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Agenda Date: 9/21/2011

Agenda Placement: 9A

Napa County Planning Commission Board Agenda Letter

TO: Napa County Planning Commission

FROM: John McDowell for Hillary Gitelman - Director
Conservation, Development & Planning

REPORT BY: RONALD GEE, PLANNER III - 707.253.4417

SUBJECT: Vista Corporation - Robert Pestone / Clover Flat Resource Recovery Park - Use Permit Major Modification # P09-00511-MOD

RECOMMENDATION

VISTA CORPORATION - ROBERT PESTONE / CLOVER FLAT RESOURCE RECOVERY PARK - USE PERMIT MAJOR MODIFICATION # P09-00511-UP

CEQA Status: Mitigated Negative Declaration has been prepared. According to the proposed mitigated negative declaration, if mitigation measures are not included, the proposed project would have potentially significant environmental impacts in the following areas: Agriculture & Forest Resources, Biological Resources. The project is considered a hazardous waste sites enumerated under Government Code Section 65962.5.

Request: Approval for a Use Permit Major Modification to modify existing landfill and recycling operations, add a new biomass power generator, extend the lifetime of the Clover Flat Landfill and convert the facility to a Resource Recovery Park. Proposed operational changes include but are not limited to: 1) Relocation/expansion of the gate operations and recycling area from 1.4 acres to 2.1 acres; 2) Increase the permitted Solid Waste Facility boundary by 1.0 acre (79.0 acre total); 3) Permit grading in the proposed gate operations area of 70,000 cubic yards of cut material to create the proposed 2.1 acre area; 4) Amend the Final Fill Plan (landfill design) to retain an existing concrete operations pad; 5) Extend the landfill closure date from 2021 to 2044; 6) Decrease the permitted landfill capacity from 5.1 million cubic yards to 4.9 million cubic yards; 7) Allow use of new inert alternative daily cover (ADC) material types including glass chards and diatomaceous earth; 8) Relocate the material recovery facility; 9) Expand in-vessel food waste composting and recycling operations; and 10) Add a biomass power generation plant using 40 tons per day of wood waste. Other than expansion of the existing gateway and recycling operations area, no other physical changes to the Clover Flat Landfill are proposed as part of this Use Permit application as there will be minor or no changes to the following operations: tonnage amount or waste types; traffic counts; employees; operating hours; or disposal footprint of the landfill. The project involves modification of operations within an approximately 2.14 acre area at the southeast portion of the existing 78 acre Clover Flat Landfill, located on a 179.97 acre parcel, approximately 0.38 mile (2,000 feet) north of Silverado Trail and 1.0 mile east of Dunaweal Lane, within the AW (Agricultural Watershed) zoning district. (Assessor's Parcel Numbers: 020-120-020 and -021) 4380 Clover Flat Road, Calistoga, CA 94515.

Recommendation: Adopt the Mitigated Negative Declaration and approve the requested use permit as conditioned.

Staff Contact: Ronald Gee, 707.299.1351, ronald.gee@countyofnapa.org

EXECUTIVE SUMMARY

Proposed Action:

That the Planning Commission:

1. Adopt the project Mitigated Negative Declaration, based on findings 1-5 of Exhibit A; and
2. Approve Use Permit Major Modification # P09-00511-MOD UP based on findings 6-10 of Exhibit A and subject to the recommended Conditions of Approval, Exhibit B.

Discussion:

In operation since 1963, Clover Flat Landfill (CFL) is an existing Class III municipal solid waste facility that services north Napa County within the boundaries of the Zone 3 - Upper Valley Waste Management Authority jurisdiction which includes the Cities of Calistoga, St. Helena, Yountville and unincorporated Napa County. The CFL has a permitted operational area of 78 acres and a 48 acre disposal area. On-site activities include materials separation, recycling, green-waste composting, waste disposal, landfill gas recovery and power generation. Up to 600 tons per day of waste material can be accepted at the landfill with a maximum traffic volume of 275 vehicles per day. Hours of operation are from 9:00 AM – 4:00 PM, Tuesday-Saturday and 9:00 AM - 3:00 PM on Sundays. The permitted lifetime of the facility includes an expected 2021 closure date with a 5.1 million cubic yard landfill capacity.

The Use Permit Major Modification requests modification of existing landfill and recycling operations, to add a new biomass power generator, extend the lifetime of the Clover Flat Landfill and convert the facility to a Resource Recovery Park. Proposed operational changes include but are not limited to: 1) Relocation/expansion of the gate operations and recycling area from 1.4 acres to 2.1 acres; 2) Increase the permitted Solid Waste Facility boundary by 1.0 acre (79.0 acre total); 3) Permit grading in the proposed gate operations area of 70,000 cubic yards of cut material to create the proposed 2.1 acre area; 4) Extend the landfill closure date from 2021 to 2044; 5) Decrease the permitted landfill capacity from 5.1 million cubic yards to 4.9 million cubic yards; 6) Allow use of new inert alternative daily cover (ADC) material types including glass chards and diatomaceous earth; 7) Relocate the material recovery facility; 8) Expand in-vessel food waste composting and recycling operations; and 9) Add a biomass power generation plant using 40 tons per day of wood waste.

Other than expansion of the existing gateway and recycling operations area, no significant physical changes to the Clover Flat Landfill are proposed as part of this Use Permit application as there will be minor or no changes to the following operations: tonnage amount or waste types; traffic counts; employees; operating hours; or disposal footprint of the landfill.

As part of the Initial Study review and proposed Mitigated Negative Declaration, a focused Sound Study; Plant, Wildlife and Tree Survey; Greenhouse Gas (GHG) Inventory Management Plan; Analysis of Air Quality Risks; and GHG Emissions Reductions - Construction & Demolition Recovery Study were prepared. With implementation of proposed mitigation measures, no potentially significant environmental impacts to Agriculture & Forest Resources or Biological Resources were identified that could result from the project. All other requirements of the County Zoning Ordinance, General Plan and affected agencies shall be met. The proposed conversion of the Clover Flat

Landfill to a Resource Recovery Park is an adaptation to changing trends in waste management in the upper Napa Valley. As such, Staff recommends approval of the use permit request as conditioned.

FISCAL IMPACT

Is there a Fiscal Impact? No

ENVIRONMENTAL IMPACT

Mitigated Negative Declaration prepared. According to the proposed Mitigated Negative Declaration, if mitigation measures are not included, the proposed project would have potentially significant environmental impacts in the following areas: Agriculture & Forest Resources and Biological Resources. The project site is not on any of the lists of hazardous waste sites enumerated under Government Code section 65962.5.

BACKGROUND AND DISCUSSION

Owner/Applicant: Vista Corporation / Clover Flat Landfill, Inc. c/o Robert Pestoni

Representative: Evan Edgar, Edgar & Associates

General Plan Designation: Landfill, Napa County Genral Plan Land Use Map

Zoning: AW (Agricultural Watershed)

Filed: November 1, 2009

Deemed Complete: May 26, 2011

Landfill Type: Class III, Municipa Solid Waste - no hazardous or designated wastes are accepted

Landfill Capacity: Approved for 5.1 million cubic yards disposal area with expected 2021 facility closure date

Waste Stream: Napa County Waste Zone 3, Upper Valley Waste Maagement Authority

Disposal Rate: Permitted to accpt up to 600 tons per day

Traffic: A maximum 275 vehicle trips per day are allowed

Number of Employees: Current: 16 Proposed: 20

Hours of Operation: 9:00 AM - 4:00 PM, Tuesday-Saturday and 9:00 AM - 3:00 PM, Sundays

Parcel Size: 179.97 acres with a permitted landfill area of 78.00 acres and a 44.00 acre disposal area

Adjacent Zoning/Land Use:

North - AW (Agricultural Watershed) District - Vacant (Three parcels: 68.88, 72.64 and 96.59 acres)
South - AP (Agricultural Preserve) District - Vineyard with rural residences (Three parcels: 24.93, 20.38 and 3.74 acres)
East - AW - Rural Residential and Vacant (Three parcels: 60.01, 44.15 and 9.29 acres)
West - AW - Vacant and Landfill Rural residence (117.35 acres and 1.8 acres)

Property History:

On June 20, 1990, the Conservation, Development and Planning Commission certified FEIR-061 and approved Use Permit # U-43889 to allow Clover Flat Landfill (CFL) expansion from 12 acres to 43 acres and to increase landfill capacity from 1.14 million cubic yards to 5.14 million cubic yards. With that approval, an additional 35 years of landfill working life was expected until 2025. The permit included an increase to daily allowances for CFL to accept 300 tons of municipal solid waste per day (TPD); to stockpile certain materials by grinding yard waste to create mulch for use as part of vegetative cover of landfill waste or sold as part of a recycling program and crushing concrete and asphalt debris to create on-site road base, tipping areas on the landfill and possible sale off-site to local buyers; to accept non-hazardous, de-watered sludge (bio-solids) from the Calistoga Wastewater Treatment Plant in exchange for the treatment plant's acceptance of CFL leachate for disposal (bio-solids are mixed with waste and used for alternative daily cover); revise the CFL base liner system to comply with new federal standards; and, to install three landfill gas monitoring probes.

Use Permit # 94173-UP allowed a mass grading erosion control plan for topsoil stockpiling associated with CFL operations. The stockpile was located outside the designated landfill area,

Use Permit # 94333-MOD modified Use Permit # U-43889 to allow a boundary adjustment to place the landfill on a single parcel, increased daily through put from 126 TPD to 300 TPD, allowed further changes to the base liner, allowed limited processing of green waste, concrete and asphalt, relocated landfill gas monitoring probes, increase maximum daily tonnage from 300 tons to 600 tons per day and modified restrictions for de-watered sludge conditions.

Use Permit # 99081-UP modified the location of three landfill gas monitoring probes, further modified de-watered sludge conditions to eliminate reference to the Calistoga Wastewater Treatment Plant as the source of de-watered, non-hazardous sludge with less than 50% liquid permitted to be accepted at CFL. Use Permit # 00380 was a time extension to February 12, 2001 to implement Use Permit # 99081-UP which had expired after one year.

Use Permit Very Minor Modification # P10-00328 was approved on November 29, 2010 to modify the CFL gas monitoring and flare system by installing either three Ingersoll-Rand micro-turbines or one General Electric Jenbacher Gas Engine to produce renewable energy, construct an approximately 80 ft. x 27 ft. concrete pad for placement of the power generating equipment and to recognize 5 existing vertical gas extraction wells to improve landfill gas removal through the existing pipe network.

Code Enforcement History

There is no record of Planning Department code enforcement violations at the CFL.

Discussion:

Waste Management - General Background

As a result of serious state-wide landfill capacity shortage, the state legislature passed the landmark AB 939/SB 1322, *California Integrated Waste Management Act of 1989*. The purpose was to direct attention to the increasing

waste stream and decreasing landfill capacity and to mandate a reduction of waste being disposed. Jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000. A disposal reporting system was established with Cal Recycle oversight (formerly the California Integrated Waste Management Board). Facility and program planning was required along with a process to ensure environmentally safe disposal of waste that could not be diverted. Cal Recycle also fosters markets for recovered recyclables, a key component of its overall mission. Cal Recycle enforces the Act's legal provisions designed to protect the environment and the public's health and safety.

Landfills within the State of California are primarily regulated by two state agencies: the State Water Quality Resources Control Board through its Regional Water Quality Control Board (RWQCB) and CalRecycle, formerly the California Integrated Waste Management Board (CIWMB). CalRecycle's regulatory activities are normally implemented by a local regulatory agency referred to as a Local Enforcement Agency (LEA). Historically, these agencies administered regulations as promulgated in the California Code of Regulations (CCR) Title 23 and Title 14, respectively. Title 23 required landfill operators to submit a Report of Waste Discharge (ROWD) to the RWQCB in order for the site to receive or revise Waste Discharge Requirements (WDRs). In addition, Title 14 required landfill operators to submit a Report of Disposal Site Information (RDSI) to the LEA/CIWMB in order for the site to receive or revise a Solid Waste Facility Permit (SWFP). In 1993, the California State Legislature passed AB 1220 which required the CIWMB and SWRCB to eliminate regulatory overlap, develop a streamlined permitting process, and consolidate primary solid waste disposal facility regulations into one area within the CCR. Although signed into law in 1993, it wasn't until 1997 that solid waste disposal facility regulations were merged into one set of regulations that clarified the roles of the RWQCB, the CIWMB, and the LEA.

The SWRCB requires landfill operators to submit a ROWD in the form of a Joint Technical Document (JTD) as part of the application process for receiving WDRs from the applicable RWQCB. CalRecycles requires landfill operators to submit a RDSI in the form of a JTD as part of the application process for receiving a Solid Waste Facilities Permit from the applicable LEA and CalRecycles. The JTD is updated every five years with current site information and prior to implementation of any significant design or operational changes. Although the RWQCB, CalRecycles and LEA are the primary regulatory agencies requiring detailed site information for the CFL, other regulatory agencies also have a role in the operations of the site. The Bay Area Air Quality Management District (BAAQMD) issues permits for landfill air emission sources. The Napa County Division of Weights and Measures certifies facility weight scales. The Napa County Building Department issues required facility building permits. Other agencies, such as the Occupational Safety and Health Administration (OSHA), govern facility operations through general CCR code sections.

Napa County has adopted the following plans related to solid waste:

- *2002 Napa Countywide Integrated Waste Management Plan*
- *Summary Plan* (Countywide)
- *Siting Element* (Countywide)
- *Source Reduction and Recycling Elements* (American Canyon, City of Napa, Upper Valley Agency (UVA), remaining unincorporated County)
- *Household Hazardous Waste Elements* (American Canyon, City of Napa, UVA, remaining unincorporated County)
- *Non-Disposal Facility Elements* (American Canyon, City of Napa, UVA, remaining unincorporated County)

In addition, the County in 1991 adopted a "Waste Source Reduction and Recycled Product Content Procurement Policy" intended to reduce the amount of waste generated by the County's operations and encourage firms serving the County to use recycled materials.

There are five solid waste service providers and two joint power agencies/authorities in Napa County. Solid waste service providers include the Upper Valley Disposal Service (UVDS), Berryessa Garbage Service (BGS), Napa Recycling and Waste Services (NRWS), Napa County Recycling and Waste Services (NCRWS), and American

Canyon Recycling and Disposal (ACRD). The joint power agencies/authorities in the County include the Upper Valley Waste Management Agency (UVWMA) and the Napa Vallejo Waste Management Authority (NVWMA). These joint power agencies do not provide solid waste collection disposal services. The UVWMA was formed to provide the coordination of economic and regional waste management services to meet the requirements set forth in the California Integrated Waste Management Act of 1999. The UVWMA includes Yountville, St. Helena, Calistoga, and the northern unincorporated portions of the County. The NVWMA includes the cities of Napa, Vallejo, and American Canyon and the southern portion of the unincorporated County. The NVWMA was formed to coordinate all solid waste services within its watershed. The NVWMA owns and operates the Devlin Road Recycling and Transfer Station, the Hazardous Waste Collection Facility, and the American Canyon Sanitary Landfill (now closed).

Landfill Operations

In operation since 1963, Clover Flat Landfill (CFL) is an existing Class III municipal solid waste facility that services northwest Napa County within the boundaries of Solid Waste Zone 3. Zone 3 is the Upper Valley Waste Management Agency jurisdiction which includes the Cities of Calistoga, St. Helena, Yountville and unincorporated Napa County boundary. The CFL has a permitted operational area of 78 acres and a 48 acre disposal area with a total capacity of 5.1 million cubic yards. Up to 600 tons per day of material can be accepted at the landfill with a maximum traffic volume of 275 vehicles per day. As of August 2009, the CFL had a remaining capacity of 3,335,000 cubic yards and is permitted through 2021. On-site activities include materials separation, recycling, green-waste composting, waste disposal, landfill gas recovery and power generation. Hours of operation are from 9:00 AM – 4:00 PM, Tuesday-Saturday and 9:00 AM - 3:00 PM on Sundays. There are currently 16 full-time employees at the CFL.

UVDS collects and disposes solid waste and recycling materials at CFL, which is located at 4380 Silverado Trail, just south of Calistoga. The two-lane entrance road, Clover Flat Road, extends up north and east from Silverado Trail for approximately 0.8 mile to the CFL. A woven wire fence provides security at the Silverado Trail/entrance road junction. A second gate is located at the landfill entrance. The gate operations staging area at the CFL entrance is approximately 1.4 acres in size. A small, aluminum-framed building serves as a weigh station, pay booth and office. There is a separate administrative landfill operations office trailer with additional utility storage sheds. Behind the administrative office is an existing landfill gas flare and is the site of the future power generation facilities. A source separated recycling/buy-back/salvage center is also located in the staging area.

Above the staging area is the working face of the landfill disposal area. There is a large concrete pad which contains a materials recycling facility that picks through solid waste to collect recyclable materials. A green waste and inert material drop-off area, a wood waste stockpile and in-vessel food waste composting area are also located on the upper level. A separate storage area located above and southwest of the Gate Operations area is used for metal stockpiles.

Proposal:

The project consists of the following modifications to existing landfill and recycling operations with the addition of a new biomass power generator to facilitate conversion of the landfill to a resource recovery park. The plans are consistent with AB 32 and the draft Napa County Climate Action Framework goals to reduce greenhouse gas emissions, reduce consumption and solid waste, improve the energy supply by switching from fossil fuels to renewable energy sources, achieve overall waste diversion of 75% to 90% by 2020 and to conserve agriculture, natural resources and urban forest. The proposal includes:

Gate Operations:

- a) Relocate the existing Gate Operations area northwest of its current location at the entrance to the main landfill facility;

- b) Expand the size of the Gate Operations and Recycling Operations areas from 1.4 acres to 2.1 acres;
- c) Increase the permitted Solid Waste Facility boundary by 1.0 acre (79.0 acre total) to accommodate the new Recycling Operations area; and
- d) Permit grading in the proposed gate operations area of 70,000 cubic yards (CY) of cut material to create the proposed 2.1 acre Recycling Operations area.

The proposed Gate Operations area expansion from 1.4 to 2.1 acres will consolidate on-going recycling and other landfill operations at the main CFL entrance gate. Due to its current location at the edge of the approved Solid Waste Facility Permit boundary, the overall boundary needs to be expanded by 1.1 acre to approximately 79.0 acres.

The proposed expansion includes cut-and-fill of 70,000 CY of material to create a level bench in an area of steep, forested slopes on the adjacent hillside southwest of the existing gate. The Shaw Group prepared the Joint Technical Document (JTD) in 2005 for the CFL as part of the permitting documents required for the SWFP Revision at the time. A Geotechnical Analysis and Slope Stability Analysis were required to be part of the JTD and were included in Appendix G of the JTD. Previous engineering analysis indicated that excavation slopes can be as steep as 1.25:1 (horizontal: vertical). The slope of 1.5:1 (horizontal: vertical) is now being proposed by EBA Engineers for the proposed grading, which is a 67% slope. The average slope over three rise/run cross section is about 60%, adding in the drainage bench midway up the cut where the average run is 140 feet, and the average rise is 83 feet. The final slope is exempt from a Use Permit Exception to Conservation Regulations for slopes greater than 50% under Section 18.108.050 (I) since a state timber harvesting permit is required where erosion measures will be included in the project as necessary (detailed below). A Grading Permit, Stormwater Pollution Prevention Plan, Solid Waste Facility Permit Amendment and Timberland Conversion Permit or Less Than 3 Acre Exemption (with Timber Harvesting Plan) are required to implement proposed grading.

The 70,000 CY of cut material will be stored on the property and used as intermediate and daily cover material as part of on-going operations. It is typical of landfill operations to have stockpiles of fill material as a result of landfill construction activities, where the soil is incorporated into daily operations over the years. The 1990 CEQA document reviewed the permitted large excavations and cuts as part of the CFL development that utilizes the spoils of the construction activity into the daily activities. The ability for the operator to provide adequate access and operational areas while stockpiling material is a state minimum standard that the LEA provides monthly oversight. The short-term aesthetics impacts of stockpile storage were addressed in the previous EIR. The location of where the 70,000 CY stockpiles change constantly since the landfill is a dynamic construction project. The material will be stored for seasonal purposes and be handled multiple times.

The fill material from the Gateway Operations area expansion will be placed within the permitted boundary of the landfill and will not be placed in the upper pad area outside of the permitted landfill boundary. The operator will prepare an annual wet weather operations plan on or before October 15, 2010 and place the plan into the operating record; the plan will indicate where the fill material will be stored on an annual basis and provide an estimated 2-year fill plan, to be updated every year.

As detailed in the Mitigated Negative Declaration, a Tree Mitigation Planting Plan identified in the Questa Engineering Corp., *Tree Mitigation Planting Plan – Clover Flat Landfill Recycling Facility Expansion, February 22, 2011*, including replacement tree canopy species and understory species with wildlife habitat enhancements and minimum five-year monitoring of improvements is required due to the clearance of the adjacent hillside. The California Department of Forestry and Fire Protection District requires the Timberland Conversion Permit or Less Than 3 Acre Exemption to provide concurrent oversight.

Landfill Operations:

- a) Extend the landfill closure date from 2021 to 2044 due to increased recycling, increased compaction and the use of synthetic tarpaulins as alternative daily cover;
- b) Decrease the permitted landfill capacity from 5.1 million cubic yards to 4.9 million cubic yards in a discrete location;
- c) Allow the existing concrete operations pad to remain in place with a new Final Fill Plan for that specific area; and
- d) Allow use of new inert alternative daily cover (ADC) material types including glass chards and diatomaceous earth.

Based upon the historic landfill disposal rate of up to 50,000 tons per year, the CFL's estimated closure date is 2044. With increased material diversion, recycling efforts, improved methods of waste disposal, compaction and reduced soil coverage, landfill space is filled at a reduced rate. For these reasons, the expected lifespan of the CFL can be extended.

The proposed decrease in the permitted landfill capacity is to amend the ultimate landfill design to retain an existing concrete operations pad in place, forgoing a potential 170,000 cubic yards landfill disposal area and space that would otherwise have been created in the same area (this figure is based upon a 1,300 pounds per cubic yard and a soil to cover ratio of 5:08:1). The existing concrete pad would be used for the proposed bio-mass power generator.

ADC means cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging. CalRecycle has approved 11 ADC material types, including those proposed for CFL. Generally, these materials must be applied so they do not allow gaps in the exposed landfill face. The use of ADC is not recorded as disposal; ADC use is considered diversion through recycling. Although the LEA has allowed use of glass chards and diatomaceous earth on a temporary basis through demonstration projects, this request allows the materials to be used as needed. The JTD will need to be amended for new ADC types used at CFL.

Re-processed glass chards generated from single-stream recycling practices are back-hauled to the facility and used as ADC. Since this type of ADC is not pre-approved by the state with state minimum standards, the applicant proposes a demonstration project to include re-processed glass as ADC. The ADC demonstration process will follow current CalRecycle Title 27 regulations and would focus on dust control. This ADC will consist of clean glass shards re-processed in San Leandro to remove contamination and fines. The use of this ADC material shall only occur during periods of low wind to minimize dust generation, and will be routinely sprayed with water to retain a level of moisture. This ADC will not be exposed for more than 7 days, and will only be used on the slopes of cells that will be covered by additional MSW within a week.

Crystalline silica is the naturally occurring form of silicon dioxide that can cause serious lung disease. Dust from glass is an amorphous rather than crystalline material and does not have the same health impacts as crystalline silica. The broken glass may have the potential to generate some dust, but it is not coming from a facility where glass is ground or crushed. It is simply the fraction of glass material that is small enough to pass a one-inch screen. The fine material from broken or ground glass is considered by the Occupational Safety and Health Administration as a nuisance dust and treated as such. Moisture application is used to prevent airborne dust and loads would be covered for transport.

Recycling Operations:

- a) Relocate the existing, canopied mixed-recycling processing line (i.e., material recovery facility or MRF) from its current staging area to the new Gate Operations area;

- b) Expand in-vessel food waste composting and food waste transfer and processing operations;
- c) Increase the storage area of recyclable materials on-site; and
- d) Add a series of commodity bunkers for wood chips, compost, top soil blends, aggregate materials, and landscape materials
for the general public to purchase recycled materials.

These activities will be consolidated in the new Gate Operations expansion area for more efficient operations and increased working space. Recycling operations would be expanded by adding more bulky commercial waste to the existing canopied Materials recycling facility (MRF), adding in-vessel food waste composting and food waste transfer and processing operations, increasing the storage of recyclable materials, and adding a series of commodity bunkers for wood chips, compost, top soil blends, aggregate materials, and landscape materials for the general public to purchase recycled materials.

The current entrance facilities and Recycling Center occupy 1.4 acres on an asphalt concrete pad area. The Recycling Center is being proposed to be expanded to 2.1 acres and increase the SWFP area by 1.01 acres with the proposed re-location of the MRF from the landfill to the Recycling Center area. The applicant has diverted mixed C&D and self haul materials at the MRF since autumn of 2008. It was anticipated that over 6,800 metric tons of GHGs would be avoided each year with the operations of the facility (attached Greenhouse Gas Emissions Reductions)

The Mixed Construction & Demolition debris (C&D) Processing Facility consists of a processing line that is located on a concrete pad on the upper CFL pad area, on intermediate cover. The processing line has the capability of handling 25 tons per hour of material; for a 12-hour operating day, the capacity is 300 TPD. For a typical 8-hour shift, the capacity is 200 TPD. This processing line has proven to be durable with low maintenance, and has disc screens on the front-end to produce an ADC material from C&D fines that meets state specifications. The MRF will still process mixed C&D and self-haul loads rich in C&D.

The MRF to process more than just mixed C&D and self-haul materials. Single-stream material from residential and commercial sources with less than 10% residual will continue to go to the Upper Valley Recycling operations on Whitehall Lane, which is not part of this project. The bulkier heavier commercial waste from commercial sources will continue to be processed at the MRF. The MRF will accommodate mixed commercial recyclables that has up to 30% residuals which is not appropriate for Recycling Centers that need to stay under 10% residuals. The MRF's recycling rate will continue to achieve a 70% diversion rate, and continue to process the same types of mixed recyclables from C&D, self-haul, and commercial sources.

The following materials will not be processed at the MRF: residential municipal solid waste (MSW) from the curbside cart, wet commercial MSW from bins, food waste or restaurants wastes, liquids, and sludges. This is not a mixed MSW MRF, but a mixed recyclable MRF that will recovery 70% of the material, leaving 30% residual with incidental amounts of putrescibles. JTD protocols define procedures that preclude disposal of hazardous or designated wastes at the Class III facility. These materials are refused outright, or if discovered, are collected and sent to a Class II facility. The MRF will continue to accept the same mixed recyclable materials, and will continued to be canopied with the relocation, but will not be housed in a building. The MRF will be located on an asphalt-concrete pad when relocated at the Recycling Operations Center and will be located closer to the cut-slope to offer a level of protection from the wind which blows from the northeast to the southwest; thee scalehouse will be located o the east.

After being weighed at the scalehouse, the vehicles are directed to the MRF areas following directional signage. The vehicles will be backed-up to the tipping pad to deposit their loads. Self-haul vehicle vehicles (i.e., cars and light duty trucks) would exit without being re-weighed. Customers with an account with CFL, typically have their tare weight for their vehicles. In those cases, the vehicles would exit without being re-weighed. Users that are large enough to be weighed, and do not have an accounts, will need to be re-weighed prior to exiting, and they would be

informed by the scalehouse.

The drop-off residential food waste programs is an interim measure until a residential co-collected organics program can be initiated. Wheeled carts will be placed in the Recycling Center Drop-off area, be checked daily and transported every 48 hours to the food waste composting programs on top of CFL, to add this feedstock into the composting program. The amount of food waste will be incidental and is presented as a convenience to the residents of the Upper Valley that may wish to have their food waste composted. The wheeled carts may fill up daily, and may generate 10 to 20 tons of food waste per year. The anticipated vehicle trips to purchase materials are already included in the traffic counts.

Users of the MRF are primarily contractors and gardeners that drop off their wastes and materials, and back-haul the recycled materials and soil amendments in the same vehicle on the same trip, where back-hauls would not count as an additional trip. In the cases where a customer is coming solely to purchase products, that vehicle will be counted against the permitted traffic counts of 275 vehicles per day.

The project will allow food waste composting on-site and the transfer of food waste from the proposed bunkers or in the vessel from CFL to a permitted compost facility. The CFL proposes to add a containerized in-vessel food waste composting system, using modified 40-cubic yard or 50-cubic yard corrosion-resistant containers to convert source-separated food wastes into compost products with up to 60 containers or 2,500 CY of material, a peak of 13,000 tons per year. Using containerized composting eliminates buildings, large concrete surfaces and storm water basins since the food waste is containerized. Source-separated food wastes from local restaurants, from zero-waste special events, and the 26 residential food waste drop-off program will be delivered to one of two concrete bunkers on top of the intermediate cover on the landfill deck. The intermediate cover will be compacted soil of at least 1-foot depth, sloped at 1% for positive drainage and will be maintained to prevent ponding due to settlement. Should on-site composting not be economically feasible due to the smaller scale, as an option, the food waste composting may occur at an off-site permitted compost facility and the food waste would be transferred from the bunkers or in the full vessels to a permitted compost facility. The amount of food and green waste that could be transferred off-site to a permitted facility could be 13,000 tons per year, the equivalent of up to 42 TPD day or 2 transfer trailer vehicles per day.

There will be a public drop-off of food waste at the Recycling Center that will be stored up to 24 hours prior to being transferred to the compost operations. Food waste will also arrive at the site via commercial packer trucks. The food waste will be stored in the bunkers for a period not to exceed 24 hours, and if stored overnight will be covered with a synthetic tarp. Each bunker will be approximately 20 ft. by 20 ft. and hold up to 75 CY of food waste. The food waste will be mixed with processed green waste and some finished compost, and then loaded into the food waste composting vessel. The food waste/green waste mixture will be composted in the enclosed compost vessel for a maximum time of 30 days. Following removal from the compost vessel the material will be stored at the CFL.

Processing the food waste could take one of two forms subject to LEA approval:

- 1) The material would be stored for up to 14 days for curing and then be trucked to a permitted compost facility for further processing into soil amendments: or
- 2) The material would be stored for only two days and then be trucked to a permitted compost facility for further processing into soil amendments.

Emissions estimates for VOCs and ammonia are provided for the 24-hour period before incorporation into the composting system, the 30-day active in-vessel compost period and both 14-day and 2-day storage periods following removal from the compost vessel.

The proposal is to begin with a minimum capacity of 800 CY and potentially increase to 2,500 CY of in-vessel composting volume. If a density of 1,000 lbs. per cubic yard for the food waste/green waste mixture is assumed,

with a retention time of 30 days, the result would be a minimum throughput of 14 TPD and a maximum of 42 TPD.

There are many in-vessel compost systems available of the containerized, modular version envisioned for the CFL. The vessels are specifically designed to prevent leakage of liquid or gases. The anticipated mixture of feedstocks is 40% to 50% food waste, mixed with green waste and finished compost. The composting vessels are sealed with gaskets and pull-down latches to achieve an airtight seal. The specific compost vessel type will be a modified metal roll-off bin. The base of the compost vessel is sealed where liquids are neither generated nor will leak. Moisture control is optimized where the compost retains the moisture without the generation of free liquids, where leachate will not be generated. Air is blown into the base of the vessel and exits the top. Space is left at the top of the feedstock in each vessel for the placement of a biofilter consisting of finished compost on top of the material. Prior to exiting the vessel, the emitted gas passes through the biofilter. Aeration will be provided by blowers that will be powered either through grid-provided power (PG&E) or power generated on-site by the proposed LFG energy system, the biomass gasification system, or a combination of those sources. Emissions from the on-site power sources are provided elsewhere in this document. Finished compost material will be used as a biofilter to reduce the amount of VOCs and ammonia in compost off-gas. Emissions are generated during: 1) the 24 hours of food waste storage prior to composting, 2) the active in-vessel composting period, and 3) the storage period before off-site shipment to a permitted compost facility (2 to 14-day storage time) following removal from the compost vessel. Food Waste Feedstock Storage: Food waste will be mixed with green waste and incorporated into the composting process within 24 hours. VOC emissions of 0.09 lbs/ton and ammonia emissions of 0.00043 lbs/ton of feedstock material over the two-day period. Using one day of storage rather than two, assuming storage for 365 days per year, and applying the emission factors to the maximum anticipated throughput tonnage of 42 TPD results in reduced emissions within established threshold levels.

No concurrent increase in the permitted 600 tons per day accepted at CFL or the 275 vehicle trips per day are requested for these activities. The sources of disposal tonnage are subject to the franchise agreement between the Upper Valley Waste Management Agency, including waste importation from outside Zone 3.

Renewable Energy Facilities:

a) Add a Biomass Conversion Facility (power generation plant) that proposes to use 40 tons per day of clean, processed wood waste in a gasification unit to produce one mega-watt of renewable energy for on-site use and off-site sales.

The proposed CFL Biomass Conversion Facility (Unit) uses clean, processed wood waste in a gasification unit to produce electricity at the rate of 1 megawatt per day. The Unit is designed to handle 40 TPD of biomass feedstock and will be operating 24 hours per day, 7 days per week, with about 6 planned maintenance days per year. The electricity produced would be used on-site or sold to PG&E. The generator would be placed on the existing concrete pad on the upper landfill deck where the current material processing facility (MPF) is located.

The following biomass material types will be used: 1) Wood, wood chips, and wood waste; 2) Agricultural crop residuals; 3) Bark, lawn, yard, and garden clipping; 4) Leaves, silvicultural residue, and tree and brush pruning. The primary fuel type will be wood chips from on-site wood grinding operations. Agricultural crop residuals from vineyard wastes and biomass waste from quarantined materials such as Sudden Oak Death could be treated at the biomass gasification unit. Most of the wood chips will be generated on-site from incoming vehicles delivery source separated lumber and brush, or recovered from mixed C&D loads. The MRF could process an average of 200 TPD during peak construction seasons which typically has 30% recoverable wood material, providing 60 TPD of wood chips to fuel the biomass conversion facility. At 100 TPD of incoming mixed C&D, about 30 TPD of wood waste could be recovered and processed into wood chips.

The biomass conversion facility will only receive clean processed wood chips, and will obtain the necessary air permits from the BAAQMD. The lumber that is recovered and processed into biomass wood chips is currently

being hauled to the Central Valley (i.e., Woodland, Tracy, Rocklin or Andersen) to be combusted at other biomass-to-energy facilities. Additional wood chips may be delivered by transfer trailers. The electricity is considered renewable power and is sold to the utilities for their achievement of the state mandate of utilizing 20% renewable energy by 2010. Current state policy and future laws could increase the amount of renewable energy used in California to 33% by 2020. The applicant proposes to use technologies that convert biomass into a synthetic natural gas (syngas) through the process of thermo-chemical conversion in a gasification unit. This syngas is then used to fuel a specially modified natural gas genset that provides renewable electricity and heat.

To account for seasonal low peaks and down construction cycles, the amount of wood recovered from the processing line and delivered from source-separate loads is assumed to be about 20 TPD. The 20 TPD balance will need to be imported from off-site sources in a transfer trailer. To ensure a sustainable supply of wood chips, 1.5 new transfer trailers carrying 30 tons of wood chips per day may be needed on a seasonal or intermittent basis. The wood chips may be processed at out-of-county wood waste processing operations scattered around the Bay Area. It is typical that transfer trailers haul wood chips from Bay Area wood waste processing operations to Central Valley biomass-to-energy facilities. The CFL facility offers a closer and convenient operation that will reduce overall vehicle emissions. In the future, additional agricultural wastes will be generated from “no-burn” days and policies. Agricultural wastes from vineyards and orchards may be processed into wood chips to generate another 20 TPD locally where importation may not be needed.

The current MPF, with its canopied processing line, is 27 ft. tall. The Unit will have a maximum 41 ft height; most of the unit mass is less than 20 feet in height. The in-feed conveyor and the biomass feed into the chamber will be 41 ft. in an area of less than 25 ft. by 25 ft. The existing pad is not located on a sensitive ridge line identified in the 1990 EIR for the original landfill CEQA analysis. The proposed Unit will be located on the same pad area after relocation of the MPF to the Gateway Operation expansion area. The in-feed conveyor and the chamber will be painted a neutral earth tone color that would blend into the color of the landfill cover material. There is no proposed lattice or landscaping at this location, since the Unit is located below the sensitive ridge lines identified in the 1990 EIR. A minimum of 2 days of feedstock consisting of 80 tons of wood chips (400 CY) must be stored next to the feed conveyor; remaining wood chips may be stored elsewhere on the landfill's intermediate cover. The size of the pile will not exceed 15 feet in height, and will have a minimum of 20 ft wide fire lane around the perimeter of the pile. The site plan for the Unit's storage piles shows 2 piles with 5,000 CY of storage capacity.

The biomass gasification process is a thermo-chemical one that ‘cooks’ biomass in an oxygen starved environment. By depriving the fuel of sufficient oxygen the biomass does not burn, but rather gives off a hydrogen-rich syngas. As the biomass gives off the syngas, it is transformed into bio-char and ash of approximately 1-5% of the volume of biomass fuel. The syngas is then captured, cleaned and cooled before being sent as fuel to the genset. The gensets are provided by a variety of nationally known vendors such as Cummins, Caterpillar, or GE. This ensures that there are readily available spare parts and maintenance technicians available locally. The bio-char has demonstrated ability to sequester carbon in solid form for upward of 1,000 years if applied as a soil amendment.

A conveyor fed hopper provides the most flexible solution to deliver biomass wood chips into the unit into the fuel hopper. Once in the hopper, the system uses a robust platform and fuel metering sensors to continuously feed the conversion unit in small batches as needed. The biomass conversion chamber is essentially a chemical reactor where various complex thermo-chemical processes take place. As it flows through the reactor, the biomass is dried, heated, converted into gas and reduced into bio-char and ash. Although there is considerable overlap, each process can be considered to be occupying a separate zone, in which fundamentally different chemical and thermal reactions take place. The fuel must pass through all of these zones to be completely converted. The downdraft conversion unit, employed by the technology, is under vacuum drawn by a high-pressure blower (“negative air”). The essential characteristic of the downdraft design is that the tars given off in the heating zone are drawn through the conversion zone, where they will be broken down or oxidized. When this happens, the energy they contain is usefully recovered and the mixture of gases in the exit stream is relatively clean. Expected total gas

contaminant concentration prior to filtration is up to 100 times less than is often seen in updraft and fluid bed systems.

After the syngas has been extracted from the conversion chamber it is cooled and cleaned by a series of scrubbers and filters. First the gas passes through a venturi scrubber, which is known to remove particulate in the submicrometer range. The gas is then passed through a series of four filters. The first is a coarse filter to coalesce residual liquids. The second is a rejuvenating active sawdust filter, the third is a similar passive filter, and the fourth is a fabric bag filter. The filter media are sawdust and biomass chips so instead of using expensive synthetic filters that need to be thrown away, the used filter media can be simply placed into the fuel hopper and consumed.

The power units are based on a spark-ignited engine genset. Depending on the model chosen, the engines are capable of providing up to 1 mega-watt (net) operating on syngas. The applicant will customize to allow syngas carburetion for this engine and provide standard paralleling switchgear for electrical output with up to 1 mega-watt. The applicant plans to utilize a CAT 3516 or the Cummins 1710 as the most attractive engine options. These engines also have unique features of better fuel economy, better emissions, durability, and extended oil and filter change period. Both CAT and Cummins engines have been designed to combine compact size, low emission levels and excellent performance characteristics of high-speed technology with the medium speed benefits of water-cooled exhaust valve seats, steel-crown pistons & combustion control. A Bay Area Air Management Quality District Permit to Operate will be obtained. The San Joaquin Valley Air Pollution Control District has issued a Permit to operate for similar biomass conversion unit.

As detailed in the Mitigated Negative Declaration, greenhouse gas, landfill gas methane emissions and those related to expanded composting operations and post-resource recovery park conversion traffic will remain below established threshold levels. With issuance of an Authority to Construct from the Bay Area Air Quality Management District, the new bio-mass

No significant physical changes to the Clover Flat Landfill are proposed as part of this Use Permit application, as there will be minor or no changes to the following operations: tonnage amount or waste types; traffic counts; employees; operating hours; disposal footprint of the landfill.

SUPPORTING DOCUMENTS

- A . Exhibit A - Findings
- B . Exhibit B - Conditions of Approval
- C . Local Enforcement Agency Comment
- D . Fire Marshal Comment
- E . Department of Environmental Management Comment
- F . California Department of Forestry and Fire Protection Comment
- G . Initial Study / Mitigated Negative Declaration
- H . Plant, Wildlife and Tree Survey Reports
- I . Tree Mitigation Planting Plan
- J . Application
- K . Application Description
- L . Application Description Supplement
- M . Graphics

Napa County Planning Commission: Approve

Reviewed By: John McDowell