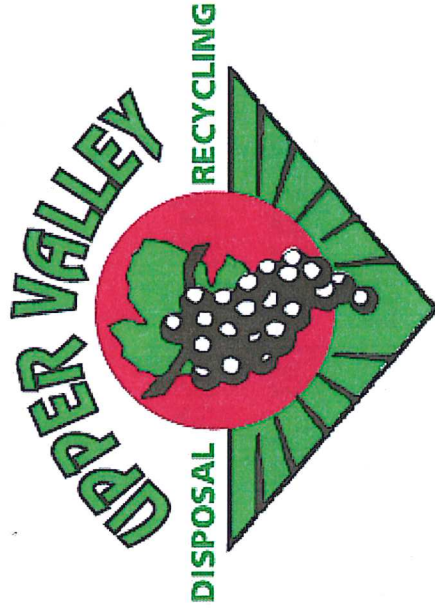


Upper Valley Waste Management Authority
Upper Valley Recycling Master Plan
Clover Flat Resource Recovery Park
Facility Updates for Climate Action Planning



By Edgar & Associates, Inc.
April 20, 2015



- UVDS Compost Facility Master Plan
- UVR Recycling Facility
- UVDS Fleet CARB Compliance Update
- Diesel or CNG Fueling Options
- GHG Inventory – Net Zero



- New SWFP – 15 year capacity (2021 to 2047)
- Phase 2 Development
- Gate Operations
- Biomass Conversion Facility
- Landfill Closure Cost Estimates
- Landfill Closure Trust Fund



UVDS Master Plan – CUP in 2015

3

- **UVDS Compost Facility**

- Add Food Waste/Green Waste as feedstocks
 - ✦ Mandatory Commercial Organics – AB 1826 (Chesbro, 2014) 2016-2018-2019
 - ✦ Residential Co-collected organics – add food waste to green waste (AB 32 - Climate Action Plans)
- Comply with new Water Board compost regulations (to be adopted June 2015) to line pond and certify pad
- Comply with new Stormwater Pollution Prevention Plan (effective July 1, 2015)
- Add Organics Blending Barn to process and mix food waste

- **UVDS Recycling MRF Facility**

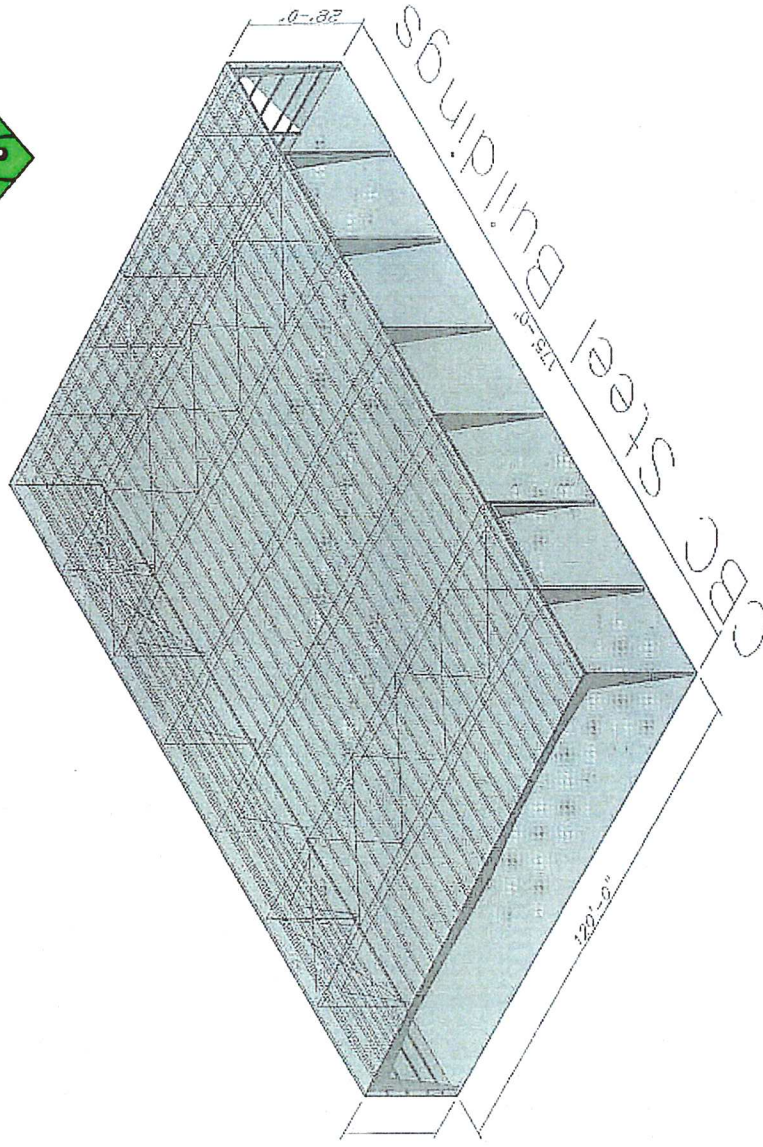
- Add more dry commercial mixed recyclables – mandatory commercial collection (AB 341, 2011) after food waste in removed
- Obtain a Full Solid Waste Facility Permit
- Add 0.5 MW solar to roof-top

Upper Valley Disposal

- Add "Organics Blending Barn"
- Blend commercial food waste with wood chips and compost
- Receive co-collected residential organics for blending
- 120' x 175' semi-enclosed building
- CEQA mitigation for stormwater mitigation, noise, odors, dust
- CalRecycle Grant



Food Waste Organics Blending Barn



UVDS Fleet and Fueling Station Option

5

- **Fleet Transition underway for required CARB compliance**
 - CARB Heavy-Duty Vehicle Rule – Criteria Pollutants
 - Older trucks with older technology will fail and need replacement
 - Held off and deferred for years – warranties expiring
 - ✦ 21 UVDS Fleet from 2015 to 2022
 - ✦ 2 in 2015, 3 per year from 2016 to 2021
- **Fleet/Fuel Options – Diesel or CNG**
 - \$4,715,000 estimate Fleet Replacement - Diesel
 - \$5,605,000 estimate Fleet Replacement – CNG option (\$42,000 more per truck)
- **CNG Fueling Station Option at UVDS – bring in PG&E pipeline gas**
 - \$1,000,000 for CNG fueling station
- **CNG is 23% less greenhouse gases than diesel**
 - CNG – cheaper fuel cost, less noise, CARB compliant
 - Possible CNG Fleet using Renewable CNG from landfill gas is 80% less carbon
 - Possible CNG using Renewable CNG from waste water treatment plants is 70% less carbon

UVDS Sustainability Initiatives

6

- Climate Action Plans themes (renewable energy, alternate fuels and fleets, zero waste, compost use)
- AB 32 Scoping Plan (2008, 2014 First Update)
 - Methane Mitigation Plan – Organics out of landfills
 - Net Zero by 2030 (UVDS/CFL is Net Zero Now)
- AB 32 – 2030 Mid-Terms Goals – proposed Legislation
 - SB 350 - 50% renewable energy by 2030, 50% less petroleum by 2030
- 2.3 MW of renewable power including CFL (Marin Clean Energy)

GHG Analysis for CUP/CEQA

7

- GHG Inventory – 2006 Base Year established
 - UVDS Fleet, UVR Processing, CFL Disposal
- GHG Analysis for CUP/CEQA - Implement Climate Action Plans
- GHG Inventory – 2014 Calendar Year and 2020 Projections underway
- CUP Application to be submitted Summer 2015
- Revised SWFP in 2016 – update ever 5 years
- UVDS Make-Over to accommodate change in laws

Clover Flat Resource Recovery Park

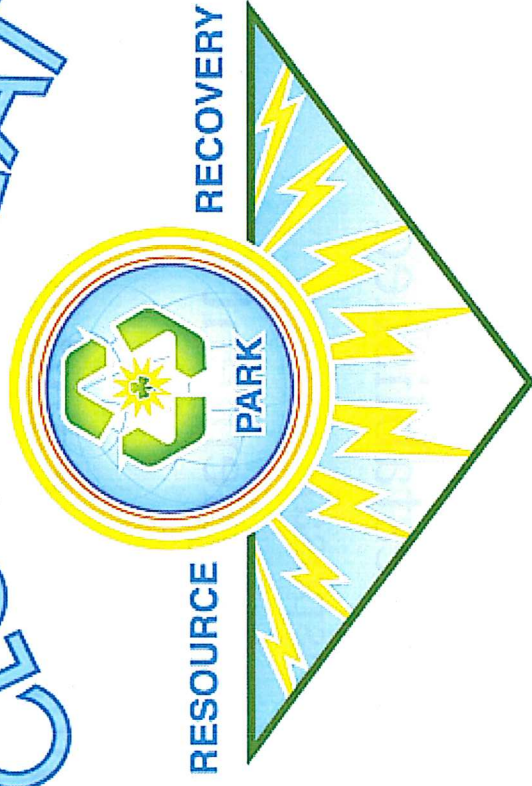
8

CUP – SWFP completed

2009 to 2014 process

- New SWFP – 15 year capacity (2021 to 2047)
- Phase 2 Development
- Gate Operations
- Biomass Conversion Facility
- Landfill Closure Cost Estimates
- Landfill Closure Trust Fund

CLOVER FLAT





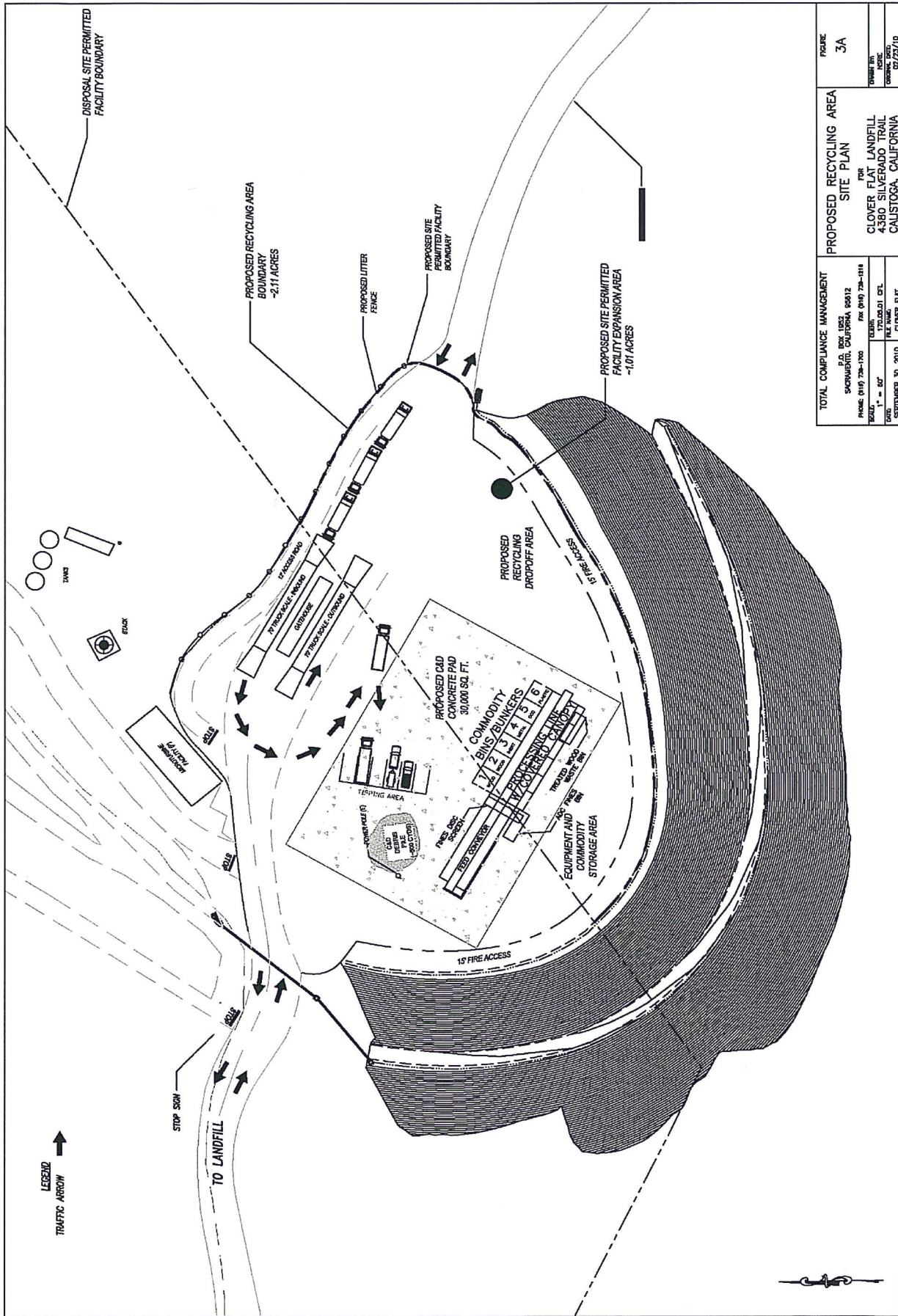
Approved Key Phase 2 Elements:

- SWFP Closure date of the Landfill from 2021 to 2047 (15-year capacity requirement) – less tons with more mandated recycling.
- Expand the entrance facilities and the Recycling Center from 1.1 acres to 2.1 acres
- Move and expand C&D Processing Line
- Permitted in-vessel food waste composting and food waste transfer and processing operations.
- Increase the storage of recyclable materials Add a 0.8 MW landfill gas to energy plant
- Add a 1.0 MW biomass conversion facility that uses clean processed wood waste in a gasification unit.



Expand Gate Recycling Operations

- Move the existing canopied recycling processing line from the landfill deck on intermediate cover to the expanded Recycling Center with 90,000 square feet of pavement – add more recycling types
- Add more recycling capacity to gate area including EPR for paint, carpet and mattresses
- Cut 70,000 CYD with drainage and vegetative plan
- Gate house, scale, lighting, litter fence, septic facilities, and power
- Preliminary Cost Estimate: \$1.4 million (shared costs over 10 years)
- Construction date: 2016 - 2017



TOTAL COMPLIANCE MANAGEMENT		FIGURE	
BY: HKS	DATE: 09/12/10	3A	
PROJECT: 0117 750-1104	CLIENT: CLOVER TRAIL RECYCLING		
DESIGN: 0117 750-1104	REVISION: PER 0117 750-1114		
DRAWN: J. KIM	CHECKED: J. KIM		
DATE: SEPTEMBER 30, 2010	FILE NAME: CLOVER TRAIL		
		FOR: CLOVER FLAT LANDFILL	
		4380 SILVERADO TRAIL	
		CAUSTOGA, CALIFORNIA	



Renewable Energy Facilities

12

- Add a clean wood waste Biomass Conversion Facility 40 TPD – 1 MW for on-site use and off-site sales
- Implements Climate Action Plans
- Community Choice (Marin Clean Energy)
- SB 498 – confirmed as renewable and diversion
- Obtain necessary BAAQMD Permits to Operate
- Preliminary Cost Estimate: \$5.5 million – private funding
- SB 1122 Incentives as distributed energy
- Possible construction date: 2016-2017



Landfill Closure Cost Estimate

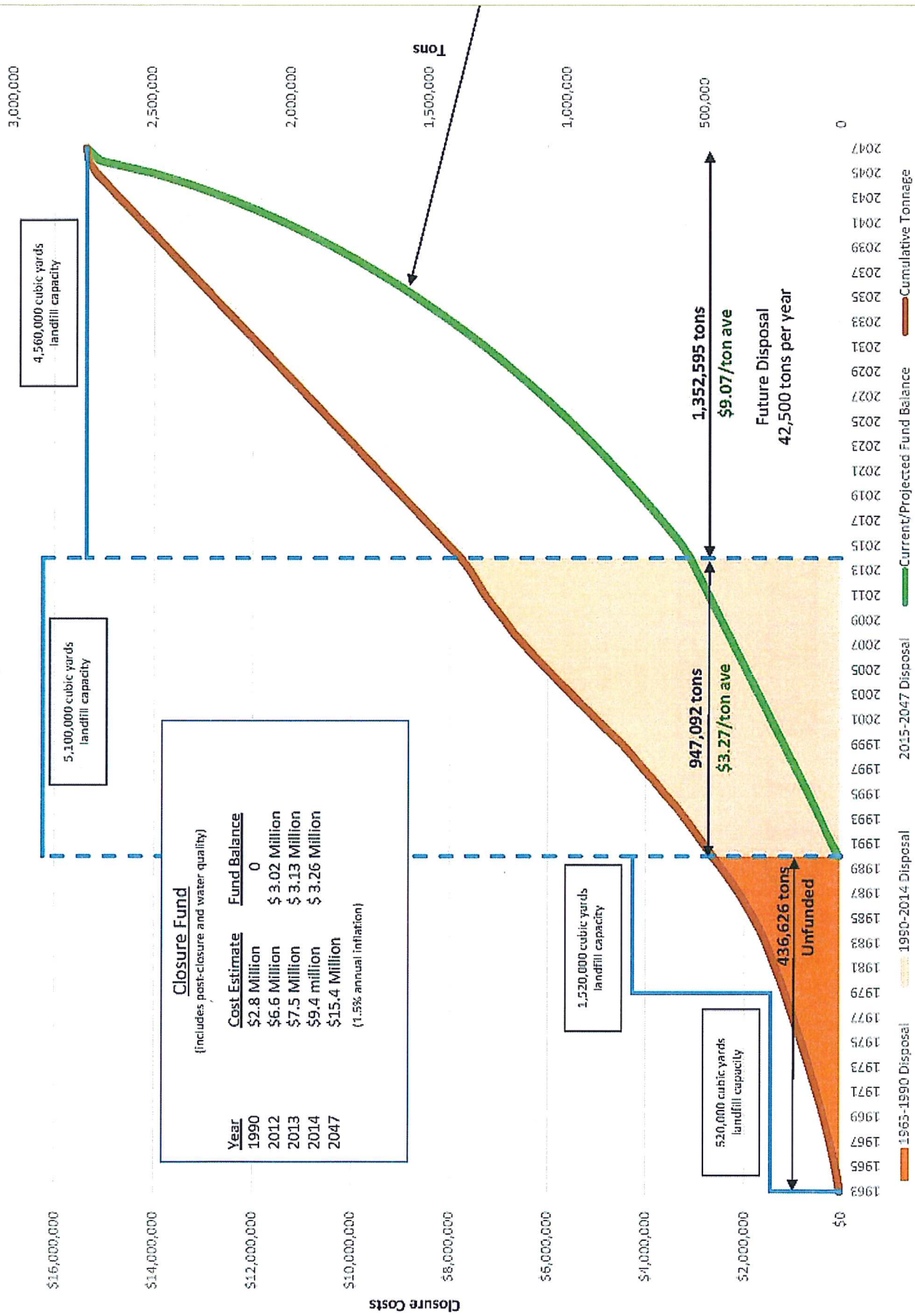
- Closure Costs increase - \$9,423,777 (2014 estimate – approved by CalRecycle)
 - \$5,281,402 closure cost – clay and HDPE plastic cap
 - \$3,973,557 post-closure maintenance for over 30 years plus
 - \$ 168,815 corrective action – water quality
- Up from \$7.5 million (2013) new regulations and \$6.6 million (2012)
- Change of law - CalRecycle Title 27 regulations
 - Long-Term Postclosure Maintenance and Corrective Action Cost Estimates and Financial Assurance Demonstrations for Landfills
 - The Office of Administrative Law approved the regulations on April 9, 2010, and they became effective on July 1, 2010. Triggered with the SWFP Revision started with 2012 CUP Modification and approved in 2014 SWFP Revision.
 - Proposed regulations on closure, postclosure maintenance, and corrective action plan cost estimates and related financial assurance demonstrations.
 - Regulations required prevailing wage and CALTRANS force-account rates for closure costs
 - California Code of Regulations, Title 27, Division 2, Subdivision 1:
 - Chapter 4, Subchapter 4 - Chapter 6, Subchapter 3, Article 1 and Article 2



Landfill Closure Trust Fund

- Closure Date from 2021 to 2047 with and less disposal tons – 50,000 to 40,000 TPY – with mandatory commercial recycling, AB 32, and more efficient
- Current Trust Fund Amount - \$3,260,588 (Dec. 2014)
 - Trustee for UVWMA – Distributed with CalRecycle approval for Closure
- Funds to be collected - \$6,163,189
- Remaining Capacity – 2,430,600 cubic yards
 - ✦ Refer to graphics on next page
 - ✦ 1,352,595 tons – 42,500 tons per year planned average–
 - ✦ 1.5% inflation – \$9.0/ton average from 2015 to 2047
 - ✦ Diminishing capacity CalRecycle funding formula
 - ✦ Annual capacity filled/remaining capacity x remaining cost estimate to be funded
 - ✦ 2015 - 35,000 tons/1,352,595 tons x \$6,163,189 = \$160,000 - \$4.57/ton

Clover Flat Landfill Closure Costs



3,000,000

2,500,000

2,000,000

1,500,000

1,000,000

500,000

0

4,560,000 cubic yards
landfill capacity

5,100,000 cubic yards
landfill capacity

1,520,000 cubic yards
landfill capacity

520,000 cubic yards
landfill capacity

1,352,595 tons
\$9.07/ton ave
Future Disposal
42,500 tons per year

947,092 tons
\$3.27/ton ave

436,626 tons
Unfunded

2047
2045
2043
2041
2039
2037
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1965
1963

Current/Projected Fund Balance
2015-2047 Disposal
1963-1990 Disposal
Cumulative Tonnage

Closure Costs

CFL & UVDS Planning for a Sustainable Future



Inventory – Fully Integrated

17

- 30+ years of Landfill Remaining Capacity
- C&D Recycling
- Residential and Commercial Recycling
- Food and Greenwaste Composting
- Renewable Power Plant



Sustainability - The Drivers

18

- Environmental Regulation Drivers
- Change in Waste Volumes and Types
- Economic Growth Impacts



Sustainability – It Pays for Itself

19

- Lowest Cost Option
- Best Environmental Option
- Best Economic Growth Option



Agreements – Perfect Timing

20

- CFL & UVDS – 10 years remaining
- Both have options to extend
- Right time to exercise those options
 - Regulations
 - Low cost of money
- What's needed?
 - Time to depreciate improvements
 - Commitment of volume



Sustainability Goals

21

- Decrease Traffic
- Decrease Green House Gas Emissions
- Increase Diversion
- Increase Renewable Energy
- Minimize Rate Impacts



Clover Flat Options

22

- **Option A**
 - Current Agreement
 - No Sustainability Upgrades

- **Option B**
 - Extend Agreement 10 years
 - Sustainability Upgrades

- **Option C**
 - Extend Agreement 20 years
 - Sustainability Upgrades



Landfill Agreement Term Extension

23

“The AGREEMENT can be thereafter be renewed for succeeding (10) year terms provided that the permitted life of the LANDFILL has been extended for at least ten additional years thirty-six (36) months before the termination date of this AGREEMENT and written notice of intent to renew is given by AGENCY to CONTRACTOR...”



Sustainability Upgrades

24

- Electric Grinder (Renewable Power) - \$700k
 - 100% CFL
- Biogasification (1MW Renewable Power) - \$5.5M
 - 100% CFL
- Front Entrance Improvements - \$1.4M
 - 50% UVDS
 - 50% CFL



Closure / Post Closure Trust Fund

25

- Prevailing Wage / Caltrans Force Account
- Landfill life greater than Agreement



Prevailing Wage/Caltrans

26

- Previous Estimate = \$7.5M
- New Estimate = \$9.4M
- **Net Increase = \$1.9M**



Prevailing Wage/Caltrans

27

- Option A = \$190k/yr = \$4.42 / ton
- Option B = \$95k/yr = \$2.21 / ton
- Option C = \$63k/yr = **1.47 / ton**

Note: Based on 43,000 tons per year



Landfill Life Greater Than Agreement

28

- Start of Agreement (2007)
- Where we are now? (2015)
- Challenges
- Solutions
- What to do now?



Agreement

29

- Closure/Post Closure responsibility of Contractor
- Deposits into Trust Fund per regulations
- Agency's money in Trust Fund
- Landfill life less than Agreement



Trust Fund

30

“CONTRACTOR shall be responsible for all closure and thirty years of post-closure costs relating to the LANDFILL. CONTRACTOR shall establish and maintain at its sole expense any closure and post-closure trust fund now and hereafter required under any applicable federal, or state law or regulation.”

“In the event a ‘trust fund’...is created and funds are collected from the rate payers for closure and post-closure costs, CONTRACTOR shall collect such funds and hold as trustee for AGENCY and shall not own such funds...”



Where are we now?

- **Landfill life greater than Agreement**
- Increased diversion
- Increased density



Challenges

32

- Landfill needs Agency volume to be economically viable
- Closure/Post Closure Trust Fund will be underfunded at end of Agreement



Trust Fund Balance

33

- Current Fund Balance = \$3.3M
- Closure Cost = \$9.4M
- **Balance = \$6.1M**
- Regulatory Increase = \$1.9M
- Remaining Balance = \$4.2M



Trust Fund

34

- Option A = \$420k/yr = \$9.77 / ton
- Option B = \$210/yr = \$4.88 / ton
- Option C = \$140/yr = **3.26 / ton**

Note: Based on 43,000 tons per year



Summary

35

- Option A = \$14.18/ton (\$0.90/mo residential)
- Option B = \$7.09/ton (\$0.45/mo residential)
- Option C = \$4.73/ton (\$0.30/mo residential)



Solutions

36

- Increase annual Closure/Post Closure Trust Fund deposit greater than mandated in Agreement
- Extend Agreement



What to do now?

37

- May 1 rate review submittal will include rate increase request to cover Closure/Post Closure Trust Fund regulatory increase and short fall (Option A).
- **Request:** Have Agency and Contractor staff explore options and bring back to the Board on May 18 for consideration.



UVDS Options

38

- **Option A**
 - Current Agreement
 - No Sustainability Upgrades

- **Option B**
 - Extend Agreement 10 years
 - Sustainability Upgrades

- **Option C**
 - Extend Agreement 20 years
 - Sustainability Upgrades



Collection Agreement Term Extension

39

“The AGREEMENT shall thereafter be renewed automatically for succeeding ten (10) year terms ...unless written notice of intent not to renew is given by AGENCY to Contactor...



Sustainability Upgrades

40

- Facility
- Collection Trucks



Facility Upgrades

41

- **MRF Roof = \$300k**
 - Allocation 100% UVDS
- **Solar = \$800k**
 - Allocation 100% Contractor (Option B & C)
- **Organics Mixing Barn = \$500k (Regulatory Driven)**
 - Allocation 100% UVDS
- **Retention Pond = \$400k (Regulatory Driven)**
 - Allocation 50% UVDS
- **Total UVDS = \$1M**



Facility Depreciation

42

- Option A = \$100k / year
- Option B = \$50k / year
- Option C = \$50k / year



Collection Truck Upgrades

43

- Collection Fleet
- Replacement Criteria
- Cost



Collection Fleet

44

- 7 Side Loaders
- 4 Front Loaders
- 2 Food Waste Trucks
- 2 Forks Trucks
- 6 Roll Off Trucks
- Total Trucks = 21



Collection Truck Replacement Criteria

45

- 1. FRONT LINE** - Truck is front line piece of equipment (used at least once per week)
- 2. AGE** - Truck is at least 10 years old
- 3. CARB** - Truck is required to be replaced due to CARB regulations and or 3rd party exhaust retrofit 5 years warranty has expired.



Collection Truck Replacement Cost

46

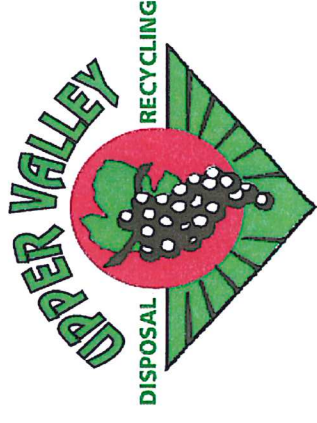
- 2 Side Loaders @ \$350k each = \$700k
- 2 Front Loaders @ \$350k each = \$700k
- 1 Fork Truck @ \$150k = \$150k
- 2 Roll Off Trucks @ \$150k each = \$300k
- **Total = 7 Trucks @ Cost = \$1.85M**



Collection Truck Depreciation

47

- Total Cost = \$1.85M
- Depreciation Duration = 5 years
- Annual Depreciation = \$370,000 per year



CNG Sustainability Option

48

- CNG Fueling Station = \$1M
- CNG Truck Incremental Cost: 21 Trucks @ \$40k/truck = \$840k
- **Annual Depreciation = \$134k/year**



CNG Savings

49

- Fuel Consumption = 100,000 gallons/year
- Diesel Price = \$2.70/gallon
- CNG Price = \$1.20/gallon
- Fuel Savings = \$150,000/year



Summary

50

- Option A = \$470k/year (1.07/mo residential)
- Option B = \$420k/year (0.95/mo residential)
- Option C = \$420/year (0.95/mo residential)
- No rate impact this year



What to do now?

51

- May 1 rate review submittal will include **no** sustainability options (Option A).
- **Request:** Have Agency and Contractor staff explore options and bring back to the Board on May 18 for consideration.



Sustainability Summary

52

- Biogasification – 1MW of renewable power
- Solar – 0.5MW of renewable power
- CNG Trucks – 23% reduction in GHG emissions
- **No Rate Impact**



Options

53

- **Option A**
 - Current Agreement
 - No Sustainability Upgrades

- **Option B**
 - Extend Agreement 10 years
 - Sustainability Upgrades

- **Option C**
 - Extend Agreement 20 years
 - Sustainability Upgrades

