Solid Waste & Recycling Transfer Station

Feasibility Study 18-11171-C

City Council Work Session

November 5, 2019

Presented by:

ZERO WASTE COLLABORATIVE

Kevin McCarthy & Ruth Abbe

PROJECT GOALS

- **State-of-the-art Solid Waste and Recycling Transfer Station**:
  - **Zero Waste Goals**
    - Maximizes recovery of reusable and recyclable materials to meet the City's zero waste goal
    - Ensures highest and best use of recovered materials
    - Facility that provides a maximum amount of space for the separation of materials for recovery
  - **User-friendly for customers, city staff, and city contractors**
  - **Sensitive to potential neighborhood and environmental impacts**

PROJECT GOALS Cont.

- **State-of-the-art Solid Waste and Recycling Transfer Station:**
  - **Ensures environmental health & safety of the workers & visitors**
  - **Climate Action Goals**
    - Supports GHG emissions reduction targets
    - Infrastructure for future electrification of collection fleet
    - Net Zero Energy Facility
    - Leadership in Energy and Environmental Design (LEED) Certified Facility

EXISTING SITE TODAY

- 37 years old (opened in 1982)
- 7.45-acres site including:
  - Transfer Station (TS)
  - Recycling Center
  - Vehicle Maintenance
- 137,885 tons of materials handled in 2017 from Berkeley and adjacent cities
- 75,448 tons of garbage in 2017 transferred to landfill annually
- **62,437 tons reused, recycled or composted annually**

FACILITY OVERVIEW

Berkeley Transfer Station Tons (2017)

Materials	Collection Trucks	Self-Haul	Total[1]
Reuse salvage @ Transfer Station	--	784	784
Recycling Center	12,620	3,367	15,987
Organics @ Transfer Station	21,177	12,303	33,480
Construction & demolition @ Transfer Station	--	12,186	12,186
Refuse @ Transfer Station	33,356	36,892	70,248
Total at Transfer Station	54,533	62,165	116,698
Total at Transfer Station + Recycling Center	67,153	65,532	132,685
Diversion %	50.3%	43.7%	47.1%

1 – Does not include MRF residual and cleanup of illegal dumping; approx. 5,200 TPY.

FACILITY OVERVIEW

Current Transfer Station vs Future Transfer Station

Current

Future

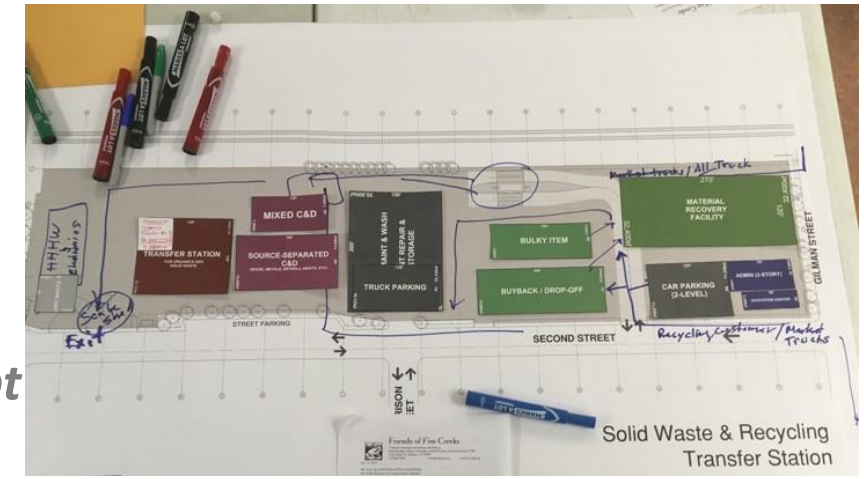
STAKEHOLDER & PUBLIC ENGAGEMENT

NOVEMBER-DECEMBER 2018

Listening Sessions (3 meetings)
Desired Transfer Station Features

JANUARY 2019

Design Charrette (3 days)
Develop Preliminary Concept Plans for Facility



MARCH 2019

Review Three Primary Concept Plans (2 meetings)

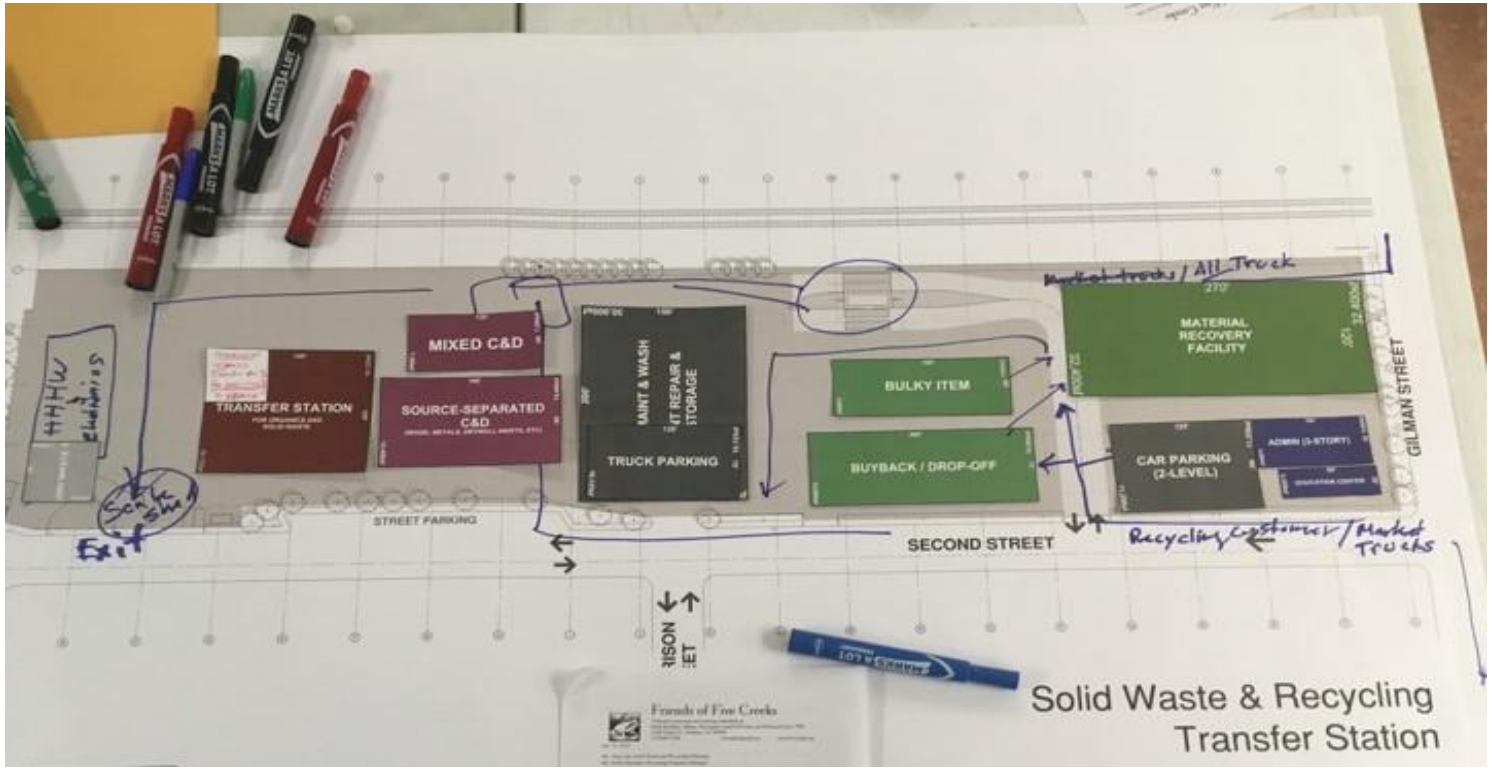
MAY 2019-WORKSHOP

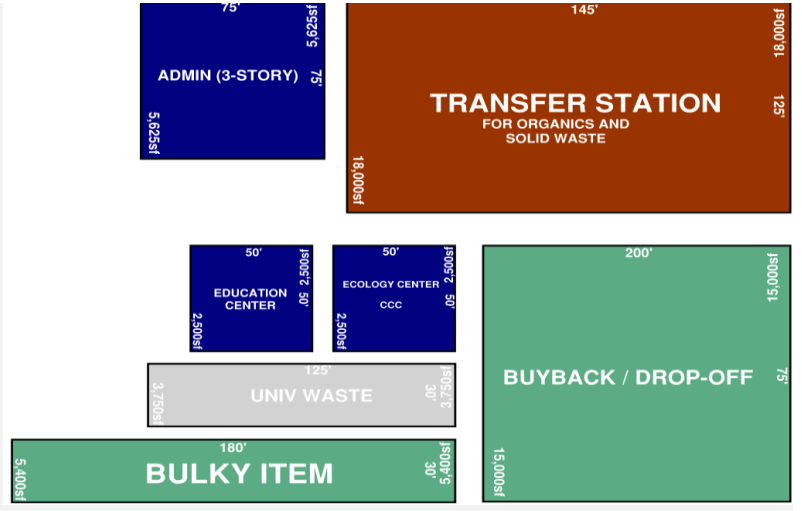
Revised Concept Plans based on Community & Stakeholder Feedback (1 meeting)

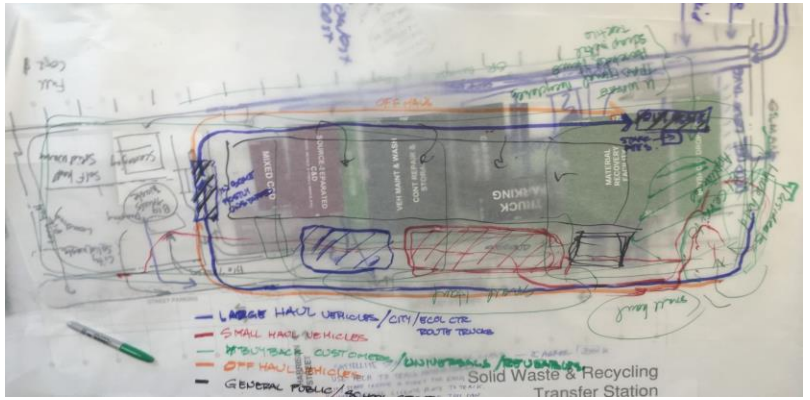
STAKEHOLDER & PUBLIC ENGAGEMENT

JANUARY 2019 - ***Design Charrette (3 days)***

Develop Preliminary Concept Plans for Facility







TWO CONCEPT PLANS (A & B) - SUMMARY

- **Two facility design concepts were** developed from extensive and valuable input from the community & stakeholder engagement process as well as programming input from City staff for current and future requirements

- Both design concept plans have much in common and both received support from community members and key stakeholders in the engagement/outreach process

- Main difference between two concept plans is Option A has a single material recovery facility (MRF)/Transfer Station building and Option B has separate buildings for the MRF and Transfer Station

- More than a dozen concept plan iterations were eliminated due to factors such as inefficient circulation, limited capacity, and/or significant cost impacts

TWO CONCEPT PLANS (A & B) – SUMMARY Cont.

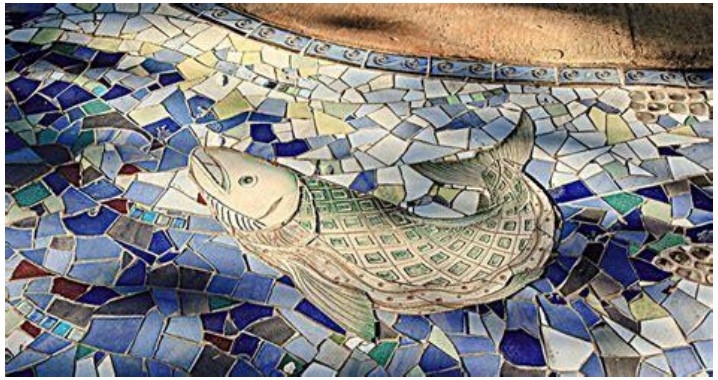
- **Design Layout Characteristics in Common:**
  - Self-haul queuing capacity at the north end of Second Street based on repositioning of the cul-de-sac
  - Public buyback and drop-off center close to the corner of Gilman Street and Second Street to facilitate the heavy use from pedestrian walk-in customers
  - Separation of public and collection truck traffic through use of separate scale entrances.
  - Each concept plan also has similar public amenities and sustainability features

TWO CONCEPT PLANS (A & B) – SUMMARY Cont.

- **Both concept plans incorporate a <u>diverse array of sustainability and community engagement features</u> including:**
  - **Net Zero Energy and LEED Certification**
    - Photovoltaic panels on roof & canopy structures
    - Elevated wind turbines for on-site production of power
    - Rainwater capture and reuse features
    - Electric charging stations for staff vehicles
    - Design for future electrification of collection fleet

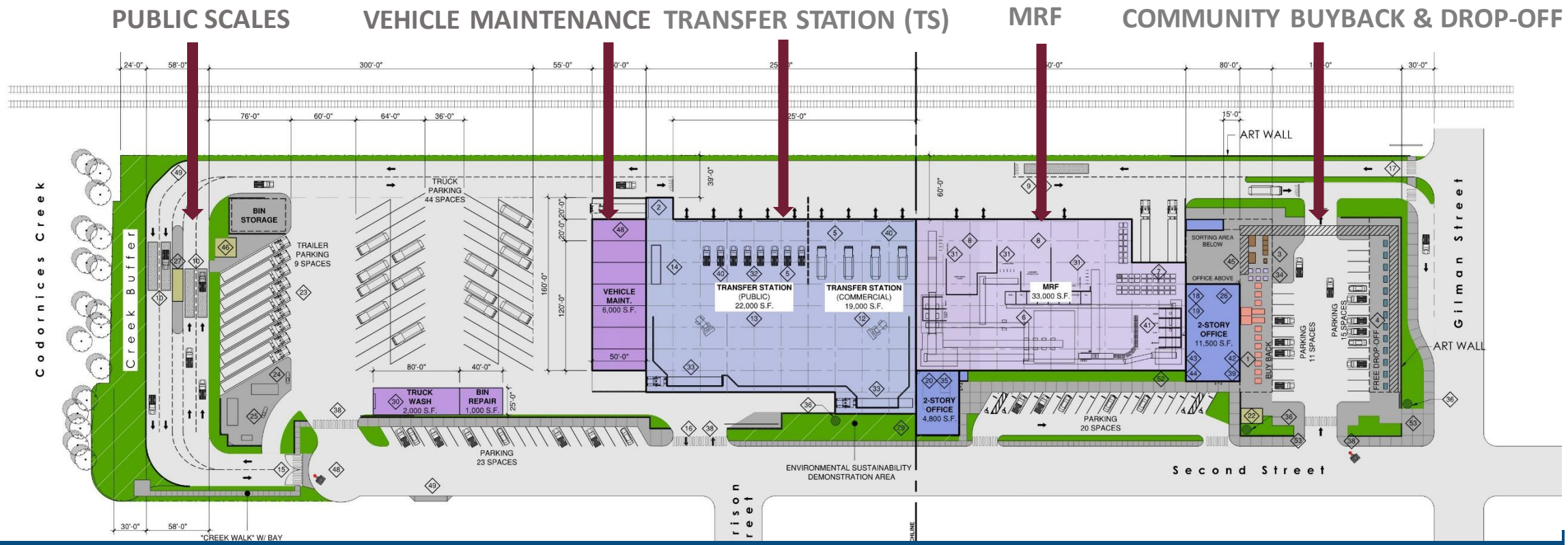
TWO CONCEPT PLANS (A & B) – SUMMARY Cont.

- **Community Outreach & Empowerment Features**
  - Environmental education center and public tour program
  - Creek walk (pathway) w/ educational kiosks and watershed art on Codornices Creek
  - Community and Artisan space for learning opportunities that explore common sense activities for creative reuse
  - Public kiosks for customers to attain zero waste and sustainability information
  - Community (civic) art onsite opportunities



SITE CONCEPT PLAN A

SINGLE BUILDING CONCEPT



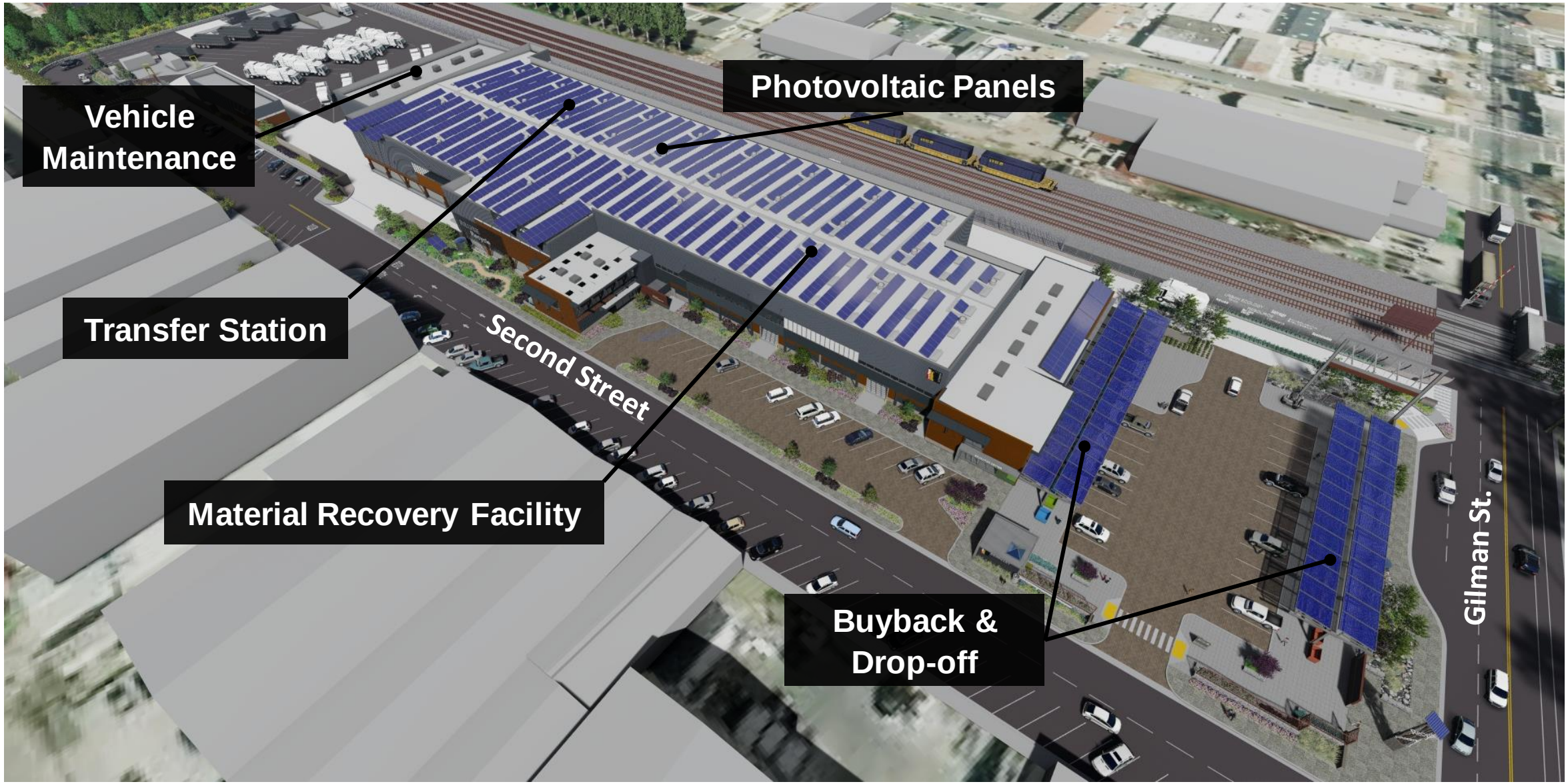
Creek Restoration

Public Traffic at Second Street (North end)

Single MRF/TS Building

Truck Traffic along eastern site boundary

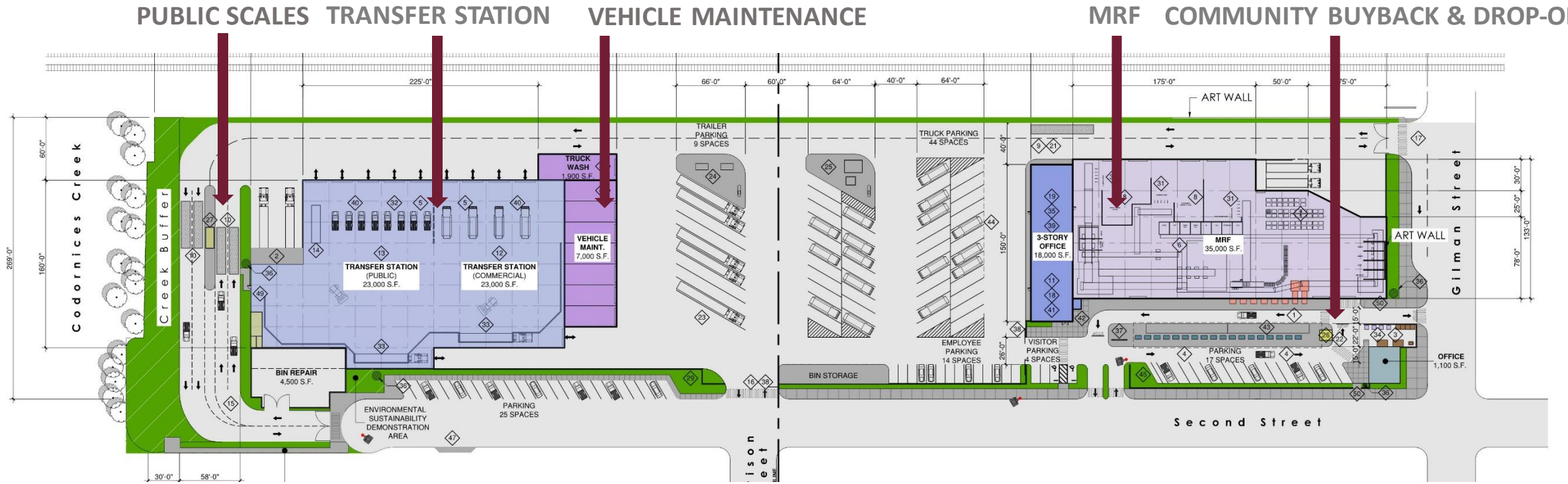
Community Buyback & Drop-off at Gilman Street



Concept A – Rendering Aerial View (from west, southwest)

SITE CONCEPT PLAN B

TWO BUILDING CONCEPT



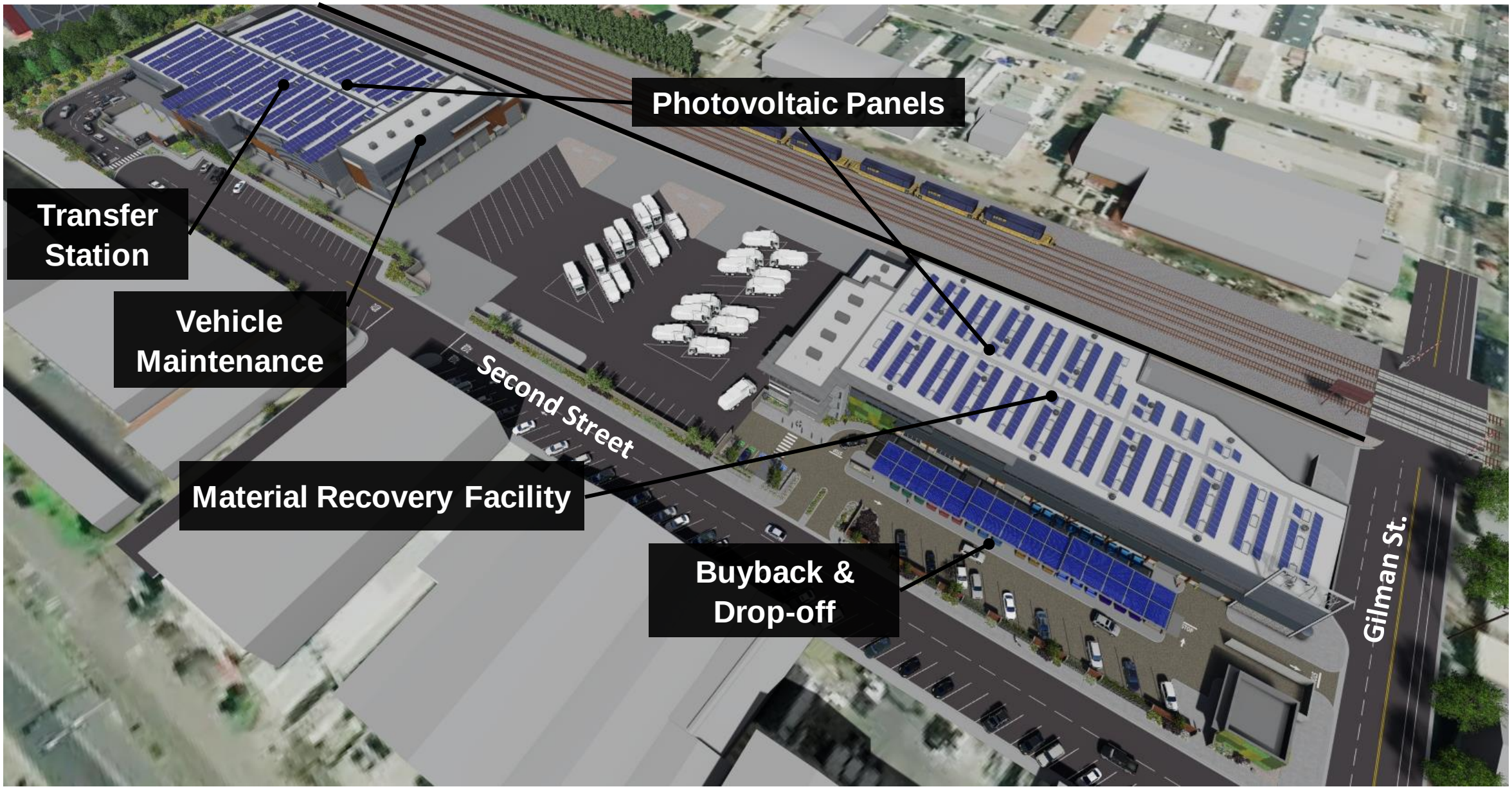
Creek Restoration

Public Traffic at Second Street (North end)

Two Buildings, 1 MRF and 1 TS

Truck Traffic along eastern site boundary

Community Buyback & Drop-off at Gilman Street



Concept B – Rendering Aerial View (from west, southwest)

Development of Cost Analysis Framework

- **ZWC Design Team developed plans, sections, and elevations with dimensions and keynote information for future use in developing preliminary cost estimates**
- **Future Project Cost Analysis should include following components:**
  - *Site Improvements* (e.g., grading and paving, utilities relocation and undergrounding, etc.)
  - *Building Improvements* (e.g., TS, MRF, scale house, admin. offices, vehicle maintenance, etc.)
  - *Facility Equipment* (e.g., MRF sorting and processing equipment)
  - *Facility and Energy Sustainability* (e.g., infrastructure for electrification of collection fleet, photovoltaic panels, rainwater harvest tanks, wind turbines, etc.)
  - *Project Escalation Factor* from 2019 to projected bids for construction
  - *Contractors' indirect costs* (overhead and profit)

Development of Cost Analysis Framework Cont.

Cost Analysis Components cont.

- *Design contingency cost* per the AACE International Design Practices
- *Contractor planning permits and construction inspection/compliance*

❑ **Project Permitting Costs**

Following project costs have been included in the ongoing Rate Study in development:

- *Solid Waste & Recycling Feasibility Study* - $500,000 (FY2019/2020)
- *California Environmental Quality Act (CEQA) Study* - $5,000,000 (FY2020 – FY2025)
- *Geotechnical site investigation* - $1,000,000 (completed during CEQA process through FY2021/2022)
- *Final Design, and Plans & Specifications Engineering* - $3,000,000 (FY2026/2027)

POTENTIAL FINANCIAL MODEL

FINANCIAL MODEL COMPONENTS

- A financial model should be developed to identify source of funds (revenues) and associated cash flow to ensure Zero Waste Enterprise can pay for project cost estimates.
- There are four potential sources of revenues for the City to pay for project 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 – operating and capital reserve
  - Debt financing through issuance of solid waste revenue bonds

Current Operations vs. Future – Buyback & Drop-Off Center

Current

Future

Current Operations vs. Future – Scale Entrance

Current

Future

NEXT STEPS

WHERE DO WE GO FROM HERE?

- Community Member and City Council Input & Feedback
- CEQA Process
- Financial Feasibility Analysis
- Final Facility Design and Permitting
- Facility Construction
- Commence New Operations

QUESTIONS / INPUT