THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
ACTION AGENDA SUMMARY

DEPT: Environmental Resources **BOARD AGENDA #** B-23

Urgent ☐ **Routine** ☒ **AGENDA DATE** June 29, 2010

CEO Concurs with Recommendation YES ☒ **NO** ☐ **4/5 Vote Required YES** ☐ **NO** ☒
(Information Attached)

SUBJECT:

Approval to Accept the Transfer Station/Materials Recovery Facility Feasibility Study for the Fink Road Landfill

STAFF RECOMMENDATIONS:

Accept the September 2009 Transfer Station/Materials Recovery Facility Feasibility Study for the Fink Road Landfill.

FISCAL IMPACT:

There is no fiscal impact associated with accepting the Transfer Station/Materials Recovery Facility Feasibility Study. This project is identified as Capital Improvement Plan Project No. 2006.156 in Category C- Future Project/Planned, however, funding has not yet been identified. Capital costs for this project are estimated at $3.2 million with ongoing operations and maintenance costs estimated at $1,000,000 per year at start-up, tapering to approximately $900,000 per year as users of the facility become familiar with the operation.

(Continued on next page)

BOARD ACTION AS FOLLOWS:

No. 2010-433

On motion of Supervisor Monteith , **Seconded by Supervisor** O'Brien
and approved by the following vote,
Ayes: Supervisors: O'Brien, Chiesa, Monteith, DeMartini, and Chairman Grover
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

1) X **Approved as recommended**
2) _____ **Denied**
3) _____ **Approved as amended**
4) _____ **Other:**
MOTION:

Christine Ferraro

ATTEST: **CHRISTINE FERRARO TALLMAN, Clerk** **File No.**

FISCAL IMPACT (Continued):

It is also probable that some staffing efficiencies through the shared utilization of Landfill staff could lower this annual cost further. Costs associated with California Environmental Quality Act review, facility design, and construction administration were not included in this estimate. Available funding within the Fink Road Landfill Enterprise Fund and a rate structure to support this project would be necessary at the time it is recommended for implementation.

DISCUSSION:

Background

The Department of Environmental Resources (Department), Landfill Division, maintains and operates the Fink Road Landfill. This facility is located at 4000 Fink Road, Crows Landing, in western Stanislaus County. The Fink Road Landfill provides landfill services for Class III municipal solid waste (MSW) for all of Stanislaus County as well as Class II disposal of the combustion ash that results from the incineration of MSW at the adjacent Waste-to-Energy facility.

The existing footprint of the Landfill has a remaining capacity of approximately 13 years, and it has been a long-standing priority of the Board of Supervisors to maximize this capacity. Within the Board's priority for a well planned infrastructure system, Goal 3 is identified as promoting effective solid waste disposal. The specific outcome associated with this Goal includes completing a waste stream and feasibility analysis of a recycling/materials recovery/transfer facility at the Fink Road Landfill. To address this outcome, the Board engaged the services of Stearns, Conrad, and Schmidt, Consulting Engineers, Inc., on March 25, 2008, to complete the waste stream analysis portion. The results indicated that a significant amount of waste within the self-haul category in particular could be diverted from disposal including wood, ferrous metal, yard waste, mixed plastics, and cardboard.

The next step in addressing the desired outcome for Goal 3 was to prepare a Request for Proposals (RFP) for the completion of a feasibility study for a transfer station (TS)/materials recovery facility (MRF). On April 14, 2009, the Board awarded the contract to HDR Engineering, Inc., and the study was completed the following September. The feasibility study analyzes the potential of constructing a small volume TS/MRF at the Fink Road Landfill together with a household hazardous waste drop-off location and an equipment maintenance (shop) building. The Scope of Work in the RFP directed the consultant to develop an approach that would, as economically as possible, provide a simple and partially enclosed TS/MRF structure that would be placed at the end of the recovery drop-off areas of the facility where self-haul users would be directed to self-unload municipal sold waste and recyclable and recoverable materials.

The Fink Road Landfill currently disposes of approximately 41,000 tons annually of what is categorized as self-haul waste which could be diverted to a TS/MRF. An additional

14,000 tons of waste arrives at the Landfill in drop boxes in fairly homogenous loads which could also be diverted, bringing the total tons of waste which could be processed by a TS/MRF to 55,000. Encouraging, educating, and directing self-haul users to source separate and self-unload at a TS/MRF can provide an economical approach to increasing waste diversion rates and maximizing remaining landfill capacity. The feasibility study included the development of design criteria for a TS/MRF facility, developing alternative facility layouts, presenting a preferred facility layout, projecting a range of diversion goals for the facility based upon the waste stream analysis, developing a facility cost estimate, and developing an implementation plan.

The Study determined that approximately eight (8) acres would be needed for a TS/MRF facility as identified by the Scope of Work. The relatively flat area west of the roadway intersection leading to the waste-to-energy facility was determined to be the most desirable location due to its relatively flat terrain which would provide a good proximity to the County's tentatively reserved future landfill space, ample queuing area between the scales and the TS/MRF facility, lower grading costs, and a less complicated drainage design.

The design criteria identified three approaches; both a fully- and a partially depressed loading tunnel, and a design without a depressed loading area where waste would be top-end loaded into the transfer trailers. Each proposed layout would be 150 feet wide and 100 feet deep, including a full wall on the transfer side of the building and at least partial walls on the remaining sides to help control litter. Of these three options, a partially depressed design was identified as the preferred option because it offers a fully adequate load-out efficiency while avoiding the increased cost of constructing a fully depressed loading tunnel. A partially depressed loading design could process 378 tons per day accommodating current volumes and allow for future growth over 20 years.

With respect to alternative layouts, three were presented that varied placement of the TS/MRF building either upwind or downwind along with different rotations and traffic flow patterns. The preferred layout was identified as Layout 2 and was recommended because its orientation provided a more economical layout for a partially depressed loading tunnel, a greater likelihood of capturing windblown litter, and greater visibility to operations staff with easier access for operational equipment movement onsite.

The range of waste diversion goals achievable through the recommended facility design and layout are approximately 15% in the short-term up to 35% in the long-term of the self-haul waste stream processed at the facility, or 3,900 – 11,000 tons per year; the success of which would largely be dependant upon establishing a tiered pricing system encouraging customers to separate and self-unload recoverable materials in recycling and recovery drop-off areas and educating users about the benefits of source separating materials. If half of the drop box loads were also processed, the overall percentage remains similar (14% and 34%, respectively), however, the diverted tonnage increases to roughly 14,000 tons per year.

Capital costs for the recommended design are estimated at $3.2 million with start-up operations and maintenance costs of approximately $1,000,000 per year, including revenues from recycled materials, tapering to approximately $900,000 per year as users of the facility become familiar with the operation. This estimated cost factors in a 6-day per week operation versus the 7-day per week analysis completed by the consultant. It is probable that staffing efficiencies through the shared utilization of existing Landfill staff could lower this cost to the $800,000 range for approximately eight (8) full-time employees. If the facility processed the self-haul waste stream of 41,000 tons per year at a tipping fee in the range of $30-45 per ton, the remaining capacity of the Landfill could potentially be extended by 19% if the long-term diversion rate could be achieved and sustained. The estimated completion time to take a project of this nature from site investigation to project completion is approximately two years.

It should be noted that the feasibility study evaluated only the ongoing costs for the TS/MRF facility, not including landfill disposal costs. Based upon the revenue, expenditures, and tonnage data for the 2008 timeframe which the study was based on, factoring in the additional $1 million in operating costs for the TS/MRF suggests that the additional cost to the overall tipping fee to incorporate a TS/MRF facility would be approximately $7 per ton. A more in depth analysis, however, would be necessary at the time this project was being considered for implementation.

Legislative Requirements

Assembly Bill (AB) 939, the Integrated Waste Management Act of 1990, as one of its provisions required that cities and counties meet and maintain a 50% waste diversion rate as of January 1, 2000. Currently, the Stanislaus County Regional Solid Waste Planning Agency, which is comprised of the County together with the cities of Ceres, Hughson, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford, is estimated to be diverting approximately 61% of its waste from disposal. Over the past several years, however, the California Legislature has frequently contemplated raising the diversion mandate to levels of 65% and above; the efforts of which have not yet successfully been enacted into law.

Considering that the Stanislaus County Regional Solid Waste Planning Agency is currently diverting well in excess of the 50% mandate, it is recommended that staff be directed to return to the Board for reconsideration of this project and the identification of a funding mechanism if the State of California increases the waste diversion mandate above the 50% level.

Other Considerations

An additional consideration that could add to the cost of waste disposal and, therefore, make a TS/MRF more viable is AB 32, the Global Warming Solutions Act. Specifically, on September 27, 2006, Governor Schwarzenegger signed AB 32 into law which requires the California Air Resources Board (CARB) to adopt a greenhouse gas emissions cap on all major sources in order to reduce statewide emissions of

greenhouse gases (GHG) back to 1990 levels by the year 2020. This legislation represents the first enforceable statewide program in the U.S. to cap GHG emissions from major industries that includes penalties for non-compliance. It directed CARB to develop appropriate regulations and establish a mandatory reporting system to track and monitor GHG levels, and develop market-based compliance mechanisms including cap-and-trade.

Cap-and-trade refers to a system in which the production of pollutants is capped, producers receive allowances that give them the right to pollute up to specified amounts, and a market is created for trading allowances among producers. In December 2008, CARB issued a Scoping Plan that outlines California's strategies for meeting this mandate. Establishing a California cap-and-trade program is a prominent component of the Scoping Plan. CARB's preliminary draft regulations released in December 2009 indicated that sectors subject to the cap-and-trade program include large stationary sources of GHG emissions, electricity deliverers, and fuel deliverers that emit at or above a threshold of 25,000 metric tons of carbon dioxide equivalents (CO2e). The sector that currently includes waste-to-energy (WTE) facilities is the electrical sector.

According to Covanta, the Stanislaus Resource Recovery Facility reported 81,931 tons of CO2e emissions in 2009, and therefore, will be subject to the cap-and-trade regulation which goes into effect on January 1, 2012. After lengthy discussions between stakeholders and CARB about sources that are carbon neutral, CARB has excluded the biogenic (non-fossil fuel) portion of carbon emissions from the cap-and-trade program for WTE facilities. For the Covanta Stanislaus Facility, this means that in determining the annual cost of allowance, the total CO2e emissions will be reduced by the biogenic portion. CARB has not yet identified how much the allowances will cost, but indications are that offset costs can range between $20 to $60 per ton of CO2e which could add a significant annual operational cost to the WTE facility.

Because energy production is secondary to the WTE facility's primary role as one strategy in managing waste and minimizing reliance upon landfill disposal, Stanislaus County is working together with Covanta staff to exclude WTE from inclusion in CARB's definition of the electrical sector within its GHG inventory. If this effort is not successful, a diversion program for fossil fuels, or plastics essentially, could make a significant difference in the non-biogenic-related (i.e., anthropogenic) CO2e emissions, and therefore, the cost to purchase off-set credits. A TS/MRF facility at the Fink Road Landfill may be a possible mechanism for establishing a diversion program of this nature, and while there are limited markets for plastics currently, adding significant operational costs to the WTE facility could make plastics diversion more viable.

A final consideration that could make a TS/MRF more viable is that the Scoping Plan adopted by CARB also includes a mandatory commercial recycling measure as one component of their overall strategy for reducing GHG emissions. The thought is that recycling can reduce GHG emissions from multiple phases of product production including extraction of raw materials, preprocessing, and manufacturing. A co-benefit of

increased recycling is avoided methane emissions at landfills from the decomposition of organic materials.

CARB is currently engaged in an informal rulemaking process while developing a mandatory commercial recycling measure and it is anticipated that the effective date for the regulation will coincide with the cap-and-trade implementation on January 1, 2012. Following this, businesses that generate four (4) cubic yards or more of waste per week would be required by July 1, 2012, to implement one of the following options: 1) source separation of recyclables from their waste and either self-hauling of the materials to a diversion facility or subscribing to a collection service to separately haul the recycled materials to divert them from disposal; or 2) subscribing to an alternative type of recycling service that includes mixed waste processing to divert materials from disposal. A mandated commercial recycling program such as this is likely to create additional demand for waste diversion opportunities, particularly for businesses that elect to self-haul their diverted materials. A TS/MRF facility could fulfill a portion of this need.

POLICY ISSUE:

The Board of Supervisors should determine if accepting the Transfer Station/Materials Recovery Facility Feasibility Study for the Fink Road Landfill is consistent with the Board's priorities of the efficient delivery of public services, a safe community, a healthy community, and a well planned infrastructure system.

STAFFING IMPACTS:

There are no staffing impacts associated with this item.

CONTACT PERSON:

Sonya K. Harrigfeld, Director of Environmental Resources. Telephone: 209-525-6770

ATTACHMENTS AVAILABLE FROM YOUR CLERK

Stanislaus County Dept. of Environmental Resources

Sonya K. Harrigfeld, Director
Jami Aggers, Assistant Director
Gerry Garcia, LF Manager I

June 29, 2010

PowerPoint Presentation B-23

TS/MRF Feasibility Study at the Fink Road Landfill

- Remaining capacity of approx. of 13 years = Board priority to maximize site life of the Landfill
- Board Priority: A well planned infrastructure system, Goal 3: Promote effective solid waste disposal
- Capital Improvement Project No. 2006.156, Category C – Future Project/Planned, however, funding has not yet been identified

TS/MRF Feasibility Study at the Fink Road Landfill cont'd.

- Specifically: Hired consultant March 2008 to prepare an updated waste stream analysis
- Results indicated that a significant amount of waste within the self-haul category could be diverted from disposal
- Wood, ferrous metal, yard waste, mixed plastics, and cardboard

TS/MRF Feasibility Study at the Fink Road Landfill cont'd.

- Next step: Prepare an RFP for the completion of a feasibility study TS/MRF
- April 14, 2009, Board awarded the contract to HDR Engineering, Inc.
- Study was completed in Sept. 2009

TS/MRF Feasibility Study at the Fink Road Landfill cont'd.

- Analyze the potential for constructing a small vol. TS/MRF, a HHW drop-off site, & shop building for equipment repairs
- Consultant direction: as economically as possible, simple & partially enclosed, including drop-off areas for users to self-unload recoverable materials

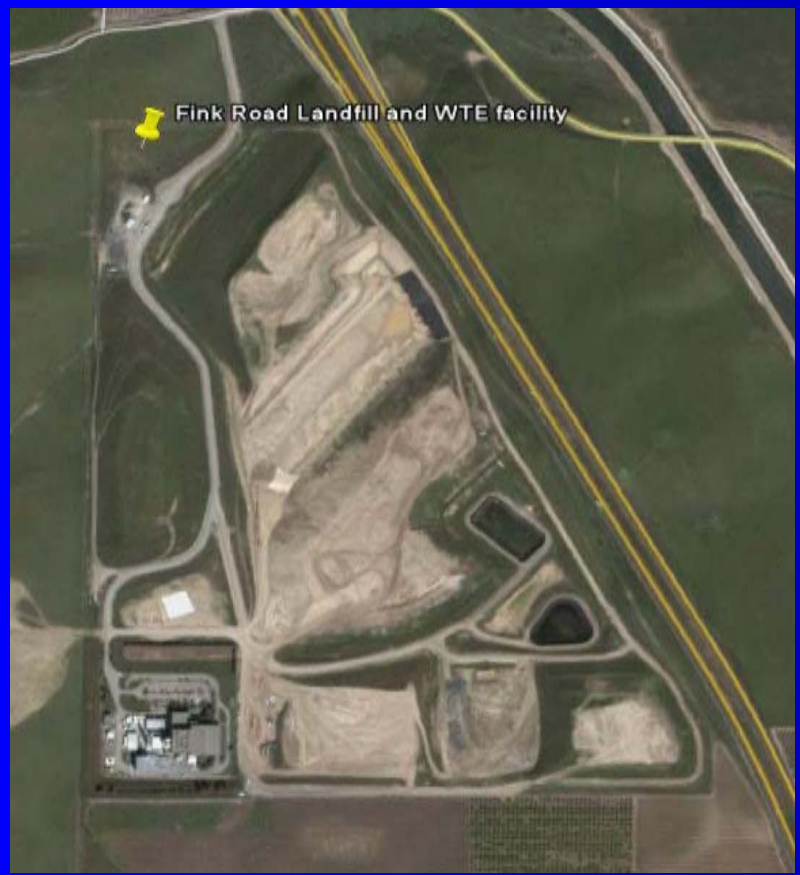
TS/MRF Feasibility Study Goals:

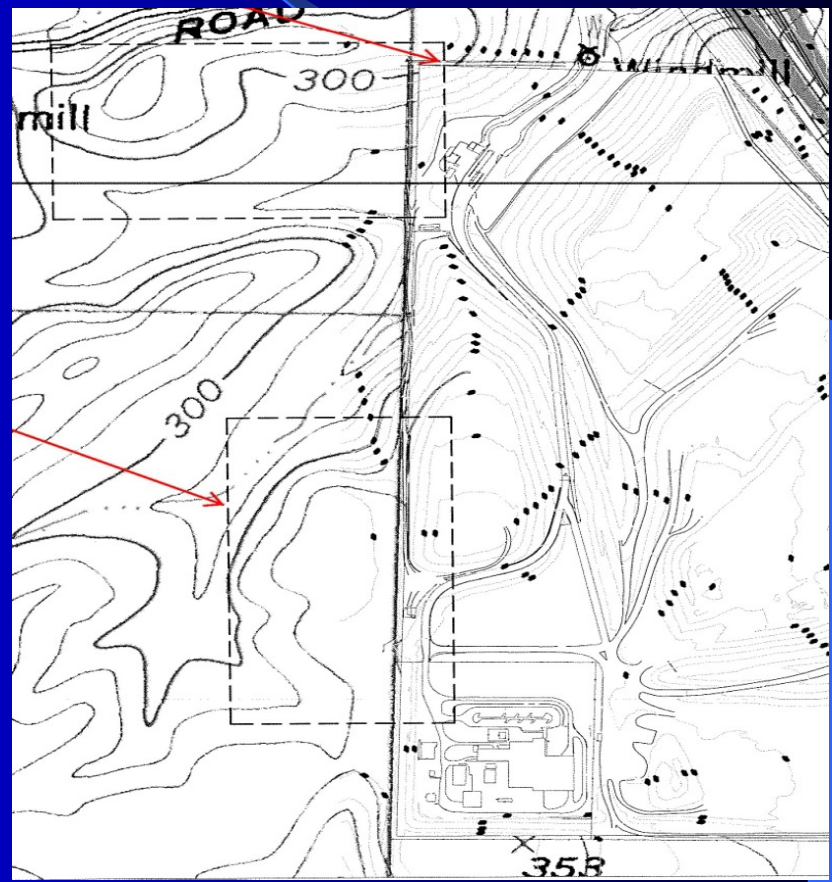
- Remove self-haul traffic from Landfill
- Divert materials from the LF disposal
  - Achieve higher diversion rate
  - Increase the landfill site life
- Minimize cost

Landfill Waste Stream

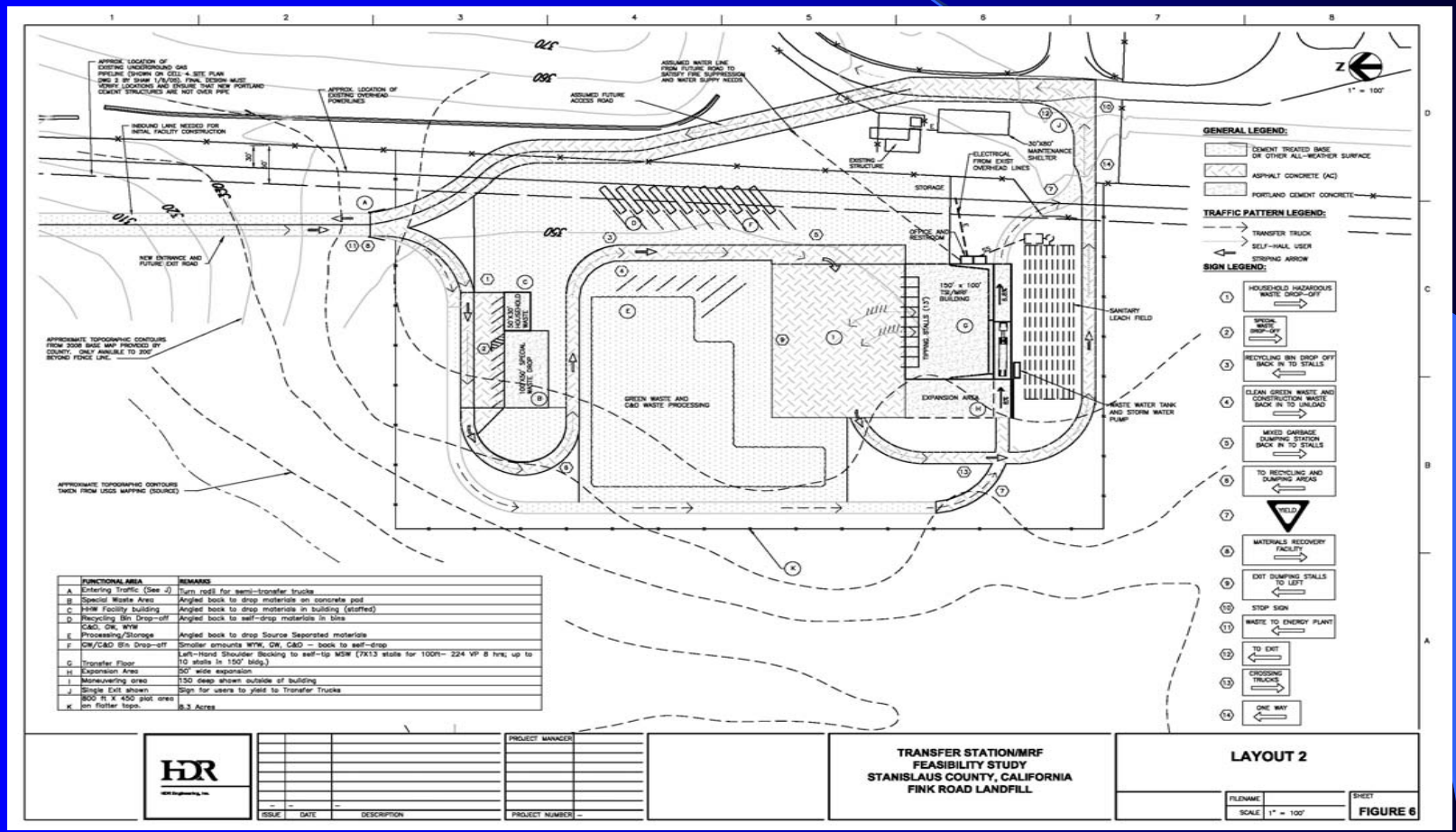
- Review of Waste Stream Analysis to Select Self-Haul and “Rich” Commercial Loads
  - Mom and Pop [100%]
  - Non-Franchise [up to 100%]
  - Franchise Drop Box [50%]
- Process 41,000 - 55,000 TPY to landfill in (2008 base tonnage)
- Facility Design for 20 years is *Peak* 320 trips per day on weekend day and 378 TPD on weekdays

Location on Site





Preferred Facility Layout (#2)



Diversion Potential of Total Self-haul Waste Stream to TS/MRF

- 15% or 3,900 tons in the short-term
- 27% or 8,600 tons in the medium-term
- 35% or 11,000 tons in the long-term

- "Train" users to separate and self-unload recoverables
- Lower range: limited participation
- Mid-range: incentives & high participation
- High range: may require reduced tip fees

Estimated Cost

	CAPITAL COSTS	Total	Annualized*
1	Site improvements & buildings	$ 3,200,000	$279,000
2	Equipment Installation Cost	$ 10,000	$1,000
3	Spare parts inventory	$ -	$0
4	*CEQA Environmental Impact Review*	$ 130,000	$11,000
5	*Design*	$ 260,000	$23,000
6	*Construction administration*	$ 160,000	$14,000
7	Subtotal	$ 3,760,000	$328,000
8	Contingency (10%)	$ 376,000	$33,000
9	Land	$ -	$0
10	Equipment (not Rolling Stock)	$ 15,000	$1,000
	Subtotal - Capital Project Costs	$ 4,321,000	$ 362,000
**	ANNUAL O&M COSTS		
A	Labor		$ 850,000
B	Facilities maintenance		$ 16,000
C	Rolling stock		$ 170,000
D	Rolling stock fuel and maintenance		$ 45,000
E	Utilities		$ 43,000
F	General & administration/legal,/accnt.		$ 30,000
G	Residue disposal		$ -
H	Contractor Greenwaste grinding and marketing		$ 40,000
I	Contractor Wood waste grinding and marketing		$ 80,000
J	Assumed Revenues from diversion commodities		$ (115,500)
	Subtotal - O& M		$ 1,158,500
	Total Annualized Facility Cost		$ 1,520,500
	Annual Cost per Ton Statistics	Tons	$2010/Ton
K	Total tons processed at Facility	41,359	$ 37

- Site improvements & buildings: $3.2M
- CEQA, equipment, design & construction oversight are additional

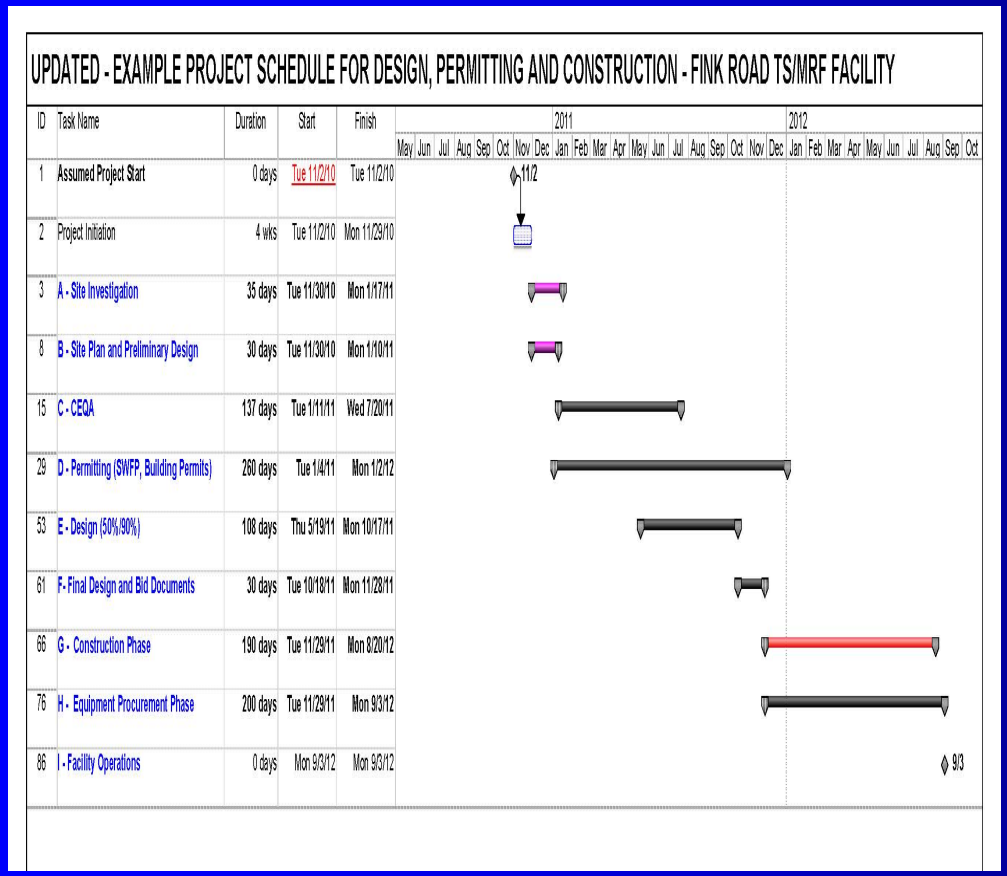
Estimated Cost, cont'd.

- Operations & Maintenance: $1M/year at start-up for 9-10 full-time staff
- Cost could drop to $900K/yr as users become familiar with the site (8-9 staff)
- Cost based on 6 day/wk operation (vs. 7)
- Some staffing efficiencies are probably thru shared utilization of LF staff

Estimated Cost, cont'd.

- If the facility processed the self-haul waste stream of 41,000 TPY, remaining LF capacity could potentially be extended 19%
- Per ton cost range at the TS/MRF is estimated at $30-45/ton, excluding LF cost
- Based on revenue, expenses, and tonnage for 2008, may add approx. $7/ton to tip fee

TS/MRF Wrap-up



UPDATED - EXAMPLE PROJECT SCHEDULE FOR DESIGN, PERMITTING AND CONSTRUCTION - FINK ROAD TS/MRF FACILITY

ID	Task Name	Duration	Start	Finish
1	Assumed Project Start	0 days	Tue 11/2/10	Tue 11/2/10
2	Project Initiation	4 wks	Tue 11/2/10	Mon 11/29/10
3	A - Site Investigation	35 days	Tue 11/30/10	Mon 1/17/11
8	B - Site Plan and Preliminary Design	30 days	Tue 11/30/10	Mon 1/10/11
15	C - CEQA	137 days	Tue 1/11/11	Wed 7/20/11
29	D - Permitting (SWFP, Building Permits)	260 days	Tue 1/4/11	Mon 1/2/12
53	E - Design (50%,90%)	108 days	Thu 5/19/11	Mon 10/17/11
61	F - Final Design and Bid Documents	30 days	Tue 10/18/11	Mon 11/28/11
66	G - Construction Phase	190 days	Tue 11/29/11	Mon 8/20/12
76	H - Equipment Procurement Phase	200 days	Tue 11/29/11	Mon 9/3/12
86	I - Facility Operations	0 days	Mon 9/3/12	Mon 9/3/12

- 2-year time frame from start to finish
- Costs are approximations – more in depth analysis needed for actual implementation

Legislative Requirements

- AB 939 requires cities & counties to meet and maintain a 50% waste diversion mandate
- Stanislaus County Regional Agency is estimated at 61% diversion currently

Legislative Requirements, cont'd.

- Several attempts legislatively to raise the mandate to 65% and above
- Unsuccessful to date, but likely to change
- Staff recommends it be directed to return to the Board for reconsideration of this project and the identification of funding if the 50% mandate is increased

Other Considerations

- AB 32 (2006), the Global Warming Solutions Act, required the Air Resources Board to adopt a greenhouse gas emissions cap on all major sources to lower statewide emissions back to 1990 levels by the year 2020
- Enforceable and have penalties for non-compliance

Other Considerations, cont'd.

- ARB is mandated to develop regulations, a reporting/tracking system, and market based compliance mechanisms including cap-and-trade
- Cap-and-trade means that emitters are given a limit (cap) on the production of pollutants. If the limit is exceeded, you must purchase (trade) an available allowance

Other Considerations, cont'd.

- In California, those subject to this include: large stationary sources, electricity deliverers, and fuel deliverers that emit at or above 25,000 metric tons of CO2e
- The WTE facility currently falls under the electrical sector even though power generation is secondary to its waste management purpose

Other Considerations, cont'd.

- According to Covanta, the WTE facility reported 81,931 of CO2e emissions in 2009 so it will be subject to cap-and-trade beginning Jan. 1, 2012
- At costs of $20-$60/ton of CO2e allowance credits, this would add significant cost to the WTE facility's annual O&M

Other Considerations, cont'd.

- CARB has agreed to exclude the biogenic (non-fossil fuel) portion of emissions (i.e., plastics are the concern)
- Working to exclude WTE from the electrical sector
- If unsuccessful, a diversion program for plastics, potentially at the TS/MRF, could become more viable

Other Considerations, cont'd.

- Also part of ARB's overall strategy for reducing GHG gases, is a mandatory commercial recycling measure
- The concept is that recycling avoids extracting raw materials, preprocessing & manufacturing, but also diverts material from landfills where methane is produced

Other Considerations, cont'd.

- ARB would have ultimate authority but CalRecycle would evaluate jurisdiction performance re: implementation
- Required regardless of whether you've met the 50% diversion mandate
- Rulemaking process is underway and effective date aligns with cap-and-trade: Jan. 1, 2012

Other Considerations, cont'd.

- ARB's goal is to finalize regulations by January 1, 2011, and jurisdictions would have one year to develop their program (by 1/1/2012)
- Implementation would be required 6-months thereafter (July 1, 2012)
- Must include an education and outreach component

Other Considerations, cont'd.

- Businesses that generate 4 cu yds or more of waste/week would be required to 1) separate recyclables and either self-haul them or subscribe to a recycling service; or 2) subscribe to a mixed waste processing service to remove the recyclables
- Must include monitoring of the businesses that generate 4 cu yds of waste or more

Other Considerations, cont'd.

- Does not mandate that jurisdictions pass an Ordinance, but a mandatory Ordinance is one aspect a program can include
- Flexibility will be allowed in program design – details still being worked out
- TS/MRF could fulfill a portion of this need

Questions?