer Station – Minimum Load Requirements

<u>Material:</u>	<u>Refuse/Trash</u>	<u>Green Waste/Wood Waste/Compostables</u>
<u>Facility</u>		
Berkeley	330 lbs. or less to be visually measured. Minimum charge \$29.00/ cu. yard.	330 lbs. or less to be visually measured. Minimum charge \$23.00/ cu. yard.
Davis Street TS (San Leandro)	Large percentage of customers are charged by the cubic yard. Minimum charge 1 yard = \$33/ cu. yard.	Large percentage of customers are charged by the cubic yard. Minimum charge 1 yard = \$27.00/ cu. yard.
Golden Bear (Richmond)	Minimum 1 yard for measured loads and 2000 lbs. for weighed loads. \$36.05/ cu. yard.	Minimum 1 yard for measured loads and 2000 lbs. for weighed loads. \$29.05/ cu. yard for green waste.
Shoreway (San Carlos)	1 yard minimum at \$42.00/ cu. yard.	1 yard minimum at \$33.00/ cu. yard.

**Short-term recommendation:** The rate structure, if based on a minimum cubic yard charge, would move through more customers to a cubic yard calculation and thus reduce the number of customers required to tare out.

**Long-term recommendation:** Add at least one new inbound traffic lane with scale so have two inbound scales and one non-weigh for manual transactions. Automate inbound weighing of city trucks w / transponder/RFID or related system. Have two dedicated outbound scales, with no cross-over traffic from inbound allowed, and one bypass lane.

- Single inbound scale for public as attendants must weigh loads, load check and measure customers. Facility requires minimum of two inbound scales to maintain traffic flow. Scale issue must be addressed in new plan.

**Long-term recommendation:** Add at least one new inbound traffic lane with scale so have two inbound scales and one non-weigh for manual transactions. Automate inbound weighing of city trucks w / transponder/RFID or related system. Have two dedicated outbound scales, with no cross-over traffic from inbound allowed, and one bypass lane.

- Due to site limitations, queue space within the facility footprint (i.e., between the facility entrance gate and scale house) is insufficient and contributes to back-ups onto 2<sup>nd</sup> street and blocked internal roadways.



Figure 2: Queue Space

**Long-term recommendation:** New facility traffic plan should include a significantly lengthened queue area.

- Confusing, cluttered signage surrounds the scale house. Revamp production of signage. Most striping is worn off the roadway.

**Short-term recommendation:** Assess all signs in place and determine which are needed and/or can be consolidated. Also, re-striping would help with weighing and flow.

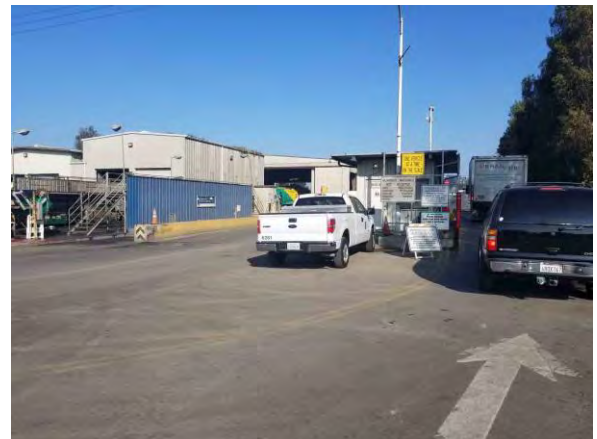


Figure 3: Signs Next to Scale

- Public traffic sightlines to Transfer Station (TS) Building are hindered by Emergency preparedness trailer, particularly sightlines from bypass lane. Customers do have straight view of tipping area as they approach the TS building and can prepare for staging at tip area.

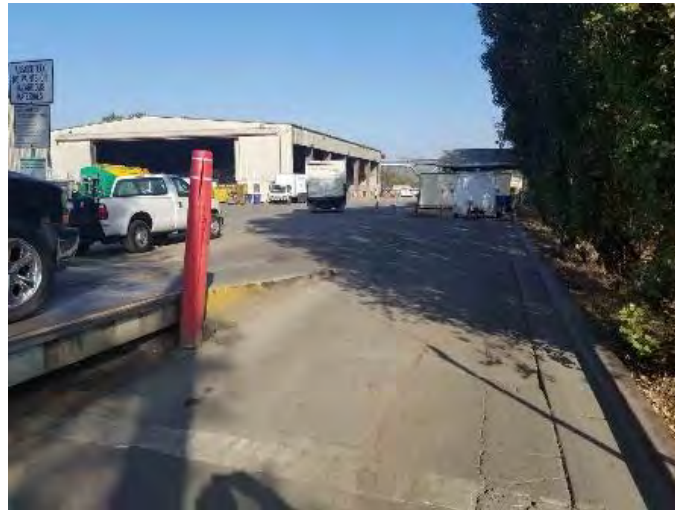


Figure 4: Traffic towards the TS building

- Inbound public traffic to the TS building tip area and outbound from tip area share the same roadway with each other and also route trucks.

**Long-term recommendation:** New facility traffic plan should create separate roadways for public and route trucks. Plan should also try to eliminate two-way traffic and establish one-way traffic flow.

## 2. Transfer Station Building Observations

Observations are broken out into specific unloading and operational interface areas.

- **Public Tipping (East Side Public Tipping Area):** Urban Ore operation stages at SE corner of transfer building, salvaging materials from public trash loads. This operation will need to be considered when planning future improvements. Storage, staging and working conditions should be addressed.



Figure 5: South East Corner of Transfer Station

Three to five employees work the tip floor directing traffic and helping customers back into trash, green waste and C&D tip areas. Employee and public safety concern



Figure 6: Transfer Station Building

require clarification. Additional signage and improved personal protective equipment for spotters would provide a short-term improvement.

Staging area across from tip floors are used to park route trucks. Turning and staging areas are significantly reduced by route truck parking. Long-term, route trucks would need to be relocated.

**Short-term recommendation:** Implement new operational procedures to enhance signage and use of PPE.

Designate a single supervisor/manager onsite to be responsible for site housekeeping and maintenance.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas. Also, delineation of separate corp. yard area with truck parking, maintenance, washing and fueling; and container storage and maintenance.

- **Public Tipping (East Side Interface between Public and Route GW and Trash Customers):**

Due to the facility original use, tip area is limited. Public green, route green, public and route trash and loaders share the same space at the same time. Short term operations can highlight the separation between loading and pushing unless vehicles are removed from the immediate vicinity. Overall, this facility is too small when considering operating procedures, volume, diverse customer base and material streams.



Figure 7: Public Tipping Area (East Side)

Photo above illustrates route and public trash pile being loaded and route and public green waste piled to the right. This setup works when traffic flow is slow. When traffic increases all tipping and loading areas become readily congested.



**Short-term recommendation:** Implement new operational procedures that provide space separation between loading and pushing until vehicle(s) are removed from the immediate operational vicinity.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows.

- **Public Tipping (North Side C&D Outdoor Drop-off Area and Interface with TS Building):** Area is limited, tight quarters during peak times with underutilized space behind tipping area (see pictures on next page). For safety and logistics reasons, loading is done at night when the facility is closed.



Figure 8 & 9: Public Tipping Area North Side C&D Outdoor Drop-Off Area

North side view of building illustrates building condition and need for a facility maintenance program sooner rather than later. Maintenance needs to be part of the plan.



Figure 10: North Side View of Transfer Station

**Short-term recommendation:** Designate a single supervisor/manager onsite to be responsible for site housekeeping and maintenance.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas.



- Public Tipping (East Side Interface between Public and Route GW Customers):** This green waste operation functions but the interface between public and route trucks and loaders is not optimal and should be addressed in the new plan. The interface between the three must be eliminated in the new plan. In the interim, spotters could hold customers while loaders push. Loaders operators should halt weaving and pushing next to and behind any vehicles. The space is too small for the volume currently received.



Figure 11, 12 & 13: Public Tipping Area East Side Interface between Public & Route GW Customers

**Short-term recommendation:** Implement operational procedures to minimize operational interface between loaders and vehicles; spotter can hold customer from unloading while loaders push.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas.

- Public Tipping (East Side Public and Route GW Customers Queuing):** Parking route trucks and mixing tipping route trucks with inbound, staging and outbound public loads is not optimal and needs to be addressed in new plan.

Parked trucks and staged loaders utilize valuable space that could improve trash and green waste staging and tipping operations.



Figure 14, 15 & 16: Parking route trucks and mixing tipping route trucks

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas. Also, delineation of separate corp. yard area with truck parking, maintenance, washing and fueling; and container storage and maintenance.

- Route and Large Truck Tipping (South side of TS Building):** South side route truck tipping area is limited by public and city mattress disposal, maintenance facility parking, the Urban Ore operation and accumulated debris. Like all vehicles moving through the facility, route trucks must weave their way through cross traffic and operations mentioned above, to get to the tip floor. This issue should be addressed in the long-term plan.



**Figure 17:** Mattress Disposal on South Side Route Truck Tipping Area

The inbound/out bound scale and wash rack are also located in close proximity. Their location and functionality impact the South side route truck area as well as the inbound customer queuing area and limits the flexibility of the scale house operation. This should be addressed in the long-term plan.

The loaders remain in the building and effectively load transfer trailers from each side of the trash pile. They loaded to the high-water mark of the trailer but did not hit maximum payload on axles. A review of outbound payloads would be valuable in assessing loading process and trailer specifications.

Although not ideal and should be addressed in long-term plan a limited number of large public customers use the route truck tip area.



**Figure 18:** South Side View of Transfer Station



Less the cross traffic and mattress staging, this area functioned effectively and did not seem overwhelm.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas. Also, delineation of separate corp. yard area with truck parking, maintenance, washing and fueling; and container storage and maintenance.

Identify operational and equipment needs to achieve higher density in loads through more compaction on floor. Plan to identify potential upside from higher average payloads.

- **Transfer Trailer Loadout**

The loader operators effectively working in tandem to load transfer trailer. However, there is no means of communication between loader operator and transfer driver. Loader operator(s) communication is limited.



Figure 19: Loader Operators

Transfer trailers were loaded to high water level and tamped by loader with extended lower lip of bucket. There is insufficient density being achieved on the tip floor. Trailers cubed out before achieving maximum axle weights. 48' trailers are limited in size due to tunnel considerations. Told verbally that payloads were approx. 20 tons/load.

**Short-term recommendation:** Install radios in transfer tractor/trailers so there can be real time communication with the drivers and loader operator(s) while onsite and offsite.

Tractor and trailer specifications should be reviewed to identify opportunities to lower tare weights.



Figure 20: Tipping Floor Area



**Long-term recommendation:** Identify operational and equipment needs to achieve higher density in loads through more compaction on floor. Plan to identify potential upside from higher average payloads.



Drains and storage areas are impacted by dirt and sludge, again impacting storm water. Adherence to a facility maintenance plan/program would have a positive impact.

Figure 21: Drains & Storage Areas



Figure 22, 23 & 24: Tire & Scrap Storage (Left), Urban Ore Operations (Middle) & Mattress Disposal Drop-Off Area (Right)

Tire and scrap storage in C&D area need improvement in new plan to include more room, containment and cover from elements.

Urban Ore is organized but in close proximity to wood, metal boxes, loaders and route trucks. Cleanliness and safety improvements should be addressed in the updated plan.

The uncovered mattress drop off area is next to the route truck tip area. Public and route trucks interface in this area along with the maintenance facility. Safety, covered storage, traffic flow should be addressed in the new plan. The maintenance facility location impacts the inbound and outbound traffic lanes, scale house and



scales and access to the South side transfer station tipping areas. Relocation of the maintenance facility must be considered in new plan.

**Short-term recommendation:**

Trucks should be evaluated and repaired immediately to eliminate storm water impacts.

Designate a single supervisor/manager onsite to be responsible for site housekeeping and maintenance.

Implement CA's product stewardship program for free mattress recycling service; trailer provided to store mattress. See <http://mattressrecyclingcouncil.org/collection-site-or-event-host/>.

**Long-term recommendation:** Larger transfer station building with more delineated public/route truck separation and traffic flows and expanded tipping areas. Also, delineation of separate corp. yard area with truck parking, maintenance, washing and fueling; and container storage and maintenance.

Develop a new public drop off area that consolidates all bulky items (tires, mattresses appliances, carpet, etc.) and special and universal waste items (e.g., waste oil and e-waste) drop-off into one integrated area. This area may also incorporate traditional bottles, cans and papers; scrap metal; full range of universal waste (e.g., oil, battery, paint, e-waste, fluorescent tubes, etc.); and other identified items (e.g., reusable items, soil product sales, books, etc.) that support the City's zero waste goals.

### 3. Public Drop-Off and Buyback Center Operations

- These operations flow well given the high volume of public traffic that uses the area. There's a high level of repeat customers which helps alleviate any operational limitations with the confined operational footprint. CCC staff also appeared very attentive to customer needs. Work areas were generally clean.







Figure 25 & 26: Public Drop-Off & Buyback Center

- The drop-off area could benefit from improved signage. Overhead signage above the bins would also help like shown for cardboard.

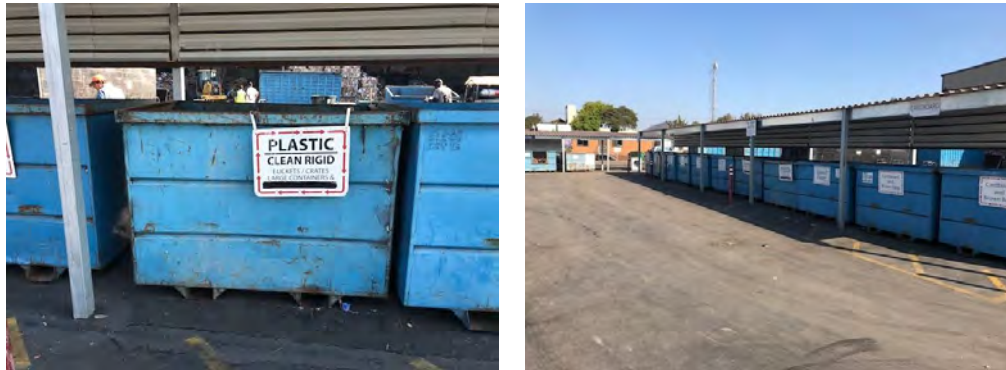


Figure 27 & 28: Current Signage on Bins

**Short-term recommendation:** Install signs above each recycle material loading bin.

- The appliance area should be in a contained/bermed area to mitigate stormwater impacts.



Figure 29: Appliance Area

**Short-term recommendation:** To minimize stormwater runoff place filter socks or temporary barriers down to catch runoff during rain events. Also, retrain employees and customers to unload and keep appliance under the covered area.

- Exit area from drop off area onto one-way 2<sup>nd</sup> Street is close enough to Gilman Street that some customers drive the wrong way on 2<sup>nd</sup> Street to get back to Gilman to avoid the much longer route up 2<sup>nd</sup> Street to Harrison Street to Eastshore Highway (freeway frontage road) and back to Gilman; this was observed while onsite and personnel stated this isn't an uncommon practice.



Figure 30: Public Entrance to Buy Back Recycling and Drop-Off Recycling

**Short-term recommendation:** Review traffic signage and ensure signage is in place noting entrance to facility is one-way in. On exit gate from drop-off area consider installing a sign that says “right-turn only.”

- Exit from buyback center onto Gilman Street can be congested, particularly if attempting to make left turn across Gilman to go eastbound.



Figure 31: Exit from Buyback Center onto Gilman

**Short-term recommendation:** Consider installing a sign for “right-turn only”.

- Facility scale is in the middle of the facility with active cross-traffic. Trucks using the scale have adapted to the location, but long-term facility plan should address relocating the scale.
- Universal waste drop-off area is in a secure location with adequate signage. Long-term facility plan should place this operation in a more convenient location that can continue to be easily monitored.
- Overall, these are highly function areas that could benefit from co-location with other public drop-off services located at the Transfer Station.



Figure 32: Universal Waste Drop-Off Area

**Long-term recommendation:** Develop a new public drop off area that consolidates all bulky items (tires, mattresses appliances, carpet, etc.) and special and universal waste items (e.g., waste oil and e-waste) drop-off into one integrated area. This area may also incorporate traditional bottles, cans and papers; scrap metal; full range of universal waste (e.g., oil, battery, paint, e-waste, fluorescent tubes, etc.); and other identified items (e.g., reusable items, soil product sales, books, etc.) that support the City's zero waste goals.

#### 4. Ecology Center Operational Area

- It was observed that 4-5 of the residential recycling trucks were making their last loads within five minutes of each other.

**Short-term recommendation:** Ensure stormwater controls, such as filter socks are maintained to function at peak rain events.

**Long-term recommendation:** The long-term facility plan should assess the operational advantages and synergies associated with a single corp. yard for all solid waste and recycling collection and transfer vehicles for truck parking, maintenance, washing and fueling; and container storage and maintenance.

#### 5. Material Recovery Facility Operations

A preliminary MRF equipment and operational assessment was conducted by Rick Kattar and his analysis is captured in the tables below organized by fiber processing, container processing, and baler.



**Table 2:** Fiber Processing System Review

Berkeley Site Visit October 18, 2018			
<b>MRF Equipment and Process review</b>			
<b>Fiber Processing System</b>			
<b>Manufacturer</b>	Machinex Manufacturing		
<b>Process Flow</b>	Infeed----Inclined belt----6-8 person Sorting conveyor (positive pull- Trash/Containers into 30gal trash cans. When full the cans are dumped into self dumping hoppers positioned on either side of the platform) Positive pull-- OCC into Drop down chutes to 3 push through bunkers ----Negative sort mixed paper.		
<b>Staffing</b>	Loader operator - 2-4 sorters - Forklift operator - Baler operator - Bale QC sorter.		
<b>System Overview</b>	This is a very basic system built by Machinex manufacturing. The infeed is narrow and has material containment challenges as bucket overflow spills on either side of the drop point. There is no metering device/system and as a result inclined spill over is also problematic, caused by surging. As material transitions from the inclined belt to the sorting belt material flow is uneven and inconsistent. Sorters are often forced to pause the conveyor and level the pile as they dig through the material surge. This results in low production run rates and poor quality as sorters are inadvertently pulling prohibitive with the OCC as they attempt to delaminate the surge pile. Guesstimate the system produced at a 3-5 ton per hour run rate when observed.		
<b>Components -</b>	<b>Description</b>	<b>Condition</b>	<b>Recommendation</b>
Infeed	Chain conveyor	Conveyor structure appeared uncompromised and refurbishable. Chain assembly and rail appeared to be free flowing and aligned.	Review Titus maintenance reports.
System Structure	Steel construction	Stable and working order. No structural issues identified.	Review Titus maintenance reports.
Sorting conveyor	Slider bed conveyor	Belt and lacing were in working and useful condition.	Review Titus maintenance reports.
Self dumping hopper platforms	Welded steel platform extensions	Platforms appeared to be functional.	Review Titus maintenance reports.
<b>Summary of system challenges -</b>			
<ol style="list-style-type: none"> <li>1.To-be-processed fiber had problematic levels of glass, plastic containers and metals.</li> <li>2. Narrow and under-contained infeed charging drop point.</li> <li>3. No material metering capabilities</li> <li>4. No scalping or fines screen to eliminate glass and single serve cross contamination.</li> <li>5. No mechanical OCC recovery system forcing team to focus on large OCC missing smaller but recoverable OCC and containers.</li> </ol>			
<b>Recommendations</b>			
<ol style="list-style-type: none"> <li>1. Fabricate enhanced in-feed drop point to reduce spill point</li> <li>2. Install a metering device to eliminate material surging.</li> <li>3. Install a screen to remove container contamination (glass and single serve containers)</li> <li>4. Install an OCC screen (2 deck) to mechanically remove 60-75% of OCC</li> </ol>			

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Table 3: Container Process Review

Berkeley Site Visit October 18, 2018			
<b>MRF Equipment and Process review</b>			
<b>Container Process</b>			
<b>Manufacturer</b>	CP Manufacturing		
<b>Process Flow</b>	Split tipping floor with commercial and residential container streams - Inclined infeed - Sorting conveyor ( 3-7 plastic, fiber, trash, HD, PET, FE, 3-sort glass , negative sort 3 mix glass and unpulled trash) Aluminum is positively sorted into 30 gal trash cans and dumped into self dumping hoppers.		
<b>Staffing</b>	Loader operator - 5-6 sorters - Forklift operator - (Baler operator - Bale QC sorter---In fiber building).		
<b>System Overview</b>	This is a basic sorting system for container streams. It works best when the material is exceptionally clean and this may be why they segregate the inbound. All but steel cans and 3 mix glass are positively pulled from the sorting lines and deposited into toss-across chutes that drop down to take-away conveyors. The first 2 sorts are critical as they remove most of the bulky burden material (fiber and tramp plastics) that inhibits PET and AL recovery. The system appeared to be running at approximately 5-7 tons per shift hour during the observation period.		
<b>Components -</b>	<b>Description</b>	<b>Condition</b>	<b>Recommendation</b>
Infeed	Chain conveyor	Conveyor structure appeared uncompromised and refurbishable. Chain assembly and rail appeared to be free flowing and aligned.	Review Titus maintenance reports.
System Structure	Steel construction	Stable and working order. No structural issues identified.	Review Titus maintenance reports.
Sorting conveyor	Slider bed conveyor	Belt and lacing were in working and useful condition.	Review Titus maintenance reports.
Take-away conveyors	Slider bed conveyor	Conveyor structure, belt and lacing were in working , useful and refurbishable condition.	Review Titus maintenance reports.
Magnet	Over belt	Stable and working order.	Review Titus maintenance reports.
<b>Summary of system challenges -</b>			
<ol style="list-style-type: none"> <li>1.To-be-processed commercial containers had problematic levels of film plastics.</li> <li>2. No material metering capabilities</li> <li>3. No scalping or fines screen to get 3-mixed glass out in front of system.</li> <li>4. No mechanical Alum recovery system forcing team to focus on aluminum as a secondary sort.</li> </ol>			
<b>Recommendations</b>			
<ol style="list-style-type: none"> <li>1. Review possible opportunities to meter containers to system. Enhance density of blended sort materials and reduce black belt.</li> <li>2. Review possibility to recover mixed glass early in the process. Reduce sort belt burden and eliminate rerunning 3-mix as a negative sort.</li> <li>3. Consider a small eddy current for Aluminum. Increases pull rates from sorters at dedicated sort positions.</li> </ol>			
<b>Material Recovery and upgrade opportunities:</b>			
<ol style="list-style-type: none"> <li>1. Review opportunity to sort HDPE into two distinct products - Natural and pigmented. 800 vs 300 market value variance.</li> <li>2. 3-mix glass upgrade with better 2 inch minus screening.</li> <li>3. Review opportunity to recover #5 poly Pro plastic as first sort. Go negative end of line 3,4,6,7 plastics as residue.</li> </ol>			

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**Table 4:** Baler Review

Berkeley Site Visit October 18, 2018			
<b>MRF Equipment and Process review</b>			
<b>Baler</b>			
<b>Manufacturer</b>	Lindeman		
<b>Process Flow</b>	Open and level floor infeed conveyor - incline to baler - 90 degree left bale flow - Bale turner taking bale flow opposite infeed.		
<b>Staffing</b>	Loader operator - Baler operator - Bale QC sorter---Forklift operator.		
<b>System Overview</b>	Infeed conveyor and belt was operating without obvious issues. Pit access was limited and may contribute to reduced maintenance attention. Baler is in operational condition. Operator indicates that a full reline is scheduled in the near future. Fiber bales appeared tight and fairly uniform. Plastic container bales were not uniform and required re-work to be load ready. During observation wire integrity appeared good even with reline issues.		
<b>Components -</b>	<b>Description</b>	<b>Condition</b>	<b>Recommendation</b>
Infeed	Chain conveyor	Conveyor structure appeared uncompromised and refurbishable. Chain assembly and rail appeared to be free flowing and aligned.	Review Titus maintenance reports.
System Structure	Steel construction	Stable and working order. No structural issues identified.	Review Titus maintenance reports.
Pit	Welded plate inground structure	Infeed conveyor pit access was limited	Review Titus maintenance reports.
Baler	Single ram	Working but operationally challenged. Reline required and possible wire tie assemble rebuild may be needed.	Review Titus maintenance reports.
<b>Summary of system challenges -</b>			
<ol style="list-style-type: none"> <li>1. Baler is positioned far from container line operations requiring double handling and inefficient baler flow operations.</li> <li>2. No bale QC station to allow for Pre-Bale QC</li> <li>3. Infeed Pit access for cleaning and maintenance is challenged.</li> <li>4. Baler is not engineered to bale plastics and other materials with high expansion properties.</li> </ol>			
<b>Recommendations</b>			
<ol style="list-style-type: none"> <li>1. Bring several processing and baling reps in to brainstorm and provide vision. Focus on the following -               <ol style="list-style-type: none"> <li>a. Opportunities to position the baler differently to accommodate all process streams - Direct bale, Mixed fiber and Container stock.</li> <li>b. Review possibility of upgrading to a 2 ram baler.</li> <li>c. Review trade in options.</li> <li>d. Review baler area bunkering and flow options.</li> </ol> </li> </ol>			

SOLID WASTE RECYCLING & FEASIBILITY STUDY





Figure 33, 34, 35 & 36: Material Processing Equipment Areas

**Long-term recommendation:** Separate from the assessment of equipment and operations it's the opinion of the team that the long-term facility plan should evaluate the operational benefits and synergies associated with co-location of the MRF with the Transfer Station. Such an evaluation will need to be coupled with an overall facility traffic plan that looks at a perimeter one-way traffic flow pattern for the entire facility with an internal access road for solid waste and recycling collection and transfer vehicles. City staff have stated that the future traffic improvements at the Interstate 80/Gilman interchange may place additional traffic demand on 2<sup>nd</sup> Street as the Eastshore Highway (freeway frontage road) between Gilman and Harrison Street will be one way, i.e. north to south; this may result in traffic heading westbound on Gilman that used to make a right turn on Eastshore now making a right turn onto 2<sup>nd</sup> Street.

## 6. Facility Directional and Identification Signage

On October 18<sup>th</sup>, 2018 a site walk was conducted to document facility directional and identification signage to ascertain the effectiveness and consistency of the signage used. Sign locations are marked on the Site Plans A1.1 and A1.2. Pictures of these signs are below:

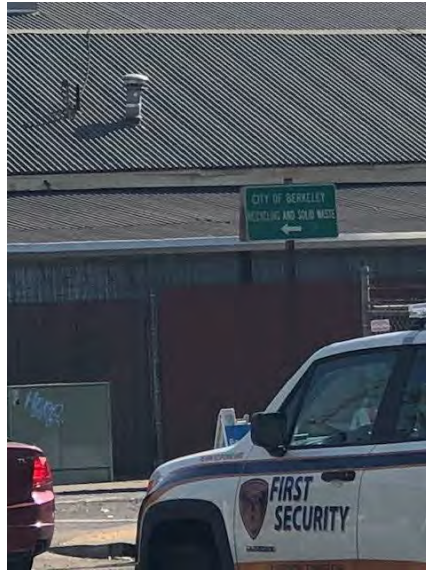


Figure 37: Facility ID Signage on South wall of MRF building



Figure 38: 2-sided facility directional sign visible westbound on Gilman Street and visible eastbound (across intersection) on Gilman at 2nd Street. Sign reads "City of Berkeley Recycling and Solid Waste"





**Figure 39:** 2-sided facility directional sign visible eastbound on Gilman Street and visible westbound (across intersection) on Gilman at 2nd Street. Sign reads “City of Berkeley Recycling and Solid Waste”.



**Figure 40:** Facility ID Signage on Gate, Public Entrance to Buy Back Recycling and Drop-Off Recycling



Figure 41: Facility ID Sign for Ecology Center



Figure 42: Directional Signage to Transfer Station. Sign reads "Solid Waste" and "Recycling Center". This is located at the entrance to the Ecology Center for the public and residential recycling trucks.





**Figure 43:** Transfer Station Facility Entrance Sign just before entrance to facility for public and city vehicles. Sign reads "City of Berkeley Zero Waste Resource Management Center"



**Figure 44:** Facility ID Sign on Administration Building. Sign reads "City of Berkeley Solid Waste Management Division"

The City should consider adopting a consistent usage for the identification of the facilities. The City should also consider rebranding the facility ID to match the vision of the future integrated facility.



# Section 3: Limited Structural Condition Assessment

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The Berkeley Solid Waste Transfer Station is located at 1201 Gilman Street, Recycling Center (Berkeley Recycling) is located at 1205 Second Street, Berkeley, California. The Transfer Station was originally constructed in 1982. The recycling operation was added to the site in the late 1980's.

The City commissioned J.R. Miller & Associate, Inc. dba Zero Waste Collaborative to conduct an overall facility existing conditions review as part of Task 1 of the Solid Waste & Recycling Transfer Station Feasibility Study (scope of work). The goal of this assessment is to observe and to determine usable assets that may be retained or incorporated into future site development plans. This document summarizes our assessment findings and will be included in the final Basis of Improvement Plan.

The walk-through assessment was conducted on October 18 and 19, 2018. It was performed by Krystal Li, P.E. of J.R. Miller & Associates (JRMA). The following structures were included in the walk-through assessment:

1. Transfer Station
2. Storage Shed
3. Used Oil Canopy
4. Scale House
5. Vehicle Maintenance Shop
6. Admin Office
7. Trailer Office
8. 1-Story Concrete Building
9. MRF
10. Ecology Center
11. Buy-back Office

The assessment did not involve a detailed inspection of all the building structural elements. No as-built documents were available for review. Approximately 25% of the primary frames and secondary frames were inspected where access is allowed. Destructive and non-destructive material testing and inspection were not performed. The following general information for each structure was determined based on limited observation made during the site visit.



## 1. Transfer Station



Figure 1 & 2: Transfer Station, East Elevation (Left) & South Elevation (Right)

The Transfer Station is a pre-engineered metal building (PEMB) with metal roof deck and metal siding. A top load tunnel is located at the west end of the building. The tipping floor is constructed with reinforced concrete slab-on-grade. The following deficiencies were observed and should be addressed in the near future.

- Warped steel column flanges were observed along the east wall. The damages most likely were caused by vehicle and loader impact. It is our understanding the City will be installing new large-sized concrete collars around the steel columns soon to prevent further damage to the columns. We recommend the warped column flanges to be reinforced at the same time.



Figure 3: TS East Wall, Warped Column Flange

- Steel columns that support the roof and the sliding door along the south face are damaged. Concrete pilasters supporting the columns are also damaged. Concrete reinforcement is exposed. It is reported that the damaged columns and the concrete pilaster have been repaired in January 2019 after our initial site visit.





**Figure 4 & 5:** TS East Wall, Damaged Column Pilaster (Left) & TS South Wall, Damaged Concrete Pilaster (Right)

- Large areas of the existing metal roof deck were severely corroded. Areas of the metal deck have been penetrated throughout. It is our recommendation that the City not allow anyone on the roof until the roof deck and the purlins are replaced.
- Majority of the roof purlins are corroded. Sections of the purlins have no metal remaining. The remaining purlin sections are likely to be unsound.
- Missing cross bracings along the east wall.
- Concrete tipping floor has been worn out. Slab reinforcement and embedded steel rails were exposed in the heavy traffic location.



**Figure 6:** TS Corroded Roof Deck & Roof Purlins



**Figure 7 & 8:** TS, Tip Floor, Exposed Reinforcement (Left) & TS, Tip Floor, Exposed Rail



## Recommendations

- Our assessment revealed that the Transfer Station building is in **very poor** overall condition. The degree of deterioration and damages observed in the Transfer Station makes reuse of this building cost prohibitive. We recommend the Transfer station building to be demolished. It should not be incorporated into any future site development plan.
- Repair all the damaged columns as soon as possible.
- Repair the damaged concrete pilasters along south side of the building as soon as possible.
- Do not allow anyone on the roof until the roof deck and the purlins are replaced or repaired.
- Install missing bracings along the east wall.

## 2. Storage Shed



Figure 9 & 10: Storage Shed, East Elevation with Damaged Siding (Left) & Storage Shed, Rusted Primary and Secondary Members

The Storage shed is a pre-engineered metal building (PEMB) with metal roof and siding at 3 sides. The floor is constructed with reinforced concrete slab-on-grade. The following deficiencies were observed.

- Warped steel column flanges were observed. The damages most likely were caused by vehicle and loader impact.
- Corroded roof deck.
- Damaged siding.
- Damaged gutter.



Figure 11: Storage Shed, Warped Column Flange

#### Recommendations

- Our assessment revealed that the Storage Shed is in **poor** overall condition. We recommend the Storage Shed not to be incorporated into the future master plan.

### 3. Used Oil Canopy

The Used Oil canopy is a wood framed canopy. The floor is constructed with reinforced concrete slab-on-grade. No obvious structural deficiency was observed.

#### Recommendations

- Our assessment revealed that the Used Oil Canopy is in **good** overall condition. It is our opinion that the Used Oil Canopy can be retained as appropriate in the future master planning process.



Figure 12: Used Oil Canopy

#### 4. Scale House

The Scale house is a pre-fab modular building. No obvious structural deficiency was observed.

##### Recommendations

- It is our opinion that the Scale House could be retained as appropriate in the future master planning process.



Figure 13: Scale House

#### 5. Vehicle Maintenance Shop

The Vehicle Maintenance Shop includes two (2) side-by-side Pre-engineered Metal Buildings with reinforced concrete slab-on-grade. No obvious structural deficiency was observed.

##### Recommendations

- Our assessment revealed that the Vehicle Maintenance shop is in **good** overall condition. It is our opinion that the Vehicle Maintenance Shop could be retained as appropriate in the future master planning process.



Figure 14 & 15: Vehicle Maintenance Shop, South Elevation (Left) & Vehicle Maintenance Shop, West Elevation (Right)

## 6. Admin. Building



Figure 16 & 17: Admin Office, North Elevation (Left) & Admin Office South Elevation (Right)

The Admin. Building is a modular building with metal roof and meal siding. The following minor deficiency was observed.

- Stained ceiling tiles were observed in various location. According to the City staff, most of the leaks have been repaired.



Figure 18: Admin Office, Water Stain on Ceiling Tiles

### Recommendations

- Our assessment revealed that the Admin. Building is in **good** overall condition. We recommend that the Admin. Building could be retained as appropriate in the future master planning process.

## 7. Trailer Office

The Trailer Office is a modular building with metal roof and metal siding. No obvious deficiency was observed.

### Recommendations

Our assessment revealed that the Trailer Office is in **good** overall condition. It is our understanding that this trailer will be removed and not utilized in the near future (late 2019).





Figure 19 & 20: Trailer Office, Exterior (Left) & Trailer Office, Interior (Right)

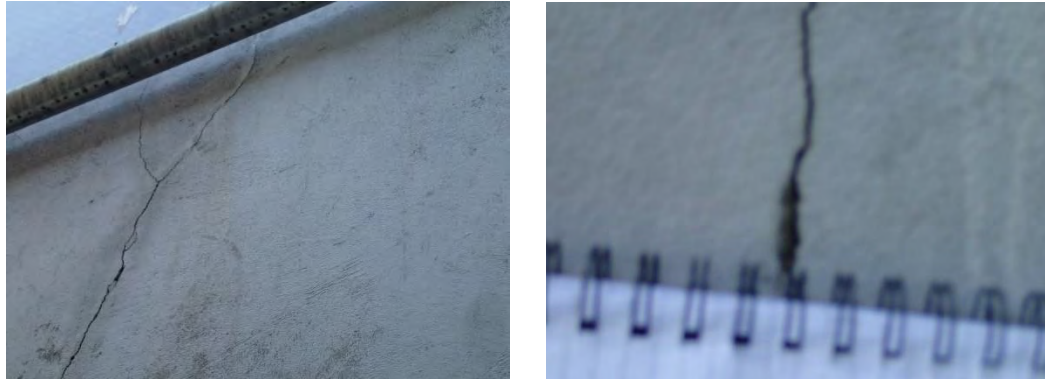
## 8. One-Story Pre-cast Concrete Building (Concrete Building)



Figure 21 & 22: Concrete Building, Offices, Interior View (Left) & Concrete Building, Offices, Interior View (Right)

The concrete building consists of 3 areas: Unoccupied office space (Office), Shops and Canopy. The Office and the Shops are constructed with pre-cast wall panels, steel girders, wood purlins and plywood diaphragm. The Canopy is a pre-engineered metal building (PEMB). The floor is reinforced concrete slab-on-grade. The following deficiencies were observed.

- Office Building
  - No obvious deficiency was observed.
- Shop
  - Long and relatively large exterior wall cracks were observed.



**Figure 23 & 24:** Concrete Building Shops, Cracks on Exterior PC Panel (Left) & Close Up View (Right)

- Water stains and peeling paint were observed though out Shops' roof structure.



**Figure 25:** Concrete Building, Water Stains and Check on Beam

- Sagging roof purlins were observed.
- Warped Girder Flange was observed.
- Buckled beam braces were observed.
- Large areas of peeling paint on interior concrete walls.



**Figure 26:** Concrete Building, Sagging Roof Beams, Damaged Beam Flange and Buckled Flange Brace

- Canopy
  - Damaged gutter.
  - Rust pits were observed on columns.
  - Corroded roof deck.



**Figure 27 & 28:** Concrete Building, Steel Canopy, Damaged Gutter (Left) & Concrete Building, Steel Canopy, Rust Pits on column (Right)

## Recommendations



- Our assessment revealed the following
  - The Office Building is in **good** over all condition. We recommend the Office Building to be retained.
  - The Shop is in **fair** overall condition. It is our opinion the observed deficiencies were caused by water infiltration. A detailed structural investigation is recommended to determine the extent of the damage and to develop proper repair measures. It is our opinion the Shop could be retained providing all the structural deficiencies are addressed.
  - The Canopy is in **fair** overall condition. It is our opinion the Canopy could be retained if the deficiencies are properly addressed.

## 9. MRF



Figure 29 & 30: MRF, West Elevation (Left) & MRF, Interior (Right)

The MRF is a pre-engineered metal building (PEMB) with metal roof and siding on 3 sides. The floor is constructed with reinforced concrete slab-on-grade. The following deficiencies were observed.

- Surface rusts were observed on the primary and the secondary framing members.
- Damaged wall girts
- Corroded roof deck.
- Damaged siding.



Figure 31: MRF, Rusted Steel Column

### Recommendations



- Our assessment revealed that the MRF is in **fair** overall condition. It is our opinion the MRF building can be retained once the building deficiencies are addressed.



Figure 32 & 33: MRF, Rusted Secondary Members (Left) & MRF, Minor Damage on Siding (Right)

## 10. Ecology Center

The Ecology Center is a double wide modular building with wood sidings. It is supported by blocks. The following issues were observed.

- Minor building settlement was observed.

### Recommendations

- Our assessment revealed the Ecology Center is in **good** overall condition. We recommend the Ecology Center building can be retained as appropriate in the future master planning process.



Figure 34: Ecology Center, South Elevation

## 11. Buy Back Office



Figure 35 & 36: Buy-back Center, Office (Left) & Buy-back Center, Office, Peeling Paint on Exterior Wall (Right)

The Buy Back office is a modular building with wood siding. The following non-structural deficiencies were observed.

- Peeling paint
- Minor concrete spall was observed at the base of the concrete foundation wall.

### Recommendations

- Our assessment revealed that the Storage Shed is in **fair** overall condition. It is our opinion that the Buy Back Office could be retained.

## Conclusion and Recommendations

Our limited structural condition assessment reveals most of the buildings at the site are in relatively fair-to-good condition except for the Transfer Station Building and the Storage Shed.

The Used Oil Canopy, the Scale House, the Vehicle Maintenance Shop, the Admin. office, the Trailer office, 1-story Concrete Office building and the Ecology Center are in good overall condition.

The Canopy adjacent to the 1-story Concrete Office, the MRF and the Buy-back Office are in fair overall condition. Some building structural deficiencies were observed.

The Shops next to the 1-story concrete office appear to be in fair condition. Deteriorated roof members and a cracked concrete wall were observed. The roof deterioration and damages are most likely caused by water infiltration. Localized repair or reconstruction should be expected. It is our recommendation that a detailed structural investigation be implemented as part of the planning process when considering a potential repurpose of the building.



Figure 37: Aerial View of Berkeley Transfer Station

The Storage Canopy is in poor condition. It may not be cost effective to mitigate the deficiencies observed. It is our opinion the Storage Canopy should not be retained.

Finally, the Transfer Station is in very poor overall condition. Severely damaged steel columns, concrete pilasters, concrete collars, and deteriorated roof deck and purlins were observed. It is our opinion these damages are due to vehicles and loader impacts. If the building is left in its current unprotected condition, localized failures are likely to occur. It is our understanding the City is working with some local consultants to install protection and to address some of the deficiencies identified. It is our opinion that it would be cost prohibitive to mitigate all the building deficiencies. We recommend the Transfer Station to be demolished.


Our structural condition assessment was limited to those areas that are readily accessible and visible to the field staff. Concealed conditions that become exposed in the future may change our current recommendations made here.





# Section 4: Facility Programming Checklist

\*\*\*Sections to be added \*\*\*



## Zero Waste Resource Management Center

Programming Questionnaire | Material Recovery Facility

Date: \_\_\_\_\_

Guide: Please provide any comments and recommendations in the "Stakeholder Comment / Priority" column. This text box may be used for preferences, questions, as well as any potential concerns and past experience. Indicate if specific information is not available e.g. "unk"/"tbd". Note: All input is welcome! Please provide your name/department in the "Stakeholder Name" column. Thank you.

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
<b>A Current Operations</b>				
1	Average daily volume of container and fiber materials received (TPD)		41.79 Based on three month of data. July 2018 to September 2018	
2	Maximum volume of container and fiber materials received (TPD)		44.96	
3	Percentage of incoming volume delivered by dual compartment collection trucks		80% Residential curbside and Commercial delivered by route either paper or containers trucks	
4	Percentage of incoming volume delivered by transfer trucks (if any)		0%	
5	Hours of Operation - Receiving		6 days per week (Buyback closed on Sunday)	
	5.1 M-F		8am-430pm Average buyback tons Mon-Fri = 116.27	
	5.2 Weekends		Saturday 830am-430pm Average buyback tons 16.84	
	5.3 Seasonal Schedules		No Close on New Year's, Easter, Thanksgiving and Christmas	
6	Hours of Operation - MRF Processing		CCC processes material seven days per week Baling and Containers processing 6 days per week and paper sorting seven days per week. (See weekly schedule)	
	6.1 M-F		8am-430pm	
	6.2 Weekends		830am-430pm	
	6.3 Seasonal Schedules		no Close on New Year's, Easter, Thanksgiving and Christmas	








M

### Zero Waste Resource Management Center Programming Questionnaire | Material Recovery Facility

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
<b>B Current Recovery</b>				
1	Average recovered volume of marketable commodities (TPD)			
1.1	ONP			
	Percentage recovery*		Stopped processing ONP #6 in 2013 because not enough newsprint coming in with fibers	
1.2	OCC			
	Percentage recovery		99.5%	
1.3	Mixed Paper			
	Percentage recovery		99.5%	
1.4	HDPE			
	Percentage recovery		95%	
1.5	PET			
	Percentage recovery		95%	
1.6	Mixed Plastic			
	Percentage recovery		85% About 15% is lost during processing mainly small lids and straws going off the end of container line along with mixed glass.	
1.7	Glass			
	Percentage recovery		98%	
1.8	Fe			
	Percentage recovery		99% tin lids	
1.9	Non-Fe			
	Percentage recovery		99%	
	How is recovered glass currently being processed and shipped?		1. Clean color sorted glass from the Buyback is dumped into bays. 2. Sorters pull whole colored glass from container sorting line and deposit into bays. 3. Broken glass goes off the end of container line. Loader operator loads end dump trailer for shipment to WSM in Fairfield.	

\* Percentage of total waste stream 95%





### Zero Waste Resource Management Center

Programming Questionnaire | Material Recovery Facility

**C Projected Operations at MRF Start-up**

1	Average volume of container and fiber materials received (TPD)	42.6	
2	Maximum volume of container and fiber materials received (TPD)	44.96	
3	Average volume of clean commercial materials received (TPD)	213lbs. REI baled OCC	
4	Maximum volume of clean commercial materials received (TPD)	3.19 REI baled OCC	
5	Percentage of incoming volume delivered by collection trucks	80%	
<b>ID</b>	<b>Topic</b>	<b>Design Team Response</b>	<b>Stakeholder Comment</b>
6	Percentage of incoming volume delivered by transfer trucks (if any)		0%
7	Hours of Operation - Receiving		
	7.1 M-F		No Change
	7.2 Weekends		No Change
	7.3 Seasonal Schedules		No Change
8	Hours of Operation - MRF Processing		
	8.1 M-F		No Change
	8.2 Weekends		No Change
	8.3 Seasonal Schedules		No Change

**D Projected Recovery at MRF Start-up**

1	Percentage recovery of marketable commodities (percent of total waste stream)		
	1.1 ONP		0%
	1.2 OCC		29.5%
	1.3 Mixed Paper		36.34%
	1.4 HDPE		1.17%
	1.5 PET		2.32%
	1.6 Mixed Plastic		1.8%
	1.7 Glass		24.08%
	1.8 Fe		3.62%





**Zero Waste Resource Management Center**  
Programming Questionnaire | Material Recovery Facility

	1.9 Non-Fe		.32%	
2	Will additional commodities be targeted from the Clean Commercial waste stream?		no	
3	Will organics recovery be required from the combined waste stream?		no	
4	How will recovered glass be processed and shipped?		Same as above	

ID	Topic	Design Team Response	Stakeholder Comment
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E Method of Accommodating Visitors			
1	Walk on Processing floor?	yes	
2	Un-enclosed viewing catwalk or platform outside of building?	no not necessary	
3	Enclosed catwalk or viewing gallery inside or outside of building?	no not necessary in my opinion	

E Projected Operations – Future (10 yrs.) Ultimate Capacity			
1	Projected Average volume of container and fiber materials received (TPD)	60	All depends on projected growth in population and recovering recyclable materials that are currently going to the landfill. Major goal is to keep material clean and not to add materials with limited markets that contaminate existing materials
2	Projected Maximum volume of container and fiber materials received (TPD)	65	
3	Average volume of clean commercial materials received (TPD)	0%	



**Zero Waste Resource Management Center**  
Programming Questionnaire | Material Recovery Facility

4	Maximum volume of clean commercial materials received (TPD)		CCC has the baling capacity to handle 10% more clean fiber if material does not need to go over paper sorting line.
5	Percentage of incoming volume delivered by collection trucks		80%
6	Percentage of incoming volume delivered by transfer trucks (if any)		0%
7	Hours of Operation - Receiving		Same as above unless major change is required or practical.
	7.1 M-F		
	7.2 Weekends		
	7.3 Seasonal Schedules		
8	Hours of Operation - MRF Processing		
	8.1 M-F		
	8.2 Weekends		
	8.3 Seasonal Schedules		

ID	Topic	Design Team Response	Stakeholder Comment
<b>F Projected Recovery – Future Ultimate Capacity</b>			
1	Percentage recovery of marketable commodities (percent of total waste stream)		To be determined by City and Consultant
	1.1 ONP		
	1.2 OCC		
	1.3 Mixed Paper		
	1.4 HDPE		
	1.5 PET		
	1.6 Mixed Plastic		
	1.7 Glass		
	1.8 Fe		
	1.9 Non-Fe		
2	Will additional waste streams be received and processed?		
3	Will additional commodities be targeted from either waste stream?		







**Zero Waste Resource Management Center**  
Programming Questionnaire | Material Recovery Facility

4	Will organics recovery be required from the combined waste stream?		no goes to transfer.	
5	How will recovered glass be processed and shipped?			

**G Additional Current Operations**

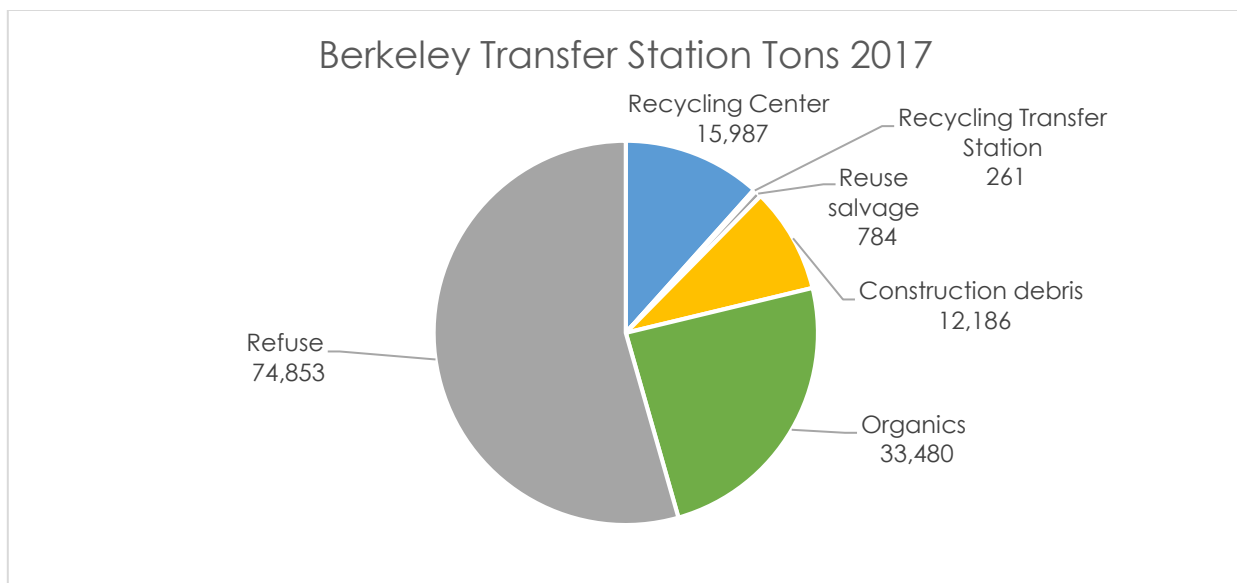
1	Which vehicles will be required to weigh out?			
	1.1 Transfer		yes	
	1.2 Collection		yes	
	1.3 Commodity shipping		yes	
2	Which vehicles will require Bills of Lading or Shipping Manifests to exit site?			
	2.1 Transfer		yes	
	2.2 Commodity shipping		yes	

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
3	Explain any floor sorting operations.		Managers inspect incoming loads after being dumped. If food waste or medical waste is spotted in large quantities managers will properly remove using safety gear and equipment.	
4	If hazardous materials are segregated on tipping floor, how are they handled and stored?		1. Identify hazard. 2. Identify the source. 3. Contact City Staff for appropriate action. 4. Have source remove or take to transfer station	
5	How are transfer vehicles loaded?		If you call a roll-off truck a transfer truck. We use a forklift to dump 4cyb in 50cyb for delivery	
	If truck well is used, how many positions?		We have one roll-off truck and several drivers that can operate. No site only	
6	How are commodity shipping trucks loaded?		We also load container and flatbed trucks with bales of material using a forklift	
	If truck well used, how many positions?		CCC does not operate market trucks that go deliver materials to market	
7	What parking requirements are there for any types of operational vehicles?		1. 7 employee parking spaces 2. 7 customer parking spaces. 3. 17 roll off bins throughout the yard for loose storage of containers, trash and metals	



# Section 5: Berkeley Transfer Station Zero Waste Program Assessment

## Transfer Station Tonnage 2017



<b>Material Type/Source</b>	<b>Tons</b>	<b>Percent</b>
Recycling Center (residential, commercial, drop-off, buyback)	15,987	12%
Recycling Transfer Station (white/brown goods, mattresses, tires, propane tanks)	261	0%
Reuse salvage	784	1%
Construction debris recycling (transfer)	12,186	9%
Organics (transfer)	33,480	24%
Refuse (transfer)	74,853	54%
<b>Total</b>	<b>137,551</b>	<b>100%</b>

Source: City of Berkeley, Zero Waste Diversion Metrics, 2017



<u>Origin</u>	<u>Organics Tons</u>	<u>Percent</u>	<u>Construction Tons</u>	<u>Percent</u>	<u>Refuse Tons</u>	<u>Percent</u>
Berkeley	30,939	92%	8,978	74%	62,751	84%
Non-Berkeley	2,541	8%	3,208	26%	12,102	16%
<b>Total</b>	<b>33,480</b>		<b>12,186</b>		<b>74,853</b>	

Source: City of Berkeley, Zero Waste Diversion Metrics, 2017

## Existing Zero Waste Programs

### Recycling Center (Berkeley Recycling)

The Recycling Center, operated by Community Conservation Centers, includes: buyback, drop-off, residential curbside and commercial recyclables processing. Some materials from the floor-sort activity at the transfer station are also processed at the Recycling Center.

The Recycling Center processes dual stream recycling from the residential and commercial collection program which includes: mixed containers (glass, plastic, metal) and mixed paper (paper and cardboard). Glass is color sorted and sold. PETE and HDPE plastics are sorted, baled and sold. Aluminum and steel cans are sorted baled and sold. Number 3-7 plastics are aggregated and shipped to the Titus MRF in southern California for additional processing. Approximately 60% of the plastics shipped to Titus are recovered for recycling. The Recycling Center processes two grades of paper: mixed paper and cardboard which are baled and sold.

The buyback operation is the only buyback facility in Berkeley and the adjacent cities of Albany, El Cerrito and Emeryville. The buyback operation pays customers for CRV containers (aluminum, bi-metal, glass, and plastic), scrap aluminum, mixed paper, and cardboard.

The drop-off operation accepts additional materials including: scrap steel, cooking oil, clothes, shoes and accessories, tapes/CDs, and large loads of books (for a fee).

The Recycling Center also includes a drop-off area for Universal Waste, including: fluorescent bulbs, household batteries, tool batteries, automotive batteries, light ballasts (labeled "PCB free"), and appliances (for a fee).

A total of 15,987 tons of material were handled at the Recycling Center in 2017. This represents 12% of the total throughput for both the Transfer Station and Berkeley Recycling. Approximately 80% of the recycling tons is from the residential and commercial recycling collection programs and 20% is from the buyback and drop-off programs.







### Self-Haul

Self-haul includes all vehicles that use the transfer station besides the City fleet and the Ecology Center fleet. Self-haulers are directed to separate some materials from disposal, including yard trimmings, construction debris, mattresses, tires, propane tanks, and motor oil.

In addition, City staff separate some materials (including cardboard and metal) from self-haul loads after they have been delivered to the transfer station floor.

Urban Ore crews identify loads with potentially reusable items (including household goods, lumber, fixtures, and furniture) and either assist self-haulers to unload reusable items or segregate these items after they have been unloaded.

Urban Ore salvaged 784 tons of reusable items in 2017 and 261 tons of recyclable materials were diverted from landfill through the recycling area at the transfer station.

Construction debris from self-haulers is transferred to the Zanker Road Resource Management Inc. (Zanker) Facility in San Jose for recycling. Materials targeted for recycling include, wood, drywall, shingles, plastics and metal. 12,186 tons of construction materials were transferred in 2017 or about 9% of total facility throughput. 74% of construction materials are from Berkeley sources and 26% are from outside of Berkeley.

A portion of the organics tons handled at the facility (described below) are brought by self-haulers, including 2,541 tons or about 8% from outside of Berkeley.

### Transfer of Materials

Organics collected by City crews from residential and commercial customers in Berkeley are transferred to the Recology Blossom Valley Organics-North processing facility in Vernalis. A total of 33,480 tons of organics were handled in 2017. A portion of this total includes self-haul tons.

Refuse collected by City crews from residential and commercial customers and refuse delivered to the facility from self-haulers is transferred to the Altamont Landfill in Alameda County near Livermore. 74,853 tons were transferred to the landfill in 2017, including 62,751 tons or 84% from Berkeley sources and 12,102 ton or 16% from outside of Berkeley.

Approximately, 65% of landfilled tons attributed to Berkeley flow through the transfer station. In 2017, an additional 33,842 tons were delivered to landfills and incinerators from self-haulers (including construction & demolition materials and residuals from processing facilities, including Blossom Valley Organics-North and Zanker).



<b><u>Berkeley Refuse Tons by Facility 2017</u></b>	<b><u>Tons</u></b>
Altamont	80,384
Azusa	3
Ox Mountain	49
Covanta	1
Fink	247
Foothill	36
Forward	1,385
Keller	9,050
Monterey	1,005
Newby	105
Potrero	1,977
Recology Hay Road	1,554
Redwood	362
Vasco	275
Yolo	3
Zanker	157
Total Berkeley Refuse Tons 2017	<b>96,593</b>
Berkeley Refuse Tons Transferred through Berkeley Transfer Station in 2017	62,751

Sources: CalRecycle Jurisdiction Disposal by Facility, 2017  
City of Berkeley, Zero Waste Diversion Metrics, 2017

## Future Zero Waste Programs

Future Zero Waste programs are under development or are being considered for future development by the City.

### Carpet Recycling

The City has received a grant to implement a program for separating carpets for recycling. Currently, carpets delivered to the facility are transferred to landfill. The grant was for a covered area for carpet storage. Carpets will be recycled through Carpet America Recovery Effort (CARE), a stewardship program operated pursuant to the requirements of Assembly Bill 2398 (statutes of 2010).





**Food Recovery and Food Waste Reduction**

CalRecycle is promulgating regulations for the implementation of Senate Bill 1383 (statutes of 2016) which requires a 75-percent reduction in the level of the disposal of organics from 2014 levels by 2025, including a provision that 20 percent of edible food that is currently disposed of is recovered for human consumption by 2025. The City will need to increase organics recovery and provide for reuse of edible food.

**New Single Use Foodware and Litter Reduction Ordinance**

City Council had the first reading/approval (January 22, 2019) for the proposed Single Use Foodware and Litter Reduction Ordinance. The Ordinance will allow food service vendors (both dine-in and take-out) to charge 25¢ per item charge to offset vendors' cost to switch from single use food ware utensils to either reused or compostable foodware use utensils. The Ordinance will not take full effect until January 1, 2021.

**New Construction & Demolition Debris Ordinance**

The City is researching opportunities for increasing deconstruction of buildings slated for demolition and source-separation of construction materials from building projects in the City.

**Additional Zero Waste Program Options**

As a part of the future facility design, the City could consider additional Zero Waste programming at the facility. During the initial listening sessions held during the fall and winter of 2018, stakeholders identified the following program elements for consideration.

**Buyback**

The facility has the only buyback in within Berkeley, not the adjacent cities of Albany, El Cerrito and Emeryville. It needs to accommodate both pedestrian and vehicle customers. It could be designed to be more user-friendly. Might want to consider a "bottle drop" (similar to those operated by the Oregon Beverage Recycling Cooperative).

**Source-Separation Incentives/Requirements for Self-Haul Customers**

The system needs to enhance recovery. Most desirable is to have serial drop-off and require (or incentivize through rate structure) separation by material type (yard trimmings, lumber, scrap wood, fixtures, scrap metal, cardboard, furniture, household goods). Alternatively, there could be a picking line like at the Davis Street Transfer Station or Recology SF Recycling & Disposal. The Urban Ore scavenging function is desirable to maintain. Additional vendors could be included. The facility could have a Goodwill trailer as well and other reuse and repair vendors.

**Drop-Off Center Improvements**

Stakeholders would like a configuration that is more "casual user friendly" similar to the El Cerrito Recycling Center. Expanded materials types accepted for recycling could include



everything that can be marketed, including aseptics, flat glass, bicycle parts, electronics, corks, Styrofoam blocks. The City could potentially allow for licensed scavengers (like at El Cerrito).

**Reuse Exchange**

As part of the drop-off or education center there could be a clean, dry place for free “put and take” (household goods, books, magazines).

**Education Center**

Classroom space, community meeting space, educational displays are desired. Plus, a catwalk through the facility for tours.

**Administration Building**

Co-located office space for City staff, and City's contracted companies to Zero Waste. This enhances collaboration and goal setting.

**Recyclables processing**

The City should maintain dual stream processing. The operation should be located adjacent to the buyback and drop-off. There is a need for more indoor storage for some materials.

**Organics**

Assumed to be primarily a transfer function. Residential food co-collected with yard trimmings transferred to compost facilities. There is some interest in source-separated commercial organics to anaerobic digestion at EBMUD. This might require pre-processing. There is some concern about co-digestion (as biosolids from wastewater are land-applied or used as alternative daily cover at landfills).

**Construction & Demolition**

Assumed to be primarily a transfer function. There is interest in some C&D processing for highest and best use. Enhanced source-separation is also desired. Keeping some load separate (such as asphalt shingles) can enhance recovery.

**HHW and Universal Waste**

There is an interested in expanding the types of materials that could be collected on-site. The City could consolidate HHW and Universal Waste drop-off.

**Refuse**

Assumed to be primarily a transfer function. There is some interest in reserving space for future processing of mixed waste.

**Other Desired Program Features**

- Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space)







- Maker space
- Social services for vulnerable populations
- Needle exchange
- Supplemental Nutrition Assistance Program (SNAP) program applications
- Food pantry
- Landscaping
- Sculpture garden
- Compost demonstration



# Section 6: Planning & Zoning

The following represents what is considered pertinent reference information from the City of Berkeley Planning Department information available from the City's website.

City of Berkeley Planning Division Contact: Shannon Allen, AICP  
Principal Planner/Co-Secretary to the ZAB  
Planning and Development Department  
1947 Center Street, Second Floor  
Berkeley, CA 94704

**The Transfer Station site is in the M-Manufacturing District** (Berkeley Municipal Code Chapter 23E.72)

The following is a use-specific excerpt from the **Chapter 23 Use and Required Permits Table**:

<b>Table 23E.72.030</b>
<b>Use and Required Permits</b>

Recycled Materials Processing	ZC*	AUP	UP	* If all processing done indoors; if any outdoors, AUP
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\*\* AUP - Additional Use Permit

The following sections are from Chapter 23 regarding the M Zoning District and would be relevant to the expansion of the facility and specific uses:

**23E.72.050 Physical Changes to Buildings: Construction of New Floor Area,  
Conversions of Existing Buildings, Requirements for Use Permits**





- A. Creation of new floor area includes construction of new buildings or accessory buildings, additions to existing buildings or the installation of new floor or mezzanine levels within or onto existing buildings.
- B. The construction of 20,000 square feet or more of new floor area requires a Use Permit. Construction of more than 20,000 but less than 40,000 square feet requires an Administrative Use Permit, and the construction of 40,000 square feet or more shall require a Use Permit and a Public Hearing.

**C. For purposes of the Noise Ordinance, Chapter [13.40](#), the M District shall be considered an Industry District.**

D. Automobile sales are not permitted on City-owned land used for a Materials Recovery Enterprise or solid waste transfer station as of January 1, 2008. (Ord. 7167-NS § 5, 2011: Ord. 7013-NS § 3, 1/15/08: Ord. 6478-NS § 4 (part), 1999)

**23E.72.070 Development and Performance Standards**

- A. Except as otherwise provided in Chapter [23B.36](#), the floor area ratio (FAR) shall not exceed two.
- B. Except as otherwise provided in Chapter [23B.36](#), the height for a main building for any permitted use shall not exceed 45 feet.
- C. No lot may have an area of less than 20,000 square feet.
- D. No yards shall be required.
- E. Subject to review and consultation with the Commission and the Board, the City Manager may promulgate and revise performance standards concerning dust, glare, noise, odor, vibration, hazardous materials or any other potential off-site environmental impacts. All uses shall be subject to these standards.
- F. Sites used for automobile sales are subject to the following development standards:
  - 1. When a project results in construction of a new building with more than 10,000 square feet of new floor area, the following standards shall apply to the new building:
    - a. A minimum building frontage of 40 percent of the project's primary street frontage is required within 25 feet of the public right of way. The



primary street frontage is the frontage towards which the primary building entrance is oriented;

b. Along Gilman Street a minimum building frontage of 50 percent of the Gilman Street frontage is required within 25 feet of the public right of way;

c. The minimum building height shall be 20 feet within 25 feet of the public right of way along the primary street frontage.

2. Adequate landscaping and/or fencing shall be used to screen views from street level of dealership operations that are not located within a building.

Outdoor vehicle storage and display does not need screening. Such screening shall not be required to obscure all visibility of interior activities but shall provide some filtering of outdoor dealership operations.

3. For the purposes of this Title and design review, areas used for outdoor vehicle storage and display are not considered parking areas.

4. Appropriate site design measures shall be installed to the maximum extent practicable to ensure clean water standards are met. Permanent stormwater best management practices and on-site storm water treatment shall be used for all runoff generated by new impermeable surfaces. Runoff from automobile washing and maintenance activities shall be properly collected and treated, consistent with the requirements of the Public Works Department and the Toxics Management Division of the Planning Department. When new paving is proposed, pervious paving shall be used where feasible and shall be reviewed and approved by the Public Works Department and Office of Transportation.

5. All noise-generating activities and equipment, such as vehicle repair, shall be shielded by noise-attenuating construction or equipment. Outdoor amplification is prohibited.

6. Exterior light standards and fixtures shall not be taller than 20 feet, light cutoffs shall be utilized to control light spillover onto adjacent properties, and low energy light fixtures consistent with Berkeley's goals for energy efficiency shall be utilized.







7. Vehicle test drives shall not be conducted in adjacent residential Zoning Districts.

G. Projects that may create environmental impacts as described in the West Berkeley Project Final EIR shall be subject to the adopted Mitigation Monitoring Program. (Ord. 7167-NS §§ 6 – 9, 2011; Ord. 7013-NS § 4, 1/15/08; Ord. 6478-NS § 4 (part), 1999)

**Parking**

**23E.72.080 Off-Street Parking and Loading Requirements**

A. For each of the following uses, the minimum number of off-street parking spaces shall be provided and in accordance with Chapter [23E.28](#) except as set forth in Section [23E.72.080](#).G. Construction of new floor area and changes of use of existing floor area shall satisfy the parking requirements of this section:

Table 23E.72.080	
Off-Street Parking Requirements*	
Use	Parking Requirement -- Number of Spaces
Manufacturing uses (assembly, production, storage and testing space only), Storage, Warehousing and Wholesale Trade	One space per 1,000 sq. ft. of floor area for spaces of less than 10,000 sq. ft.; one per 1,500 for spaces of 10,000 sq. ft. or more
All non-residential uses other than those listed above and in Subsection C	Two spaces per 1,000 sq. ft. of floor area
Automobile Sales and ancillary uses	One space for every: 1,000 s.f. of display floor area; 500 s.f. of other floor area. Two per service bay.
*See Subsection G for substitutions of up to 10% with bicycle/motorcycle parking	

B. The otherwise applicable parking requirement may be reduced if a Use Permit is obtained. The Use Permit shall be valid for a specified duration, not to exceed five years. In order to approve the Use Permit, the Zoning Officer or Board shall make the finding under Section [23E.72.090.C](#).



- C. Unless otherwise specified in Subsection A above, uses designated in this chapter as Other Industrial Uses, Automobile and Other Vehicle Oriented Uses, Outdoor Uses, Residential and Related Uses or as Miscellaneous Uses shall be required to provide the number of off-street parking spaces determined by the Zoning Officer or Board based on the amount of parking demand generated by the particular use and comparable with specified standards for other uses.
- D. Bicycle parking spaces shall be provided for new construction at the ratio of one space per 2,000 square feet of gross floor area of non-residential space, in accordance with Section [23E.28.070](#).
- E. Off-street parking required by this section may be satisfied by the provision of leased spaces, provided that the requirements of Section [23E.28.030](#) are met; however, the leased parking spaces may be within 500 feet of the property it serves, provided that leased parking at a distance greater than 500 feet may be approved by an Administrative Use Permit.
- F. If a Transportation Services Fee (TSF) for all or part of West Berkeley is adopted by the City Council, said TSF shall be paid per square foot of gross floor area in an amount set by Council Resolution, and in accordance with the general regulations concerning TSF, Section [23E.28.120](#). The fee per square foot may be set at different levels for different types of uses.
- G. Subject to the finding in Section [23E.72.090.D](#), an Administrative Use Permit may be issued to designate up to 10% of automobile parking required for a use for bicycle and/or motorcycle parking, unless a Use Permit from the Board is required to approve any part of the application, in which case the Use Permit shall be approved by the Board. Any bicycle parking created by this designation shall be in addition to otherwise required bicycle parking.
- H. Notwithstanding the general regulations for screening and landscaping of parking spaces (Section [23E.28.080](#)), there shall be no requirement for screening or landscaping of that portion of any parking lot which is adjacent to Third Street (Southern Pacific railroad tracks).
- I. In buildings with one or more manufacturing, wholesale trade or warehouse use, all uses shall maintain the loading space requirements of Chapter [23E.32](#).
- J. All uses which have one or more loading spaces shall retain at least one such space.
- K. Any construction which results in the creation of 10,000 square feet of new or additional commercial or manufacturing gross floor area shall satisfy Chapter [23E.32](#).
- L. All automobile sales uses shall provide for on-site loading and unloading of deliveries and may not occupy street parking or block public or private streets. On-street unloading may be permitted by an





Administrative Use Permit subject to the findings of [23E.72.090.F](#). (Ord. 7013-NS §§ 5, 6, 7, 1/15/08: Ord. 6856-NS § 21 (part), 2005: Ord. 6478-NS § 4 (part), 1999)

**23E.72.090 Findings**

A. In order to approve any Use Permit under this chapter the Zoning Officer or Board must make the finding required by Section [23B.32.040](#). The Zoning Officer or Board must also make the findings required by the following paragraphs of this section to the extent applicable.

B. A proposed use or structure must:

1. Be consistent with the purposes of the District;
2. Be consistent with the surrounding uses and buildings;
3. Be consistent with the adopted West Berkeley Plan;
4. Be not likely, under reasonably foreseeable circumstances, either to induce or contribute to a cumulative change of use in buildings from manufacturing, wholesale trade or warehousing uses;
5. Be designed to support 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;
6. Be able to meet any applicable performance standards for off-site impacts.

C. In order to approve a Use Permit for a reduction in the otherwise applicable parking requirement for a manufacturing, wholesale trade, or warehouse use under Section [23E.72.080.B](#), the Zoning Officer or Board must find that under the circumstances of the particular use and building, the demand for parking can be expected to be below the otherwise required level for a sustained period of time.

D. In order to approve a Use Permit for the substitution of bicycle and/or motorcycle parking under Section [23E.72.080.G](#), the Zoning Officer or Board must find that the substitution will not lead to an undue shortage of automobile parking space and that it can be reasonably expected that there will be demand for the bicycle and/or motorcycle parking spaces being provided.

E. In order to approve a Use Permit under Section [23E.72.030](#) to allow an automobile sales use, the Zoning Officer or Board must find that the following conditions are met:



1. The project will not result in unreasonable impacts on circulation and parking on adjacent streets or in the immediate neighborhood;
2. The project will not result in a substantial adverse impact on existing uses in the immediate vicinity;
3. The project will not generate objectionable odors or excessive levels of noise;
4. Site design reflects the urban form of the surrounding area and new construction, materials and/or building forms reflect the area's industrial character;
5. New construction along Gilman Street reflects the importance of a defined street wall along this main entry corridor to the City;
6. The project will not materially interfere with the activities of the City-owned solid waste center.

F. In order to approve a Permit under Section [23E.72.080.L](#) to allow on-street unloading of automobiles, parts or other auto accessories, the Zoning Officer or Board must find that:

1. It will not be unreasonably disruptive or detrimental to activities in the vicinity; and
2. On-site deliveries are not feasible due to specific site or roadway constraints. (Ord. 7013-NS. § 8, 1/15/08; Ord. 6478-NS § 4 (part), 1999)

## West Berkeley Plan Area (1993)

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### Plan Background Statement

"West Berkeley's uniqueness and dynamism grow largely out of its wide variety of land uses. Preserving and supporting all of the elements of this vital mix of land uses is the central policy of the West Berkeley Plan...

"The Plan designates two (relatively small) portions of West Berkeley as locales where large scale, materials processing "heavy" manufacturers are accepted as legitimate, important, long term uses...

"Environmental quality is central to the Plan -- the land use concept supports it by shielding residential areas from uses with high potential for impact. It provides additional environmental buffering along those sensitive edges where residential and heavy industrial uses meet...

There are only a few "heavy" manufacturers in West Berkeley, but they play a disproportionately important role. 1992 data indicates that there is roughly 1,000,000 square feet of heavy industrial space. Business License data indicates only 31 heavy manufacturers, 3% of area businesses, but they employ a reported 1,685 workers, 16% of stated employment. While individual company circumstances vary, the heavy manufacturers







tend to have the largest sites, to have been in place the longest, and to have the largest and most heavily unionized workforces. On the physical level, some heavy manufacturers occupy distinctive high-ceilinged yet 1 story buildings, to house large scale machinery.

“Heavy manufacturers are generally located in either of 2 clusters. There is a cluster in northwestern West Berkeley, where the Manufacturing zone is located. Here is Pacific Steel Castings (with @300 employees)...” It should be noted that the Pacific Steel Castings is currently vacant.

The Transfer Station site is specific to the Manufacturing District which is summarized in the West Berkeley Plan Area as follows:

**General Manufacturing Districts**

“There are 2 small districts in the Plan which allow process intensive, "heavier" manufacturing uses, as well as light industrial uses. These are the Manufacturing District in northwestern West Berkeley (largely west of the railroad tracks), and the Mixed Manufacturing District in southwestern West Berkeley (around the Colgate and Miles sites). These areas are the present home to most West Berkeley "heavy" industries such as steelmaking and ink production. These districts are closely targeted to industrial uses, and generally do not allow residential, live-work, retail, or office uses (except on upper stories in the Mixed Manufacturing District).

The overall intent reinforces the historical context of industrial jobs and to maintain those jobs, to allow development but not permit radical change. “Residents should be buffered from the effects of heavy industrial uses as much as possible...”

Generally Permitted and Prohibited Uses for the Manufacturing District are as follows:

“**Permitted Uses** (see Development Standards chart for sizes of projects requiring Administrative Use Permit, Use Permit with Public Hearing)

- Arts & Crafts Uses (workspaces only, not live-work)
- Auto body & painting
- Automobile dismantling ("junkyards")
- Auto repair
- Bus, Cab, truck, and public utility depots
- Composting
- Construction yards and associated offices
- Farms and Agricultural establishments
- Industrial Product Sales (Gases & Chemicals)
- Manufacturing: Food processing, textiles, apparel, lumber & wood products, furniture, paper & allied products, printing (exclusive of publishing); asphalt products, leather products (exclusive of primary production of leather); stone, clay, and glass products; fabricated metals, industrial machinery, electrical machinery & electronics, transportation equipment, scientific instruments, miscellaneous manufacturing.
- **Recyclable materials collection points, exclusive of facilities handling primarily hazardous waste**
- Parking lots (for uses located in the district)



- Self-storage ("mini-storage")
- Warehouses
- Wholesale trade and distribution
- Uses always requiring Public Hearing (regardless of project size)
- Chemicals, including pharmaceuticals (exclusive of the manufacturing of alkalis, chlorine, chemical warfare gases, DDT, chloroform, fertilizers, and explosives)
- Parking structures
- Primary metals, including smelting and refining
- Ancillary Uses (Uses permitted only as an integral part of manufacturing or wholesale trade site)
- Factory Outlets (for products manufactured on site)
- Laboratories
- Offices

**Prohibited Uses**

- Banks and financial establishments
- Gasoline stations
- Group quarters residences
- Hazardous waste transfer stations & disposal facilities (freestanding facilities)
- Hotels and motels
- Laboratories (freestanding)
- Live-work  
(Manufacturing District -Prohibited Uses continued)
- Manufacturing: Tobacco products, alkalis, chlorine, chemical warfare gases, DDT, pesticides, chloroform, fertilizers, explosives; primary production of leather; petroleum refining, products of petroleum and coal not elsewhere classified; tires, inner tubes, synthetic rubber, asbestos products, ordnance and accessories, reprocessing of nuclear cores & scrap
- Offices (freestanding)
- Publishing
- Residences
- Restaurants
- Retail establishments, except permitted factory outlets
- Schools and day care facilities

"It is important to note that no special process would be required of large-scale projects which conform in all substantive respects to the uses and development standard of their district. Such a project, however large, would require simply the normal Use Permit(s) and environmental review (an Environmental Impact Report or other appropriate documentation).

"All uses, even those permitted in a zone, are subject to review for environmental impacts. However, whether an Environmental Impact Report (EIR), an Initial Study, or other environmental document is needed will be determined by the nature and scale of an application;





## West Berkeley Plan Area Environmental Quality Element

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“The Plan is premised not on the displacement of existing manufacturers, but rather on the improvement of their (as well as other business’, institutions’, and households ‘environmental practices.

“Yet there are unquestionably serious environmental issues in West Berkeley. Interstate 80 is a major emitter of carbon monoxide, nitrogen oxides, and reactive organic gases, joined by some industrial users. There is significant use of hazardous materials in industries and households, causing the potential for environmental problems...

“The ground itself can be a cause for concern in West Berkeley, given that it has liquefaction potential in earthquake, particularly west of 3rd St. (Southern Pacific RR). The West Berkeley Plan by contrast recognizes conflicts, seeks to reduce them, and seeks to improve environmental performance while maintaining a mix of uses.

Guidance from the West Berkeley Plan Area for environmental quality should be all-inclusive but the air quality, noise and physical form elements should be acknowledged for specific relevance to the transfer station and recycling operations as a part of future master planning of the site. The following are highlights that require detailed investigation.

### Air Quality

“West Berkeley’s foremost local air pollution problem--likely to get worse with worsening traffic conditions-- is Interstate 80. There are also other major roads and some major manufacturers contributing to pollution problems.....

“By working along with the Bay Area Air Quality Management District--for trip reduction, and improvements in industrial emissions, air quality in West Berkeley can continue to improve.

### Air Quality Goals

- Improve communication and coordinate responsibilities for assistance, enforcement, and complaint response with the BAAQMD.
- Reduce existing traffic and adequately mitigate the impact of future traffic (see Transportation Element)
- Regulate the use of ozone depleting compounds.
- Promote risk management and communication practices.
- Reduce the importing, transportation, use and storage of materials which will become airborne hazardous waste.
- Avoid the establishment of new uses which would create immitigable odors in residential districts.



- Institute tree planting as an anti-pollution measure (see Physical Form Element for Implementation Measures)

### Noise

The West Berkeley Plan Environmental Impact Report projects noise contours--areas where overall noise levels are likely to exceed 60 decibels. **60 decibels is the level the 1977 Master Plan sets as a generally acceptable level.**

## West Berkeley Plan Area Physical Form Element

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The following excerpt provides specific references to the Transfer Station's location on Gilman as a part of the West Berkeley manufacturing industrial context and its importance as a "gateway."

### Gilman St.--Industrial Entry Corridor

Gilman St. is an important route into West Berkeley for the Manufacturing District, and a large part of the Light Industrial district, as well as for North Berkeley generally. The West Berkeley Plan's land use concept designates Gilman St. west of 10th primarily for industrial (and secondarily for office) uses. Likely to become more important in the future, with the development of the University's 12 acres of Harrison lands, Gilman must be recognized as a key industrial/corridor. The Gilman Freeway exits, unlike University or Ashby deposit the driver at street level, in a somewhat confused intersection. Crossing the tracks is followed by the landmark and visually distinctive Tannery complex. This "gate" is the entry to "West Berkeley." It is followed by a series of generally industrial buildings which--in their utilitarian lack of obvious effort to appeal to passersby--may seem monotonous, but actually vary in materials used, height, roofline, window treatment, and other aspects. At San Pablo Ave., one passes from the industrial zone to an area of small houses.

How can Gilman be improved as an entry corridor, while recognizing that it is to remain an industrial corridor? Many of the answers may simply involve improved design of both private sites and the public right-of-way. New buildings can come forward on their properties to strengthen the "street wall" of buildings where it exists





and shape a new one where it does not. This can be done without a loss of industrial utility (as the many existing "street-holding" industrial buildings demonstrate). Buildings need not be retail sites to "turn their faces"--their doors and windows--to Gilman St. They need not present a blank wall or parking lot on Gilman, as some of the newer buildings east of 6th St. do. Even industrial buildings can at least in part "turn their faces" to Gilman St. rather than side streets or parking lots. Gilman may be a situation where greater design uniformity--similar setbacks, heights, landscaping, etc.--may improve the image of the street, since present diversity is not perceived positively.

Section 4 of the Physical Form Element is specific to Industrial Districts and provides guidance towards design elements critical to the West Berkeley community context historical as well as vision.

"Despite the changes of recent years, most of West Berkeley's economically active area continues to be in districts which are predominantly industrial. The West Berkeley Plan designates two general industrial districts--the Manufacturing District in the north and the Mixed Manufacturing district in the south. It also designates much of the area as Mixed Use/Light Industrial (green)--covering light industrial areas from Harrison St. near Albany to Folger St. near Emeryville. Most of these industrial areas are not seen or used by people who do not work or do business there, although 7th St., Ashby Ave., and Gilman St. are major streets which pass through or alongside them. The industrial districts illustrate almost the full range of 20th Century industrial development--in building and lot size, building age, materials used, building/roof shape and height. Landscaping and setbacks are almost universally absent, although some of the larger sites (such as Miles) and a few of the newer sites (such as General Parametrics at 9th & Gilman) devote much of their land to parking. The Mixed Manufacturing district is dominated by large, multi-building sites (Miles, Colgate, Temescal), whose development was initiated in the early 20th Century. 4th St. south of University is typified by post-War concrete "warehouse" type structures, though there are exceptions (e.g. the 1910 brick building--now used for auto repair--at 4th & Dwight). Tall metal "sheds" for working metals are common around Gilman St. in the Manufacturing district. Industrial area landmarks include the Kawneer building at 8th & Parker, the City's original garbage





incinerator near 2nd & Harrison, and the Durkee Building on 7th St. west of Heinz. Ironically, West Berkeley's only open creek-- Codornices Creek--edges the industrial area.

Usefulness has generally been the chief design criterion in these areas, as is appropriate in districts whose primary users are workers and people doing business there. Thus, new buildings (and building rehabilitations) here should first of all be functional for the businesses and comfortable for their employees. However, there are instances where building decisions in these areas can affect the broader public. The "edges" of these districts--such as Dwight Way, 7th St., Heinz St. are places where they meet less intense ones--buildings and sites should be landscaped and scaled accordingly. Particular care is required where general industrial districts meet areas which are wholly or partially residential (see Goal 4). The role of Gilman St. and Ashby Ave. as corridors through and along the districts has been noted. Tree planting and landscaping along these edges and corridors provides far more benefit to the general public than it does on streets interior to the general manufacturing districts (Manufacturing and Mixed Manufacturing) although such interior plantings would presumably be seen as amenities by area workers. Development on major sites of an acre or more in these districts are key in shaping the overall character of their districts and West Berkeley and should thus aim for both internal coherence and integration with the broader fabric of West Berkeley (see Goal 5).

Policies towards older buildings in these districts, particularly in the relatively small general manufacturing districts (where non-industrial uses are deliberately limited) can present painful choices. City policy seeks to maintain historic buildings, and most historic industrial structures have been preserved in recent decades. What is termed "adaptive reuse" of buildings (i.e. change of use from industrial to another use) is often possible, particularly in the Mixed Use/Light Industrial zone--although this must be balanced against the district's central purpose of maintaining light manufacturing sites. In other cases, there is market demand to reuse older industrial buildings for industrial purposes. The City should certainly support the reuse of existing industrial buildings for manufacturing and other industrial purposes and should explore how such reuse can be encouraged. However, there are cases, particularly on "heavier" industrial sites, where buildings have become obsolete for industrial purposes. In some cases,



buildings may be moved (if sites and users are available), in other cases they are too fragile to survive a move. In these cases, there may be no choice but demolitions if the industrial use of the site is to be maintained.

### III. An Urban Design Vision for West Berkeley

What threads together this Element's proposals for various areas--its goals and policies, its implementation measures is an urban design vision for West Berkeley. It is not a vision of stasis--of keeping all buildings and sites exactly as they are, and assuming that nothing ever need be changed or removed. Nor it is a vision of clearance--of recklessly blasting away existing buildings or existing uses in search of what is believed to be "modern." It is rather a vision of conservation, creativity, and integrated development--of maintaining West Berkeley's historic, architectural, and use character(s) while welcoming suitable new development (which can sometimes be formally innovative development). West Berkeley's rich past has given it a wealth of historical and architectural resources which should be preserved, its future should give it buildings and places that will be landmarks for future generations.

The urban design vision seeks to link the many diverse elements of West Berkeley various areas of West Berkeley. A resident, a worker, a visitor should know when she passes from the Commercial to the Mixed Use/Residential to the Manufacturing district. Yet there should be features which link this large and diverse collection of places together and give it a sense of overall "West Berkeley" identity. Some of the most important linking features (which are discussed in greater detail in the Goals and Policies Section) are:

- Enhancement of commercial nodes and corridors: The commercial nodes and corridors are the places in West Berkeley used by the most people. It is important to improve the visual character and physical layout of key commercial corridors and encourage nodal development along these corridors.
- Entry Corridors: The entry corridors are important in setting the tone for West Berkeley. Defining the image and character for the city's major gateway—University Ave.--and for the other entry corridors which lead into West Berkeley--Ashby Ave., and Gilman St., and the northern and southern



ends of San Pablo Avenue is a major urban design task.

- Greening of the Streets: Trees provide green relief amidst the concrete and asphalt of West Berkeley. Expanding street tree planting to additional streets in West Berkeley will further this task. Street tree planting can be designed to address specific needs or conditions, such as enhancing residential areas, visually connecting residential and commercial areas, framing views, or improving the visual appearance of commercial streets and major roadways.
- Connections to existing public parks: West Berkeley's open spaces resources are not used to their fullest extent. Improving the pedestrian, bicycle and vehicular access to existing public parks, especially to the Marina area and Aquatic Park, will help West Berkeleyans (and Berkeley residents generally) enjoy their parks and will also help link the area together.

Reference

[https://www.cityofberkeley.info/Planning\\_and\\_Development/Redevelopment\\_Agency/West\\_Berkeley\\_Plan\\_\(The\).aspx](https://www.cityofberkeley.info/Planning_and_Development/Redevelopment_Agency/West_Berkeley_Plan_(The).aspx)

## West Berkeley Project

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In 2007, City Council asked the Planning Commission to recommend zoning amendments for the West Berkeley area. The resulting work program, budgeted through the Office of Economic Development, is working to ease the obstacles that people face when trying to build, operate, or grow industrial businesses in West Berkeley. The work program seeks incremental changes to the zoning ordinance, not wholesale changes to the West Berkeley Plan.

Reference

[https://www.cityofberkeley.info/WBP\\_Archive.aspx](https://www.cityofberkeley.info/WBP_Archive.aspx)



## Codornices Creek

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The following requirements are specific to City Creeks Ordinance Administration (2004)

### Background

The City recently adopted new regulations related to development on or near creeks in Berkeley. The regulations were adopted by the City Council after the Creeks Task Force studied the issues for nearly two years, received public input, and made recommendations regarding open and culverted creeks. In particular, the proximity of development to creeks is regulated.



The revised regulations provide property owners adjacent to creeks with greater flexibility than the previous ordinance. One of the goals of the amended ordinance is to protect open creeks and nearby habitat, while providing more options for expansion of existing nearby homes. For culverted creeks, which are below ground and within a pipe or box-shaped conduit in a creek bed, the ordinance protects structures built over creek culverts, protects the culvert itself, and preserves access to the culvert to allow the responsible party to maintain it.

### Open Creeks

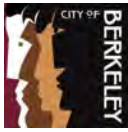
“ Construction within 30 feet of the centerline of an open creek is regulated to protect water quality and riparian habitat. An open creek may carry water either intermittently or continuously. See the definition for more information.

“An existing structure can be expanded vertically (up or down) within the existing footprint of the building within the 30-foot setback with an administrative Creek Permit from the City Engineer. Existing buildings can be expanded within 25 to 30 feet of an open creek with authorization of an Administrative Use Permit from the Zoning Office.

“Construction of new buildings within 30 feet of a creek continues to be prohibited without the issuance of a Variance.

“Property owners must use permeable paving (meaning water can penetrate through the material) within 30 feet of an open creek, and only for footpaths within 10 feet of an open creek.





"Obstruction of open creeks continues to be prohibited. Culverts, riprap, debris, walls and drains in the creek channel or on the banks, are banned without the issuance of a Creek Permit by the Department of Public Works.

Reference

[https://www.cityofberkeley.info/Planning\\_and\\_Development/Land\\_Use\\_Division/Creeks\\_Ordinance.aspx](https://www.cityofberkeley.info/Planning_and_Development/Land_Use_Division/Creeks_Ordinance.aspx)







# Exhibit A: Key Contacts

Contact Person's Name	Phone Number	Email Address
<b>City of Berkeley</b>		
Greg Apa		gapa@cityofberkeley.info
Manuel Hector		MHector@cityofberkeley.info
Heidi Obermeit		hobermeit@cityofberkeley.info
<b>Zero Waste Collaborative</b>		
Clark Davis	714-524-1870 Ext. 227	clarkd@jrma.com
Doug Drennen	714-904-0248	doug@jrma.com
Kevin McCarthy	650-248-7440	kevinm@jrma.com
Ruth Abbe	415-235-1356	ruth.abbe@abbeassociates.com
Jack Isola	714-582-3288	isola.jack@yahoo.com
Richard Kattar	303-589-5864	Rick@SwordfishConsulting.US

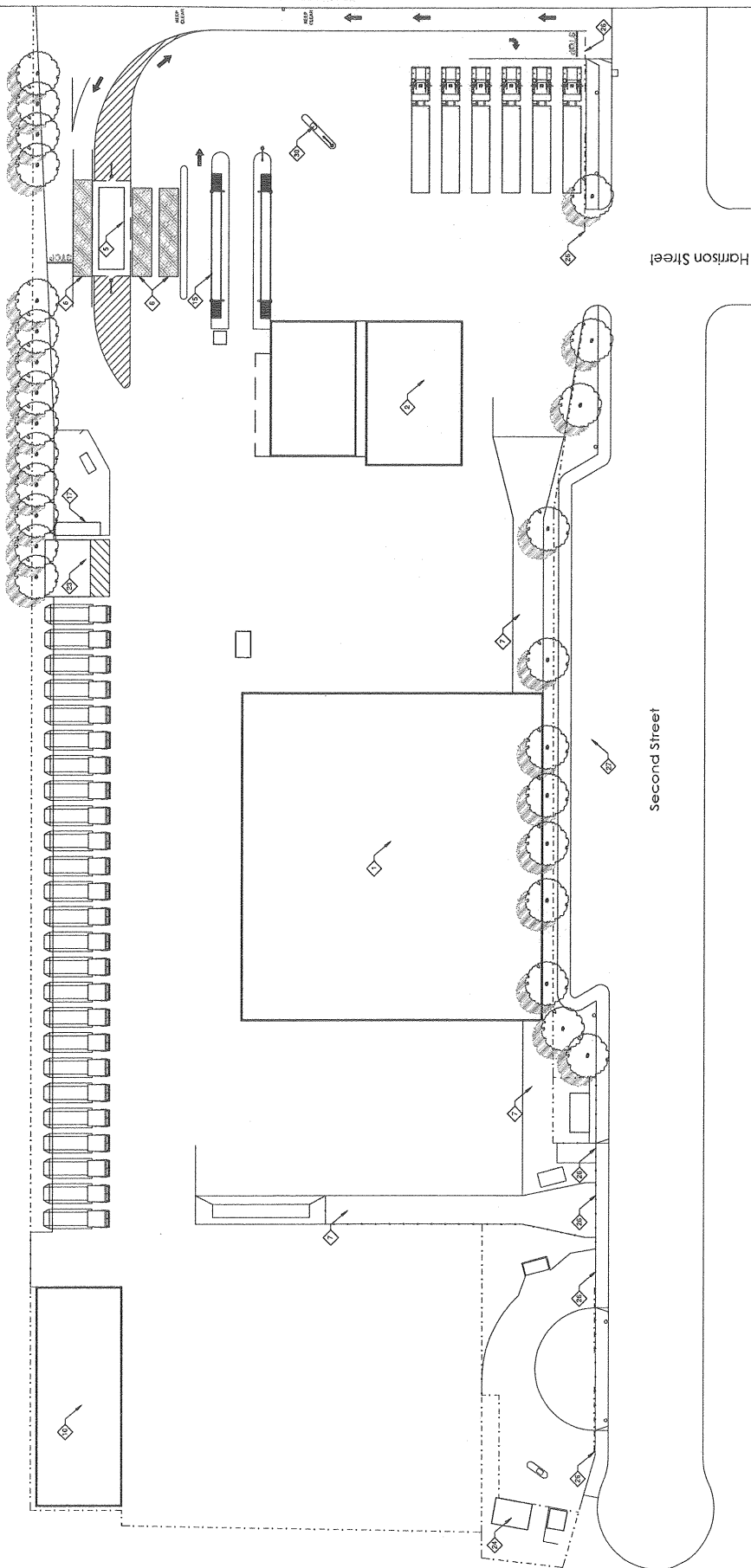


# Exhibit B: Site Map

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MATCH LINE



**KEYNOTES**

- ① TRANSFER STATION
- ② VEHICLE MAINTENANCE
- ③ ADMIN/OFFICE
- ④ MFP
- ⑤ SCALEHOUSE
- ⑥ SCALE
- ⑦ LOADOUT TUNNEL/RAMP
- ⑧ RECYCLING
- ⑨ BALEN
- ⑩ SORT PLATFORM
- ⑪ BIN SHED

**LEGEND**

- ① USED OIL CANOPY
- ② TRILLIUM C&G FACILITY
- ③ TRANSFORMER
- ④ GATE
- ⑤ STREET PARKING
- ⑥ BILLBOARD
- ⑦ RAMP (MOVABLE)
- ⑧ FUEL PUMP
- ⑨ BURNER
- ⑩ VACANT STRUCTURE (TILT UP)
- ⑪ RECYCLE BUY BACK CANOPY
- ⑫ MODULAR STRUCTURE
- ⑬ TRUCK WASH BAY
- ⑭ SHIPPING/STORAGE CONTAINER
- ⑮ MICROWAVE TOWER/EQUIPMENT
- ⑯ COMM. CONSERV. CENTER (CCC)
- ⑰ ECOLOGY CENTER
- ⑱ RECYCLE DROP-OFF
- ⑲ UNIVERSAL WASTE
- ⑳ LIGHT POLE
- ㉑ POWER/TEL POLE
- ㉒ CATCH BASIN
- ㉓ FIRE HYDRANT
- ㉔ FENCE

APPROX. SCALE  
0 20' 40' 80'

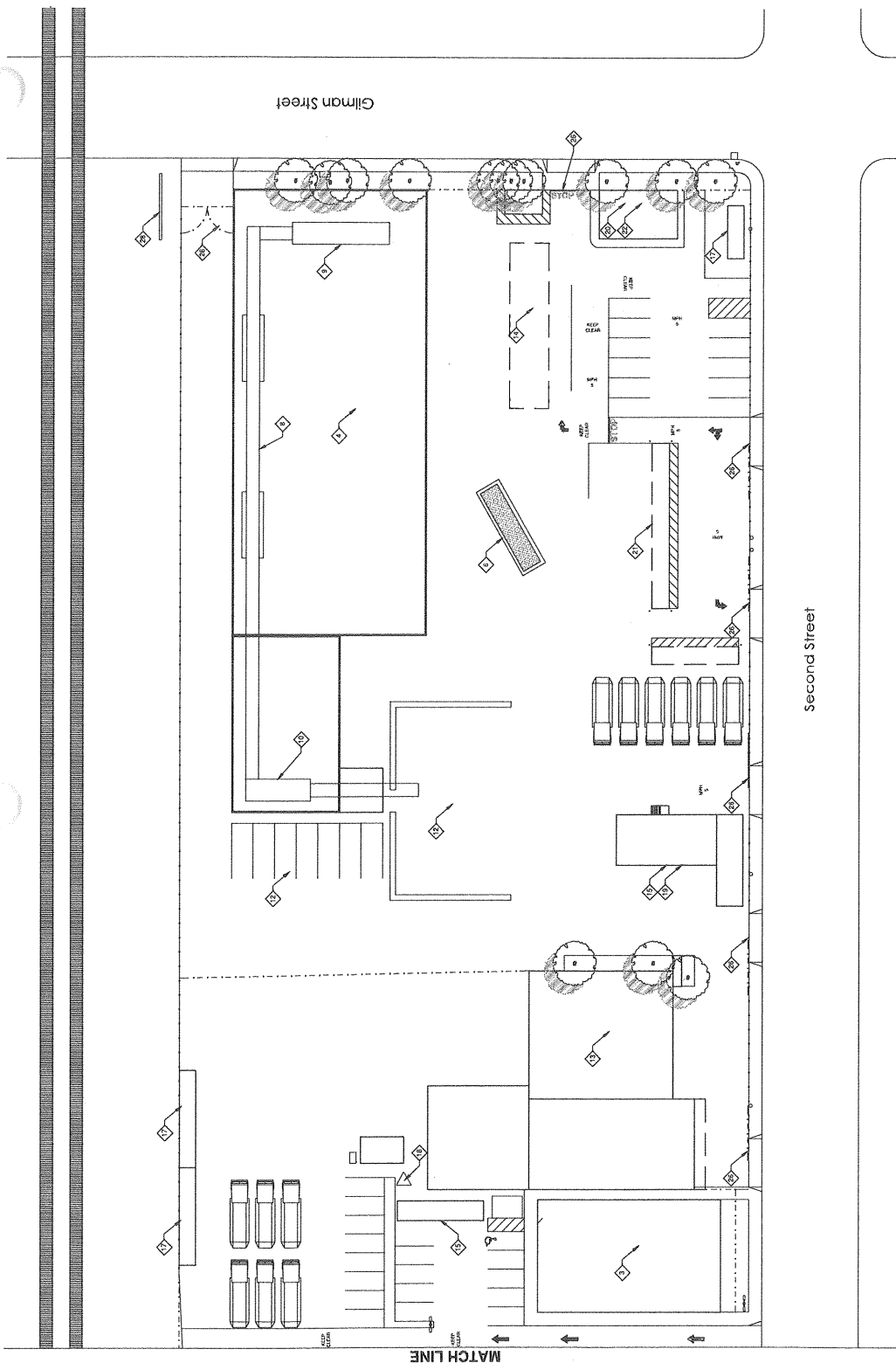


**SITE MAP**  
**Solid Waste Transfer Station & Recycling Center**  
 The City of Berkeley  
 1201 Second Street, Berkeley, CA 94710

Job No. 5447  
 10.15.2018  
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**A1.2**





**LEGEND**

- ◻ LIGHT POLE
- POWER/TEL POLE
- ◻ CATCH BASIN
- ⊕ FIRE HYDRANT
- - - - FENCE

**KEYNOTES**

- ① TRANSFER STATION
- ② VEHICLE MAINTENANCE
- ③ ADMIN OFFICE
- ④ MRF
- ⑤ SCALEHOUSE
- ⑥ SCALE
- ⑦ RECYCLING
- ⑧ BALER
- ⑨ SORT PLATFORM
- ⑩ BIN SHED
- ⑪ BUNKER
- ⑫ TRANSFORMER
- ⑬ GATE
- ⑭ STREET PARKING
- ⑮ BILLBOARD
- ⑯ RAMP (MOVEABLE)
- ⑰ FUEL PUMP
- ⑱ VACANT STRUCTURE (TILT-UP)
- ⑲ RECYCLE BUY BACK CANOPY
- ⑳ MODULAR STRUCTURE
- ㉑ TRUCK WASH BAY
- ㉒ SHIPPING STORAGE CONTAINER
- ㉓ MICROWAVE TOWER/EQUIPMENT
- ㉔ COMM. CONSERV. CENTER (CCC)
- ㉕ ECOLOGY CENTER
- ㉖ RECYCLE DROP-OFF
- ㉗ UNIVERSAL WASTE
- ㉘ USED OIL CANOPY
- ㉙ TRILLIUM O&G FACILITY



**SITE MAP**  
**Solid Waste Transfer Station & Recycling Center**  
 The City of Berkeley  
 1201 Second Street, Berkeley, CA 94710

Job No. 5447  
 10.15.2018  
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**A1.1**





# Exhibit C: Traffic Circle Layout

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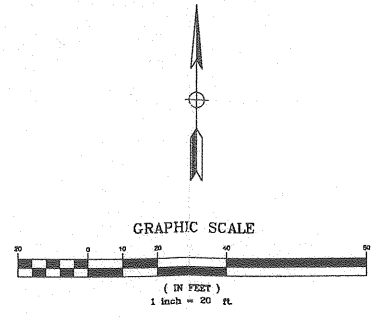
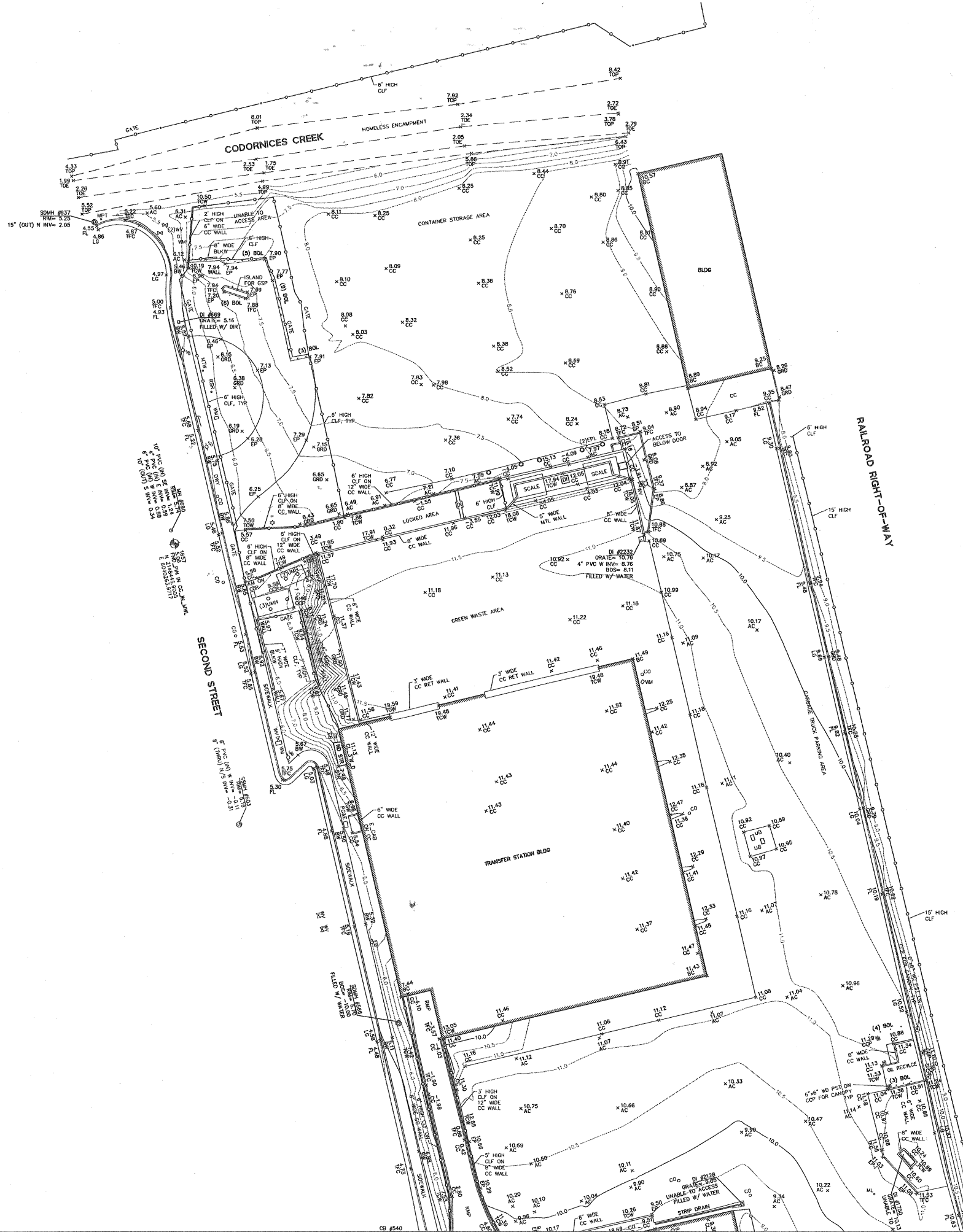
# Exhibit D: Topographic Survey

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**LEGEND**

AC	ASPHALTIC CONCRETE
BFP	BACKFLOW PREVENTER
BOL	METAL BOLLARD
BLDG	BUILDING
BLKW	BLOCK WALL
BW	BACK OF WALK
BWL	BOTTOM OF WALL
CB	CATCH BASIN
CB@FC	CATCH BASIN AT TOP FACE OF CURB
CC	CONCRETE
CCP	CONCRETE PAD
CL_3'_W_D	CENTERLINE OF 3' WIDE DOOR
CL_12'_W_RD	CENTERLINE OF 12' WIDE ROLL DOOR
CLF	CHAINLINK FENCE
CMG	COMMUNICATIONS BOX
CRN	CROWN
DI	DROP INLET (STORM DRAIN INLET)
DIK	DIK
E	EAST
E/S	EAST TO SOUTH
E-W	EAST TO WEST OR WEST TO EAST (UNKNOWN FLOW DIRECTION)
EB	ELECTRICAL BOX
EBUID	EAST BAY MUNICIPAL UTILITY DISTRICT
E-CAB	ELECTRICAL CABINET
ELEC	ELECTRICIAN
EP	EDGE OF PAVEMENT
ETW	EDGE OF TRAVELWAY
EDC	FIRE DEPARTMENT CONNECT
FEN	FENCE
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FL	FLOWLINE
FM	GATE/FENCE MOTOR
FND	FOUND
GM	GAS METER
GRD	GROUND
GSP	GAS PUMP STATION
GT	GATE
GV	GAS VALVE
GW	GUY WIRE
HB	HOSE BIB
HCR	HANDICAP RAMP
HD	HEAD WALL
IN/OUT	INLET/OUTLET
IN	INVERT
JB	JUNCTION BOX
JP	JOINT POLE
LG	LIP OF GUTTER
LND	LANDING
ML	METAL (UNKNOWN)
MLB	MALBOX
MPT	METAL POST
MFL	METAL
MFW	MONITORING WELL
MW	MONUMENT WELL
N	NORTH
PV	POST INDICATOR VALVE
PP	POWER POLE
POST	POST
S	SOUTH
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SGN	SIGN
SLS	STREET LIGHT BOX
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEANOUT
STR	STAIRS
STB	STAIRS
SW	SIDEWALK
RCB	REINFORCED CONCRETE PIPE
RET	RETAINING WALL
RAMP	RAMP
RSR	RAMP
RUD	ROLL UP DOOR
TB	TELEPHONE BOX
TCW	TOP CENTERLINE OF WALL
TFC	TOP OF CURB/FACE OF CURB
TFL	TRAFFIC LIGHT
TIB	TRANSFORMER
TYP	TYPICAL
UB	UTILITY BOX (UNKNOWN)
UMH	UNKNOWN UTILITY MANHOLE (NO INVERT STRUCTURES)
UPL	UTILITY PANEL
W	WEST
WTH	WOOD
WM	WATER METER BOX
WV	WATER VALVE
VLT	VAULT
+	BENCHMARK
▬	BUILDING PERIMETER LINE
○	ELECTROLER/ELECTROLER ON CONCRETE BASE
⊕	FIRE HYDRANT
⊖	GUY WIRE
⊕	JOINT POLE
⊖	SIGN
○	SANITARY SEWER CLEANOUT
○	SANITARY SEWER MANHOLE
⊕	STORM DRAIN MANHOLE
⊖	WATER VALVE



**TOPOGRAPHIC SURVEY  
SECOND STREET TRANSFER STATION**

4670 WILLOW RD  
SUITE 250  
BERKELEY, CA 94586  
925-398-7700  
925-398-7799 (FAX)

CALIFORNIA

ALAMEDA COUNTY

CITY OF BERKELEY

Date: 5-20-09	Scale: 1"=20'
Drawn: AM	Approved: WS
Job No: 20081028-09	
Revisions:	
No.	
3	3





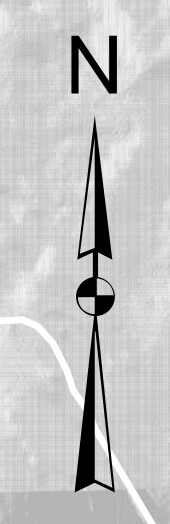
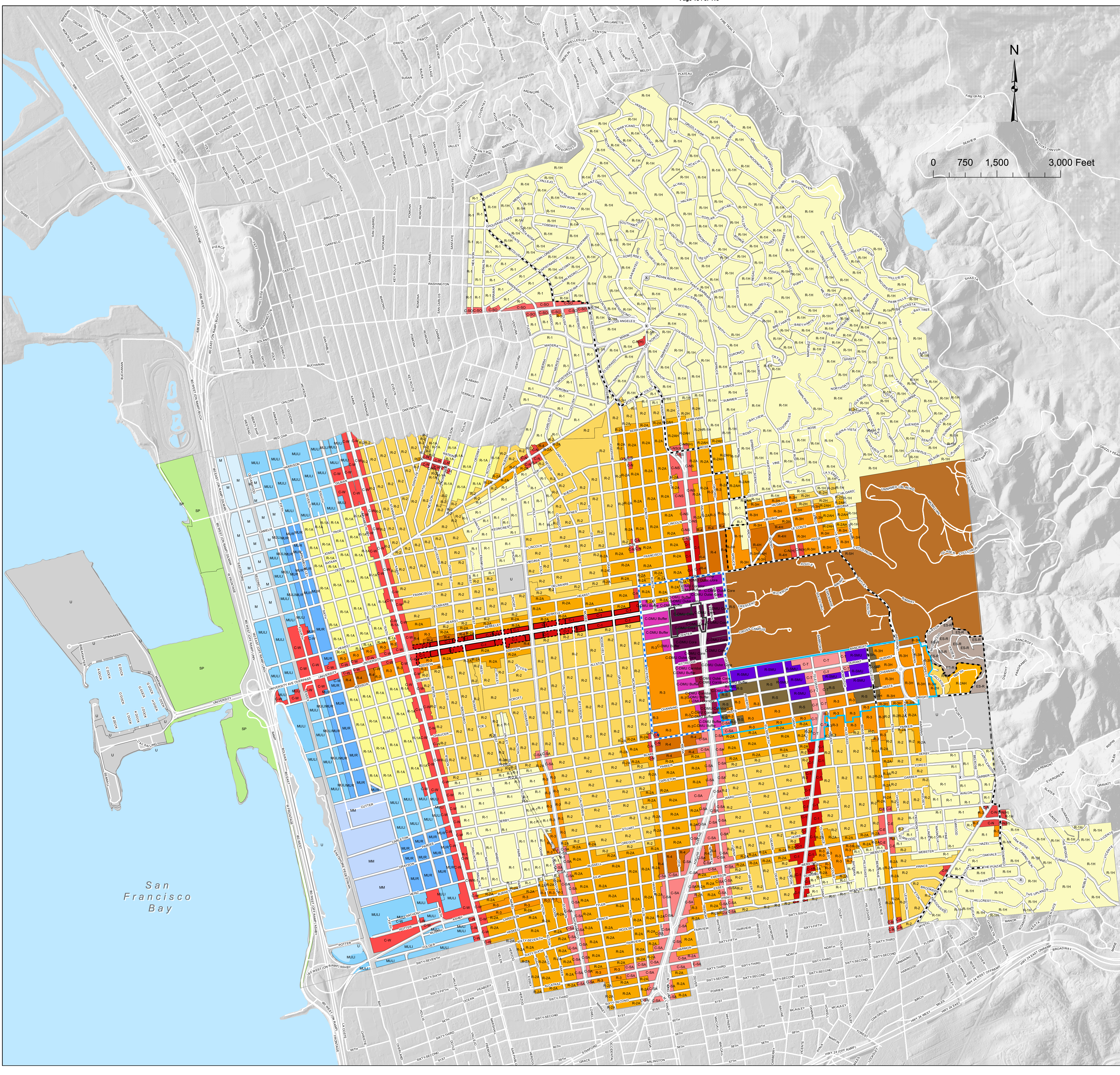
# Exhibit E: Zoning Map

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# LAND USE ZONING DISTRICTS

AS OF MARCH 20, 2014



## ZONING DISTRICTS

R-1	Single Family Residential
R-1A	Limited Two-family Residential
R-2	Restricted Two-family Residential
R-2A	Restricted Multiple-family Residential
R-3	Multiple-family Residential
R-4	Multi-family Residential
R-5	High Density Residential
ES-R	Environmental Safety-Residential
R-S	Residential High Density Subarea
R-SMU	Residential Mixed Use Subarea
C-DMU	C-DMU Core
C-DMU	C-DMU Outer Core
C-DMU	C-DMU Corridor
C-DMU	C-DMU Buffer
C-1	General Commercial
C-E	Elmwood Commercial
C-N	Neighborhood Commercial
C-NS	North Shattuck Commercial
C-SA	South Area Commercial
C-SO	Solano Avenue Commercial
C-T	Telegraph Avenue Commercial
C-W	West Berkeley Commercial
M	Manufacturing
MM	Mixed Manufacturing
MULI	Mixed Use-Light Industrial
MUR	Mixed Use-Residential
SP	Specific Plan
U	Unclassified

## ZONING OVERLAYS

	Hillside Overlay Boundary
	Arts District Overlay
	Southside Plan
	Downtown Area Plan
	University Ave Strategic Plan
	Avenue Mixed Use
	UASP Node

**Disclaimer:**  
 The sole purpose of this map is to indicate the boundaries of the zoning districts in the City of Berkeley. The map should not be relied upon to determine the zoning district in which any specific parcel lies.

The map as published may contain technical inaccuracies or typographical errors, which will be corrected from time to time. The City of Berkeley may also make improvements and/or changes to the map that do not change the boundaries of zoning districts. In the event of a discrepancy between the map as an illustration and site information on record in the City's geographical information database, the site information will prevail over the map, and the map will be corrected.

Zoning Map (including Hillside Overlay) - Ordinance No. 6478-N.S. adopted March 18, 1999.  
 Arts District Overlay - Ordinance No. 6514-N.S. adopted December 16, 1999.

Redistricting of ten parcels between Hearst Ave, San Pablo Ave and Curtis St. from R-3 to R-2A - Ordinance No. 6681-N.S. adopted April 18, 2002.  
 University Avenue Strategic Plan Overlay - Ordinance No. 6830-N.S. adopted January 6, 2005.  
 Zoning Districts R-S, R-SMU (Southside Plan) - Ordinance No. 7211-N.S. adopted November 15, 2011.  
 Zoning Districts C-DMU Core, Outer Core, Corridor and Buffer (Downtown Area Plan) - Ordinance No. 7324-N.S. adopted May 5, 2012.  
 Rezone of 8,700 sq ft of MULI to C-W, Ordinance No. 7313-N.S. adopted by Council on 10/29/2013.  
 Rezone two parcels from MULI to C-W, Ordinance No. 7324-N.S. adopted by Council on 2/26/2014.





# Exhibit 2

## MRF Programming Questionnaire



# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

Date:

**Guide:** Please provide any comments and recommendations in the "Stakeholder Comment / Priority" column. This text box may be used for preferences, questions, as well as any potential concerns and past experience. Indicate if specific information is not available e.g. "unk"/"tbd". Note: All input is welcome! Please provide your name/department in the "Stakeholder Name" column. Thank you.

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
<b>A Current Operations</b>				
1	Average daily volume of container and fiber materials received (TPD)		41.79 Based on three month of data. July 2018 to September 2018	
2	Maximum volume of container and fiber materials received (TPD)		44.96	
3	Percentage of incoming volume delivered by dual compartment collection trucks		80% Residential curbside and Commercial delivered by route either paper or containers trucks	
4	Percentage of incoming volume delivered by transfer trucks (if any)		0%	
5	Hours of Operation - Receiving		6 days per week (Buyback closed on Sunday)	
	5.1 M-F		8am-430pm Average buyback tons Mon-Fri = 116.27	
	5.2 Weekends		Saturday 830am-430pm Average buyback tons 16.84	
	5.3 Seasonal Schedules		No Close on New Year's, Easter, Thanksgiving and Christmas	
6	Hours of Operation – MRF Processing		CCC processes material seven days per week Baling and Containers processing 6 days per week and paper sorting seven days per week. (See weekly schedule)	
	6.1 M-F		8am-430pm	
	6.2 Weekends		830am-430pm	
	6.3 Seasonal Schedules		no Close on New Year's, Easter, Thanksgiving and Christmas	



# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

M

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
----	-------	----------------------	---------------------	------------------

**B Current Recovery**

1	Average recovered volume of marketable commodities (TPD)			
	1.1 ONP Percentage recovery*		Stopped processing ONP #6 in 2013 because not enough newsprint coming in with fibers	
	1.2 OCC Percentage recovery		99.5%	
	1.3 Mixed Paper Percentage recovery		99.5%	
	1.4 HDPE Percentage recovery		95%	
	1.5 PET Percentage recovery		95%	
	1.6 Mixed Plastic Percentage recovery		85% About 15% is lost during processing mainly small lids and straws going off the end of container line along with mixed glass.	
	1.7 Glass Percentage recovery		98%	
	1.8 Fe Percentage recovery		99% tin lids	
	1.9 Non-Fe Percentage recovery		99%	
	How is recovered glass currently being processed and shipped?		1. Clean color sorted glass from the Buyback is dumped into bays. 2. Sorters pull whole colored glass from container sorting line and deposit into bays. 3. Broken glass goes off the end of container line. Loader operator loads end dump trailer for shipment to WSM in Fairfield.	

\* Percentage of total waste stream 95%





# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

### C Projected Operations at MRF Start-up

1	Average volume of container and fiber materials received (TPD)		42.6	
2	Maximum volume of container and fiber materials received (TPD)		44.96	
3	Average volume of clean commercial materials received (TPD)		213lbs. REI baled OCC	
4	Maximum volume of clean commercial materials received (TPD)		3.19 REI baled OCC	
5	Percentage of incoming volume delivered by collection trucks		80%	

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
6	Percentage of incoming volume delivered by transfer trucks (if any)		0%	
7	Hours of Operation - Receiving			
	7.1 M-F		No Change	
	7.2 Weekends		No Change	
	7.3 Seasonal Schedules		No Change	
8	Hours of Operation – MRF Processing			
	8.1 M-F		No Change	
	8.2 Weekends		No Change	
	8.3 Seasonal Schedules		No Change	

### D Projected Recovery at MRF Start-up

1	Percentage recovery of marketable commodities (percent of total waste stream)			
	1.1 ONP		0%	
	1.2 OCC		29.5%	
	1.3 Mixed Paper		36.34%	
	1.4 HDPE		1.17%	
	1.5 PET		2.32%	
	1.6 Mixed Plastic		1.8%	
	1.7 Glass		24.08%	
	1.8 Fe		3.62%	



# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

	1.9 Non-Fe		.32%	
2	Will additional commodities be targeted from the Clean Commercial waste stream?		no	
3	Will organics recovery be required from the combined waste stream?		no	
4	How will recovered glass be processed and shipped?		Same as above	

ID	Topic	Design Team Response	Stakeholder Comment
<b>E Method of Accommodating Visitors</b>			
1	Walk on Processing floor?		yes
2	Un-enclosed viewing catwalk or platform outside of building?		no not necessary
3	Enclosed catwalk or viewing gallery inside or outside of building?		no not necessary in my opinion

<b>E Projected Operations – Future (10 yrs.) Ultimate Capacity</b>			
1	Projected Average volume of container and fiber materials received (TPD)		60 All depends on projected growth in population and recovering recyclable materials that are currently going to the landfill. Major goal is to keep material clean and not to add materials with limited markets that contaminate existing materials
2	Projected Maximum volume of container and fiber materials received (TPD)		65
3	Average volume of clean commercial materials received (TPD)		0%



## Zero Waste Resource Management Center Programming Questionnaire | Material Recovery Facility

4	Maximum volume of clean commercial materials received (TPD)		CCC has the baling capacity to handle 10% more clean fiber if material does not need to go over paper sorting line.	
5	Percentage of incoming volume delivered by collection trucks		80%	
6	Percentage of incoming volume delivered by transfer trucks (if any)		0%	
7	Hours of Operation - Receiving		Same as above unless major change is required or practical.	
	7.1 M-F			
	7.2 Weekends			
	7.3 Seasonal Schedules			
8	Hours of Operation – MRF Processing			
	8.1 M-F			
	8.2 Weekends			
	8.3 Seasonal Schedules			

ID	Topic	Design Team Response	Stakeholder Comment
<b>F Projected Recovery – Future Ultimate Capacity</b>			
1	Percentage recovery of marketable commodities (percent of total waste stream)		To be determined by City and Consultant
	1.1 ONP		
	1.2 OCC		
	1.3 Mixed Paper		
	1.4 HDPE		
	1.5 PET		
	1.6 Mixed Plastic		
	1.7 Glass		
	1.8 Fe		
	1.9 Non-Fe		
2	Will additional waste streams be received and processed?		
3	Will additional commodities be targeted from either waste stream?		



# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

4	Will organics recovery be required from the combined waste stream?	no goes to transfer.
5	How will recovered glass be processed and shipped?	

### G Additional Current Operations

1	Which vehicles will be required to weigh out?	
	1.1 Transfer	yes
	1.2 Collection	yes
	1.3 Commodity shipping	yes
2	Which vehicles will require Bills of Lading or Shipping Manifests to exit site?	
	2.1 Transfer	yes
	2.2 Commodity shipping	yes

ID	Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
3	Explain any floor sorting operations.		Managers inspect incoming loads after being dumped. If food waste or medical waste is spotted in large quantities managers will properly remove using safety gear and equipment.	
4	If hazardous materials are segregated on tipping floor, how are they handled and stored?		1. Identify hazard. 2. Identify the source. 3. Contact City Staff for appropriate action. 4. Have source remove or take to transfer station	
5	How are transfer vehicles loaded?		If you call a roll-off truck a transfer truck. We use a forklift to dump 4cyb in 50cyb for delivery	
	If truck well is used, how many positions?		We have one roll-off truck and several drivers that can operate. No site only	
6	How are commodity shipping trucks loaded?		We also load container and flatbed trucks with bales of material using a forklift	
	If truck well used, how many positions?		CCC does not operate market trucks that go deliver materials to market	
7	What parking requirements are there for any types of operational vehicles?		1.7 employee parking spaces 2. 7customer parking spaces. 3. 17 roll off bins throughout the yard for loose storage of containers, trash and metals	



# Zero Waste Resource Management Center

## Programming Questionnaire | Material Recovery Facility

### H Planned Future Operations

1	Explain any planned changes in vehicle weighing.		No changes	
2	Explain any planned changes in floor sorting operations.		Not at the moment	
3	Explain any planned changes in vehicle loading.		No changes	
4	What future additional parking requirements will there be for any types of operational vehicles?		Not at the moment	

### J Current Staffing

1	Are any activities other than MRF and related operations conducted at this facility?		Universal Waste drop-off station	
2	How many management and administrative personnel are staffed at this facility?		3 Administrative and 4 operation and supervisors	
3	How many operations personnel are staffed at this facility?		27	
4	Are car parking spaces required for every staff member?		no	
5	Do you conduct training at this facility?		yes	

	ID Topic	Design Team Response	Stakeholder Comment	Stakeholder Name
--	----------	----------------------	---------------------	------------------

### K Future Staffing

1	Will any activities other than MRF and related operations be conducted at this facility?		no	
2	Will additional management and administrative personnel be staffed at this facility?		no	
3	Will car parking spaces be required for every staff member?		no	
4	Will you conduct training at this facility?		yes	





# Zero Waste Resource Management Center

Programming Questionnaire | Material Recovery Facility

## L Maintenance

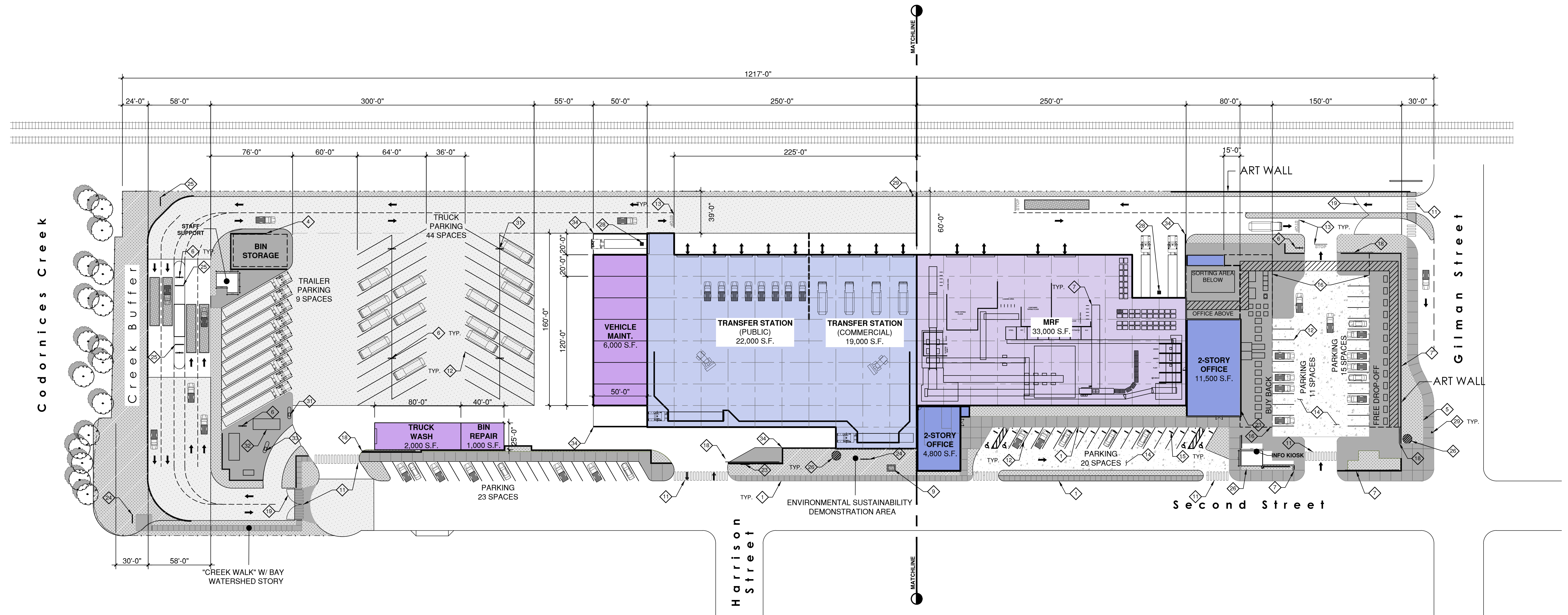
1	Is Tipping Floor clean-up typically wet or dry?		dry	
2	Is an enclosed area required for maintenance of fixed equipment and storage of spare parts?		Desired but not required	
3	Is an enclosed bay required for maintenance of rolling stock?		Desired but not required	



# **Exhibit 3**

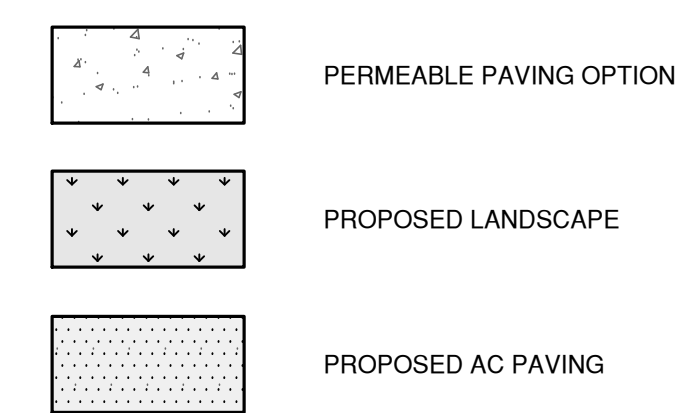
## **A1.1 SITE PLAN – CONCEPT A**





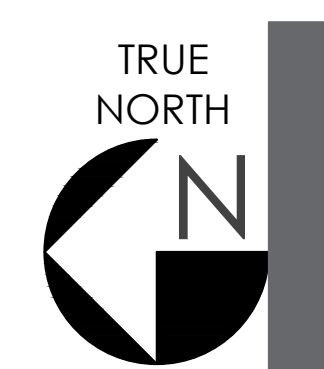
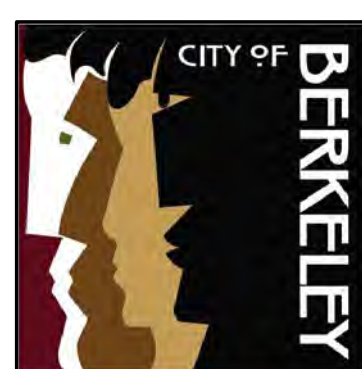
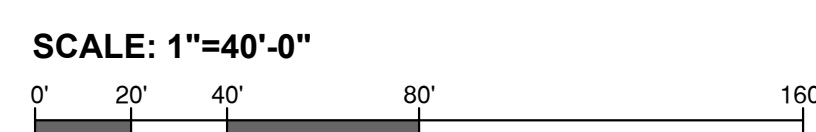
**KEYNOTES**

- |  |  |                                |                                       |
|--|--|--------------------------------|---------------------------------------|
| 1 CONCRETE SIDEWALK                                      | 11 CROSSWALK STRIPING  | 20 NOT USED                    | 30 NOT USED                           |
| 2 CONCRETE PAVING (6" THICK / REINFORCED)                | 12 PARKING STALL STRIPING  | 21 STEEL WALL PROTECTION RAIL  | 31 CNG FUEL DISPENSER                 |
| 3 A.C PAVING (HEAVY DUTY RATING)                         | 13 PAVEMENT MARKING "STOP"   | 22 SIGNAGE - MONUMENT          | 32 CNG STORAGE & EQUIPMENT            |
| 4 8' TALL CMU WALL (STACK BOND W/ 2" CAP)                | 14 PERVIOUS PAVING   | 23 SIGNAGE - BUILDING MOUNTED  | 33 DIESEL FUEL PUMP & ABV GROUND TANK |
| 5 LANDSCAPE AREA   | 15 PRECAST CONCRETE BUMPER   | 24 SIGNAGE - EDUCATIONAL       | 34 LOADING DOCK WALL (CIP CONCRETE)   |
| 6 LIGHT STANDARD (LED) W/ 24" CONCRETE BASE / 24' HEIGHT | 16 CANTILEVER STEEL CANOPY W/ BUILDING INTEGRATED PHOTOVOLTAIC PANEL DAYLIGHTING | 25 SIGNAGE - DIRECTIONAL       |                                       |
| 7 8' TALL DECORATIVE FENCE                               | 17 EQUIPMENT   | 26 RAINWATER STORAGE TANK      |                                       |
| 8 3' TALL DECORATIVE MASONRY WALL                        | 18 ROLLING STEEL GATE  | 27 STORMWATER DETENTION SYSTEM |                                       |
| 9 TRANSFORMER  | 19 SWING STEEL GATE  | 28 SUMP                        |                                       |
| 10 NOT USED  |  | 29 FIRE HYDRANT                |                                       |



**SITE SUMMARY**

<b>BUILDING AREAS:</b>	
TRANSFER STATION:	41,000 S.F.
MATERIAL RECOVERY FACILITY:	33,000 S.F.
VEHICLE MAINTENANCE BUILDING:	6,000 S.F.
TRUCK WASH BUILDING:	2,000 S.F.
BIN REPAIR:	1,000 S.F.
OFFICE (2-STORY):	2,500 S.F.
OFFICE (2-STORY):	4,800 S.F.
<b>TOTAL BUILDING FOOTPRINT:</b>	<b>90,300 S.F.</b>
<b>SITE AREAS:</b>	
AC PAVING AREA:	82,000 S.F.
PERMEABLE PAVING AREA:	22,000 S.F.
LANDSCAPE AREA:	37,300 S.F.
VEHICLE PAVEMENT AREA:	62,000 S.F.
SIDEWALKS AREA:	39,500 S.F.
<b>TOTAL:</b>	<b>242,800 S.F.</b>
CREEK BUFFER ZONE AREA:	12,000 S.F.



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# Site Concept A

# A1.1

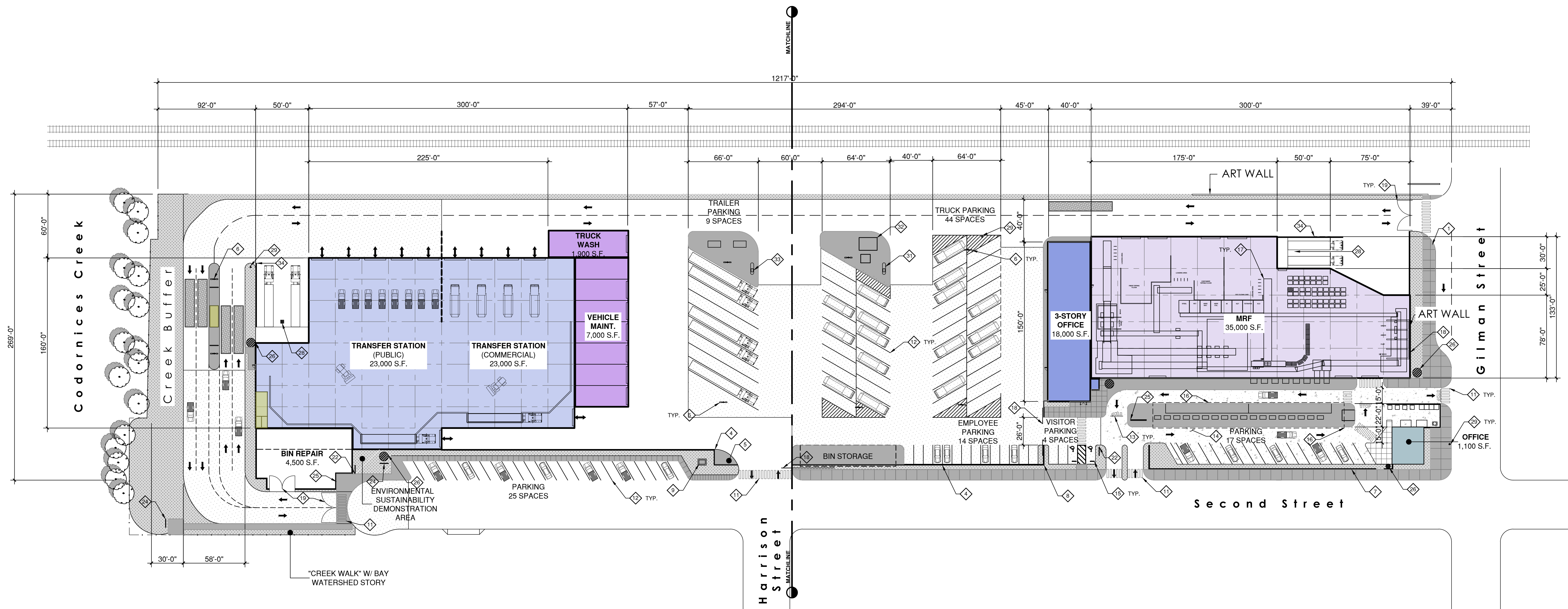




# **Exhibit 4**

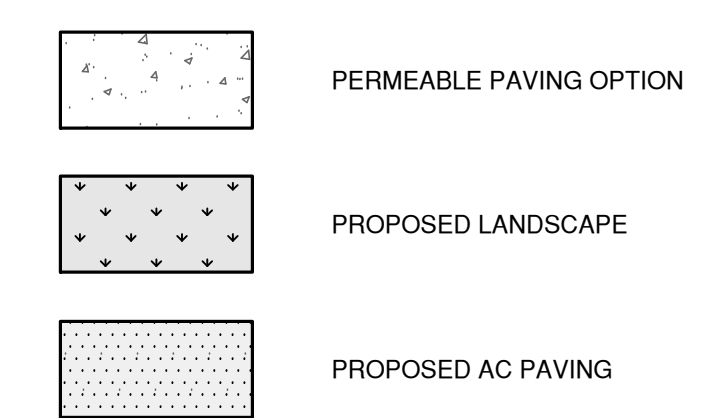
## **A1.2 SITE PLAN – CONCEPT B**





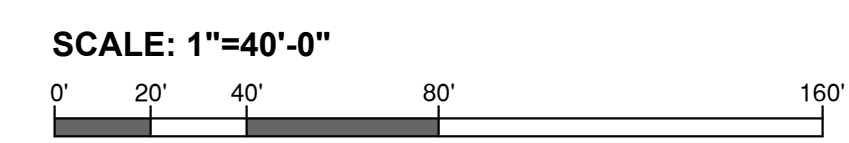
**KEYNOTES**

- 1 CONCRETE SIDEWALK
- 2 CONCRETE PAVING (6" THICK / REINFORCED)
- 3 A.C PAVING (HEAVY DUTY RATING)
- 4 8' TALL CMU WALL (STACK BOND W/ 2" CAP)
- 5 LANDSCAPE AREA
- 6 LIGHT STANDARD (LED) W/ 24" CONCRETE BASE / 24' HEIGHT
- 7 8' TALL DECORATIVE FENCE
- 8 3' TALL DECORATIVE MASONRY WALL
- 9 TRANSFORMER
- 10 NOT USED
- 11 CROSSWALK STRIPING
- 12 PARKING STALL STRIPING
- 13 PAVEMENT MARKING "STOP"
- 14 PERVIOUS PAVING
- 15 PRECAST CONCRETE BUMPER
- 16 CANTILEVER STEEL CANOPY W/ BUILDING INTEGRATED PHOTOVOLTAIC PANEL DAYLIGHTING
- 17 EQUIPMENT
- 18 ROLLING STEEL GATE
- 19 SWING STEEL GATE
- 20 NOT USED
- 21 STEEL WALL PROTECTION RAIL
- 22 SIGNAGE - MONUMENT
- 23 SIGNAGE - BUILDING MOUNTED
- 24 SIGNAGE - EDUCATIONAL
- 25 SIGNAGE - DIRECTIONAL
- 26 RAINWATER STORAGE TANK
- 27 STORMWATER DETENTION SYSTEM
- 28 SUMP
- 29 FIRE HYDRANT
- 30 NOT USED
- 31 CNG FUEL DISPENSER
- 32 CNG STORAGE & EQUIPMENT
- 33 DIESEL FUEL PUMP & ABV GROUND TANK
- 34 LOADING DOCK WALL (CIP CONCRETE)

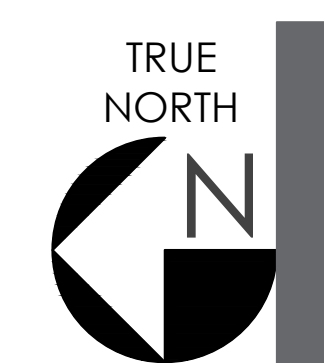
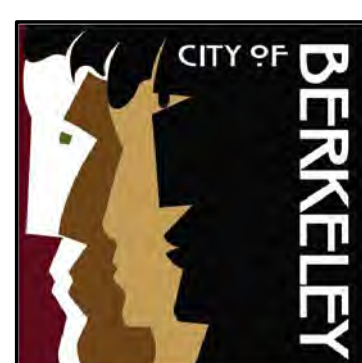


**SITE SUMMARY**

<b>BUILDING AREAS:</b>	
TRANSFER STATION:	46,000 S.F.
MATERIAL RECOVERY FACILITY:	35,000 S.F.
VEHICLE MAINTENANCE BUILDING:	7,000 S.F.
TRUCK WASH BUILDING:	1,900 S.F.
OFFICE (3-STORY):	8,000 S.F.
OFFICE:	1,100 S.F.
<b>TOTAL BUILDING FOOTPRINT:</b>	<b>99,000 S.F.</b>
<b>SITE AREAS:</b>	
AC PAVING AREA:	85,000 S.F.
PERMEABLE PAVING AREA:	14,000 S.F.
LANDSCAPE AREA:	30,000 S.F.
VEHICLE PAVEMENT AREA:	79,100 S.F.
SIDEWALK AREA:	30,200 S.F.
<b>TOTAL:</b>	<b>238,300 S.F.</b>
CREEK BUFFER ZONE AREA:	12,000 S.F.



# Site Concept B



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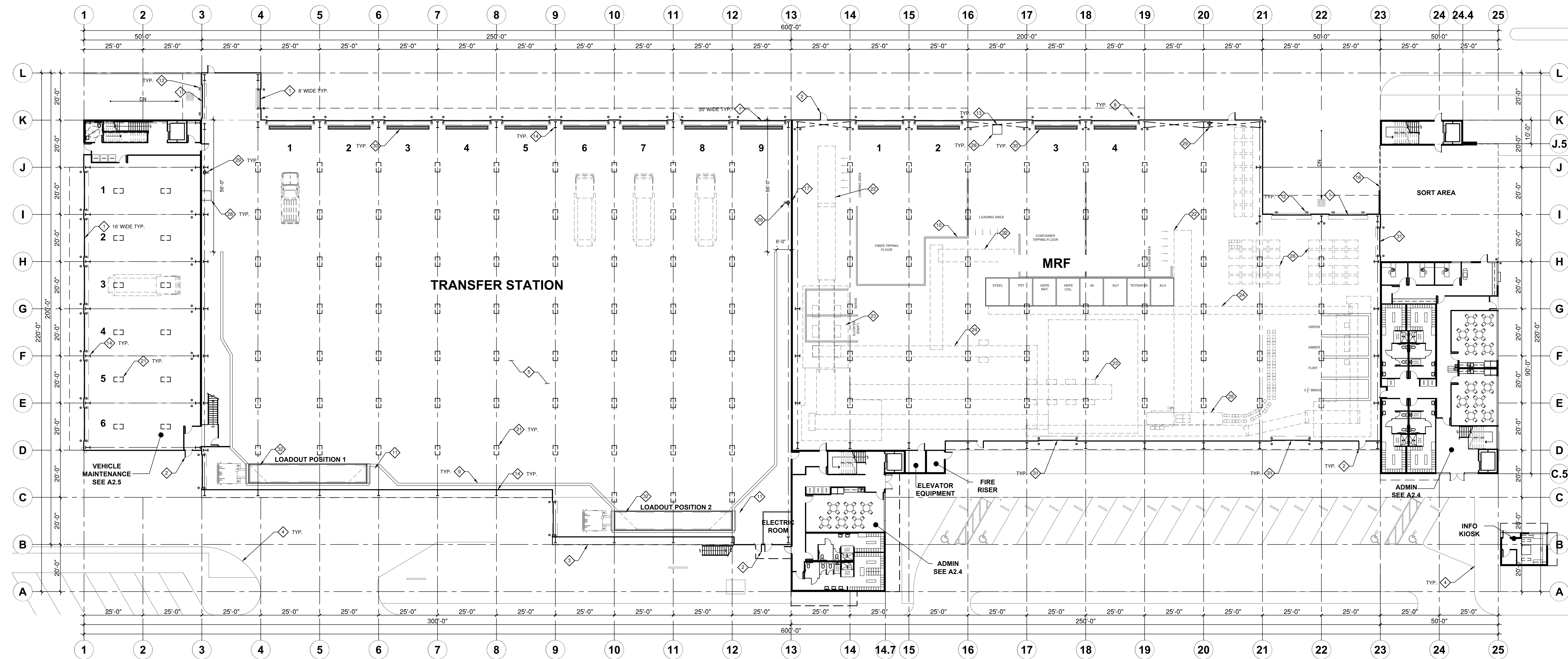
# A1.2



# **Exhibit 5**

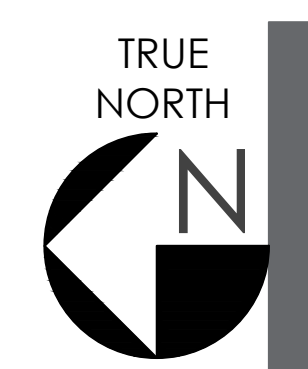
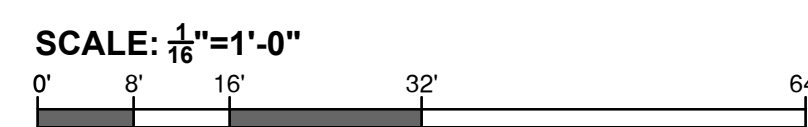
## **A2.1 OVERALL FLOOR PLAN – CONCEPT A**





**KEYNOTES**

- |  |  |                                |  |  |
|--|--|--------------------------------|--|--|
| 1 OVERHEAD COILING DOOR                  | 8 10" DIAMETER CONCRETE FILLED STEEL BOLLARD | 15 GALVANIZED DOWNSPOUT        | 21 HIGH BAY LED                            | 27 TIP & STORAGE AREA                      |
| 2 PEDESTRIAN DOOR (HOLLOW METAL)         | 9 CONCRETE PUSHWALL 14' TALL                 | 16 1 1/2" GALV. PIPE GUARDRAIL | 22 INFEED CONVEYER (BY EQUIPMENT SUPPLIER) | 28 WATER HOSE REEL                         |
| 3 CONCRETE WALL                          | 10 STEEL PUSH WALL 12' TALL                  | 17 ENVIRONMENTAL WALL          | 23 SORT PLATFORM (BY EQUIPMENT SUPPLIER)   | 29 EMERGENCY EYE WASH                      |
| 4 CONCRETE CURB                          | 11 STEEL LOADOUT DEFLECTOR                   | 18 EXHAUST FAN                 | 24 CONVEYOR (BY EQUIPMENT SUPPLIER)        | 30 TRENCH DRAIN                            |
| 5 STRUCTURAL CONCRETE SLAB - (TIP FLOOR) | 12 DOCK LEVELER & BUMPERS                    | 19 HVAC                        | 25 BALER (BY EQUIPMENT SUPPLIER)           | 31 OVERHEAD SECTIONAL DOOR W/ CLEAR PANELS |
| 6 STRUCTURAL CONCRETE SLAB - 6" W/ BASE  | 13 STRUCTURAL STEEL TUBE BRACING             | 20 SMOKE VENT                  | 26 BALES                                   | 32 70' TRUCK SCALE W/ DIGITAL DISPLAY      |
| 7 CONCRETE PAVING / SIDEWALK             | 14 STRUCTURAL STEEL COLUMN                   |                                |  |  |



OVERALL FLOOR PLAN CONCEPT A  
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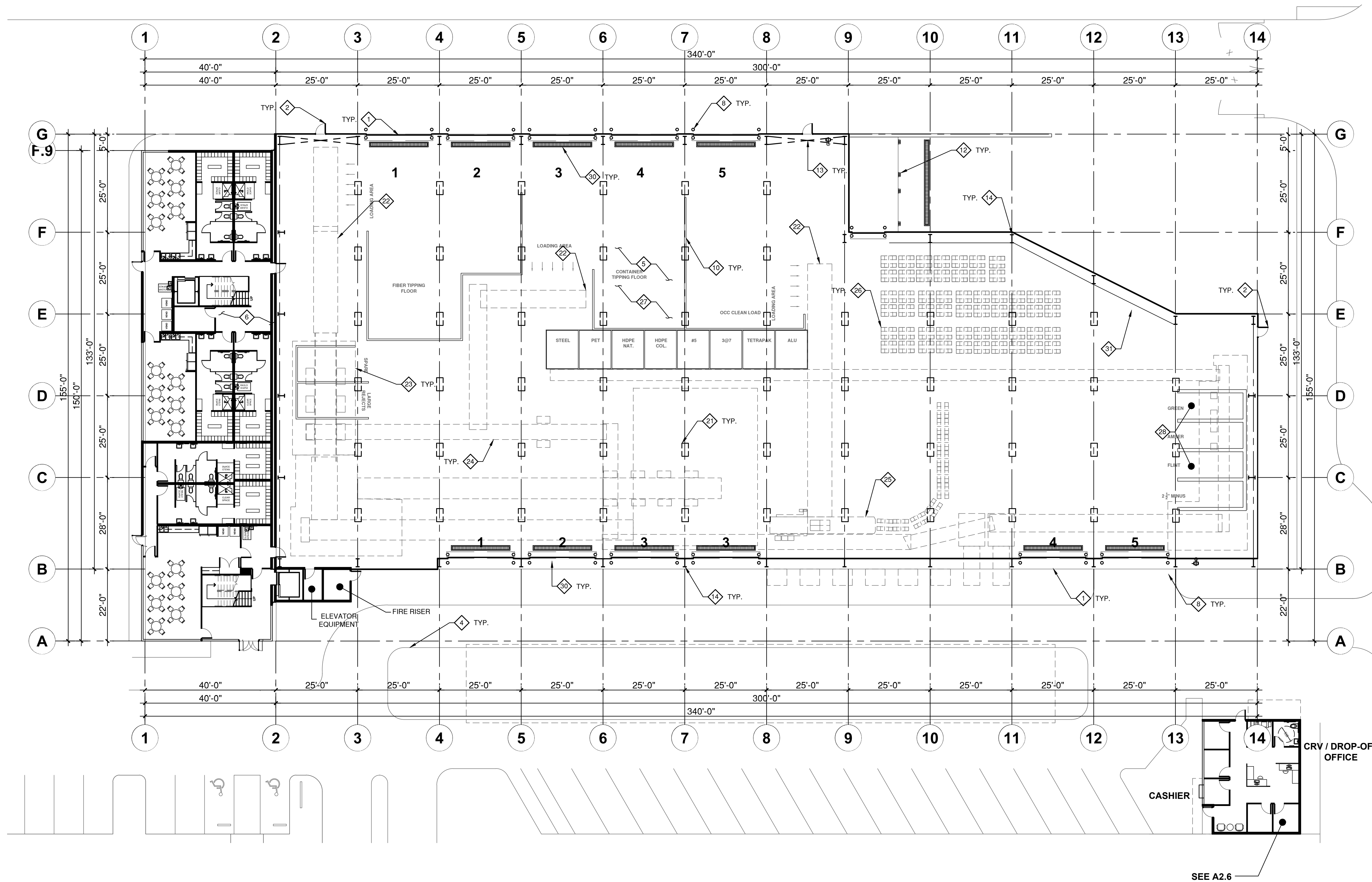
**A2.1**



# **Exhibit 6**

## **A2.2 FLOOR PLAN CONCEPT B – MRF**



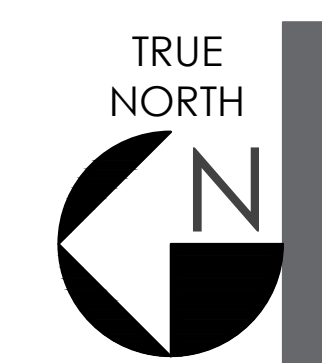


**KEYNOTES**

- 1 OVERHEAD COILING DOOR
- 2 PEDESTRIAN DOOR (HOLLOW METAL)
- 3 CONCRETE WALL
- 4 CONCRETE CURB
- 5 STRUCTURAL CONCRETE SLAB - 12" (TIP FLOOR)
- 6 STRUCTURAL CONCRETE SLAB - 8" W/ BASE
- 7 CONCRETE PAVING / SIDEWALK
- 8 10" DIAMETER CONCRETE FILLED STEEL BOLLARD
- 9 CONCRETE PUSHWALL 14' TALL
- 10 STEEL PUSH WALL 12' TALL
- 11 STEEL LOADOUT DEFLECTOR
- 12 DOCK LEVELER & BUMPERS
- 13 STRUCTURAL STEEL TUBE BRACING
- 14 STRUCTURAL STEEL COLUMN
- 15 GALVANIZED DOWNSPOUT
- 16 1 1/2" GUARDRAIL
- 17 ENVIRONMENTAL WALL
- 18 EXHAUST FAN
- 19 HVAC
- 20 SMOKE VENT
- 21 INTERIOR LIGHTING
- 22 INFEEED CONVEYER (BY EQUIPMENT SUPPLIER)
- 23 SORT PLATFORM (BY EQUIPMENT SUPPLIER)
- 24 CONVEYOR (BY EQUIPMENT SUPPLIER)
- 25 BALER
- 26 BALES
- 27 TIP & STORAGE AREA
- 28 BUNKERS
- 29 EMERGENCY EYE WASH
- 30 TRENCH DRAIN
- 31 HEAVY DUTY PROTECTION RAIL
- 32 SEISMIC GAP



SCALE: 3/8" = 1'-0"  
 0' 5' 10' 32'



FLOOR PLAN CONCEPT B - MRF  
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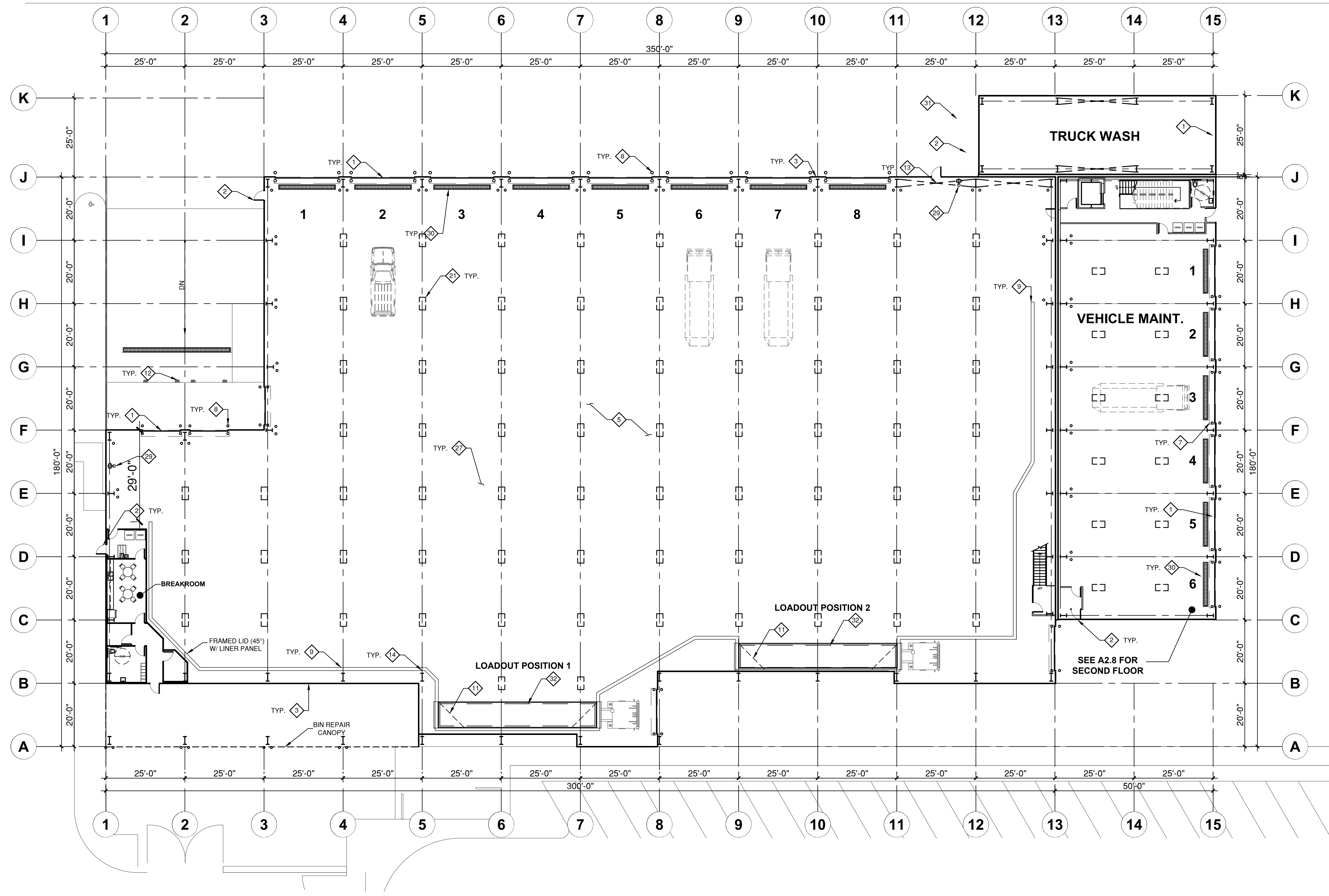
**A2.2**



# Exhibit 7

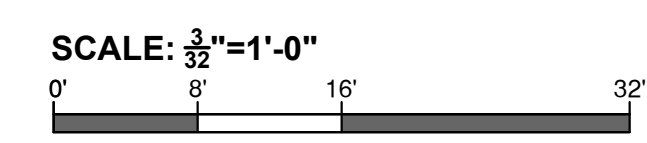
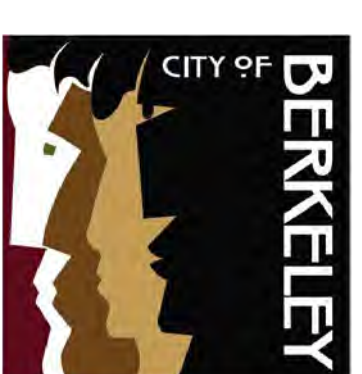
## A2.3 FLOOR PLAN CONCEPT B – TS





**KEYNOTES**

- 1 OVERHEAD COILING DOOR
- 2 PEDESTRIAN DOOR (HOLLOW METAL)
- 3 CONCRETE WALL
- 4 CONCRETE CURB
- 5 STRUCTURAL CONCRETE SLAB - 12" (TIP FLOOR)
- 6 STRUCTURAL CONCRETE SLAB - 6" W/ BASE
- 7 CONCRETE PAVING / SIDEWALK
- 8 10" DIAMETER CONCRETE FILLED STEEL BOLLARD
- 9 CONCRETE PUSHWALL 14' TALL
- 10 STEEL PUSH WALL 12' TALL
- 11 STEEL LOADOUT DEFLECTOR
- 12 DOCK LEVELER & BUMPERS
- 13 STRUCTURAL STEEL TUBE BRACING
- 14 STRUCTURAL STEEL COLUMN
- 15 GALVANIZED DOWNSPOUT
- 16 1 1/2" GUARDRAIL
- 17 ENVIRONMENTAL WALL
- 18 EXHAUST FAN
- 19 HVAC
- 20 SMOKE VENT
- 21 INTERIOR LIGHTING (LED PENDANT)
- 22 INFEEED CONVEYER (BY EQUIPMENT SUPPLIER)
- 23 SORT PLATFORM (BY EQUIPMENT SUPPLIER)
- 24 CONVEYOR (BY EQUIPMENT SUPPLIER)
- 25 BALER
- 26 BALES
- 27 TIP & STORAGE AREA
- 28 NOT USED
- 29 EMERGENCY EYE WASH
- 30 TRENCH DRAIN
- 31 TRUCK WASH EQUIPMENT
- 32 70' TRUCK SCALE W/ DIGITAL DISPLAY



TRUE NORTH  
**FLOOR PLAN CONCEPT B**  
**TRANSFER STATION**  
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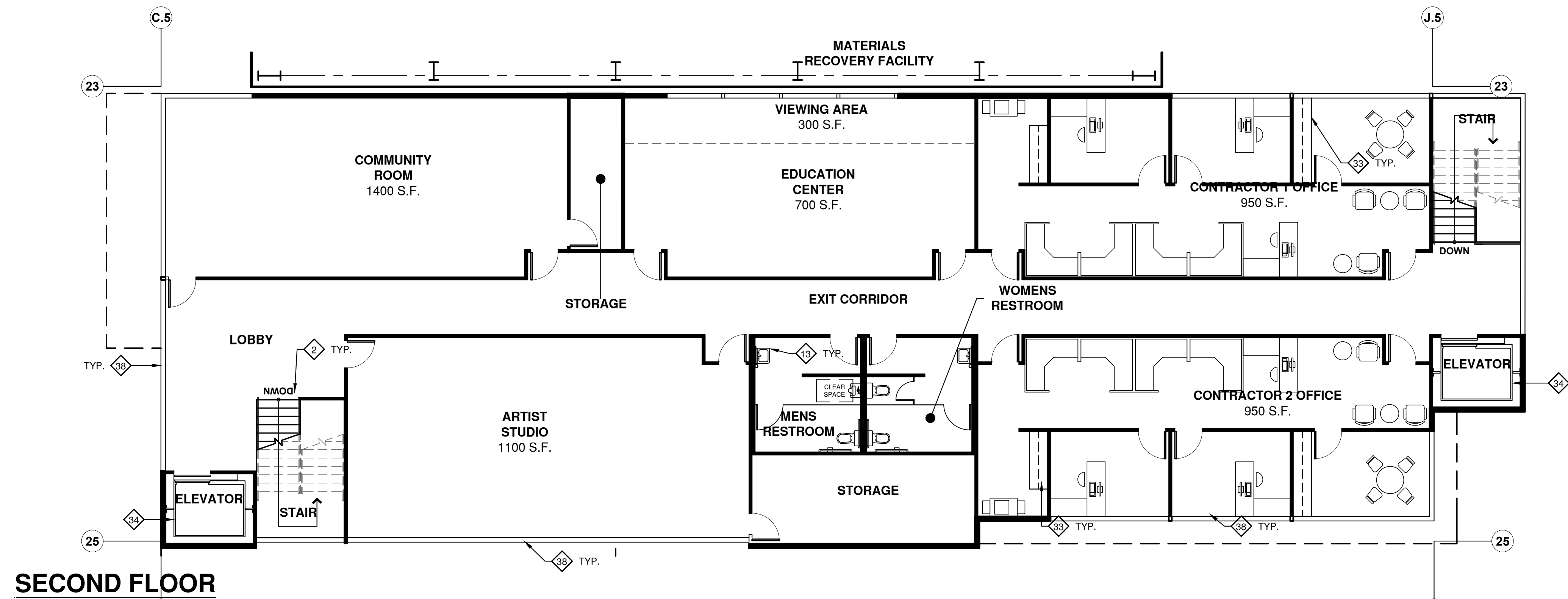
**A2.3**



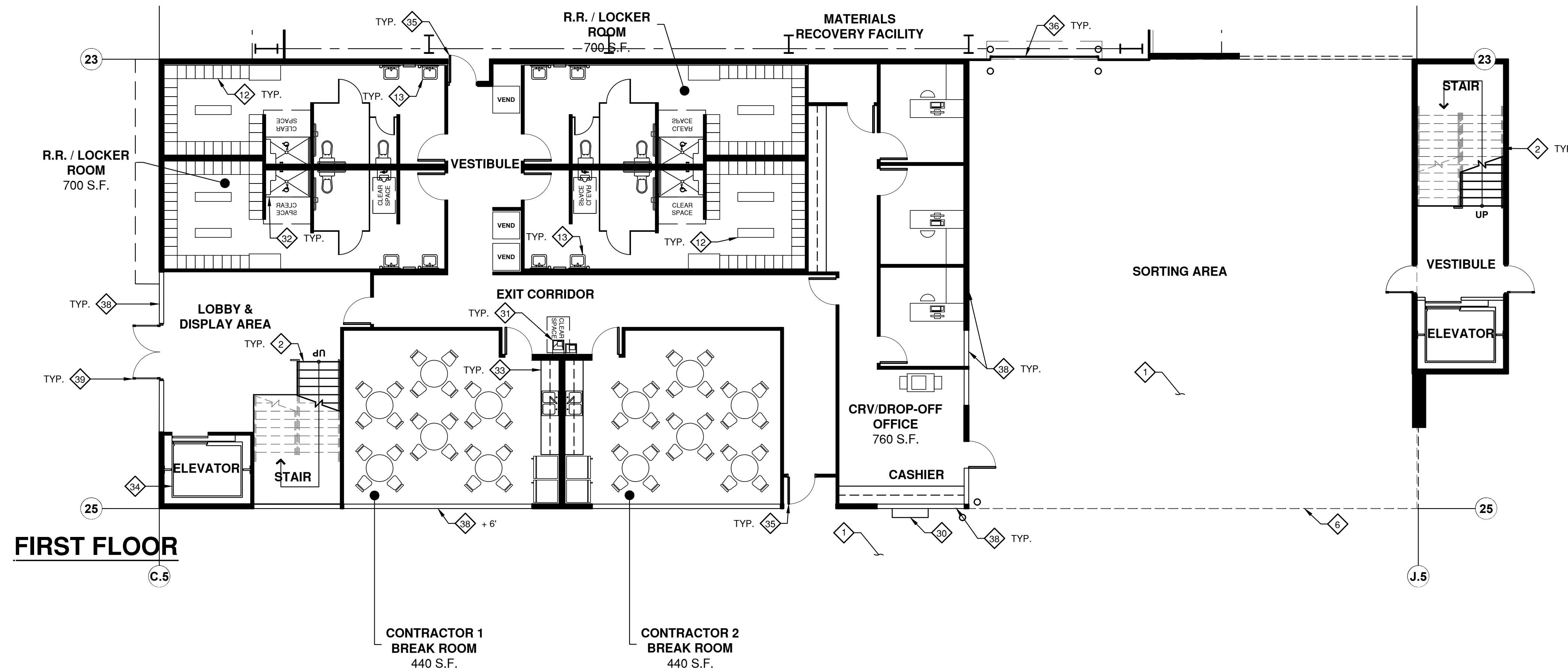
# **Exhibit 8**

## **A2.4 ADMIN FLOOR PLAN CONCEPT A**





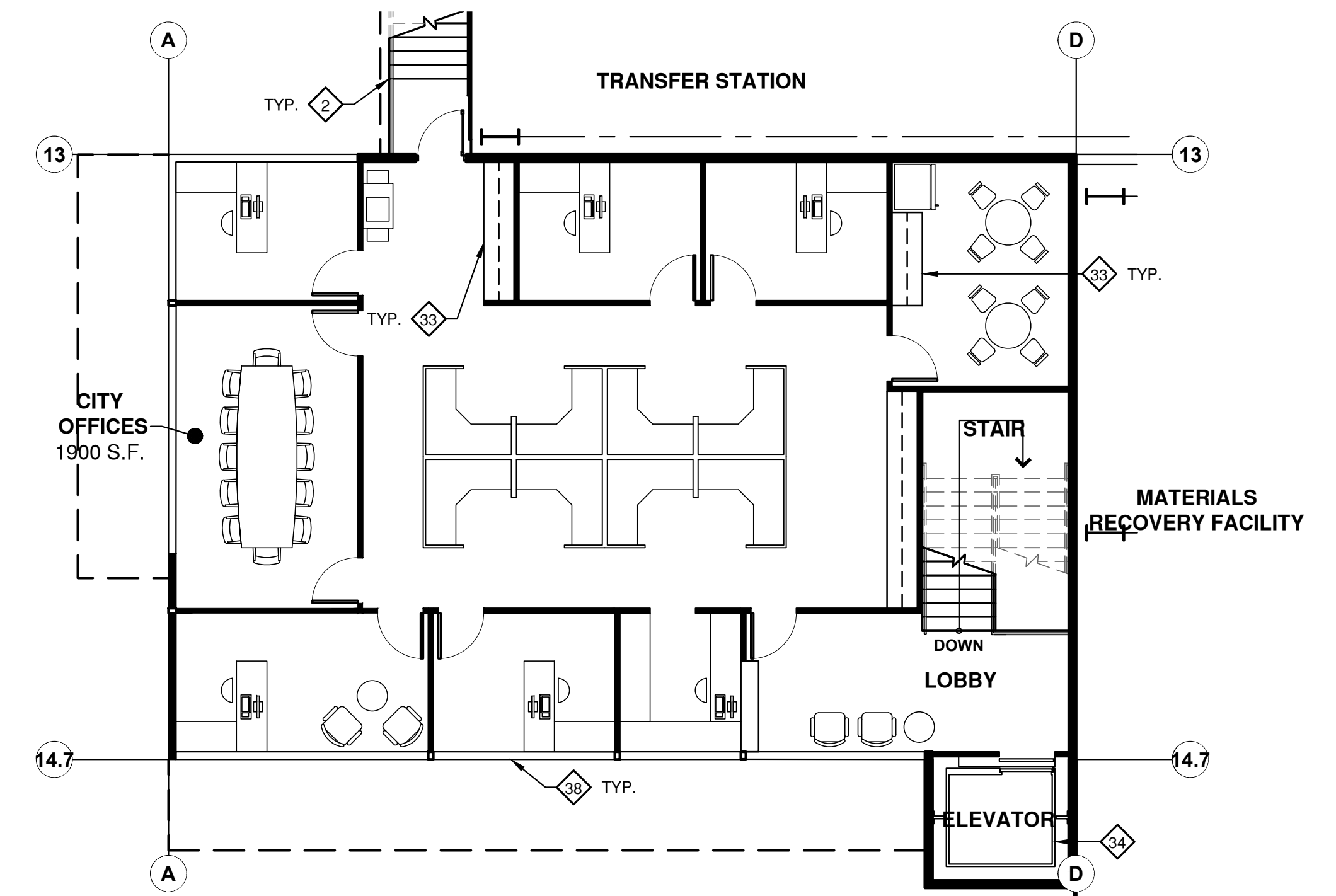
**SECOND FLOOR**



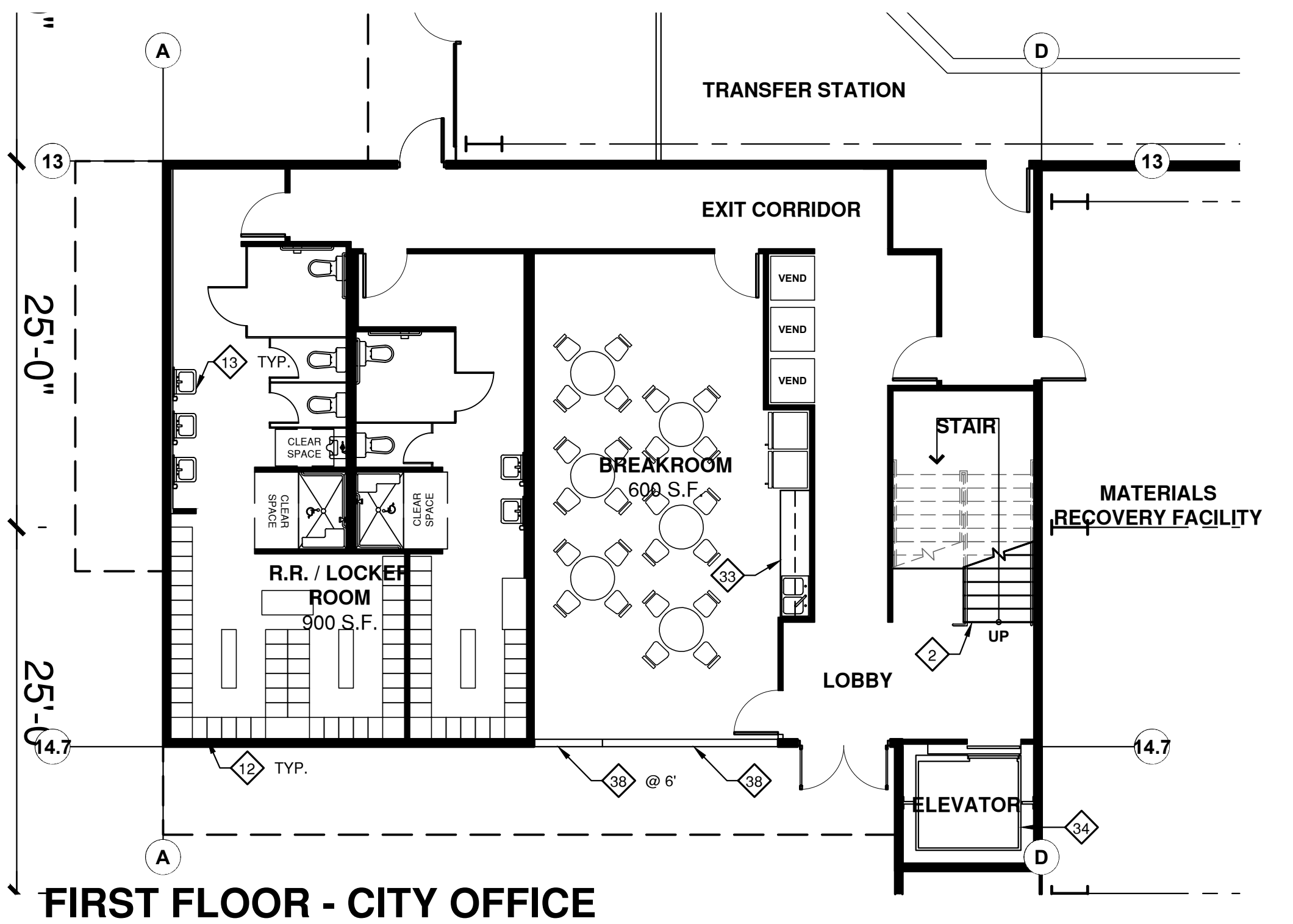
**FIRST FLOOR**

**KEYNOTES**

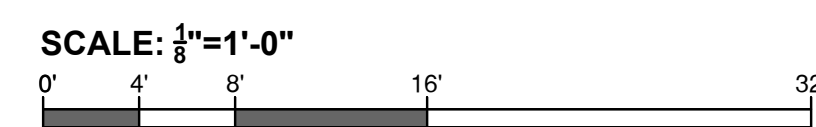
- |  |   |   |                                   |                |
|--|---|---|-----------------------------------|----------------|
| 1 STRUCTURAL CONCRETE SLAB                   | 11 STRUCTURAL STEEL COLUMN (PEMB)       | 21 HELICAL WIND TURBINE                           | 30 COUNTER                        | 40 NOT USED    |
| 2 STEEL STAIR                                | 12 METAL LOCKERS                        | 22 STEEL SUPPORT FRAME                            | 31 WATER BOTTLE FILL STATION      | 41 SMOKE HATCH |
| 3 CONCRETE PAVING / SIDEWALK                 | 13 WALL MOUNTED SINK                    | 23 LIGHT GAUGE FRAMING W/ 1/2 GYP BOARD EACH SIDE | 32 SHOWER                         |                |
| 4 10" DIAMETER CONCRETE-FILLED STEEL BOLLARD | 14 TUBULAR DAYLIGHTING SYSTEM ABOVE     | 24 GYP BOARD CEILING ABOVE                        | 33 CASEWORK / CABINETS ABOVE      |                |
| 5 EMERGENCY EYE WASH STATION                 | 15 SKYLIGHT ABOVE (5x8)                 | 25 SUSPENDED ACOUSTIC CEILING 2x2 GRID ABOVE      | 34 ELEVATOR                       |                |
| 6 LINE OF ROOF ABOVE                         | 16 FIRE RISER                           | 26 LIGHT FIXTURE - HIGH BAY LED                   | 35 PEDESTRIAN DOOR (HOLLOW METAL) |                |
| 7 METAL LOUVER                               | 17 STRIPING                             | 27 LIGHT FIXTURE - ARCH. INTERIOR LED             | 36 OVERHEAD COILING DOOR          |                |
| 8 CONCRETE CURB                              | 18 FULL HEIGHT TILE WALL - LARGE FORMAT | 28 COMPOSITE PANEL - WOOD                         | 37 EXTERIOR CMU WALL              |                |
| 9 STRUCTURAL STEEL BRACING (PEMB)            | 19 FLOOR TILE - LARGE FORMAT            | 29 VEGETATED WALL W/ DRIP IRRIGATION              | 38 STOREFRONT WINDOWS             |                |
| 10 NOT USED                                  | 20 NOT USED                             |   | 39 STOREFRONT DOOR                |                |



**SECOND FLOOR - CITY OFFICE**



**FIRST FLOOR - CITY OFFICE**



ADMIN FLOOR PLAN CONCEPT A  
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**A2.4**

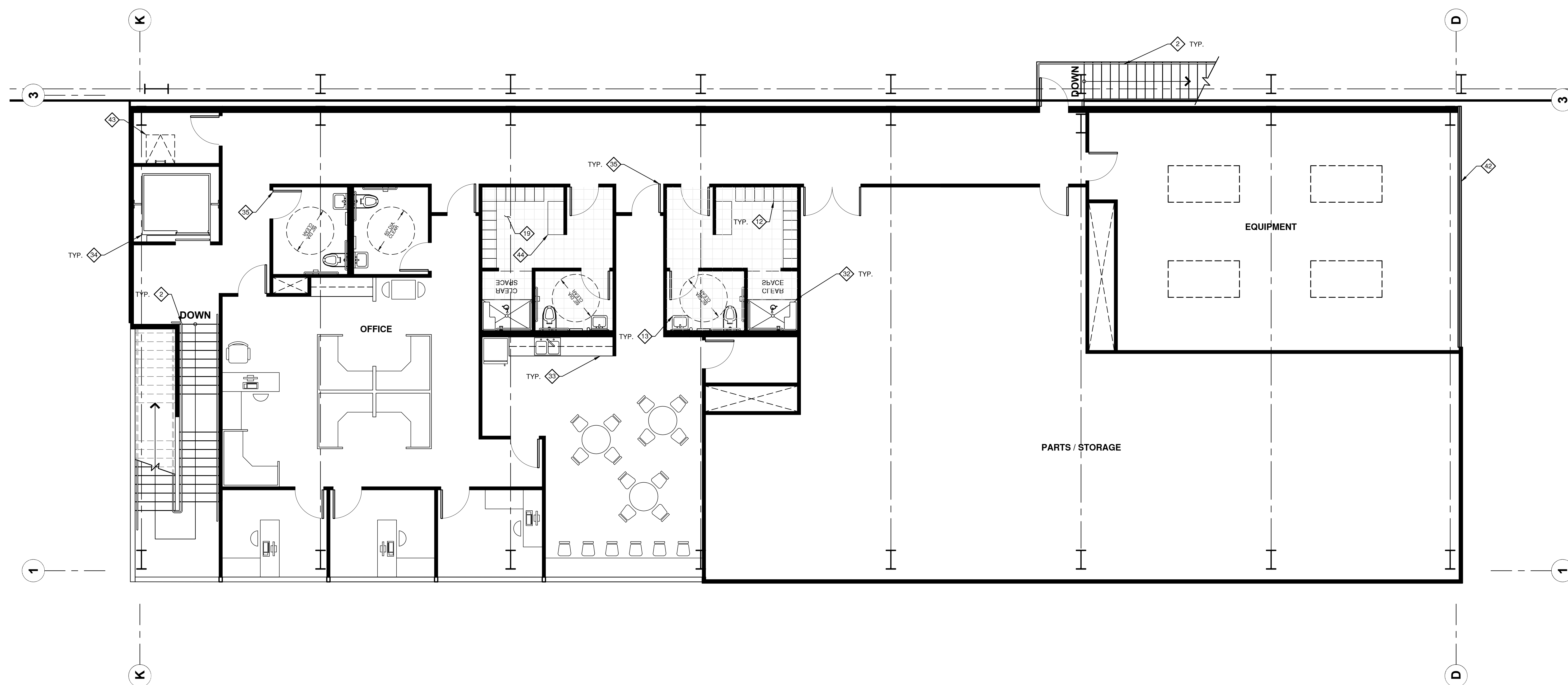


## **Exhibit 9**

# **A2.5 ADMIN FLOOR PLAN CONCEPT A – VM BLDG**



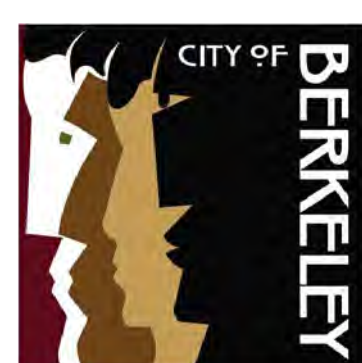
TRANSFER STATION



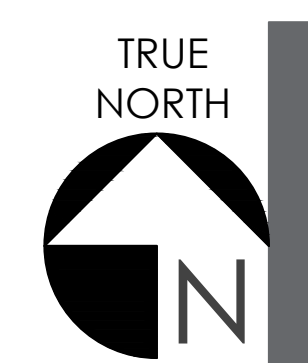
VEHICLE MAINTENANCE - 2ND FLOOR

KEYNOTES

- |  |   |   |                                   |                |
|--|---|---|-----------------------------------|----------------|
| 1 STRUCTURAL CONCRETE SLAB                   | 11 STRUCTURAL STEEL COLUMN (PEMB)       | 21 HELICAL WIND TURBINE                           | 30 COUNTER                        | 40 COMPRESSORS |
| 2 STEEL STAIR                                | 12 METAL LOCKERS                        | 22 STEEL SUPPORT FRAME                            | 41 WATER BOTTLE FILL STATION      | 41 SMOKE HATCH |
| 3 CONCRETE PAVING / SIDEWALK                 | 13 WALL MOUNTED SINK                    | 23 LIGHT GAUGE FRAMING W/ 1/2 GYP BOARD EACH SIDE | 32 SHOWER                         | 42 LOUVER      |
| 4 10" DIAMETER CONCRETE-FILLED STEEL BOLLARD | 14 TUBULAR DAYLIGHTING SYSTEM ABOVE     | 24 GYP BOARD CEILING ABOVE                        | 33 CASEWORK / CABINETS ABOVE      | 43 ROOF ACCESS |
| 5 EMERGENCY EYE WASH STATION                 | 15 SKYLIGHT ABOVE (5x8)                 | 25 SUSPENDED ACOUSTIC CEILING 2x2 GRID ABOVE      | 34 ELEVATOR                       | 44 BENCH       |
| 6 LINE OF ROOF ABOVE                         | 16 FIRE RISER                           | 26 LIGHT FIXTURE - HIGH BAY LED                   | 35 PEDESTRIAN DOOR (HOLLOW METAL) |                |
| 7 METAL LOUVER                               | 17 STRIPING                             | 27 LIGHT FIXTURE - ARCH. INTERIOR LED             | 36 OVERHEAD COILING DOOR          |                |
| 8 CONCRETE CURB                              | 18 FULL HEIGHT TILE WALL - LARGE FORMAT | 28 COMPOSITE PANEL - WOOD                         | 37 EXTERIOR CMU WALL              |                |
| 9 STRUCTURAL STEEL BRACING (PEMB)            | 19 FLOOR TILE - LARGE FORMAT            | 29 VEGETATED WALL W/ DRIP IRRIGATION              | 38 STOREFRONT WINDOWS             |                |
| 10 NOT USED                                  | 20 NOT USED                             |   | 39 STOREFRONT DOOR                |                |



SCALE: 1/8" = 1'-0"  
0 4 8 16



ADMIN FLOOR PLAN CONCEPT A - VM BLDG.

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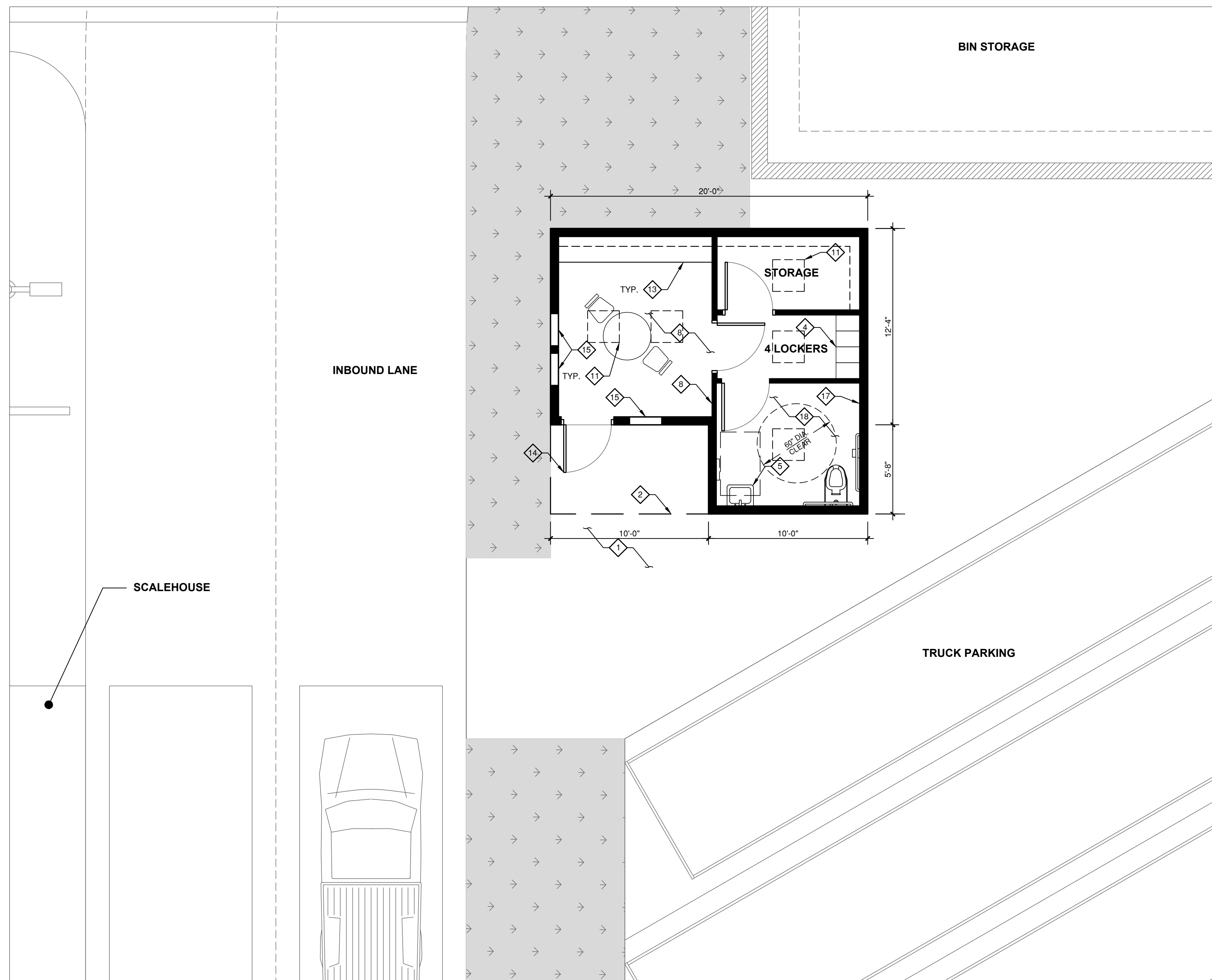
A2.5



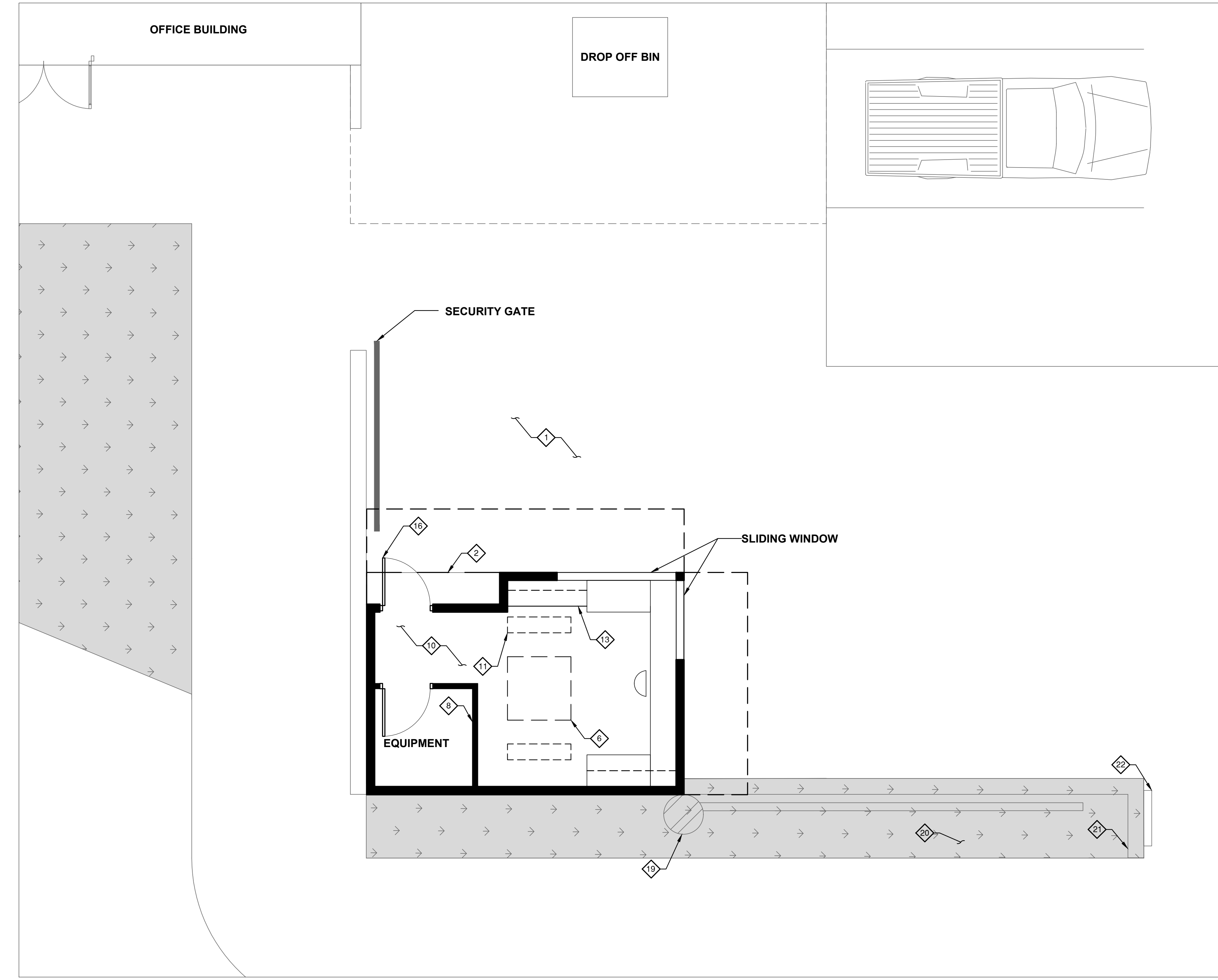
# **Exhibit 10**

## **A2.6 MISC. FLOOR PLANS CONCEPT A**





SCALEHOUSE STAFF AREA



INFORMATION KIOSK

**KEYNOTES**

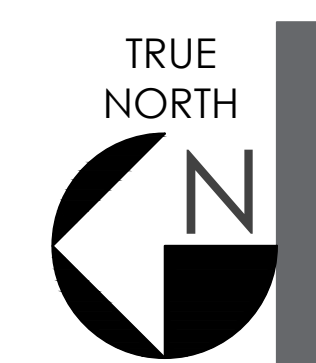
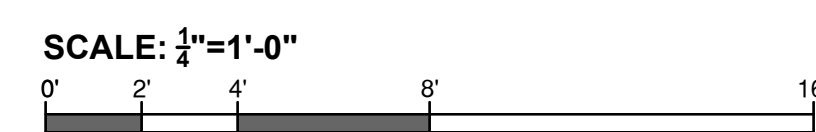
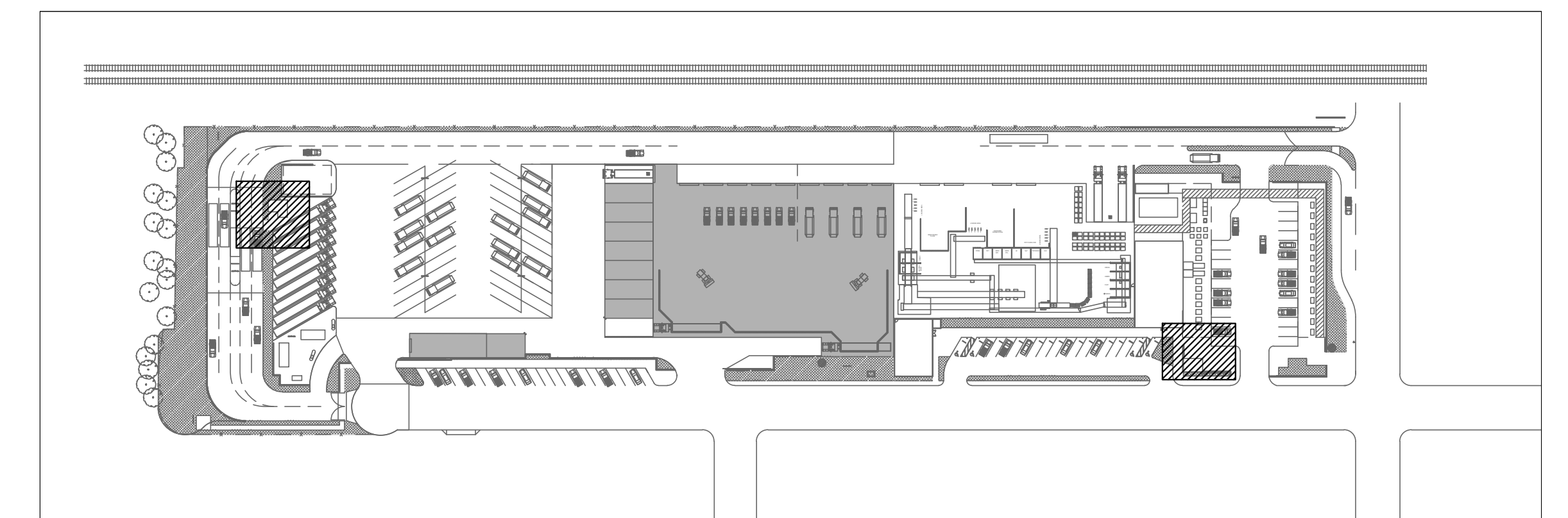
- 1 CONCRETE PAVING / SIDEWALK
- 2 LINE OF ROOF ABOVE
- 3 METAL LOUVER
- 4 METAL LOCKERS
- 5 WALL MOUNTED SINK
- 6 TUBULAR DAYLIGHTING SYSTEM ABOVE
- 7 VEGETATED WALL W/ DRIP IRRIGATION

- 8 LIGHT GAUGE FRAMING W/ 1/2" GYP BOARD EACH SIDE
- 9 GYP BOARD CEILING ABOVE
- 10 SUSPENDED ACOUSTIC CEILING 2x2 GRID ABOVE
- 11 LIGHT FIXTURE - ARCH. INTERIOR LED
- 12 COMPOSITE PANEL - WOOD

- 13 CASEWORK / CABINETS ABOVE
- 14 PEDESTRIAN DOOR (HOLLOW METAL)
- 15 STOREFRONT WINDOWS
- 16 STOREFRONT DOORS
- 17 FULL HEIGHT TILE WALL
- 18 FLOOR TILE

- 19 RAINWATER CISTERN - PRECAST CONCRETE W/ PUMP IN VAULT
- 20 LANDSCAPE AREA - SEE L1.2
- 21 4' HIGH MASONRY BASE WALL W/ DECORATIVE STEEL FENCE
- 22 DIRECTIONAL SIGNAGE

**KEY MAP**



MISC. FLOOR PLANS CONCEPT A  
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**A2.6**

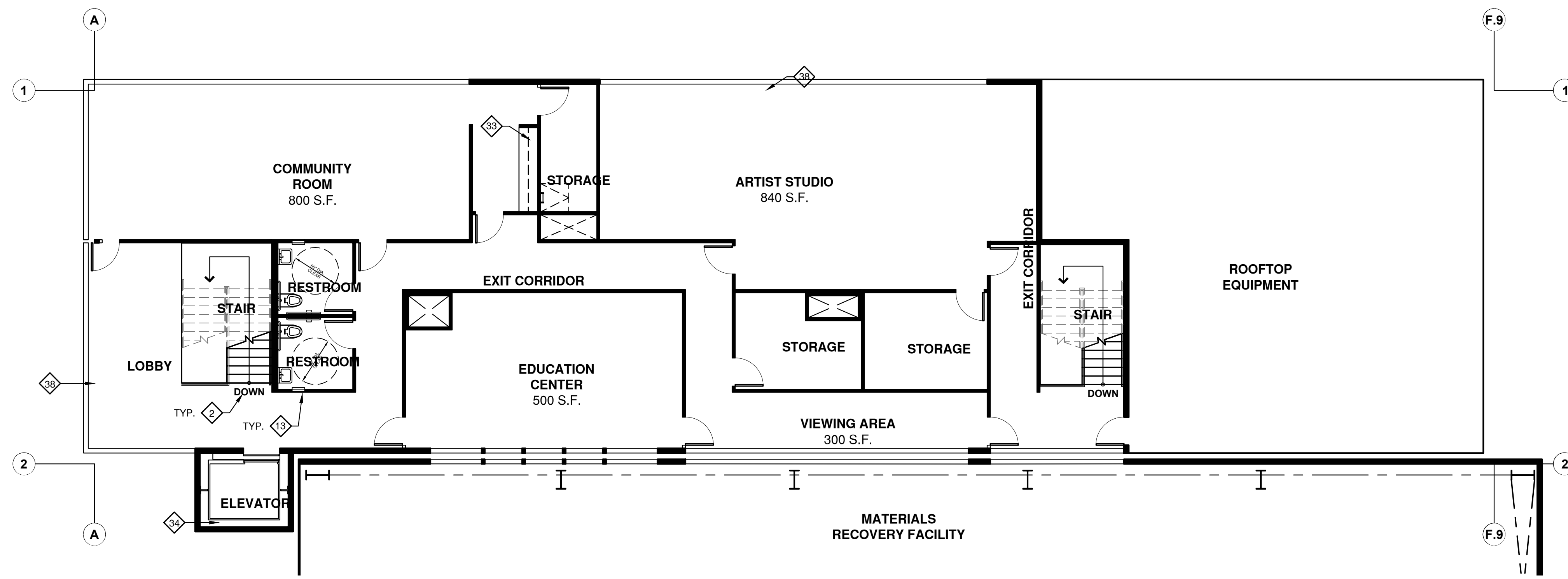


# **Exhibit 11**

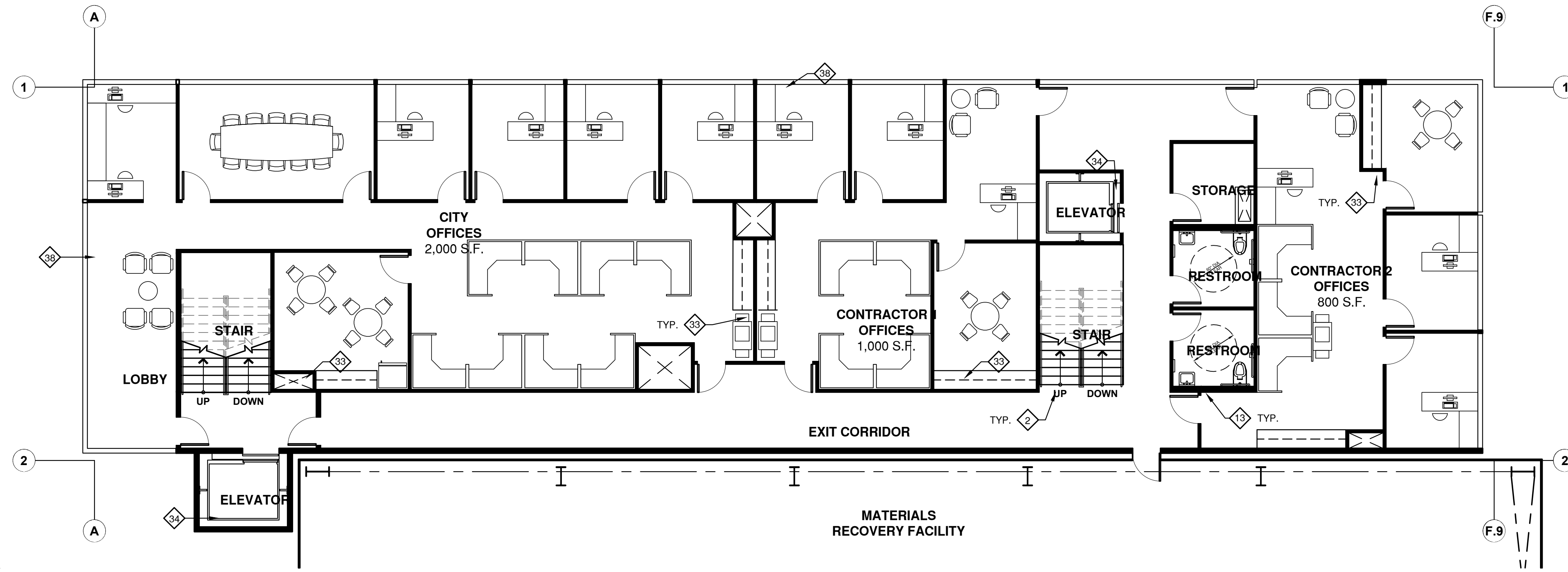
## **A2.7 ADMIN FLOOR PLAN CONCEPT B**



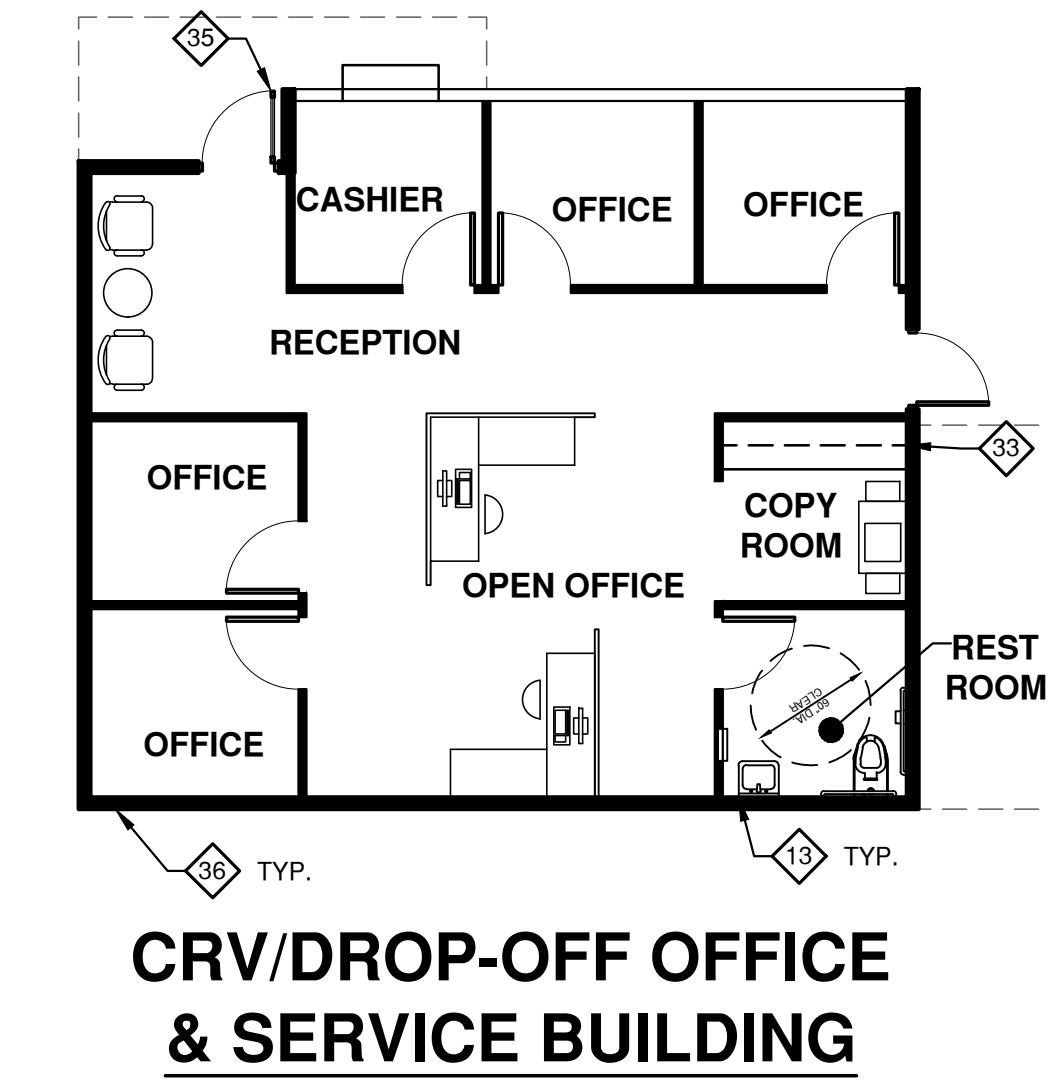
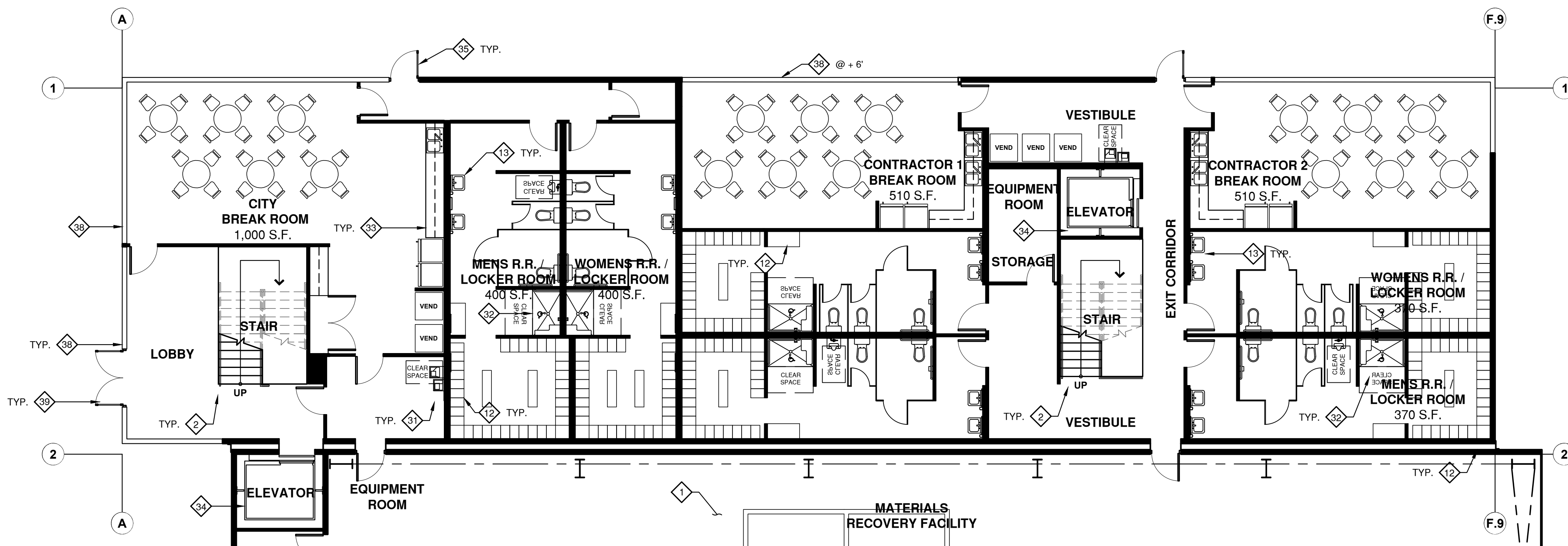
**THIRD FLOOR**



**SECOND FLOOR**

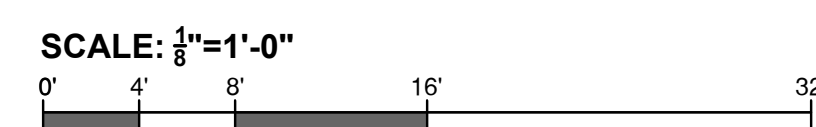
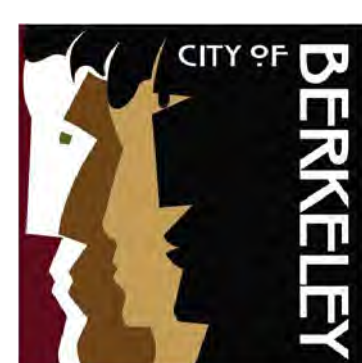


**FIRST FLOOR**



**KEYNOTES**

- |    |  |    |  |
|----|--|----|--|
| 1  | STRUCTURAL CONCRETE SLAB                   | 22 | STEEL SUPPORT FRAME                            |
| 2  | STEEL STAIR                                | 23 | LIGHT GAUGE FRAMING W/ 1/2 GYP BOARD EACH SIDE |
| 3  | CONCRETE PAVING / SIDEWALK                 | 24 | GYP BOARD CEILING ABOVE                        |
| 4  | 10" DIAMETER CONCRETE FILLED STEEL BOLLARD | 25 | SUSPENDED ACOUSTIC CEILING 2x2 GRID ABOVE      |
| 5  | EMERGENCY EYE WASH STATION                 | 26 | LIGHT FIXTURE - HIGH BAY LED                   |
| 6  | LINE OF ROOF ABOVE                         | 27 | LIGHT FIXTURE - ARCH. INTERIOR LED             |
| 7  | METAL LOUVER                               | 28 | COMPOSITE PANEL - WOOD                         |
| 8  | CONCRETE CURB                              | 29 | VEGETATED WALL W/ DRIP IRRIGATION              |
| 9  | STRUCTURAL STEEL BRACING (PEMB)            | 30 | COUNTER  |
| 10 | NOT USED                                   | 31 | WATER BOTTLE FILL STATION                      |
| 11 | STRUCTURAL STEEL COLUMN (PEMB)             | 32 | SHOWER   |
| 12 | METAL LOCKERS                              | 33 | CASEWORK / CABINETS ABOVE                      |
| 13 | WALL MOUNTED SINK                          | 34 | ELEVATOR                                       |
| 14 | TUBULAR DAYLIGHTING SYSTEM ABOVE           | 35 | PEDESTRIAN DOOR (HOLLOW METAL)                 |
| 15 | SKYLIGHT ABOVE (5x8)                       | 36 | OVERHEAD CEILING DOOR                          |
| 16 | FIRE RISER                                 | 37 | EXTERIOR CMU WALL                              |
| 17 | STRIPING                                   | 38 | STOREFRONT WINDOWS                             |
| 18 | FULL HEIGHT TILE WALL - LARGE FORMAT       | 39 | STOREFRONT DOOR                                |
| 19 | FLOOR TILE - LARGE FORMAT                  | 40 | NOT USED                                       |
| 20 | NOT USED                                   | 41 | SMOKE HATCH                                    |
| 21 | HELICAL WIND TURBINE                       |    |  |



ADMIN FLOOR PLAN CONCEPT B  
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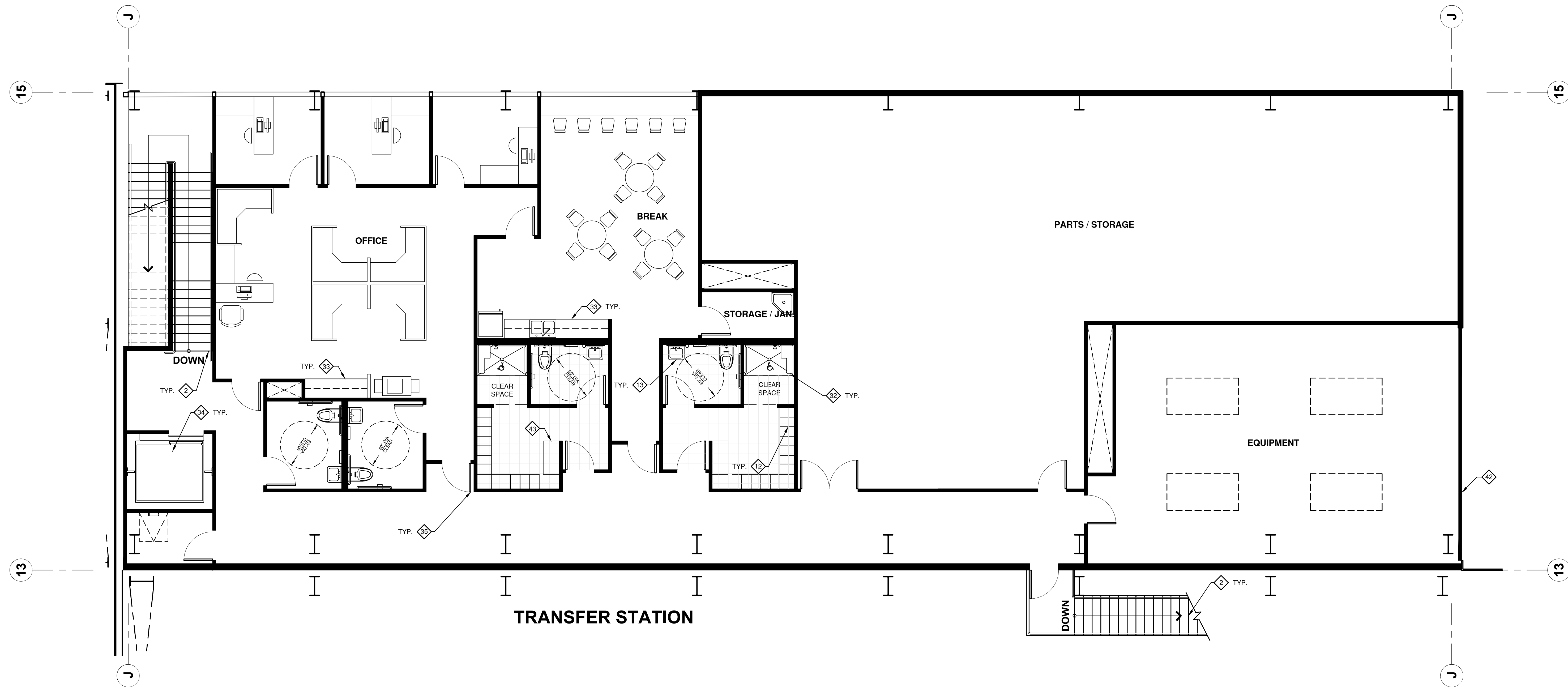
**A2.7**



## **Exhibit 12**

# **A2.8 ADMIN FLOOR PLAN CONCEPT B – VM BLDG**

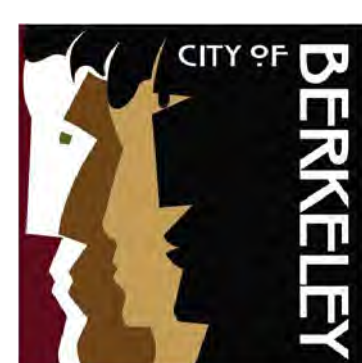




**VEHICLE MAINTENANCE - 2ND FLOOR**

**KEYNOTES**

- |  |   |   |                                   |                |
|--|---|---|-----------------------------------|----------------|
| 1 STRUCTURAL CONCRETE SLAB                   | 11 STRUCTURAL STEEL COLUMN (PEMB)       | 21 HELICAL WIND TURBINE                           | 30 NOT USED                       | 40 COMPRESSORS |
| 2 STEEL STAIR                                | 12 METAL LOCKERS                        | 22 STEEL SUPPORT FRAME                            | 41 WATER BOTTLE FILL STATION      | 41 SMOKE HATCH |
| 3 CONCRETE PAVING / SIDEWALK                 | 13 WALL MOUNTED SINK                    | 23 LIGHT GAUGE FRAMING W/ 1/2 GYP BOARD EACH SIDE | 32 SHOWER                         | 42 LOUVER      |
| 4 10" DIAMETER CONCRETE FILLED STEEL BOLLARD | 14 TUBULAR DAYLIGHTING SYSTEM ABOVE     | 24 GYP BOARD CEILING ABOVE                        | 33 CASEWORK / CABINETS ABOVE      | 43 BENCH       |
| 5 EMERGENCY EYE WASH STATION                 | 15 SKYLIGHT ABOVE (5x8)                 | 25 SUSPENDED ACOUSTIC CEILING 2x2 GRID ABOVE      | 34 ELEVATOR                       |                |
| 6 LINE OF ROOF ABOVE                         | 16 FIRE RISER                           | 26 LIGHT FIXTURE - HIGH BAY LED                   | 35 PEDESTRIAN DOOR (HOLLOW METAL) |                |
| 7 METAL LOUVER                               | 17 STRIPING                             | 27 LIGHT FIXTURE - ARCH. INTERIOR LED             | 36 OVERHEAD CEILING DOOR          |                |
| 8 CONCRETE CURB                              | 18 FULL HEIGHT TILE WALL - LARGE FORMAT | 28 COMPOSITE PANEL - WOOD                         | 37 EXTERIOR CMU WALL              |                |
| 9 STRUCTURAL STEEL BRACING (PEMB)            | 19 FLOOR TILE - LARGE FORMAT            | 29 VEGETATED WALL W/ DRIP IRRIGATION              | 38 STOREFRONT WINDOWS             |                |
| 10 NOT USED                                  | 20 NOT USED                             |   | 39 STOREFRONT DOOR                |                |



SCALE: 1/8" = 1'-0"  
0 2 4 8 16



ADMIN FLOOR PLAN CONCEPT B - VM BLDG

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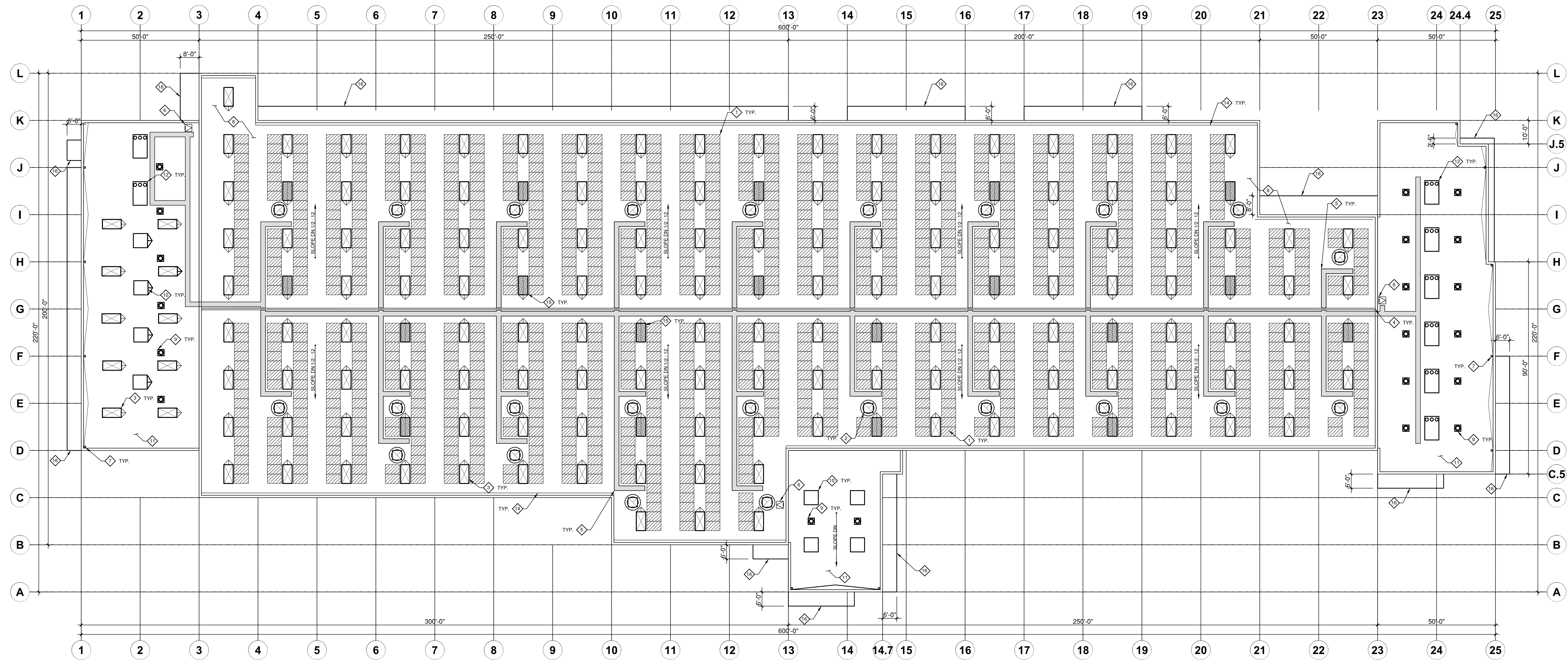
**A2.8**



# **Exhibit 13**

## **A4.1 ROOF PLAN CONCEPT A**

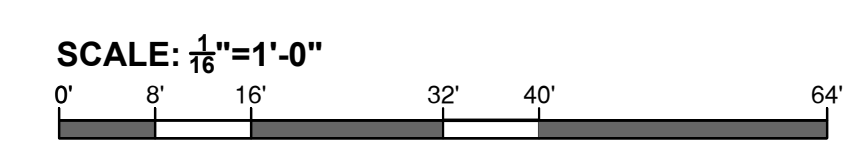
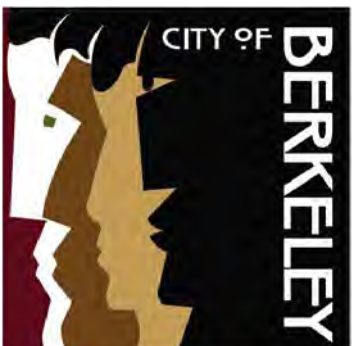




**KEYNOTE**

- ◆ 4' x 6' PHOTOVOLTAIC PANELS
- ◆ 48" DIAMETER EXHAUST FAN
- ◆ 4' x 8' FIXED SKYLIGHT
- ◆ RIDGELINE
- ◆ 24" WIDE ROOF WALK
- ◆ ROOF ACCESS HATCH
- ◆ ROOF DRAIN
- ◆ METAL ROOF PANEL
- ◆ TUBULAR SKYLIGHTS
- ◆ EVAP COOLER
- ◆ SINGLE PLY EPDM ROOF MEMBRANE (WHITE)
- ◆ HVAC
- ◆ 24" DIAMETER EXHAUST FAN
- ◆ GUTTER
- ◆ SMOKE VENT
- ◆ STEEL CANOPY

AREA OF PV PANELS: 27,000 S.F.  
 AREA OF ROOF WALK: 3,700 S.F.  
 SKYLIGHT COUNTS: 159



**ROOF PLAN CONCEPT A**  
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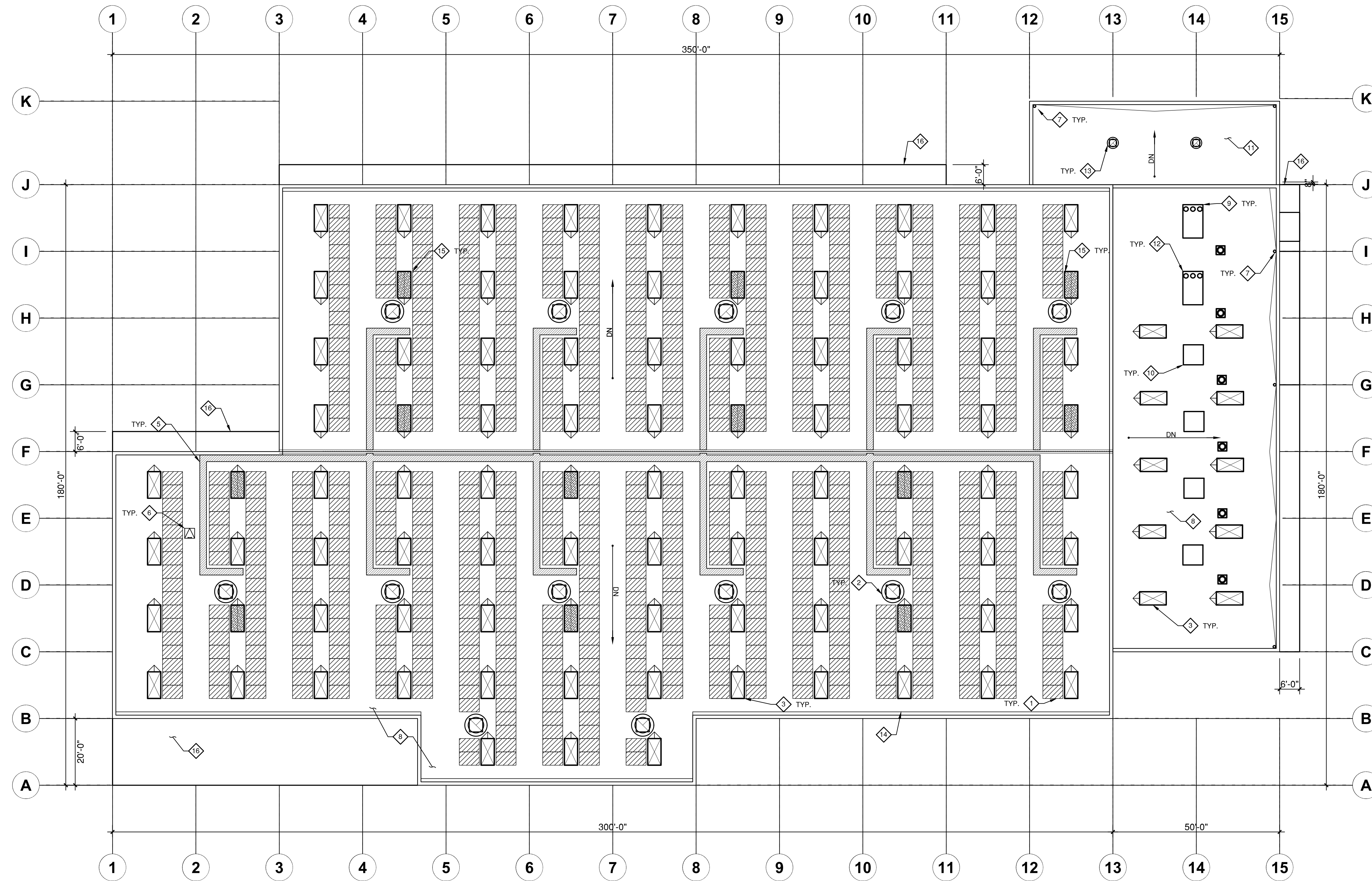
**A4.1**



# **Exhibit 14**

## **A4.2 ROOF PLAN CONCEPT B – TS**

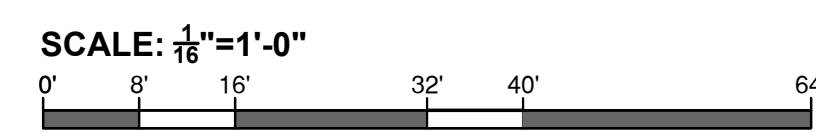




**KEYNOTE**

- 1 4' x 6' PHOTOVOLTAIC PANELS
- 2 48" DIAMETER EXHAUST FAN
- 3 4' x 8' FIXED SKYLIGHT
- 4 RIDGELINE
- 5 24" WIDE ROOF WALK
- 6 ROOF ACCESS HATCH
- 7 ROOF DRAIN
- 8 METAL ROOF PANEL
- 9 TUBULAR SKYLIGHTS
- 10 EVAP COOLER
- 11 SINGLE PLY EPDM ROOF MEMBRANE (WHITE)
- 12 HVAC
- 13 24" DIAMETER EXHAUST FAN
- 14 GUTTER
- 15 SMOKE VENT
- 16 STEEL CANOPY

AREA OF PV PANELS: 16,000 S.F.  
 AREA OF ROOF WALK: 1,500 S.F.  
 SKYLIGHT COUNTS: 101



TRUE NORTH

ROOF PLAN CONCEPT B - TRANSFER STATION

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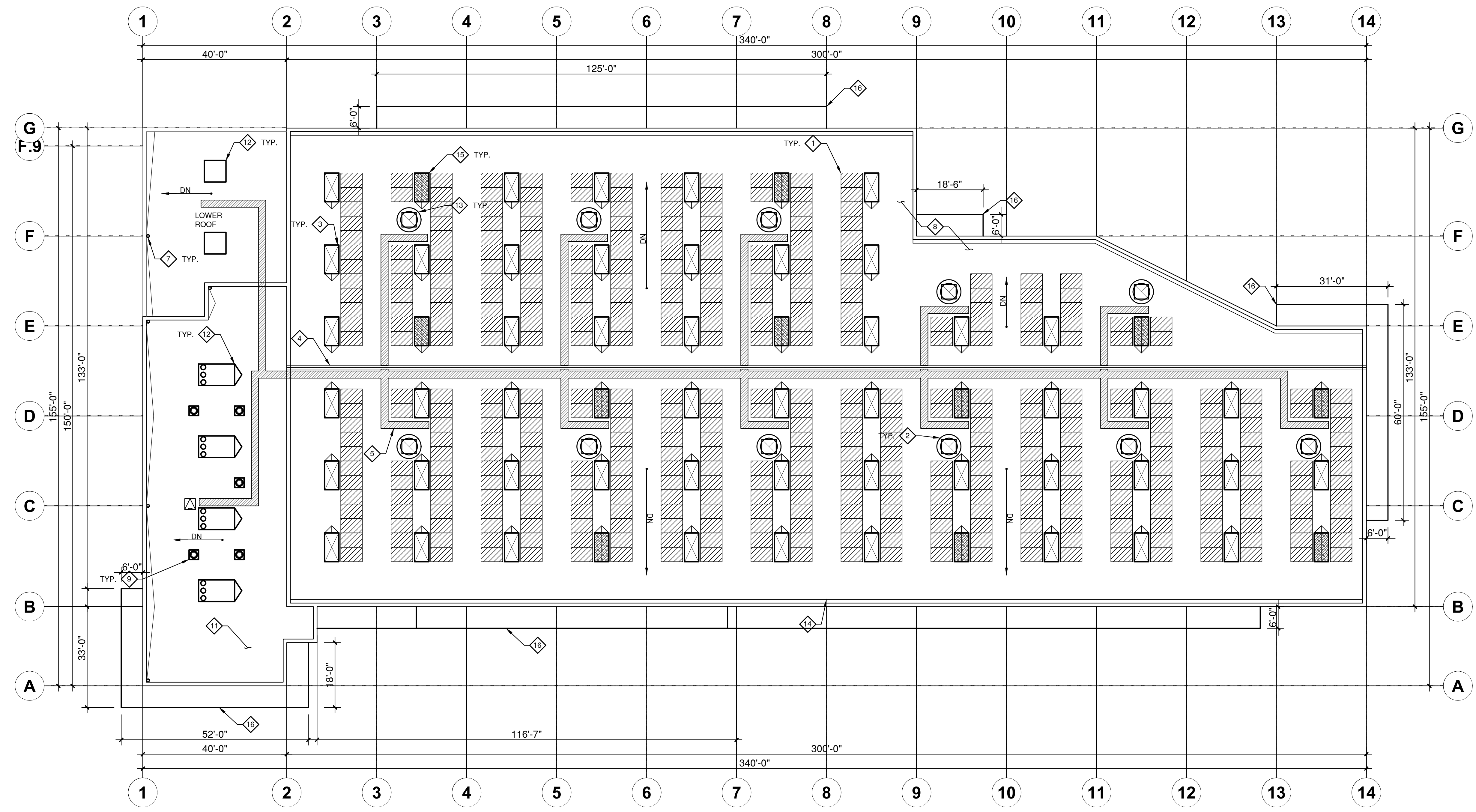
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**A4.2**



# **Exhibit 15**

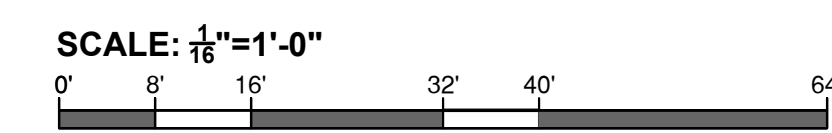
## **A4.3 ROOF PLAN CONCEPT B – MRF**



**KEYNOTE**

- 12 4' x 6' PHOTOVOLTAIC PANELS
- 13 48" DIAMETER EXHAUST FAN
- 14 4' x 8' FIXED SKYLIGHT
- 15 RIDGELINE
- 16 24" WIDE ROOF WALK
- 17 ROOF ACCESS HATCH
- 18 ROOF DRAIN
- 19 METAL ROOF PANEL
- 20 TUBULAR SKYLIGHTS
- 21 EVAP COOLER (6' x 6')
- 22 SINGLE PLY EPDM ROOF MEMBRANE (WHITE)
- 23 HVAC
- 24 EXHAUST FAN
- 25 GUTTER
- 26 SMOKE VENT
- 27 STEEL CANOPY
- 28 15' x 9' CURBED FIXED ACRYLIC SKYLIGHT

AREA OF PV PANELS: 10,000 S.F.  
 AREA OF ROOF WALK: 1,400 S.F.  
 SKYLIGHT COUNTS: 60



TRUE NORTH  
**ROOF PLAN CONCEPT B - MRF**  
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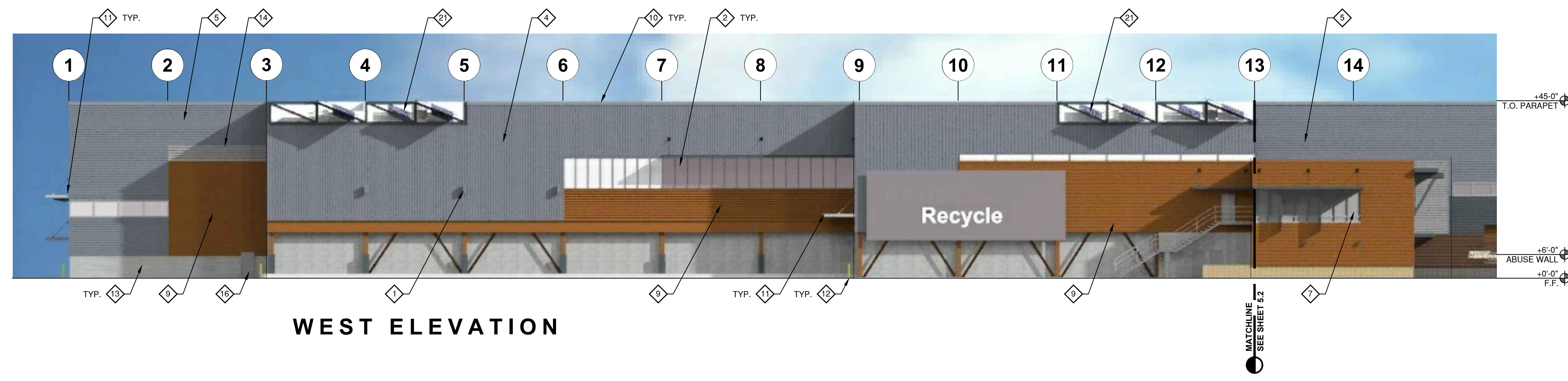
**A4.3**



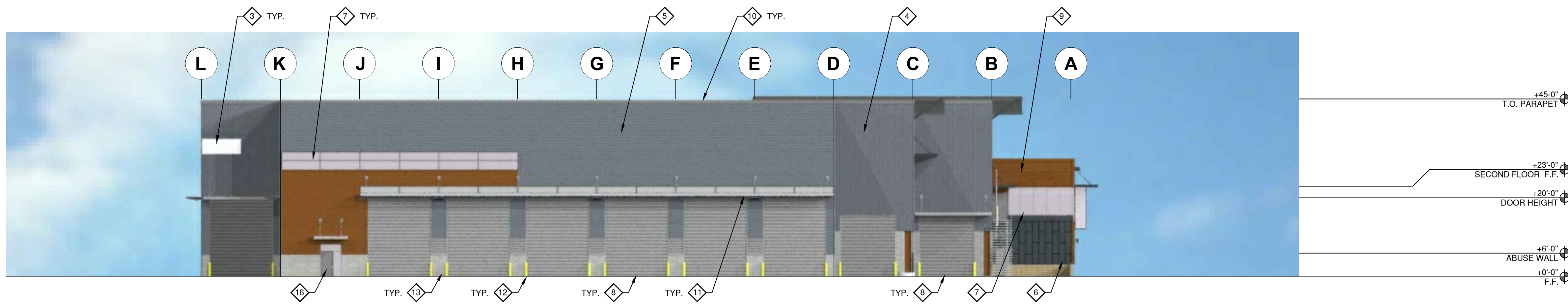
# **Exhibit 16**

## **A5.1 EXTERIOR ELEVATIONS CONCEPT A**

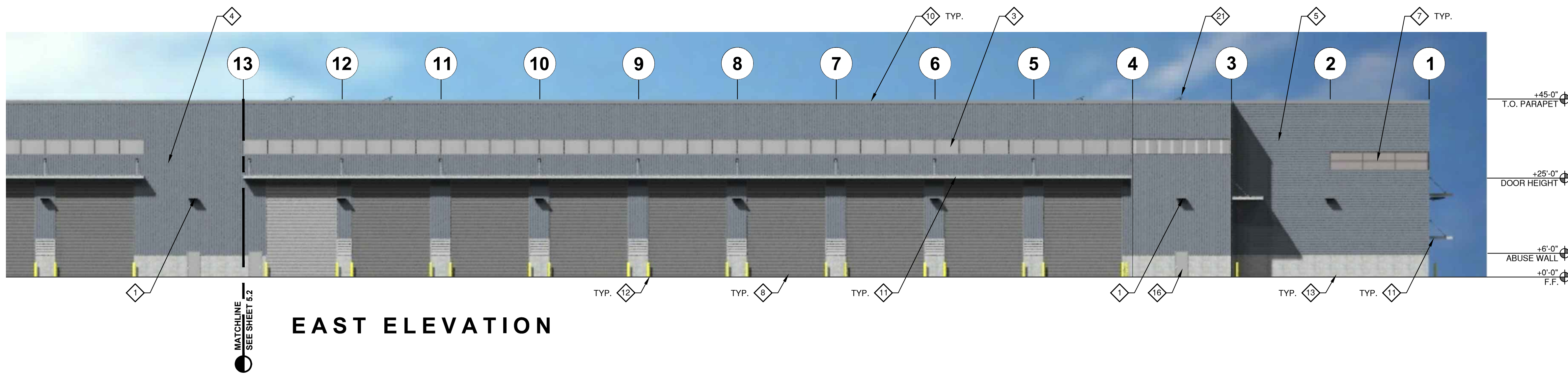




WEST ELEVATION



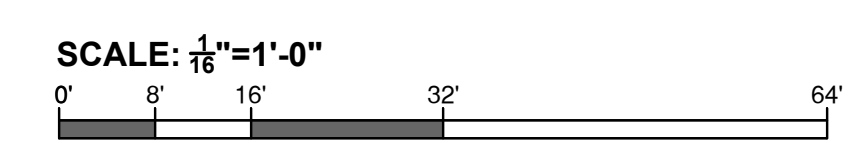
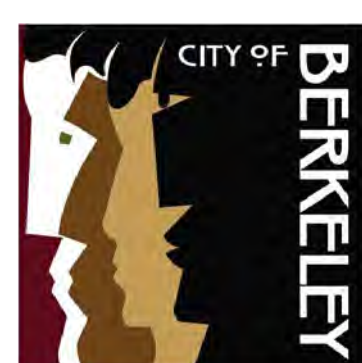
NORTH ELEVATION



EAST ELEVATION

**KEYNOTES**

- 1 LIGHT FIXTURE / WALL MOUNTED LED
- 2 DAYLIGHTING WALL PANEL / POLYCARBONATE
- 3 DAYLIGHTING WALL PANEL / FIBER GLASS
- 4 METAL PANEL - VERTICAL RIB
- 5 METAL PANEL - HORIZONTAL RIB
- 6 METAL PANEL - FLAT
- 7 STOREFRONT - DUAL PANE LOW E
- 8 OVERHEAD COILING DOOR
- 9 COMPOSITE PANEL - WOOD GRAIN
- 10 FLAT METAL TRIM
- 11 STEEL CANOPY
- 12 STEEL BOLLARD
- 13 CONCRETE ABUSE WALL
- 14 LOUVERS
- 15 PEMB COLUMN
- 16 PEDESTRIAN DOOR
- 17 VERTICAL WIND TURBINES
- 18 OVERHEAD SECTIONAL DOOR
- 19 VEGETATED WALL
- 20 STEEL FRAMING
- 21 PHOTOVOLTAIC PANEL



EXTERIOR ELEVATIONS CONCEPT A  
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A5.1

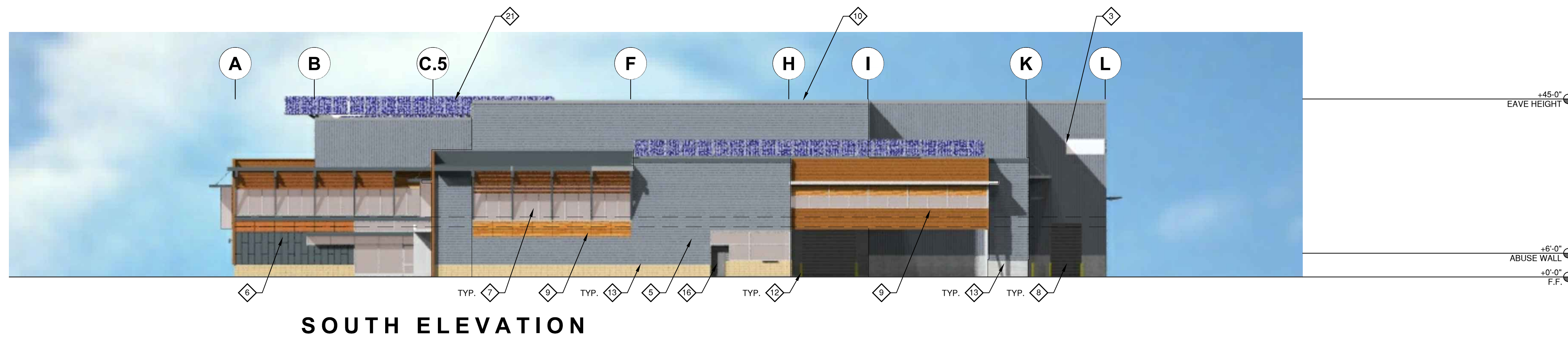




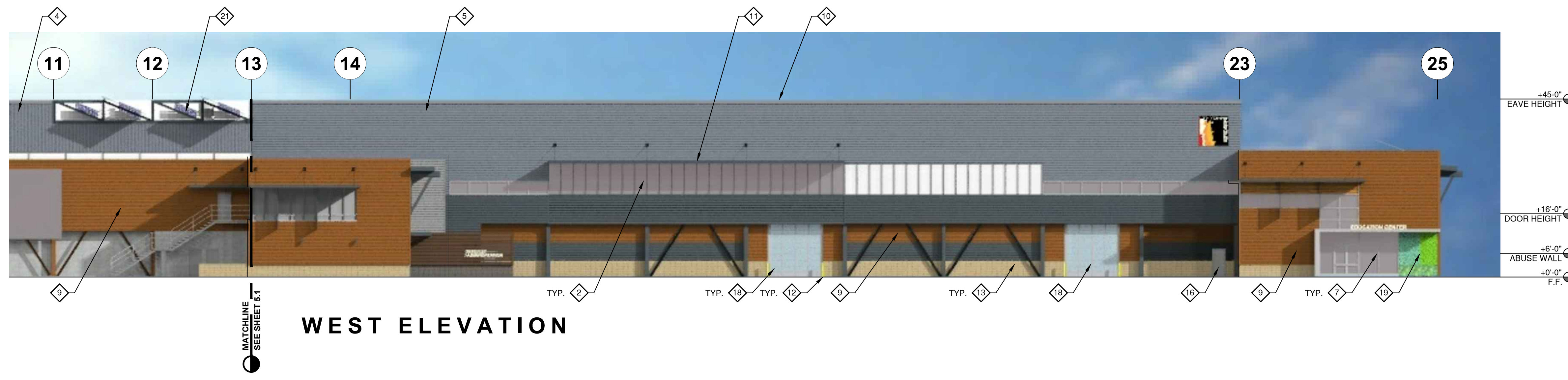
# **Exhibit 17**

## **A5.2 EXTERIOR ELEVATIONS CONCEPT A**

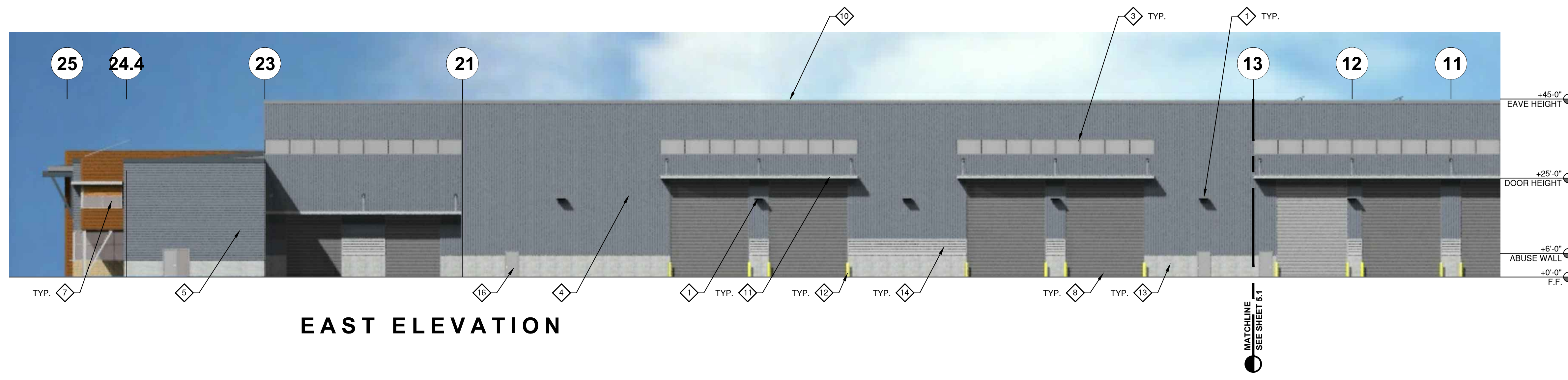




**SOUTH ELEVATION**



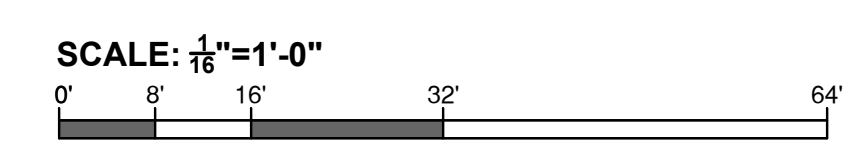
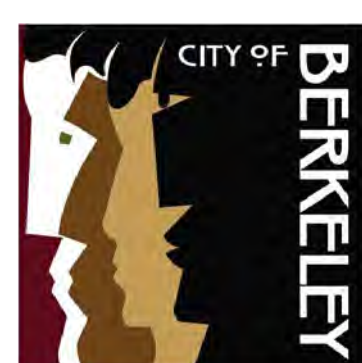
**WEST ELEVATION**



**EAST ELEVATION**

**KEYNOTES**

- 1 LIGHT FIXTURE / WALL MOUNTED LED
- 2 DAYLIGHTING WALL PANEL / POLYCARBONATE
- 3 DAYLIGHTING WALL PANEL / FIBER GLASS
- 4 METAL PANEL - VERTICAL RIB
- 5 METAL PANEL - HORIZONTAL RIB
- 6 METAL PANEL - FLAT
- 7 STOREFRONT - DUAL PANE LOW E
- 8 OVERHEAD COILING DOOR
- 9 COMPOSITE PANEL - WOOD GRAIN
- 10 FLAT METAL TRIM
- 11 STEEL CANOPY
- 12 STEEL BOLLARD
- 13 CONCRETE ABUSE WALL
- 14 LOUVERS
- 15 PEMB COLUMN
- 16 PEDESTRIAN DOOR
- 17 VERTICAL WIND TURBINES
- 18 OVERHEAD SECTIONAL DOOR
- 19 VEGETATED WALL
- 20 STEEL FRAMING
- 21 PHOTOVOLTAIC PANEL



EXTERIOR ELEVATIONS CONCEPT A  
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**A5.2**

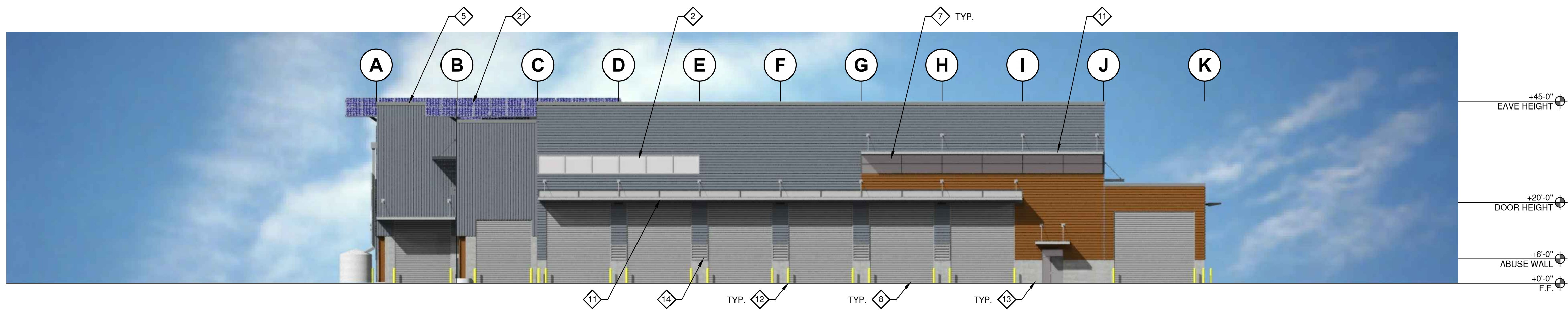




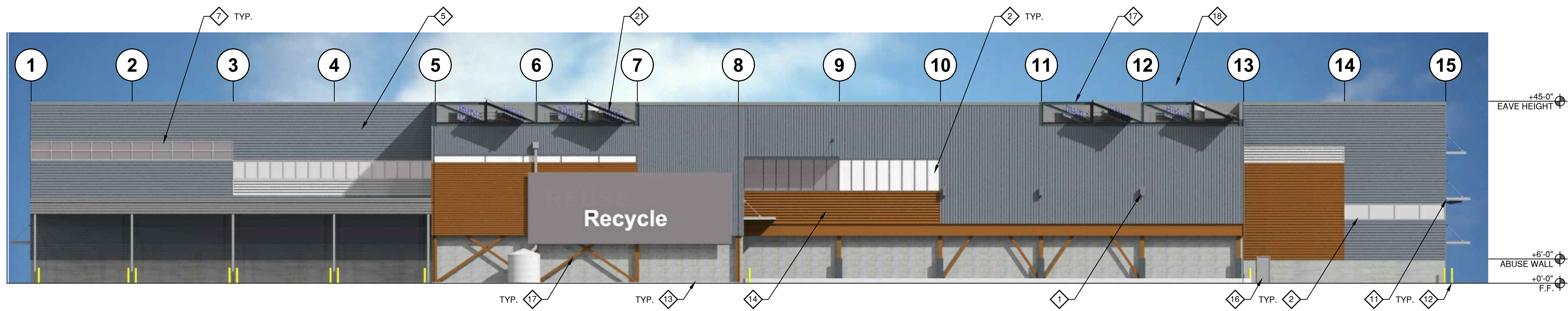
# **Exhibit 18**

## **A5.3 EXTERIOR ELEVATIONS CONCEPT B**

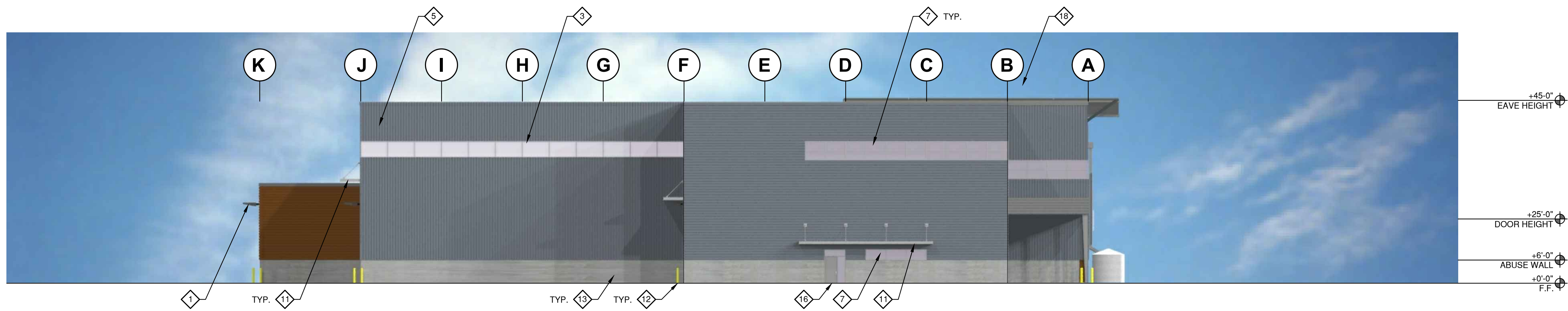




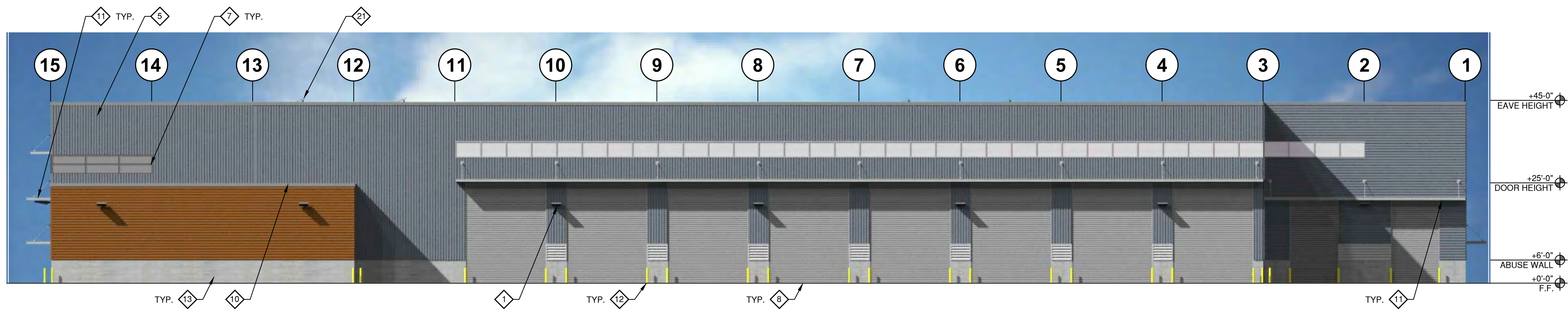
**SOUTH ELEVATION**



**WEST ELEVATION**



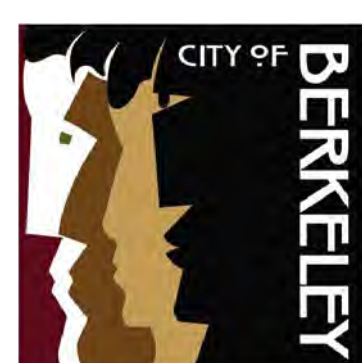
**NORTH ELEVATION**



**EAST ELEVATION**

**KEYNOTES**

- 1 LIGHT FIXTURE / WALL MOUNTED LED
- 2 DAYLIGHTING WALL PANEL / POLYCARBONATE
- 3 DAYLIGHTING WALL PANEL / FIBER GLASS
- 4 METAL PANEL - VERTICAL RIB
- 5 METAL PANEL - HORIZONTAL RIB
- 6 METAL PANEL - FLAT
- 7 STOREFRONT - DUAL PANE LOW E
- 8 OVERHEAD COILING DOOR
- 9 COMPOSITE PANEL - WOOD GRAIN
- 10 FLAT METAL TRIM
- 11 STEEL CANOPY
- 12 STEEL BOLLARD
- 13 CONCRETE ABUSE WALL
- 14 LOUVERS
- 15 PEMB COLUMN
- 16 PEDESTRIAN DOOR
- 17 VERTICAL WIND TURBINES
- 18 OVERHEAD SECTIONAL DOOR
- 19 VEGETATED WALL
- 20 STEEL FRAMING
- 21 PHOTOVOLTAIC PANEL



SCALE: 1/8"=1'-0"  
 0' 8' 16' 32' 64'

EXTERIOR ELEVATIONS CONCEPT B

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**A5.3**

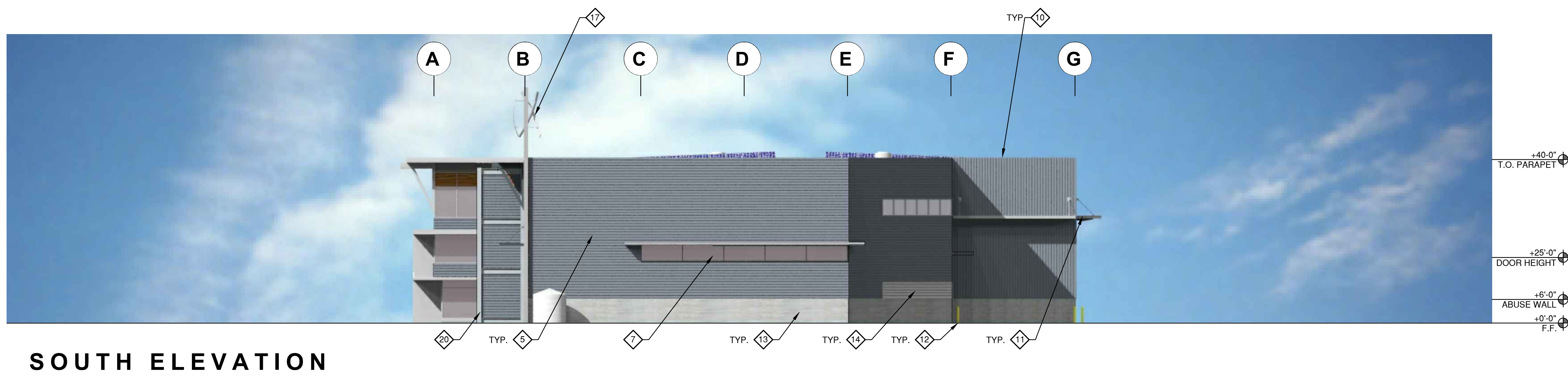




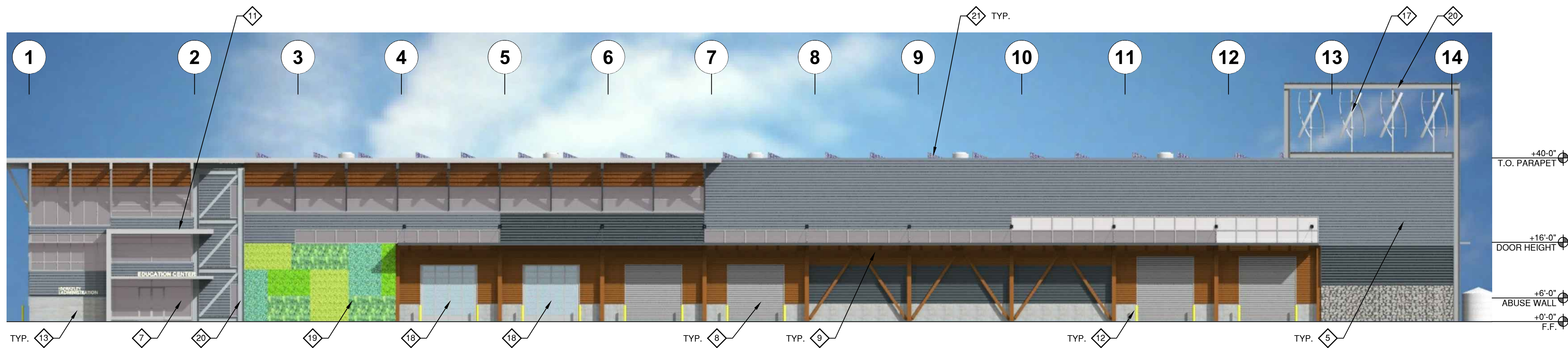
# **Exhibit 19**

## **A5.4 EXTERIOR ELEVATIONS CONCEPT B**

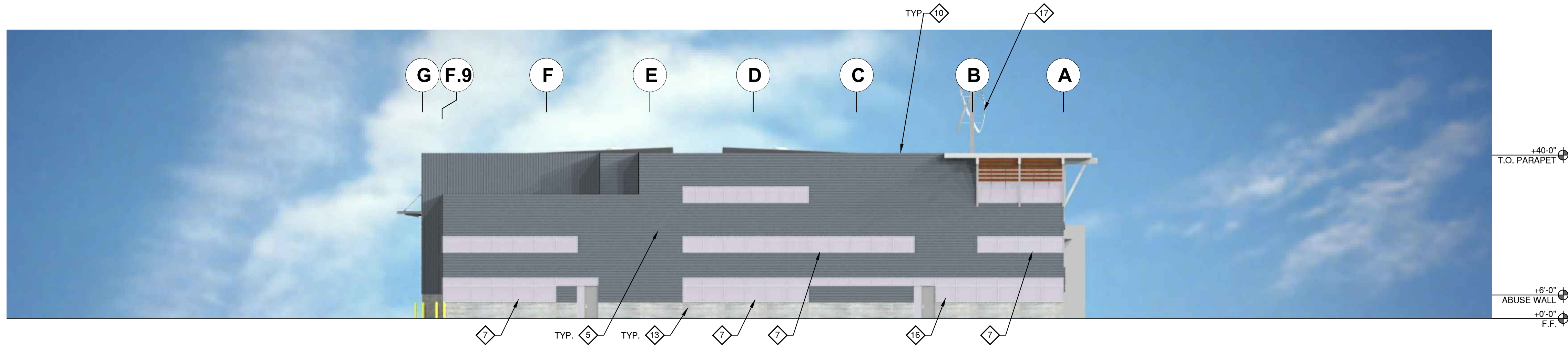




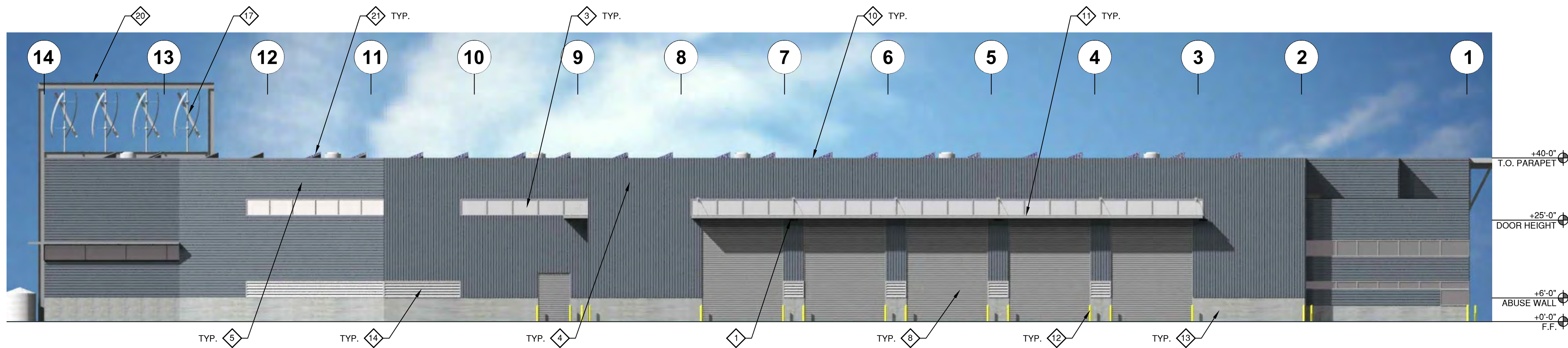
**SOUTH ELEVATION**



**WEST ELEVATION**



**NORTH ELEVATION**



**EAST ELEVATION**

**KEYNOTES**

- ① LIGHT FIXTURE / WALL MOUNTED LED
- ② DAYLIGHTING WALL PANEL / POLYCARBONATE
- ③ DAYLIGHTING WALL PANEL / FIBER GLASS
- ④ METAL PANEL - VERTICAL RIB
- ⑤ METAL PANEL - HORIZONTAL RIB
- ⑥ METAL PANEL - FLAT
- ⑦ STOREFRONT - DUAL PANE LOW E
- ⑧ OVERHEAD COILING DOOR
- ⑨ COMPOSITE PANEL - WOOD GRAIN
- ⑩ FLAT METAL TRIM
- ⑪ STEEL CANOPY
- ⑫ STEEL BOLLARD
- ⑬ CONCRETE ABUSE WALL
- ⑭ LOUVERS
- ⑮ PEMB COLUMN
- ⑯ PEDESTRIAN DOOR
- ⑰ VERTICAL WIND TURBINES
- ⑱ OVERHEAD SECTIONAL DOOR
- ⑲ VEGETATED WALL
- ⑳ STEEL FRAMING
- ㉑ PHOTOVOLTAIC PANEL



SCALE: 1/8"=1'-0"  
 0' 8' 16' 32' 64'

EXTERIOR ELEVATIONS CONCEPT B

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**A5.4**

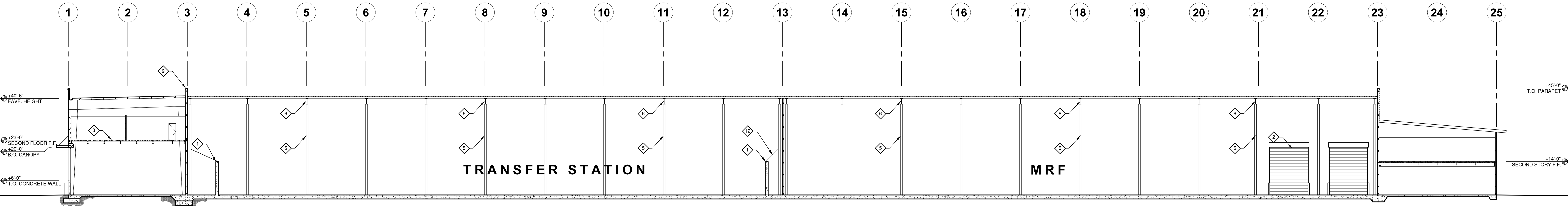




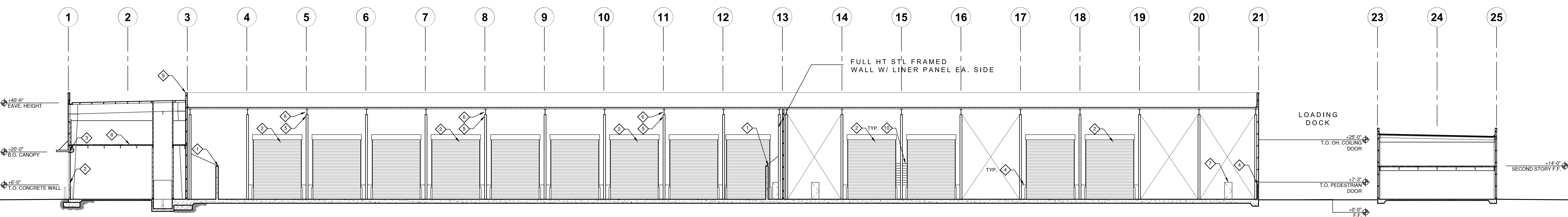
# **Exhibit 20**

## **A6.1 BUILDING SECTIONS CONCEPT A**

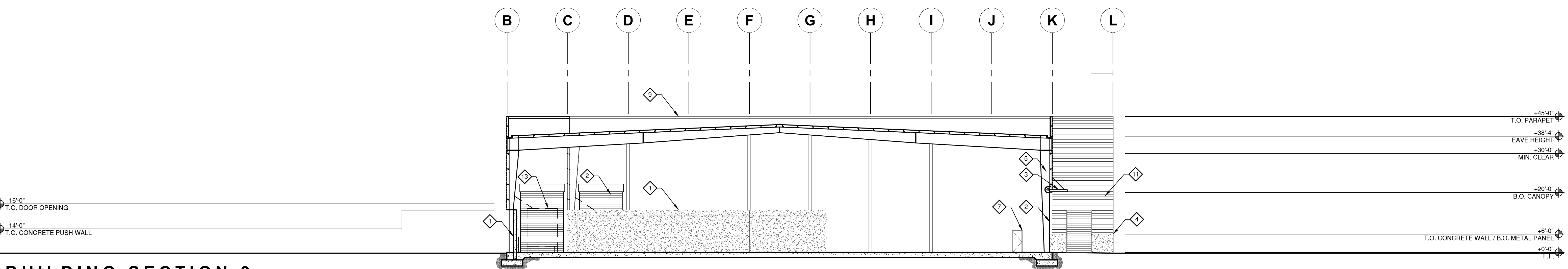




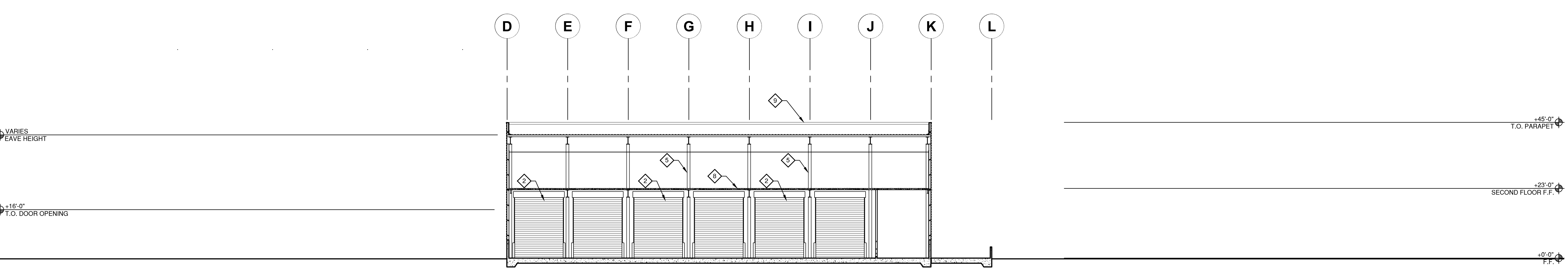
BUILDING SECTION 1



BUILDING SECTION 2



BUILDING SECTION 3

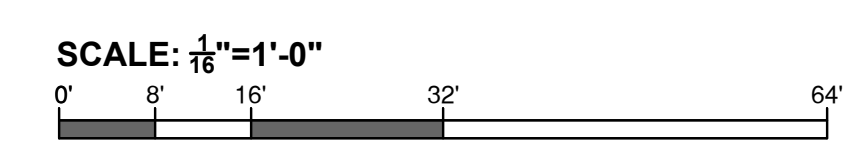
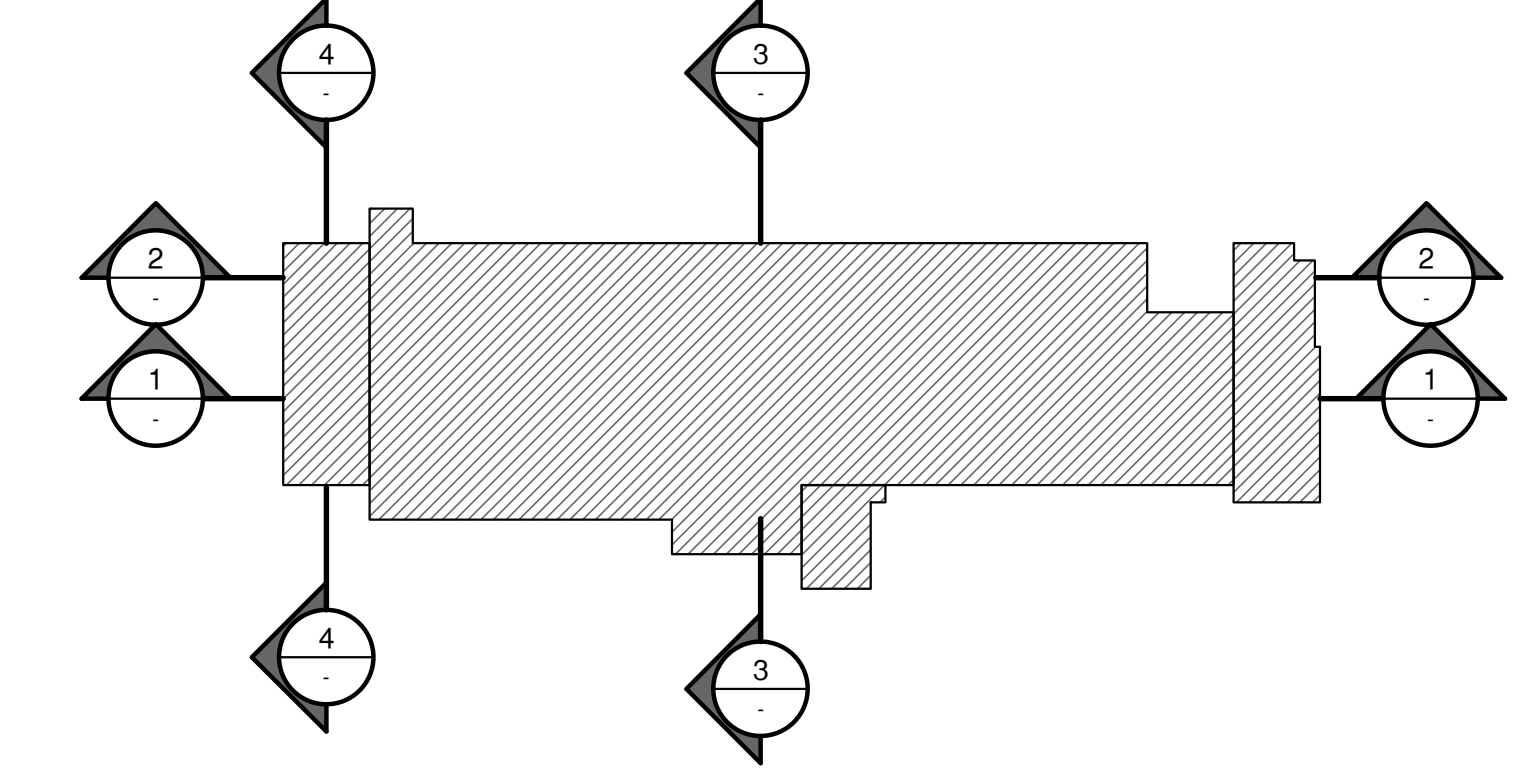


BUILDING SECTION 4

KEYNOTES

- 1 14' CONCRETE PUSHWALL W/ 12' LIMIT LINE
- 2 OVERHEAD COILING DOOR
- 3 METAL CANOPY
- 4 CONCRETE ABUSE WALL
- 5 RIGID FRAME COLUMN
- 6 RIGID FRAME BEAM
- 7 MANDOOR
- 8 CONCRETE METAL DECK
- 9 PARAPET CAP
- 10 LOUVERS
- 11 METAL WALL PANEL
- 12 STEEL SHEET SLOPED COVER
- 13 STEEL PLATE HOPPER

KEY PLAN



BUILDING SECTIONS CONCEPT A  
**The City Of Berkeley**  
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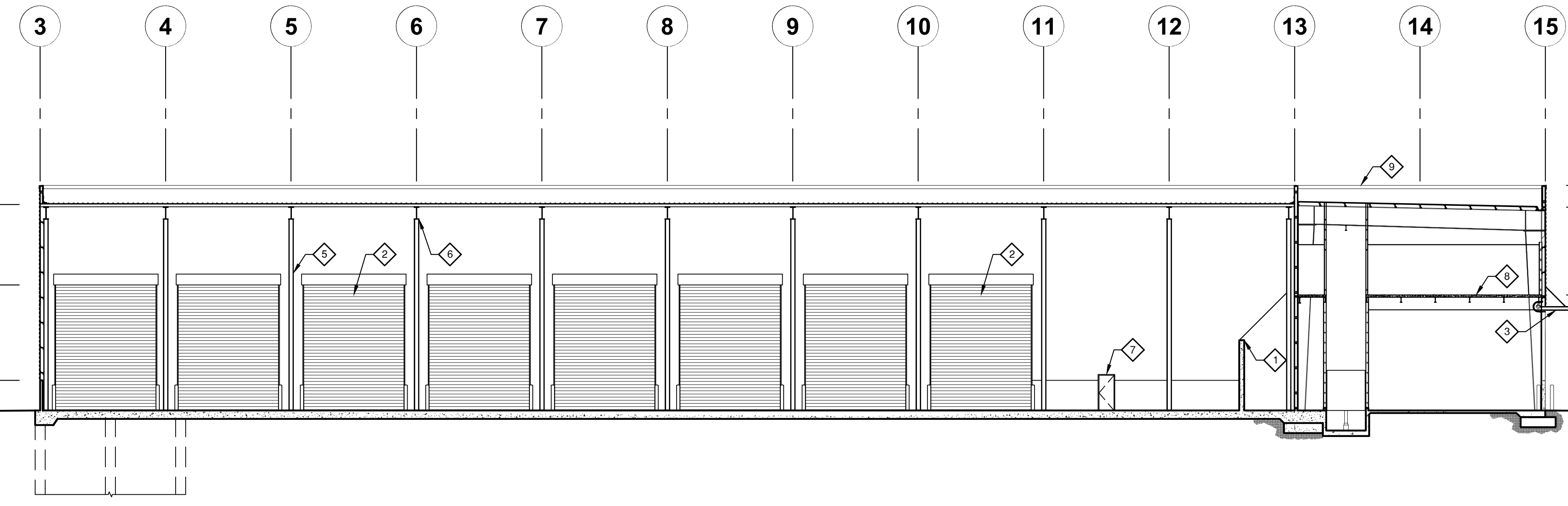
**A6.1**



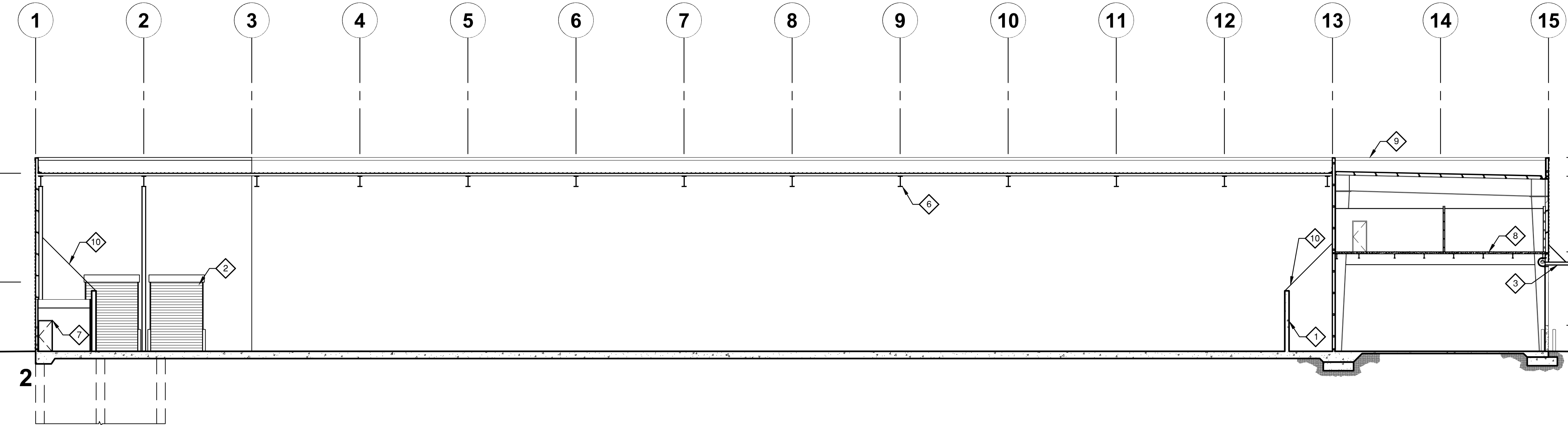
# **Exhibit 21**

## **A6.2 BUILDING SECTIONS CONCEPT B – TS**

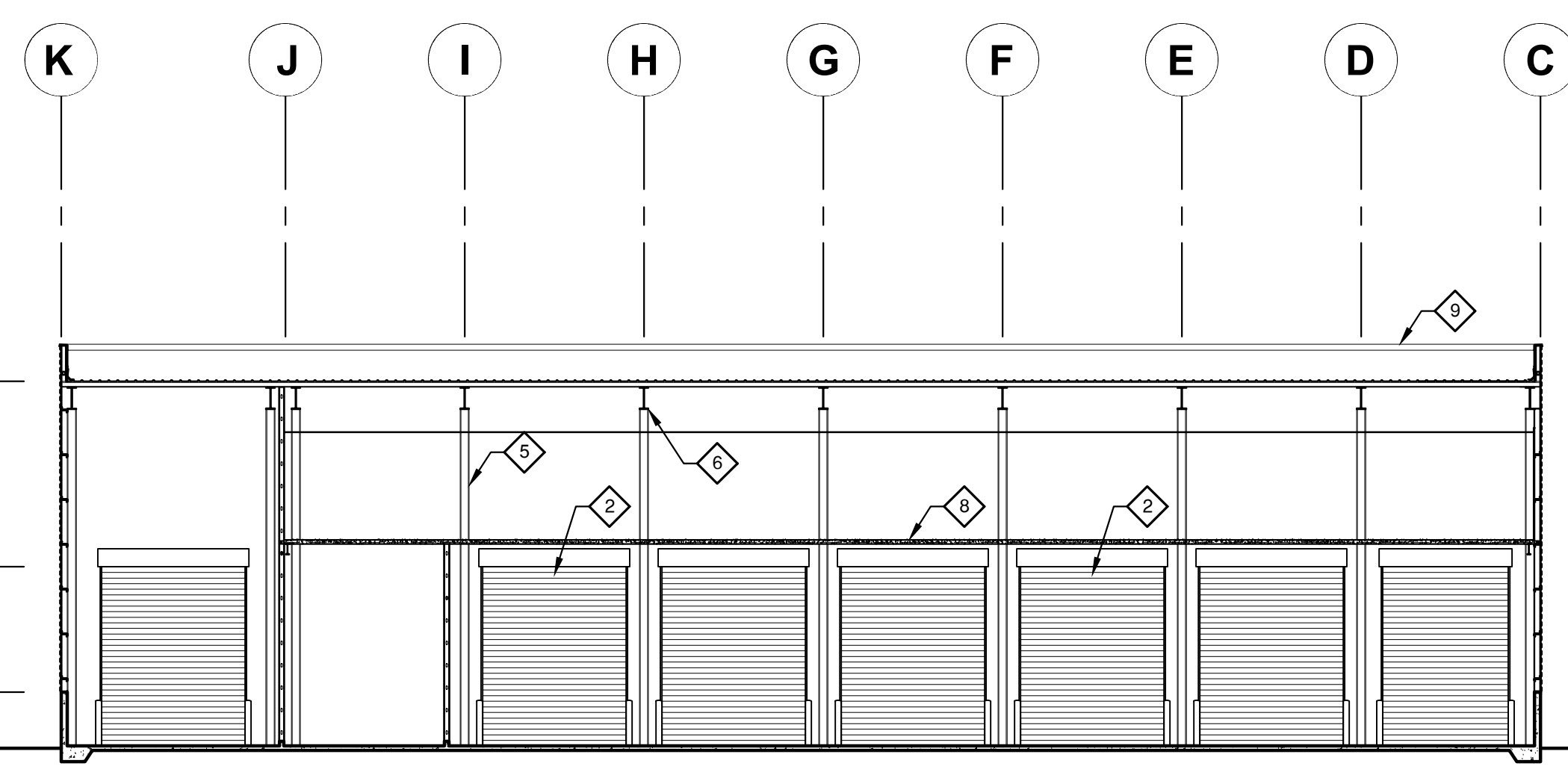




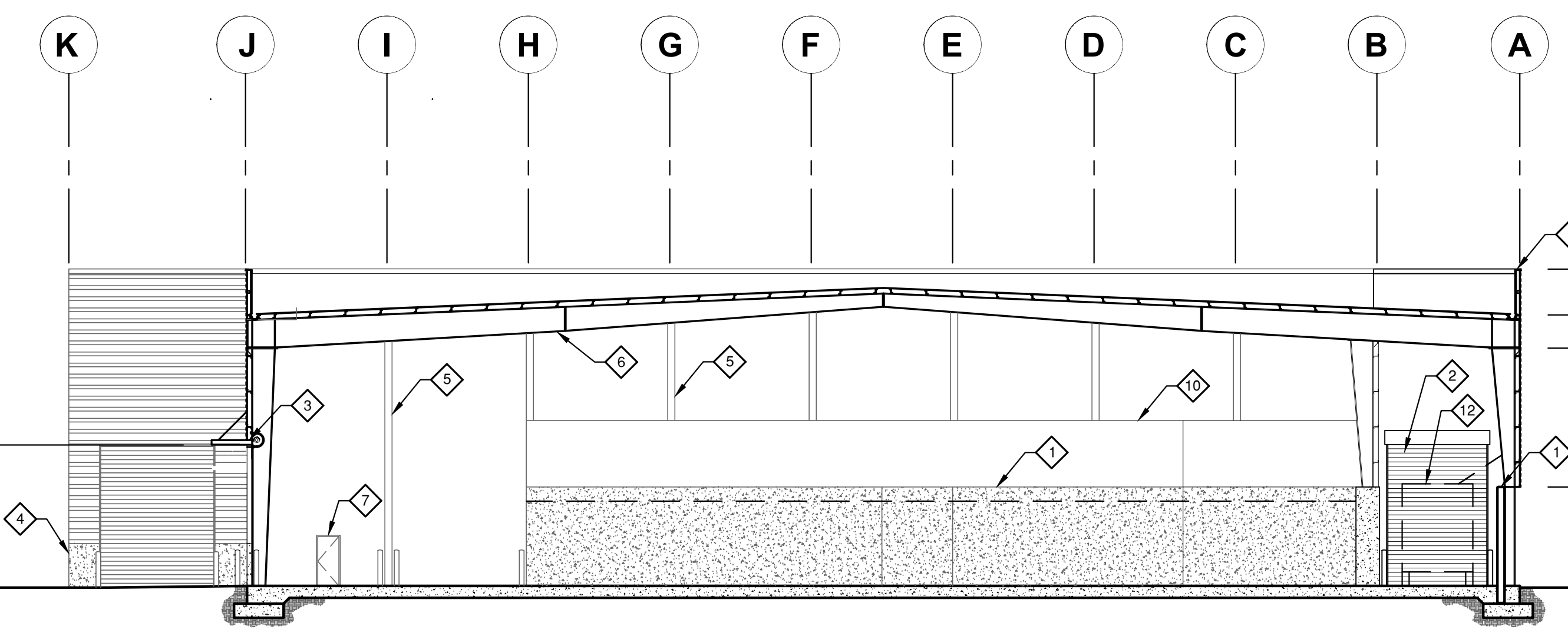
**BUILDING SECTION 1**



**BUILDING SECTION 2**



**BUILDING SECTION 3**

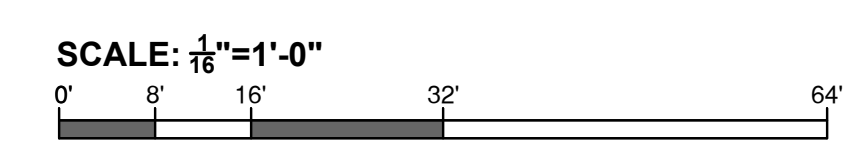
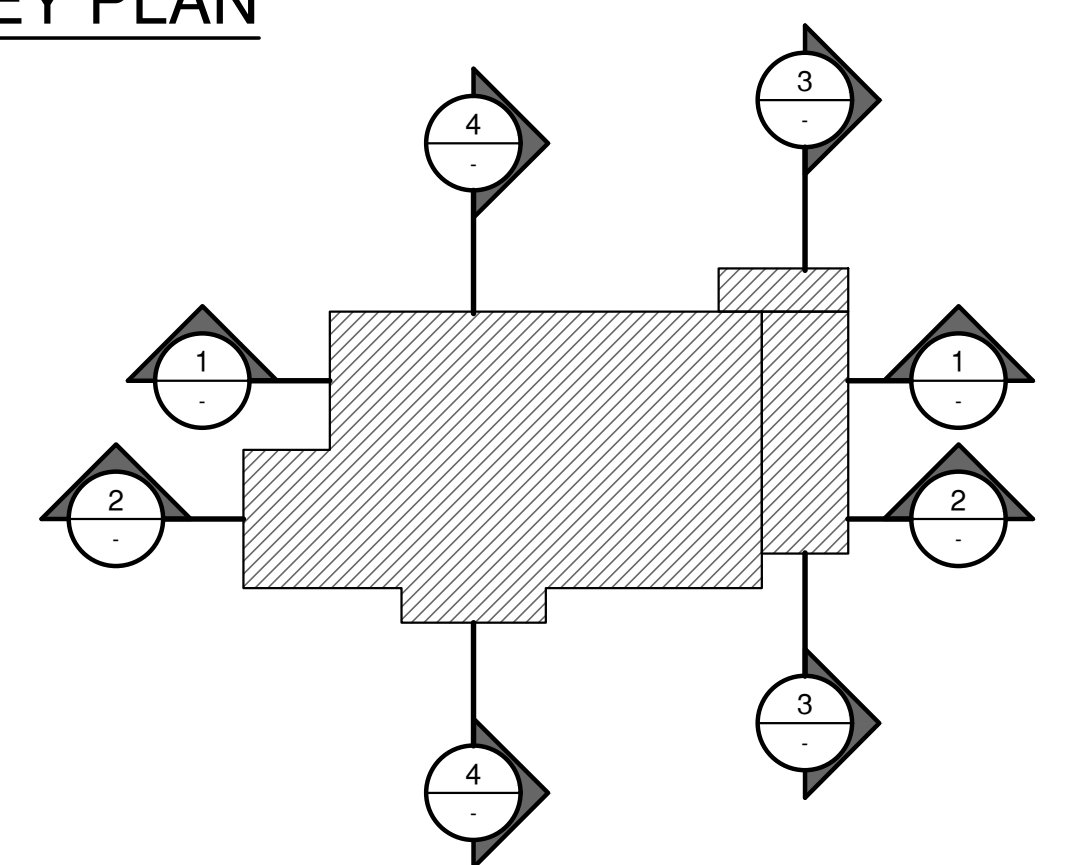


**BUILDING SECTION 4**

**KEYNOTES**

- 1 14' CONCRETE PUSHWALL W/ 12' LIMIT LINE
- 2 OVERHEAD COILING DOOR
- 3 METAL CANOPY
- 4 CONCRETE ABUSE WALL
- 5 RIGID FRAME COLUMN
- 6 RIGID FRAME BEAM
- 7 PEDESTRIAN DOOR - HOLLOW METAL
- 8 CONCRETE ON METAL DECK
- 9 PARAPET CAP
- 10 STEEL SHEET SLOPED COVER TYP.
- 11 PILE SUPPORTED SLAB FOUNDATION
- 12 STEEL PLATE HOPPER

**KEY PLAN**



**BUILDING SECTIONS CONCEPT B**  
**TRANSFER STATION**  
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**A6.2**

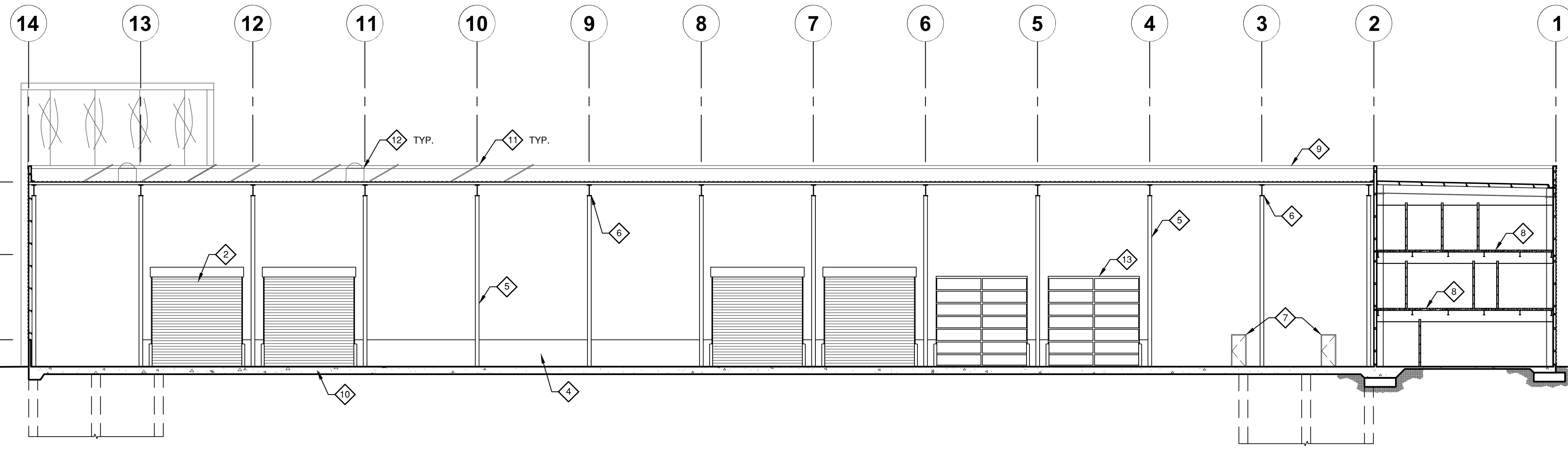


# **Exhibit 22**

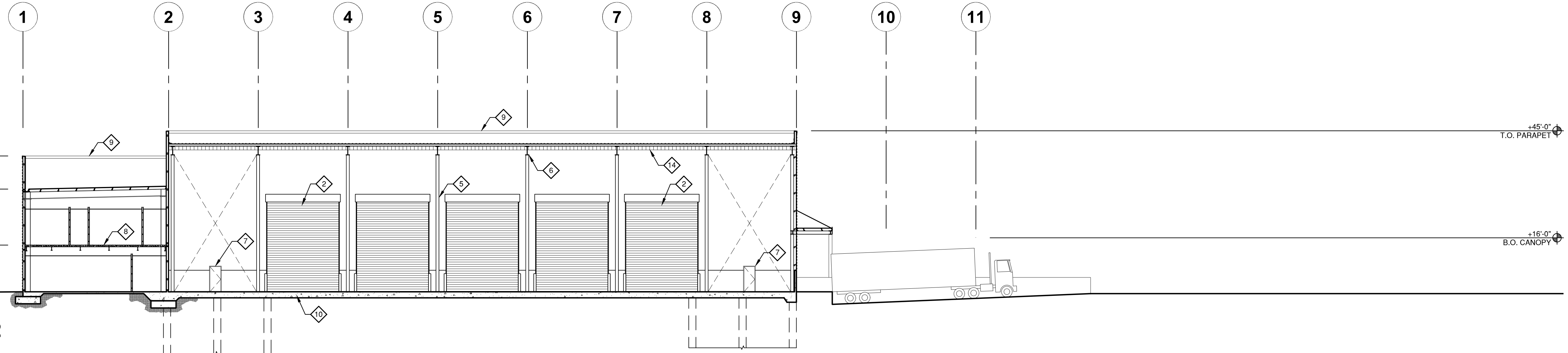
## **A6.3 BUILDING SECTIONS**

### **CONCEPT B – MRF**

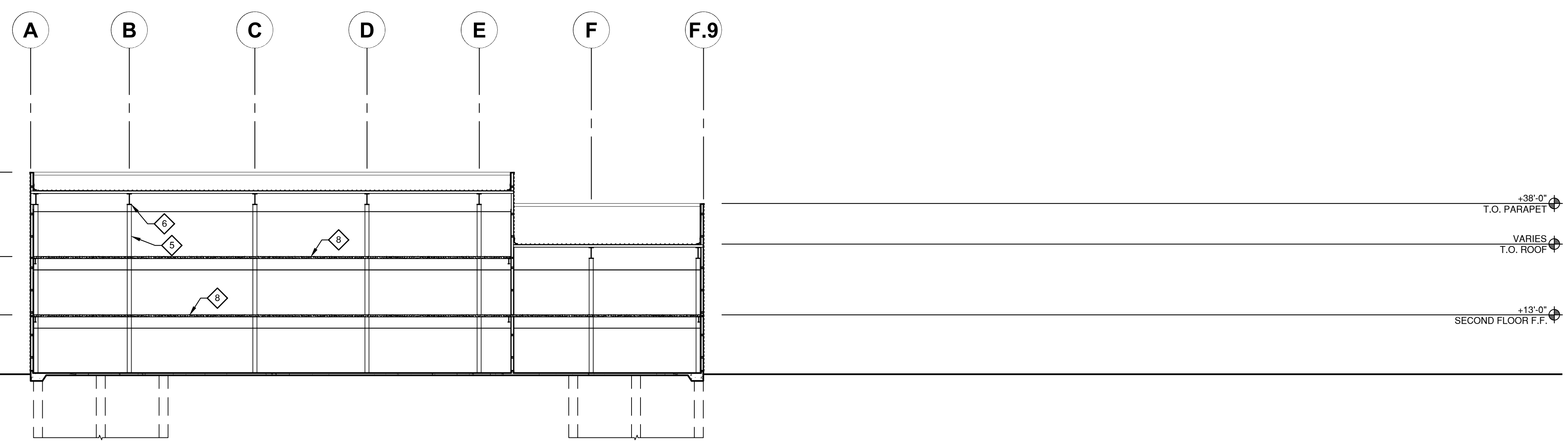




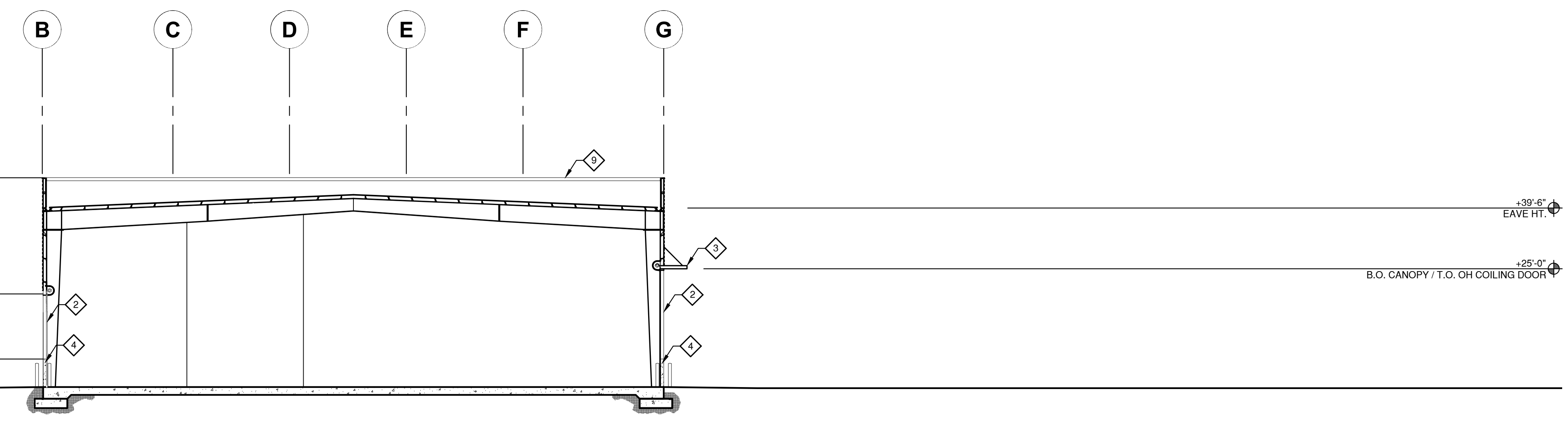
**BUILDING SECTION 1**



**BUILDING SECTION 2**



**BUILDING SECTION 3**

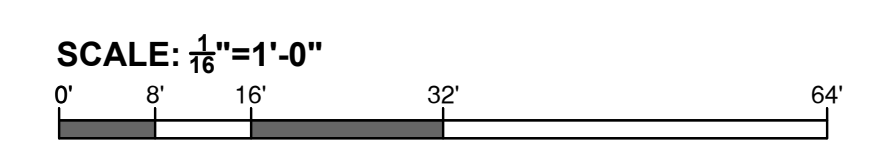
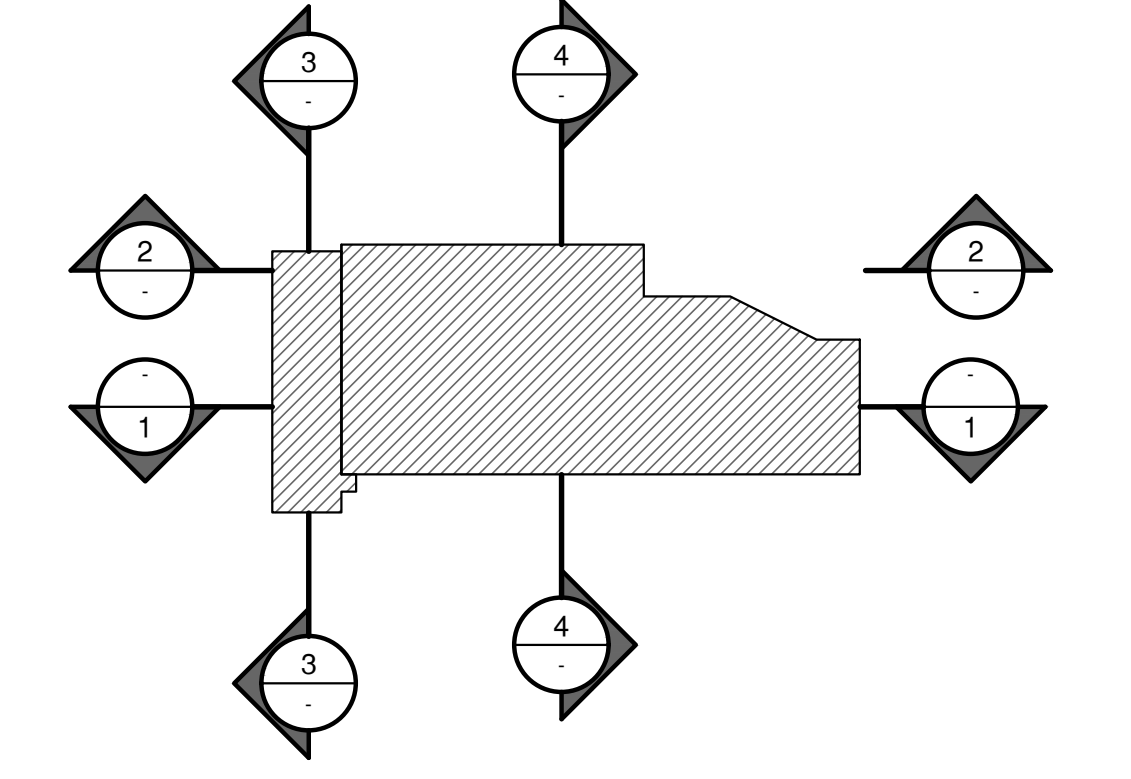


**BUILDING SECTION 4**

**KEYNOTES**

- 14' CONCRETE PUSHWALL W/ 12' LIMIT LINE
- OVERHEAD COILING DOOR
- METAL CANOPY
- CONCRETE ABUSE WALL
- RIGID FRAME COLUMN
- RIGID FRAME BEAM
- PEDESTRIAN DOOR- HOLLOW METAL
- CONCRETE ON METAL DECK
- PARAPET CAP
- PILE SUPPORTED SLAB FOUNDATION
- 4' x 6' PHOTOVOLTAIC PANELS TYP.
- 48" DIAMETER EXHAUST FAN, 26,000 CFM
- OVERHEAD SECTIONAL DOOR
- ROOF INSULATION W/ VINYL FACING

**KEY PLAN**



**BUILDING SECTIONS CONCEPT B**  
**MATERIAL RECOVERY FACILITY**  
**The City Of Berkeley**  
 Material Recovery Facility and Transfer Station  
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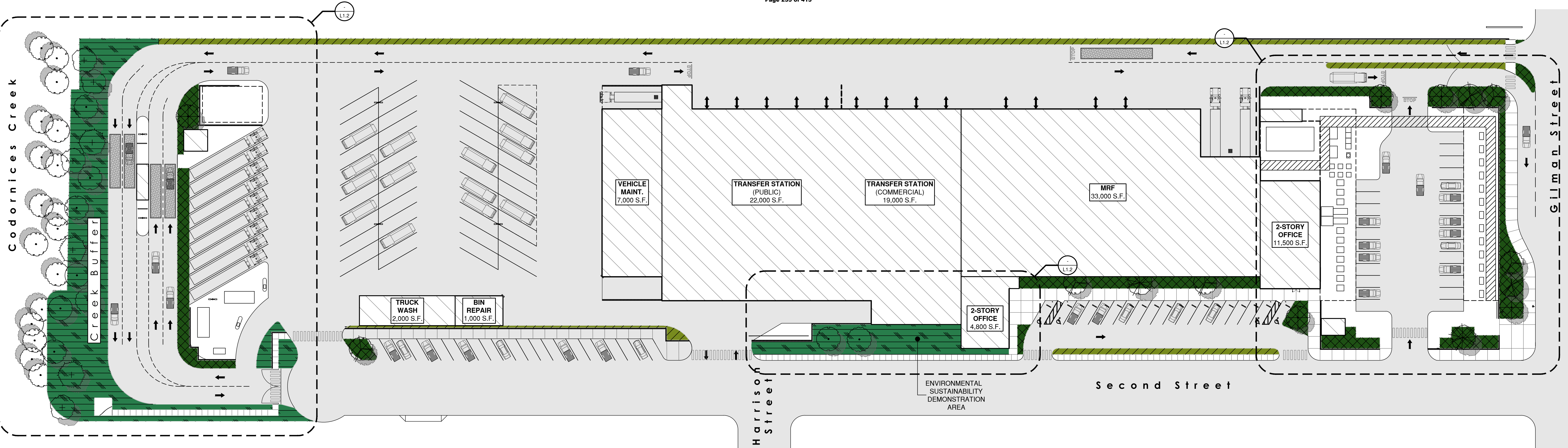
**A6.3**



# **Exhibit 23**

## **L1.1 LANDSCAPE SITE PLAN – CONCEPT A**





**CREEK LANDSCAPE PALETTE**

- AEsculus California
- BEtula Occidentalis
- PPlatanus Racemosa
- PPopulus Trichocarpa
- U Umbellularia California
- C Carex Pansa
- Ceanothus Thyrsiflorus
- Chondropetalum Tectorum
- F Festuca Rubra 'Molate'
- I Iris Douglasiana
- H Heteromeles Arbutifolia
- S Sambucus Racemosa
- C California Buckeye
- W Water Birch
- W Western Sycamore
- B Black Cottonwood
- C California Laurel
- S Sanddune Sedge
- B Blue Blossom
- C Cape Rush
- M Molate Fescue
- D Douglas Iris
- T Toyon
- R Red Elderberry

**ORNAMENTAL LANDSCAPE PALETTE**

- A Acer Circinatum
- A Arbutus Menziesii
- C Cercis Occidentalis
- G Ginkgo Biloba
- E Erigeron Glaucus
- A Arctostaphylos Uva-Ursi
- C Ceanothus Thyrsiflorus Var. Griseus
- C Cornus Sericea
- F Festuca Rubra 'Molate'
- I Iris Douglasiana
- M Muhlenbergia Rigens
- R Ribes Speciosum
- V Vine Maple
- M Madrone
- W Western Redbud
- M Maidenhair Tree
- B Beach Daisy
- K Kinnikinnick
- Y Yankee Point Ceanothus
- R Red Twig Dogwood
- M Molate Fescue
- D Douglas Iris
- D Deer Grass
- F Fuchsia Flowering Gooseberry

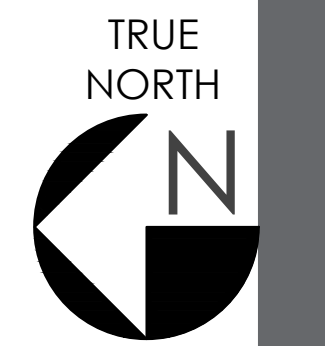
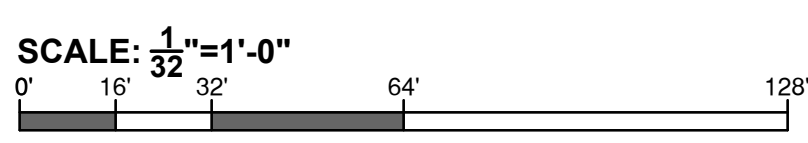
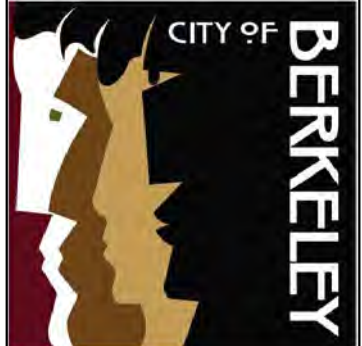
**PLANTER LANDSCAPE PALETTE**

- A Arctostaphylos Uva-Ursi
- B Bouteloua Gracilis 'Blonde Ambition'
- C Ceanothus Thyrsiflorus Var. Griseus
- R Ribes Speciosum
- K Kinnikinnick
- B Blue Grama
- Y Yankee Point Ceanothus
- F Fuchsia Flowering Gooseberry

**TREES**



**PLANTS**



CONCEPT A LANDSCAPE PLAN  
**The City Of Berkeley**  
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Job No. 5447-0  
 07.18.2019

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**L1.1**

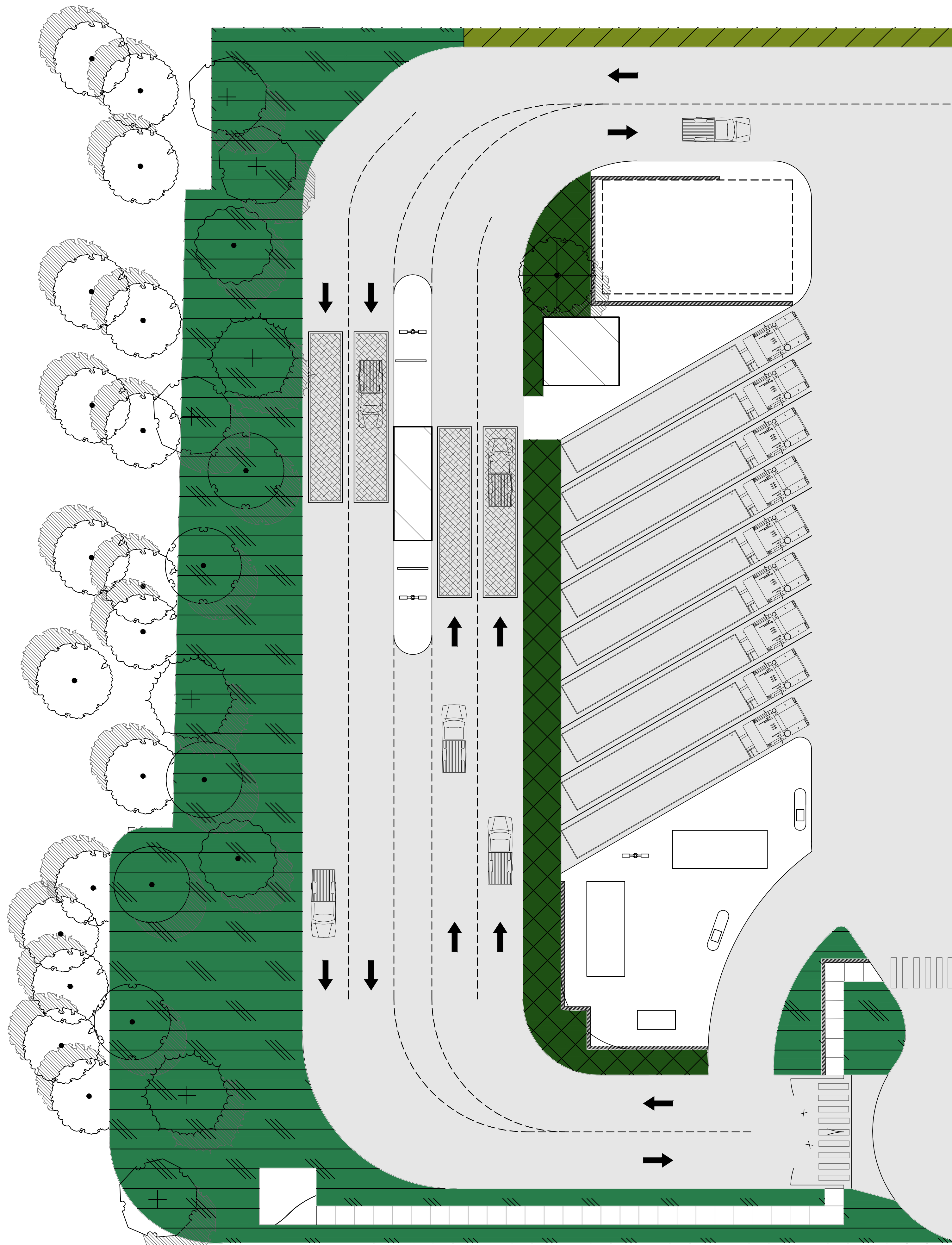




## **Exhibit 24**

# **L1.2 LANDSCAPE SITE PLAN – CONCEPT A – ENLARGED**





**CREEK LANDSCAPE PALETTE**

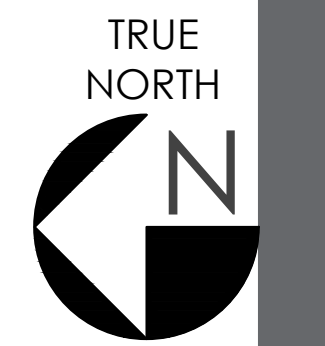
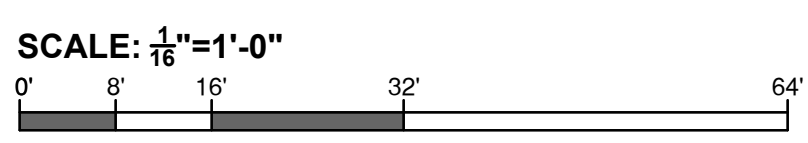
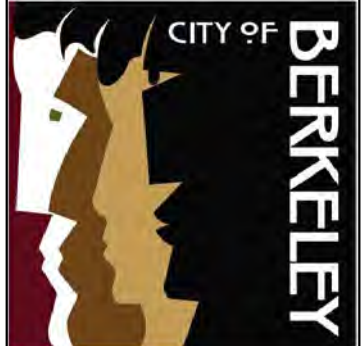
- AESCULUS CALIFORNICA
- BETULA OCCIDENTALIS
- PLATANUS RACEMOSA
- POPULUS TRICHOCARPA
- UMBELLULARIA CALIFORNICA
- CAREX PANSA
- CEANOTHUS THYRSIFLORUS
- CHONDROPETALUM TECTORUM
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASIANA
- HETEROMELES ARBUTIFOLIA
- SAMBUCUS RACEMOSA
- CALIFORNIA BUCKEYE
- WATER BIRCH
- WESTERN SYCAMORE
- BLACK COTTONWOOD
- CALIFORNIA LAUREL
- SANDDUNE SEDGE
- BLUE BLOSSOM
- CAPE RUSH
- MOLATE FESCUE
- DOUGLAS IRIS
- TOYON
- RED ELDERBERRY

**ORNAMENTAL LANDSCAPE PALETTE**

- ACER CIRCINATUM
- ARBUTUS MENZIESII
- CERCIS OCCIDENTALIS
- GINKGO BILOBA
- ERIGERON GLAUCUS
- ARCTOSTAPHYLOS UVA-URSI
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- CORNUS SERICEA
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASIANA
- MUHLENBERGIA RIGENS
- RIBES SPECIOSUM
- VINE MAPLE
- MADRONE
- WESTERN REDBUD
- MAIDENHAIR TREE
- BEACH DAISY
- KINNIKINICK
- YANKEE POINT CEANOTHUS
- CORNUS SERICEA
- MOLATE FESCUE
- DOUGLAS IRIS
- DEER GRASS
- FUCHSIA FLOWERING GOOSEBERRY

**PLANTER LANDSCAPE PALETTE**

- ARCTOSTAPHYLOS UVA-URSI
- BOUTELOUA GRACILIS 'BLONDE AMBITION'
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- RIBES SPECIOSUM
- KINNIKINICK
- BLUE GRAMA
- YANKEE POINT CEANOTHUS
- FUCHSIA FLOWERING GOOSEBERRY



CONCEPT A ENLARGED LANDSCAPE PLAN  
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**L1.2**

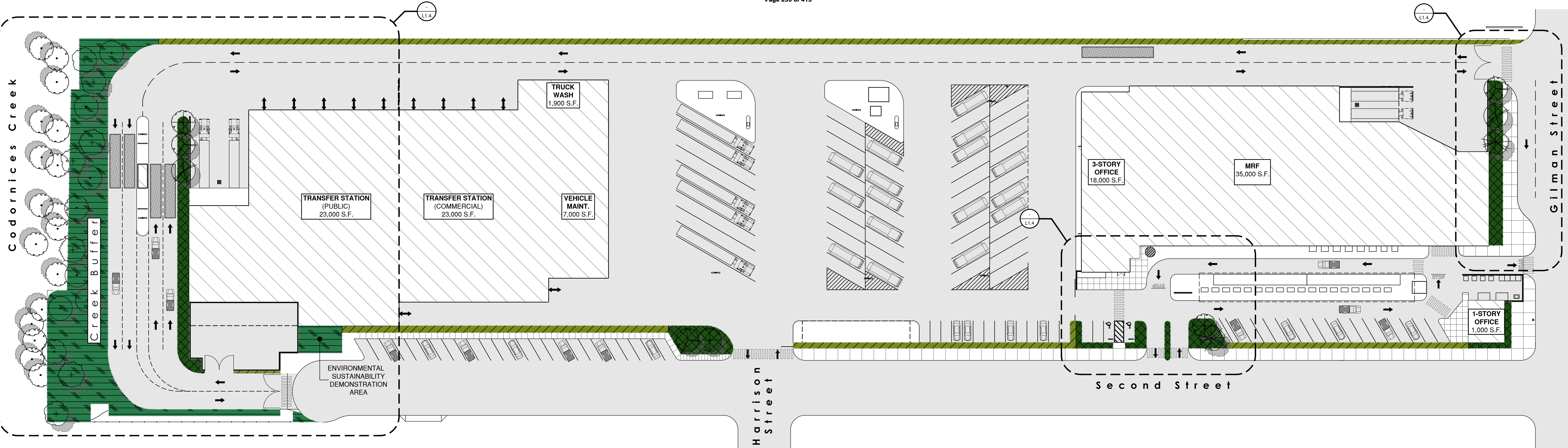




# **Exhibit 25**

## **L1.3 LANDSCAPE SITE PLAN – CONCEPT B**





**CREEK LANDSCAPE PALETTE**

- AESCLUS CALIFORNICA
- BETULA OCCIDENTALIS
- PLATANUS RACEMOSA
- POPULUS TRICHOCARPA
- UMBELLULARIA CALIFORNICA
- CAREX PANSA
- CEANOTHUS THYRSIFLORUS
- CHONDROPETALUM TECTORUM
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASIANA
- HETEROMELES ARBUTIFOLIA
- SAMBUCUS RACEMOSA
- CALIFORNIA BUCKEYE
- WATER BIRCH
- WESTERN SYCAMORE
- BLACK COTTONWOOD
- CALIFORNIA LAUREL
- SANDDUNE SEDGE
- BLUE BLOSSOM
- CAPE RUSH
- MOLATE FESCUE
- DOUGLAS IRIS
- TOYON
- RED ELDERBERRY

**ORNAMENTAL LANDSCAPE PALETTE**

- ACER CIRCINATUM
- ARBUTUS MENZIESII
- CERCIS OCCIDENTALIS
- GINKGO BILOBA
- ERIGERON GLAUCUS
- ARBUTUS MENZIESII
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- CORNUS SERICEA
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASIANA
- MUHLENBERGIA RIGENS
- RIBES SPECIOSUM
- VINE MAPLE
- MADRONE
- WESTERN REDBUD
- MAIDENHAIR TREE
- BEACH DAISY
- KINNIKINICK
- YANKEE POINT CEANOTHUS
- RED TWIG DOGWOOD
- MOLATE FESCUE
- DOUGLAS IRIS
- DEER GRASS
- FUCHSIA FLOWERING GOOSEBERRY

**PLANTER LANDSCAPE PALETTE**

- ARCTOSTAPHYLOS UVA-URSI
- BOUTELOUA GRACILIS 'BLONDE AMBITION'
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- RIBES SPECIOSUM
- KINNIKINICK
- BLUE GRAMA
- YANKEE POINT CEANOTHUS
- FUCHSIA FLOWERING GOOSEBERRY

**TREES**

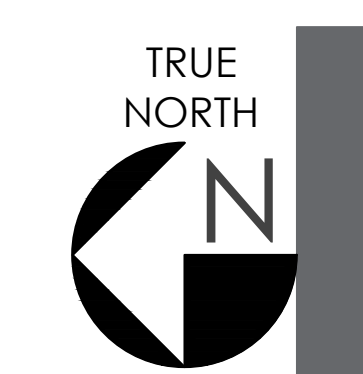
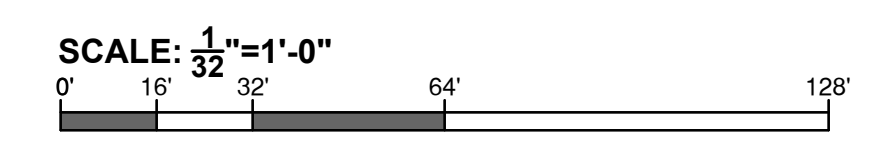
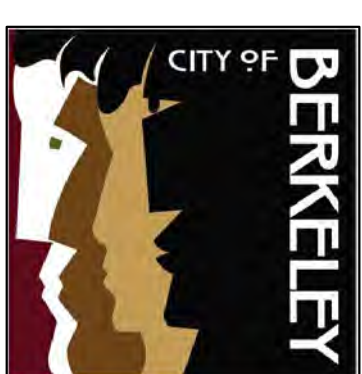


ACER CIRCINATUM VINE MAPLE  
 AESCLUS CALIFORNICA CALIFORNIA BUCKEYE  
 ARBUTUS MENZIESII MADRONE  
 BETULA OCCIDENTALIS WATER BIRCH  
 CERCIS OCCIDENTALIS WESTERN REDBUD  
 GINKGO BILOBA MAIDENHAIR TREE  
 PLATANUS RACEMOSA WESTERN SYCAMORE  
 POPULUS TRICHOCARPA BLACK COTTONWOOD  
 UMBELLULARIA CALIFORNICA CALIFORNIA LAUREL

**PLANTS**



ARCTOSTAPHYLOS UVA-URSI KINNIKINICK  
 BOUTELOUA GRACILIS BLUE GRAMA  
 CAREX PANSA SANDDUNE SEDGE  
 CEANOTHUS THYRSIFLORUS BLUE BLOSSOM  
 CEANOTHUS T. VAR. GRISEUS YANKEE POINT CEANOTHUS  
 CHONDROPETALUM TECTORUM CAPE RUSH  
 CORNUS SERICEA RED TWIG DOGWOOD  
 ERIGERON GLAUCUS BEACH DAISY  
 FESTUCA RUBRA 'MOLATE' MOLATE FESCUE  
 IRIS DOUGLASIANA DOUGLAS IRIS  
 HETEROMELES ARBUTIFOLIA TOYON  
 MUHLENBERGIA RIGENS DEER GRASS  
 RIBES SPECIOSUM FUCHSIA FLOWERING GOOSEBERRY  
 SAMBUCUS RACEMOSA RED ELDERBERRY



CONCEPT B LANDSCAPE PLAN  
**The City Of Berkeley**  
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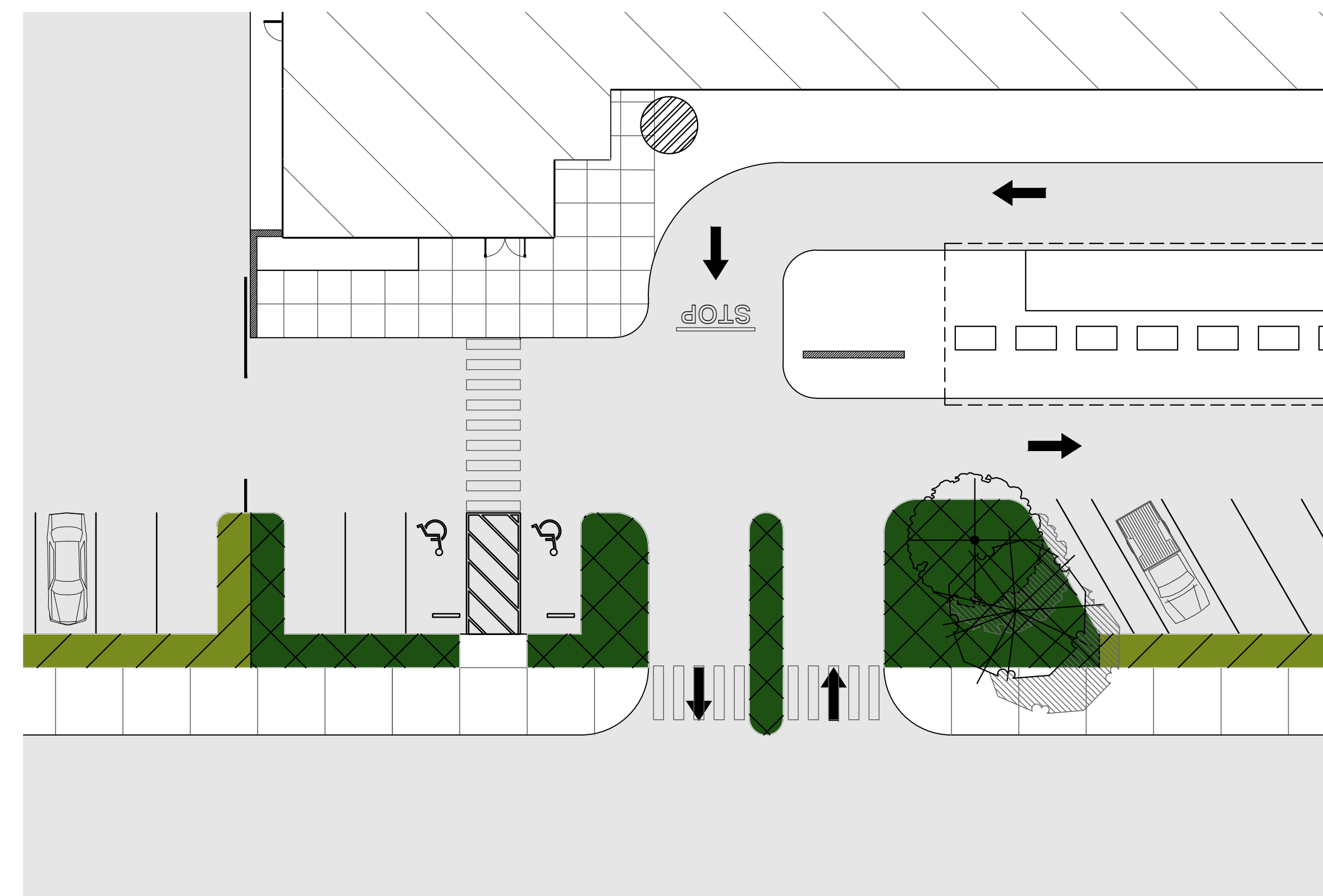
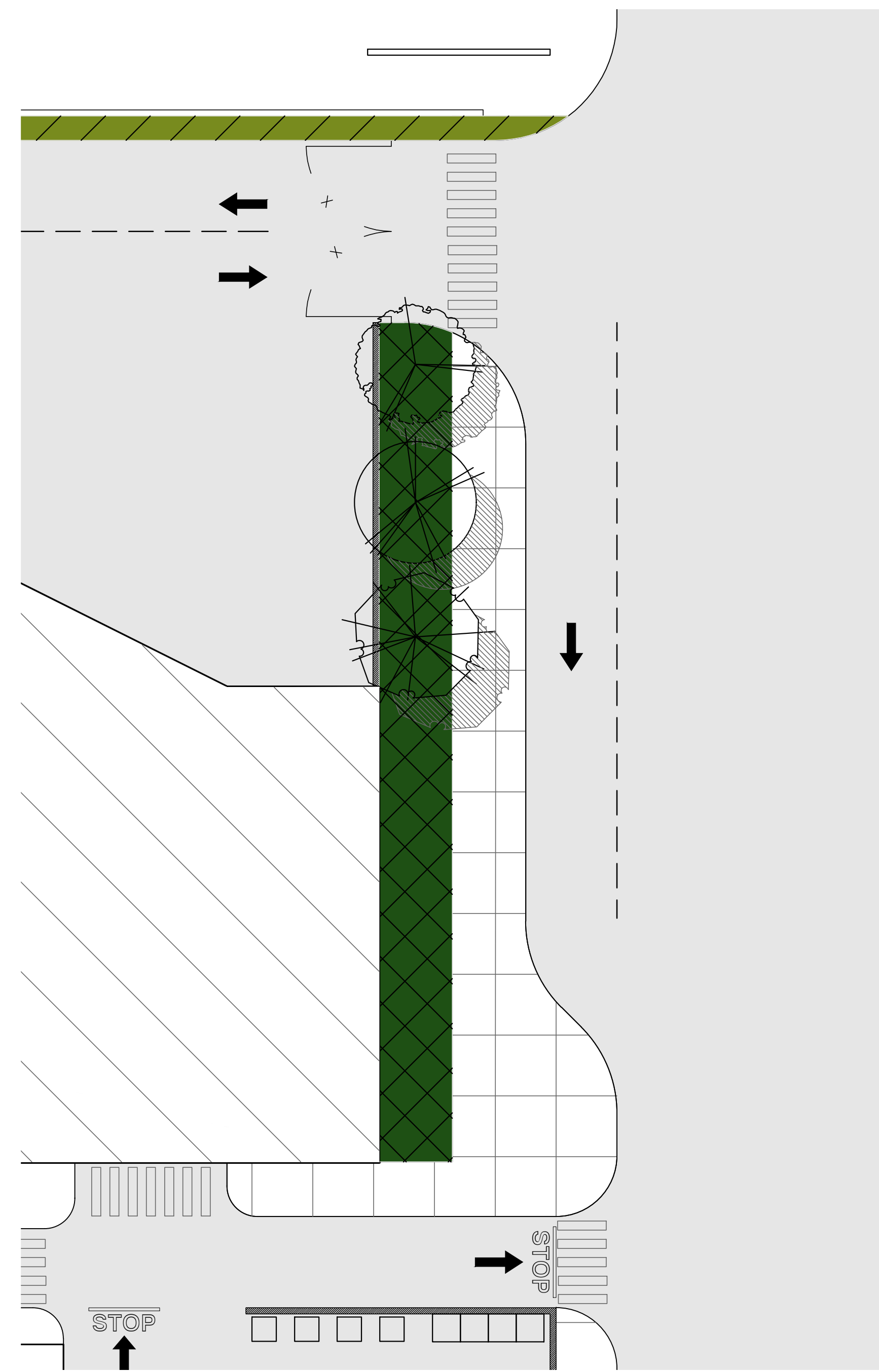
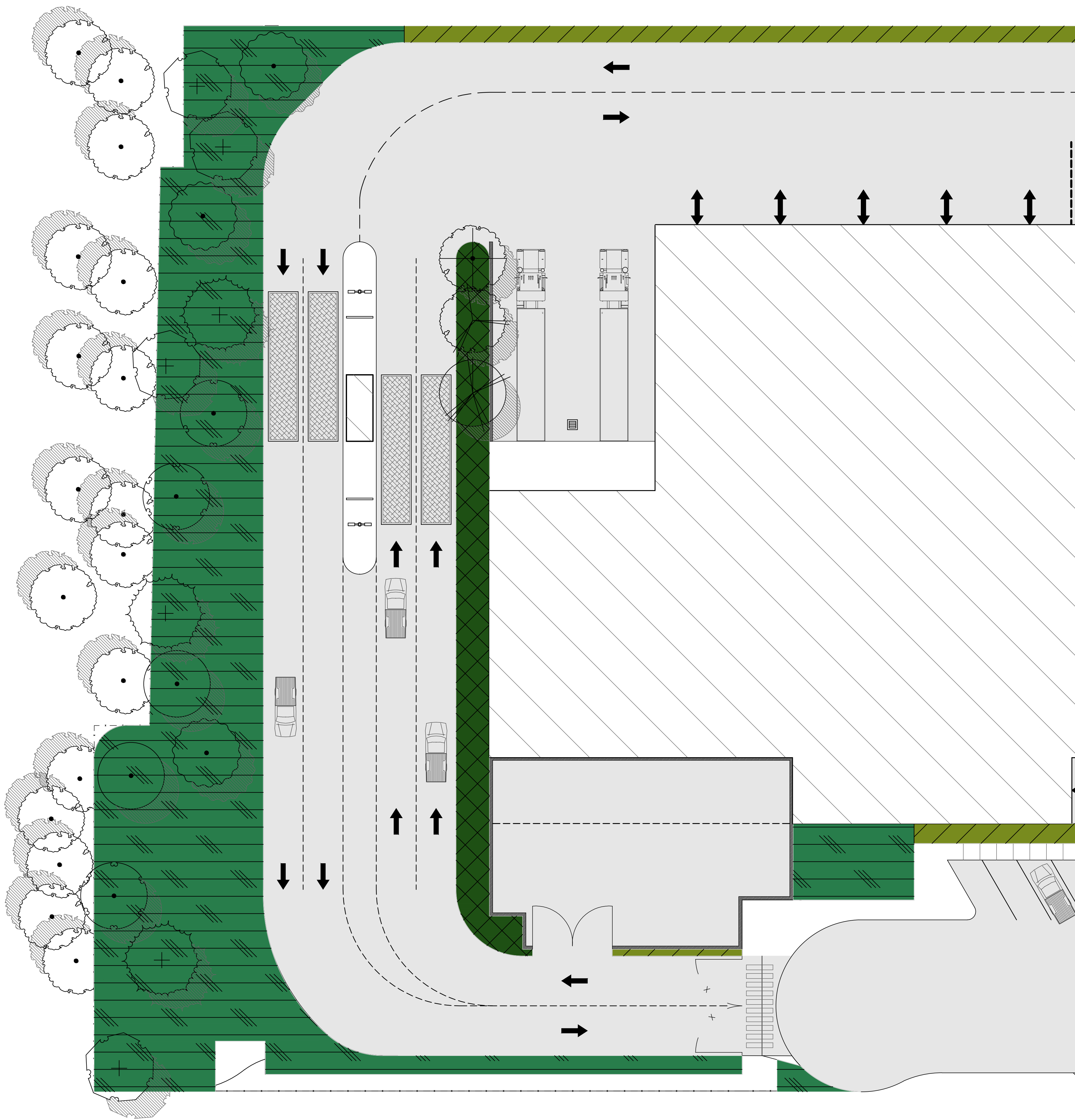
**L1.3**





## **Exhibit 26**

# **L1.4 LANDSCAPE SITE PLAN – CONCEPT B – ENLARGED**



**CREEK LANDSCAPE PALETTE**

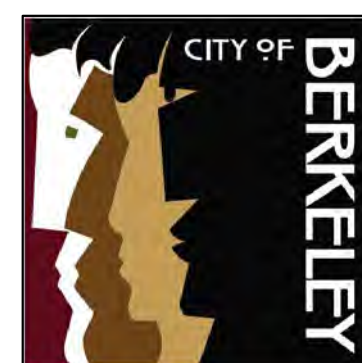
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- BETULA OCCIDENTALIS
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- CAREX PANSA
- CEANOTHUS THYRSIFLORUS
- CHONDROPETALUM TECTORUM
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASSIANA
- HETEROMELES ARBUTIFOLIA
- SAMBUCUS RACEMOSA
- CALIFORNIA BUCKEYE
- WATER BIRCH
- WESTERN SYCAMORE
- BLACK COTTONWOOD
- CALIFORNIA LAUREL
- SANDDUNE SEDGE
- BLUE BLOSSOM
- CAPE RUSH
- MOLATE FESCUE
- DOUGLAS IRIS
- TOYON
- RED ELDERBERRY

**ORNAMENTAL LANDSCAPE PALETTE**

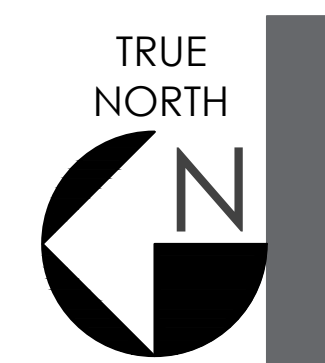
- ACER CIRCINATUM
- ARBUTUS MENZIESII
- CERCIS OCCIDENTALIS
- GINKGO BILOBA
- ERIGERON GLAUCUS
- ARCTOSTAPHYLOS UVA-URSI
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- CORNUS SERICEA
- FESTUCA RUBRA 'MOLATE'
- IRIS DOUGLASSIANA
- MUHLENBERGIA RIGENS
- RIBES SPECIOSUM
- VINE MAPLE
- MADRONE
- WESTERN REDBUD
- MAIDENHAIR TREE
- BEACH DAISY
- KINNIKINICK
- YANKEE POINT CEANOTHUS
- RED TWIG DOGWOOD
- MOLATE FESCUE
- DOUGLAS IRIS
- DEER GRASS
- FUCHSIA FLOWERING GOOSEBERRY

**PLANTER LANDSCAPE PALETTE**

- ARCTOSTAPHYLOS UVA-URSI
- BOUTELOUA GRACILIS 'BLONDE AMBITION'
- CEANOTHUS THYRSIFLORUS VAR. GRISEUS
- RIBES SPECIOSUM
- KINNIKINICK
- BLUE GRAMA
- YANKEE POINT CEANOTHUS
- FUCHSIA FLOWERING GOOSEBERRY



SCALE: 1/8"=1'-0"



CONCEPT B ENLARGED LANDSCAPE PLAN

**The City Of Berkeley**  
 Material Recovery Facility and Transfer Station  
 1201 Second Street, Berkeley, CA 94710

Job No. 5447-0  
 07.18.2019

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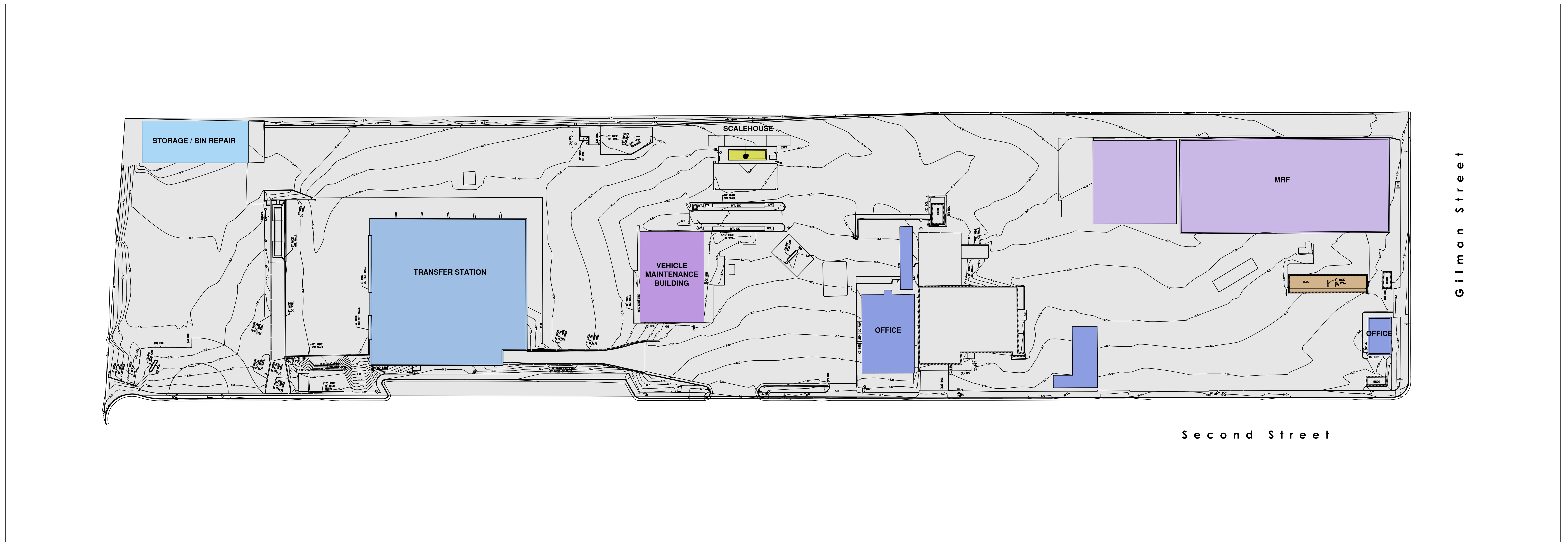
**L1.4**



# Exhibit 27

## EXISTING SITE PLAN

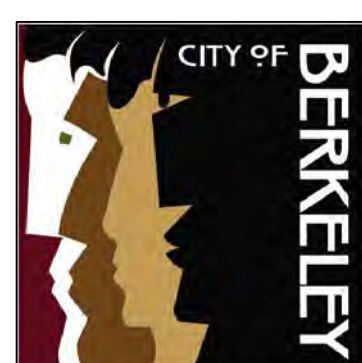




**SITE SUMMARY**

SITE AREA:	330,000 S.F.
<b>BUILDING AREAS:</b>	
TRANSFER STATION:	20,700 S.F.
MATERIAL RECOVERY FACILITY:	18,000 S.F.
VEHICLE MAINTENANCE BUILDING:	5,200 S.F.
TRUCK WASH BUILDING:	2,000 S.F.
BIN REPAIR:	4,000 S.F.
OFFICE :	800 S.F.
OFFICE :	3,800 S.F.
<b>TOTAL:</b>	<b>52,700 S.F.</b>

**EXISTING SITE**



**The City Of Berkeley**  
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 07.30.2019

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# **Exhibit 28**

## **LEED Checklist**



**LEED v4.1 for BD+C: New Construction and Major Renovation**  
Project Checklist

Project Name: Berkeley Material Recovery Facility and Transfer Station  
Date:

Y ? N

1			Credit	Integrative Process	1
---	--	--	--------	---------------------	---

5	3	24	Location and Transportation		16
		16	Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
	1	1	Credit	High Priority Site	2
2	1	2	Credit	Surrounding Density and Diverse Uses	5
		5	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

3	4	3	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
		2	Credit	Protect or Restore Habitat	2
		1	Credit	Open Space	1
1	2		Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1

7	1	3	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
4	1	1	Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

23	6	4	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5		1	Credit	Enhanced Commissioning	6
11	4	3	Credit	Optimize Energy Performance	18
1			Credit	Advanced Energy Metering	1
	2		Credit	Grid Harmonization - (demand response program)	2
5			Credit	Renewable Energy Production	5
1			Credit	Enhanced Refrigerant Management	1

7	4	2	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	1	2	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

7	6	3	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1	1		Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
	2		Credit	Indoor Air Quality Assessment	2
		1	Credit	Thermal Comfort	1
	1	1	Credit	Interior Lighting	2
2	1		Credit	Daylight	3
	1		Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

4	2	0	Innovation		6
3	2		Credit	Innovation - Green Building Education	5
1			Credit	LEED Accredited Professional	1

4	0	0	Regional Priority		4
1			Credit	Regional Priority: Optimize energy performance - required threshold 10 points	1
1			Credit	Regional Priority: Outdoor Water use - no Permanent Irrigation System	1
1			Credit	Regional Priority: Indoor Water Use Reduction - 40% reduction	1
1			Credit	Regional Priority: Building Product disclosure & optimization - raw materials	1

<b>61</b>	<b>26</b>	<b>39</b>	<b>TOTALS</b>	<b>Possible Points: 110</b>
-----------	-----------	-----------	---------------	-----------------------------

**Certified:** 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110





# **Exhibit 29**

## **Berkeley Listening Session Summary**



# Zero Waste Transfer Station Listening Session Summary

**Key Take-Aways:**

- Form follows policy
- Highest and best use
- Reduce overall generation
- Facility needs to accommodate multiple user types

**Information Needs:**

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

**Desired Features:**

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 El Cerrito. 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 (like at El Cerrito).
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. Plus catwalk through the facility for tours.

Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.
Break room, 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 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	<ul style="list-style-type: none"> <li>■ Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>■ Maker area</li> <li>■ Social services for vulnerable populations</li> <li>■ Needle exchange</li> <li>■ Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>■ Food pantry. Landscaping</li> <li>■ Sculpture garden</li> <li>■ Compost demonstration</li> </ul>





# **Exhibit 30**

## **Berkeley Transfer Station Public Meeting Notes**



# Zero Waste Transfer Station Public Meeting Notes

## Fall Listening Sessions

- November 7<sup>th</sup> 1:30 p.m. - 3:30 p.m.  
Berkeley Central Library, 3rd Floor Community Room, 2090 Kittredge Street
- November 28<sup>th</sup> 6 p.m. - 9 p.m.  
South Berkeley Senior Center, 2939 Ellis Street

## January Charrette

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

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

## Spring Workshops

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



# Zero Waste Transfer Station Listening Session Notes – November 7, 2018

## 16 attendees:

- 7 Interested Citizens
- 3 Public Works Commissioners
- 2 Public Works Staff
- 2 City Contractors
- 1 Zero Waste Commissioner
- 1 Student

## Comments during discussion:

- Concerned about runoff from the site. Current site has highest PCB levels in the Bay Area. The current site floods.
- Supports El Cerrito-style drop off center. However, people don't like backing up into parking spaces at El Cerrito.
- Concerned about the functionality of the site during the construction. Would it be more efficient to move the entire operation off-site to other City properties during construction. We discussed that it is very difficult to permit sites for transfer (even temporarily).
- Suggested that the City consider changes the future composition and tonnage levels generated in Berkeley.
- We should explore what the City can do legislatively to reduce the number of tons generated.
- The City needs to address encampments (and other dumping).
- The City needs to address materials that can't be recycled or composted and must be addressed upstream.
- The facility should accept HHW and virtually everything else.
- Could the City enforce recycling and composting requirements through employing garbage inspectors/code enforcement?

## Specific Ideas for improvements at the transfer station:

- Source separation is key to clean, green streams
- The City should charge different rates for different materials, landfill last stop
- There should be a lift-able platform at the drop-off location in the transfer station, so self-haulers don't toss and break stuff
- Make it a one-stop shop
- The design needs to accommodate all types of users: pedestrians, cars, pickups/trailers, front loaders, waste trucks. All carry different materials and affect traffic flow.



- To accommodate different types of generators, there may need to be multiple places for dropping off certain types of materials (e.g., cardboard at drop-off, cardboard at buyback, cardboard at C&D).
- The City might want to consider making the site regional facility in order to maximize revenue
- Support makers/repair community to expand commerce in the city. This also brings regular people (including artists) to site which is good for education.
- El Cerrito is well done and it's a destination for visitors. Styrofoam densifier is a great draw at El Cerrito.
- Berkeley is difficult to use: who to pay, hazardous materials being dumped, where to go, long lines.
- Would like to see one big roof for rainwater catchment and storage for delayed release, sawtooth roof for natural light and solar. LEED certified. Net Zero energy.
- The City should partner with UC Berkeley to address items dumped on street during move out. New dorms have space for exchange on move in day and food waste diversion.
- Can the City utilize rail tracks at site (as alternative to long-haul trucks)?
- The City should incorporate the planning process into the City's Vision 2050 Plan.
- Will the footprint for the redesign expand onto adjacent plots or remote sites, such as the Pacific Steel?

**Additional written comments:**

- Keep dumping rates low for reuse and recycling to incentivize use.
- Fees should be lower for Berkeley residents/home owners/local contractors.
- Measure and improve access for Urban Ore's salvage and reuse operations.
- Expand role of Urban Ore to take advantage of their big site.
- Integrate self-haulers/home owners who already pay the City's Zero Waste tax assessment.
- Make the space cool for artists and re-users.
- Look into Pacific Steel site for expansion.
- Require supermarkets to accept buyback centers (to reduce impact of buyback operation at the transfer station).
- Set up transfer operation so that items can be placed directly into bins or transfer trucks.
- Use train tracks adjacent to transfer station.
- Expand the footprint of the Zero Waste facility for non-garbage services.
- Expand HHW drop-off.
- The transfer station should include a community center for reuse (like El Cerrito).
- Have a packaging materials and cardboard box reuse function.
- Keep streams separate (home owners, haulers, C&D).
- Make transfer station a destination (as in El Cerrito) rather than a hassle (as Berkeley is currently).
- Add meeting space, seed bank, medicine drop off spot, etc.
- Add a spot where wood and organic mulch can be picked up all through the month (rather than only once per month as currently offered at the Corp Yard).
- Include visual aids – a map where different materials can be dropped off.
- Provide educational opportunities for students and residents to find out more about waste stream, transparency, tours.

- The problem with waste is that people avoid knowing about it. This place could do so much great education. Make it transparent and friendly. A place for changing exhibitions.
- Include an artist-in-residence program (like at Recology and El Cerrito).
- Expand small commerce, reuse/repair, artists, makers, corks, household ceramics, on-site repair.
- Have a Zero Waste home demonstration site (like the old Integral Urban House).



# Zero Waste Transfer Station Listening Session Notes – November 28, 2018

15+ attendees:

- 9 Interested Citizens
- 2 Zero Waste Commissioners
- 3 Service Providers (EBMUD, Worm Compost, Landscaper)
- 1 City Contractor

## Questions during presentation

- We will ever have C&D on-site?
- Can we frame the necessities of why this has to be done?
- Attendees: Urban ore employee, recycling center user, zero waste commissioner, business owner to make compost into protein, interested community member, East Bay Mud interested in commercial source separating organics, facilities operator for high school
- Who does the facility operate for? University/commercial not included
- Is it 420 or 560 tons per day (as Greg said)? Current use is 420, permitted for 560
- Should be open on Sunday! 7 days a week
- How many tons a week are compost? 6000 tons a year (need metrics)
- Is this compost combined or mixed? Yard trimmings co-collected with food scraps
- Is residential co-mingled? Yes
- Commercial food scraps are easier to handle than residential, less contaminants
- What are "white/brown goods"? Electronics and appliances
- Big pile of trash in slide is also resources (to Urban Ore)
- Paying \$4 a month is fair for using El Cerrito center (even from Berkeley residents), they would pay for Berkeley
- What is the scale on the Davis Street station? How many acres? How many is Berkeley?
- Can anybody use the Davis Street station? Yes
- Do the Artists in Residence live on the facility? No. They have permission to scavenge for 3 months. Then there is a wine and cheese reception.
- The acreage of other sites will be on the notes
- The Blue Line Transfer Station collects carpets for recycling

## Specific questions and ideas for improvements

- Electronic queue monitoring system
- Maddening for a user (using a truck) as of right now. Materials should have a flow for drop off. It should be the reverse of it is right now. Covering and tying down truck multiple times is frustrating. Multiple scales could be a bottle neck.



- Is the acreage big enough for the scale we want?
- Is the street shared with other users?
- El Cerrito is good at utilizing their small space
- What is the value of processing on site?
- The processing lines are getting bigger and bigger. If this facility is preventing cross contamination, then that is its job, rather than just crushing
- Matching revenue bonds as a way to process
- Relations between the CCC and the transfer station? 20 years ago, CCC was their own operation, and were protective over their space
- Circulation problem: You have to turn right at storage place, or turn left only at certain hours.
- New plan to make a counter clockwise circle/roundabout – good idea, but doesn't solve issue of going through station
- New figuration for consumer (in Berkeley) – want normal people to use the transfer station – good idea
- Potential synergy, no separate entrances and exits
- How do we operate with El Cerrito? Is Berkeley a replacement, or can we work together?
- El Cerrito is far away and inconvenient, and can't take much more stuff
- People don't know how to use these facilities. Want to make a facility that is outreach for the community and is practical
- What is aspect of CCC's dollar value, and what percent of this dollar value is regular consumers?
- It is easier to move our stuff and is marketable, but there is not enough of it (doesn't move the market)
- What is the cost of scavenging? What would be the impact of no scavenging on the site?
- Curbside vs. buy back tons data
- Paper used to be the main money maker, but not anymore
- Wish list: Berkeley kids can go on tours, art on site, food scraps made into animal feed for sale, EV charging for electric vehicles, encouraging workers to bike, free or reduced price meals (referral for community), social services for buy back center, create business opportunities with University, drones delivering things in the future – space for this? Utilizing air space/building vertically, solar panels,
  - Modular construction – a facility that can do more in the future. If everything is in a cable tray and you can add more later
  - Low-income creative jobs where people pull stuff out at dump: Urban Ore is this!
- Outreach into education moves behavior of adults – motivation is difficult
- Show students what happens to the stuff that you sort incorrectly
- Maker space and artist in residence program
- Commercial compost gets transferred 70 miles to get processed. Energy production and displacement of fossil fuels is more important than compost – work with East Bay Mud to do this (only move 6 miles). We need contamination removal. Convert compost into gas lines back to Berkeley
- Martinez has a grinder, takes food waste from Contra Costa County. Berkeley should work together in this
- Cleaner burning natural gas vehicles are available today, while large electric vehicles are not yet
- Food waste is very digestible. 80-90% turns into gas. The rest is hauled away
- Potentially segregating digesters by waste water and food

- Urban Ore wants to incentivize source separating. Want more categories of materials, price will vary depending on markets
- People tossing things off their truck and destroying them. Solution: Have electric lift gates to adjust to truck heights to make it easier to offload
- No financial incentive to let people (scavengers) take stuff
- No need for scales for recycling
- People who want to dump and run vs. people who want to sort
- Ideal: people sort your materials for you
- No one will take flat glass, particularly architectural samples
- Urban Ore's design ideas should be utilized
- Berkeley right now is inflexible, needs to be flexible
- Integrate with City's Vision 2050 project



# Zero Waste Transfer Station Listening Session Notes – December 1, 2018

17+ attendees:

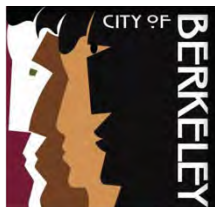
- 4 Berkeley residents
- 2 Albany residents
- 1 San Jose resident
- 2 former Zero Waste commissioners
- 4 City contractors
- 1 NGOs (Transition Berkeley)
- 1 reporter (Berkeleyside)
- 2 service providers (architect, consultant)

## Questions and comments

- Wants to no longer have to sign health waivers to play soccer downwind.
- Wants outreach as to what the transfer station does, public doesn't know.
- Several called the transfer station a dump
- Current layout is confusing.
- Current design allows wind to blow through and blow dust to soccer field. Are misters working? (Yes)
- Date of charette? Mid-January
- Who will be at charette? Project team, all public
- Reuse and repair industry is a missing stakeholder.
- Goal is not to have a transfer station at all (because we have no discarded materials).
- Urban ore is "supply-driven retail"
- Water reclamation: city uses non-potable water from elsewhere. Collect rainwater on site.
- Include photovoltaics
- Should be friendly to casual customers
- Cultural/resource survey needed
- How small can we be? Be small so other uses can use the surplus space
- Don't subsidize neighboring communities (e.g., traffic) Don't make it cheap.
- Bayshore recycled water project is a pipeline for reused water. Very close to site
- Education and awareness needs a designated space. Transfer station should be a hub for education.
- Priorities needs "health and safety of workers, visitors, neighbors" added
- Be flexible in design for changes in future
- Design for 10 years, 20 years out uses



- Use terms like "lumber" instead of "wood"
- ISO 50000 series relates to operations and efficiency. Facility should be efficient.
- Integrate Fire safety and emergency response
- Likes tours for residents/students like at Shoreway
- Parking on-site is an issue
- Near Hayward fault. Will we have capacity after disaster for debris?
- Should be able to bring everything reusable to site
- Develop multiple revenue streams: discourage out of Berkeley loads, encourage source separation, selling local repaired goods,
- Include a catwalk designed for visitors/kids
- Urban Ore has a history of recycling in Berkeley: send to all participants
- City has a goal of reducing generation
- Facility should have the lowest carbon footprint possible
- Food is volatile so consider digesting on site
- Make it more convenient to recycle/etc. than dispose
- Design should allow for flexibility as technologies and economy evolve. Mixed waste processing?
- Think long-term, once there is no "trash" – just recyclable and compostable materials
- El Cerrito is easy to use, so people use it.
- Need bike access, transit access, pedestrian access.
- You won't be able to fit everything everybody wants on the site. So no processing and no sales.
- Relocate vehicle storage and maintenance (this will cost money)
- Need more area for drop-offs, maybe two booths for weighing, truck traffic should be highest priority
- Need to prioritize options because can't fit everything
- Convenient, less expensive self-hauling prevents illegal dumping
- Should do some processing in our city. It's our problem. Off-site, we should support community-based organics processing throughout the City.
- No space for "processing", just sorting and aggregating. Should transfer materials to larger operations.
- Integrate rate study into charette. Should have 12 categories for rates.
- There is no room for C&D MRF.
- Indoor storage is a big concern
- Where should the other processing and redistribution happen?
- Urban Ore receives 50-100 loads per day that don't have to go to the transfer station
- More 3<sup>rd</sup> party vendors? Two-way transactions? Could these be moved off-site?
- Transitions (death, moves) create need for folks to get rid of materials (hard to take the time to bring everything to the right place, so it all goes to the transfer station)
- Vehicle storage and maintenance could be moved
- Rate structure should support source-separation
- City has source reduction goal (17,000 tons)
- Integrate landscaping and sculpture
- Meeting space for NGOs, workshops and Repair Café
- Artist in residence program
- Design principle – Circular Economy, local over global markets
- Ecology of commerce
- Help achieve climate goals – solar and wind resources on-site



# Zero Waste Transfer Station Listening Session Summary

**Key Take-Aways:**

- Form follows policy
- Highest and best use
- Reduce overall generation
- Facility needs to accommodate multiple user types

**Information Needs:**

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

**Desired Features:**

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 El Cerrito. 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 (like at El Cerrito).
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. Plus catwalk through the facility for tours.
Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.

Break room, 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 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	<ul style="list-style-type: none"> <li>▪ Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>▪ Maker area</li> <li>▪ Social services for vulnerable populations</li> <li>▪ Needle exchange</li> <li>▪ Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>▪ Food pantry. Landscaping</li> <li>▪ Sculpture garden</li> <li>▪ Compost demonstration</li> </ul>



## Zero Waste Transfer Station Charrette Notes – January 16, 2019

### Session 1: Ideas to paper

January 16<sup>th</sup> (Wednesday): 6:00 p.m. – 8:00 p.m.

30 attendees, including:

- 11 Interested Citizens
- 8 City Contractors
- 3 Non-profit Representatives (Friends of Five Creeks, Transition Berkeley, NCRA)
- 2 Zero Waste Commissioners
- 1 Public Works Commissioner
- 1 Former Zero Waste Commissioner
- 1 Regional Government (EBMUD)
- 1 Journalist (California Magazine)

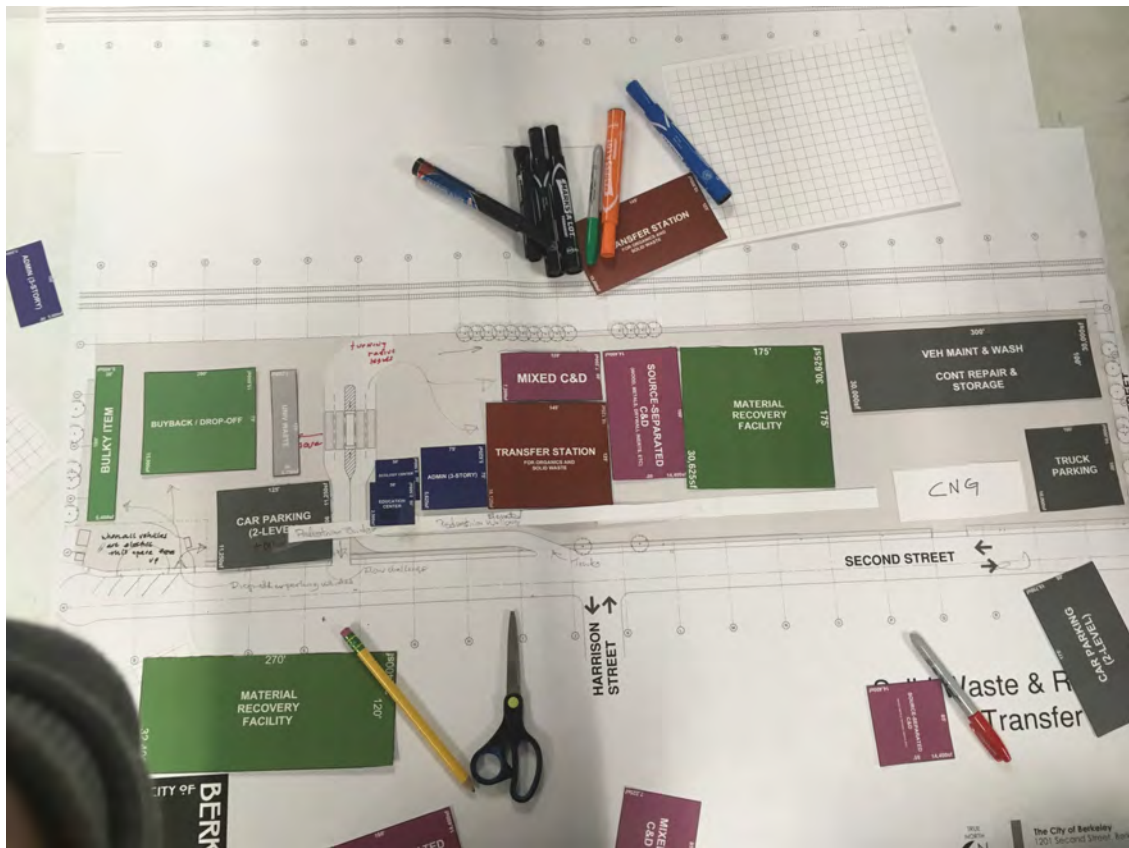
### Questions/Comments During Presentation:

- How do cars come in and out of the center? (referring to the draft layout)
- What queue length is anticipated? (in comparison with today)
- Not everyone has to weigh, it's messy (as of now). Could there be multiple scales?
- Separate residential from commercial users? Pedestrian/car?
- Current transfer station is not welcoming
- Do we have a traffic study?
- Educational capabilities for the center? Education center, catwalk
- There is a giant industrial site across the street – utilize this space
- We need multiple income portals to collect rates on the site (?)
- How far away from the creek does it have to be?
- According to the squares, it seems like people would have to walk far from their cars to sort
- Who are the existing users?

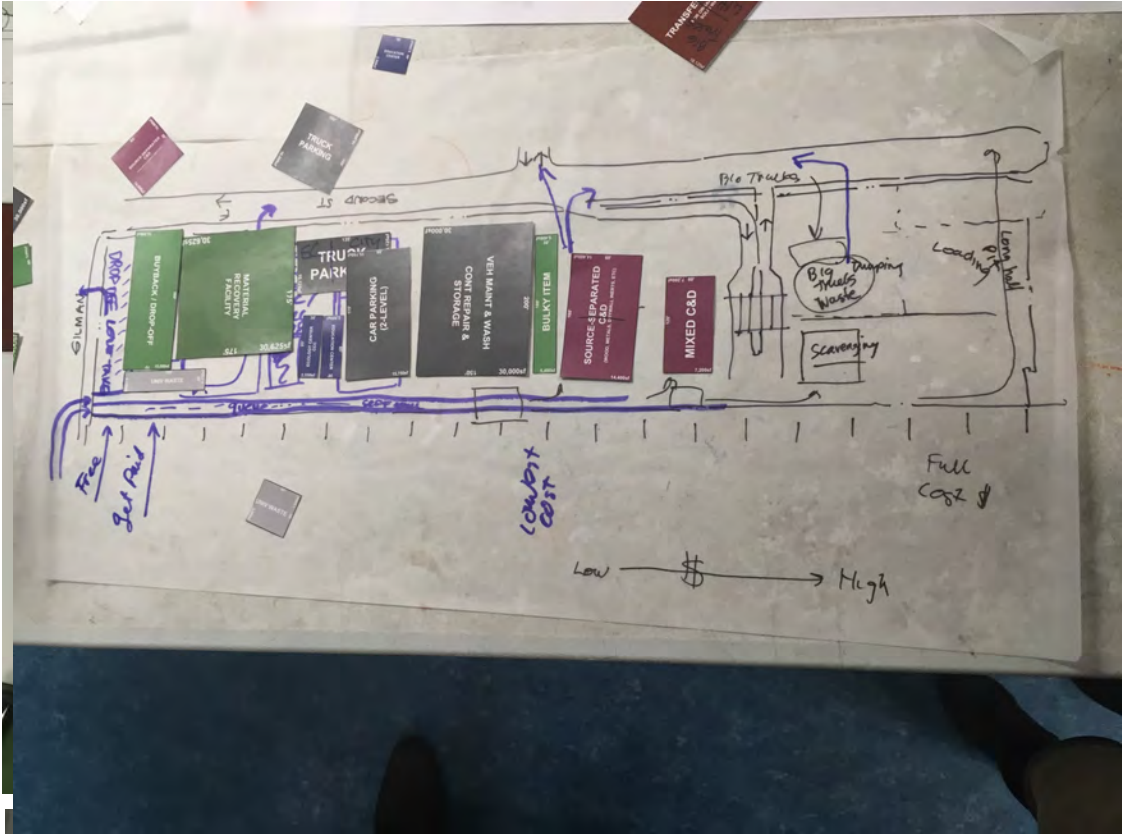
**Results from Exercises (see pictures below) were used by the project team to develop the sketches presented at the January 17<sup>th</sup> workshop.**













# Zero Waste Transfer Station Charrette Notes – January 17 2019

**Session 2: Analyze first night's outcomes**  
**January 17<sup>th</sup> (Thursday): 6:00 p.m. – 8:00 p.m.**

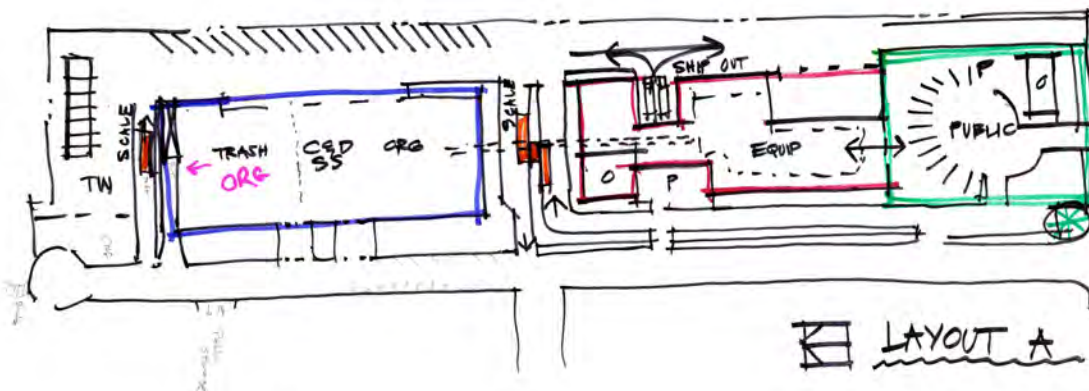
20 attendees, including:

- 7 Interested Citizens
- 6 City Contractors
- 1 Regional Government (EBMUD)

### Questions/Comments During Presentation:

- How does the transfer station connect to curbside pickup?
- How does the city define zero waste? What's Berkeley's current zero waste percentage?
- Most stations are double floored, is this feasible here? Can you dig underneath?
- Also, they use the big truck area for drop-off on weekends
- We should build up and not down, because of water issues (creek, etc.)
- What is the zoning limit?
- What is the budget?
- What is the time frame for construction?
- What has changed (since its construction) to make the current station packed?

### Site Layout A

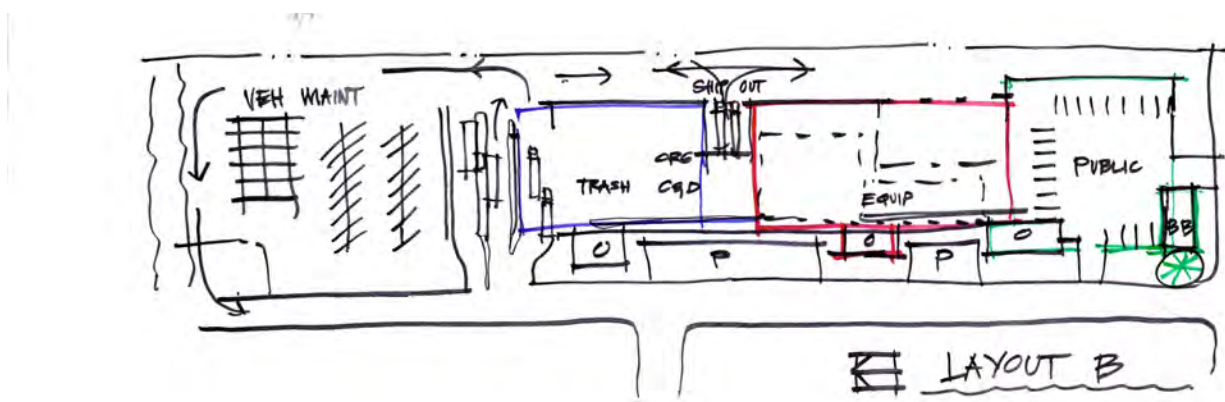


- What are the dimensions of the model?



- What is the route for a car in this model?
- A now-backwater street will become a main street with this model
- How many trucks do you have to park overnight?
- What is being taken away to allow for larger buildings?
- How to make this space more comfortable (trees, grass, community gathering spaces, etc.)
- Currently, split trucks have to go across the scales twice
- Gate off portions for educational purposes
- What is "equipment" (in regards to model)
- Left turn on Gillman is not good (right is ok)

### Site Layout B



- Move the placement of parking plaza
- Is it possible for overnight trucks to be on a multi-story building?
- Conveyor belts can move materials between buildings.
- Professional scavengers aren't bad
- Overlay El Cerrito's blueprint on Berkeley's (Google Earth)
- There is a large space that is currently not used, we can make it parking for RVs/trucks
- Electronic monitoring system to see how long queue line is
- Mary Lou vs. Martin: having buy-back center on site (for ex. used wedding gowns, wine bottles) or bring to a vintage store
- Have urban ore picker on-site at drop-off area
- App for transfer station



# Zero Waste Transfer Station Charrette Notes – January 18, 2019

## Session 3: Recap

January 18<sup>th</sup> (Friday): 10:00 a.m. – 12:00 p.m.

15 attendees, including:

- 7 City Contractors
- 2 Public Works Staff
- 2 Non-profit Representatives (East Bay Depot, NCRA)
- 1 Interested Citizen
- 1 Zero Waste Commissioner

## Group Discussion:

- Circle model in El Cerrito is safer, but it gives up efficient parking, it's not easy to use
- Chrise: People back into poles at El Cerrito, confusing layout
- Greg: El Cerrito overlaid on Berkeley site, circle or square model works well. Parking in middle, so people don't have to back out. These schemes don't segregate small and big trucks. Scales are the problem. Use smaller scales for smaller vehicles, and have them along road. This would give accurate receipts for city too.
- Martin: Now, there are about 15 bays for self-haulers. We need to keep self-haulers and route trucks separate.
- Greg: How do long haul and route trucks exit the station? We need to consider circulation.
- Mary Lou: What is the circulation pattern for self-haul? Suggest providing space for shredding plant debris on-site.
- Jeff: Large drop off space takes away from loose storage, large bale storage, and emergency space. More space than what we currently have would be ideal.
- Susan: Residential area on Gillman is a good idea. Sculpture, signs, and education center would be nice. Time separation could work better than physical separation. How often do big trucks come in to drop off? Which plan is most flexible for the changing materials of the future? Make sure there's space for bicycle parking.

- Martin: Residential facing buyback drop off on Gillman, or in center? Vertical vs. horizontal parking? El Cerrito's attractive because of the range of materials they accept. This requires more staff and money. Consider pay as you go, rather than flat fee like El Cerrito. Have parking covered and water control.
- Dan: Charging by cubic yard changes behavior. Consider incentives. Let Department of Toxic Substances in for EIR.
- Toni: De-bag shredding so no plastic. Need a staging area for mixed commercial materials.
- Peter: We need to stop this world of convenience.
- Greg: Making 15 trips to different stations is wasteful and super inconvenient
- Greg: Exiting on Gillman is not a traffic concern.
- Dan: Tap into the surplus labor of Berkeley (tent cities) with cleaning up creeks, etc.
- Mary Lou: Make it transparent to the people, encouraging zero waste behavior. Example: Should not be a big black mystery box; there should be lots of glass.
- Toni: Strong building that can handle seismic activity, solar panels, day lighting not artificial lighting.
- Susan: Should be attractive enough to have birthday parties on site like at fire dept. Tour should feel like Jelly Belly factory tour.
- Provide a cyclist or pedestrian bridge over creek.
- Martin: Creek is in a hazard zone, think about preserving it instead of exploiting it. Have public facing side on Gillman. 2 building approach, good fences make good neighbors. The more roofs the better (for weather and workers).
- Daniel: Separation of buildings causes lack of communication in an emergency.
- Dan: Storm water management, roofs: materials should not be exposed to the elements. Berkeley can flood a lot easily.
- Peter: Mitigate concerns about lithium battery fires!!

### Notes from Posters:

1. What Else Do We Need to Think About?
  - Traffic pattern for City crews
  - Maintenance facility for recycling
  - Flooding
  - Future above ground fuel tanks (2025 removal of current tanks)
  - Flexibility in changes in material types
  - Bicycle parking
  - Salvaging operation would like 1,000 square feet in transfer station



- As big a roof as possible
- 2. Comment on Listening Session Summary
  - Desirable to have functioning HHW facility. Address full HHW facility in EIR. See Berkeley Municipal Code 11.50.040. This would be a good time to address it (even if the HHW facility is not included).
- 3. Additional Ideas to Take into Account
  - Compost demonstration/vermiculture
  - Superior Energy Performance – ISO 50,000 (Berkeley Labs)
  - Reservation System for drop-off outside the transfer station
  - Homeless services/employment
  - Flexible space, day-lighting, visibility
  - Small bay for maintenance near MRF
  - Plan to have route truck covered parking
  - Consult with Department of Toxics Substances Control early on about their requirements
  - Rainwater capture from roofs
  - Provide opportunity to separate C&D loads
  - Consider the pros and cons of “El Cerrito Plus”
  - Consider shredding yard debris on-site
  - Consider dedicated area for EBMUD commercial organics
  - Need bale storage and room for emergency storage
  - Mechanization should support manual labor (not replace it)
  - Look at circulate design re: efficient parking – backing in is an issue. Is circular safer or not?
  - Route trucks and self-haul separation in transfer station building
  - Need at least 15 stalls for self-haul plus 6 stalls for route trucks
  - Separation of administrative units by facilities
  - How will this be funded? How much will it cost (range)?

**Preferred Facility Names:**

1. Berkeley Resource Recovery Center (8 dots)
2. Tanya Levy Zero Waste Park (4 dots)
3. Mark Gorrell Eco Pavilion (3 dots)
4. Berkeley Zero Waste Center (3 dots)
5. Berkeley Zero Waste Park (2 dots)
6. Berkeley Eco Center (2 dots)
7. Resource Development Park (2 dots)
8. Berkeley Zero Waste (1 dot)
9. Berkeley Transfers (1 dot)

Additional Suggestions:

- It should not be called “Berkeley” as it should be more regional
- Our Lamentable Materialist Legacy
- The Berkeley Museum of Contemporary Culture & Society
- Make naming an opportunity for funding, can change it periodically – pitch to social investors



## Zero Waste Transfer Station May 22<sup>nd</sup> Workshop Public Comments

- MRFs have burned down before – these buildings have a high risk
  - There will be sprinkler coverage
- How do we reach our goals of material separation? – more material has to come to the facility in a separated form, or has to go through a facility. Waste has to come in clean
  - Site needs to processed materials to be clean
- To get waste to come in clean, we should have extensive fees to encourage source-separation
- Educate population through school tours
- Site A's parking lot is too big, not using space properly. It looks too big in rendered art, in the blueprint it looks much smaller
- How do we regulate illegal/after hours dumping?
- What is universal waste?
- Want an exchange zone-type space – reusable, small, salvageable items – let public have access to it
- Creek walk is a priority, allows access to Target by foot or bike
- Site B is a much further walk through traffic to the recycling bays
- Backing up into spaces is difficult (Ex: El Cerrito)
- Should be gate across drop off area
- All material choices should be duplicated on each side of drop off area, no cross traffic
- Forklifts should have access from back, not with general traffic
- Smooth surface for shopping carts (no yellow bumps)
- Glass separation area should/will be messy, they will abandon their barrels/bins
- When does the Creek walk end? Don't want them camping out
- Site A is unsafe for pedestrians with traffic. Want enough spaces for self haul



- Connect self-haul and drop off in one row with several points of access. Put right up against bins, this would save space
- Site B is much more cramped
- Space for roll off bins
  - Won't need roll off bins because everything will happen inside the building
- The new position of the CNG station is very good for the creek
- Have outside signs for the creek, interactive and educational
- Creek walk is private property? How it intersects with Target property
- Don't have storm water collection lead into creek
- People will want carts to bring materials from their cars
- Want before and after of site to compare in presentation
- Are there plans to handle the materials on site?
- Appropriate signage near Target, maybe a recycle symbol? Able to see from freeway
- Will the buildings contain debris better than the current transfer station?
- Does the station have the physical flexibility to change as less trash comes in over time?
- What is the function of the public recycling area?
- The site that has moveable internal divisions is preferable for future flexibility
- There are reusable things going into self-haul
- Would penalty pricing drive customers away?
- Site needs to be flexible for fluctuating economy, amounts of waste



## Zero Waste Transfer Station Response to Comments on March Workshop Concept Designs

The following responses follow a very engaging open house in March that generated much feedback. We hope that most comments stated in that meeting are represented here and that the City and the Design Team has demonstrated responsiveness to those comments. At this date it is important to note that the goal of the Presentation and Open House on Wednesday May 22, is to present two **concept** site plan designs that 1) address the City's Zero Waste goals, is operationally efficient and creates a community engagement asset but also 2) represents the valuable community outreach input we've received. Following May 22, the design will only be developed further to a preliminary level for the purpose of only assessing the CEQA process and the viability of the design(s). It should be noted that both designs would/could be modified following this task. No further design work will be performed until the next phase is initiated by the City. In the next phase the design would be developed and would be submitted for City Planning reviews and the CEQA review which requires multiple public hearings over a 2-3 year period. This timeline provides significant additional opportunities for the community to monitor and engage the design process.

	Question/Comment	Response
<b>Oral Comments from March 14<sup>th</sup> Meeting</b>		
1	Are we aiming for net 0 for solar on the facility? It would generate revenue as well	The preliminary plan is to have the transfer station be a net zero energy facility. Any surplus energy would be sold to the grid/EBCE. It is likely that most of the available roof-top space would be needed to serve the facility's energy needs. However, the City will evaluate the cost/benefit of maximizing the solar energy potential in the next phase of the project.
2	Cars will probably spend more time here than in El Cerrito, wouldn't cars block each other?	More spaces for parking and unloading at drop-off/buyback are included Concept A and Concept B.
3	"Airport model" is too stressful and drives potential users away. People will go to El Cerrito or just throw it away	Comment noted.
4	It's inconvenient for Berkeley residents; it's a hassle to go all the way to Albany to exit	Comment noted.
5	Signs need to be obvious	Final design will address this.
6	This plan does not separate customers from cars and from forklifts	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this, though some interface is possible like in current operations.
7	Need to separate users: Buy back users are restaurants/bars/homeless, drop off is more residential	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Direct access from the street will be provided for pedestrians and customers on bikes. Also, bulky items have been moved back to Transfer Station with a dedicated area accessed via the scale facility.
.8	Too many decision points, as opposed to El Cerrito. Need to be able to digest all options	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this to minimize decision points. Scale access is at separate location of the site.
9	Average consumer does not drop off bulky items, they should go more in the back	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.
10	Queuing line on Gilman Street doesn't seem like it fits	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Customers enter the drop-off/buyback area and if a space isn't available, they can loop back (Concept B) or loop back via Gilman to Second Street (Concept A).
11	Education center should be over the path between stations	Education Center is adjacent to the MRF Building in Concept A and Concept B
<b>Post-It Notes from March 14<sup>th</sup> Meeting</b>		
12	Need to accommodate pedestrian access	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this for direct pedestrian access.
13	Still want a bike bridge across the creek	Creek crossing is not a part of this project
14	Arts & crafts studio would be better at another site (Pacific Steel). Inconsistent with keeping people from hanging out.	Comment noted.
15	Mixing truck & public traffic is not ideal	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to minimize this but allow shared access where appropriate.
16	Agree that bulky is best moved back to the dump area (Transfer Building)	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.

Question/Comment	Response
17 Having two lane roads through separate buildings wastes space. Also, getting recyclables to baler causes cross traffic	Concept A and Concept B no longer include these features. Access is at exterior.
18 Phasing? Does the site have to close? Does part?	Future phasing schedule will address this. On-going operations will be accommodated.
19 How many pay stations? Where? Who decides rates?	Currently one pay station in both Concept A and Concept B. Both designs could accommodate future mobile pad pay stations.
20 Reuse Exchange – imagine a future where reusable items never come to the Transfer Station	This feature can be included in the drop-off/buyback area, primarily in Concept B.
21 Ability to loop around drop-off is good	Concept A will require a looping back onto Gilman or customers can park and walk across aisle. Concept B allows for internal looping.
<b>Oral Comments from March 15<sup>th</sup> Meeting</b>	
22 How many cars can stop at buy back area before getting back logged?	More spaces for parking and unloading at drop-off/buyback are included Concept A and Concept B. Both concepts have a substantial increase in parking compared to current configuration for the drop-off/buy back area.
23 Move bulky items back to transfer station	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.
24 The way it is now, one large truck could block everyone	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Truck maneuvering is separate from public areas.
25 Transaction times with buy back take much longer	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Parking spaces allow varied time on-site.
26 Keep all cars parked on 2 <sup>nd</sup> , bring their materials on big carts into station – this is not good for people with mobility issues	Drop-off/buyback areas in Concept A and Concept B have been configured for direct access to drop-off. Assistance can be provided for people with mobility issues.
27 Think about hazardous waste facility – include HHW	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.
28 How does this plan stop materials from going to the landfill?	Fee schedule will emphasize source-separation.
29 There aren't as many trucks as customers in Berkeley	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
30 Put all types of customers/vehicles in the same line will be problematic	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Two inbound scale lanes are provided. A separate RFID scale is provided for trucks. The public drop-off/buyback is a separate part of the site.
31 Want PDFs of site maps/traffic flow (email)	Links provided to attendees.
32 Sorting on site will be too difficult if we need 90% reduction of landfill - Need on site, hands on education with users - Behavioral change – charge more for mixed waste	Future programming will address this.
33 In Crescent City, they have a 12 category MRF with 18 different rates	Fee schedule will emphasize source-separation
34 Want to be able to move walls for flexibility Shrink trash area, need expandability for recycling processing	Transfer Building includes this open area flexibility. MRF Building is limited based on space needed for fixed-in-place processing equipment. Fee schedule will emphasize source-separation.
<b>Post-It Notes from March 15<sup>th</sup> Meeting</b>	
35 Like keeping MRF adjacent to recycling area – which handles similar materials	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
36 Eliminate barrier of free drop-off area to allow access without backing up	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
37 Free drop-off area is not going to work. Not enough parking spaces. Linear drive.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
38 What about putting the offices, artist space and educational center by the creek to create a more user friendly space for the public to learn and enjoy a sculpture garden? I know there is a traffic issue but I think we could figure that out. Also keeps the big trucks with exhaust and potential oil leaks near the water and riparian habitat	Establishing the public "face" of the facility at Gilman (in both Concept A and Concept B) was considered an important outcome from the Design Charrette.
39 Generally we need to do more outreach to the community to educate us more on things like pre-sorting before going to the center and very specific info on what can be dropped off as bulky items for reuse	Future programming will address this.
40 Make Second Street two-way to aid traffic flow	As part of the Gilman Street traffic flow plan, this cannot be changed.



	Question/Comment	Response
41	Need more stopping/parking space for people to unload	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
42	Check out "be green" separation and rate	Future programming will address this.
43	Public in free drop-off area will have to share area with other machinery collecting the free bins. Currently not the case.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Staff-only forklift aisle is provided behind free drop-off bins.
44	Will there be a place to put Styrofoam?	Space constraints may preclude collection of large items such as Styrofoam (which requires special handling/compression) in the drop-off area.
45	Will I be able to "recycle" all random plastics (that just will end up in landfill)?	Drop-off/buyback areas in Concept A and Concept B are sized to accept marketable plastics (similar to what is collected now).
46	Proposed concepts all mix free drop-off with the buyback customers – likely to result in more traffic congestion.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
47	Don't forget the Exchange Zone	This feature can be included in the drop-off/buyback area.
48	Within the life of the facility there may be a railroad grade crossing (may not be your problem)	Comment noted.
49	Prefer separating commercial and public traffic	Both Concept A and Concept B include this feature
50	Can load out box really be at grade?	Yes, this is a common feature in other transfer stations
<b>Commenter 1</b>		
51	On each site plan, I see a few small circles with numbers (e.g. 10 in the northeast corner of concept 1) in them. They don't correspond to the diamonds. What are they?	These are not included in Concept A and Concept B
52	For concept 3, the self-haul traffic must pass the scales through the Recycling Center. However, I think it would be much better for self-haulers not to have to go through the Recycling Center if they don't have buyback or free drop off (like concept 1). My main concern is congestion in the recycling center for folks who only want to self-haul at the tipping floor, and the associated cluster that I would see happening at the intersection right after folks get off the scales in the recycling center (concept 3 only). The other thing about concept 1 that's good is that there isn't an opportunity for folks to accidentally get into the self-haul line and potentially get backed up big time at that scale house with no escape. It's a little unclear to me whether the self-haulers in concept 1 have an egress point onto Gilman (?) The traffic circulation map should help.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Self-haul traffic has direct access to the Transfer Building.
53	I think it needs to be clarified whether the information kiosk is also a payment station. I think it would make sense to be one in concept 1 -- for those who want to do buy back only -- but not concepts 2 and 3.	Concept A and Concept B both include an information kiosk and a separate pay station in the drop-off/buyback area. Both designs could accommodate future mobile pad pay stations.
54	On that note, regarding one of the main issues -- traffic congestion within the recycling center -- I strongly urge the consideration of mobile payment devices to facilitate circulation. Also, I just want to say that I'm really happy with Greg Apa's statement that the City will be hiring 3 FTE Zero Waste Ambassadors to educate folks and provide assisted offloading. Bravo !!!!!	Both designs could accommodate future mobile pad pay stations.
55	It seems that in concepts 2 and 3 the C&D and organics piles might be blocking access to the landfill tipping floor for the self-haulers. I realize the diamonds are not exact locations, but as it appears, it seems to be a problem.	Concept A and Concept B both allow sufficient space for self-haulers and City vehicles to transfer C&D, organics and landfill-bound materials. The tip floor area can be reconfigured based on future needs.
56	Regarding our operation, concept 2 seems most optimal. We don't keep container trailers on site at the transfer station, so I'm a little confused about this. In concept 2 we could have our truck(s) parked at the one location, and it's all close enough to handle there. With concepts 1 and 2, we would have to have split crews and staging equipment. A lot to think about and discuss there. Not saying it's impossible, but it would certainly offer some challenges.	Concept A and Concept B include areas for a salvage trailer. However, current operations are not precluded in either design. Salvage operation has been consolidated into the Transfer Building in both designs.
57	So ultimately I like the layout of the recycling center of concept 1 coupled with the location of the tipping floor in concept 2. Those two are incompatible though (please correct me if I'm wrong -- I hope so) in the sense that the scale house needs to be located before the tipping floor with a reasonable queuing area.	Concept A and Concept B both include this feature. In both Concepts A & B, the scale house is at the north end of the site with appropriate queueing provided.
58	I'm not sure if we've mentioned it yet, but here I'll say that it would be great (humane) to have an room in the contractor's office, or at least a space with electricity and easy access to a sanitary bathroom (we don't currently...)	Final design will address this

Question/Comment	Response
<b>Commenter 2</b>	
<p>59 1. Artist's studios onsite. Ordinarily I would cheer this on, but in this case I think it's inconsistent with other goals, principally that of keeping people moving through and out. It's true that some arts and crafts people are hermits, but many want people to see them at work. Examples I've seen are blacksmiths and glass blowers. This is where the about-to-be-sold nearby six or seven acre Pacific Steel Castings site comes in. At the meeting called to get public comment on the bankruptcy sale of this property, which was attended by Berkeley's Mayor and the recently elected Northwest Berkeley councilmember as well as the Economic Development officer, there was strong support going forward for turning the Pacific Steel site into arts and crafts studios and other manufacturing startups. The land is currently zoned M for manufacturing. It has toxics issues that the buyer will have taken on. There was some talk of rezoning all or part of it into MU-Li zoning, or Mixed-Use/Light Industrial, which would trigger zoning rules that Urban Ore largely wrote that permit Material Recovery Enterprises "as of right." I think almost everyone would welcome recognition by this TS rebuild working group that you are aware of the potential for these uses to take at least some of materials that the TS site will generate and make them into things of beauty and utility.</p> <p>This would relieve what I think would otherwise be a congestion-inducing use on what will be a very busy place. You can expect a lot of new customers — some from El Cerrito — at the new transfer station if it is designed and built right, in my opinion.</p>	<p>Artist studio could be accommodated in the Education Center. Final design will address this.</p>
<p>60 2. Phasing, or close for months? The site plan that Urban Ore did had a phasing plan, wherein portions of the site were closed and moved around while demolition and reconstruction took place. Our building plans facilitated this phasing, which would take place in four stages. We'd welcome a review of that site plan, but you've gone off in another direction that seems to me to be difficult to do in stages. Does that mean a partial or complete shutdown for months or up to a year? I wanted to bring this up at the meeting, but because of so many questions and comments that flew around we ran out of time and I could not be recognized, which is why I'm bringing it up now.</p> <p>Long-term or even short-term shutdown would severely affect the current lineup of working parts and working trading platforms, risking catastrophic loss of disposal market share. (I use disposal here in its generic, ordinary English usage, which includes reuse, recycling and composting unlike "industry standard" jargon inherited from the waste industry that seems to think it owns the word. It doesn't).</p>	<p>Future phasing schedule will address this. On-going operations will be accommodated.</p>
<p>61 3. I agree strongly with Mas Wechsler that mobile payment technologies be welcomed on this site. But we still need to know how many and where the fixed pay stations will be. Our view is that the supply customers will respond more to financial signals caused by a much more complex and nuanced fee system than even to good signage and design. There is no need to argue of which is more important. All three are needed as a best practice goal. We've used financial inducements to great effect for 39 years and counting. Paying for some loads and charging for some is one of the biggest factors we cite to tour groups in explaining Urban Ore's growth over the years. What we're after is behavioral change. Fees both positive and negative can stimulate the behavior you want to see.</p>	<p>Concept A and Concept B both include an information kiosk and a separate pay station in the drop-off/buyback area. Both designs could accommodate future mobile pad pay stations.</p>
<p>62 4. Circulation. I think cutting a two lane road through the site is a waste of space, and encourages what several people called out as conflicts, safety problems, and confusion-inducing problems of wayfinding. Putting the roadway between the reuse/recycle/regulated material areas means materials have to cross the roadway from one part to another. That's why our design went for a long building and put a lot of the materials movement after drop-off on the East side. The big and small vehicles were separated very well that way. Also, having a big long building with roofs held up by trusses. and having demising walls that don't hold anything up and can be moved provides maximum segmentation flexibility that many knowledgeable people said was absolutely necessary for efficient operation. It also helps in wayfinding, because each bay can be sized appropriately for its function and for handling its designated particular configuration of the 12 market categories. Lastly it furthers the ecology of commerce model that we already have, where at least six material recovery enterprises engage in co-petition on a daily basis.</p>	<p>Transfer Building includes this flexibility. MRF Building is limited based on space needed for processing equipment. Fee schedule will emphasize source-separation. For Concept B, direct shipment off-site from each building is expected; minimal material moves between buildings.</p>

Question/Comment	Response
<p>63 Last night, at t the first of the two meetings on plans for the transfer station rebuild, I raised this question: Why, in all three proposed site designs that your collaborative has provided, is the only part labeled as a “transfer station” that part where the mixed materials dumping happens? Surely, I suggested, there is a better, more specific term. Even “mixed-waste dumping” would be better.</p> <p>More importantly, Isn’t it true that “transfer” is what will be happening everywhere else on the site as well? My view, if this truth is granted, is that the whole facility is the transfer station, not just one part. My reasoning is that what will be transferred by supply customers, whether it happens in the recycling part, the reuse part, the composting part, the regulated materials part, or the wasting part, is:</p> <ol style="list-style-type: none"> <li>1. unwanted more or less valuable materials that mostly could fall into 12 standard market categories given better source separation and sorting; and</li> <li>2. ownership of these materials; and</li> <li>3. liability that attaches to these materials when and if they are illegally dumped in the streets or down into streambeds..</li> </ol> <p>These are important functions for civilized life, and they are common to the entire facility. Mr. Clark the architect said he was open to a different naming, but then he (and you) went right on calling the wasting part the transfer station. Clark tried — unsuccessfully in my opinion — to justify his usage as standard in the industry. But so is the now discredited market wrecking single stream collection system, as is mixed waste processing of just about any other kind. Then Clark reverted to the claim that all this is “just semantics,” which is an even more discredited argument in my opinion, because how we name things is a vital part of the intellectual software that our brains have developed to negotiate modern life and make informed choices. Appropriate naming counts a great deal when words get put into ordinances or executive orders or regulations.</p> <p>I call on your team to revise its thinking, please, and show it by changing the way you talk about your work product. I look forward to your considered response.</p>	<p>The official name of the permitted facility is: City of Berkeley Solid Waste Management Center &amp; Transfer Station (01-AC-0029). There is no plan to change the name of the facility on the official permits.</p> <p>The facility is commonly known at the City of Berkeley Transfer Station or City of Berkeley Solid Waste &amp; Recycling Transfer Station. The preliminary plan is to update the commonly used name once it is rebuilt (e.g., Berkeley Resource Recovery Center, Berkeley Zero Waste Transfer Station, etc.).</p> <p>Concept A and Concept B include two buildings, conjoined or separated:</p> <ol style="list-style-type: none"> <li>1. MRF Building – which includes the fixed-in-place recycling processing equipment</li> <li>2. Transfer Station or Transfer Building – which transfers reusable items, organics, C&amp;D, recyclable bulky items (mattresses, carpet) and landfill-bound materials.</li> </ol> <p>There is no separate wasting building or dedicated wasting area within the conjoined building.</p> <p>All 12 categories of materials are planned to be addressed at the facility:</p> <ul style="list-style-type: none"> <li>Metal – Drop-off, Buyback, MRF Building, Transfer Building</li> <li>Glass – Drop-off, Buyback, MRF Building</li> <li>Polymers - Drop-off, Buyback, MRF Building</li> <li>Putrescible – Transfer Building</li> <li>Plant debris – Transfer Building</li> <li>Soils – Transfer Building</li> <li>Crushables – Transfer Building</li> <li>Textiles – Drop-off (reusable + rags), Transfer Building (mattresses, carpet)</li> <li>Wood – Transfer Building</li> <li>Paper – Drop-off, MRF Building</li> <li>Reusable – Drop-off, Transfer Building</li> <li>Chemicals – Universal Waste Drop-off (used oil, batteries)</li> </ul>
<p><b>Commenter 3</b></p>	
<p><b>General Comments</b></p>	
<p>64 1. Move all buildings to West side of property as a windshield and keep doors on East side as much as possible such as like Concept 1.</p>	<p>Both Concept A and Concept B include this feature with most door openings facing the east.</p>
<p>65 2. Keep the positions/order of current site conditions; e.g., Buy Back &amp; Drop-off (BB/DO) services to the south adjacent to Gilman St. next to MRF; Ecology Center operations next to MRF or closest for unloading; and finally the Transfer Station (TS) furthest away on the property with a limited view corridor to the public. The general ordering and position of each building use is still a logical setup and most familiar to the public and employees.</p>	<p>Both Concept A and Concept B include this order. Concept B is closest to current operations.</p>
<p>66 3. Fully separate traffic origins and functions, e.g., pedestrians and passenger cars from self haul (SH) light duty trucks and trailers, and heavy duty route trucks (RT) and long-haul tractor (LH) trailer trucks and commodity trucks from each other. The final design concept must prioritize the health and safety of all site users. It is especially important that SH customers are assisted in unloading within the SH Recovery Area for materials recovery and safety reasons</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. The drop-off/buyback area is separate and distinct from the Self-haul scale entry. A separate RFID scale provides entry/exit options for trucks. Corporate yard/fleet maintenance and transfer loadout trailer trucks have separate driveway access.</p>
<p>67 4. SH and RT unloading and load out should be positioned on East side of property</p>	<p>Both Concept A and Concept B include this.</p>
<p>68 5. RT and LH vehicles should egress onto Gilman Street, while SH and passenger autos (PA) exit to 2nd St.</p>	<p>Both Concept A and Concept B include this.</p>
<p>69 6. Place SH at the North end of the facility so that maximum queueing can occur on site</p>	<p>Both Concept A and Concept B include this.</p>



Question/Comment	Response
70 7. All RT and LH trucks enter mid property between SH & City (RT) unloading areas such that they can access both City and MRF unloading/out loading areas. This probably means two separate buildings (like Concept 1). Enlarging these structures (TS & MRF) to the dimensions of Concept 3 would represent optimizing the available site footprint	Both Concept A and Concept B include separate RFID scale off of Gilman. Concept A is one building and Concept B is two separate buildings.
71 8. Integrate EC offices, MRF ops Offices, Education Center, and IWW Crew Room into MRF / BB / DO area. Integrate City offices / SEIU Crew Room into City RT unloading and SH resource Recovery Infrastructure	Concept A includes two separate office buildings. Concept B includes a more consolidated office building approach.
72 9. Include electric charging stations and capacity for both light and heavy duty vehicles for future use	Final design will address this.
73 10. Have just one load out each for MSW and Organics shared by separate City RT and SH offload areas. Commercial food scrap is only collected by City RT; mixed C&D collected only by SH.	Both Concept A and Concept B include two load out areas. These can accommodate multiple materials.
74 11. Consider separate line for commercial food scrap that includes a presort/clean up for offsite digestion destination. Additional separation criteria from other operations within the TS would need to be developed for this somewhat difficult handling process (drainage, odors, vectors, etc.)	Site constraints preclude organics processing in the Transfer Building.
75 12. Have duplicate/adjunct collection for some items like cardboard in both BB, DO & SH, and household goods in DO & SH.	Both Concept A and Concept B can accommodate this.
76 13. Fueling island should be located away from significant other traffic.	Both Concept A and Concept B include this feature.
<b>Curbside Recycling Collection</b>	
77 14. Create close adjacency of Ecology Center (EC) Offices, MRF Opps Offices, Education Center, Crew Room, Recycling Collection Truck Parking, and EC Maintenance Bay.	Concept B co-locates offices near truck parking. Concept A separates truck parking from the main office buildings but will have an upstairs staff support area above the vehicle maintenance bays.
78 15. Include at least one on-site Maintenance Bay for light duty repairs to curbside recycling collection vehicles to help prevent and contain spills on route.	Concept A & B include vehicle maintenance.
79 16. Minimum 12 Dedicated EC RT Parking Spots and 2 Service Pickup spots (potentially on East Side similar to Concept 3).	Site constraints preclude increasing truck parking beyond current levels.
80 17. Move and elevate EC Education Facilities to the second floor and include large room with views of both MRF and DO/BB areas with public seating for up to 60. Include a Multipurpose room for presentations and other meetings including ZW Commission potentially (like Concept 3).	Both Concept A and Concept B include an Education Center/Community Room.
81 18. Ensure nearby parking for a school bus and at least two visiting vehicles for Education Center.	Final design will address this.
82 19. Separate recycling education activities for kids and casual visitors, and residents from tours of Source Separated Self Haul and Commercial scale operations for professionals and international visitors. Build elevated walkway in TS (SH & City RT facility) for safe/unobtrusive viewing.	Both Concept A and Concept B include an Education Center and Viewing Area. Guided tour access & dedicated walkways will be considered as appropriate for reasons of safety.
<b>Buy Back /Drop Off Area</b>	
83 20. Remove Bulky Items (BI) drop-off area and relocate to SH unload area within TS.	Bulky items have been moved to Transfer Building in Concept A and Concept B.
84 21. Create separate BB/DO "Front of House" area for users and "Back of House" area for handling, transport, storage and load out activities including Universal Waste (UW).	Both Concept A and Concept B include dedicated forklift access to bins.
85 22. Reduce footprint of UW area office to less than 500-750 sq. ft. commensurate with anticipated volumes and storage.	Both Concept A and Concept B address this.
86 23. Ensure strong pedestrian access along Gilman St. and to BB.	Both Concept A and Concept B address this.

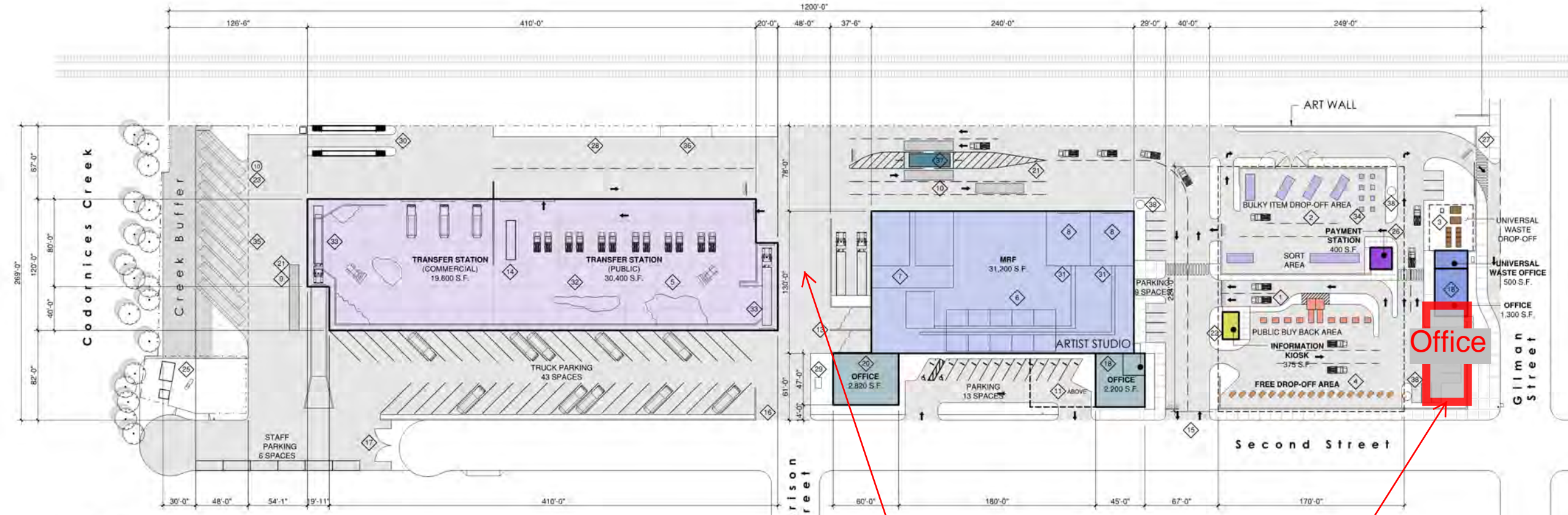
	Question/Comment	Response
87	24. Create dedicated connectivity to MRF and storage/load out areas from "Back of House" area of BB/DO with safe forklift and bin transit lanes.	Both Concept A and Concept B address this.
88	25. Integrate Info Kiosk, Assisted Unloading Support, and Pay House (for collecting fees and making payments) that faces Front of House and is entered from Back of House. Pay House footprint could be reduced to 400 sq. ft. or less and still maintain functionality.	Currently one pay station and once information kiosk in both Concept A and Concept B. Both designs could accommodate future mobile pad pay stations.
89	26. Integrate mobile and account based transactions for both Pay House and tablet based mobile transactions.	Both designs could accommodate future mobile pad pay stations.
90	27. Ensure space for accepting and handling additional future materials such as pharmaceuticals, sharps, bike parts, block polystyrene, pallets, and more.	Space constraints may preclude collection of large items such as Styrofoam (which requires special handling/compression) and pallets in the drop-off area. Wood, large scrap metal and reusable items to be addressed in the Transfer Building. Pharmaceuticals and sharps depositories can be included in the drop-off area. Final design will address this.
91	28. Dedicate space for household goods, clothing etc. through potential additional operator like Goodwill Industries or St Vincent's.	Space constraints may preclude collection of household goods in drop-off area. Final design will address this.
92	29. Integrate Electronics Waste (EW) drop off into the area.	Both Concept A and Concept B address this.
93	30. Include space for an Exchange or Give/Take Center.	This feature can be included in the drop-off/buyback area.
94	31. Designate Motor Oil and Filters and Cooking Oil drop off locations for commercial and public customers. If Cooking Oil is residential, place in DO; if commercial such as a restaurant customer unload within the BB. If Motor Oil is residential place within DO; if commercial put in SH.	Space constraints may preclude collection of oil and oil filters in drop-off area. Final design will address this.
95	32. Include Designated HHW area for CEQA and permit processes and later consideration.	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.
<b>MRF Operations</b>		
96	33. Integrate MRF Operations Office with Ecology Center Office. Integrated IWW crew room, and Education Center in two story office next to or attached to or within the MRF building with Crew Rooms on ground floor. Offices should have clear line of sight to both BB/DO and MRF operations.	This is accommodated in both layouts.
97	34. Keep largest MRF operations footprint (Concept 3) for future flexibility and growth including finished bales and emergency product storage. Suggest 40,000 sq. ft.	Site constraints preclude this. MRF Building 33,000 square feet in Concept A and 34,900 square feet in Concept B. Both layouts include sufficient space to accommodate MRF processing equipment.
<b>Source Separated Self Haul Resource Recovery area within Transfer Station</b>		
98	35. Focus SH on strong source separation policy, pricing, and infrastructure.	Fee schedule will emphasize source-separation
99	36. Incorporate third-party contractors to manage recoverable materials and/or regulated such as Carpet, Mattresses, Appliances-White Goods, and other Bulky Items with Reuse ability. Expand resource recovery and include separation and collection of used doors, windows, sinks, tubs, hardware, hardscaping, and furniture, along with other Bulky materials.	Bulky items will be addressed in Transfer Building. This floor area is open and flexible for any recoverable materials or goods.. Final design will address this.
100	37. Assuming all mixed C&D will be derived from SH, it is unclear if there will be any mixed C&D separation on site. C&D recycling is critical to achieving Zero Waste goals.	Fee schedule will emphasize source-separation. No processing of C&D anticipated to be on-site. Mixed C&D would be transferred in both designs.
101	38. Incorporate Pay In/Pay Out with mobile device capacity.	Both designs could accommodate future mobile pad pay stations.
102	39. Integrate multipurpose floor conveyor to move MSW, Yard Debris, and Commercial Food scraps between SH and single load out.	Both designs include two separate load outs bays.
<b>Maintenance Facility</b>		
103	40. No maintenance facility is located or specified on the Concepts. Additional space can be freed up with certain revisions as we have suggested, e.g., moving Bulky Waste drop off to within the TS and reduction in UW area; reorganizing certain parking areas, etc. Having a designated maintenance building on-site is necessary for efficient operations of	Both Concept A and B include vehicle maintenance.

Question/Comment	Response
the whole facility.	
<b>Large Scale Solar Plant</b>	
104 41. Could the City apply to do a feasibility study for a large scale solar project that could feed into the East Bay Community Energy grid at the transfer station?	The preliminary plan is to have the transfer station be a net zero energy facility. Any surplus energy would be sold to the grid/EBCE. It is likely that most of the available roof-top space would be needed to serve the facility's energy needs. However, the City will evaluate the cost/benefit of maximizing the solar energy potential in the next phase of the project.
<b>Commenter 4 (drawing attached)</b>	
<b>Concept 1</b>	
105 Separate buildings seems like a non-starter – severely limits future options	Transfer Building includes this flexibility. MRF Building is limited based on space needed for fixed-in-place processing equipment. Fee schedule will emphasize source-separation.
106 Can some of the office move here (southwest corner) to give better street presence and to hide the buyback, etc.?	Concept A includes consolidated offices along entire south end of the structure. Concept B includes office building facing southwest.
<b>Public Recycle Drop-off Area Concept 1</b>	
107 Could save space by making this (self-haul southmost lane) one way west bound only – this is a recirculation routes for people with multiple places to go	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing. Self-haul access is at north end of the site.
108 Office to visually anchor the corner (southwest corner), screens the chaos	Offices will be visually prominent and will establish facility identity. Concept A includes consolidated offices. Concept B includes office building facing southwest.
109 Parking to replace lost to scale house queue (west of drop-off bins)	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.
110 Scale queue (northside - clockwise circulation pattern)	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing. Scale access is at north end of site on Concept A & B with circulation clockwise.
111 Bulk items (on northside of interior)	Bulky items have been moved to north side of Transfer Building in Concept A and Concept B.
112 Buyback/free drop off (on southside of interior)	Drop-off/buyback areas at south end of the site in Concept A and Concept B..
113 Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.
<b>Concept 2</b>	
114 MRF In the back doesn't seem to make sense	Both Concept A and Concept B include MRF Building on the south side of site.
<b>Public Recycle Drop-off Area Concept 2</b>	
115 No offense, but this kind of feels like Pac-man	Comment noted.
<b>Concept 3</b>	
116 Place commercial truck loading and scales and parking (on the east side), flipping from west side	Both Concept A and Concept B include commercial unloading on the east side.
117 Scale queue for small trucks, turnaround (on west side), basically flipping from east side	Both Concept A and Concept B include small truck unloading on the east side.
118 I still like moving the offices to the front (to the southwest corner), maybe MRF offices are separate, not the end of the world.	Concept A includes consolidated offices across south end of the site. Concept B includes office building in southwest corner.
<b>Public Recycle Drop-off Area Concept 3</b>	
119 Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations, also public functions stay on the west side, less intimidating for drop offs, looks more attractive. Nasties on RR (railroad) side	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to provide flexibility for public use and access for trucks on the east side.
120 Scale queue for small trucks, turnaround (on northwest side) basically flipping from east side	Both Concept A and Concept B include small truck queuing on northwest side
<b>Commenter 5 (drawing attached)</b>	
<b>General Comments</b>	
121 1. It would be helpful to see a wider detailed traffic pattern showing street traffic going to the zero waste facility taking the new I80 interchange into account.	Final design will address this.
122 2. Put as many items as possible in one drop-off location.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
123 3. Separate the buyback and have materials feed directly into evaluate storage bunkers that feed baler.	Space constraints may preclude this, but this may be a viable design option in both concepts.
124 4. Make the plan as flexible and simple as possible.	Comment noted.



	Question/Comment	Response
125	5. Need parking stalls for buyback and drop-off customer	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this with parking stall layouts.
126	6. Materials coming from the buyback and drop-off need a clear and unimpeded access	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this with direct access to the MRF Building.
127	7. Buyback customer currently have cueing for 10 cars. 9 vehicle sorting spaces and space for ten non car customers to sort material.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this e.g., 26 shared spaces provided in Concept A.
128	8. Drop off customers currently have 6 car spaces for parking	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this e.g., 26 shared spaces provided in Concept A.
129	9. Use building along the outside of the footprint to show case facility increase security by reducing the amount you high security fence needed.	Comment noted. Concept B, the Transfer Building is adjacent to Second Street and MRF extends to Gilman.
130	10. MRF must be located close to buyback and drop-off.	Both Concept A and Concept B include MRF Building near/adjacent to buyback/drop-off.
<b>Comments on Concept 1 &amp; 2</b>		
131	Do not agree to have one gate for recycling and transfers station customers.	Drop-off/buyback areas in Concept A and Concept B have a separate entry drive (gate) from Self-haul/Transfer Building customers.
132	Too much of the recycling facility is dedicated to cars snaking through facility.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to simplify queuing
133	Major bottle neck at the entrance to buyback and drop-off	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to separate self-haul from drop-off/buy back and simplify queuing
134	Drop-off, UW and bulky items need to be consolidated	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Note that bulky items have been moved to Transfer Building..
135	Gilman or Second street appearance not to my liking	Comment noted.
136	Missing buyback sorting and parking area	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and processing/sorting area as needed.
137	I have put together a new site design with all the key elements included in concept proposal and more. Please see site plan attached. 1. Processing Building 327 ft x 130 ft 2. Executive Office 29 ft x 60 ft 3. Drop-off area + buyback 128 ft x 62 ft 4. Maintenance and staff building 55 ft x 60 ft	Site constraints preclude larger MRF Building. MRF Building 33,000 square feet in Concept A and 34,900 square feet in Concept B. Proposed configuration of drop-off/buyback and MRF included in Concept B.
<b>Commenter 6 (drawing attached)</b>		
<b>My plan imitates El Cerrito in the following way:</b>		
138	Keeping cars away from the pedestrians. Cars come in to park and don't moving again until they leave This prevents car bottleneck And cars on the perimeter keeps them safely away from pedestrians Cars park next to walkway which immediately takes people to the recycling bins	Proposed configuration of drop-off/buyback included in Concept A. Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.
139	Bins are visible from the cars before people even get out They are looking right at the bins and can access them just a few feet from their car There are many, many bins so items can be sorted on the spot. (EC has many different kinds of bins for plastics which is great) This way people can learn as they sort Hopefully realizing the difference between seemingly similar items like plastics	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
140	With less roadway for moving cars there is more parking and for bins And more area to possibly add something like Haz Mat	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.

Commenter 4 Drawings



**SITE PLAN**

**KEYNOTES**

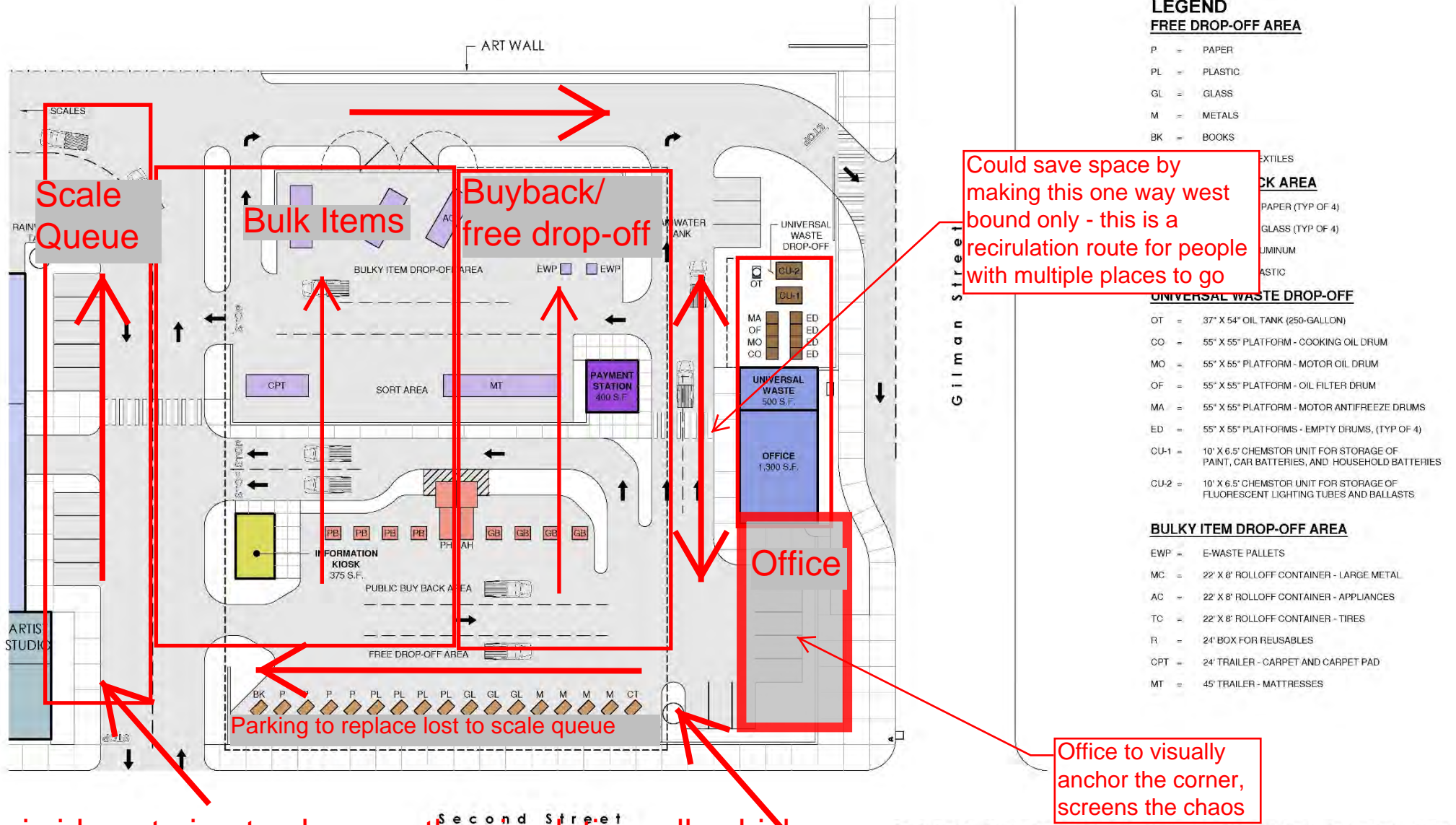
- |                            |  |                               |                     |                                    |
|----------------------------|--|-------------------------------|---------------------|------------------------------------|
| 1 PUBLIC BUY BACK AREA     | 9 70' SCALE  | 17 CITY VEHICLES              | 25 CNG STATION      | 33 LOADOUT                         |
| 2 BULKY ITEM DROP-OFF AREA | 10 40' SCALE   | 18 CONTRACTOR'S OFFICE        | 26 PAYMENT STATION  | 34 APPLIANCE AREA                  |
| 3 UNIVERSAL WASTE DROP-OFF | 11 EDUCATION CENTER  | 19 MRF OPERATION OFFICE       | 27 ALTERNATE ACCESS | 35 PERMEABLE PAVING FOR STORMWATER |
| 4 FREE DROP-OFF AREA       | 12 VEHICLE MAINTENANCE                                     | 20 CITY OFFICE                | 28 BIN STORAGE      | 36 FUEL ISLAND                     |
| 5 ORGANICS                 | 13 GLASS BUNKERS   | 21 RFID STATION               | 29 TRANSFORMER      | 37 SCALEHOUSE                      |
| 6 MRF PROCESSING AREA      | 14 CONTAINER SALVAGE TRAILER                               | 22 INFORMATION KIOSK          | 30 TRUCK WASH       | 38 RAIN WATER TANK                 |
| 7 BALE STORAGE/SHIPPING    | 15 MAIN SCALES FOR PUBLIC                                  | 23 SEMI TRAILER/TRUCK PARKING | 31 INFEED CONVEYOR  |                                    |
| 8 MRF TIPPING              | 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS | 24 FUEL ISLAND                | 32 C&D              |                                    |

Separate buildings seems like a non-starter - severely limits future options

Can some of the Office move here to give a better street presence and to hide the buyback, etc.

**Charrette-based Proposal Concept 1**  
Solid Waste & Recycling Transfer Station



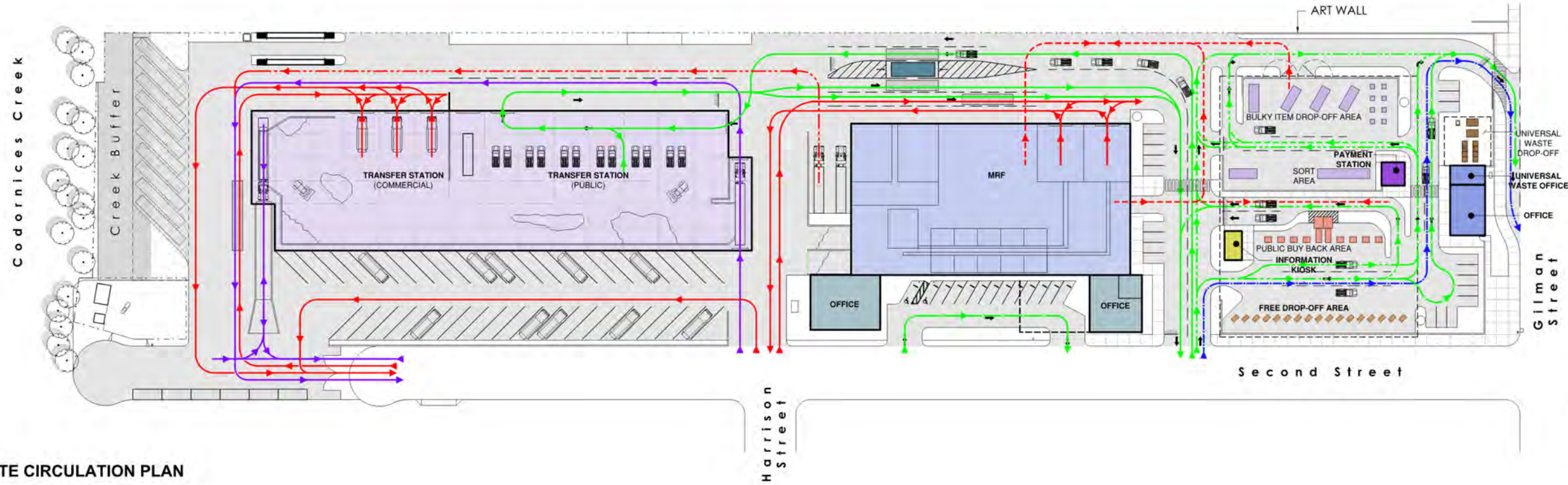


- LEGEND**
- FREE DROP-OFF AREA**
- P = PAPER
  - PL = PLASTIC
  - GL = GLASS
  - M = METALS
  - BK = BOOKS
- BULKY ITEM DROP-OFF AREA**
- EWP = E-WASTE PALLETS
  - MC = 22' X 8' ROLLOFF CONTAINER - LARGE METAL
  - AC = 22' X 8' ROLLOFF CONTAINER - APPLIANCES
  - TC = 22' X 8' ROLLOFF CONTAINER - TIRES
  - R = 24' BOX FOR REUSABLES
  - CPT = 24' TRAILER - CARPET AND CARPET PAD
  - MT = 45' TRAILER - MATTRESSES
- UNIVERSAL WASTE DROP-OFF**
- OT = 37" X 54" OIL TANK (250-GALLON)
  - CO = 55" X 55" PLATFORM - COOKING OIL DRUM
  - MO = 55" X 55" PLATFORM - MOTOR OIL DRUM
  - OF = 55" X 55" PLATFORM - OIL FILTER DRUM
  - MA = 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
  - ED = 55" X 55" PLATFORMS - EMPTY DRUMS, (TYP OF 4)
  - CU-1 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
  - CU-2 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations

ENLARGED SITE PLAN





**SITE CIRCULATION PLAN**

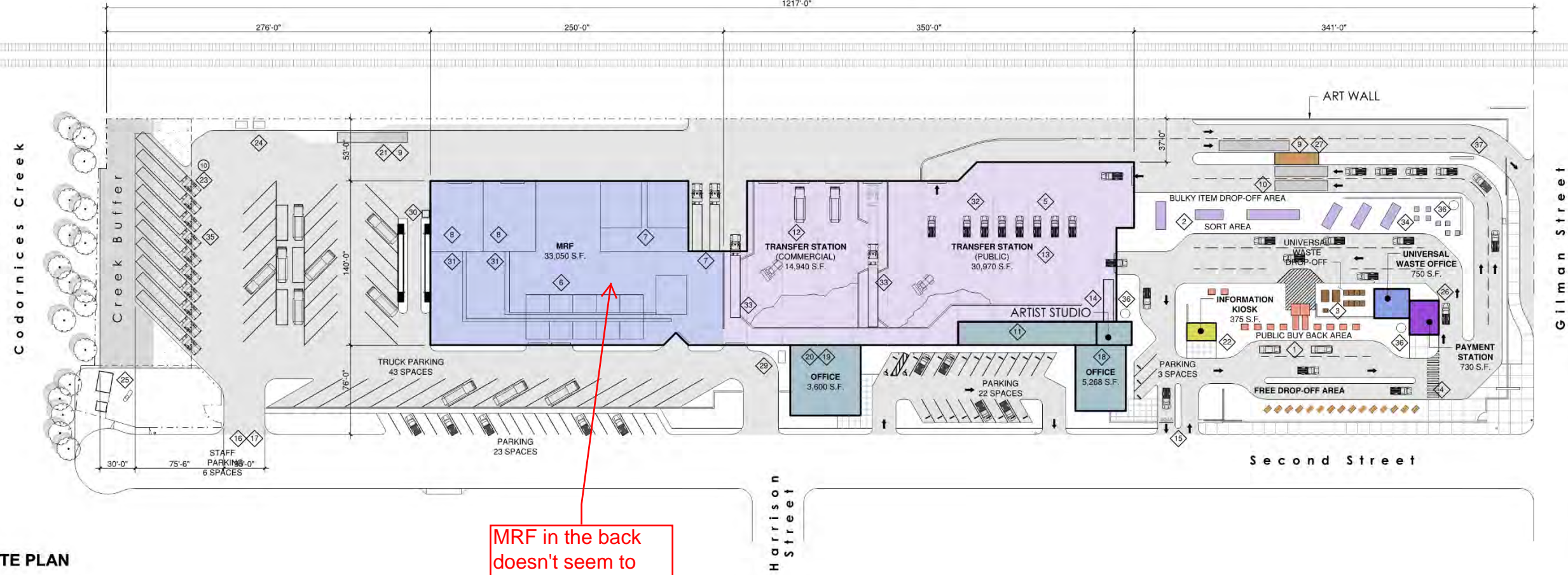
**LEGEND**

PUBLIC - SELF-HAUL		COMMERCIAL - TRANSFER TRUCKS	
PUBLIC - BULKY ITEM, SALVAGE/REUSE		COMMERCIAL - ROUTE TRUCKS	
PUBLIC - BUYBACK		COMMERCIAL - COMMODITY SHIPPING	
PUBLIC - UNIVERSAL WASTE		COMMERCIAL - FORKLIFT, YARD GOAT	
PUBLIC - EMPLOYEES			

**NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN**

**Charrette-based Proposal Concept 1**  
Solid Waste & Recycling Transfer Station

1217'-0"



MRF in the back doesn't seem to make sense.

**SITE PLAN**

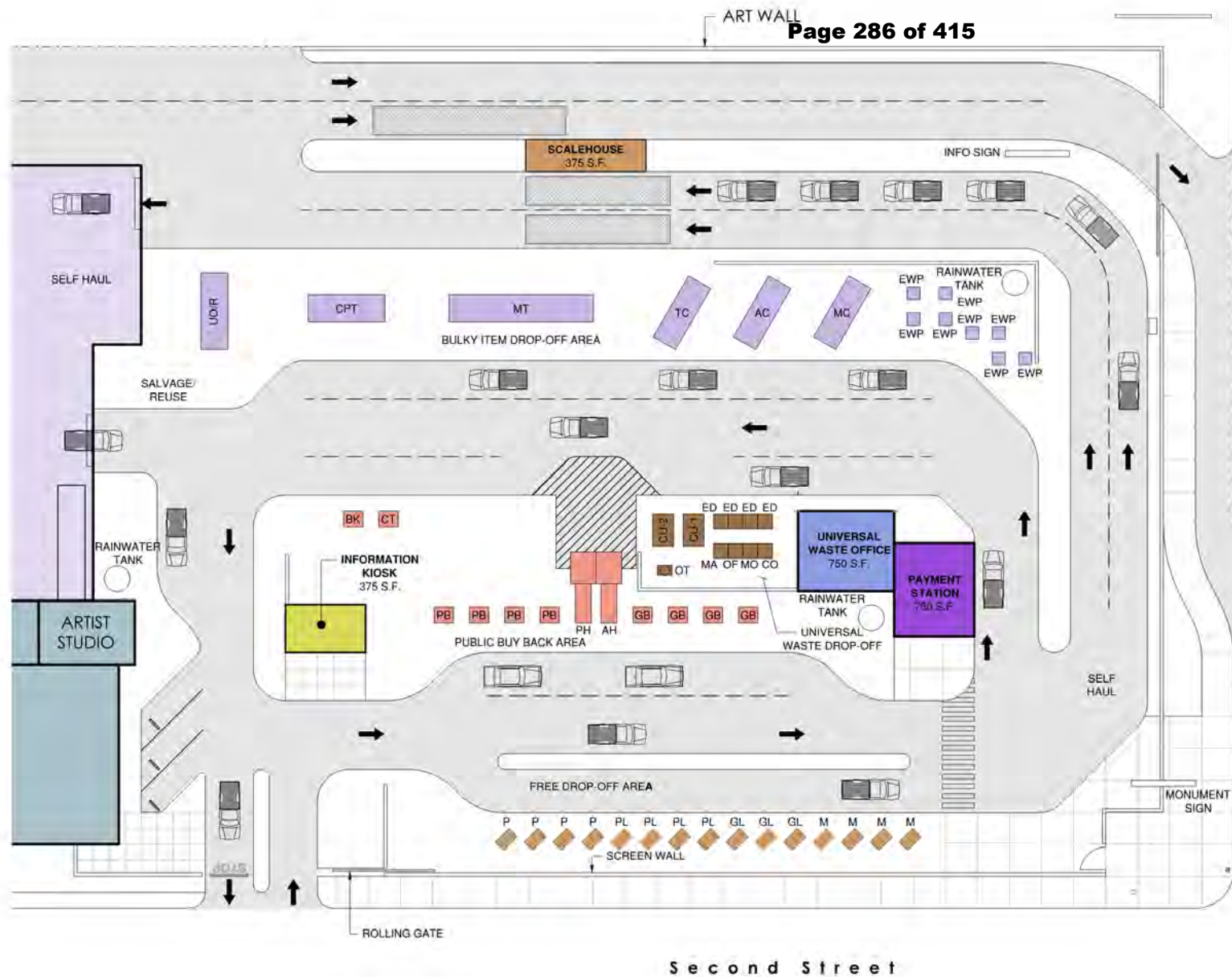
**KEYNOTES**

- |                            |  |                               |                     |                                    |
|----------------------------|--|-------------------------------|---------------------|------------------------------------|
| 1 PUBLIC BUY BACK AREA     | 9 70' SCALE  | 17 CITY VEHICLES              | 25 CNG STATION      | 33 LOADOUT                         |
| 2 BULKY ITEM DROP-OFF AREA | 10 40' SCALE   | 18 CONTRACTOR'S OFFICE        | 26 PAYMENT STATION  | 34 APPLIANCE AREA                  |
| 3 UNIVERSAL WASTE DROP-OFF | 11 EDUCATION CENTER  | 19 MRF OPERATION OFFICE       | 27 SCALEHOUSE       | 35 PERMEABLE PAVING FOR STORMWATER |
| 4 FREE DROP-OFF AREA       | 12 COMMERCIAL TIP FLOOR                                    | 20 CITY OFFICE                | 28 BIN STORAGE      | 36 RAINWATER TANK                  |
| 5 ORGANICS                 | 13 SELF HAUL AREA  | 21 RFID STATION               | 29 TRANSFORMER      | 37 INFO SIGN                       |
| 6 MRF PROCESSING AREA      | 14 CONTAINER SALVAGE TRAILER                               | 22 INFORMATION KIOSK          | 30 TRUCK WASH       |                                    |
| 7 BALE STORAGE/SHIPPING    | 15 MAIN SCALES FOR PUBLIC                                  | 23 SEMI TRAILER/TRUCK PARKING | 31 INFEEED CONVEYOR |                                    |
| 8 MRF TIPPING              | 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS | 24 FUEL ISLAND                | 32 C&D              |                                    |

# Charrette-based Proposal Concept 2

## Solid Waste & Recycling Transfer Station





**LEGEND**  
**FREE DROP-OFF AREA**

- P = PAPER
- PL = PLASTIC
- GL = GLASS
- M = METALS

**PUBLIC BUY-BACK AREA**

- PB = 6' X 5' BINS - PAPER (TYP OF 4)
- GB = 6' X 5' BINS - GLASS (TYP OF 4)
- AH = HOPPER - ALUMINUM
- PH = HOPPER - PLASTIC
- BK = BOOKS
- CT = CLOTHING/TEXTILES

**UNIVERSAL WASTE DROP-OFF**

- OT = 37" X 54" OIL TANK (250-GALLON)
- CO = 55" X 55" PLATFORM - COOKING OIL DRUM
- MO = 55" X 55" PLATFORM - MOTOR OIL DRUM
- OF = 55" X 55" PLATFORM - OIL FILTER DRUM
- MA = 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
- ED = 55" X 55" PLATFORMS - EMPTY DRUMS, (TYP OF 4)
- CU-1 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
- CU-2 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

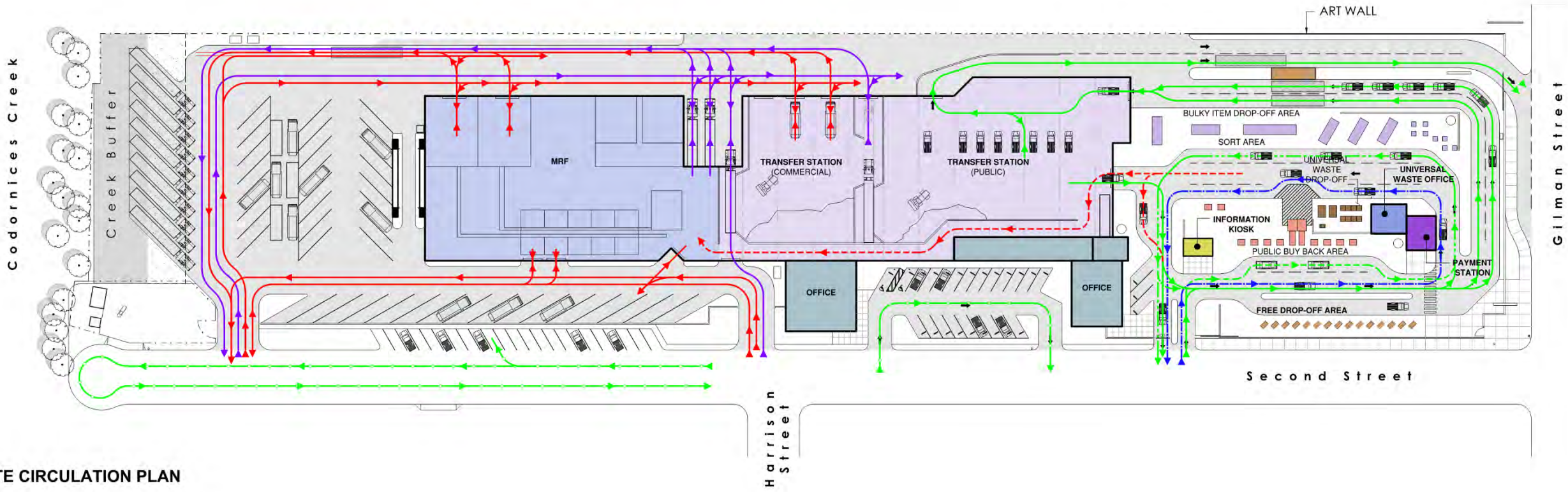
**BULKY ITEM DROP-OFF AREA**

- EWP = E-WASTE PALLETS
- MC = 22' X 8' ROLLOFF CONTAINER - LARGE METAL
- AC = 22' X 8' ROLLOFF CONTAINER - APPLIANCES
- TC = 22' X 8' ROLLOFF CONTAINER - TIRES
- UO/R = 24' BOX TRUCK - URBAN ORE/REUSABLES
- CPT = 24' TRAILER - CARPET AND CARPET PAD
- MT = 45' TRAILER - MATTRESSES

No offense, but this kind of feels like Pac-man.....

PUBLIC RECYCLE DROP-OFF AREA  
Charrette-based Proposal Concept 2  
Solid Waste & Recycling Transfer Station





**SITE CIRCULATION PLAN**

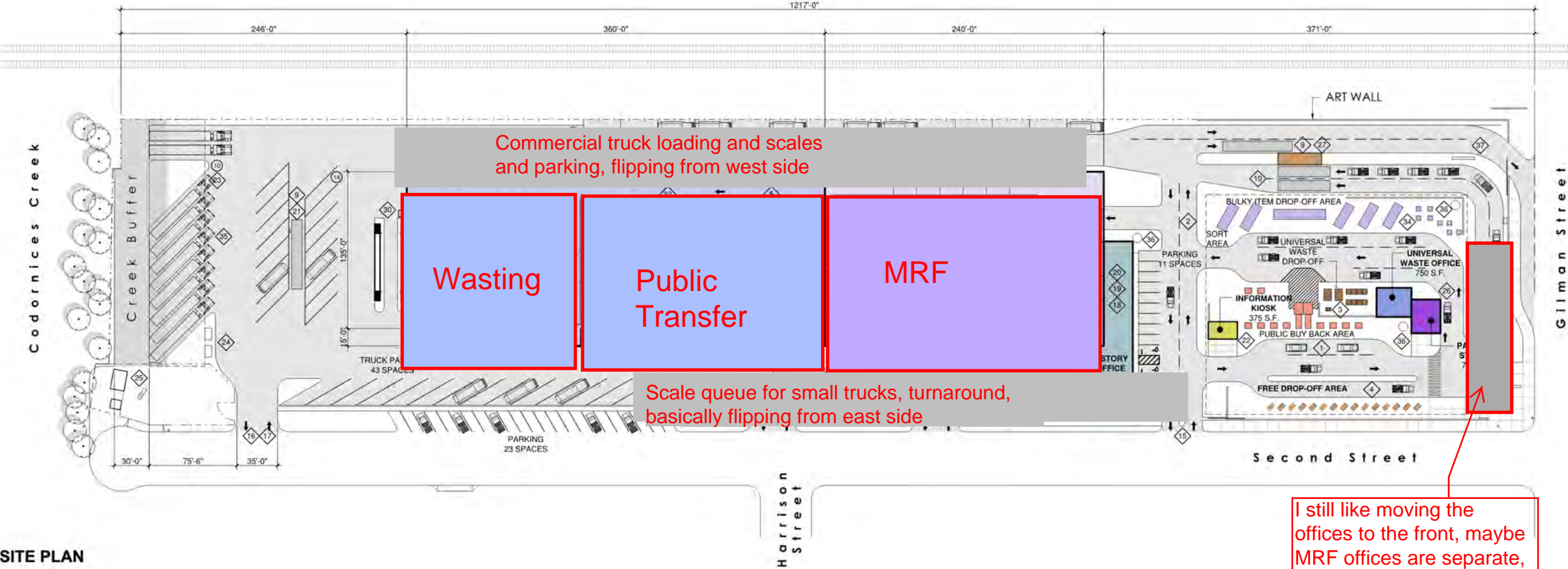
**LEGEND**

PUBLIC - SELF-HAUL		COMMERCIAL - TRANSFER TRUCKS	
PUBLIC - BULKY ITEM, SALVAGE/REUSE		COMMERCIAL - ROUTE TRUCKS	
PUBLIC - BUYBACK		COMMERCIAL - COMMODITY SHIPPING	
PUBLIC - UNIVERSAL WASTE		COMMERCIAL - FORKLIFT, YARD GOAT	
PUBLIC - EMPLOYEES			

**NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN**

# Charrette-based Proposal Concept 2

## Solid Waste & Recycling Transfer Station



Commercial truck loading and scales and parking, flipping from west side

Wasting

Public Transfer

MRF

Scale queue for small trucks, turnaround, basically flipping from east side

I still like moving the offices to the front, maybe MRF offices are separate, not the end of the world.

**SITE PLAN**

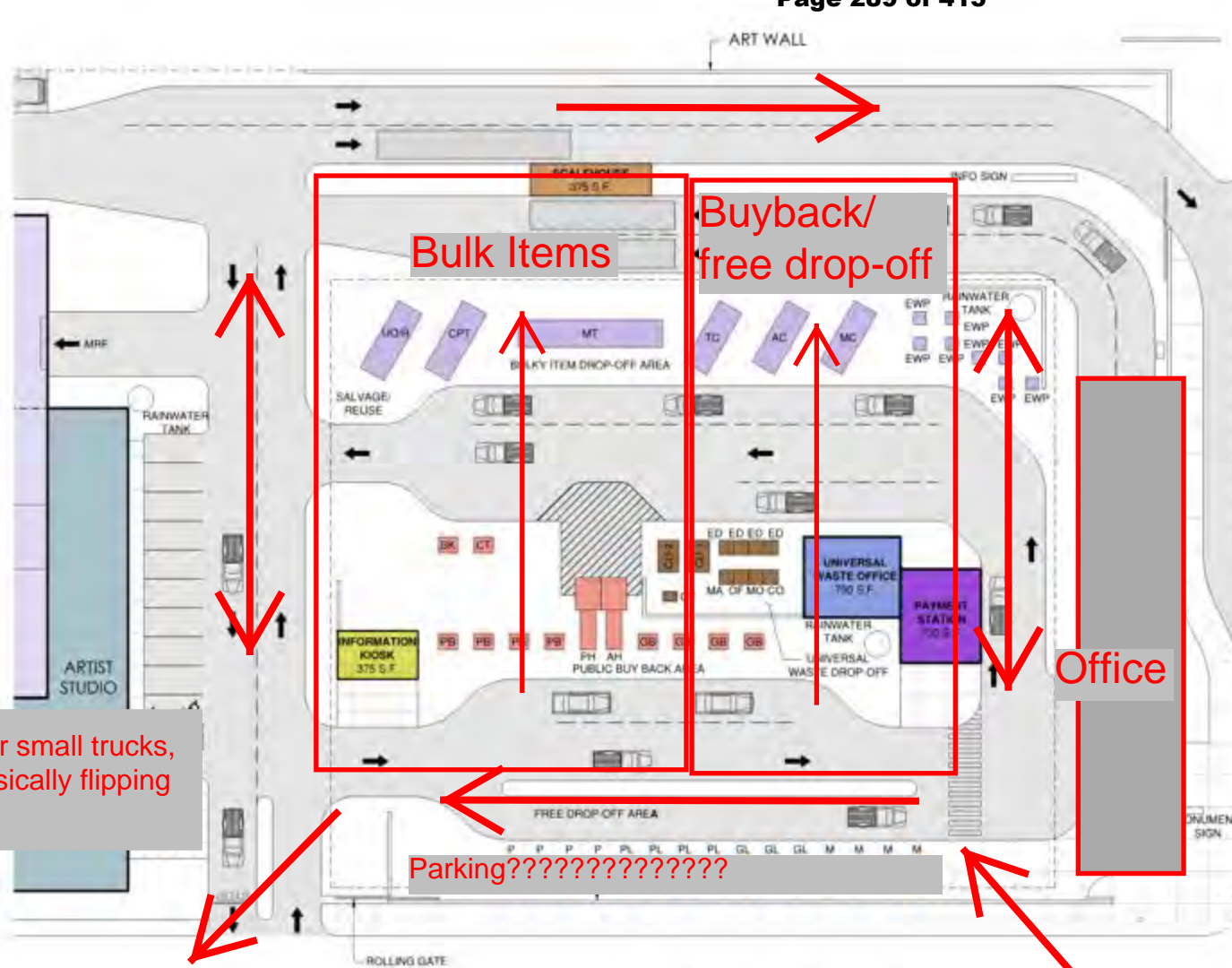
**KEYNOTES**

- |                            |  |                               |                     |                                    |
|----------------------------|--|-------------------------------|---------------------|------------------------------------|
| 1 PUBLIC BUY BACK AREA     | 9 70' SCALE  | 17 CITY VEHICLES              | 25 CNG STATION      | 33 LOADOUT                         |
| 2 BULKY ITEM DROP-OFF AREA | 10 40' SCALE   | 18 CONTRACTOR'S OFFICE        | 26 PAYMENT STATION  | 34 APPLIANCE AREA                  |
| 3 UNIVERSAL WASTE DROP-OFF | 11 EDUCATION CENTER  | 19 MRF OPERATION OFFICE       | 27 SCALEHOUSE       | 35 PERMEABLE PAVING FOR STORMWATER |
| 4 FREE DROP-OFF AREA       | 12 COMMERCIAL TIP FLOOR                                    | 20 CITY OFFICE                | 28 BIN STORAGE      | 36 RAINWATER TANK                  |
| 5 ORGANICS                 | 13 SELF HAUL AREA  | 21 RFID STATION               | 29 TRANSFORMER      | 37 INFO SIGN                       |
| 6 MRF PROCESSING AREA      | 14 CONTAINER SALVAGE TRAILER                               | 22 INFORMATION KIOSK          | 30 TRUCK WASH       |                                    |
| 7 BALE STORAGE/SHIPPING    | 15 MAIN SCALES FOR PUBLIC                                  | 23 SEMI TRAILER/TRUCK PARKING | 31 INFEEED CONVEYOR |                                    |
| 8 MRF TIPPING              | 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS | 24 FUEL ISLAND                | 32 C&D              |                                    |

# Charrette-based Proposal Concept 3

## Solid Waste & Recycling Transfer Station





**LEGEND**

**FREE DROP-OFF AREA**

- P = PAPER
- PL = PLASTIC
- GL = GLASS
- M = METALS

**PUBLIC BUY-BACK AREA**

- PB = 6' X 5' BINS - PAPER (TYP OF 4)
- GB = 6' X 5' BINS - GLASS (TYP OF 4)
- AH = HOPPER - ALUMINUM
- PH = HOPPER - PLASTIC
- BK = BOOKS
- CT = CLOTHING-TEXTILES

**UNIVERSAL WASTE DROP-OFF**

- OT = 37" X 54" OIL TANK (250-GALLON)
- OD = 55" X 55" PLATFORM - COOKING OIL DRUM
- MO = 55" X 55" PLATFORM - MOTOR OIL DRUM
- OF = 55" X 55" PLATFORM - OIL FILTER DRUM
- MA = 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
- ED = 55" X 55" PLATFORMS - EMPTY DRUMS, (TYP OF 4)
- CU-1 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
- CU-2 = 10' X 6.5' CHEMSTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

**BULKY ITEM DROP-OFF AREA**

- EWP = E-WASTE PALLETS
- MC = 22' X 8' ROLLOFF CONTAINER - LARGE METAL
- AC = 22' X 8' ROLLOFF CONTAINER - APPLIANCES
- TC = 22' X 8' ROLLOFF CONTAINER - TIRES
- UGR = 24' BOX TRUCK - URBAN ORE/REUSABLES
- CPT = 24' TRAILER - CARPET AND CARPET PAD
- MT = 45' TRAILER - MATTRESSES

Scale queue for small trucks, turnaround, basically flipping from east side

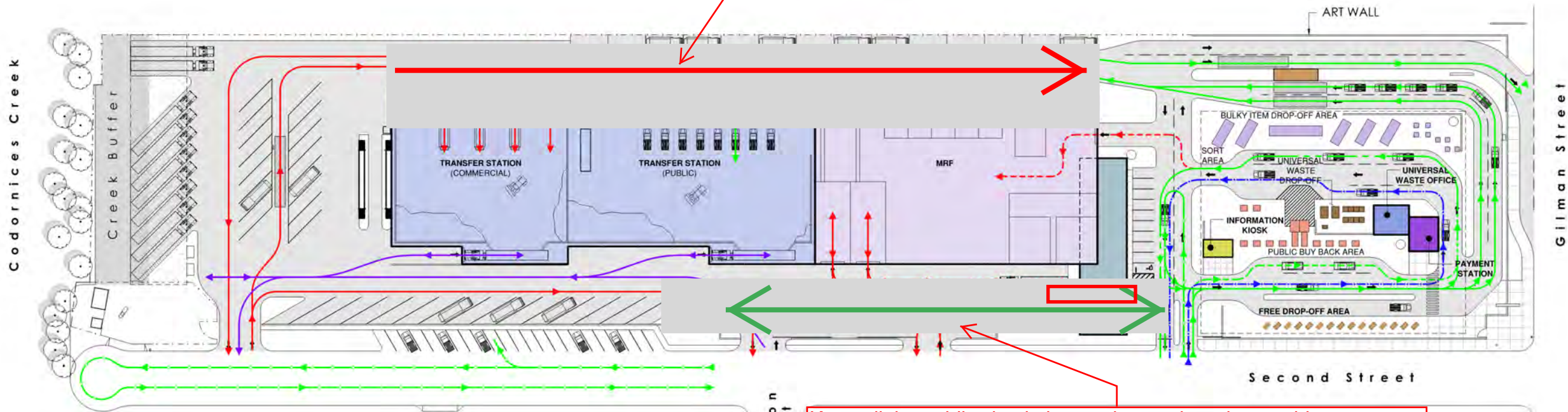
Bulk Items Buyback/free drop-off

Office

Parking????????????????

Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations, also, public functions stay on west side, less intimidating for drop offs, looks more attractive. Nasties on RR side





Keep all the public circulation on the south and west side.

In theory you could have inbound scales at the south end, and outbound scales at the north. Inbound scales would be unstaffed, but a camera would record license while computer records weight.

Probably something wrong with that, but you can always use scales in both directions at south end.

### Charrette-based Proposal Concept 3

Solid Waste & Recycling Transfer Station

#### SITE CIRCULATION PLAN

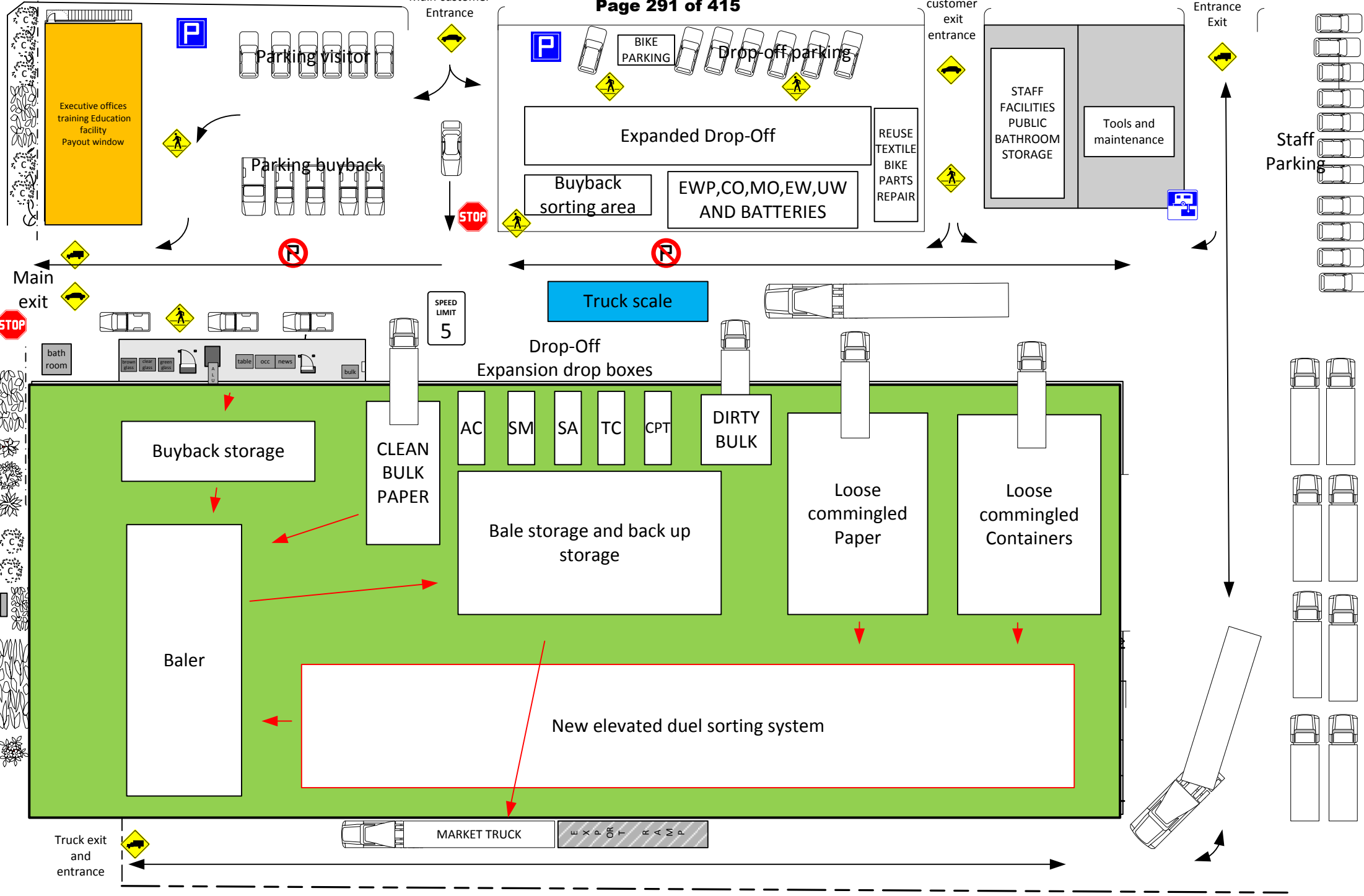
#### LEGEND

- |                                    |  |                                  |  |
|------------------------------------|--|----------------------------------|--|
| PUBLIC - SELF-HAUL                 |  | COMMERCIAL - TRANSFER TRUCKS     |  |
| PUBLIC - BULKY ITEM, SALVAGE/REUSE |  | COMMERCIAL - ROUTE TRUCKS        |  |
| PUBLIC - BUYBACK                   |  | COMMERCIAL - COMMODITY SHIPPING  |  |
| PUBLIC - UNIVERSAL WASTE           |  | COMMERCIAL - FORKLIFT, YARD GOAT |  |
| PUBLIC - EMPLOYEES                 |  |                                  |  |

NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN

SECOND STREET

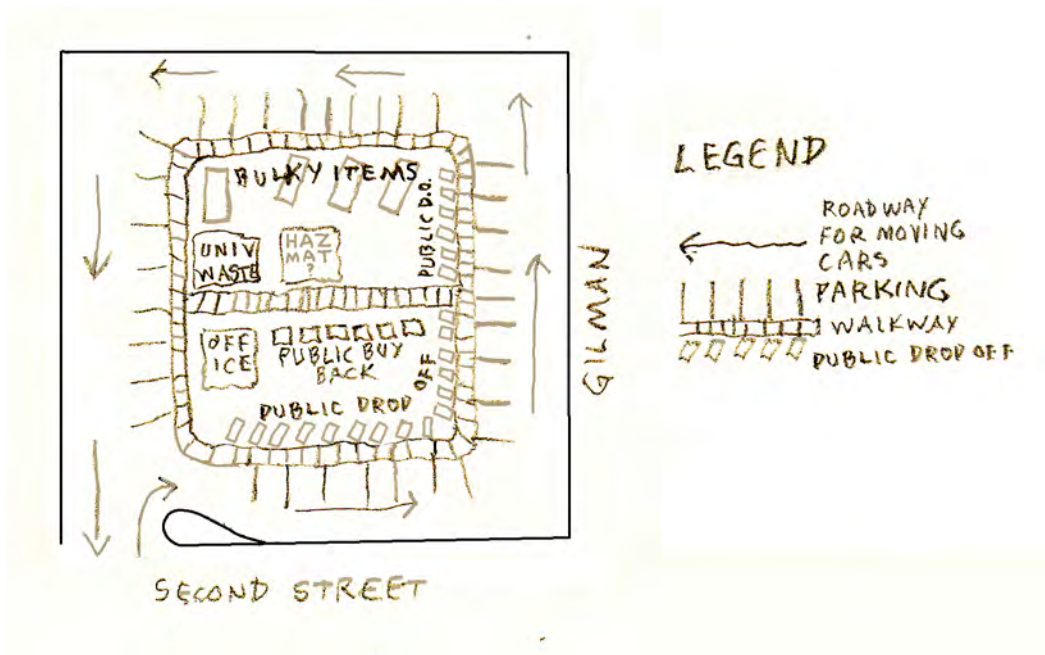
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Page 291 of 415



Railroad tracks

Commerter 5 Drawing

Commenter 6 Drawing







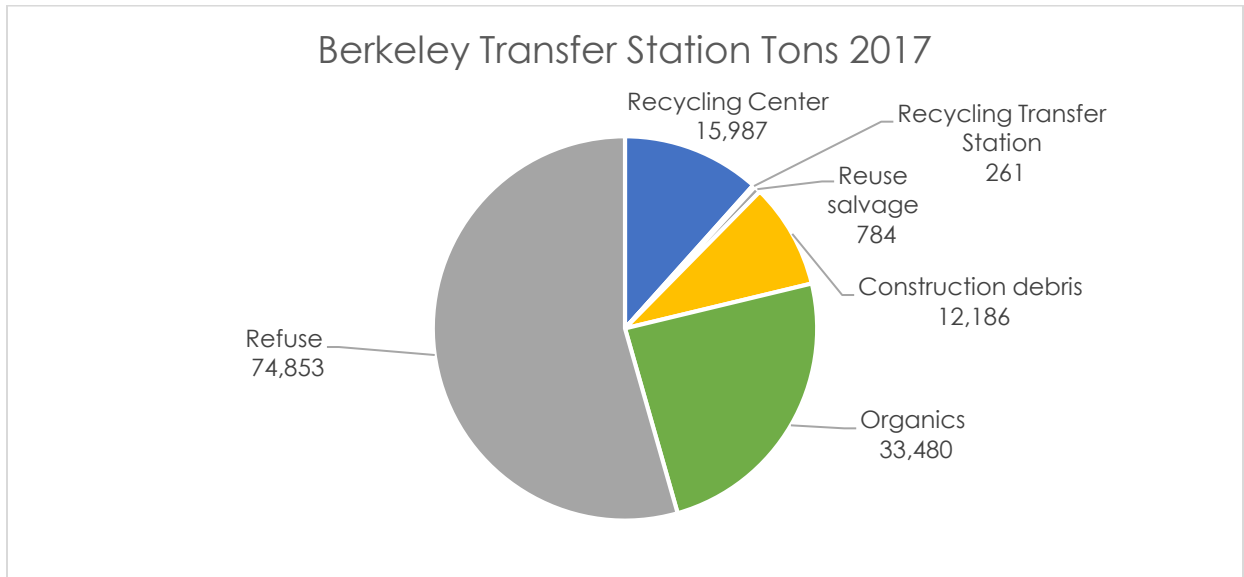
# **Exhibit 31**

## **Berkeley Zero Waste Programs**



# Berkeley Transfer Station Zero Waste Program Assessment

## Transfer Station Tonnage 2017



Material Type/Source	Tons	Percent
Recycling Center (residential, commercial, drop-off, buyback)	15,987	12%
Recycling Transfer Station (white/brown goods, mattresses, tires, propane tanks)	261	0%
Reuse salvage	784	1%
Construction debris recycling (transfer)	12,186	9%
Organics (transfer)	33,480	24%
Refuse (transfer)	74,853	54%
<b>Total</b>	<b>137,551</b>	<b>100%</b>

Source: City of Berkeley, Zero Waste Diversion Metrics, 2017

Origin	Organics Tons	Percent	Construction Tons	Percent	Refuse Tons	Percent
Berkeley	30,939	92%	8,978	74%	62,751	84%
Non-Berkeley	2,541	8%	3,208	26%	12,102	16%
<b>Total</b>	<b>33,480</b>		<b>12,186</b>		<b>74,853</b>	

Source: City of Berkeley, Zero Waste Diversion Metrics, 2017

## Existing Zero Waste Programs

### Recycling Center

The Recycling Center, operated by Community Conservation Centers, includes: buyback, drop-off, residential curbside and commercial recyclables processing. Some materials from the floor-sort activity at the transfer station are also processed at the Recycling Center.

The Recycling Center processes dual stream recycling from the residential and commercial collection program which includes: mixed containers (glass, plastic, metal) and mixed paper (paper and cardboard). Glass is color sorted and sold. PETE and HDPE plastics are sorted, baled and sold. Aluminum and steel cans are sorted baled and sold. Number 3-7 plastics are aggregated and shipped to the Titus MRF in southern California for additional processing. Approximately 60% of the plastics shipped to Titus are recovered for recycling. The Recycling Center processes two grades of paper: mixed paper and cardboard which are baled and sold.

The buyback operation is the only buyback facility in Berkeley, Albany, El Cerrito and Emeryville. The buyback operation pays customers for CRV containers (aluminum, bi-metal, glass, and plastic), scrap aluminum, mixed paper, and cardboard.

The drop-off operation accepts additional materials including: scrap steel, cooking oil, clothes, shoes and accessories, tapes/CDs, and large loads of books (for a fee).

The Recycling Center also includes a drop-off area for Universal Waste, including: fluorescent bulbs, household batteries, tool batteries, automotive batteries, light ballasts (labeled "PCB free"), and appliances (for a fee).

A total of 15,987 tons of material were handled at the Recycling Center in 2017. This represents 12% of the total throughput. Approximately 80% of the recycling tons is from the residential and commercial recycling collection programs and 20% is from the buyback and drop-off programs.



### **Self-Haul**

Self-haul includes all vehicles that use the transfer station besides the City fleet and the Ecology Center fleet. Self-haulers are directed to separate some materials from disposal, including yard trimmings, construction debris, mattresses, tires, propane tanks, and motor oil.

In addition, City staff separate some materials (including cardboard and metal) from self-haul loads after they have been delivered to the transfer station floor.

Urban Ore crews identify loads with potentially reusable items (including household goods, lumber, fixtures, and furniture) and either assist self-haulers to unload reusable items or segregate these items after they have been unloaded.

Urban Ore salvaged 784 tons of reusable items in 2017 and 261 tons of recyclable materials were diverted from landfill through the recycling area at the transfer station.

Construction debris from self-haulers is transferred to the Zanker Road Processing Facility in San Jose for recycling. Materials targeted for recycling include, wood, drywall, shingles, plastics and metal. 12,186 tons of construction materials were transferred in 2017 or about 9% of total facility throughput. 74% of construction materials are from Berkeley sources and 26% are from outside of Berkeley.

A portion of the organics tons handled at the facility (described below) are brought by self-haulers, including 2,541 tons or about 8% from outside of Berkeley.

### **Transfer**

Organics collected by City crews from residential and commercial customers in Berkeley are transferred to the Recology Blossom Valley Organics-North processing facility in Vernalis. A total of 33,480 tons of organics were handled in 2017. A portion of this total includes self-haul tons.

Refuse collected by City crews from residential and commercial customers and refuse delivered to the facility from self-haulers is transferred to the Altamont Landfill in Alameda County near Livermore. 74,853 tons were transferred to the landfill in 2017, including 62,751 tons or 84% from Berkeley sources and 12,102 tons or 16% from outside of Berkeley.

Approximately, 65% of landfilled tons attributed to Berkeley flow through the transfer station. In 2017, an additional 33,842 tons were delivered to landfills and incinerators from self-haulers (including construction & demolition materials and

residuals from processing facilities, including Blossom Valley Organics-North and Zanker).

<b>Berkeley Refuse Tons by Facility 2017</b>	<b>Tons</b>
Altamont	80,384
Azusa	3
Ox Mountain	49
Covanta	1
Fink	247
Foothill	36
Forward	1,385
Keller	9,050
Monterey	1,005
Newby	105
Potrero	1,977
Recology Hay Road	1,554
Redwood	362
Vasco	275
Yolo	3
Zanker	157
Total Berkeley Refuse Tons 2017	96,593
Berkeley Refuse Tons Transferred through Berkeley Transfer Station in 2017	62,751

Sources: CalRecycle Jurisdiction Disposal by Facility, 2017  
City of Berkeley, Zero Waste Diversion Metrics, 2017

## Future Zero Waste Programs

Future Zero Waste programs are under development or are being considered for future development by the City.

### Carpet Recycling

The City has received a grant to implement a program for separating carpets for recycling. Currently, carpets delivered to the facility are transferred to landfill. The future program will include a covered area for carpet storage. Carpets will be recycled through Carpet America Recovery Effort (CARE), a stewardship program operated pursuant to the requirements of Assembly Bill 2398 (statutes of 2010).

### **Food Recovery and Food Waste Reduction**

CalRecycle is promulgating regulations for the implementation of Senate Bill 1383 (statutes of 2016) which requires a 75-percent reduction in the level of the disposal of organics from 2014 levels by 2025, including a provision that 20 percent of edible food that is currently disposed of is recovered for human consumption by 2025. The City may need to increase organics recovery and provide for reuse of edible food.

### **Changes to the Foodware Ordinance**

The City is considering changes to its foodware ordinance which would require restaurants to provide reusable foodware for dine-in customers. This effort would also restrict distribution of single-use plastics.

### **Changes to the Construction & Demolition Debris Ordinance**

The City is researching opportunities for increasing deconstruction of buildings slated for demolition and source-separation of construction materials from building projects in the City.

### **Additional Zero Waste Program Options**

As a part of the future facility design, the City could consider additional Zero Waste programming at the facility. During the initial listening sessions held during the fall and winter of 2018, stakeholders identified the following program elements for consideration.

### **Buyback**

The facility has the only buyback in Berkeley, Albany, El Cerrito and Emeryville. It is considered a very important regional asset. It needs to accommodate both pedestrian and vehicle customers. It could be designed to be more user-friendly. Might want to consider a "bottle drop" (similar to those operated by the Oregon Beverage Recycling Cooperative).

### **Source-Separation Incentives/Requirements for Self-Haul Customers**

The system needs to enhance recovery. Most desirable is to have serial drop-off and require (or incentivize through rate structure) separation by material type (yard trimmings, lumber, scrap wood, fixtures, scrap metal, cardboard, furniture, household goods). Alternatively, there could be a picking line like at the Davis Street Transfer Station or Recology SF Recycling & Disposal. The Urban Ore scavenging function is desirable to maintain. Additional vendors could be included. The facility could have a Goodwill trailer as well and other reuse and repair vendors.



### **Drop-Off Center Improvements**

Stakeholders would like a configuration that is more “casual user friendly” similar to the El Cerrito Recycling Center. Expanded materials types accepted for recycling could include everything that can be marketed, including aseptics, flat glass, bicycle parts, electronics, corks, styfoam blocks. The City could potentially allow for licensed scavengers (like at El Cerrito).

### **Reuse Exchange**

As part of the drop-off or education center there could be a clean, dry place for free “put and take” (household goods, books, magazines).

### **Education Center**

Classroom space, community meeting space, educational displays are desired. Plus a catwalk through the facility for tours.

### **Administration Building**

Co-located office space for City staff, Community Conservation Centers, Ecology Center. This enhances collaboration and goal setting.

### **Break Room, Locker Room, Showers**

Is it possible to have two separate spaces for the two unions? It might be desirable for them to be together and build trust. There needs to be discussion with the labor representatives.

### **Recyclables processing**

The City should maintain dual stream processing. The operation should be co-located with buyback and drop-off. There is a need for more indoor storage for some materials.

### **Organics**

Assumed to be primarily a transfer function. Residential food co-collected with yard trimmings transferred to compost facilities. There is some interest in source-separated commercial organics to anaerobic digestion at EBMUD. This might require pre-processing. There is some concern about co-digestion (as biosolids from wastewater are land-applied or used as alternative daily cover at landfills).

### **Construction & Demolition**

Assumed to be primarily a transfer function. There is interest in some C&D processing for highest and best use. Enhanced source-separation is also desired. Keeping some load separate (such as asphalt shingles) can enhance recovery.

### **HHW and Universal Waste**

There is an interest in expanding the types of materials that could be collected on-site. The City could consolidate HHW and Universal Waste drop-off.

## **Refuse**

Assumed to be primarily a transfer function. There is some interest in reserving space for future processing of mixed waste.

## **Other Desired Program Features**

- Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space)
- Maker space
- Social services for vulnerable populations
- Needle exchange
- Supplemental Nutrition Assistance Program (SNAP) program applications
- Food pantry
- Landscaping
- Sculpture garden
- Compost demonstration



# **Exhibit 32**

## **Community Conservation Centers (10/15/18)**





# Zero Waste Transfer Station

## Community Conservation Centers – October 15, 2018

Attendees: Pam Belchamber, Jeff Belchamber, Nancy Gorrell, Carol Vomacka, David

### Ruth: Summary

- Looking at goals
- "Listening sessions"
- Evaluation of site
  - equipment
  - assets
  - what's the function of site
- what big stuff needs to happen at the transfer station
- vision of the entire community
- you wants and desires
- public listening sessions
- What do we need?

### Pam: Overview of "us"

- Not big staff
- Processors
- Facilities need improvement, conference rooms, etc.

### Jeff: Presentation (See PowerPoint Presentation)

- Community conservation center
- 33 employees
- Buy back drop off dual stream MRF
- Provide jobs/training to urban youth
- Over 50% of employees have 10 years of experience
- Over 200 buy back customers per day
- 7 days a week
- One of the first certified programs in CA
- 1.2 mil \$ to customers (lower income)
- Cannot collect residential garbage without buyback
- 20k pounds batteries and bulb diverted
- Max tonnage in 2005: 20k
- 66% of material is fiber
- Site plan
- Many benefits to local economy
- Local = convenient, better
- Mgmt. has experience
- Residual rate is 5%

- Storm water compliances
- Meeting requirements for fiber
- Ideal location
- Quality
- Inspected daily
- \$83k improvement to asphalt
- Goals: integrated part of zero waste, highest and best use
- Not a lot of overhead
- Experience and reputation
- Stay as dual stream, don't change to single stream

Pam:

- Don't start over from scratch
- Keep the good parts
- Our policy "labor intensive" rather than expensive equipment
- Providing jobs
- Drastic change of policy
- City's reference to "reduce cost of recycling and reuse" not possible = less reliant on people, more reliant on machines

#### Questions for CCC:

Q: Where does ecology center do fleet maintenance?

- Their own parking lot
- We use outside people

Q: Physical demarcation, no institution/political problem with combining?

- No
- But who's going to run the one space

Q: Wishlist?

- Jeff: add electronics recycling
- David: they bring electronics in 20-30 times a day
- Oil, cartridges, propane, ink, microwaves etc. recycling
- Carol: customer point of view, easier for customers to access, cleaner/faster
- Encourage customers to come here
- Bring in higher quality product
- Help the community
- Ruth: Oregon bottle system, bottle drop
- Ruth: online or paper survey on customer use
- Nancy: improved flow pattern for self-haul/dropping stuff off

Q: Are we building for Berkeley or the region?

- Not big enough for the WHOLE region but can increase from Berkeley
- Improving facility = increase in use
- Other people bringing in cardboard now

Pam: Cities don't mind funding front end but don't fund back end as much

- Not a subsidy, it's a service

- Messaging about what the customers are paying for (recycling/compost/reuse/etc.)
- More participation, not less

Q: Is there a place for reuse here?

- Jeff: we want to look at it, yes
- Nancy: some people already doing that
- Jeff: gray area – valuable stuff

Q: One line for recycling and transfer station?

- Jeff: not feasible, problematic
- Nancy: Layered load

Q: Do they bring recyclables to you from transfer station?

- They bring over scrap metal etc.

Q: Do the transfer station drop off people know about the recycling center?

- Some do, not all
- Pam: How much low-hanging fruit is going into landfill?
- City not great on PR announcing

Q: Pam: How long will the facility last?

- Ruth: 30 years, 2050
- Flexibility for adding/removing parts

Q: What are the evaluation criteria for the city?

- El Cerrito pays for facility, will Berkeley do the same?
- El Cerrito gave up buy back
- Are good jobs a value of the city?

Q: How do we get customer input?

- Send out something
- More meetings? More city council members in meetings?
- Need views from people working it, not from the public
- Public not knowledgeable enough, need direct questions

Q: Jeff: Pacific steel brought into equation?

- They are closing
- It's a factor

**Pam: Closing** (See Written Statement):

- don't reinvent the wheel
- build on success
- highest and best use
- labor intensive approach
- well paid
- not high-cost investments
- proven innovations that can be replaced when necessary



- reduce, specifically plastics
- reuse, urban ore
- recycle, dual stream system



# **Exhibit 33**

## **Ecology Center (10/15/18)**



# Zero Waste Transfer Station Ecology Center – October 15, 2018

Attendees: Martin Bourque, Greg Morgan, Deborah Beyea

## Ruth: Summary

- Redesigning the whole transfer station
- Form follows function
- What are the functions that need to happen?
- Listening sessions
- Program assessment
- What do we want?
- Who should we get to the public sessions?
- Meet with stakeholders

## Ecology Center Wishlist

- Roof, one big building
  - Flexible internally
  - Airflow, lighting
- Some things dropped off for free
  - Some get paid
  - Some need to be paid
- Stronger interface with residents
- HHW site
- Reusable exchange
  - Center for creative reuse?
- Nicer, prettier site like El Cerrito
  - More attractive to residents
  - More likely to be used
  - Semi-permanent scavengers at El Cerrito
- Source separation
- Small financial incentives for repeat customers
  - Charge for no tarp on truck/etc.
- Infrastructure for industrial/building waste
  - Require source separation
- cardboard screen on fiber line
- Needs a waste characterization study of Berkeley
- More composting facilities
  - Residential vs. industrial
- School tour accessible



## Challenges

- Industrial big haulers vs. smaller loads
  - Keep separate
- Plan for bikes and pedestrians
- We send a lot of customers to el Cerrito
- Block Styrofoam needs to be addressed
- What's the waste stream of 2030/2050?
- Current site is not user-friendly
- Reuse: efficiency of frontloader vs. picking through piles
- Thermoplastics(?) require optical sorting
- would sort differently at MRF

## Questions for Ecology Center

Q: Facilities onsite?

- Have own breakroom
- Maintain fleet on site
- Offsite maintenance is third-party
- Hoping for fleet replacement

Q: Physical demarcation between the two facilities?

- Preferred all under one admin unit

Q: How long are the contracts? What are the issues?

- 2010-2020
- Would like 15-20 year next time
- City owns carts
  - Ecology would like to own the carts
  - needs significant replacement
- Needs a waste characterization study of Berkeley
- Flood, storm water concerns
- Difficult to direct people to MRF
- Need a long-term contract/plan for Urban Ore/paper shredding/etc.
- Need to appreciate the value of Urban Ore
- Need a zero waste plan
- Want to be treated like a service provider, separate entity from city
- Same union as CCC
- Could use the same admin building
- Want to collaborate more with CCC
- More buybacks needed in Berkeley

Q: How to get the community interested in transfer station?

- Not parcel tax
- Get the word out
- Need an online survey
- Plus a user survey, using flyers at the station

Q: Is a listening session needed?

- Some people will not get the word on it
- But a lot of people will
- Flyers at the station?
- Homeless advocacy networks need to be contacted
- Basic services at station?
- Listening session in south Berkeley necessary
- Would they come to a meeting?
- Need to contact organizations there
- Ecology network needs times and dates for events

Q: Should the Transfer Station be for Berkeley only or the whole region?

- Want to service the whole region
- Don't have the room for it right now
- Redesign will get us more efficiency
- More composting facilities are needed



# **Exhibit 34**

## **Urban Ore Meeting (10/18/18)**





# Zero Waste Transfer Station Urban Ore Meeting – October 18, 2018

Attendees: Mary Lou Van Deventer, Dan Knapp, Greg Van Mechelen

## Intro by Dan:

- Reuse is a labor-intensive process
- Urban Ore has cutting edge technology/upgrades
- Annual \$2.6 million dollars in sales
- The incinerator was rejected and recycling expanded, causing today's awkward placing of drop-off at transfer station
- Urban Ore diverts 8k tons per year
- Would like credit for ideas if they are used in the new design

## Presentation

### Dan:

- Multiple income portals
- Currently have buyback and fee gate
- We need more places where money can change hands

### Many Lou:

- In 1980, Berkeley planned to make an incinerator
- Opposed by urban ore and other recycling organizations
- One corner of site dedicated to recycling, everything else incinerator
- After hard-fought initiative, recycling approved by public
- First conceptual design in Sierra magazine 1982
- 1983, new transfer station opens
- Urban Ore, Ecology Center, and CCC were all on the same site
- In 2005, Berkeley wanted to recover 75%, proposed a rebuild
- Urban Ore had designed facilities in many areas, wanted to design one for Berkeley
- "Form follows policy"
- Make reuse a priority over recycling

- Clustered design = “Mall effect” = cooperation/competition = good
- Waste is divvied out sequentially (important to prioritize reuse etc.)
- Reuse>Recycling>Compost>Soil production>Ceramics

**Greg: the site itself (See PowerPoint Presentation)**

- Unclear demarcation of zones
  - Confusion for the public
- Public face is on the narrow end of the long site (on Gilman street)
  - Multiple driveways on Gilman cause traffic issues
- Debris pile, recycling drop-off crosses path with backend workers
- Difficult/confusing layout
- Designed by aggregation = confusing design
- Issue: site has high water table and potential plume of toxic chromium VI
- Users of site: public customer, professional drop-off, materials processing, materials pick-up
- Safe/Efficient/Convenient/Flexible
- Traffic should be circular to be simple and safe
- Large trucks separate from casual users, around the edge
- One big building for materials, office next to Gilman
- Can take hazmat materials?
- Offices shared by multiple entities
- Sawtooth roof on one large building
- Reuse materials moved offsite
- Daily average of 3 tons from transfer station to Urban Ore
  - 10-15% of Urban Ore material comes from transfer station
- Divisions between different “sections” should be minimal so that items and machinery can be exchanged
- Office building should have environmental and educational features
- Solar panels on the roof
- Goal of zero energy use
- Make reuse area bigger?
- Consumer facing side and industrial facing side (airport metaphor)
- Arts project for the messaging of the building – visual are much more tuned into visual elements

- Greeters to direct them where they should go
- Keeping the public separated from the processing areas
- El Cerrito has a place for free public trading of reusable materials
- Not dipping into the toxic soil
- Safer to bring the materials to the trucks (rather than digging into the ground)
- Elevated picking line
- Tenants responsible for their own breakrooms and machinery
- 30 year plan, will Urban Ore be responsible for reuse in all that time?
  - City can take bids?
- Assisted unloading?
  - Not for every vehicle
- Picking line for self-haul?
  - Dump and pick
  - Providers decide what they want to do
- Buyback area small?
  - Add more space to the right?
- Compete with El Cerrito?
  - Need to figure out what material types we DON'T provide for
- As a service provider, what do you need?
  - Access to materials to pick up
  - We make decision of what is reusable
  - Recover non-ferrous materials
  - Other people don't know what is reusable and what is not, so we need to be able to look at all the sections
- Minimalizing trash processing?
  - As much as we can
- This design preserves pit?
  - Yes but we'd like to get rid of it
- A lot of specialists doing different things instead of one big company covering everything
- City had an old consultant plan to remove CCC, Ecology Center, and Urban Ore and replace with city staff
- Provision for paying rent on site



- Recommendations in terms of listening strategy?
  - Leaflet the transfer station customers
  - To people who buy and drop-off at Urban Ore
  - Contact councilmembers, use their email lists
  - The mayor
  - Councilmember Linda Mayo
  - Provide a Weekend/afternoon meeting time
  - Urban Ore Facebook
  - Neighborhood organizations
  - West Berkeley industrial people
  - Online survey?



# **Exhibit 35**

## **Vendor Meeting (1/17/19)**



## Zero Waste Transfer Station Vendor Meeting – January 17, 2019

### Attendees:

Ruth, Clark, Mary Lou, Doug, Greg, Jeff, Pam, Carol, David, Debbie, Daniel, Dan, Max, Martin

- Ruth: what specific needs do your facilities have?  
Recommendations etc.
- Observations from last night?
  - Greg: seeking answer without stating problem, we need to know the issue that we are solving
    - what the problem is: circulation, how do the people flow to the building, how big and small vehicles flow into the building
    - 3 genres of customers: 1) city gang, professional haulers, 2) small haulers, clearing out basement 3) MRF people (homeless, etc.)
    - we need to divide the big customers and the small customers because they have different needs. Big scales vs. little scales or carts
  - Clark: comes down to how fees are handled, what is our flexibility, we need to know the internal info from the groups today
  - Ruth: 160 average per day buyback, 40 average drop-off might increase after change
  - Dan: questioning the number, he sees it differently at the site
  - Jeff: number is higher probably
  - Ruth: el Cerrito is same program
  - Martin: what is userbase for drop-off? Improved site would take customers away from el Cerrito and from S Berkeley. How successful do we want to be?
  - Debbie: ask el Cerrito what they would improve?
  - Jeff: el Cerrito could bring their stuff to us
  - Ruth: we need to get the people who are going to transfer station now
  - Greg: we need fees for various materials



- Max: exercise is encouraging source separation, while maintaining traffic flow,
  - each person at a station could have a tablet and generate a digital ticket for customer, pay with square,
  - need to retrain people, restructure the whole system to flow smoother
- Dan: something akin to mall management, bunch of groups who pay rent, everyone on site should pay rent,
  - Marginal/token rent for certain groups
- Ruth: what materials wouldn't be covered?
- Dan: six total material recovery enterprises
- Ruth: what are the voids?
  - Ceramics?
- Greg: city needs to decide what materials it wants to handle itself or send to a private entity (airport analogy)
  - Who is doing customer-facing relations? The city?
- Ruth: is it necessary to have more than 6 enterprises?
- Mary Lou: 12 groups are master categories, can be infinitely subdivided
  - Not all textiles (for example) should go to the same place
  - Wedding dress vs. moldy carpet
- Clark: Etsy in mall metaphor
  - Big mall containing multiple micro malls
- Ruth: should we try to duplicate that or just tell people to bring wedding dress etc. to somewhere else?
- Greg: everything should be collected in one place
- Ruth: we don't want reusable stuff in the site right?
- Martin: concept of multiple portals in effect now
  - We don't need a separate purchaser/vendor for each subcategory (paper/fabric/etc.)
- Mary Lou: we need to make it easier to customers, accept everything
- Martin: we can't make everyone go to this limited site
  - People who want \$ for stuff will go to vintage stores, why come here?
- Mary Lou: we need one stop shop, customer convenience
- Jeff: improvement on collecting reusables
- Max: not have more people on the site, cater to those who are already coming, show market price for various materials
- Greg: reusables don't need a large space, just a little kiosk
- Ruth: reusables probably 5-6%
- Move on from reusable
  - Pam: build on what is working, highest and best use

- Labor intensive instead of unproven technologies
- Ecology center should be encouraged for good PR
- Dan: one last thing about reusables: as a practice we do not compete with garage/estate sales etc.
- Ruth: focus on six enterprises?
- Dan: we have labor intensive and intelligence intensive model, that is necessary
- Martin: how the people are moving across the site, trucks can't go in-out constantly, think of the user cross-site
- Mary Lou: labor/intelligence is very important, it takes skill to sort
  - Multiple stops can make it easy if linear/circular
- Greg: multiple stops could be hard on the user if they keep having to start and stop
- Ruth: route trucks – getting stuff into the right truck is a problem that happens at the users and not at the site
- Martin: same number of trucks presumably
- Carol: there was no discussion about the trucks that come IN to pick up stuff from the site
- Doug: other scrap dealers that come in to pick up stuff?
  - yes
- Dan: we brought in design of site to address issue of trucks
- Pam: what are the priorities for this site? What are the investments? What are the programs that can be used? Etc.
- Ruth: addressing ongoing uses that we have to continue
- Mary Lou: copy of the slides and plan for phasing of construction
- Clark: circulation issue –
  - Need to be flexible because things will change in the future
  - Using RFIDs etc.
  - More access to site is good, takes up real estate though
- Greg: we don't need a staff person at both incoming and outgoing scales, McDonalds drive-through metaphor with voice-box
- Clark: we need a scale master, there are a lot of important/different functions
- Greg: small haulers don't need a large scale, could do it on carts
- Doug: how will the customer know how many carts they need to put it in?
- Greg: customers park and unload all their items
- Max: helpful equipment – electronic lift gate

- Not sorting should be most expensive option
- Martin: presenting plan
  - Industrial end vs. customer facing end
  - Self haul users: regular construction users vs. household users
  - Residential and buyback should be in different places, different customers
  - Plan for traffic, possible queuing area
  - David: train will not wait for pedestrians, have to plan around that
  - Parking should be central so people don't have to walk too far
  - admin next to operations and centered
  - one big building with different functions inside
  - "el Cerrito" area should be on one end so that they don't have to enter the depths of the site
- Ruth: Any further issues?
  - Martin: separated but coordinated sections
    - Bicycle and pedestrian users
    - Industrial vs. self haul
    - Okay with duplication of collection areas
  - Max: thanks to everyone
  - Dan: rent issue
    - It gives you rights, a lease
    - RFP and competitive bids doesn't lead to better outcomes
    - Rents set to be affordable
  - Daniel: keep public away from backend
  - Debbie: goal is zero waste, emphasize education
  - David: flow is a concern, what we have now can be enhanced
  - Carol: customers want to stay away from the big industrial areas
  - Pam: ideal vs. practical
  - Jeff: his design adds an extra scale house, traffic shouldn't go against each other, processing building stays or goes?
  - Greg: stacking vertically from Gilman from most commercial to more industrial
    - Businesses would have to be redirected to Albany?
    - Explanation of circle diagram
  - Doug: n/a
  - Mary Lou: this is economic development project, goal is zero waste



- customer service is important, it should be fun and pleasant,
- rent would bring rent to the city
- walkway over the area for education
- area for social service intervention for homeless population
- no need to bid every 5 years`





# **Exhibit 36**

## **Vendor Meeting (5/22/19)**



## Zero Waste Transfer Station Vendor Meeting – May 22, 2019

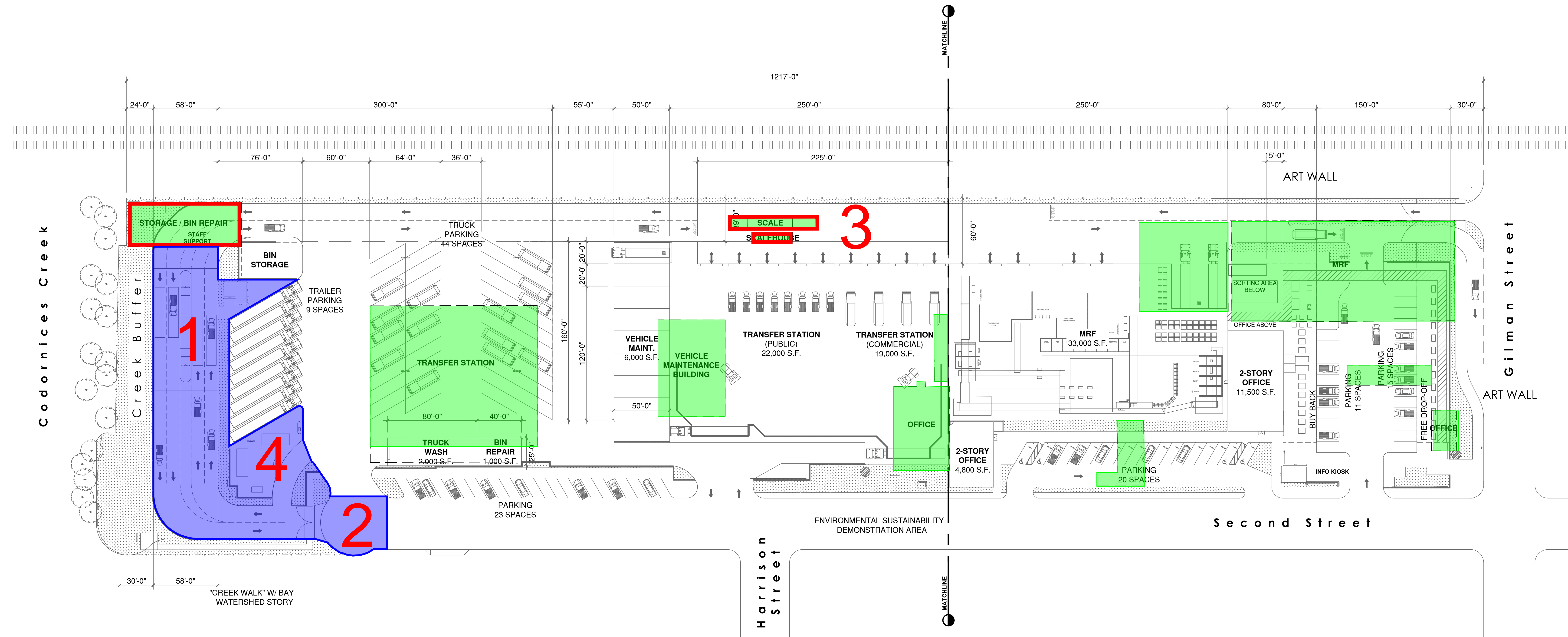
- Route truck parking in Concept A – where is employee parking?
- Could we have breakrooms above vehicle maintenance?
- Structure is contiguous in Concept A. Fewer parking spaces in drop off in Concept B.
- Do we need two loading bays?
- Any on street parking on Second Street?
- No employee parking
- Need some separation between buyback and drop off customers
- Concerns about the changing material types – does the design allow for flexibility in the future
- Can we save room to do onsite shredding of plant debris?
- Can we save room to salvage dimensional lumber?
- Can regular self-haul users use the RFID? [Could lead to abuse. Need financial control.]
- Commodity trucks have to circle out of the site
- Route trucks need access to the scale
- Would like to see some duplication of diversion activities (i.e., recovery of scrap metal in both the drop off area and the self-haul bulky area)
- Could we flip Universal Waste with buyback (get the material closer to the processing area)?
- The Strategic Plan (which will identify future programming) should inform final design



# **Exhibit 37**

## **Phasing Plans**

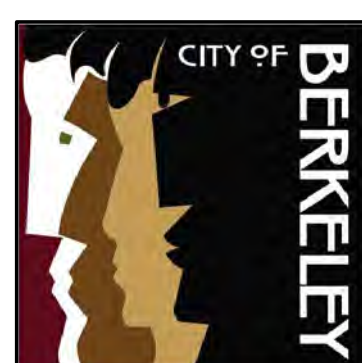




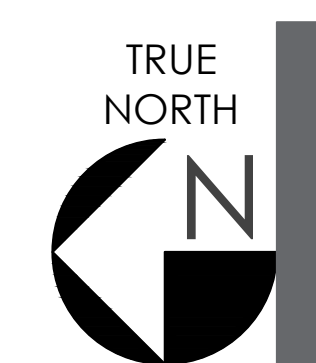
- 1- CONSTRUCTION OF NEW SCALE FACILITY (DEMO STORAGE BIN REPAIR)
- 2- RECONSTRUCTION OF CUL-DE-SAC
- 3- DEMO OF EXISTING SCALE FACILITY
- 4- RELOCATION OF CNG & DIESEL FUELING

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 1 - Site Concept A



SCALE: 1"=40'-0"  
 0' 20' 40' 80' 160'

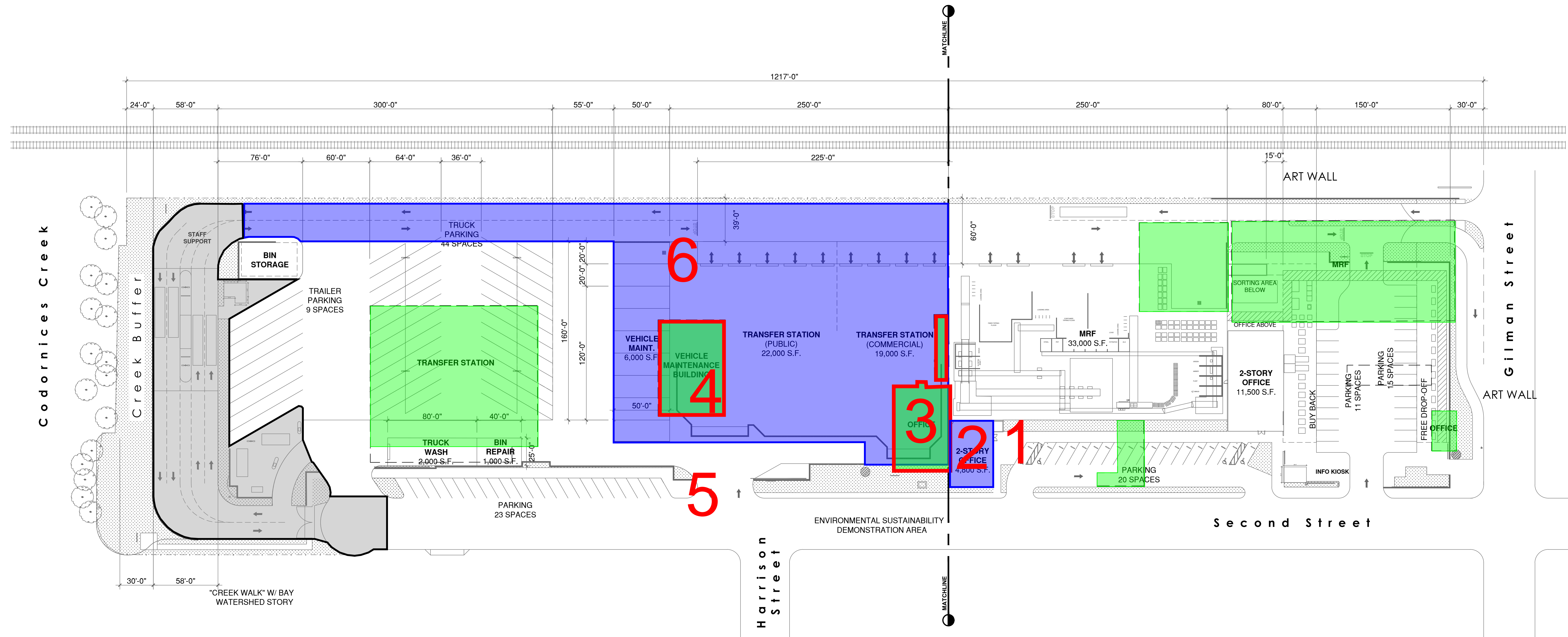


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 Material Recovery Facility and Transfer Station  
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Job No. 5447-0  
 08.23.2019

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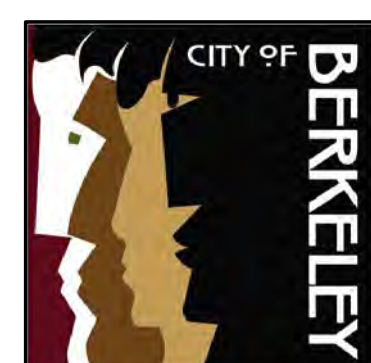




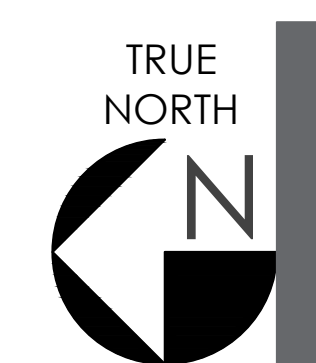
- 1- DEMOLITION OF EXISTING 1-STORY STRUCTURES
- 2- CONSTRUCTION OF NEW 2-STORY CITY ADMIN
- 3- DEMOLITION OF EXISTING CITY ADMIN (1-STORY)
- 4- DEMOLITION OF EXISTING VEHICLE MAINTENANCE.  
CITY CONTRACTS W/ 3RD PARTY
- 5- REROUTE OVERHEAD POWER
- 6- CONSTRUCTION OF NEW TRANSFER STATION & VEHICLE MAINTENANCE

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 2 - Site Concept A



SCALE: 1"=40'-0"  
0 20 40 80 160

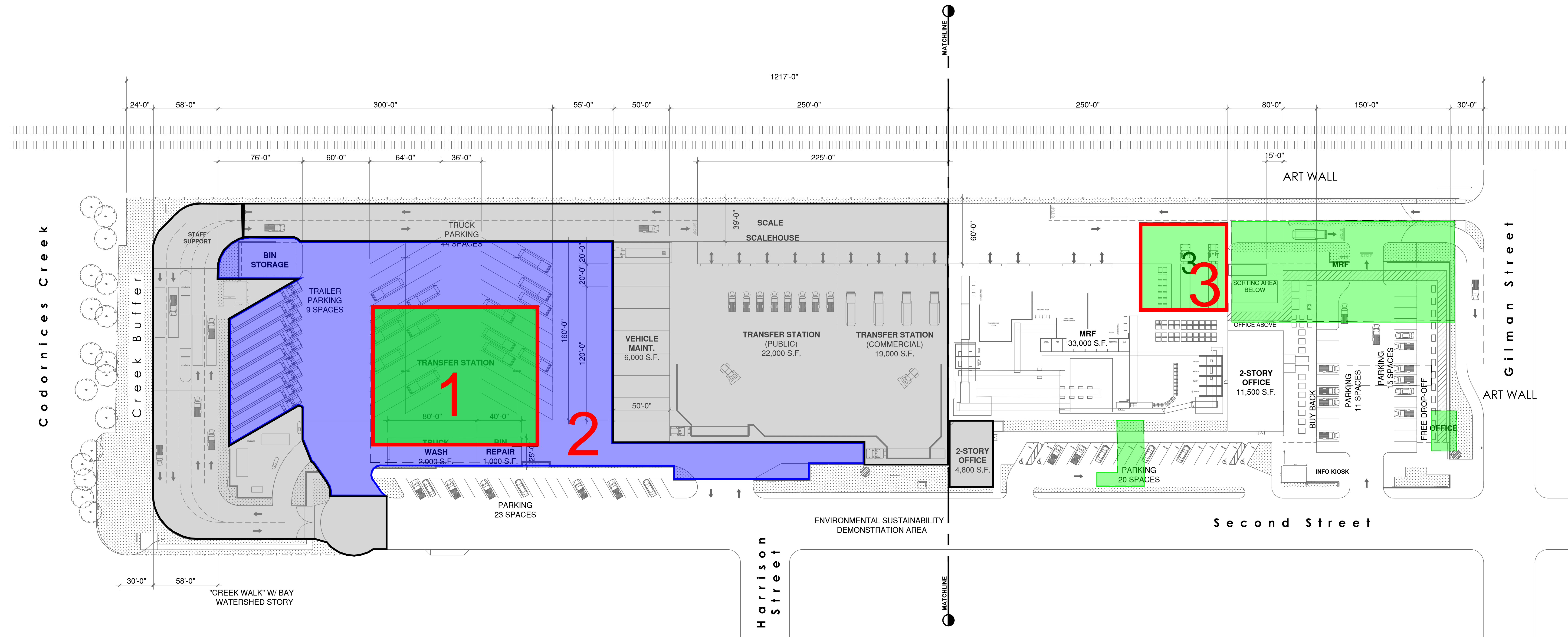


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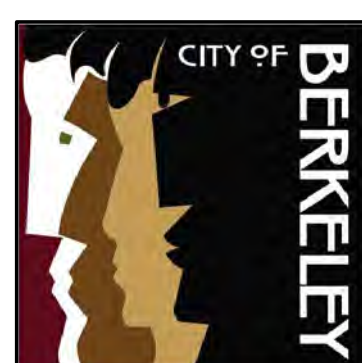




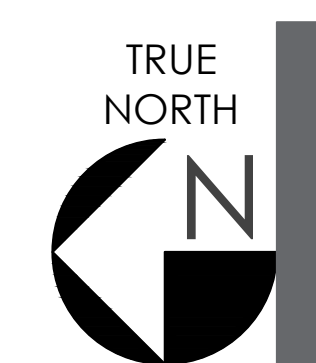
- 1- DEMOLITION OF EXISTING TRANSFER STATION
- 2- CONSTRUCT TRUCKWASH, BIN REPAIR & TRUCK PARKING
- 3- DEMOLITION OF NORTH EXTENSION OF RECYCLING BUILDING

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 3 - Site Concept **A**



SCALE: 1"=40'-0"

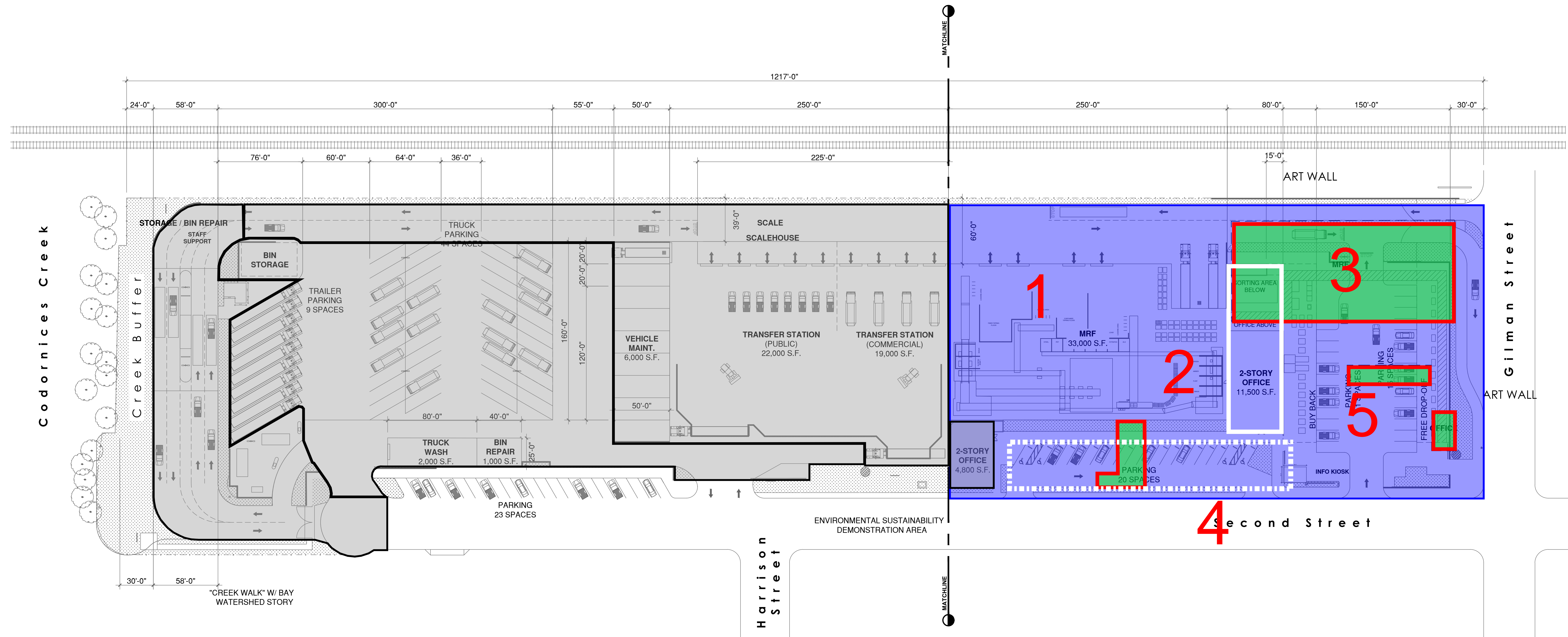


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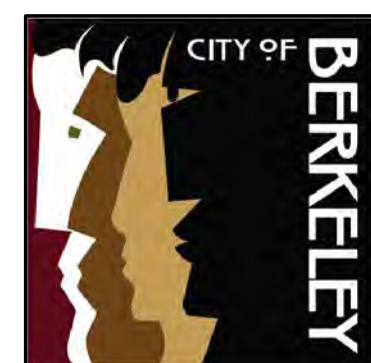




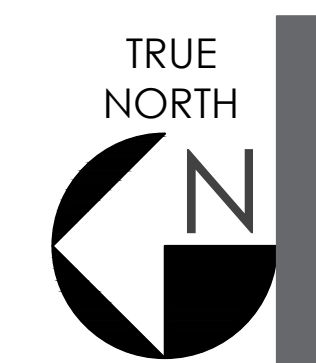
- 1- CONSTRUCT NEW MRF STRUCTURE & STAFF PARKING
- 2- INSTALL PROCESS EQUIPMENT / COMMISSION
- 3- DEMO EXISTING RECYCLING BUILDING  
CITY CONTRACTS W/ 3RD PARTY AS REQUIRED
- 4- RECONFIGURE EXISTING DROP-OFF AREA
- 5- CONSTRUCT NEW ADMIN & BUYBACK DROP-OFF AREA
- 6- COMPLETE SITE IMPROVEMENTS

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 4 - Site Concept A



SCALE: 1"=40'-0"  
0 20 40 80 160

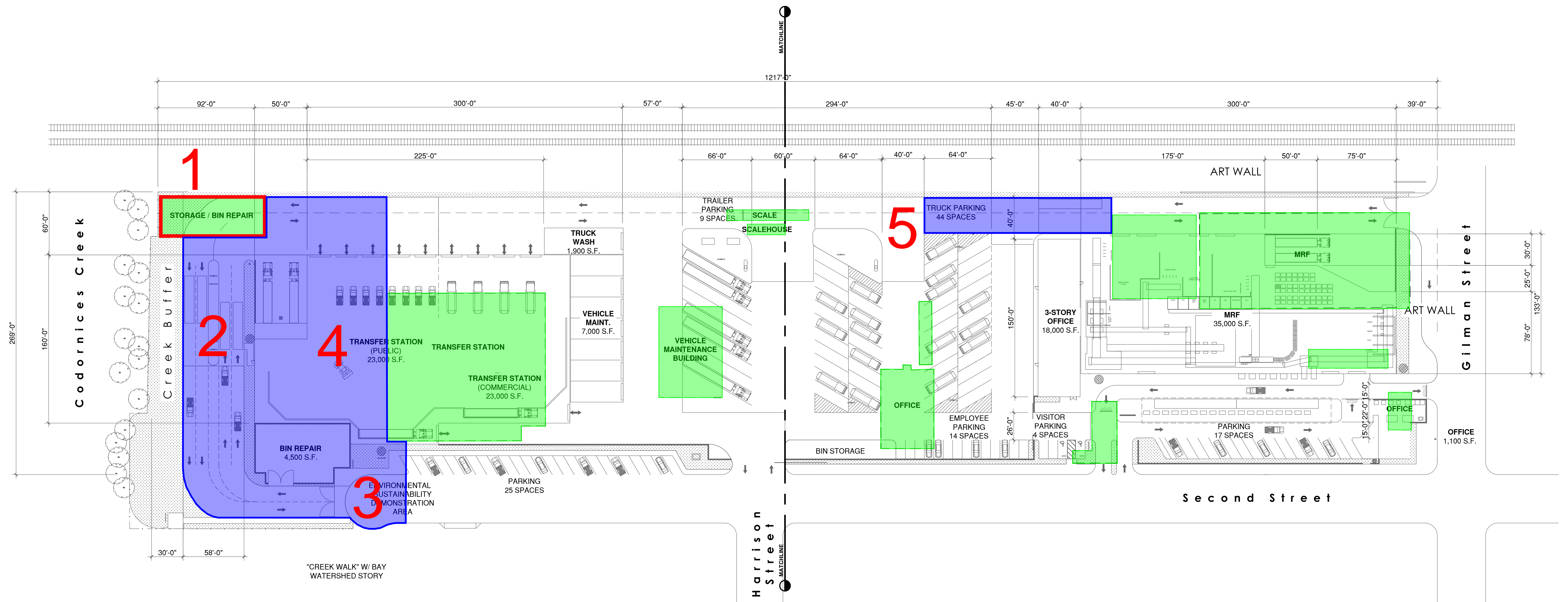


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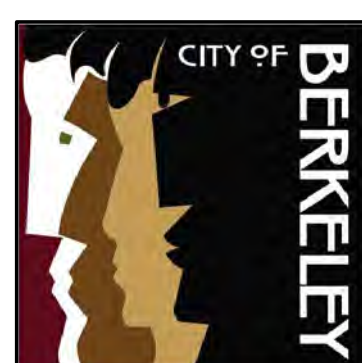




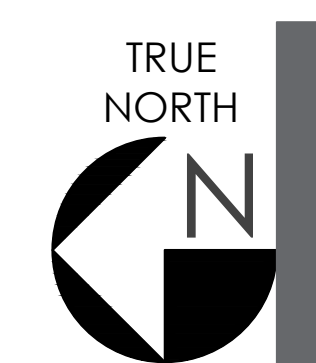
- 1- DEMO STORAGE BIN REPAIR
- 2- CONSTRUCT NEW SCALE FACILITY & TRUCK SCALE
- 3- RECONSTRUCT NEW CUL-DE-SAC (TEMP CNG FUELING OFF-SITE)
- 4- CONSTRUCT NEW TS NORTH (5) BAYS W/ ACCESS PAVING
- 5- CONSTRUCT NEW REMOTE SCALE

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 1 - Site Concept **B**



SCALE: 1"=40'-0"

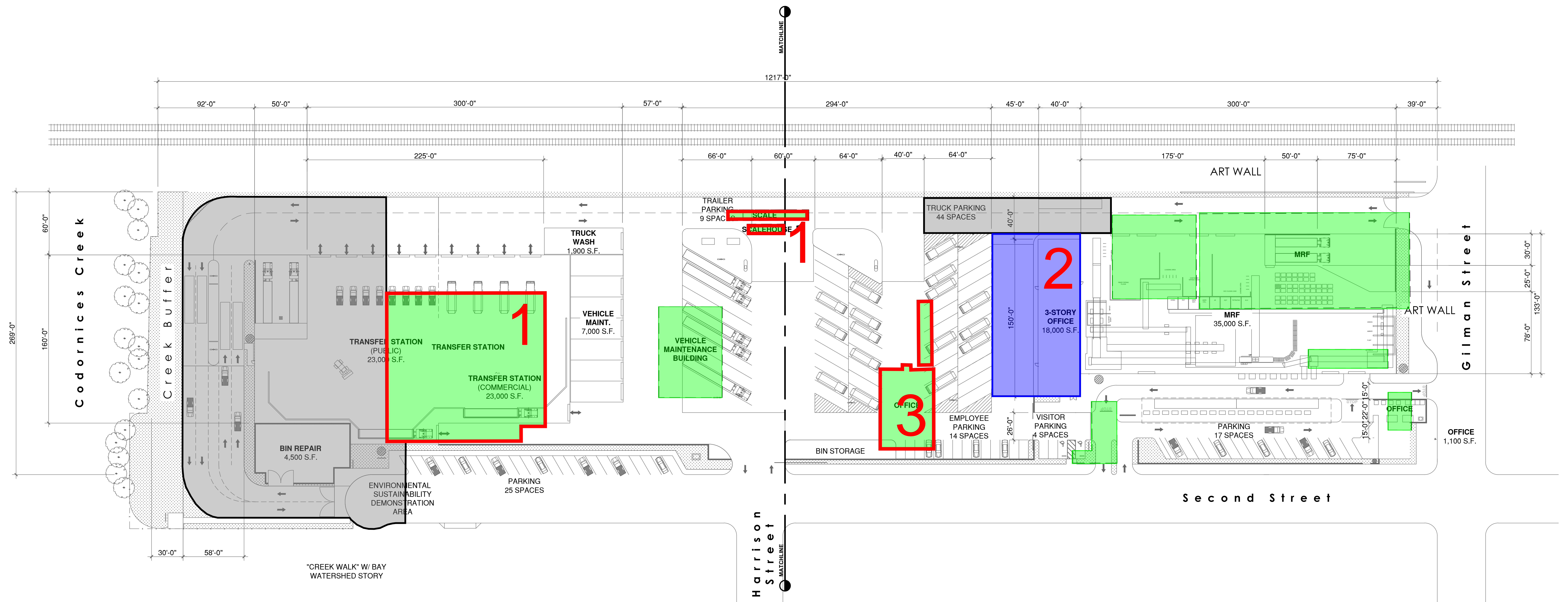


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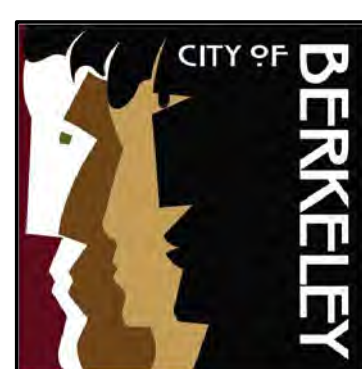




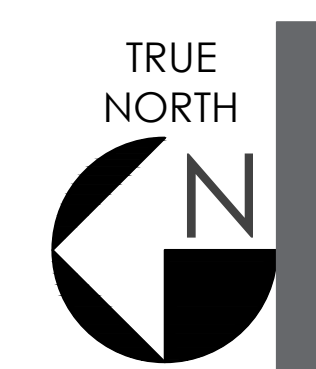
- 1- DEMO EXISTING SCALE FACILITY & TRANSFER STATION
- 2- CONSTRUCT NEW ADMIN AT MRF & DRIVE AISLE
- 3- DEMO CITY ADMIN

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 2 - Site Concept **B**



SCALE: 1"=40'-0"

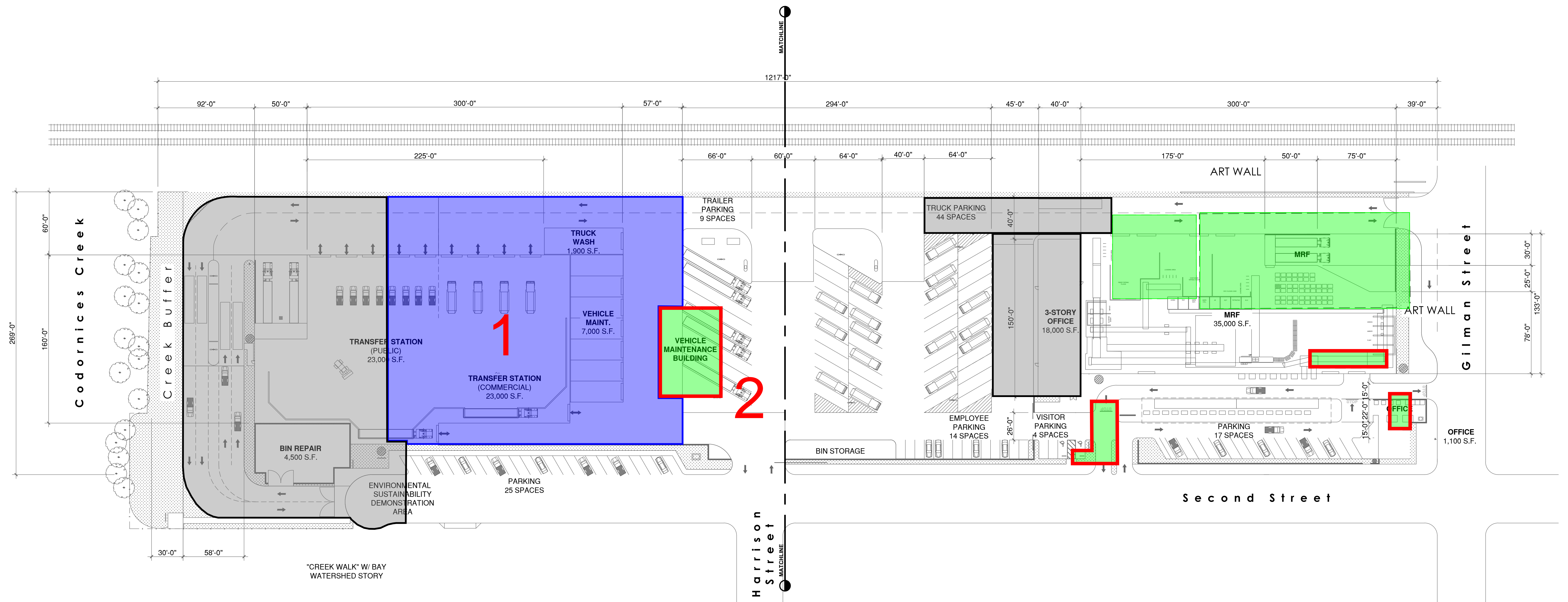


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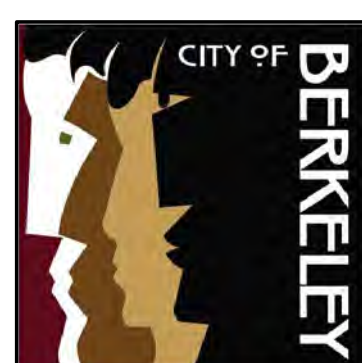




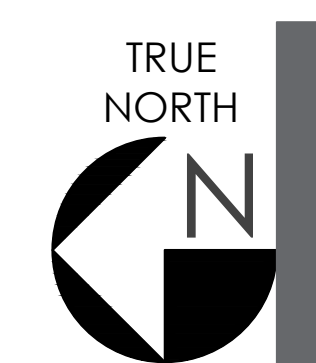
- 1- CONSTRUCT NEW TS SOUTH & VEHICLE MAINTENANCE
- 2- DEMO EXISTING VEHICLE MAINTENANCE

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 3 - Site Concept B



SCALE: 1"=40'-0"

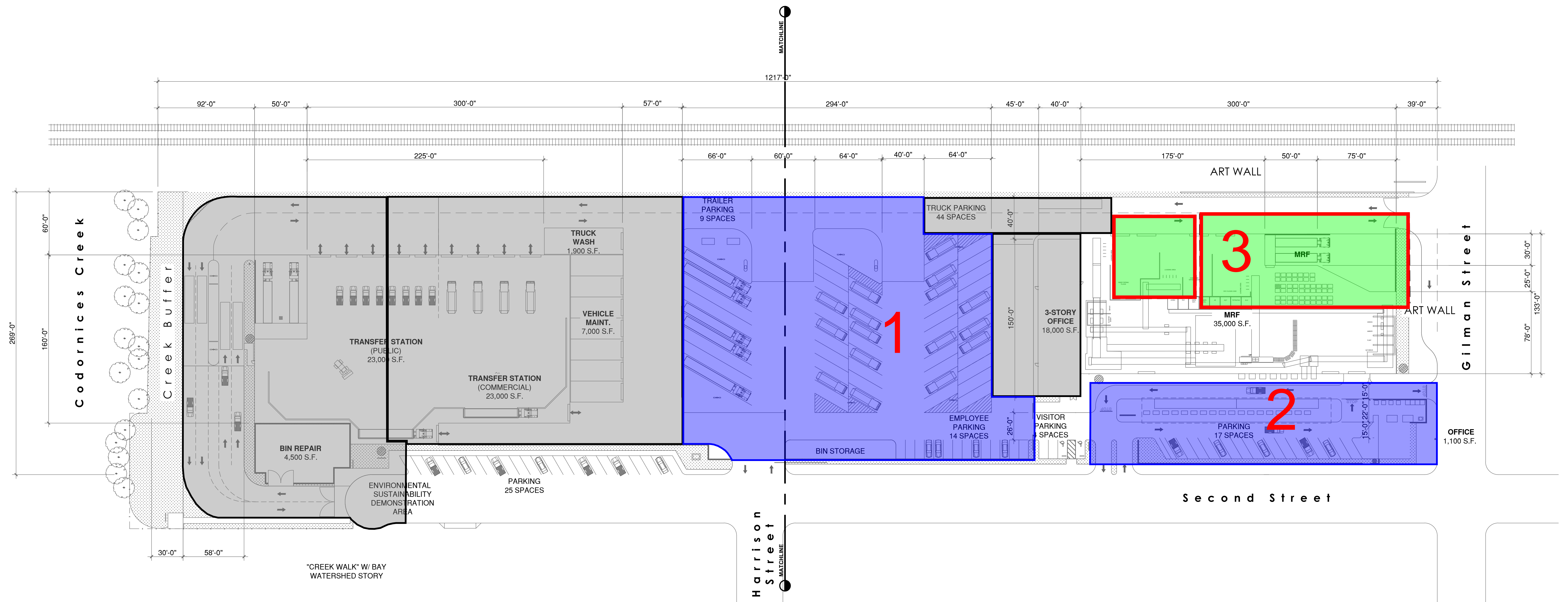


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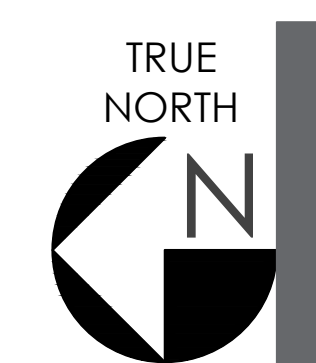
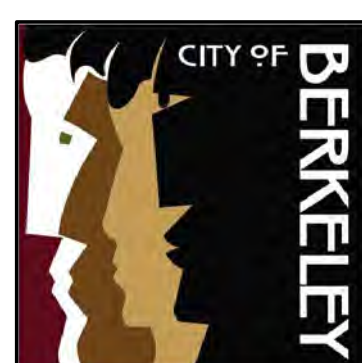


- 1- CONSTRUCT TRUCK PARKING AREA & FUEL ISLAND
- 2- RECONFIGURE BUY-BACK DROP-OFF TO OPEN NEW MRF SITE
- 3- DEMO EXISTING RECYCLING
  - MATERIAL PROCESSED BY OFF-SITE THIRD PARTY
  - PORTION OF NEW TRUCK PARKING COULD BE TEMP. USED FOR DROP-OFF

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

SCALE: 1"=40'-0"

# Phase 4 - Site Concept **B**



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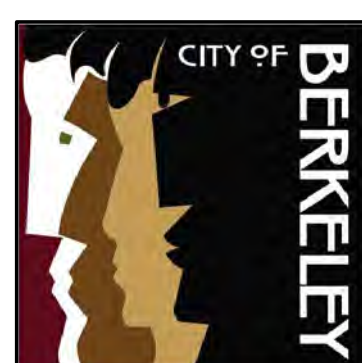




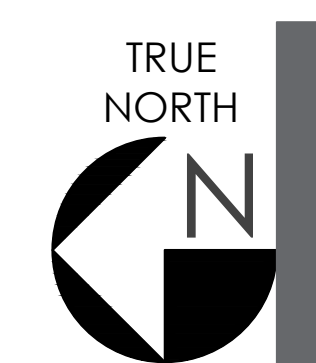
- 1- CONSTRUCT NEW MRF & BUYBACK / DROP-OFF
- 2- TEMP. BUYBACK / DROP-OFF
- 3- CONSTRUCT NEW BUYBACK / DROP-OFF
- 4- COMPLETE SITE IMPROVEMENTS

- EXISTING BUILDING
- PROPOSED DEMOLITION
- PROPOSED CONSTRUCTION

# Phase 5 - Site Concept B



SCALE: 1"=40'-0"



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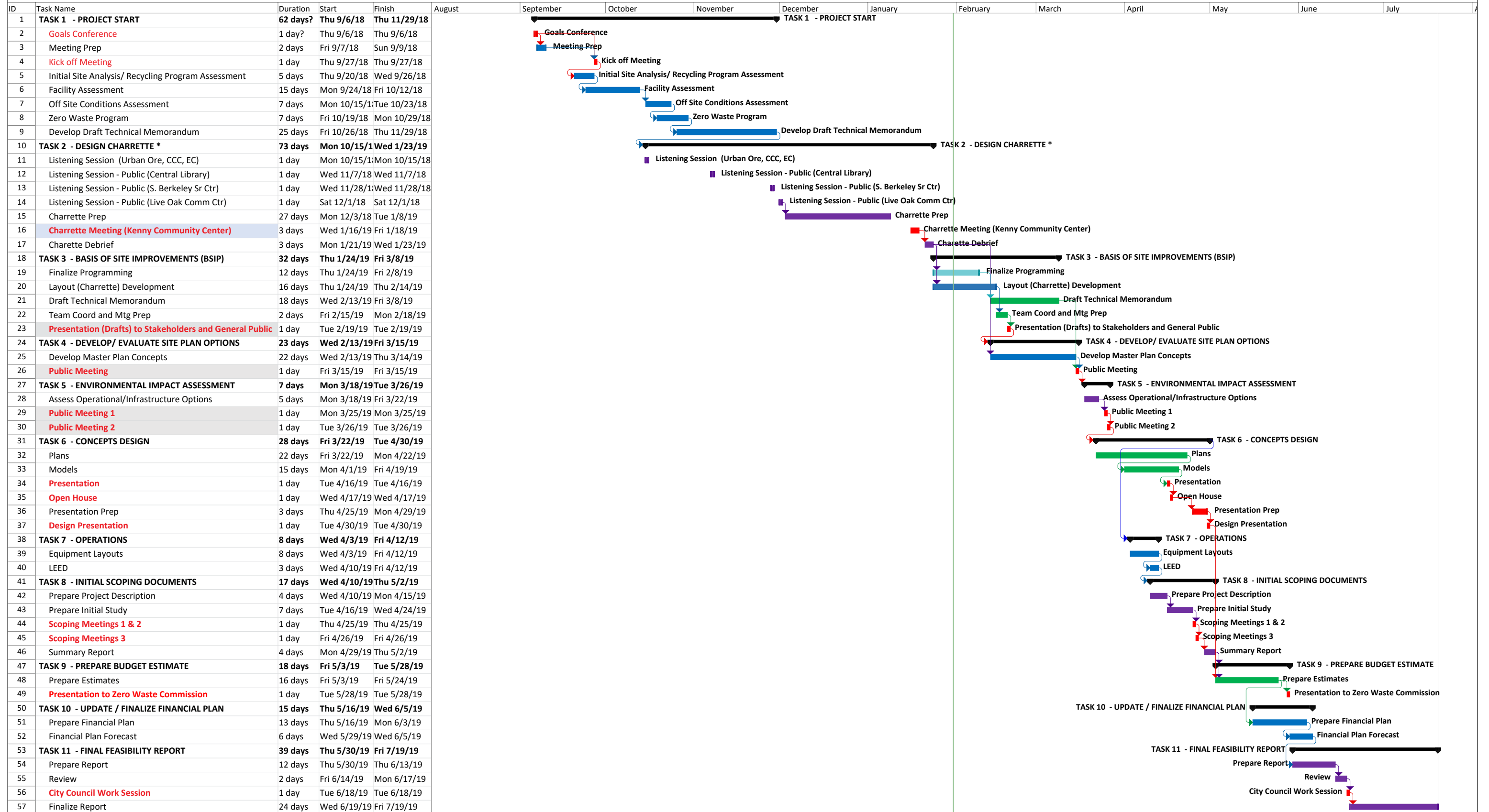


# **Exhibit 38**

## **BTS Schedule (1/31/2019)**

# City of Berkeley Zero Waste Division, Public Works Department Solid Waste & Recycling Transfer Station Feasibility Study

## Project Schedule Zero Waste Collaborative



\* Dependent on scheduling coordination for all stakeholders. Critical path activities that follow may experience delays. Note: All meeting dates that require scheduling of multiple parties may be subject to change based on scheduling conflicts.



# **Exhibit 39**

## **Feature Comparison Table**



## Berkeley Recycling &amp; Resource Recovery Center

Item	Feature	Site A	Site B
	<b>Public Buy Back and Drop-off Area</b>		
	Public Buy Back & Drop-off Area (BB/DO) is at the south end of the site and faces Gilman St for maximum visibility and community presence.	X	X
	BB/DO area has entry from Second St.	X	X
	BB/DO area users can exit directly to Second St.		X
	BB/DO area has direct pedestrian access from Gilman St..	X	X
	Pay Station has is identifiable and can be a home base for mobile transaction activity.	X	X
	BB/DO has exiting to Gilman St. (note: this a right only exit with an acceleration lane).	X	X
	Return loop capability is provided for customers that have missed a station.	X	X
	BB/DO increases the number of parking stalls and offers open access to all bins.	X	X
	BB/DO is adjacent to the MRF for the transfer of collected materials.	X	X
	BB/DO shares access with Moderate Risk Waste drop-off	X	X
	Weather protection canopy structure provided over Public Drop-off area. (this canopy will have solar photovoltaic panels for on-site power generation).	X	X
	Dedicated staff-only forklift path.	X	X
	<b>Self-haul, TS, MRF</b>		
	Self-haul entry from Second St. with (2) scales.	X	X
	Self-haul exiting (from scales) to Second St with (2) scales.	X	X
	Route trucks enter from (westbound) Gilman St.	X	X
	Route trucks exit to Gilman St. (right-only)	X	X
	Route trucks can exit from maintenance to Harrison St.	X	X
	All Transfer trailer trucks exit site to Harrison St.	X	X
	MRF & Transfer operations in one structure.	X	
	MRF & Transfer operations in separate structures.		X
	Transfer building floor area between public and commercial has no obstacles and is flexible for reassignment between public and commercial use depending on demand.	X	X
	Dedicated area for drop-off and shipment of bulky items.	X	X
	Dedicated area for salvage item collection and shipment.	X	X
	Transfer area has two loadout bays for material shipment flexibility.	X	X
	Vehicle maintenance, truck wash, and bin repair operations.	X	X
	Vehicle maintenance office and staff areas over service bays.	X	X
	Truck parking spaces in one area.	X	X

A separate remote RFID scale is required for separation of commercial and public traffic.	X	X
A second separate remote RFID scale for MRF tipping.	X	X
Transfer Station truck doors predominantly face east (tracks).	X	X
MRF truck doors predominantly face east (tracks).	X	X
The MRF truck (route and commodity) access is separate of on-site public user traffic.	X	X
Commercial truck access is separate from on-site public user traffic.	X	X
The Commercial area of the TS can be separated from public user activity.	X	X
The outbound public self-haul user has (2) scales and has good queuing capability.	X	X
Contractor and City offices are consolidated in the same area of the site.		X
Contractor and City offices are centrally located.		X
The Second St cul-de-sac is rededicated to the south to provide better public site access. (CNG fueling reconfigured)	X	X
Continued use of angled car parking spaces on east side of Second St for employee parking.	X	X
<b>Community</b>		
Information kiosk provided for on-site way-finding and facility use, City recycling programs & events, etc.	X	X
Pedestrian access provided at Gilman/Second St corner.	X	X
Education Center with multi-purpose room.	X	X
Education Center with viewing of the recycling equipment.	X	X
Artist Studio in residence and/or Makers Shop.	X	X
Art Wall at south end of east property line (visible from BART & Gilman).	X	X
<b>Environmental</b>		
Codornices Creek buffer zone and restoration area provided.	X	X
Outdoor watershed interpretive path.	X	X
Outdoor salvage material sculpture garden and environmental demonstration area.	X	X
Permeable paving for additional stormwater mitigation near the Creek.	X	X
Rainwater capture systems & low water use fixtures.	X	X
Optimal use of rooftop photovoltaics.	X	X
Wind turbines.		X
Fast roll doors to control noise, dust and odor.	X	X
Negative air flow and filtration systems.	X	X
Daylighting and LED lighting.	X	X
Vegetated walls and titanium dioxide coatings (to absorb NOx).	X	X
Recycled content construction materials.	X	X
Reuse of demolition concrete.	X	X
Reflective roof and paving to mitigate heat island effect.	X	X



## Zero Waste Transfer Station Public Meeting Notes

### 2018 Community Member and Businesses Listening Sessions

- November 7<sup>th</sup> 1:30 p.m. - 3:30 p.m.  
Berkeley Central Library, 3rd Floor Community Room, 2090 Kittredge St.
- November 28<sup>th</sup> 6 p.m. - 9 p.m.  
South Berkeley Senior Center, 2939 Ellis Street
- December 1, 1 p.m. - 4 p.m.  
Live Oak Community Center, 1301 Shattuck Avenue

### January 2019 Charrette (intensive and immersive community members input)

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

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

### 2019 Conceptual Plans Review Workshops

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

### Study Presentations

- September 27, 2018 - All City Departments  
City Hall - request for input and information
- June 24, 2019 - Zero Waste Commission  
Conceptual Plans







# Zero Waste Transfer Station Listening Session Notes – November 7, 2018

16 attendees:

- 7 Interested Citizens
- 3 Public Works Commissioners
- 2 Public Works Staff
- 2 City Contractors
- 1 Zero Waste Commissioner
- 1 Student

## Comments during discussion:

- Concerned about runoff from the site. Current site has highest PCB levels in the Bay Area. The current site floods.
- Supports El Cerrito-style drop off center. However, people don't like backing up into parking spaces at El Cerrito.
- Concerned about the functionality of the site during the construction. Would it be more efficient to move the entire operation off-site to other City properties during construction. We discussed that it is very difficult to permit sites for transfer (even temporarily).
- Suggested that the City consider changes the future composition and tonnage levels generated in Berkeley.
- We should explore what the City can do legislatively to reduce the number of tons generated.
- The City needs to address encampments (and other dumping).
- The City needs to address materials that can't be recycled or composted and must be addressed upstream.
- The facility should accept HHW and virtually everything else.
- Could the City enforce recycling and composting requirements through employing garbage inspectors/code enforcement?

## Specific Ideas for improvements at the transfer station:

- Source separation is key to clean, green streams
- The City should charge different rates for different materials, landfill last stop
- There should be a lift-able platform at the drop-off location in the transfer station, so self-haulers don't toss and break stuff
- Make it a one-stop shop
- The design needs to accommodate all types of users: pedestrians, cars, pickups/trailers, front loaders, waste trucks. All carry different materials and affect traffic flow.



- To accommodate different types of generators, there may need to be multiple places for dropping off certain types of materials (e.g., cardboard at drop-off, cardboard at buyback, cardboard at C&D).
- The City might want to consider making the site regional facility in order to maximize revenue
- Support makers/repair community to expand commerce in the city. This also brings regular people (including artists) to site which is good for education.
- El Cerrito is well done and it's a destination for visitors. Styrofoam densifier is a great draw at El Cerrito.
- Berkeley is difficult to use: who to pay, hazardous materials being dumped, where to go, long lines.
- Would like to see one big roof for rainwater catchment and storage for delayed release, sawtooth roof for natural light and solar. LEED certified. Net Zero energy.
- The City should partner with UC Berkeley to address items dumped on street during move out. New dorms have space for exchange on move in day and food waste diversion.
- Can the City utilize rail tracks at site (as alternative to long-haul trucks)?
- The City should incorporate the planning process into the City's Vision 2050 Plan.
- Will the footprint for the redesign expand onto adjacent plots or remote sites, such as the Pacific Steel?

**Additional written comments:**

- Keep dumping rates low for reuse and recycling to incentivize use.
- Fees should be lower for Berkeley residents/home owners/local contractors.
- Measure and improve access for Urban Ore's salvage and reuse operations.
- Expand role of Urban Ore to take advantage of their big site.
- Integrate self-haulers/home owners who already pay the City's Zero Waste tax assessment.
- Make the space cool for artists and re-users.
- Look into Pacific Steel site for expansion.
- Require supermarkets to accept buyback centers (to reduce impact of buyback operation at the transfer station).
- Set up transfer operation so that items can be placed directly into bins or transfer trucks.
- Use train tracks adjacent to transfer station.
- Expand the footprint of the Zero Waste facility for non-garbage services.
- Expand HHW drop-off.
- The transfer station should include a community center for reuse (like El Cerrito).
- Have a packaging materials and cardboard box reuse function.
- Keep streams separate (home owners, haulers, C&D).
- Make transfer station a destination (as in El Cerrito) rather than a hassle (as Berkeley is currently).
- Add meeting space, seed bank, medicine drop off spot, etc.
- Add a spot where wood and organic mulch can be picked up all through the month (rather than only once per month as currently offered at the Corp Yard).
- Include visual aids – a map where different materials can be dropped off.
- Provide educational opportunities for students and residents to find out more about waste stream, transparency, tours.

- The problem with waste is that people avoid knowing about it. This place could do so much great education. Make it transparent and friendly. A place for changing exhibitions.
- Include an artist-in-residence program (like at Recology and El Cerrito).
- Expand small commerce, reuse/repair, artists, makers, corks, household ceramics, on-site repair.
- Have a Zero Waste home demonstration site (like the old Integral Urban House).





## Zero Waste Transfer Station Listening Session Notes – November 28, 2018

15+ attendees:

- 9 Interested Citizens
- 2 Zero Waste Commissioners
- 3 Service Providers (EBMUD, Worm Compost, Landscaper)
- 1 City Contractor

### Questions during presentation

- We will ever have C&D on-site?
- Can we frame the necessities of why this has to be done?
- Attendees: Urban ore employee, recycling center user, zero waste commissioner, business owner to make compost into protein, interested community member, East Bay Mud interested in commercial source separating organics, facilities operator for high school
- Who does the facility operate for? University/commercial not included
- Is it 420 or 560 tons per day (as Greg said)? Current use is 420, permitted for 560
- Should be open on Sunday! 7 days a week
- How many tons a week are compost? 6000 tons a year (need metrics)
- Is this compost combined or mixed? Yard trimmings co-collected with food scraps
- Is residential co-mingled? Yes
- Commercial food scraps are easier to handle than residential, less contaminants
- What are "white/brown goods"? Electronics and appliances
- Big pile of trash in slide is also resources (to Urban Ore)
- Paying \$4 a month is fair for using El Cerrito center (even from Berkeley residents), they would pay for Berkeley
- What is the scale on the Davis Street station? How many acres? How many is Berkeley?
- Can anybody use the Davis Street station? Yes
- Do the Artists in Residence live on the facility? No. They have permission to scavenge for 3 months. Then there is a wine and cheese reception.
- The acreage of other sites will be on the notes
- The Blue Line Transfer Station collects carpets for recycling

### Specific questions and ideas for improvements

- Electronic queue monitoring system
- Maddening for a user (using a truck) as of right now. Materials should have a flow for drop off. It should be the reverse of it is right now. Covering and tying down truck multiple times is frustrating. Multiple scales could be a bottle neck.



- Is the acreage big enough for the scale we want?
- Is the street shared with other users?
- El Cerrito is good at utilizing their small space
- What is the value of processing on site?
- The processing lines are getting bigger and bigger. If this facility is preventing cross contamination, then that is its job, rather than just crushing
- Matching revenue bonds as a way to process
- Relations between the CCC and the transfer station? 20 years ago, CCC was their own operation, and were protective over their space
- Circulation problem: You have to turn right at storage place, or turn left only at certain hours.
- New plan to make a counter clockwise circle/roundabout – good idea, but doesn't solve issue of going through station
- New figuration for consumer (in Berkeley) – want normal people to use the transfer station – good idea
- Potential synergy, no separate entrances and exits
- How do we operate with El Cerrito? Is Berkeley a replacement, or can we work together?
- El Cerrito is far away and inconvenient, and can't take much more stuff
- People don't know how to use these facilities. Want to make a facility that is outreach for the community and is practical
- What is aspect of CCC's dollar value, and what percent of this dollar value is regular consumers?
- It is easier to move our stuff and is marketable, but there is not enough of it (doesn't move the market)
- What is the cost of scavenging? What would be the impact of no scavenging on the site?
- Curbside vs. buy back tons data
- Paper used to be the main money maker, but not anymore
- Wish list: Berkeley kids can go on tours, art on site, food scraps made into animal feed for sale, EV charging for electric vehicles, encouraging workers to bike, free or reduced price meals (referral for community), social services for buy back center, create business opportunities with University, drones delivering things in the future – space for this? Utilizing air space/building vertically, solar panels,
  - Modular construction – a facility that can do more in the future. If everything is in a cable tray and you can add more later
  - Low-income creative jobs where people pull stuff out at dump: Urban Ore is this!
- Outreach into education moves behavior of adults – motivation is difficult
- Show students what happens to the stuff that you sort incorrectly
- Maker space and artist in residence program
- Commercial compost gets transferred 70 miles to get processed. Energy production and displacement of fossil fuels is more important than compost – work with East Bay Mud to do this (only move 6 miles). We need contamination removal. Convert compost into gas lines back to Berkeley
- Martinez has a grinder, takes food waste from Contra Costa County. Berkeley should work together in this
- Cleaner burning natural gas vehicles are available today, while large electric vehicles are not yet
- Food waste is very digestible. 80-90% turns into gas. The rest is hauled away
- Potentially segregating digesters by waste water and food

- Urban Ore wants to incentivize source separating. Want more categories of materials, price will vary depending on markets
- People tossing things off their truck and destroying them. Solution: Have electric lift gates to adjust to truck heights to make it easier to offload
- No financial incentive to let people (scavengers) take stuff
- No need for scales for recycling
- People who want to dump and run vs. people who want to sort
- Ideal: people sort your materials for you
- No one will take flat glass, particularly architectural samples
- Urban Ore's design ideas should be utilized
- Berkeley right now is inflexible, needs to be flexible
- Integrate with City's Vision 2050 project





## Zero Waste Transfer Station Listening Session Notes – December 1, 2018

### 17+ attendees:

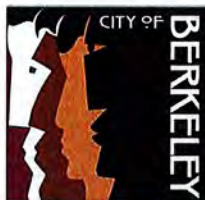
- 4 Berkeley residents
- 2 Albany residents
- 1 San Jose resident
- 2 former Zero Waste commissioners
- 4 City contractors
- 1 NGOs (Transition Berkeley)
- 1 reporter (Berkeleyside)
- 2 service providers (architect, consultant)

### Questions and comments

- Wants to no longer have to sign health waivers to play soccer downwind.
- Wants outreach as to what the transfer station does, public doesn't know.
- Several called the transfer station a dump
- Current layout is confusing.
- Current design allows wind to blow through and blow dust to soccer field. Are misters working? (Yes)
- Date of charette? Mid-January
- Who will be at charette? Project team, all public
- Reuse and repair industry is a missing stakeholder.
- Goal is not to have a transfer station at all (because we have no discarded materials).
- Urban ore is "supply-driven retail"
- Water reclamation: city uses non-potable water from elsewhere. Collect rainwater on site.
- Include photovoltaics
- Should be friendly to casual customers
- Cultural/resource survey needed
- How small can we be? Be small so other uses can use the surplus space
- Don't subsidize neighboring communities (e.g., traffic) Don't make it cheap.
- Bayshore recycled water project is a pipeline for reused water. Very close to site
- Education and awareness needs a designated space. Transfer station should be a hub for education.
- Priorities needs "health and safety of workers, visitors, neighbors" added
- Be flexible in design for changes in future
- Design for 10 years, 20 years out uses

- Use terms like "lumber" instead of "wood"
- ISO 50000 series relates to operations and efficiency. Facility should be efficient.
- Integrate Fire safety and emergency response
- Likes tours for residents/students like at Shoreway
- Parking on-site is an issue
- Near Hayward fault. Will we have capacity after disaster for debris?
- Should be able to bring everything reusable to site
- Develop multiple revenue streams: discourage out of Berkeley loads, encourage source separation, selling local repaired goods,
- Include a catwalk designed for visitors/kids
- Urban Ore has a history of recycling in Berkeley: send to all participants
- City has a goal of reducing generation
- Facility should have the lowest carbon footprint possible
- Food is volatile so consider digesting on site
- Make it more convenient to recycle/etc. than dispose
- Design should allow for flexibility as technologies and economy evolve. Mixed waste processing?
- Think long-term, once there is no "trash" – just recyclable and compostable materials
- El Cerrito is easy to use, so people use it.
- Need bike access, transit access, pedestrian access.
- You won't be able to fit everything everybody wants on the site. So no processing and no sales.
- Relocate vehicle storage and maintenance (this will cost money)
- Need more area for drop-offs, maybe two booths for weighing, truck traffic should be highest priority
- Need to prioritize options because can't fit everything
- Convenient, less expensive self-hauling prevents illegal dumping
- Should do some processing in our city. It's our problem. Off-site, we should support community-based organics processing throughout the City.
- No space for "processing", just sorting and aggregating. Should transfer materials to larger operations.
- Integrate rate study into charette. Should have 12 categories for rates.
- There is no room for C&D MRF.
- Indoor storage is a big concern
- Where should the other processing and redistribution happen?
- Urban Ore receives 50-100 loads per day that don't have to go to the transfer station
- More 3<sup>rd</sup> party vendors? Two-way transactions? Could these be moved off-site?
- Transitions (death, moves) create need for folks to get rid of materials (hard to take the time to bring everything to the right place, so it all goes to the transfer station)
- Vehicle storage and maintenance could be moved
- Rate structure should support source-separation
- City has source reduction goal (17,000 tons)
- Integrate landscaping and sculpture
- Meeting space for NGOs, workshops and Repair Café
- Artist in residence program
- Design principle – Circular Economy, local over global markets
- Ecology of commerce
- Help achieve climate goals – solar and wind resources on-site





# Zero Waste Transfer Station Listening Session Summary

**Key Take-Aways:**

- Form follows policy
- Highest and best use
- Reduce overall generation
- Facility needs to accommodate multiple user types

**Information Needs:**

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

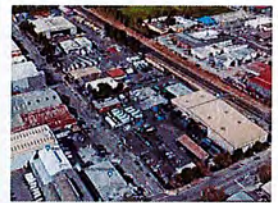
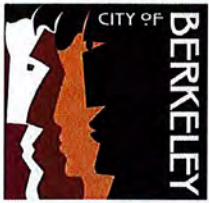
**Desired Features:**

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 El Cerrito. 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 (like at El Cerrito).
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. Plus catwalk through the facility for tours.
Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.



Break room, 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 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	<ul style="list-style-type: none"> <li>▪ Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>▪ Maker area</li> <li>▪ Social services for vulnerable populations</li> <li>▪ Needle exchange</li> <li>▪ Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>▪ Food pantry. Landscaping</li> <li>▪ Sculpture garden</li> <li>▪ Compost demonstration</li> </ul>





## Zero Waste Transfer Station Charrette Notes – January 16, 2019

### Session 1: Ideas to paper

January 16<sup>th</sup> (Wednesday): 6:00 p.m. – 8:00 p.m.

30 attendees, including:

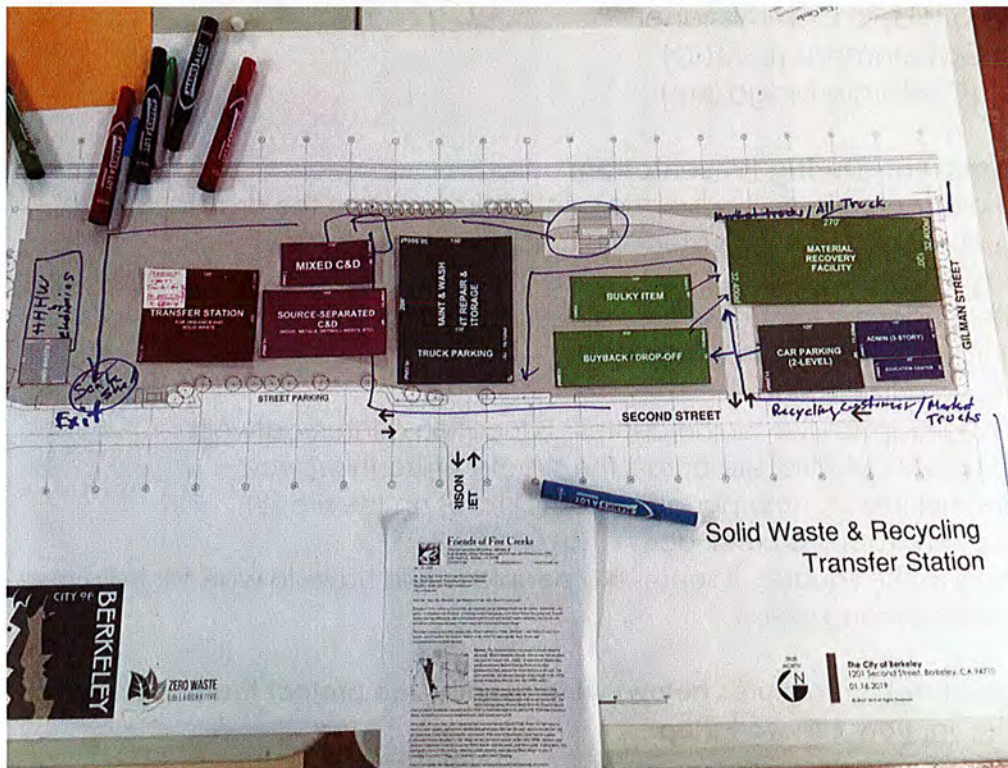
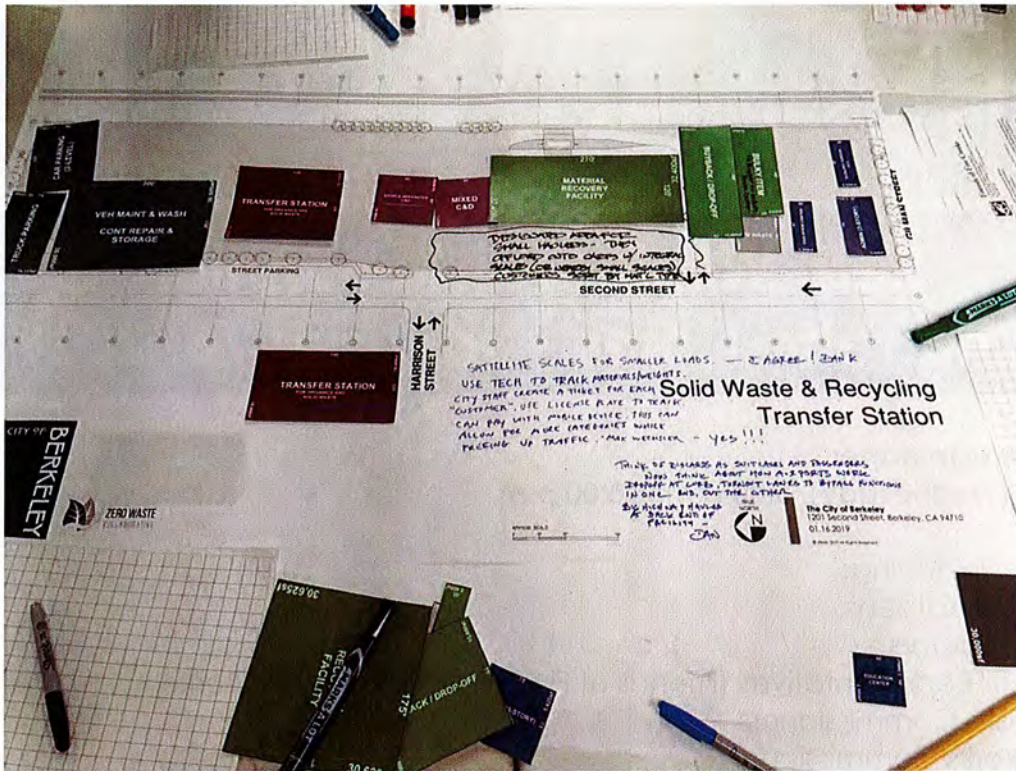
- 11 Interested Citizens
- 8 City Contractors
- 3 Non-profit Representatives (Friends of Five Creeks, Transition Berkeley, NCRA)
- 2 Zero Waste Commissioners
- 1 Public Works Commissioner
- 1 Former Zero Waste Commissioner
- 1 Regional Government (EBMUD)
- 1 Journalist (California Magazine)

### Questions/Comments During Presentation:

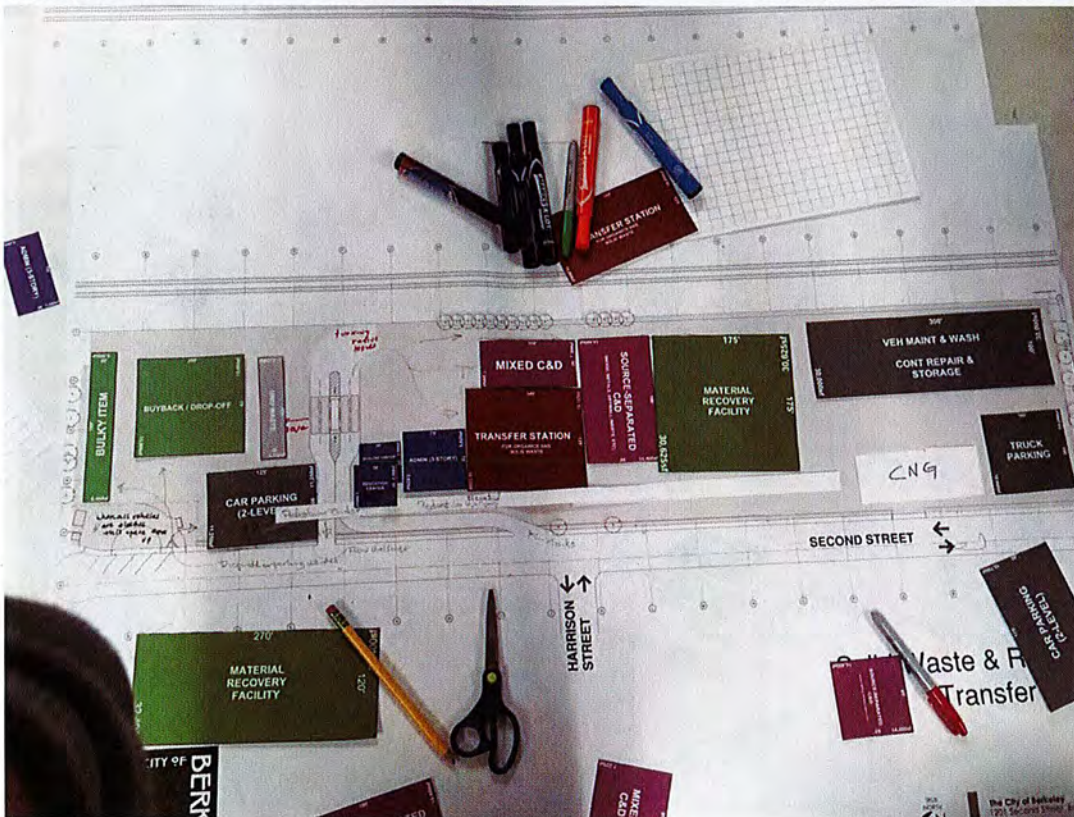
- How do cars come in and out of the center? (referring to the draft layout)
- What queue length is anticipated? (in comparison with today)
- Not everyone has to weigh, it's messy (as of now). Could there be multiple scales?
- Separate residential from commercial users? Pedestrian/car?
- Current transfer station is not welcoming
- Do we have a traffic study?
- Educational capabilities for the center? Education center, catwalk
- There is a giant industrial site across the street – utilize this space
- We need multiple income portals to collect rates on the site (?)
- How far away from the creek does it have to be?
- According to the squares, it seems like people would have to walk far from their cars to sort
- Who are the existing users?

Results from Exercises (see pictures below) were used by the project team to develop the sketches presented at the January 17<sup>th</sup> workshop.

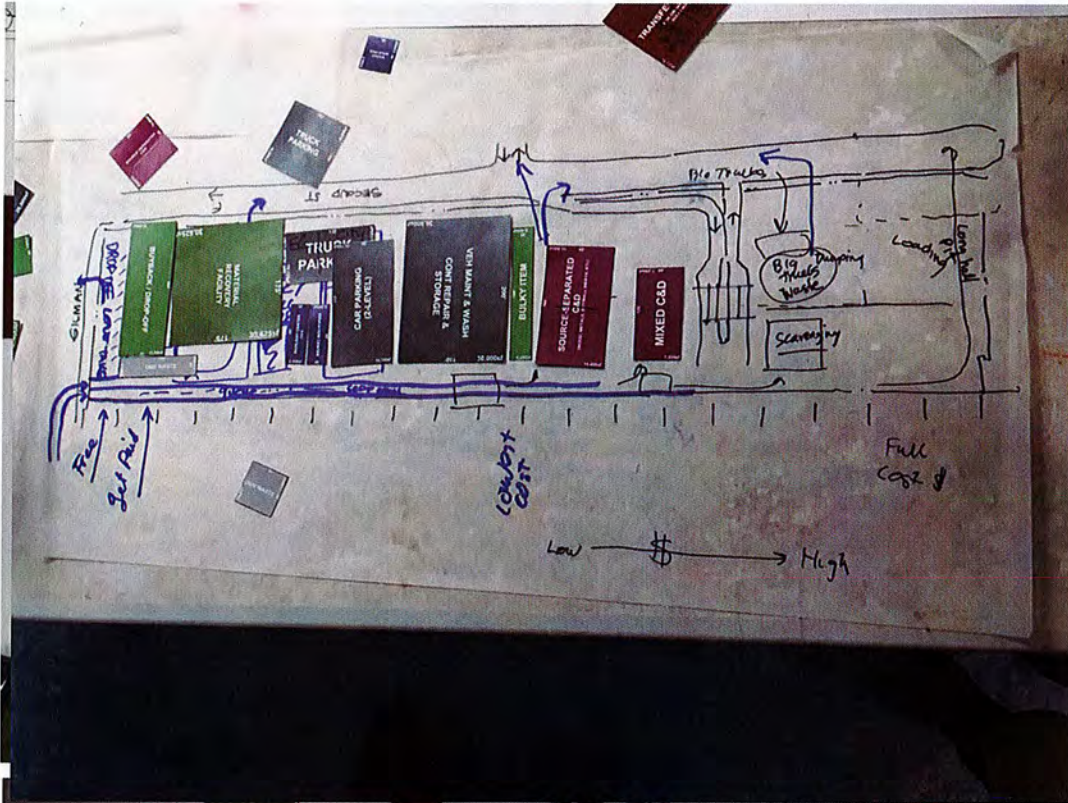
















# Zero Waste Transfer Station Charrette Notes – January 17 2019

**Session 2: Analyze first night's outcomes**  
January 17<sup>th</sup> (Thursday): 6:00 p.m. – 8:00 p.m.

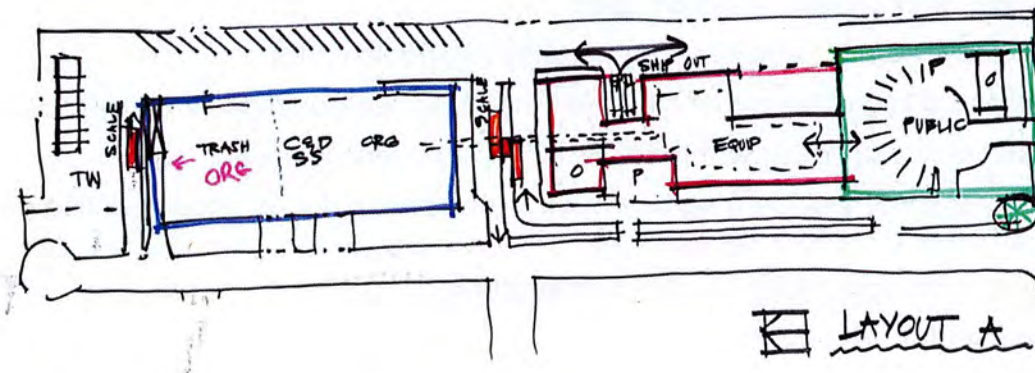
20 attendees, including:

- 7 Interested Citizens
- 6 City Contractors
- 1 Regional Government (EBMUD)

## Questions/Comments During Presentation:

- How does the transfer station connect to curbside pickup?
- How does the city define zero waste? What's Berkeley's current zero waste percentage?
- Most stations are double floored, is this feasible here? Can you dig underneath?
- Also, they use the big truck area for drop-off on weekends
- We should build up and not down, because of water issues (creek, etc.)
- What is the zoning limit?
- What is the budget?
- What is the time frame for construction?
- What has changed (since its construction) to make the current station packed?

## Site Layout A

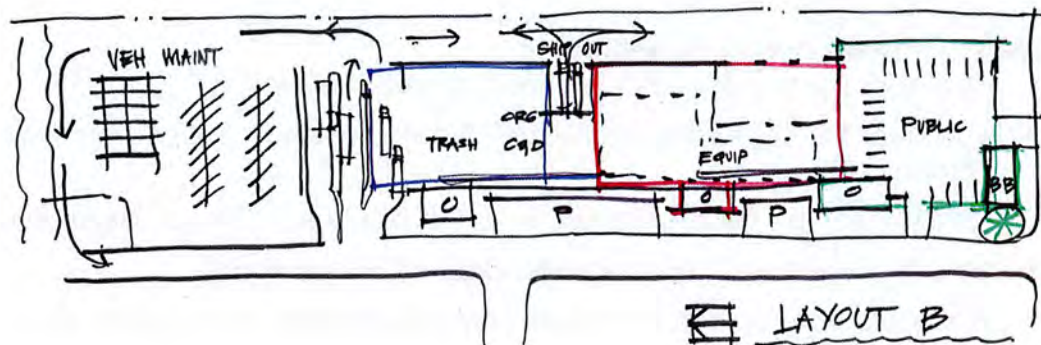


- What are the dimensions of the model?



- What is the route for a car in this model?
- A now-backwater street will become a main street with this model
- How many trucks do you have to park overnight?
- What is being taken away to allow for larger buildings?
- How to make this space more comfortable (trees, grass, community gathering spaces, etc.)
- Currently, split trucks have to go across the scales twice
- Gate off portions for educational purposes
- What is "equipment" (in regards to model)
- Left turn on Gillman is not good (right is ok)

**Site Layout B**



- Move the placement of parking plaza
- Is it possible for overnight trucks to be on a multi-story building?
- Conveyor belts can move materials between buildings.
- Professional scavengers aren't bad
- Overlay El Cerrito's blueprint on Berkeley's (Google Earth)
- There is a large space that is currently not used, we can make it parking for RVs/trucks
- Electronic monitoring system to see how long queue line is
- Mary Lou vs. Martin: having buy-back center on site (for ex. used wedding gowns, wine bottles) or bring to a vintage store
- Have urban ore picker on-site at drop-off area
- App for transfer station



# Zero Waste Transfer Station Charrette Notes – January 18, 2019

## Session 3: Recap

January 18<sup>th</sup> (Friday): 10:00 a.m. – 12:00 p.m.

15 attendees, including:

- 7 City Contractors
- 2 Public Works Staff
- 2 Non-profit Representatives (East Bay Depot, NCRA)
- 1 Interested Citizen
- 1 Zero Waste Commissioner

## Group Discussion:

- Circle model in El Cerrito is safer, but it gives up efficient parking, it's not easy to use
- Chrise: People back into poles at El Cerrito, confusing layout
- Greg: El Cerrito overlaid on Berkeley site, circle or square model works well. Parking in middle, so people don't have to back out. These schemes don't segregate small and big trucks. Scales are the problem. Use smaller scales for smaller vehicles, and have them along road. This would give accurate receipts for city too.
- Martin: Now, there are about 15 bays for self-haulers. We need to keep self-haulers and route trucks separate.
- Greg: How do long haul and route trucks exit the station? We need to consider circulation.
- Mary Lou: What is the circulation pattern for self-haul? Suggest providing space for shredding plant debris on-site.
- Jeff: Large drop off space takes away from loose storage, large bale storage, and emergency space. More space than what we currently have would be ideal.
- Susan: Residential area on Gillman is a good idea. Sculpture, signs, and education center would be nice. Time separation could work better than physical separation. How often do big trucks come in to drop off? Which plan is most flexible for the changing materials of the future? Make sure there's space for bicycle parking.



- Martin: Residential facing buyback drop off on Gillman, or in center? Vertical vs. horizontal parking? El Cerrito's attractive because of the range of materials they accept. This requires more staff and money. Consider pay as you go, rather than flat fee like El Cerrito. Have parking covered and water control.
- Dan: Charging by cubic yard changes behavior. Consider incentives. Let Department of Toxic Substances in for EIR.
- Toni: De-bag shredding so no plastic. Need a staging area for mixed commercial materials.
- Peter: We need to stop this world of convenience.
- Greg: Making 15 trips to different stations is wasteful and super inconvenient
- Greg: Exiting on Gillman is not a traffic concern.
- Dan: Tap into the surplus labor of Berkeley (tent cities) with cleaning up creeks, etc.
- Mary Lou: Make it transparent to the people, encouraging zero waste behavior. Example: Should not be a big black mystery box; there should be lots of glass.
- Toni: Strong building that can handle seismic activity, solar panels, day lighting not artificial lighting.
- Susan: Should be attractive enough to have birthday parties on site like at fire dept. Tour should feel like Jelly Belly factory tour.
- Provide a cyclist or pedestrian bridge over creek.
- Martin: Creek is in a hazard zone, think about preserving it instead of exploiting it. Have public facing side on Gillman. 2 building approach, good fences make good neighbors. The more roofs the better (for weather and workers).
- Daniel: Separation of buildings causes lack of communication in an emergency.
- Dan: Storm water management, roofs: materials should not be exposed to the elements. Berkeley can flood a lot easily.
- Peter: Mitigate concerns about lithium battery fires!!

#### Notes from Posters:

1. What Else Do We Need to Think About?
  - Traffic pattern for City crews
  - Maintenance facility for recycling
  - Flooding
  - Future above ground fuel tanks (2025 removal of current tanks)
  - Flexibility in changes in material types
  - Bicycle parking
  - Salvaging operation would like 1,000 square feet in transfer station



- As big a roof as possible
- 2. Comment on Listening Session Summary
  - Desirable to have functioning HHW facility. Address full HHW facility in EIR. See Berkeley Municipal Code 11.50.040. This would be a good time to address it (even if the HHW facility is not included).
- 3. Additional Ideas to Take into Account
  - Compost demonstration/vermiculture
  - Superior Energy Performance – ISO 50,000 (Berkeley Labs)
  - Reservation System for drop-off outside the transfer station
  - Homeless services/employment
  - Flexible space, day-lighting, visibility
  - Small bay for maintenance near MRF
  - Plan to have route truck covered parking
  - Consult with Department of Toxic Substances Control early on about their requirements
  - Rainwater capture from roofs
  - Provide opportunity to separate C&D loads
  - Consider the pros and cons of "El Cerrito Plus"
  - Consider shredding yard debris on-site
  - Consider dedicated area for EBMUD commercial organics
  - Need bale storage and room for emergency storage
  - Mechanization should support manual labor (not replace it)
  - Look at circulate design re: efficient parking – backing in is an issue. Is circular safer or not?
  - Route trucks and self-haul separation in transfer station building
  - Need at least 15 stalls for self-haul plus 6 stalls for route trucks
  - Separation of administrative units by facilities
  - How will this be funded? How much will it cost (range)?

**Preferred Facility Names:**

1. Berkeley Resource Recovery Center (8 dots)
2. Tanya Levy Zero Waste Park (4 dots)
3. Mark Gorrell Eco Pavilion (3 dots)
4. Berkeley Zero Waste Center (3 dots)
5. Berkeley Zero Waste Park (2 dots)
6. Berkeley Eco Center (2 dots)
7. Resource Development Park (2 dots)
8. Berkeley Zero Waste (1 dot)
9. Berkeley Transfers (1 dot)

Additional Suggestions:

- It should not be called "Berkeley" as it should be more regional
- Our Lamentable Materialist Legacy
- The Berkeley Museum of Contemporary Culture & Society
- Make naming an opportunity for funding, can change it periodically – pitch to social investors



## Zero Waste Transfer Station May 22<sup>nd</sup> Workshop Public Comments

- MRFs have burned down before – these buildings have a high risk
  - There will be sprinkler coverage
- How do we reach our goals of material separation? – more material has to come to the facility in a separated form, or has to go through a facility. Waste has to come in clean
  - Site needs to processed materials to be clean
- To get waste to come in clean, we should have extensive fees to encourage source-separation
- Educate population through school tours
- Site A's parking lot is too big, not using space properly. It looks too big in rendered art, in the blueprint it looks much smaller
- How do we regulate illegal/after hours dumping?
- What is universal waste?
- Want an exchange zone-type space – reusable, small, salvageable items – let public have access to it
- Creek walk is a priority, allows access to Target by foot or bike
- Site B is a much further walk through traffic to the recycling bays
- Backing up into spaces is difficult (Ex: El Cerrito)
- Should be gate across drop off area
- All material choices should be duplicated on each side of drop off area, no cross traffic
- Forklifts should have access from back, not with general traffic
- Smooth surface for shopping carts (no yellow bumps)
- Glass separation area should/will be messy, they will abandon their barrels/bins
- When does the Creek walk end? Don't want them camping out
- Site A is unsafe for pedestrians with traffic. Want enough spaces for self haul



- Connect self-haul and drop off in one row with several points of access. Put right up against bins, this would save space
- Site B is much more cramped
- Space for roll off bins
  - Won't need roll off bins because everything will happen inside the building
- The new position of the CNG station is very good for the creek
- Have outside signs for the creek, interactive and educational
- Creek walk is private property? How it intersects with Target property
- Don't have storm water collection lead into creek
- People will want carts to bring materials from their cars
- Want before and after of site to compare in presentation
- Are there plans to handle the materials on site?
- Appropriate signage near Target, maybe a recycle symbol? Able to see from freeway
- Will the buildings contain debris better than the current transfer station?
- Does the station have the physical flexibility to change as less trash comes in over time?
- What is the function of the public recycling area?
- The site that has moveable internal divisions is preferable for future flexibility
- There are reusable things going into self-haul
- Would penalty pricing drive customers away?
- Site needs to be flexible for fluctuating economy, amounts of waste



## Zero Waste Transfer Station Response to Comments on March Workshop Concept Designs

The following responses follow a very engaging open house in March that generated much feedback. We hope that most comments stated in that meeting are represented here and that the City and the Design Team has demonstrated responsiveness to those comments. At this date it is important to note that the goal of the Presentation and Open House on Wednesday May 22, is to present two concept site plan designs that 1) address the City's Zero Waste goals, is operationally efficient and creates a community engagement asset but also 2) represents the valuable community outreach input we've received. Following May 22, the design will only be developed further to a preliminary level for the purpose of only assessing the CEQA process and the viability of the design(s). It should be noted that both designs would/could be modified following this task. No further design work will be performed until the next phase is initiated by the City. In the next phase the design would be developed and would be submitted for City Planning reviews and the CEQA review which requires multiple public hearings over a 2-3 year period. This timeline provides significant additional opportunities for the community to monitor and engage the design process.

Question/Comment	Response
<b>Oral Comments from March 14<sup>th</sup> Meeting</b>	
1 Are we aiming for net 0 for solar on the facility? It would generate revenue as well	The preliminary plan is to have the transfer station be a net zero energy facility. Any surplus energy would be sold to the grid/EBC. It is likely that most of the available roof-top space would be needed to serve the facility's energy needs. However, the City will evaluate the cost/benefit of maximizing the solar energy potential in the next phase of the project.
2 Cars will probably spend more time here than in El Cerrito, wouldn't cars block each other?	More spaces for parking and unloading at drop-off/buyback are included Concept A and Concept B.
3 "Airport model" is too stressful and drives potential users away. People will go to El Cerrito or just throw it away	Comment noted.
4 It's inconvenient for Berkeley residents; it's a hassle to go all the way to Albany to exit	Comment noted.
5 Signs need to be obvious	Final design will address this.
6 This plan does not separate customers from cars and from forklifts	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this, though some interface is possible like in current operations.
7 Need to separate users: Buy back users are restaurants/bars/homeless, drop off is more residential	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Direct access from the street will be provided for pedestrians and customers on bikes. Also, bulky items have been moved back to Transfer Station with a dedicated area accessed via the scale facility.
8 Too many decision points, as opposed to El Cerrito. Need to be able to digest all options	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this to minimize decision points. Scale access is at separate location of the site.
9 Average consumer does not drop off bulky items, they should go more in the back	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.
10 Queuing line on Gilman Street doesn't seem like it fits	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Customers enter the drop-off/buyback area and if a space isn't available, they can loop back (Concept B) or loop back via Gilman to Second Street (Concept A).
11 Education center should be over the path between stations	Education Center is adjacent to the MRF Building in Concept A and Concept B
<b>Post-It Notes from March 14<sup>th</sup> Meeting</b>	
12 Need to accommodate pedestrian access	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this for direct pedestrian access.
13 Still want a bike bridge across the creek	Creek crossing is not a part of this project
14 Arts & crafts studio would be better at another site (Pacific Street). Inconsistent with keeping people from hanging out.	Comment noted.
15 Mixing truck & public traffic is not ideal	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to minimize this but allow shared access where appropriate.
16 Agree that bulky is best moved back to the dump area (Transfer Building)	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.



Question/Comment	Response
17 Having two lane roads through separate buildings wastes space. Also, getting recyclables to baler causes cross traffic	Concept A and Concept B no longer include these features. Access is at exterior.
18 Phasing? Does the site have to close? Does part?	Future phasing schedule will address this. On-going operations will be accommodated.
19 How many pay stations? Where? Who decides rates?	Currently one pay station in both Concept A and Concept B. Both designs could accommodate future mobile pad pay stations.
20 Reuse Exchange – imagine a future where reusable items never come to the Transfer Station	This feature can be included in the drop-off/buyback area, primarily in Concept B.
21 Ability to loop around drop-off is good	Concept A will require a looping back onto Gilman or customers can park and walk across aisle. Concept B allows for internal looping.
<b>Oral Comments from March 15<sup>th</sup> Meeting</b>	
22 How many cars can stop at buy back area before getting back logged?	More spaces for parking and unloading at drop-off/buyback are included Concept A and Concept B. Both concepts have a substantial increase in parking compared to current configuration for the drop-off/buy back area.
23 Move bulky items back to transfer station	Bulky items have been moved to Transfer Building in Concept A and Concept B accessed via the scale facility.
24 The way it is now, one large truck could block everyone	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Truck maneuvering is separate from public areas.
25 Transaction times with buy back take much longer	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Parking spaces allow varied time on-site.
26 Keep all cars parked on 2 <sup>nd</sup> , bring their materials on big carts into station – this is not good for people with mobility issues	Drop-off/buyback areas in Concept A and Concept B have been configured for direct access to drop-off. Assistance can be provided for people with mobility issues.
27 Think about hazardous waste facility – include HHW	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.
28 How does this plan stop materials from going to the landfill?	Fee schedule will emphasize source-separation.
29 There aren't as many trucks as customers in Berkeley	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
30 Put all types of customers/vehicles in the same line will be problematic	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Two inbound scale lanes are provided. A separate RFID scale is provided for trucks. The public drop-off/buyback is a separate part of the site. Links provided to attendees.
31 Want PDFs of site maps/traffic flow (email)	Future programming will address this.
32 Sorting on site will be too difficult if we need 90% reduction of landfill	Fee schedule will emphasize source-separation.
<ul style="list-style-type: none"> <li>- Need on site, hands on education with users</li> <li>- Behavioral change – charge more for mixed waste</li> </ul>	Transfer Building includes this open area flexibility. MRF Building is limited based on space needed for fixed-in-place processing equipment. Fee schedule will emphasize source-separation.
33 In Crescent City, they have a 12 category MRF with 18 different rates	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
34 Want to be able to move walls for flexibility	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
Shrink trash area, need expandability for recycling processing	Establishing the public "face" of the facility at Gilman (in both Concept A and Concept B) was considered an important outcome from the Design Charrette.
<b>Post-It Notes from March 15<sup>th</sup> Meeting</b>	
35 Like keeping MRF adjacent to recycling area – which handles similar materials	Future programming will address this.
36 Eliminate barrier of free drop-off are to allow access without backing up	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
37 Free drop-off area is not going to work. Not enough parking spaces. Linear drive.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
38 What about putting the offices, artist space and educational center by the creek to create a more user friendly space for the public to learn and enjoy a sculpture garden? I know there is a traffic issue but I think we could figure that out. Also keeps the big trucks with exhaust and potential oil leaks near the water and riparian habitat	Future programming will address this.
39 Generally we need to do more outreach to the community to educate us more on things like pre-sorting before going to the center and very specific info on what can be dropped off as bulky items for reuse	As part of the Gilman Street traffic flow plan, this cannot be changed.
40 Make Second Street two-way to aid traffic flow	



Question/Comment	Response
41 Need more stopping/parking space for people to unload	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
42 Check out "be green" separation and rate	Future programming will address this.
43 Public in free drop-off area will have to share area with other machinery collecting the free bins. Currently not the case.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Staff-only forklift aisle is provided behind free drop-off bins.
44 Will there be a place to put Styrofoam?	Space constraints may preclude collection of large items such as Styrofoam (which requires special handling/compression) in the drop-off area.
45 Will I be able to "recycle" all random plastics (that just will end up in landfill)?	Drop-off/buyback areas in Concept A and Concept B are sized to accept marketable plastics (similar to what is collected now).
46 Proposed concepts all mix free drop-off with the buyback customers – likely to result in more traffic congestion.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
47 Don't forget the Exchange Zone	This feature can be included in the drop-off/buyback area.
48 Within the life of the facility there may be a railroad grade crossing (may not be your problem)	Comment noted.
49 Prefer separating commercial and public traffic	Both Concept A and Concept B include this feature
50 Can load out box really be at grade?	Yes, this is a common feature in other transfer stations
<b>Commenter 1</b>	
51 On each site plan, I see a few small circles with numbers (e.g. 10 in the northeast corner of concept 1) in them. They don't correspond to the diamonds. What are they?	These are not included in Concept A and Concept B
52 For concept 3, the self-haul traffic must pass the scales through the Recycling Center. However, I think it would be much better for self-haulers not to have to go through the Recycling Center if they don't have buyback or free drop off (like concept 1). My main concern is congestion in the recycling center for folks who only want to self-haul at the tipping floor, and the associated cluster that I would see happening at the intersection right after folks get off the scales in the recycling center (concept 3 only). The other thing about concept 1 that's good is that there isn't an opportunity for folks to accidentally get into the self-haul line and potentially get backed up big time at that scale house with no escape. It's a little unclear to me whether the self-haulers in concept 1 have an egress point onto Gilman (?). The traffic circulation map should help.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Self-haul traffic has direct access to the Transfer Building.
53 I think it needs to be clarified whether the information kiosk is also a payment station. I think it would make sense to be one in concept 1 -- for those who want to do buy back only -- but not concepts 2 and 3.	Concept A and Concept B both include an information kiosk and a separate pay station in the drop-off/buyback area. Both designs could accommodate future mobile pad pay stations.
54 On that note, regarding one of the main issues -- traffic congestion within the recycling center -- I strongly urge the consideration of mobile payment devices to facilitate circulation. Also, I just want to say that I'm really happy with Greg Apa's statement that the City will be hiring 3 FTE Zero Waste Ambassadors to educate folks and provide assisted offloading. Bravo !!!!	Both designs could accommodate future mobile pad pay stations.
55 It seems that in concepts 2 and 3 the C&D and organics piles might be blocking access to the landfill tipping floor for the self-haulers. I realize the diamonds are not exact locations, but as it appears, it seems to be a problem.	Concept A and Concept B both allow sufficient space for self-haulers and City vehicles to transfer C&D, organics and landfill-bound materials. The tip floor area can be reconfigured based on future needs.
56 Regarding our operation, concept 2 seems most optimal. We don't keep container trailers on site at the transfer station, so I'm a little confused about this. In concept 2 we could have our truck(s) parked at the one location, and it's all close enough to handle there. With concepts 1 and 2, we would have to have split crews and staging equipment. A lot to think about and discuss there. Not saying it's impossible, but it would certainly offer some challenges.	Concept A and Concept B include areas for a salvage trailer. However, current operations are not precluded in either design. Salvage operation has been consolidated into the Transfer Building in both designs.
57 So ultimately I like the layout of the recycling center of concept 1 coupled with the location of the tipping floor in concept 2. Those two are incompatible though (please correct me if I'm wrong -- I hope so) in the sense that the scale house needs to be located before the tipping floor with a reasonable queuing area.	Concept A and Concept B both include this feature. In both Concepts A & B, the scale house is at the north end of the site with appropriate queuing provided.
58 I'm not sure if we've mentioned it yet, but here I'll say that it would be great (humane) to have an room in the contractor's office, or at least a space with electricity and easy access to a sanitary bathroom (we don't currently...)	Final design will address this



	Question/Comment	Response
59	<p><b>Commenter 2</b></p> <p>1. Artist's studios onsite. Ordinarily I would cheer this on, but in this case I think it's inconsistent with other goals, principally that of keeping people moving through and out. It's true that some arts and crafts people are hermits, but many want people to see them at work. Examples I've seen are blacksmiths and glass blowers. This is where the about-to-be-sold nearby six or seven acre Pacific Steel Castings site comes in. At the meeting called to get public comment on the bankruptcy sale of this property, which was attended by Berkeley's Mayor and the recently elected Northwest Berkeley councilmember as well as the Economic Development officer, there was strong support going forward for turning the Pacific Steel site into arts and crafts studios and other manufacturing startups. The land is currently zoned M for manufacturing. It has toxics issues that the buyer will have taken on. There was some talk of rezoning all or part of it into MU-Li zoning, or Mixed-Use/Light Industrial, which would trigger zoning rules that Urban Ore largely wrote that permit Material Recovery Enterprises "as of right." I think almost everyone would welcome recognition by this TS rebuild working group that you are aware of the potential for these uses to take at least some of materials that the TS site will generate and make them into things of beauty and utility.</p>	<p>Artist studio could be accommodated in the Education Center. Final design will address this.</p>
60	<p>This would relieve what I think would otherwise be a congestion-inducing use on what will be a very busy place. You can expect a lot of new customers — some from El Cerrito — at the new transfer station if it is designed and built right, in my opinion.</p> <p>2. Phasing, or close for months? The site plan that Urban Ore did had a phasing plan, wherein portions of the site were closed and moved around while demolition and reconstruction took place. Our building plans facilitated this phasing, which would take place in four stages. We'd welcome a review of that site plan, but you've gone off in another direction that seems to me to be difficult to do in stages. Does that mean a partial or complete shutdown for months or up to a year? I wanted to bring this up at the meeting, but because of so many questions and comments that flew around we ran out of time and I could not be recognized, which is why I'm bringing it up now.</p> <p>Long-term or even short-term shutdown would severely affect the current lineup of working parts and working trading platforms, risking catastrophic loss of disposal market share. (I use disposal here in its generic, ordinary English usage, which includes reuse, recycling and composting unlike "industry standard" jargon inherited from the waste industry that seems to think it owns the word. It doesn't).</p>	<p>Future phasing schedule will address this. On-going operations will be accommodated.</p>
61	<p>3. I agree strongly with Mas Wechsler that mobile payment technologies be welcomed on this site. But we still need to know how many and where the fixed pay stations will be. Our view is that the supply customers will respond more to financial signals caused by a much more complex and nuanced fee system than even to good signage and design. There is no need to argue of which is more important. All three are needed as a best practice goal. We've used financial inducements to great effect for 39 years and counting. Paying for some loads and charging for some is one of the biggest factors we cite to tour groups in explaining Urban Ore's growth over the years. What we're after is behavioral change. Fees both positive and negative can stimulate the behavior you want to see.</p>	<p>Concept A and Concept B both include an information kiosk and a separate pay station in the drop-off/buyback area. Both designs could accommodate future mobile pad pay stations.</p>
62	<p>4. Circulation. I think cutting a two lane road through the site is a waste of space, and encourages what several people called out as conflicts, safety problems, and confusion-inducing problems of wayfinding. Putting the roadway between the reuse/recycle/regulated material areas means materials have to cross the roadway from one part to another. That's why our design went for a long building and put a lot of the materials movement after drop-off on the East side. The big and small vehicles were separated very well that way. Also, having a big long building with roofs held up by trusses, and having demising walls that don't hold anything up and can be moved provides maximum segmentation flexibility that many knowledgeable people said was absolutely necessary for efficient operation. It also helps in wayfinding, because each bay can be sized appropriately for its function and for handling its designated particular configuration of the 12 market categories. Lastly it furthers the ecology of commerce model that we already have, where at least six material recovery enterprises engage in co-petition on a daily basis.</p>	<p>Transfer Building includes this flexibility. MRF Building is limited based on space needed for processing equipment. Fee schedule will emphasize source-separation. For Concept B, direct shipment off-site from each building is expected; minimal material moves between buildings.</p>

Question/Comment	Response
<p>63 Last night, at the first of the two meetings on plans for the transfer station rebuild, I raised this question: Why, in all three proposed site designs that your collaborative has provided, is the only part labeled as a "transfer station" that part where the mixed materials dumping happens? Surely, I suggested, there is a better, more specific term. Even "mixed-waste dumping" would be better.</p> <p>More importantly, isn't it true that "transfer" is what will be happening everywhere else on the site as well?</p> <p>My view, if this truth is granted, is that the whole facility is the transfer station, not just one part.</p> <p>My reasoning is that what will be transferred by supply customers, whether it happens in the recycling part, the reuse part, the composting part, the regulated materials part, or the wasting part, is:</p> <ol style="list-style-type: none"> <li>1. unwanted more or less valuable materials that mostly could fall into 12 standard market categories given better source separation and sorting; and</li> <li>2. ownership of these materials; and</li> <li>3. liability that attaches to these materials when and if they are illegally dumped in the streets or down into streambeds.</li> </ol> <p>These are important functions for civilized life, and they are common to the entire facility.</p> <p>Mr. Clark the architect said he was open to a different naming, but then he (and you) went right on calling the wasting part the transfer station. Clark tried — unsuccessfully in my opinion — to justify his usage as standard in the industry. But so is the now discredited market wrecking single stream collection system, as is mixed waste processing of just about any other kind. Then Clark reverted to the claim that all this is "just semantics," which is an even more discredited argument in my opinion, because how we name things is a vital part of the intellectual software that our brains have developed to negotiate modern life and make informed choices. Appropriate naming counts a great deal when words get put into ordinances or executive orders or regulations.</p> <p>I call on your team to revise its thinking, please, and show it by changing the way you talk about your work product. I look forward to your considered response.</p>	<p>The official name of the permitted facility is: City of Berkeley Solid Waste Management Center &amp; Transfer Station (01-AC-0029). There is no plan to change the name of the facility on the official permits.</p> <p>The facility is commonly known at the City of Berkeley Transfer Station or City of Berkeley Solid Waste &amp; Recycling Transfer Station. The preliminary plan is to update the commonly used name once it is rebuilt (e.g., Berkeley Resource Recovery Center, Berkeley Zero Waste Transfer Station, etc.).</p> <p>Concept A and Concept B include two buildings, conjoined or separated:</p> <ol style="list-style-type: none"> <li>1. MRF Building – which includes the fixed-in-place recycling processing equipment</li> <li>2. Transfer Station or Transfer Building – which transfers reusable items, organics, C&amp;D, recyclable bulky items (mattresses, carpet) and landfill-bound materials.</li> </ol> <p>There is no separate wasting building or dedicated wasting area within the conjoined building.</p> <p>All 12 categories of materials are planned to be addressed at the facility:</p> <ul style="list-style-type: none"> <li>Metal – Drop-off, Buyback, MRF Building, Transfer Building</li> <li>Glass – Drop-off, Buyback, MRF Building</li> <li>Polymers - Drop-off, Buyback, MRF Building</li> <li>Putrescible – Transfer Building</li> <li>Plant debris – Transfer Building</li> <li>Soils – Transfer Building</li> <li>Crushables – Transfer Building</li> <li>Textiles – Drop-off (reusable + rags), Transfer Building (mattresses, carpet)</li> <li>Wood – Transfer Building</li> <li>Paper – Drop-off, MRF Building</li> <li>Reusable – Drop-off, Transfer Building</li> <li>Chemicals – Universal Waste Drop-off (used oil, batteries)</li> </ul>
<p><b>Commenter 3</b></p>	
<p><b>General Comments</b></p>	
<p>64 1. Move all buildings to West side of property as a windshield and keep doors on East side as much as possible such as like Concept 1.</p>	<p>Both Concept A and Concept B include this feature with most door openings facing the east.</p>
<p>65 2. Keep the positions/order of current site conditions; e.g., Buy Back &amp; Drop-off (BB/DO) services to the south adjacent to Gilman St. next to MRF; Ecology Center operations next to MRF or closest for unloading; and finally the Transfer Station (TS) furthest away on the property with a limited view corridor to the public. The general ordering and position of each building use is still a logical setup and most familiar to the public and employees.</p>	<p>Both Concept A and Concept B include this order. Concept B is closest to current operations.</p>
<p>66 3. Fully separate traffic origins and functions, e.g., pedestrians and passenger cars from self haul (SH) light duty trucks and trailers, and heavy duty route trucks (RT) and long-haul tractor (LH) trailer trucks and commodity trucks from each other. The final design concept must prioritize the health and safety of all site users. It is especially important that SH customers are assisted in unloading within the SH Recovery Area for materials recovery and safety reasons</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. The drop-off/buyback area is separate and distinct from the Self-haul scale entry. A separate RFID scale provides entry/exit options for trucks. Corporate yard/fleet maintenance and transfer loadout trailer trucks have separate driveway access.</p>
<p>67 4. SH and RT unloading and load out should be positioned on East side of property</p>	<p>Both Concept A and Concept B include this.</p>
<p>68 5. RT and LH vehicles should egress onto Gilman Street, while SH and passenger autos (PA) exit to 2nd St.</p>	<p>Both Concept A and Concept B include this.</p>
<p>69 6. Place SH at the North end of the facility so that maximum queuing can occur on site</p>	<p>Both Concept A and Concept B include this.</p>



Question/Comment	Response
with overflow onto the northern end of 2nd St. and avoid interfering with through traffic including inbound RT and LH vehicles	
70. All RT and LH trucks enter mid property between SH & City (RT) unloading areas such that they can access both City and MRF unloading/out loading areas. This probably means two separate buildings (like Concept 1). Enlarging these structures (TS & MRF) to the dimensions of Concept 3 would represent optimizing the available site footprint	Both Concept A and Concept B include separate RFID scale off of Gilman. Concept A is one building and Concept B is two separate buildings.
71. Integrate EC offices, MRF ops Offices, Education Center, and IWW Crew Room into MRF / BB / DO area. Integrate City offices / SEIU Crew Room into City RT unloading and SH resource Recovery Infrastructure	Concept A includes two separate office buildings. Concept B includes a more consolidated office building approach.
72. Include electric charging stations and capacity for both light and heavy duty vehicles for future use	Final design will address this.
73. Have just one load out each for MSW and Organics shared by separate City RT and SH offload areas. Commercial food scrap is only collected by City RT; mixed C&D collected only by SH.	Both Concept A and Concept B include two load out areas. These can accommodate multiple materials.
74. Consider separate line for commercial food scrap that includes a presort/clean up for offsite digestion destination. Additional separation criteria from other operations within the TS would need to be developed for this somewhat difficult handling process (drainage, odors, vectors, etc.)	Site constraints preclude organics processing in the Transfer Building.
75. Have duplicate/adjunct collection for some items like cardboard in both BB, DO & SH, and household goods in DO & SH.	Both Concept A and Concept B can accommodate this.
76. Fueling island should be located away from significant other traffic.	Both Concept A and Concept B include this feature.
77. Curbside Recycling Collection	
78. Create close adjacency of Ecology Center (EC) Offices, MRF Ops Offices, Education Center, Crew Room, Recycling Collection Truck Parking, and EC Maintenance Bay.	Concept B co-locates offices near truck parking. Concept A separates truck parking from the main office buildings but will have an upstairs staff support area above the vehicle maintenance bays.
79. Include at least one on-site Maintenance Bay for light duty repairs to curbside recycling collection vehicles to help prevent and contain spills on route.	Concept A & B include vehicle maintenance.
80. Minimum 12 Dedicated EC RT Parking Spots and 2 Service Pickup spots (potentially on East Side similar to Concept 3).	Site constraints preclude increasing truck parking beyond current levels.
81. Move and elevate EC Education Facilities to the second floor and include large room with views of both MRF and DO/BB areas with public seating for up to 60. Include a Multipurpose room for presentations and other meetings including ZW Commission potentially (like Concept 3).	Both Concept A and Concept B include an Education Center/Community Room.
82. Ensure nearby parking for a school bus and at least two visiting vehicles for Education Center.	Final design will address this.
83. Separate recycling education activities for kids and casual visitors, and residents from tours of Source Separated Self Haul and Commercial scale operations for professionals and international visitors. Build elevated walkway in TS (SH & City RT facility) for safe/unobtrusive viewing.	Both Concept A and Concept B include an Education Center and Viewing Area. Guided tour access & dedicated walkways will be considered as appropriate for reasons of safety.
84. Buy Back /Drop Off Area	
85. Remove Bulky Items (BI) drop-off area and relocate to SH unload area within TS.	Bulky items have been moved to Transfer Building in Concept A and Concept B.
86. Create separate BB/DO "Front of House" area for users and "Back of House" area for handling, transport, storage and load out activities including Universal Waste (UW).	Both Concept A and Concept B include dedicated forklift access to bins.
87. Reduce footprint of UW area office to less than 500-750 sq. ft. commensurate with anticipated volumes and storage.	Both Concept A and Concept B address this.
88. Ensure strong pedestrian access along Gilman St. and to BB.	Both Concept A and Concept B address this.



Question/Comment	Response
87. 24. Create dedicated connectivity to MRF and storage/load out areas from "Back of House" area of BB/DO with safe forklift and bin transit lanes.	Both Concept A and Concept B address this.
88. 25. Integrate Info Kiosk, Assisted Unloading Support, and Pay House (for collecting fees and making payments) that faces Front of House and is entered from Back of House. Pay House footprint could be reduced to 400 sq. ft. or less and still maintain functionality.	Currently one pay station and once information kiosk in both Concept A and Concept B. Both designs could accommodate future mobile pad pay stations.
89. 26. Integrate mobile and account based transactions for both Pay House and tablet based mobile transactions.	Both designs could accommodate future mobile pad pay stations.
90. 27. Ensure space for accepting and handling additional future materials such as pharmaceuticals, sharps, bike parts, block polystyrene, pallets, and more.	Space constraints may preclude collection of large items such as Styrofoam (which requires special handling/compression) and pallets in the drop-off area. Wood, large scrap metal and reusable items to be addressed in the Transfer Building. Pharmaceuticals and sharps depositories can be included in the drop-off area. Final design will address this.
91. 28. Dedicate space for household goods, clothing etc. through potential additional operator like Goodwill Industries or St Vincent's.	Space constraints may preclude collection of household goods in drop-off area. Final design will address this.
92. 29. Integrate Electronics Waste (EW) drop off into the area.	Both Concept A and Concept B address this.
93. 30. Include space for an Exchange or Give/Take Center.	This feature can be included in the drop-off/buyback area.
94. 31. Designate Motor Oil and Filters and Cooking Oil drop off locations for commercial and public customers. If Cooking Oil is residential, place in DO; if commercial such as a restaurant customer unload within the BB. If Motor Oil is residential place within DO; if commercial put in SH.	Space constraints may preclude collection of oil and oil filters in drop-off area. Final design will address this.
95. 32. Include Designated HHW area for CEQA and permit processes and later consideration.	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.
<b>MRF Operations</b>	
96. 33. Integrate MRF Operations Office with Ecology Center Office. Integrated IWW crew room, and Education Center in two story office next to or attached to or within the MRF building with Crew Rooms on ground floor. Offices should have clear line of sight to both BB/DO and MRF operations.	This is accommodated in both layouts.
97. 34. Keep largest MRF operations footprint (Concept 3) for future flexibility and growth including finished bales and emergency product storage. Suggest 40,000 sq. ft. <b>Source Separated Self Haul Resource Recovery area within Transfer Station</b>	Site constraints preclude this. MRF Building 33,000 square feet in Concept A and 34,900 square feet in Concept B. Both layouts include sufficient space to accommodate MRF processing equipment.
98. 35. Focus SH on strong source separation policy, pricing, and infrastructure.	Fee schedule will emphasize source-separation
99. 36. Incorporate third-party contractors to manage recoverable materials and/or regulated such as Carpet, Mattresses, Appliances-White Goods, and other Bulky Items with Reuse ability. Expand resource recovery and include separation and collection of used doors, windows, sinks, tubs, hardware, hardscaping, and furniture, along with other Bulky materials.	Bulky items will be addressed in Transfer Building. This floor area is open and flexible for any recoverable materials or goods.. Final design will address this.
100. 37. Assuming all mixed C&D will be derived from SH, it is unclear if there will be any mixed C&D separation on site. C&D recycling is critical to achieving Zero Waste goals.	Fee schedule will emphasize source-separation. No processing of C&D anticipated to be on-site. Mixed C&D would be transferred in both designs.
101. 38. Incorporate Pay In/Pay Out with mobile device capacity.	Both designs could accommodate future mobile pad pay stations.
102. 39. Integrate multipurpose floor conveyor to move MSW, Yard Debris, and Commercial Food scraps between SH and single load out. <b>Maintenance Facility</b>	Both designs include two separate load outs bays.
103. 40. No maintenance facility is located or specified on the Concepts. Additional space can be freed up with certain revisions as we have suggested, e.g., moving Bulky Waste drop off to within the TS and reduction in UW area, reorganizing certain parking areas, etc. Having a designated maintenance building on-site is necessary for efficient operations of	Both Concept A and B include vehicle maintenance.



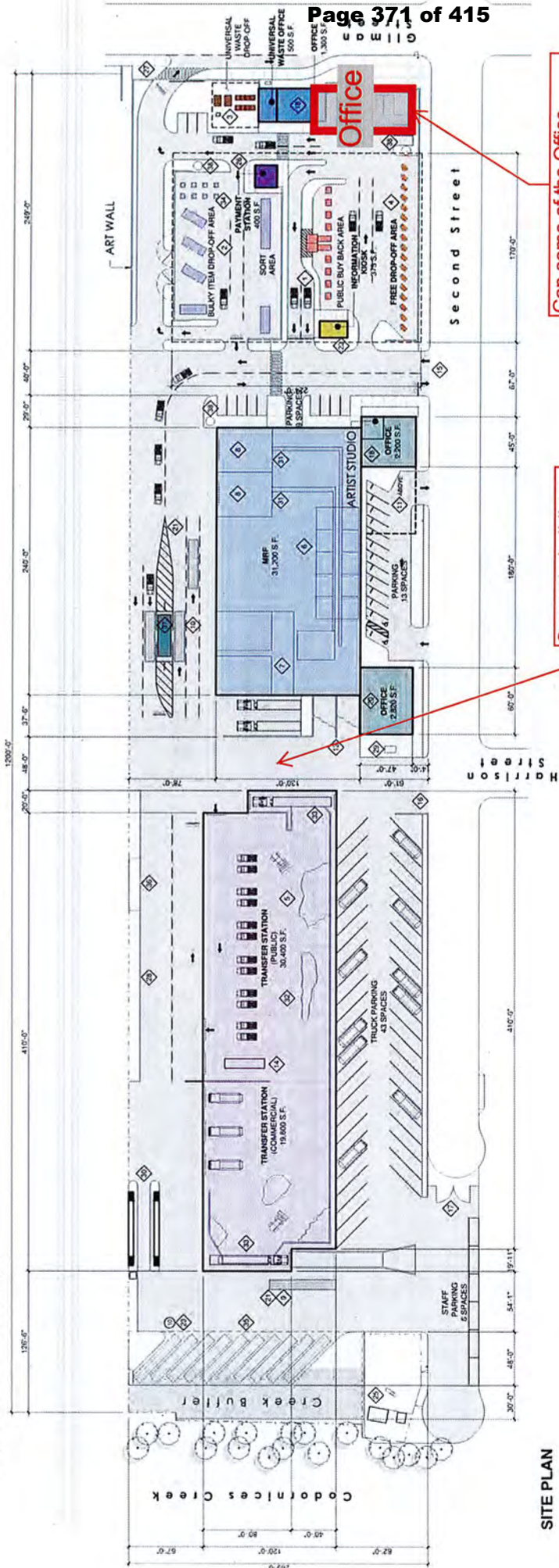
Question/Comment	Response
<p>the whole facility.</p> <p><b>Large Scale Solar Plant</b></p> <p>104 41. Could the City apply to do a feasibility study for a large scale solar project that could feed into the East Bay Community Energy grid at the transfer station?</p>	<p>The preliminary plan is to have the transfer station be a net zero energy facility. Any surplus energy would be sold to the grid/EBCCE. It is likely that most of the available roof-top space would be needed to serve the facility's energy needs. However, the City will evaluate the cost/benefit of maximizing the solar energy potential in the next phase of the project.</p>
<p><b>Committer 4 (drawing attached)</b></p>	
<p><b>Concept 1</b></p>	
<p>105 Separate buildings seems like a non-starter – severely limits future options</p>	<p>Transfer Building includes this flexibility. MRF Building is limited based on space needed for fixed-in-place processing equipment. Fee schedule will emphasize source-separation.</p>
<p>106 Can some of the office move here (southwest corner) to give better street presence and to hide the buyback, etc.?</p>	<p>Concept A includes consolidated offices along entire south end of the structure. Concept B includes office building facing southwest.</p>
<p><b>Public Recycle Drop-off Area Concept 1</b></p>	
<p>107 Could save space by making this (self-haul southmost lane) one way west bound only – this is a recirculation routes for people with multiple places to go</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing. Self-haul access is at north end of the site.</p>
<p>108 Office to visually anchor the corner (southwest corner), screens the chaos</p>	<p>Offices will be visually prominent and will establish facility identity. Concept A includes consolidated offices. Concept B includes office building facing southwest.</p>
<p>109 Parking to replace lost to scale house queue (west of drop-off bins)</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.</p>
<p>110 Scale queue (northside - clockwise circulation pattern)</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing. Scale access is at north end of site on Concept A &amp; B with circulation clockwise.</p>
<p>111 Bulk items (on northside of interior)</p>	<p>Bulky items have been moved to north side of Transfer Building in Concept A and Concept B.</p>
<p>112 Buyback/free drop off (on southside of interior)</p>	<p>Drop-off/buyback areas at south end of the site in Concept A and Concept B.</p>
<p>113 Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.</p>
<p><b>Concept 2</b></p>	
<p>114 MRF in the back doesn't seem to make sense</p>	<p>Both Concept A and Concept B include MRF Building on the south side of site.</p>
<p><b>Public Recycle Drop-off Area Concept 2</b></p>	
<p>115 No offense, but this kind of feels like Pac-man</p>	<p>Comment noted.</p>
<p><b>Concept 3</b></p>	
<p>116 Place commercial truck loading and scales and parking (on the east side), flipping from west side</p>	<p>Both Concept A and Concept B include commercial unloading on the east side.</p>
<p>117 Scale queue for small trucks, turnaround (on west side), basically flipping from east side</p>	<p>Both Concept A and Concept B include small truck unloading on the east side.</p>
<p>118 I still like moving the offices to the front (to the southwest corner), maybe MRF offices are separate, not the end of the world.</p>	<p>Concept A includes consolidated offices across south end of the site. Concept B includes office building in southwest corner.</p>
<p><b>Public Recycle Drop-off Area Concept 3</b></p>	
<p>119 Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations, also public functions stay on the west side, less intimidating for drop offs, looks more attractive. Nasties on RR (railroad) side</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to provide flexibility for public use and access for trucks on the east side.</p>
<p>120 Scale queue for small trucks, turnaround (on northwest side) basically flipping from east side</p>	<p>Both Concept A and Concept B include small truck queuing on northwest side</p>
<p><b>Committer 5 (drawing attached)</b></p>	
<p><b>General Comments</b></p>	
<p>121 1. It would be helpful to see a wider detailed traffic pattern showing street traffic going to the zero waste facility taking the new I80 interchange into account.</p>	<p>Final design will address this.</p>
<p>122 2. Put as many items as possible in one drop-off location.</p>	<p>Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.</p>
<p>123 3. Separate the buyback and have materials feed directly into evaluate storage bunkers that feed baler.</p>	<p>Space constraints may preclude this, but this may be a viable design option in both concepts.</p>
<p>124 4. Make the plan as flexible and simple as possible.</p>	<p>Comment noted.</p>



Question/Comment	Response
125 5. Need parking stalls for buyback and drop-off customer	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this with parking stall layouts.
126 6. Materials coming from the buyback and drop-off need a clear and unimpeded access	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this with direct access to the MRF Building.
127 7. Buyback customer currently have queuing for 10 cars. 9 vehicle sorting spaces and space for ten non car customers to sort material.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this e.g., 26 shared spaces provided in Concept A.
128 8. Drop off customers currently have 6 car spaces for parking	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this e.g., 26 shared spaces provided in Concept A.
129 9. Use building along the outside of the footprint to show case facility increase security by reducing the amount you high security fence needed.	Comment noted. Concept B, the Transfer Building is adjacent to Second Street and MRF extends to Gilman.
130 10. MRF must be located close to buyback and drop-off.	Both Concept A and Concept B include MRF Building near/adjacent to buyback/drop-off.
131 Comments on Concept 1 & 2 Do not agree to have one gate for recycling and transfers station customers.	Drop-off/buyback areas in Concept A and Concept B have a separate entry drive (gate) from Self-haul/Transfer Building customers.
132 Too much of the recycling facility is dedicated to cars snaking through facility.	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to simplify queuing
133 Major bottle neck at the entrance to buyback and drop-off	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to separate self-haul from drop-off/buy back and simplify queuing
134 Drop-off, UW and bulky items need to be consolidated	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this. Note that bulky items have been moved to Transfer Building..
135 Gilman or Second street appearance not to my liking	Comment noted.
136 Missing buyback sorting and parking area	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and processing/sorting area as needed.
137 I have put together a new site design with all the key elements included in concept proposal and more. Please see site plan attached. 1. Processing Building 327 ft x 130 ft 2. Executive Office 29 ft x 60 ft 3. Drop-off area + buyback 128 ft x 62 ft 4. Maintenance and staff building 55 ft x 60 ft <b>Commenter 6 (drawing attached)</b> My plan imitates El Cerrito in the following way:	Site constraints preclude larger MRF Building. MRF Building 33,000 square feet in Concept A and 34,900 square feet in Concept B. Proposed configuration of drop-off/buyback and MRF included in Concept B.
138 Keeping cars away from the pedestrians. Cars come in to park and don't moving again until they leave This prevents car bottleneck And cars on the perimeter keeps them safely away from pedestrians Cars park next to walkway which immediately takes people to the recycling bins	Proposed configuration of drop-off/buyback included in Concept A. Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address parking and queuing.
139 Bins are visible from the cars before people even get out They are looking right at the bins and can access them just a few feet from their car There are many, many bins so items can be sorted on the spot. (EC has many different kinds of bins for plastics which is great) This way people can learn as they sort Hopefully realizing the difference between seemingly similar items like plastics	Drop-off/buyback areas in Concept A and Concept B have been reconfigured to address this.
140 With less roadway for moving cars there is more parking and for bins And more area to possibly add something like Haz Mat	Site constraints preclude expansion into a full HHW drop off facility, though the space allocated to the universal waste area has been expanded.



Commenter 4 Drawings



Can some of the Office move here to give a better street presence and to hide the buyback, etc.

Separate buildings seems like a non-starter - severely limits future options

# Charrette-based Proposal Concept 1

## Solid Waste & Recycling Transfer Station

- KEYNOTES**
- ① PUBLIC BUY BACK AREA
  - ② BULKY ITEM DROP-OFF AREA
  - ③ UNIVERSAL WASTE DROP-OFF
  - ④ FREE DROP-OFF AREA
  - ⑤ ORGANICS
  - ⑥ MRF PROCESSING AREA
  - ⑦ BALE STORAGE/SHIPPING
  - ⑧ MRF TIPPING
  - ⑨ 70 SCALE
  - ⑩ 40 SCALE
  - ⑪ EDUCATION CENTER
  - ⑫ VEHICLE MAINTENANCE
  - ⑬ GLASS BINNERS
  - ⑭ CONTAINER SALVAGE TRAILER
  - ⑮ MAIN SCALES FOR PUBLIC
  - ⑯ TRANSFER TRAILERS, RECYCLING ROUTE AND COMBODITY TRUCKS
  - ⑰ CITY VEHICLES
  - ⑱ CONTRACTORS OFFICE
  - ⑲ MRF OPERATION OFFICE
  - ⑳ CITY OFFICE
  - ㉑ RFID STATION
  - ㉒ INFORMATION KIOSK
  - ㉓ SEMI TRAILER/TRUCK PARKING
  - ㉔ FUEL ISLAND
  - ㉕ CHG STATION
  - ㉖ PAYMENT STATION
  - ㉗ ALTERNATE ACCESS
  - ㉘ BIN STORAGE
  - ㉙ TRANSFORMER
  - ㉚ TRUCK WASH
  - ㉛ INFED CONVEYOR
  - ㉜ CED
  - ㉝ LOADOUT
  - ㉞ APPLIANCE AREA
  - ㉟ PERMEABLE PAVING FOR STORMWATER
  - ㊱ FUEL ISLAND
  - ㊲ SCALEHOUSE
  - ㊳ RAIN WATER TANK



**LEGEND**  
**FREE DROP-OFF AREA**

- P - PAPER
- PL - PLASTIC
- CL - GLASS
- M - METALS
- BK - BOOKS

**TEXTILES**

**PAK AREA**

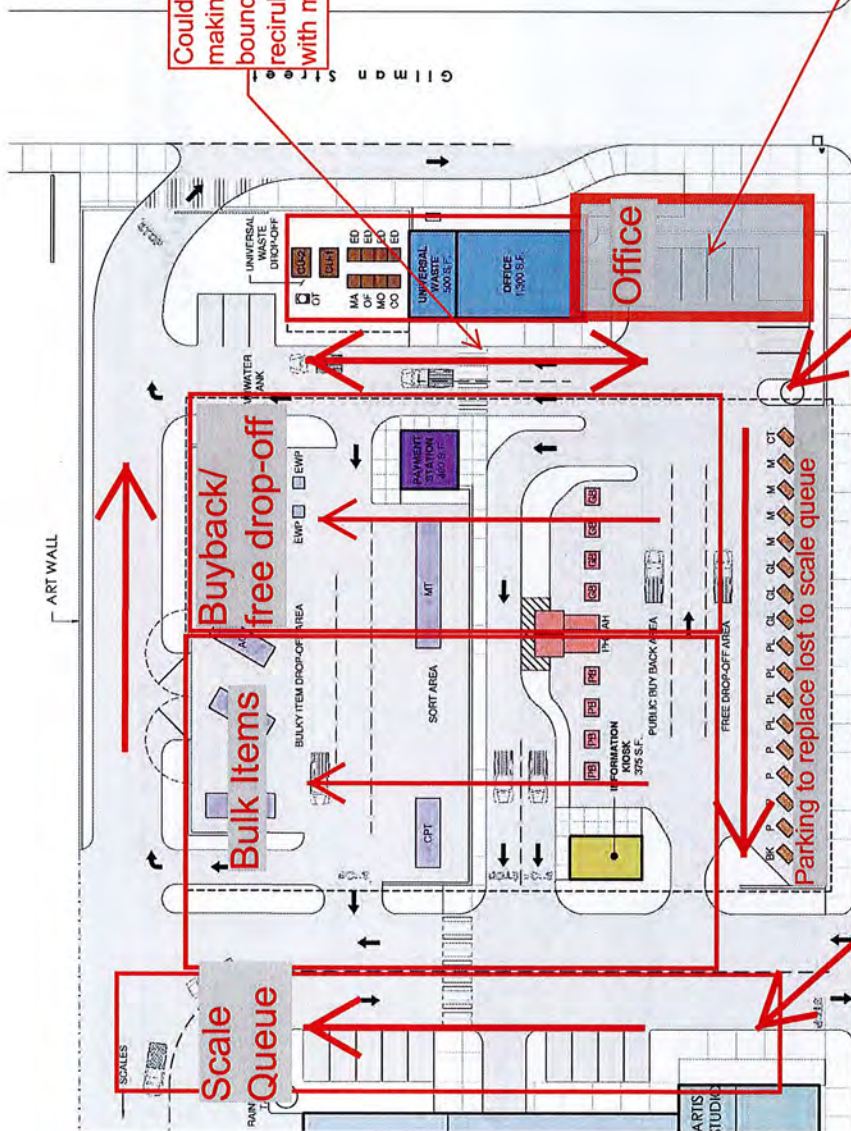
- PAPER (TYP OF 4)
- GLASS (TYP OF 4)
- ALUMINUM
- ASTIC

**UNIVERSAL WASTE DROP-OFF**

- OT - 37" X 54" OIL TANK (55-GALLON)
- CO - 55" X 55" PLATFORM - COOKING OIL DRUM
- MO - 55" X 55" PLATFORM - MOTOR OIL DRUM
- OF - 55" X 55" PLATFORM - OIL FILTER DRUM
- MA - 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
- ED - 55" X 55" PLATFORM - EMPTY DRUMS (TYP OF 4)
- CU-1 - 10" X 6.5" CHEMOTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
- CU-2 - 10" X 6.5" CHEMOTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

**BULKY ITEM DROP-OFF AREA**

- EWP - E-WASTE PALLETS
- MC - 27' X 8' ROLL OFF CONTAINER - LARGE METAL
- AC - 22' X 8' ROLL OFF CONTAINER - APPLIANCES
- TC - 22' X 8' ROLL OFF CONTAINER - TIRES
- TI - 24" BOX-FORT REUSABLES
- CPT - 24' TRAILER - CARPET AND CARPET PAD
- MT - 45' TRAILER - MATTRESSES

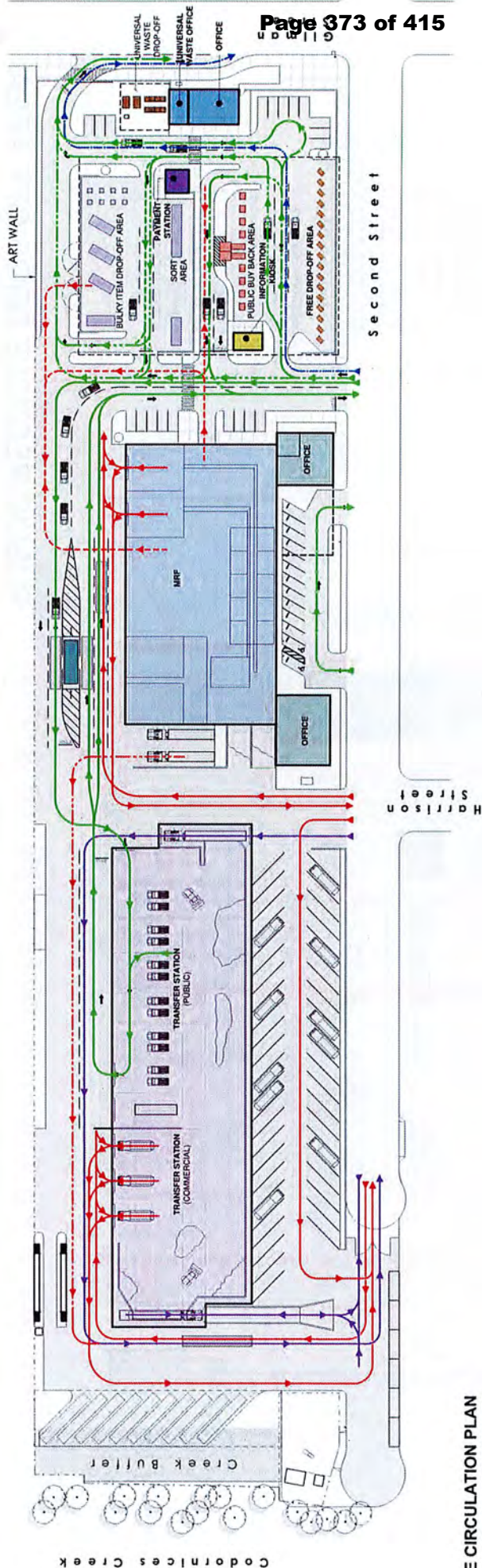


**Basic idea:** trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations

ENLARGED SITE PLAN

**PUBLIC RECYCLE DROP-OFF AREA**  
**Charrette-based Proposal Concept**  
Solid Waste & Recycling Transfer Station





SITE CIRCULATION PLAN

**LEGEND**

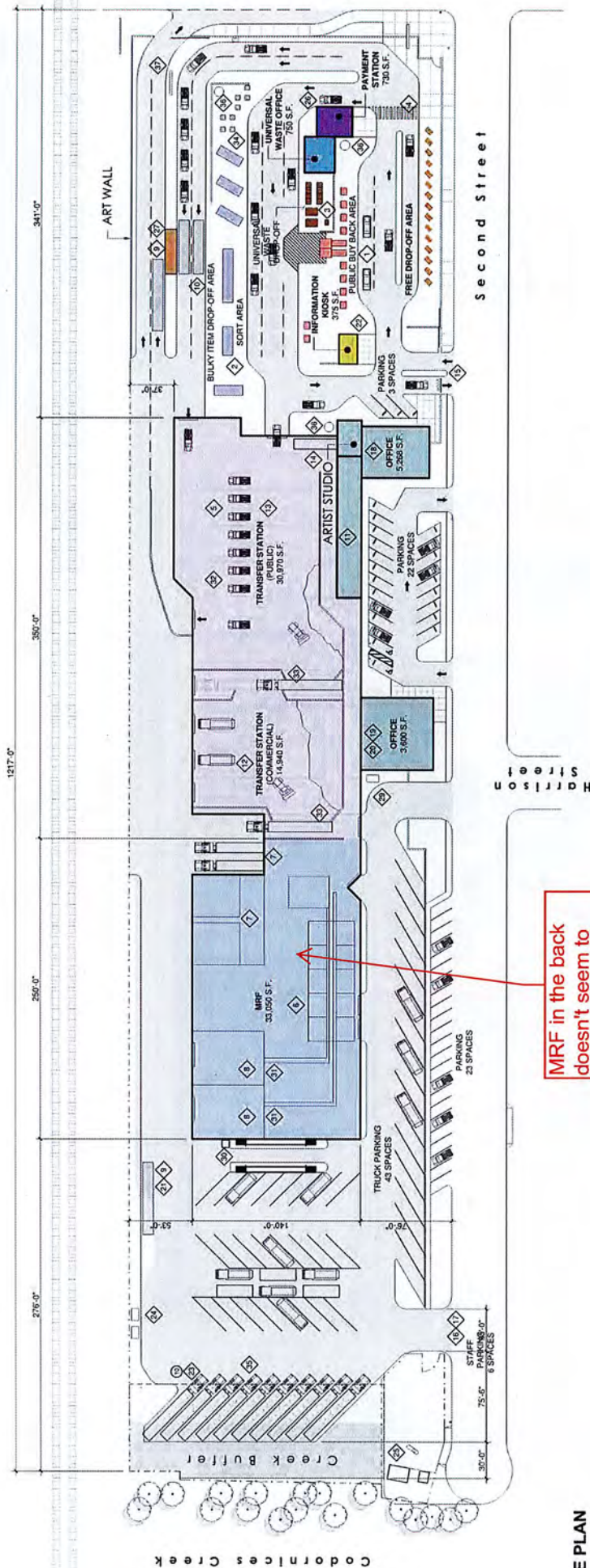
- PUBLIC - SELF-HAUL
- PUBLIC - BULKY ITEM SALVADE-REUSE
- PUBLIC - BUYBACK
- PUBLIC - UNIVERSAL WASTE
- PUBLIC - EMPLOYEES
- COMMERCIAL - TRANSFER TRUCKS
- COMMERCIAL - ROUTE TRUCKS
- COMMERCIAL - COMMODITY SHIPPING
- COMMERCIAL - FORKLIFT, YARD GOAT

NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN

# Charrette-based Proposal Concept 1

Solid Waste & Recycling Transfer Station





MRF in the back doesn't seem to make sense.

SITE PLAN

KEYNOTES

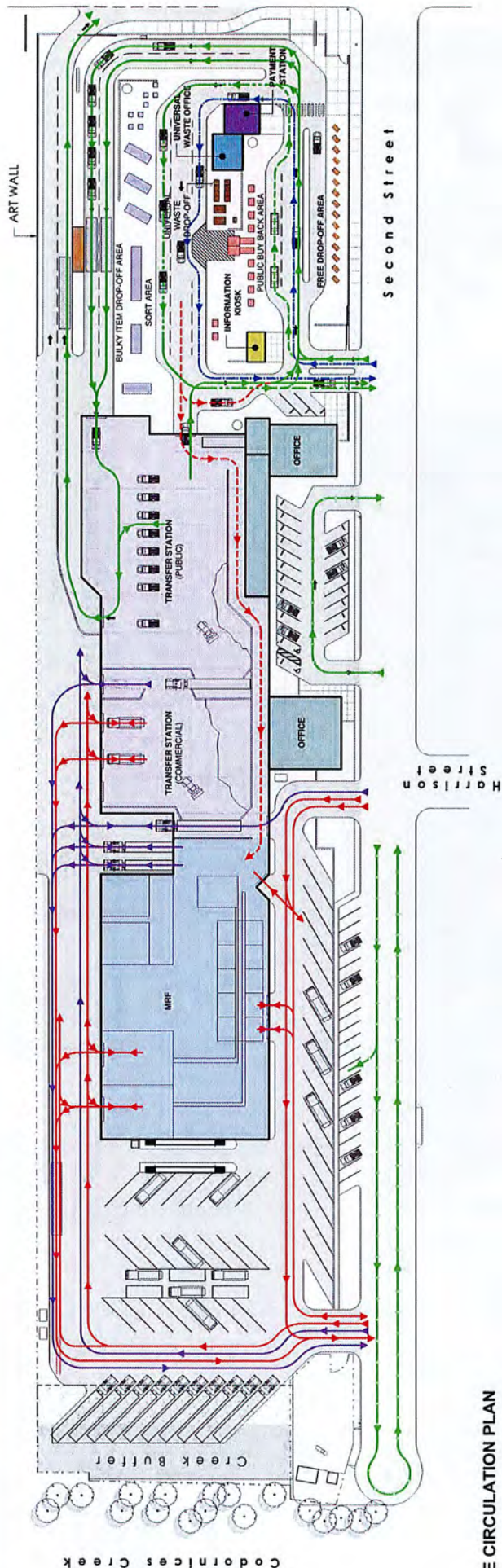
- 1 PUBLIC BUY BACK AREA
- 2 BULKY ITEM DROP-OFF AREA
- 3 UNIVERSAL WASTE DROP-OFF
- 4 FREE DROP-OFF AREA
- 5 ORGANICS
- 6 MRF PROCESSING AREA
- 7 BALE STORAGE/SHIPPING
- 8 MRF TIPPING
- 9 70' SCALE
- 10 40' SCALE
- 11 EDUCATION CENTER
- 12 COMMERCIAL TIP FLOOR
- 13 SELF HAUL AREA
- 14 CONTAINER SALVAGE TRAILER
- 15 MAIN SCALES FOR PUBLIC
- 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS
- 17 CITY VEHICLES
- 18 CONTRACTORS OFFICE
- 19 MRF OPERATION OFFICE
- 20 CITY OFFICE
- 21 RED STATION
- 22 INFORMATION KIOSK
- 23 SEMI TRAILER/TRUCK PARKING
- 24 FUEL ISLAND
- 25 CNG STATION
- 26 PAYMENT STATION
- 27 SCALEHOUSE
- 28 BIN STORAGE
- 29 TRANSFORMER
- 30 TRUCK WASH
- 31 INFEED CONVEYOR
- 32 C&D
- 33 LOADOUT
- 34 APPLIANCE AREA
- 35 PERMEABLE PAVING FOR STORMWATER
- 36 RAINWATER TANK
- 37 INFO SIGN

# Charrette-based Proposal Concept 2

## Solid Waste & Recycling Transfer Station







# Charrette-based Proposal Concept 2

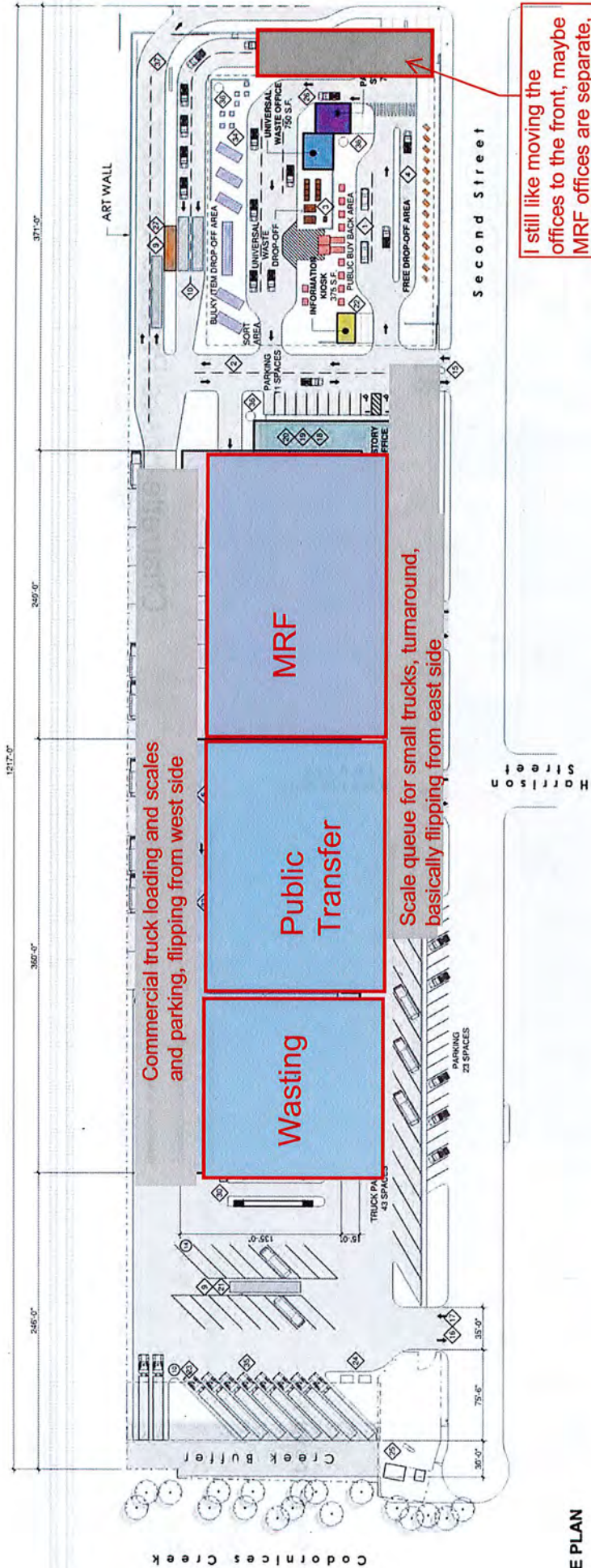
## Solid Waste & Recycling Transfer Station

SITE CIRCULATION PLAN

- LEGEND**
- COMMERCIAL - TRANSFER TRUCKS
  - COMMERCIAL - ROUTE TRUCKS
  - COMMERCIAL - COMMODITY SHIPPING
  - COMMERCIAL - FORKLIFT, YARD GOAT
  - PUBLIC - SELF-HAUL
  - PUBLIC - BULKY ITEM SALVAGE/REUSE
  - PUBLIC - BUYBACK
  - PUBLIC - UNIVERSAL WASTE
  - PUBLIC - EMPLOYEES

NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN





I still like moving the offices to the front, maybe MRF offices are separate, not the end of the world.

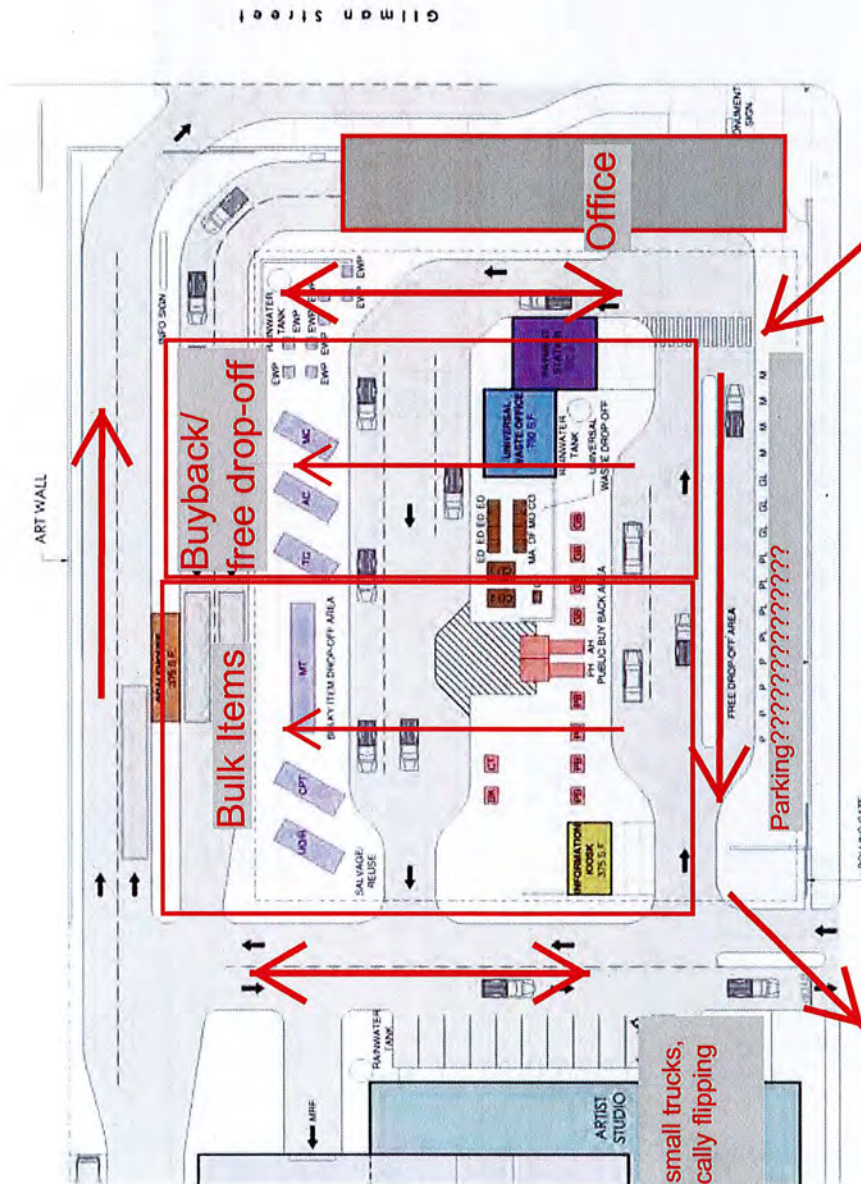
**SITE PLAN**

**KEYNOTES**

- 1 PUBLIC BUY BACK AREA
- 2 BULKY ITEM DROP-OFF AREA
- 3 UNIVERSAL WASTE DROP-OFF
- 4 FREE DROP-OFF AREA
- 5 ORGANICS
- 6 MRF PROCESSING AREA
- 7 BALE STORAGE/SHIPPING
- 8 MRF TIPPING
- 9 70' SCALE
- 10 40' SCALE
- 11 EDUCATION CENTER
- 12 COMMERCIAL TIP FLOOR
- 13 SELF HAUL AREA
- 14 CONTAINER SALVAGE TRAILER
- 15 MAIN SCALES FOR PUBLIC
- 16 TRANSFER TRAILERS, RECYCLING ROUTE AND COMMODITY TRUCKS
- 17 CITY VEHICLES
- 18 CONTRACTOR'S OFFICE
- 19 MRF OPERATION OFFICE
- 20 CITY OFFICE
- 21 RFD STATION
- 22 INFORMATION KIOSK
- 23 SEMI TRAILER TRUCK PARKING
- 24 FUEL ISLAND
- 25 CNG STATION
- 26 PAYMENT STATION
- 27 SCALEHOUSE
- 28 BIN STORAGE
- 29 TRANSFORMER
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- 31 INFEED CONVEYOR
- 32 C4D
- 33 LOADOUT
- 34 APPLIANCE AREA
- 35 PERMEABLE PAVING FOR STORMWATER
- 36 RAINWATER TANK
- 37 INFO SIGN

**Charrette-based Proposal Concept 3**  
Solid Waste & Recycling Transfer Station





**LEGEND**  
**FREE DROP-OFF AREA**

- P - PAPER
- PL - PLASTIC
- GL - GLASS
- M - METALS

**PUBLIC BUY-BACK AREA**

- PB - 6' X 9' BINS - PAPER (TYP OF 4)
- GB - 6' X 9' BINS - GLASS (TYP OF 4)
- AH - HOPPER - ALUMINUM
- PH - HOPPER - PLASTIC
- BK - BOOKS
- CT - CLOTHING/TEXTILES

**UNIVERSAL WASTE DROP-OFF**

- OT - 37" X 54" OIL TANK (250 GALLON)
- CO - 55" X 55" PLATFORM - COOKING OIL DRUM
- MO - 55" X 55" PLATFORM - MOTOR OIL DRUM
- CF - 55" X 55" PLATFORM - OIL FILTER DRUM
- MA - 55" X 55" PLATFORM - MOTOR ANTIFREEZE DRUMS
- ED - 55" X 55" PLATFORMS - EMPTY DRUMS (TYP OF 4)
- CUA - 10' X 8.5' CHEMISTOR UNIT FOR STORAGE OF PAINT, CAR BATTERIES, AND HOUSEHOLD BATTERIES
- CPS - 10' X 4.5' CHEMISTOR UNIT FOR STORAGE OF FLUORESCENT LIGHTING TUBES AND BALLASTS

**BULKY ITEM DROP-OFF AREA**

- EWP - E-WASTE PALLETS
- MC - 22' X 8' ROLLOFF CONTAINER - LARGE METAL
- AC - 22' X 8' ROLLOFF CONTAINER - APPLIANCES
- TC - 22' X 8' ROLLOFF CONTAINER - TIRES
- LOR - 24' BOX TRUCK - URBAN-CRE-REUSABLES
- CPT - 24' TRAILER - CARPET AND CARPET PAD
- MT - 45' TRAILER - MATTRESSES

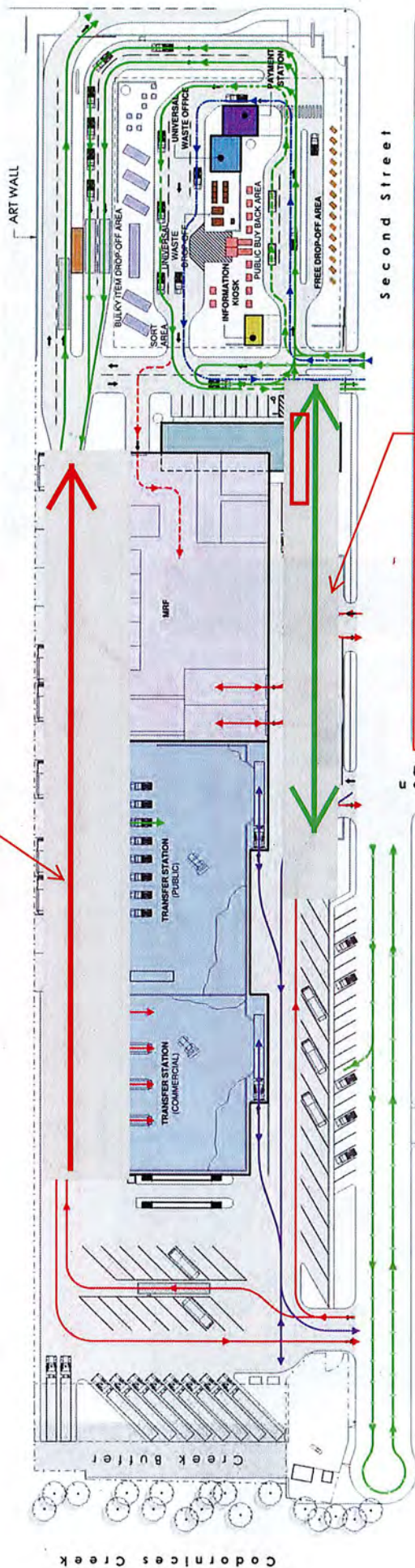
Scale queue for small trucks, turnaround, basically flipping from east side

Basic idea: trying to clean up the circulation, all vehicles move in a clockwise direction, south most aisle allows people to go back to start if they have multiple destinations, ENL/also, public functions stay on west side, less intimidating for drop offs, looks more attractive. Nasties on RR side

**PUBLIC RECYCLE DROP-OFF AREA 3**  
**Charrette-based Proposal Concept**  
Solid Waste & Recycling Transfer Station



Commercial circulation and parking on east side



SITE CIRCULATION PLAN

LEGEND

- PUBLIC - SELF-HAUL
- PUBLIC - BULKY ITEM SALVAGE/REUSE
- PUBLIC - BUYBACK
- PUBLIC - UNIVERSAL WASTE
- PUBLIC - EMPLOYEES
- COMMERCIAL - TRANSFER TRUCKS
- COMMERCIAL - ROUTE TRUCKS
- COMMERCIAL - COMMODITY SHIPPING
- COMMERCIAL - FORKLIFT, YARD GOAT

NOTE: THE VEHICLE MAINTENANCE STRUCTURE IS NOT SHOWN

Keep all the public circulation on the south and west side.

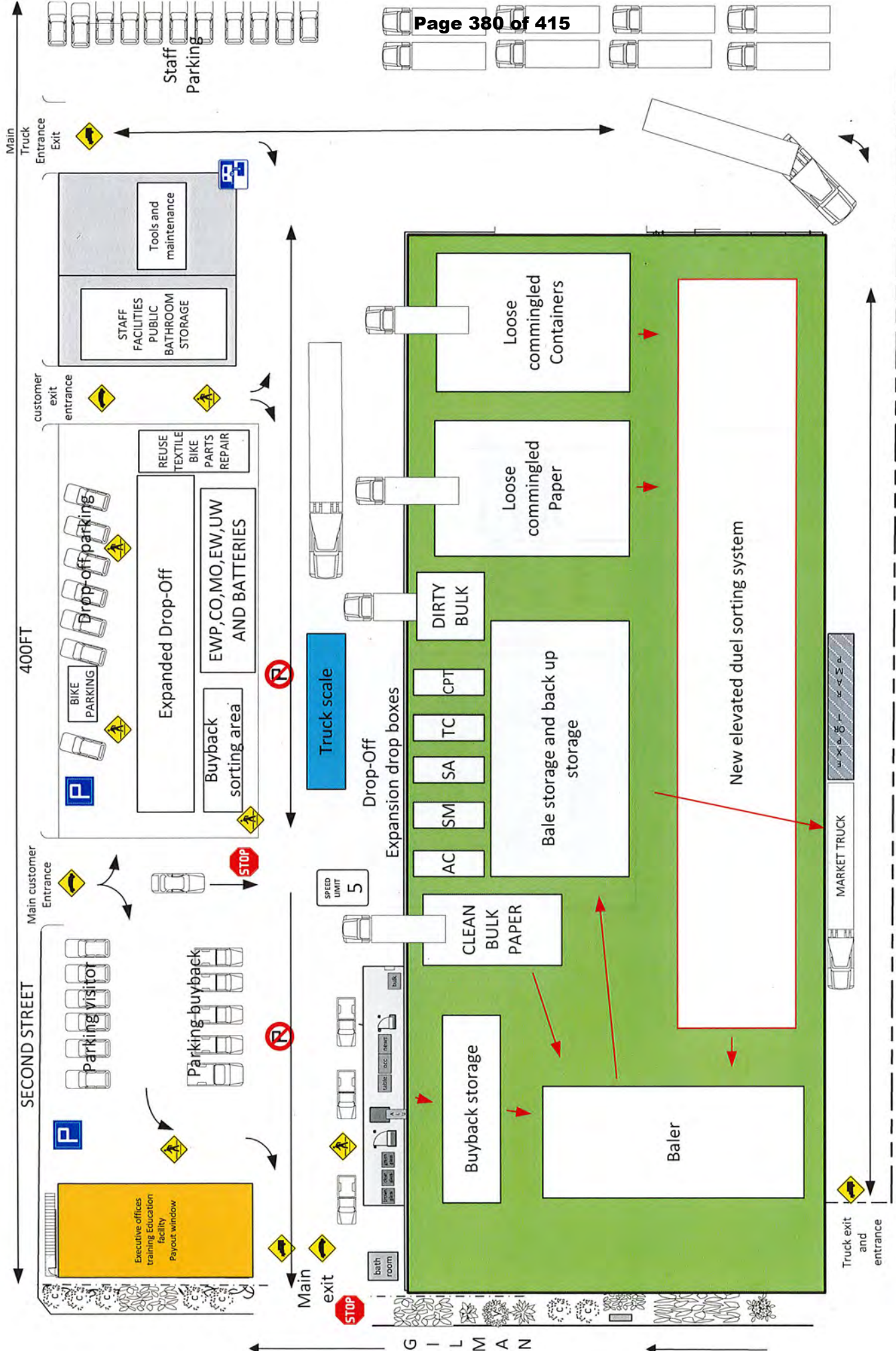
In theory you could have inbound scales at the south end, and outbound scales at the north. Inbound scales would be unstaffed, but a camera would record license while computer records weight.

Probably something wrong with that, but you can always use scales in both directions at south end.

### Charrette-based Proposal Concept 3

Solid Waste & Recycling Transfer Station



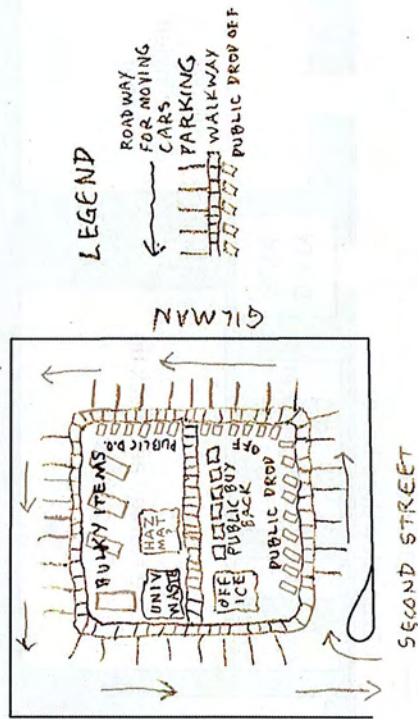


Commerter 5 Drawing

Railroad tracks

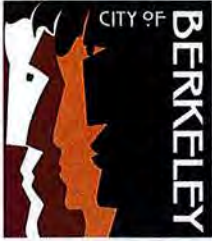


Committer 6 Drawing





## ATTACHMENT 3



## Zero Waste Transfer Station City Vendor Listening Session Summary

### Key Take-Aways:

- Form follows policy
- Highest and best use
- Reduce overall generation
- Facility needs to accommodate multiple user types

### Information Needs:

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

### Desired Features:

Buyback Center	Berkeley Recycling has the only buyback in Berkeley, Albany and Emeryville. Very important regional asset. Needs to accommodate
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	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 El Cerrito. 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 (like at El Cerrito).
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. Plus catwalk through the facility for tours.
Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.
Break room, 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 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	<ul style="list-style-type: none"><li>▪ Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li><li>▪ Maker area</li><li>▪ Social services for vulnerable populations</li><li>▪ Needle exchange</li><li>▪ Supplemental Nutrition Assistance Program (SNAP) program applications</li><li>▪ Food pantry. Landscaping</li><li>▪ Sculpture garden</li><li>▪ Compost demonstration</li></ul>
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# Zero Waste Transfer Station Community Conservation Centers – October 15, 2018

Attendees: Pam Belchamber (Board member), Jeff Belchamber (Ex. Dir.), Nancy Gorrell (Board member), Carol Vomacka (Fin. Mgr.), David Johnson (GM)

## Ruth: Summary

- Looking at goals
- "Listening sessions"
- Evaluation of site
  - equipment
  - assets
  - what's the function of site
- what big stuff needs to happen at the transfer station
- vision of the entire community
- you wants and desires
- public listening sessions
- What do we need?

## Pam: Overview of "us"

- Not big staff
- Processors
- Facilities need improvement, conference rooms, etc.

## Jeff: Presentation (See PowerPoint Presentation)

- Community conservation center
- 33 employees
- Buy back drop off dual stream MRF
- Provide jobs/training to urban youth
- Over 50% of employees have 10 years of experience
- Over 200 buy back customers per day
- 7 days a week
- One of the first certified programs in CA
- 1.2 mil \$ to customers (lower income)
- Cannot collect residential garbage without buyback
- 20k pounds batteries and bulb diverted
- Max tonnage in 2005: 20k
- 66% of material is fiber
- Site plan
- Many benefits to local economy
- Local = convenient, better
- Mgmt. has experience

- Residual rate is 5%
- Storm water compliances
- Meeting requirements for fiber
- Ideal location
- Quality
- Inspected daily
- \$83k improvement to asphalt
- Goals: integrated part of zero waste, highest and best use
- Not a lot of overhead
- Experience and reputation
- Stay as dual stream, don't change to single stream

Pam:

- Don't start over from scratch
- Keep the good parts
- Our policy "labor intensive" rather than expensive equipment
- Providing jobs
- Drastic change of policy
- City's reference to "reduce cost of recycling and reuse" not possible = less reliant on people, more reliant on machines

#### Questions for CCC:

Q: Where does ecology center do fleet maintenance?

- Their own parking lot
- We use outside people

Q: Physical demarcation, no institution/political problem with combining?

- No
- But who's going to run the one space

Q: Wishlist?

- Jeff: add electronics recycling
- David: they bring electronics in 20-30 times a day
- Oil, cartridges, propane, ink, microwaves etc. recycling
- Carol: customer point of view, easier for customers to access, cleaner/faster
- Encourage customers to come here
- Bring in higher quality product
- Help the community
- Ruth: Oregon bottle system, bottle drop
- Ruth: online or paper survey on customer use
- Nancy: improved flow pattern for self-haul/dropping stuff off

Q: Are we building for Berkeley or the region?

- Not big enough for the WHOLE region but can increase from Berkeley
- Improving facility = increase in use
- Other people bringing in cardboard now

Pam: Cities don't mind funding front end but don't fund back end as much



- Not a subsidy, it's a service
- Messaging about what the customers are paying for (recycling/compost/reuse/etc.)
- More participation, not less

Q: Is there a place for reuse here?

- Jeff: we want to look at it, yes
- Nancy: some people already doing that
- Jeff: gray area – valuable stuff

Q: One line for recycling and transfer station?

- Jeff: not feasible, problematic
- Nancy: Layered load

Q: Do they bring recyclables to you from transfer station?

- They bring over scrap metal etc.

Q: Do the transfer station drop off people know about the recycling center?

- Some do, not all
- Pam: How much low-hanging fruit is going into landfill?
- City not great on PR announcing

Q: Pam: How long will the facility last?

- Ruth: 30 years, 2050
- Flexibility for adding/removing parts

Q: What are the evaluation criteria for the city?

- El Cerrito pays for facility, will Berkeley do the same?
- El Cerrito gave up buy back
- Are good jobs a value of the city?

Q: How do we get customer input?

- Send out something
- More meetings? More city council members in meetings?
- Need views from people working it, not from the public
- Public not knowledgeable enough, need direct questions

Q: Jeff: Pacific steel brought into equation?

- They are closing
- It's a factor

**Pam: Closing** (See Written Statement):

- don't reinvent the wheel
- build on success
- highest and best use
- labor intensive approach
- well paid
- not high-cost investments

- proven innovations that can be replaced when necessary
- reduce, specifically plastics
- reuse, urban ore
- recycle, dual stream system



# Zero Waste Transfer Station Ecology Center – October 15, 2018

Attendees: Martin Bourque (Ex. Dir.), Greg Morgan (CFO), Deborah Beyea (Dir-Ops)

## Ruth: Summary

- Redesigning the whole transfer station
- Form follows function
- What are the functions that need to happen?
- Listening sessions
- Program assessment
- What do we want?
- Who should we get to the public sessions?
- Meet with stakeholders

## Ecology Center Wishlist

- Roof, one big building
  - Flexible internally
  - Airflow, lighting
- Some things dropped off for free
  - Some get paid
  - Some need to be paid
- Stronger interface with residents
- HHW site
- Reusable exchange
  - Center for creative reuse?
- Nicer, prettier site like El Cerrito
  - More attractive to residents
  - More likely to be used
 Semi-permanent scavengers at El Cerrito
- Source separation
- Small financial incentives for repeat customers
  - Charge for no tarp on truck/etc.
- Infrastructure for industrial/building waste
  - Require source separation
- cardboard screen on fiber line
- Needs a waste characterization study of Berkeley
- More composting facilities
  - Residential vs. industrial
- School tour accessible



## Challenges

- Industrial big haulers vs. smaller loads
  - Keep separate
- Plan for bikes and pedestrians
- We send a lot of customers to el Cerrito
- Block Styrofoam needs to be addressed
- What's the waste stream of 2030/2050?
- Current site is not user-friendly
- Reuse: efficiency of frontloader vs. picking through piles
- Thermoplastics(?) require optical sorting
- would sort differently at MRF

## Questions for Ecology Center

Q: Facilities onsite?

- Have own breakroom
- Maintain fleet on site
- Offsite maintenance is third-party
- Hoping for fleet replacement

Q: Physical demarcation between the two facilities?

- Preferred all under one admin unit

Q: How long are the contracts? What are the issues?

- 2010-2020
- Would like 15-20 year next time
- City owns carts
  - Ecology would like to own the carts
  - needs significant replacement
- Needs a waste characterization study of Berkeley
- Flood, storm water concerns
- Difficult to direct people to MRF
- Need a long-term contract/plan for Urban Ore/paper shredding/etc.
- Need to appreciate the value of Urban Ore
- Need a zero waste plan
- Want to be treated like a service provider, separate entity from city
- Same union as CCC
- Could use the same admin building
- Want to collaborate more with CCC
- More buybacks needed in Berkeley

Q: How to get the community interested in transfer station?

- Not parcel tax
- Get the word out
- Need an online survey
- Plus a user survey, using flyers at the station

Q: Is a listening session needed?

- Some people will not get the word on it
- But a lot of people will
- Flyers at the station?
- Homeless advocacy networks need to be contacted
- Basic services at station?
- Listening session in south Berkeley necessary
- Would they come to a meeting?
- Need to contact organizations there
- Ecology network needs times and dates for events

Q: Should the Transfer Station be for Berkeley only or the whole region?

- Want to service the whole region
- Don't have the room for it right now
- Redesign will get us more efficiency
- More composting facilities are needed







# Zero Waste Transfer Station Urban Ore Meeting – October 18, 2018

Attendees: Mary Lou Van Deventer (owner), Dan Knapp (owner), Greg Van Mechelen (Urban Ore – Architect)

## Intro by Dan:

- Reuse is a labor-intensive process
- Urban Ore has cutting edge technology/upgrades
- Annual \$2.6 million dollars in sales
- The incinerator was rejected and recycling expanded, causing today's awkward placing of drop-off at transfer station
- Urban Ore diverts 8k tons per year
- Would like credit for ideas if they are used in the new design

## Presentation

### Dan:

- Multiple income portals
- Currently have buyback and fee gate
- We need more places where money can change hands

### Many Lou:

- In 1980, Berkeley planned to make an incinerator
- Opposed by urban ore and other recycling organizations
- One corner of site dedicated to recycling, everything else incinerator
- After hard-fought initiative, recycling approved by public
- First conceptual design in Sierra magazine 1982
- 1983, new transfer station opens
- Urban Ore, Ecology Center, and CCC were all on the same site
- In 2005, Berkeley wanted to recover 75%, proposed a rebuild
- Urban Ore had designed facilities in many areas, wanted to design one for Berkeley
- "Form follows policy"

- Make reuse a priority over recycling
- Clustered design = "Mall effect" = cooperation/competition = good
- Waste is divvied out sequentially (important to prioritize reuse etc.)
- Reuse>Recycling>Compost>Soil production>Ceramics

**Greg: the site itself (See PowerPoint Presentation)**

- Unclear demarcation of zones
  - Confusion for the public
- Public face is on the narrow end of the long site (on Gilman street)
  - Multiple driveways on Gilman cause traffic issues
- Debris pile, recycling drop-off crosses path with backend workers
- Difficult/confusing layout
- Designed by aggregation = confusing design
- Issue: site has high water table and potential plume of toxic chromium VI
- Users of site: public customer, professional drop-off, materials processing, materials pick-up
- Safe/Efficient/Convenient/Flexible
- Traffic should be circular to be simple and safe
- Large trucks separate from casual users, around the edge
- One big building for materials, office next to Gilman
- Can take hazmat materials?
- Offices shared by multiple entities
- Sawtooth roof on one large building
- Reuse materials moved offsite
- Daily average of 3 tons from transfer station to Urban Ore
  - 10-15% of Urban Ore material comes from transfer station
- Divisions between different "sections" should be minimal so that items and machinery can be exchanged
- Office building should have environmental and educational features
- Solar panels on the roof
- Goal of zero energy use
- Make reuse area bigger?
- Consumer facing side and industrial facing side (airport metaphor)



- Arts project for the messaging of the building – visual are much more tuned into visual elements
- Greeters to direct them where they should go
- Keeping the public separated from the processing areas
- El Cerrito has a place for free public trading of reusable materials
- Not dipping into the toxic soil
- Safer to bring the materials to the trucks (rather than digging into the ground)
- Elevated picking line
- Tenants responsible for their own breakrooms and machinery
- 30 year plan, will Urban Ore be responsible for reuse in all that time?
  - City can take bids?
- Assisted unloading?
  - Not for every vehicle
- Picking line for self-haul?
  - Dump and pick
  - Providers decide what they want to do
- Buyback area small?
  - Add more space to the right?
- Compete with El Cerrito?
  - Need to figure out what material types we DON'T provide for
- As a service provider, what do you need?
  - Access to materials to pick up
  - We make decision of what is reusable
  - Recover non-ferrous materials
  - Other people don't know what is reusable and what is not, so we need to be able to look at all the sections
- Minimalizing trash processing?
  - As much as we can
- This design preserves pit?
  - Yes but we'd like to get rid of it
- A lot of specialists doing different things instead of one big company covering everything



- City had an old consultant plan to remove CCC, Ecology Center, and Urban Ore and replace with city staff
- Provision for paying rent on site
- Recommendations in terms of listening strategy?
  - Leaflet the transfer station customers
  - To people who buy and drop-off at Urban Ore
  - Contact councilmembers, use their email lists
  - The mayor
  - Councilmember Linda Mayo
  - Provide a Weekend/afternoon meeting time
  - Urban Ore Facebook
  - Neighborhood organizations
  - West Berkeley industrial people
  - Online survey?



# Zero Waste Transfer Station Listening Session Summary

**Key Take-Aways:**

- Form follows policy
- Highest and best use
- Reduce overall generation
- Facility needs to accommodate multiple user types

**Information Needs:**

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

**Desired Features:**

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 El Cerrito. 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 (like at El Cerrito).
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. Plus catwalk through the facility for tours.



Administration Building	Co-located office space for City staff, CCC, Ecology Center. Enhances collaboration and goal setting.
Break room, 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 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	<ul style="list-style-type: none"> <li>▪ Artists in residence program (allow access to materials like at El Cerrito – do not need dedicated studio space).</li> <li>▪ Maker area</li> <li>▪ Social services for vulnerable populations</li> <li>▪ Needle exchange</li> <li>▪ Supplemental Nutrition Assistance Program (SNAP) program applications</li> <li>▪ Food pantry. Landscaping</li> <li>▪ Sculpture garden</li> <li>▪ Compost demonstration</li> </ul>





## Zero Waste Transfer Station Vendor Meeting – January 17, 2019

### Attendees:

Zero Waste Collaborative reps: Ruth Abbe, Clark Davis

Urban Ore, Inc. reps: Mary Lou Van Deventer, Doug, Greg Van Mechelen, Max Westler

CCC, Inc.: Jeff Belchamber, Pam Belchamber, Carol Vomacka, David Johnson

Ecology, Inc.: Debbie Beyea, Daniel Mather, Martin Bourque

- Ruth: what specific needs do your facilities have?  
Recommendations etc.
- Observations from last night?
  - Greg: seeking answer without stating problem, we need to know the issue that we are solving
    - what the problem is: circulation, how do the people flow to the building, how big and small vehicles flow into the building
    - 3 genres of customers: 1) city gang, professional haulers, 2) small haulers, clearing out basement 3) MRF people (homeless, etc.)
    - we need to divide the big customers and the small customers because they have different needs. Big scales vs. little scales or carts
  - Clark: comes down to how fees are handled, what is our flexibility, we need to know the internal info from the groups today
  - Ruth: 160 average per day buyback, 40 average drop-off might increase after change
  - Dan: questioning the number, he sees it differently at the site
  - Jeff: number is higher probably
  - Ruth: el Cerrito is same program

- Martin: what is userbase for drop-off? Improved site would take customers away from el Cerrito and from S Berkeley. How successful do we want to be?
- Debbie: ask el Cerrito what they would improve?
- Jeff: el Cerrito could bring their stuff to us
- Ruth: we need to get the people who are going to transfer station now
- Greg: we need fees for various materials
- Max: exercise is encouraging source separation, while maintaining traffic flow,
  - each person at a station could have a tablet and generate a digital ticket for customer, pay with square,
  - need to retrain people, restructure the whole system to flow smoother
- Dan: something akin to mall management, bunch of groups who pay rent, everyone on site should pay rent,
  - Marginal/token rent for certain groups
- Ruth: what materials wouldn't be covered?
- Dan: six total material recovery enterprises
- Ruth: what are the voids?
  - Ceramics?
- Greg: city needs to decide what materials it wants to handle itself or send to a private entity (airport analogy)
  - Who is doing customer-facing relations? The city?
- Ruth: is it necessary to have more than 6 enterprises?
- Mary Lou: 12 groups are master categories, can be infinitely subdivided
  - Not all textiles (for example) should go to the same place
  - Wedding dress vs. moldy carpet
- Clark: Etsy in mall metaphor
  - Big mall containing multiple micro malls
- Ruth: should we try to duplicate that or just tell people to bring wedding dress etc. to somewhere else?
- Greg: everything should be collected in one place
- Ruth: we don't want reusable stuff in the site right?
- Martin: concept of multiple portals in effect now
  - We don't need a separate purchaser/vendor for each subcategory (paper/fabric/etc.)
- Mary Lou: we need to make it easier to customers, accept everything
- Martin: we can't make everyone go to this limited site
  - People who want \$ for stuff will go to vintage stores, why come here?



- Mary Lou: we need one stop shop, customer convenience
- Jeff: improvement on collecting reusables
- Max: not have more people on the site, cater to those who are already coming, show market price for various materials
- Greg: reusables don't need a large space, just a little kiosk
- Ruth: reusables probably 5-6%
- Move on from reusable
  - Pam: build on what is working, highest and best use
    - Labor intensive instead of unproven technologies
    - Ecology center should be encouraged for good PR
  - Dan: one last thing about reusables: as a practice we do not compete with garage/estate sales etc.
  - Ruth: focus on six enterprises?
  - Dan: we have labor intensive and intelligence intensive model, that is necessary
  - Martin: how the people are moving across the site, trucks can't go in-out constantly, think of the user cross-site
  - Mary Lou: labor/intelligence is very important, it takes skill to sort
    - Multiple stops can make it easy if linear/circular
  - Greg: multiple stops could be hard on the user if they keep having to start and stop
  - Ruth: route trucks – getting stuff into the right truck is a problem that happens at the users and not at the site
  - Martin: same number of trucks presumably
  - Carol: there was no discussion about the trucks that come IN to pick up stuff from the site
  - Doug: other scrap dealers that come in to pick up stuff?
    - yes
  - Dan: we brought in design of site to address issue of trucks
  - Pam: what are the priorities for this site? What are the investments? What are the programs that can be used? Etc.
  - Ruth: addressing ongoing uses that we have to continue
  - Mary Lou: copy of the slides and plan for phasing of construction
  - Clark: circulation issue –
    - Need to be flexible because things will change in the future
    - Using RFIDs etc.
    - More access to site is good, takes up real estate though
  - Greg: we don't need a staff person at both incoming and outgoing scales, McDonalds drive-through metaphor with voice-box



- Clark: we need a scale master, there are a lot of important/different functions
- Greg: small haulers don't need a large scale, could do it on carts
- Doug: how will the customer know how many carts they need to put it in?
- Greg: customers park and unload all their items
- Max: helpful equipment – electronic lift gate
  - Not sorting should be most expensive option
- Martin: presenting plan
  - Industrial end vs. customer facing end
  - Self haul users: regular construction users vs. household users
  - Residential and buyback should be in different places, different customers
  - Plan for traffic, possible queuing area
  - David: train will not wait for pedestrians, have to plan around that
  - Parking should be central so people don't have to walk too far
  - admin next to operations and centered
  - one big building with different functions inside
  - "el Cerrito" area should be on one end so that they don't have to enter the depths of the site
- Ruth: Any further issues?
  - Martin: separated but coordinated sections
    - Bicycle and pedestrian users
    - Industrial vs. self haul
    - Okay with duplication of collection areas
  - Max: thanks to everyone
  - Dan: rent issue
    - It gives you rights, a lease
    - RFP and competitive bids doesn't lead to better outcomes
    - Rents set to be affordable
  - Daniel: keep public away from backend
  - Debbie: goal is zero waste, emphasize education
  - David: flow is a concern, what we have now can be enhanced
  - Carol: customers want to stay away from the big industrial areas
  - Pam: ideal vs. practical
  - Jeff: his design adds an extra scale house, traffic shouldn't go against each other, processing building stays or goes?

- Greg: stacking vertically from Gilman from most commercial to more industrial
  - Businesses would have to be redirected to Albany?
  - Explanation of circle diagram
- Doug: n/a
- Mary Lou: this is economic development project, goal is zero waste
  - customer service is important, it should be fun and pleasant,
  - rent would bring rent to the city
  - walkway over the area for education
  - area for social service intervention for homeless population
  - no need to bid every 5 years`







**Written Statement from Pam Belchamber: (Board Member of Community Conservation Centers, Inc.)**

Build on what works!

Regarding the recycling component, we do not have to reinvent the wheel, but build on what is proven successful and has achieved the City policy of highest and best use. CCC envisions a recycling facility which will continue to produce an end product of the highest quality. CCC believes in a labor intensive approach that utilizes well trained and well paid work force, offering clean safe reliable working conditions with reliable well maintained equipment to do the job.

CCC does not believe that reliance on high cost unproven technologies and making high capital investment is prudent. This is especially true if the goal is a way to reduce the work force. Proven innovations that can be maintained/replaced quickly to keep operation up and moving is an approach that has served CCC and the City of Berkeley well. CCC believes in the reduce reuse recycle ethic.

Reduce, Ecology Centers emphasis right now on reducing the use of plastic products e.g straws is a very good start

Reuse, Urban Ore are experts at reuse

Recycle. The dual stream system, both the collection (Ecology Center) and CCC's combined MRF/BuyBack/donation model works. The local MRF, reflects an established city policy, e.g. of local control of Cities waste stream. A facility that processes all recyclables from the public, and City program's results in cost efficiencies, lower transportation costs, and a location close to freeway entrance is convenient for public access, and transport.

A wish list would be to identify incremental steps that can be undertaken taken in the short term to insure that the existing programs can be integrated smoothly into a new facility.

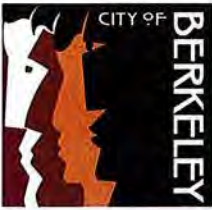
A clear definition of priorities for use of site space, what investments are made and in what order would be ideal.

Investment in recycling is not a subsidy, but old ideas die hard..accepting the new normal that we are operating a city service that is supported in large part by the rate payers is critical.

So, in terms of a newly designed facility, the policy dictates the form. The policy makers, the City staff, and the stakeholders, including the citizens who pay the price must be in alignment; stick to what works, and follow the policy.

CCC's immediate is focused on the interim period before the build phase, estimated to be 3-5 years. Keeping the current recycling programs intact and thriving is important. Any new facility has to be designed around the current city policy of a dual stream recycling system including the elements of collection and a local processing and marketing facility.

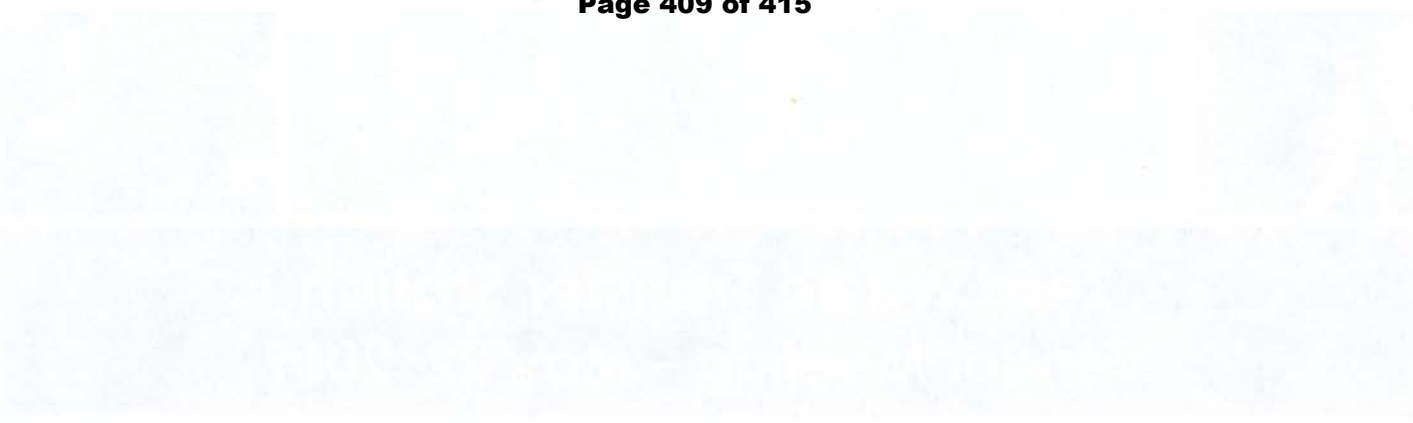




## Zero Waste Transfer Station Vendor Meeting – May 22, 2019

- Route truck parking in Concept A – where is employee parking?
- Could we have breakrooms above vehicle maintenance?
- Structure is contiguous in Concept A. Fewer parking spaces in drop off in Concept B.
- Do we need two loading bays?
- Any on street parking on Second Street?
- No employee parking
- Need some separation between buyback and drop off customers
- Concerns about the changing material types – does the design allow for flexibility in the future
- Can we save room to do onsite shredding of plant debris?
- Can we save room to salvage dimensional lumber?
- Can regular self-haul users use the RFID? [Could lead to abuse. Need financial control.]
- Commodity trucks have to circle out of the site
- Route trucks need access to the scale
- Would like to see some duplication of diversion activities (i.e., recovery of scrap metal in both the drop off area and the self-haul bulky area)
- Could we flip Universal Waste with buyback (get the material closer to the processing area)?
- The Strategic Plan (which will identify future programming) should inform final design





*[The text in this section is extremely faint and illegible. It appears to be a multi-paragraph document, possibly a report or a letter, but the content cannot be discerned.]*

MEMORANDUM

July 22, 2019

To: Berkeley City Council

From: Berkeley Zero Waste Commission

Re: Transfer Station Redesign Recommendations

At the June 2019 Zero Waste Commission meeting, the consultants from the Zero Waste Collaborative, Inc. presented two concepts for the Transfer Station feasibility study. The two concepts

- Have improved traffic flow and functionality versus the existing facility.
- Are designed to be built in phases so that the transfer station remains in operation continuously.
- Provide flexibility for changing operations as more materials are recycled or composted in the future.
- Took into consideration input from City staff, the Ecology Center, Berkeley Recycling/Community Conservation Centers, Urban Ore, and the general public.

Based on this, the Zero Waste Commission recommends that the Berkeley City Council moves forward and approves the issuing of an RFP for a consultant to take these two concepts through the CEQA process.







## Zero Waste Commission Regular Meeting

Monday, September 23, 2019, 7:00 p.m.  
City of Berkeley Corporation Yard (Ratcliff Building, Willow Room)  
1326 Allston Way, Berkeley

### Meeting Agenda

#### PRELIMINARY MATTERS (30 Minutes):

- 7:00 p.m. Call to Order  
*Chair will call the meeting to order; Secretary will call roll.*
- Christienne de Tournay (Chair)**, appointed by CM Sophie Hahn, District 5  
**Alfred Twu (Vice Chair)**, appointed by former CM Kriss Worthington, District 7  
**Annette Poliwka**, appointed by Mayor Jesse Arreguin  
**Ilana Golin**, appointed by CM Rashi Kesarwani, District 1  
**VACANT**, appointed by CM Cheryl Davila, District 2  
**Antoinette Stein**, appointed by CM Ben Bartlett, District 3  
**Margo Schueler**, appointed by CM Kate Harrison, District 4  
**Jennifer Lombardi**, appointed by CM Susan Wengraf, District 6  
**David Grubb**, appointed by CM Lori Droste, District 8
- 7:05 p.m. Approve Meeting Agenda
- 7:10 p.m. Public Comment  
*Speakers are generally allotted up to three minutes. Speakers may be allotted less time at the discretion of the Chair.*
- 7:20 p.m. Commissioner Announcements  
*Commissioners may make general announcements; no action will be taken.*
- 7:25 p.m. Approval of Minutes: July 22, 2019 Regular Meeting\*

#### INFORMATION AND ACTION ITEMS (90 minutes):

- 7:30 p.m. 1. Staff Updates
- Transfer Station Feasibility Study
  - Zero Waste Strategic Plan
  - Zero Waste Rates Sept. 17 Council Work Session Recap
  - Carpet Recycling Program
  - SB 1383 Rulemaking
  - CRRRA Report Back
- 7:45 p.m. 2. Vessel Reusable Cup Pilot Program Launch update provided by Martin Bourque, Ecology Center
- 7:55 p.m. 3. Discuss Single Use Foodware & Litter Reduction Ordinance implementation, including onsite signage and public education strategies

- 8:05 p.m. 4. Planning for March 2020 National Zero Waste Week – discuss how the Commission and/or City can be involved
- 8:15 p.m. 5. Discuss Friends of the Zero Waste Commission Facebook group and/or other public communication ideas
- 8:20 p.m. 6. Discuss methods for promoting community composting
- 8:25 p.m. 7. Deconstruction Subcommittee Update - Discuss Construction and Demolition Materials Markets: Identifying Opportunities Regionally and Locally\*
- 8:40 p.m. 8: Discuss mixed plastics recycling
- 8:50 p.m. 9. Discuss closure of deposit redemption centers in California
- 8:55 p.m. 10. Discuss future agenda items
- 9:00 p.m. 11. Action to adjourn the meeting

#### COMMUNICATIONS:

*Documents/letters are included as attachments in the agenda packet. Links to online information are included below; printed hard copies of linked items are available at the meeting or upon request.*

- Communication from Adele Poenisch\*
- Communication from Chrise de Tournay\*\*
  - <https://ecologycenter.org/blog/announcing-berkeleys-first-reusable-cup-program/>
- Documents forwarded by staff\*
  - Comments on the 2<sup>nd</sup> draft of SB1383 submitted to CalRecycle by the City of Berkeley Zero Waste Division
  - City of Berkeley Disaster Debris Management Plan DRAFT
- Informational article links/webinars forwarded by staff\*\*
  - If You Don't Know, Now You Know - Asian Nations Reject Western Trash | The Daily Show: <https://youtu.be/-htnUTN4mH0>
  - California firm closes 284 deposit redemption centers: <https://resource-recycling.com/recycling/2019/08/06/california-firm-closes-284-deposit-redemption-centers/>
  - SB1383 CalRecycle Rulemaking Information: <https://www.calrecycle.ca.gov/Laws/Rulemaking/SLCP/>
  - U.S. REGULATORY APPROACHES FOR PACKAGING - September 11, 1:30 p.m. – 3:00 p.m. (EST) [Register Here](#)
  - Article re: Wishcycling: <https://www.motherjones.com/environment/2019/08/recycling-wishcycling-china->




[plastics-zero-waste-bags-straws/?utm\\_source=Sailthru&utm\\_medium=email&utm\\_campaign=Issue:%202019-09-04%20Waste%20Dive:%20Recycling%20%5Bissue:22809%5D&utm\\_term=Waste%20Dive:%20Recycling](#)

- Invite to the **Bay Area Deconstruction Workgroup Meeting** will be **Monday, October 21, 2019, from 10:00 – 12:30** at the [U.S. EPA Region 9 Office in San Francisco](#)

\*Indicates material included in the agenda packet

\*\* Indicates material to be available at the meeting

 This meeting is being held in a wheelchair-accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services Specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

*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.*

Zero Waste Commission Secretary: Heidi Obermeit, Recycling Program Manager, 1201 2<sup>nd</sup> St. Berkeley, CA 94710, 510-981-6357, [hobermeit@cityofberkeley.info](mailto:hobermeit@cityofberkeley.info)



Zero Waste Commission  
Regular Meeting

Berkeley Corporation Yard  
July 22, 2019

**(DRAFT) MINUTES**

The meeting was convened at 7:00 p.m. with Chrise de Tournay, Chair, presiding.

**ROLL CALL**

Present: Chrise de Tournay, Alfred Twu, Ilana Golin, Antoinette Stein  
LOA: Annette Poliwka, Margo Schueler, Jennifer Lombardi  
Absent: None

**STAFF PRESENT:** Greg Apa, Heidi Obermeit

**MEMBERS OF THE PUBLIC PRESENT:** 9

**PUBLIC COMMENT:** 3

**ACTIONS TAKEN:**

**1. Approval of the July 22, 2019 Regular Meeting Agenda**

M/S/C (de Tournay/Twu) to approve the agenda for the July 22, 2019 regular meeting.  
Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

**2. Approval of the June 24, 2019 Meeting Minutes**

M/S/C (de Tournay/Stein) to approve the June 24, 2019 regular meeting minutes.  
Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

**3. Action to Send a Letter to City Council Supporting the Two Concepts for the City of Berkeley Solid Waste and Recycling Transfer Station Feasibility Study**

M/S/C (de Tournay/Golin) to approve sending a letter to City Council supporting the two concepts for the City of Berkeley Solid Waste and Recycling Transfer Station Feasibility Study that were presented at the June 24, 2019 Zero Waste Commission meeting. Action to:

- 1) Concur with the two concepts to be submitted for City Council approval at the November 5, 2019 City Council work session.
- 2) Support the inclusion of both concepts in the next phase of the Project: a Request for Proposal (RFP) to comply with California Environmental Quality Act (CEQA) requirements.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

**4. Adjournment at 8:57 p.m.**

M/S/C (de Tournay/Stein) to adjourn the meeting at 8:57 p.m.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

The next regular meeting of the Zero Waste Commission will be held on Monday, Sept. 23, 2019 at 7:00 p.m. at the City of Berkeley Corporation Yard (Ratcliff Bldg, Willow Rm), 1326 Allston Way.

Respectfully Submitted:

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Heidi Obermeit, Secretary





Office of the City Manager

WORKSESSION  
November 5, 2019

To: Honorable Mayor and Members of the City Council  
 From: Dee Williams-Ridley, City Manager  
 Submitted by: Phillip L. Harrington, Director, Department of Public Works  
 Subject: Development of a Vision Zero Action Plan

INTRODUCTION

In March 2018 the Berkeley City Council adopted the Vision Zero goal of eliminating traffic deaths and severe injuries in Berkeley by 2028, and directed staff to form a Vision Zero Task Force and develop a Vision Zero Action Plan (Resolution No. 68,371-N.S.). The resolution specified that the multi-disciplinary Task Force include members with expertise in enforcement, education, public health, emergency response, equity, and all modes of transportation; research a minimum of five years of collision data to identify behaviors most associated with traffic deaths and injuries, and geographic locations and populations which bear a disproportionate burden of fatal and severe crashes; engage the community in developing the Plan; develop assurances against racial profiling and targeting as it pertains to Vision Zero enforcement; and ensure that communities of color, the Police Department, and community leadership are included in the development of enforcement plans or policies. This report provides information on the Vision Zero Task Force process and progress toward developing a Vision Zero Action Plan.

CURRENT SITUATION AND ITS EFFECTS

Following the March 2018 City Council meeting, Public Works convened a Vision Zero Task Force and Vision Zero Advisory Committee, and has begun drafting a Vision Zero Action Plan. The Task Force consists of government agency representatives from multiple City of Berkeley Departments and partner agencies, including the Berkeley Police Department; Berkeley Fire Department; Department of Public Works; Department of Health, Housing, and Community Services; AC Transit; the University of California, Berkeley; the Office of the City Manager. Representatives from the Mayor's Office and interested Council Members' offices also participate. The purpose of the Task Force is to provide an agency perspective on the development of the Vision Zero Action Plan. The Advisory Committee consists of members of the public representing various parts of the Berkeley community, including City of Berkeley Commissioners, BUSD Board of Directors, Safe Routes to Schools parents, business associations, and pedestrian and bicycle advocates. The purpose of the Advisory Committee is to provide a public perspective on the development of the Vision Zero Action Plan.



In partnership with these two groups, Public Works staff have begun the process of drafting a Vision Zero Action Plan. This process is structured around a series of five meetings with each group, as well as focus-group meetings with specific Task Force members. Each meeting has focused on one step in the Plan development process:

1. Vision: *“eliminate traffic deaths and severe injuries on our city streets by 2028”*;
2. Guiding Principles: *values that guide the development of action items, such as safety, equity, sustainability*;
3. Draft Actions: *specific recommendations including administrative, data analysis, street design, enforcement, and public awareness components*;
4. Prioritized Actions: *given constrained resources, which actions are first*;
5. Draft Action Plan: *all above elements in a coherent, actionable policy document*.

One of the draft Action Items recommends the creation of an ongoing Vision Zero implementation committee. After consultation with the City Clerk, staff is considering continuation of both the Task Force (agency staff) and the Advisory Committee (members of the public) in one consolidated “Vision Zero Coordinating Committee”, formed to advise the City Manager on Action Plan implementation. Similar to the composition of the existing Task Force and Advisory Committee, this new Committee would consist of City staff from affected departments, assigned by the City Manager; Commissioners selected by their respective commissions; and other members of the Berkeley community as appropriate. The Committee would be an ad-hoc non-legislative body not subject to the Brown Act, and would meet quarterly to discuss a predetermined work plan and agenda. It would provide quarterly updates to the City Manager and to the City Council in the form of Information Items.

Additional information and Action Plan recommendations can be found in Attachment 1: Draft Berkeley Vision Zero Vision Statement and Guiding Principles; and Attachment 2: Draft Berkeley Vision Zero Action Items.

## BACKGROUND

Vision Zero is a safety-first approach to transportation that seeks to eliminate all traffic deaths and severe injuries. The Vision Zero approach to traffic safety was first adopted by Sweden’s parliament in 1997. By 2015, traffic deaths in Sweden dropped by over 50%, saving approximately 280 lives per year<sup>1</sup>. The first US city to adopt a Vision Zero

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<sup>1</sup> *Development of Road Safety in Sweden*. Swedish Transport Agency, Swedish Transport Administration, Transport Analysis, and Swedish National Road and Transport Research Institute. See <http://bit.ly/2yLFUmi>; *Global Status Report on Road Safety 2015*. World Health Organization. See <http://bit.ly/2ciLUp7>.

policy or plan was Chicago in 2012. Since then, other US Cities have followed suit, including San Francisco, San Jose, Los Angeles, and Fremont, California. Vision Zero is a paradigm shift that emphasizes a “safe systems” approach to roadway design and engineering, supported by enforcement and public awareness efforts.

From 2012 to 2016, an average of three people per year were killed in traffic collisions on Berkeley streets and an additional thirty-one people per year were severely injured. Severe injuries are often debilitating or life threatening and require hospitalization. Of the fourteen people killed in traffic collisions in Berkeley between 2012 and 2016, five were walking, four were bicycling, and five were driving motor vehicles at the time of the collision. Pedestrians and bicyclists are highly overrepresented among those killed and severely injured in traffic collisions in Berkeley.

The three most common factors that caused severe and fatal collisions, as recorded by law enforcement, were “Unsafe Speed” (22%), a violation of the “Pedestrian Right of Way” (14%) and “Driving or Bicycling Under the Influence of Alcohol or Drugs” (10%). Under a Vision Zero approach, traffic safety efforts would focus on reducing these primary causes of severe and fatal collisions. Reducing vehicle speed is particularly important for reducing pedestrian fatalities, as a pedestrian hit by a vehicle traveling at twenty miles per hour has a 90% chance of survival, but a pedestrian hit by a vehicle traveling at forty miles per hour has a 90% chance of dying.

#### ENVIRONMENTAL SUSTAINABILITY

Walking and cycling trips do not release air pollutants or greenhouse gasses. Implementation of the Vision Zero Action Plan could increase walking and cycling trips by improving the safety and accessibility of these modes. A survey for the 2017 Berkeley Bicycle Plan found that 71% of Berkeley residents are interested in bicycling, but do not ride because they are concerned about safety. Increasing cycling and walking would help the City achieve the Berkeley Climate Action Plan greenhouse gas emission reduction targets of 33% below year 2000 levels by the year 2020, and 80% below year 2000 levels by 2050. The Climate Action Plan states that transportation modes such as cycling must become the primary means of fulfilling the City’s mobility needs in order to meet these targets.

#### POSSIBLE FUTURE ACTION

The next step in developing a Vision Zero Action Plan will be to work with the consultant team, Task Force, and Advisory Committee to complete a draft Plan. The draft Action Plan will be presented at the November 2019 Transportation Commission meeting for review, comment, and recommendation. The final Action Plan will be presented to the Berkeley City Council in February 2020 for consideration for approval.

#### FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

The fiscal impacts of the Vision Zero Action Plan will depend on what actions are approved by Council and identified by a future Vision Zero Coordinating Committee. New safety efforts will require prioritizing new safety-related actions, re-focusing existing

safety-related work under a Vision Zero approach, and potentially providing additional funding and staffing to support these priorities.

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Attachments:

- 1: DRAFT Berkeley Vision Zero Vision Statement and Guiding Principles
- 2: DRAFT Berkeley Vision Zero Action Items



## ATTACHMENT 1: VISION ZERO GUIDING PRINCIPLES

*The City of Berkeley is committed to an equity-focused, data-driven effort to eliminate traffic deaths and severe injuries on our city streets by 2028.*

1. **Safety is our highest priority.** Human life is more important than speed, convenience, or property. We will evaluate tradeoffs and make both proactive and reactive engineering decisions about street design based on this value.
2. **Traffic deaths and severe injuries are preventable and unacceptable.** Using a holistic, data-driven, systems-level approach to street design, we will treat fatal and severe crashes as preventable and unacceptable incidents that can and must be addressed.
3. **People make mistakes.** We will design our streets so that mistakes do not result in death or severe injury.
4. **Slower streets are safer streets.** We will design, construct, and operate our streets for slower speeds with the goal of eliminating all fatal and severe collisions and of protecting our most vulnerable street users – children, seniors, people with disabilities, and people walking and biking.
5. **We will create safer transportation options for people who choose to walk, bike, and take transit.** Creating safer transportation options for people to walk, bike, and take transit can reduce the number of car trips in Berkeley. Fewer car trips can mean fewer severe and fatal collisions.
6. **Street safety must be achieved equitably.** We will respond to the disproportionate burden of traffic deaths and severe injuries on low-income communities, people of color, un-housed residents, people with no or limited English proficiency, and people with disabilities. Enforcement strategies will target the specific safety violations that disproportionately impact these vulnerable populations, to best utilize scarce resources. They will not result in racial profiling.
7. **Vision Zero will be accountable, transparent, and data-driven.** Actions will be data-driven to respond to the causal factors of deaths and severe injuries on Berkeley streets. This response will utilize both proven methods and innovative strategies. We will perform annual monitoring, reporting, and evaluation through an equity lens. We will communicate clearly what resources are necessary to achieve Vision Zero, why street design modifications are proposed, and the basis by which competing improvements are prioritized.

## **ATTACHMENT 2: Draft Berkeley Vision Zero Actions Summary**

### **The Vision Zero Program**

#### **0.1 COLLABORATION**

*With City departments, regional and community partners, and mobility providers to achieve Vision Zero goals. Continuing commitment from Berkeley elected officials.*

#### **0.2 CAPACITY**

*Sustainable funding and staffing to complete Vision Zero action items, including program management, infrastructure projects, and education, engagement, and enforcement.*

#### **0.3 TRANSPARENCY AND EQUITY**

*Establish a milestone reporting schedule. Incorporate equity into data collection, analytics, engagement, and reporting.*

### **Safer Streets for Everyone**

#### **1.1 PROJECT PLANNING AND DEVELOPMENT**

*Prioritize High-Injury Streets and the most vulnerable street users.*

#### **1.2 PROJECT DESIGN**

*Design for vulnerable users of the transportation network, including people of all ages and abilities.*

#### **1.3 PROJECT DELIVERY**

*Deliver Vision Zero traffic safety infrastructure improvements both reactively and proactively.*

### **Safer Streets by Everyone**

#### **2.1 PUBLIC AWARENESS**

*Create a culture of traffic safety by promoting awareness through public information programs and campaigns.*

#### **2.2 ENFORCEMENT**

*Develop an equitable and data-driven enforcement strategy focused on the most critical safety violations contributing to fatal and severe injuries, including speeding, failure to yield, and inattentive driving.*

## Draft Berkeley Vision Zero Actions

### **The Vision Zero Program**

#### **0.1 COLLABORATION**

*With City departments, regional and community partners, and mobility providers to achieve Vision Zero goals. Continuing commitment from Berkeley elected officials.*

ACTIONS (RESPONSIBLE PARTY):

- **Establish a standing Vision Zero Coordinating Committee** consisting of staff and Commissioners such as those representing the Commission on Aging, Community Health, Disability, Police Review, Planning, Public Works, and Transportation, and City Council members or their representatives, with quarterly meetings organized around a predetermined annual agenda. **(City Manager, Department Directors)**
- **With MTC or Alameda CTC, establish a peer-to-peer Bay Area Vision Zero Network** for information-sharing and collaboration on countywide and regional initiatives such as public health analysis of crash victim hospital data. **(Mayor's Office, City Manager, PW/Transportation)**
- **Develop a targeted, strategic Vision Zero staff training plan** to send key staff responsible for implementing the Vision Zero Action Plan such as Public Works; Police; Health, Housing and Community Services (HHCS); and the City Manager's Office and elected officials to Vision Zero-related conferences. **(City Manager, Department Directors)**
- **Incorporate Vision Zero goals into plan and policy updates** for all departments and partner institutions, including the upcoming City of Berkeley Zoning Ordinance update and UC Berkeley's Long-Range Development Plan. **(City Manager, Department Directors)**

#### **0.2 CAPACITY**

*Sustainable funding and staffing to complete Vision Zero action items, including program management, infrastructure projects, and education, engagement, and enforcement*

ACTIONS (RESPONSIBLE PARTY):

- **Conduct a citywide Vision Zero Action Plan evaluation** of existing staffing and funding capacity to complete Vision Zero Action Items. **(City Manager, Public Works, HHCS, Police Department)**
  - **Create a staffing matrix** of existing and proposed staff for the delivery of Vision Zero Action Items. New or realigned staff needs are anticipated in the areas listed below:
    - Public Works Rapid Response Safety Project team
    - Public Information Officers in key Vision Zero departments, including Police and HHCS
    - Berkeley Police Department Traffic Enforcement Unit
    - HHCS Vision Zero public awareness program
- **Establish a milestone staffing and funding schedule** to complete Vision Zero Action Items, including City and grant funds.



- **Apply for a Vision Zero Performance Audit** to be performed during the FY21 audit period to evaluate the implementation of the Action Plan and make any additional needed recommendations, including additional and/or realigned staffing and funding, for effective Vision Zero Action Plan implementation. Provide required 6-month updates to the City Council. **(Public Works)**

### 0.3 TRANSPARENCY AND EQUITY

*Establish a milestone reporting schedule. Incorporate equity into data collection, analytics, engagement, and reporting.*

ACTIONS (RESPONSIBLE PARTY):

- **Provide an annual Vision Zero Progress Report**, reviewed by the City Auditor, to the City Council, City Department Directors, Vision Zero Coordinating Committee, and Transportation Commission, on progress on reducing fatal and severe crashes, including in historically underserved neighborhoods, and on meeting the funding, staffing, and Vision Zero program delivery schedules. Include an updated Vision Zero High-Injury Street map. **(PW/Transportation)**
- **Complete a full update of the Vision Zero Action Plan every three years** to ensure continued relevancy of the Action Plan by integrating advancements in best practices and technologies. The first update will include an evaluation of equity gaps in safety datasets and develop equity milestones to address inequities related to gender, people with disabilities, homelessness, race/ethnicity, language, and income, as well as assess the need to include hospital data in Vision Zero analyses and maps. **(PW/Transportation)**

## Safer Streets for Everyone

### 1.1 PROJECT PLANNING AND DEVELOPMENT

*Prioritize High-Injury Streets and the most vulnerable street users.*

ACTIONS (RESPONSIBLE PARTY):

- **Develop a matrix to track project prioritization and progress.** Prioritize both new/existing requests/referrals and delivery of established infrastructure project lists (e.g. Five Year Repaving Program, BeST Plan, etc.) according to the Vision Zero High-Injury Street map and equity-driven prioritization from City Council adopted plans such as the forthcoming Pedestrian Master Plan and Bicycle Plan. **(City Manager, Public Works)**
- **Establish a Vision Zero Rapid Response Safety Project Protocol** that utilizes data from the Fatal Accident Investigation Team (FAIT) to deploy quick-build projects if engineering countermeasures would be effective at improving safety. **(PW/Transportation, Police Dept)**
- **Conduct before and after studies** of a sample of Vision Zero infrastructure projects to evaluate effectiveness. **(PW/Transportation, Police Dept)**
- **Undertake a Standards of Coverage/Response Time Study** to provide a data-driven understanding of how safety improvements impact emergency response times. **(PW/Transportation, Fire Department, Police Dept)**

- **Establish a pre-approved list of safety infrastructure improvements** with the Vision Zero Coordinating Committee to streamline the implementation of projects. **(PW/Transportation)**

## 1.2 PROJECT DESIGN

*Design for vulnerable users of the transportation network, including people of all ages and abilities.*

ACTIONS (RESPONSIBLE PARTY):

- **Utilize and maintain policies and design guidelines from Council-adopted plans such as the Pedestrian Master Plan and Bicycle Plan** to guide Berkeley's street design, traffic, and parking procedures in order to prioritize safety over convenience and reduce the incidence of severe and fatal collisions. Update the Berkeley Municipal Code to be consistent with these Council-adopted plans. Ensure revisions and updates are reviewed by the Vision Zero Coordinating Committee to maintain accessibility for people of all ages and abilities. **(PW/Transportation, PW/Engineering)**
- **Refine the existing traffic calming toolbox** to include design guidelines for all street types, utilizing Council adopted plans where applicable. Ensure the traffic calming toolbox is reviewed by the Vision Zero Coordinating Committee to streamline the implementation of projects. **(PW/Transportation)**

## 1.3 PROJECT DELIVERY

*Deliver Vision Zero traffic safety infrastructure improvements both reactively and proactively*

ACTIONS (RESPONSIBLE PARTY):

- **Proactively implement already-identified capital and quick-build safety projects** on all Vision Zero High-Injury Streets on a schedule to complete such projects by 2028. **(PW/Transportation, PW/Engineering)**
- **Reactively implement newly identified quick-build projects** at locations with recent severe and fatal collisions if engineering countermeasures could be effective at improving safety, based on Rapid Response Safety Project Protocol. **(PW/Transportation, PW/Engineering)**
- **Continue to deliver neighborhood traffic calming** as part of the request-based program and proactively deliver data-driven major street traffic calming projects on Vision Zero High-Injury Streets. **(PW/Transportation, PW/Engineering)**
- **Establish a Complete Streets Repaving and Development Project Checklist** to ensure proactive and reactive Vision Zero safety infrastructure for people of all ages and abilities are included with each repaving project and in the conditions of approval for development projects. **(PW/Transportation, PW/Engineering, Planning)**

## Safer Streets by Everyone

### 2.1 PUBLIC AWARENESS

*Create a culture of traffic safety by promoting awareness through public information programs and campaigns.*

ACTIONS (RESPONSIBLE PARTY):

- **Make Vision Zero a household term.** Develop Berkeley Vision Zero branding for use on promotional and educational material. Use decals and branding on City vehicle fleet to promote Vision Zero, including on police and fire department vehicles. Use existing relationships with community-based organizations to distribute material City-wide. **(City Manager PIO, PW/Transportation, HHCS)**
- **Develop and proactively deliver a Vision Zero educational campaign** focused on primary collision factors for severe and fatal injuries in Berkeley, elevating victims' stories. Regularly update the campaign to ensure it is context-specific and culturally relevant. **(City Manager PIO, PW/Transportation, HHCS)**
- **Establish a Vision Zero Rapid Response Safety Communication Protocol.** Reactively employ a communication strategy in response to recent severe and fatal collisions aimed at the human element of traffic safety, elevating victims' stories. **(PW/Transportation, HHCS)**
- **Maintain an understanding of the Berkeley community's perception of safety.** Target direct public engagement to residents of Berkeley's historically underserved neighborhoods and other vulnerable users, including seniors, people with disabilities, and people who walk and bike. **(City Manager PIO, PW/Transportation, HHCS)**
- **Partner with UC Berkeley, Berkeley City College, Berkeley Unified School District, and the Commission on Aging** to create targeted Vision Zero messaging for students, faculty, and seniors. **(City Manager PIO, PW/Transportation, HHCS)**
- **Integrate Vision Zero traffic safety awareness into training for City employees** who drive City vehicles or drive while on City business, including Police, Fire, Public Works, and all City departments and divisions. **(City Manager, PW/Transportation)**

## 2.2 ENFORCEMENT

*Develop an equitable and data-driven enforcement strategy focused on the most critical safety violations contributing to fatal and severe injuries, including speeding, failure to yield, and inattentive driving.*

ACTIONS (RESPONSIBLE PARTY):

- **Continue and regularly update a crash data-driven enforcement strategy** using Fatal Accident Investigation Team (FAIT) reports, crash data, and the High-Injury Street map. **(PW/Transportation, Police Dept)**
- **Expand safe speeds enforcement** to recognize speeding as the top primary collision factor in collisions resulting in a severe injury or fatality. Continue to provide updated speed surveys on High-Injury Streets to the Police Department. **(PW/Transportation, Police Dept)**
- **Expand on Zachary Cruz's Pedestrian Safety Month** to conduct highly-visible, well-publicized year-round pedestrian right-of-way enforcement operations. **(PW/Transportation, Police Dept)**
- **Seek opportunities to educate before issuing citations** during Vision Zero enforcement. **(PW/Transportation, Police Dept)**
- **Support state-wide traffic safety legislation** allowing automated speed enforcement by local agencies, designation of speed limits on local streets based on desired safety outcomes rather than the existing prevailing speed, and the reduction of local residential street speed



limits to below 25 MPH, which would allow for 20 MPH speed limit on local residential streets, consistent with “20 Is Plenty” campaigns. **(City Manager, PW/Transportation, Police Dept)**

