Alternatives Analysis

Summary

Brown, Vence & Associates (BVA) in cooperation with Sonoma County staff identified eleven potential alternatives for handling the County's solid waste stream. These alternatives were divided into those that could be considered short-term (implemented within the next two or three years) or long-term (implemented four or more years into the future). It should be noted that these alternatives are not in any priority order or mutually exclusive and were used in combination as overall integrated system scenarios to address potential solutions to the County's waste handling issues.

Each alternative was analyzed and evaluated using previously developed criteria. In addition, Alternatives 1 and 3 were analyzed and evaluated as both short-term and long-term alternatives and have been repeated in the text twice to discuss both the short and long term impacts. We have summarized our analysis of each alternative below; the complete analyses and evaluations are included in the main body of the text.

Short-Term Alternatives

Alternative 1 – Exporting of Solid Waste Out-of-County

Based on the mandates of the North Coast Regional Water Quality Control Board (RWQCB), as of July 2005, most or all of the solid waste generated in Sonoma County will require out-of-county disposal for a period of one to three years. There are no operating landfills in Sonoma County, other than the Central Landfill (Central), and the County now exports a relatively small amount of waste (about 300 TPD) to save limited capacity at Central.

The County has developed, and released a Request for Proposals (RFP) for transport and out-of-County disposal of solid waste. Out-of-county capacity needs to be available, whether or not it is all actually used, for current disposal levels ranging from about 1,100 to1,400 tons per day (TPD) average and up to about 2,500 TPD on peak days, plus any anticipated growth in tonnage over the period from July 2005 through 2008. The RFP and contracting process takes a number of months and thus the County is proceeding expeditiously to assure that a contract is in place prior to July 2005.

We understand that the County has recently received an unsolicited proposal for short-term export of waste out-of-county. The County should review, analyze and consider this proposal. However, since the RFP has been released and considering the potential for competitive pricing from the RFP process, the County should not abandon this process. Instead the County should run parallel processes negotiating with the unsolicited proposer while soliciting for other offers through the RFP process.

Analysis of transportation costs (from the County to these disposal sites) and representative disposal fees recently negotiated by other jurisdictions indicate total export costs may be

available to the County in the $30 to $35 per ton range. We understand that the County is currently paying approximately $36 to $38 per ton for waste export services.

In any event, exporting waste outside of the County for at least the short-term is necessary and this alternative will need to be included as part of any final scenario adopted.

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

The Sonoma County Waste Management Agency (Agency), as currently constituted, documents AB 939 compliance to the state, plans and implements Countywide programs such as HHW collection and yard waste composting, interacts with County staff and with the Local Task Force in program planning and implementation, and participates in longer-term planning processes such as development of the CoIWMP and the Long-Term Solid Waste Alternative Analysis Project. The County is a member of the Agency which is staffed by County employees. The Agency Board is comprised primarily of member agency staff members and some elected officials.

The following are a range of options that provide a greater role for the existing Agency. The options are not mutually exclusive, or in any particular order. The options reflect various JPA structures, roles and responsibilities that work effectively around the state.

- Strengthen role of Agency in identifying and recommending jurisdictional diversion programs.
- Expand charge of Agency to include facility ownership and/or operation in lieu of the County.
- Restrict representation on the Board to elected officials, with jurisdictional staff serving as a technical advisory committee.
- Modify the voting system to reflect the will of the majority, possibly with some degree of weighting based on population or other characteristics.
- Develop an Agency that is a fully autonomous or nearly fully autonomous from the County, for instance by developing an enterprise fund and providing full staffing.
- Add staff from the County, other agencies, or by stand-alone hiring.
- Member Agencies and/or haulers provide flow control to the County or to the Agency through the JPA agreement.
- Facilitate flow control to the County or to the Agency through bilateral agreements between individual jurisdictions and the County or Agency.
- Assume some or all County assets and current liabilities.
- Assume County's long-term landfill liabilities.
- Form a special district in order to take advantage of taxation powers.

With or without implementation of these options by the Agency, the County needs to fund past liabilities and ongoing System components. Currently, most of the funding for these expenses is being charged through the landfill tipping fee at County disposal sites. With one jurisdiction already leaving the System and others potentially to follow, these costs need to be separated from the landfill tipping fee and charged directly to the past users. As discussed, the majority of these charges is already included in the current landfill tipping fee rate and just require reallocation (not raising). The County needs to carefully assess and appropriately allocate these costs. Costs for current and projected users of the landfill need to be charged for day-to-day landfill operations; cost for System components and past landfill liabilities need to be allocated and charged to the responsible jurisdictions. The County needs to finalize the cost allocations and begin discussions with the various jurisdictions regarding the responsible sharing of these costs.

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

The Countywide Integrated Waste Management Plan has identified policies and programs to reach 50 percent diversion. The County achieved 55 percent diversion in 2003. As an alternative or complement to facility development and exporting of solid waste generated in the County, the County and the Cities should accelerate and enhance their source reduction and recycling plans to maximize diversion. The County should also establish specific zero waste policies and programs to reduce the generation of materials that need to be recycled or disposed. These include:

Short-term Policies

- Accelerate plans for the 70% diversion goals
- Mandatory source-separation
- Greater enforcement of existing and additional new landfill bans
- Countywide construction and demolition debris diversion ordinances
- Product stewardship advocacy
- Zero waste funding

Short-term Programs

- Changing public behavior
- Commercial, institutional and industrial outreach and technical assistance
- Market development
- Salvaging for reuse at the landfill and transfer stations
- Bulky item collection

- Source-separated organics.

Alternative 4 – Expansion of Central Disposal Site

The Central Disposal Site is owned by the County. The site has been developed with the necessary site infrastructure to function accordingly. The cost of operations at the site appears within the range of other landfills with similar volume of waste. Similarly, the cost of management (administrative burden) of the site appears within the range of similar sized organizations. The primary challenge of this site is the potential cost of the containment systems. At the Central Disposal site groundwater can be shallow or surface in springs, therefore, the prescriptive standard of 5 ft. separation distance between groundwater and the bottom of the containment system is not achievable and an engineered alternative must be designed. The cost of installing an engineered alternative containment system, which will satisfy the RWQCB may be significantly higher than disposal facilities in other regions of California. Further complicating this issue is the fact that, at this time the RWQCB has not approved a containment system for any further expansion. So cost estimates contained herein are based on the liner system currently being discussed with RWQCB staff. Additionally, given the County's recent experience with the East Canyon Phases 1 and 2, each future phase of construction will likely require a separate approval by the RWQCB and therefore, the requirements could be subject to future changes.

The expansion of the Sonoma County Central Disposal Site entails development of one or more of three distinct areas on the site, the East Canyon, the Rock Extraction Area, and the North Area Expansion (Compost Operations Area). With all planned expansions the Central Disposal Site could provide capacity until approximately 2017, depending on the rate of refuse inflow. However, according to County staff, the proposed expansions are contingent on various remedial measures for the existing Central Landfill and East Canyon required by the RWQCB. Accordingly, due to the lack of permits, the Central Disposal Site currently has permitted waste capacity only until approximately July 2005.

The RWQCB has not provided specific performance goals that the County must adhere to in order to resume with the expansion of the site. Consequently, it is not possible at this time to estimate with assurance the cost or extent of improvement needed to comply with the RWQCB. Further, it is not possible to estimate the amount of time necessary to secure regulatory approval. However as an attempt to develop a more robust containment system design, the County has developed conceptual designs, which although not approved are believed to be acceptable to the RWQCB. The costs of these improvements are estimated to be about $9.32 per ton.

Alternative 5 – Subregional Waste System

This alternative reflects a potential downsizing of the Sonoma County Waste Management Agency (Agency). This would occur if some of the member jurisdictions decided to handle their own waste and not utilize the County Solid Waste Management System. It was assumed that the County and possibly a couple of the smaller jurisdictions would maintain

some form of the current Agency and establish a subregional waste system. This subregional system would be responsible for operations and maintenance of a solid waste infrastructure to handle its own waste. For purposes of analysis, it was further assumed that the size of this subregional entity would be about 50% of the current System or generate about 250,000 tons per year (TPY) for disposal, with the remainder of the cities leaving the regional system and managing their own waste disposal.

Under this scenario mandatory collection of waste and flow control agreements with participating jurisdictions would be required. Depending on the remaining participating jurisdictions, some or most of the transfer stations would either be closed or operated with reduced hours. Depending on the outcome of issues related to expansion of Central, the landfill may need to be closed and waste exported outside of the County. Under the 50% waste stream reduction the Central Landfill could still be operated, however tip fees would need to be increased to cover the costs of operations. Current costs to operate the landfill are about $50 per ton including liner improvements. This cost may need to be increased to as much as $65 to $70 per ton to cover those portions of the operating cost that are “fixed” and not tonnage driven. If the cost to export waste out-of-County is less then the amount of this fee, exportation for the subregional system should be considered.

If jurisdictions opt to leave the County System and the Agency is downsized, the County would be required to take the following steps to implement this subregional entity:

- Establish who the participating members in the new entity will be
- Analyze the infrastructure requirements based on the participating members (transfer stations in areas of participation, sizing disposal needs, etc.). At the appropriate level of downsizing several transfer stations may need to be closed or have hours reduced
- Separate the costs out for past liabilities and establish a cost for the new participants
- Pass a mandatory collection ordinance to ensure all waste and recyclables are being collected
- Implement flow control for the members in the subregional agency ensuring all collected materials are delivered to the new System
- Charge-out costs for past liabilities to historic system users (whether or not they continue participation in the new System)

Long-Term Alternatives

Alternative 1 – Exporting of Solid Waste Outside of County

As discussed, the County has developed, and released an RFP for transport and out-of-county disposal of solid waste. We understand that the County intends this RFP to cover short-term capacity for only the next one to three years. We believe the County should consider also addressing a guarantee of disposal capacity beyond the short-term (three

year) window in the RFP as an option. This can easily be handled by adding a paragraph to the RFP that states, “The County intends the focus of the RFP to be short-term only, however at the option of the proposer, proposals will be considered for longer-term guarantees”. It would be advantageous to use the current competitive RFP process to obtain these longer-term prices, should export need to continue. However, we understand the CoIWMP has a goal to maintain local disposal capacity to handle its own waste and so the contract should not put the County under any obligation to continue export beyond 2008 in a manner that would impact the feasibility and/or timing of more preferable alternatives for maximizing recyclables and organics diversion, and the possibly more preferable alternative of developing new local disposal capacity.

In any case, 1) unless there is an change in policy to export waste long-term, as has been made by several nearby counties (such as Mendocino, Napa and Humboldt) longer-term export should be thought of as a last resort, and 2) any planning for longer-term disposal (whether exported or local) should reflect the goal of ongoing reduction in the percentage of generated waste requiring disposal. Conversely, the availability of the longer-term export option provides a safety net should other more preferable options take longer to develop than anticipated. Longer-term export of waste may require additional capital expenditures to expand the Tipping Facility at the CDS to handle the larger amounts of transferred waste over the long-term. However, the County may be able to direct haul and/or transfer waste from regions throughout the County without impacting the Tipping Facility to avoid this expansion. Operating costs will be similar to those discussed in the Analysis section of Alternative 1 Short-Term, but will reflect CPI or other adjustments necessary.

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

As discussed, the County Integrated Waste Management Plan has identified policies and programs to reach 50 percent diversion. The County achieved 55 percent diversion in 2003. As an alternative or complement to facility development and exporting of solid waste generated in the County, the County and the cities should accelerate and enhance their source reduction and recycling plans to maximize diversion. The County should also establish specific zero waste policies and programs to reduce the generation of materials that need to be recycled or disposed. These may include:

Long-term Policies

- Product bans
- Zero waste research and development

Long-term Programs

- Wet-dry collection

Alternative 6 – Development of West Expansion Area

The West Expansion Area of the Central Disposal Site is estimated to cover approximately 144 acres of land outside the current waste placement limits. This area is planned for excavation per the conceptual design prepared by Vector Engineering in January 2004.

The total estimated waste capacity of the West Expansion Area is approximately 24.3 million cubic yards. The West Expansion is still in the concept development phase and has not been permitted by the appropriate regulatory agencies.

The risk of developing the West Expansion Area is similar to the expansion of the Central Disposal Site but complicated with the addition of a massive rock quarry extraction element. As a consequence, this alternative has more regulatory approval risk than the Central Disposal site alternative. Although not in writing, the RWQCB has reportedly informed County staff that they may reserve judgment about the viability of West Expansion area for a landfill until the rock mass has been removed. If the RWQCB assumes this posture, their approval of the project could conceivably be many years after the project commencement. This would require the County to have expended significant quantities of money without the promise of securing a permit, yielding the project unviable. As a result, the ability to procure regulatory approval that can be relied upon for the duration of the waste placement activities is more tentative than the Central Disposal Site alternative. This predicament of securing only tentative regulatory approval renders this alternative potentially unreliable.

The cost to implement this alternative is estimated to be approximately $48 per ton based on a similar liner design of the Rock Extraction Area and the current $41 per ton operating cost.

Alternative 7 – Development of New Long-Term Landfill Capacity in the County

Presuming the new long-term landfill is located centrally and is operated within a similar regulatory requirement and operational capacity as disposal facilities in neighboring regions, the local disposal facility should have generally similar costs to other disposal facilities. The new long term landfill would need to include all of the fundamental cost components of a disposal site. These include:

- Land purchase,
- Site infrastructure (access roads, entrance scales, environmental control facilities, etc.),
- Containment systems (liner and closure improvements),
- Operations, and
- Management.

Of these cost components, the existing operations and management costs would presumably remain the same as the existing landfill. The remainder of the components would need to be developed at the new site.

Without conceptual designs, we have proceeded with the assumption that the development of a new landfill in the County will need to provide at least 50 or more years of capacity to justify undertaking the long and controversial process and the expensive of development.

The risk of developing a new long-term landfill within the County is similar to the West Expansion Area, but potentially complicated with the additional impacts of an entirely new community including but not limited to traffic, property devaluation, odors, noise, water quality, etc. Also, the potential of environmental issues such as habitat or protected species impact may affect the selection and viability of a potential site. As a consequence, this alternative has more regulatory approval risk than the West Expansion Area alternative.

Our estimate of development costs for a new landfill is approximately $28 million based on historic development costs for other California landfills. We have estimated the cost for the required containment system to be consistent with the robust design discussed for the Rock Extraction Area and the Western Expansion Area above. Approximately $211 million will be needed for approximately 48.6 million cubic yards of capacity, representing about 36.5 million tons. This calculates to approximately $47 per ton based on a similar liner design of the Rock Extraction Area and the current $41 per ton operating cost.

Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County's Waste

The existing County system could be expanded into a multi-county regional system including one or more nearby counties, to handle, process, divert, and or dispose of waste materials. This would increase the amount of waste handled by the region and could potentially allow opportunities for cost savings through economies of scale. The County identified and has approached staff at four near-by or adjacent counties to assess interest in participating in some form of regional system. The Counties of Del Norte, Humboldt, Mendocino, and Napa are in relatively close proximity to Sonoma County and are each exporters of solid waste. All of these Counties lie along the highway 101 corridor for easy transportation access, except for Napa County which is adjacent to the east.

Currently there are two possible opportunities for future cooperation with one or more of these counties:

- Share in use of a Regional Landfill, were a new landfill to be sited and developed within the five county area, and/or
- Participate in an export agreement to transport solid waste to a landfill(s) located outside of the five county areas, should larger volume result in a lower price.

The opportunities identified above can be further separated into four options for regional cooperation regarding disposal, two each for import to Sonoma County and two each for export:

- Option 1 - Import additional waste into the current County System,
- Option 2 - Import waste into the County for disposal at a new landfill,
- Option 3 - Export Sonoma County waste to an existing or new landfill located in one of the nearby counties, or
- Option 4 - Export waste jointly with one or more nearby counties to a host landfill in another location.

Option 4 has the most potential of the four options identified above, if for no other reason, ease of implementation. It just requires new or modified contracts rather than development of new landfill capacity. Several key questions would need to be addressed prior to consideration of this option. These are addressed in the evaluation section. .

Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Handle Source Separated and Non-Source Separated Recyclables

Currently, only North Bay Disposal Corporation (North Bay) and Empire Waste Management (Empire) operate Materials Recovery Facilities (MRFs) within Sonoma County. North Bay is attempting to develop a new MRF in Santa Rosa to handle curbside collected single-stream mixed recyclables, construction and demolition wastes and some other mixed loads of refuse. Each of these MRFs is utilized by their respective hauler to process source separated recyclables collected from their curbside routes. These routes represent the bulk of source separated recyclables generated by residents within the County. Empire indicates that they have 50% of their overall processing capacity available, while North Bay indicates that they have reached capacity at their current facility (this is one of the reasons they are attempting development of another facility). Understanding these factors indicates that the County does not need to develop any new MRF capacity to handle the source separated materials collected curbside. The private sector indicates that they can handle processing of these materials.

Although sufficient MRF capacity exists to process the County's source separated materials, a MRF should be considered to handle non-source separated mixed materials (refuse) generated by the County's residents and businesses. The non-source separated recyclables MRF facility could accept and process those materials targeted for landfill disposal to recover recyclable and reusable materials and reduce the amount of materials destined to be landfilled. Table 3 shows the composition of those mixed waste materials based on the 1999 California Integrated Waste Management Board's Statewide Study, including 2004 and 2025 estimates of tonnage based on CoIWMP and updated 2003 figures. Based on our knowledge of industry practice we have also included potential recovery estimates for those

materials such as paper, glass, metal, plastic, organics and construction and demolition (C&D) materials. The non-source separated recyclables MRF diversion rate is estimated to be about 17% based on the composition of incoming Sonoma County waste. Overall additional Countywide diversion, based on a total of 1,105,841 tons estimated to be disposed and diverted in 2004, (averaged from CoIWMP and updated figures) is approximately 7.7%.

A facility of this type should be centrally located for easy access by all jurisdictions. Locating the non-source separated recyclables MRF at or near the existing Central Disposal Site (CDS) might be beneficial for several reasons:

- Centrally located
- Transport infrastructure, including transfer stations exist
- Assist in reducing materials destined for landfill at Central or export
- Existing CDS Tipping Facility and Recycle Town could be expanded to incorporate MRF functions.

The capital cost of this size and type of facility would be approximately $15,000,000 to $25,000,000. Operating costs would be approximately $30 to $45 per ton for this size and type of facility. Typical overall tipping fees for this facility would be in the range of $35 to $55 per processed ton. It should be noted that this cost for materials processing is in addition to disposal costs for the remaining 83% of the incoming waste stream.

Alternative 10 – Development of an Organics Processing Facility

BVA has reviewed the past work the County commissioned reviewing the technical, environmental and economic feasibility of developing an Organics Processing Facility utilizing the technologies of Anaerobic Digestion and Biorefining. For the purpose of our analysis, anaerobic digestion is defined as a natural biological process of treating biodegradable waste by means of bacterial action, but in the absence of oxygen. The process generates a biogas mixture of methane (CH4) and carbon dioxide (CO2) with some other gases depending on the feedstock. The biogas can be used to fuel an engine for electrical production and thermal generation. The process requires stable conditions for temperature and moisture. Likewise, Biorefining which is also a biochemical fermentation process, employs hydrolysis and fermentation to produce different products such as ethanol and lignin. Ethanol can be used as a vehicle fuel. Lignin can conceivably be used to fire a solid fuel boiler for steam or electricity production.

Although both of these conversion technologies have promise as a means to beneficially extract energy from mixed MSW, the current state of development does not support consideration by the County in the near to mid-term. Interest exists internationally to develop and demonstrate reliable and cost effective technology employing both processes, but to date much of the work has been on a small scale pilot basis or on larger scale projects utilizing mainly non-MSW feedstocks or targeted components of the MSW stream.

Much of the challenge of going commercial with this technology has to do with the heterogeneous nature of MSW and the effect the material has, even after preprocessing, on the subsequent biochemical process and equipment. Therefore at this stage, reliable performance and cost information are not available. Although these technologies hold a lot of promise and the County should continue to monitor the progress of these technologies, currently embarking on development of an anaerobic digestion or biorefining project is a risky R&D effort. However, if the County develops the MRF discussed in Alternative 9 , an organics processing facility might fit in well as an adjunct process to handle the large amounts of organic materials separated from recyclables. Again, this alternative should be revisited in several years when more reliable actual operating history is available.

Alternative 11 – Privatization of All or Part of the Solid Waste System

The consolidation of solid waste systems has increased the amount of private company investment in developing, constructing and owning facilities. For this alternative, the County would consider selling all or a portion of the publicly-owned solid waste system to a private entity. The potential benefits of privatization, including potential cost savings and reduction in responsibility and possible long-term liability must be balanced with the potential loss of control over guaranteed disposal capacity and cost. In addition, the Sonoma County CoIWMP currently includes a strong and explicit provision to keep the system publicly-owned, and this provision would need to be revised prior to privatization. The benefits and risks to the County and other member jurisdictions need to be considered in any analysis of potential privatization.

In California, there is a broad range of experience with privatization. "Privatization" is an often used term that includes a variety of circumstances. Stockton recently sold a landfill and post-closure responsibility for several closed landfills. San Diego County sold its entire landfill system and retains no direct control over capacity or pricing. Riverside County recently decided to privatize transfer station ownership but keep landfills publicly-owned. San Bernardino County and the Salinas Valley Solid Waste Authority retains facility ownership but provides for long-term operations contracts that also privatize the day-to-day management of the system.

The private sector is often touted as being more “efficient”. Some of this efficiency is quite real, such as the ability to rapidly make decisions and act on them. Larger waste management companies have a wealth of experience to draw on from around the country, and of course immediate access to capital. However, other "efficiencies" can be false economies such as poorer wage and benefit packages. For some larger waste management companies, a high internal return on capital is a key profit center with the company acting as its own bank, and the public sector may well have access to less expensive capital. The private sector has a cost that the public sector does not have - the need for a ten to fifteen percent (or higher) corporate overhead and profit margin that can balance out much of the real or perceived gains from efficiency. In summary, while privatization has its benefits it is not always the best solution.

The following are key steps for the County in pursuing a privatization of one or more facilities:

- Obtain an independent and confidential assessment of the savings to be gained by private operations and appropriate sale price if this is part of the privatization program.
- Conduct a competitive process for the operations and/or sale similar to that the County is pursuing for obtaining out-of-county landfill capacity.
- Do not entertain sole source proposals.

Evaluation and Scoring

BVA conducted an evaluation of the eleven alternatives based on twelve previously developed criteria listed below in Table 1. A weighted points system was developed based on the priorities of the County as shown in Table 1.

Table 1 | Evaluation Criteria and Weights

Criteria	Weight (pts)
Operating History	6
Diversion Potential/Consistency with AB 939 Hierarchy	14
Distribution of Economic Benefits and Impacts, and Social Equity	6
Environmental Consequences	10
Role of Public Sector Entities & JPA Participation Potential	7
Regulatory Cooperation	7
Disposal Needs and Obligations	9
Capital Costs	6
Operating Cost	7
Cost per ton	9
Siting, Design, Permitting and Construction Requirements	9
Effect on Current System Costs	10
Totals	**100**

Each alternative was evaluated with respect to the specified criteria and a score between 1 and 5 points was assigned (5 points for most consistent with County goals; 1 point for least consistent with County goals and 3 points for those that were relatively neutral or had no effect on County goals). The points assigned for each criteria was then multiplied by the

weights assigned above and then summed for all criteria evaluated for each alternative. A summary of these results are listed in Table 2 below.

Table 2 | Alternative Scoring

Alternative	Score
Short-Term Alternatives	
Alternative 1 – Exporting of Solid Waste Outside of County	**312**
Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste	**341**
Alternative 3 – Maximize Diversion in the County through Zero Waste Policies	**355**
Alternative 4 – Expansion of the Central Disposal Site	**292**
Alternative 5 – Subregional Waste System	**232**
Long-Term Alternatives	
Alternative 1 – Exporting of Solid Waste Outside of County	**312**
Alternative 3 – Maximize Diversion in the County through Zero Waste Policies	**378**
Alternative 6 – Development of West Expansion Area	**285**
Alternative 7 – Development of New Long-Term Landfill Capacity in the County	**236**
Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County's Waste	**333**
Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Handle Recyclables	**278**
Alternative 10 – Development of an Organics Processing Facility	**248**
Alternative 11 – Privatization of All or Part of the Solid Waste System	**276**

Detailed results were tabulated and are included in Tables 5 and 6 attached at the end of this report. Detailed analyses and evaluations are included below.

Short-Term Alternatives

Alternative 1 – Exporting of Solid Waste Outside of County

Analysis

Based on the Waste Discharge Requirements issued by the North Coast Regional Water Quality Control Board.(RWQCB), as of July 1, 2005, most or all of the solid waste generated in the county will require out-of-county disposal for a period of one to three years. There are no operating landfills in Sonoma County, other than the Central Landfill (Central), and the County now exports a relatively small amount of waste (about 300 TPD) to save limited capacity at Central.

The County has developed, and released a Request for Proposals (RFP) for transport and out-of-County disposal of solid waste. Out-of-County capacity needs to be available, whether or not it is all actually used for current disposal levels ranging from about 1,100 to1,400 tons per day (TPD) average and up to about 2,500 TPD on peak days, plus any anticipated growth in tonnage over the period from July 2005 through 2008. The RFP and contracting process takes a number of months and thus the County is proceeding expeditiously to assure that a contract is in place prior to July 1, 2005. Contract provisions will ensure that the County Solid Waste Management System (System) is able to handle all jurisdictional needs in the short-term to retain these wastes within the System should regulatory issues with the North Coast Regional Water Quality Control Board (RWQCB) be satisfactorily resolved and the need for export be reduced or eliminated. The RFP provides that waste be directly transferred from each of the smaller transfer stations, rather than first being transported to Central. In order to maximize the number and attractiveness of responses and to provide the broadest range of opportunities, The RFP requests proposals for three options: a) transfer only, b) disposal only, or c) transfer and disposal.

The County may wish to enter into separate contacts with multiple facilities for several reasons. First, adequate capacity may not be physically available at one single site. Second, based on the current market for capacity, guarantee of the full capacity may be more expensive on a per-ton basis than for a portion of the tonnage. Third, host county concerns about import from Sonoma County could impact the contracted landfill's ability and cost to take waste. Host fees can typically range from five to fifteen percent of the disposal fee. Fourth, technical issues at the disposal site could impact the contracted landfill's ability to take waste. To some extent these issues can be addressed with contract language that to the maximum extent possible places the burden on the disposal site to find an alternative site, and to pay any net increase in transport cost and tip fee should it for any reason be unable to accept the County's waste.

While the combined cost of transport and disposal will be a key factor in evaluation, the RFP will allow the County to look at a variety of other factors including qualifications and experience, environmental and cost trade-offs related to longer transfer distances, diversion potential, etc. The contract(s) will guarantee the availability of capacity without providing a "put or pay" or minimum tonnage commitment that could impact the attractiveness of options to reduce the waste stream requiring disposal.

The County has collected preliminary information regarding eleven public and private Northern California landfills that are potential sites for disposal of exported waste. These sites include:

- Anderson Landfill
- Clover Flat Landfill
- Forward Landfill
- Hay Road Landfill (B&J Landfill)
- Keller Canyon Landfill
- Kiefer Landfill (Sacramento County)
- Lockwood Landfill
- Potrero Hills Landfill
- Redwood Sanitary Landfill
- Vasco Road Landfill
- Yolo County Central Landfill

Analysis of transportation costs (from the County to these disposal sites) and representative disposal fees recently negotiated by other jurisdictions, indicate total export costs may be available to the County in the $30 to $35 per ton range. We understand that the County is currently paying approximately $36 to $38 per ton for these export services. There should be some cost reduction from the current transfer station operations since waste streams from the five transfer stations will be exported directly to their disposal destinations rather than first going to the Tipping Building at the Central Disposal Site (CDS), and since the current exported tonnage will no longer be transported and disposed under emergency contract provisions. As noted above, the County may also have to, in some form, compensate the host county(ies).

Note that regardless of how or whether waste leaves the County, the County incurs and will continue to incur costs related to past disposal. At a minimum, closure and post-closure costs for older portions of the Central Landfill and other closed landfills that had been used in the past by all generators are "system costs" that should be borne by all current and future solid waste generators in the County. Other costs such as the cost of the rural site transfer system (or its alternative, illegal disposal) arguably are also "system costs" that

should be borne by the entire County. This issue is analyzed in detail under Alternative 2, but the funding of unfunded costs should be addressed as part of any decision to commence waste export under this Alternative 1.

We understand that the County has recently received an unsolicited proposal for short-term export of waste out-of-county. The County should review, analyze and consider this proposal. However, since the RFP has been released considering the potential for competitive pricing from the RFP process, the County should not abandon this process. Instead the County should run parallel processes negotiating with the unsolicited proposer while soliciting for other offers through the RFP process.

Evaluation

A. Operating History – Score 5

Transport to out of area sites, and landfill disposal have a long and proven track record and is the industry standard. Landfill disposal is the best of several options for final disposal of solid waste, and is cited in the AB 939 hierarchy as preferable to transformation. Landfill disposal is not completely safe and, among other impacts can result in contamination to soil and groundwater, but these risks to the County can be minimized through strong contract language.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

This alternative does not impact diversion objectives, plans or activities as long as there is no contractual “put or pay” or minimum tonnage commitment. Low cost landfilling, however, may impede the implementation of more expensive diversion programs.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 2

This alternative results in reduced jobs, income, and investment locally. Curtailed disposal at Central will result in loss of positions. These impacts can be mitigated to the extent that a preference is given for transporters that are headquartered in the County and/or that hire locally.

D. Environmental Consequences – Score 2

Export of solid waste will result in environmental impacts both during transport and during disposal. To some extent these impacts can be reduced. Transport results in air quality and traffic congestion impacts, some of which will occur local and some outside of the county. Out-of-county air impacts are functions of the roundtrip distance for transport and the relative per-mile fuel requirements for each route depending on the types of road.

Disposal has real environmental consequences such as use of land, greenhouse gas emissions, traffic impacts around the site, etc. Disposal also has potential environmental

consequences such as groundwater and soil contamination, local air quality impacts, etc. In addition, not all sites can provide equal assurances regarding environmental risk. The result may be cost and environmental trade-offs such as selecting a disposal site(s) that are more distant but safer. From a liability standpoint, most or all of the risks of disposal of County solid waste can be minimized if not eliminated through negotiated contract provisions.

Environmental justice concerns may arise depending on the transport route (locally and out-of-county) and the disposal site location, with relation to poor and minority populations. Also, see discussion under Criteria K regarding impact of possible concerns that may be raised by the host county(ies).

E. Role of Public Sector Entities and JPA Participation Potential – Score 4

The alternative maintains the authority of the County, the jurisdictions, and the JPA and can be implemented with no change in current organizational roles or responsibilities within the County. The alternative, by buying time for development of longer-term sustainable alternatives that maximize diversion has some potential to increase opportunities for cooperation and shared responsibility among the various parties.

However, some form of near-term commitment of the waste stream to the County system, as discussed under Alternative 2, will likely improve the export disposal price per-ton that all system users will pay. In addition to cost, and with relation both to staff experience and size of waste stream, County staff is in a better position than the staff of individual jurisdictions to evaluate the safety of out-of-county disposal sites and to negotiate the strongest contract.

F. Regulatory Cooperation – Score 3

This alternative may help buy additional time to address the concerns of the RWQCB, but otherwise does not have appreciable impact on regulatory cooperation.

G. Disposal Needs and Obligations – Score 3

The alternative does not add to disposal need, and thus is neutral in impact with regard to this criterion.

H. Capital Costs – Score 3

Transport firms may need to incur capital costs such as purchase or lease of vehicles, and any such costs will be included in the per-ton transport fee. The selected disposal site operator(s) may need to incur capital expense in order to accept County wastes, and any such costs will be reflected in the negotiated per-ton disposal fee(s). In general, this alternative will create little or no capital expenditure requirements for the County. The County may want to consider expansion of the Tipping Facility at the CDS in the short-term. The majority of vehicles that currently utilize the Central Landfill will now have to utilize the Tipping Facility.

I. Operating Costs – Score 3

Transport and disposal site operating costs will be part of the negotiated disposal fee(s). Fees are anticipated to be in the range of $30 to $35 per ton and to be somewhat less expensive than their current operating cost at Central.

Some County operating costs may be reduced since waste will be transported directly from each transfer station to the disposal site rather than first being transported to Central, however, the County will incur administrative costs associated with managing the contract, including disposal and diversion tonnage verification, invoice review and payment, etc.

J. Cost Per Ton – Score 3

Combined cost per ton for transport and disposal will be in the likely range of $30 to $35 per ton (without host fees), which is less expensive than current Central Landfill operating costs.

K. Siting, Design, Permitting and Construction Requirements – Score 4

With regard to timing, this option must be developed quickly. There is just adequate time to conduct the RFP and contracting process if the County proceeds expeditiously following the schedule defined by County staff.

Ability of each proposing disposal site to accept waste July 1, 2005 will be a key component of proposal evaluation. We do not anticipate any need to make significant changes in site infrastructure in the short-term. As noted in the analysis section and in discussion of Criteria E, the host county(ies) may raise concerns regarding the import of some or the County's entire disposal stream. We recommend that the County, following selection of a shortlist of disposal sites directly approach the host county(ies) and discuss its needs and plans, and to be sure that any host county requirements including landfill site permit conditions and/or host fees, are met. Being proactive would be preferable to either 1) hoping that issues do not arise, or 2) relying on a private disposal company to address any issues. It is possible that these issues may be more easily addressed for a publicly-owned site since the host county and the operator may be the same party.

L. Effect on Current System Costs – Score 3

Alternative 1 has a potentially lower per-ton cost, and hence some positive impact on system costs. To the extent that the County system manages and exports reduced tonnages due to decisions by individual jurisdictions to individually export waste for disposal, there will be growing unfunded County expenditures and a corresponding deficit. However, in lieu of implementation of some sort of system charge as discussed in Alternative 2 there will be the need to address very serious issues such as the legal obligation of all past system users to contribute to closure and post-closure expenses, and the County's ability to maintain a system of transfer stations serving the more rural areas of the county. Near-term decisions about how much tonnage will be committed to export under the County contract discussed in Alternative 1 forces a beneficial consideration (from the perspective of the County as a

whole) of these issues. Taking into account these system costs, overall costs may not be affected.

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Analysis

Background

The purpose of this alternative is to identify and analyze short-term options for the future role of the Sonoma County Waste Management Agency (Agency) assuming continuation of the current membership. The Agency, as currently constituted, documents AB 939 compliance to the state, plans and implements Countywide programs such as HHW collection and yard debris composting, interacts with County staff and with the Local Task Force in program planning and implementation, and participates in longer-term planning processes such as development of the CoIWMP and the Long-Term Solid Waste Alternative Analysis Project. The County is a member of the Agency, which is staffed by County employees. The Agency Board is comprised primarily of member agency staff members and some elected officials. The Agency agreement requires unanimous votes for all actions, on the annual budget, on budget expenditures over $50,000 and changes to its scope of responsibilities , and thus it only takes one dissenting member to postpone or end consideration of most significant issues.

Historically, all members of the Agency used the County system of transfer stations and landfills for management of waste, and little if any waste was exported from the County. The Agency agreement does not currently address “flow control”, or commitment of solid waste to the County system. Nor does the County have bilateral agreements with individual jurisdictions that commit delivery of waste. To date, most jurisdictional collection agreements have provided that waste be delivered to the County system, but the City of Petaluma is now considering collection proposals, one or more of which would involve directly transporting collected waste out-of-County. The County’s licensed hauler agreements for collection in the unincorporated area require delivery to the County system.

The members of the Agency have for many years benefited from use of the County system. Assuming the feasibility of one or more options for expansion or development of new disposal capacity, as discussed in Alternatives 4, 6, and 7, Agency members can continue to enjoy the benefits that come with the economies of scale associated with larger tonnages and short transport distances.

However, as noted in the analysis of Alternative 1, regardless of whether or not waste leaves the County system, the County incurs and will continue to incur costs related to past disposal. These unfunded expenses must be addressed as soon as possible. At a minimum, closure and post-closure costs for older portions of Central Landfill and other closed landfills

that had been used in the past by all generators are "system costs" that should be borne by all current and future solid waste generators in the County. As noted below, other costs such as the cost of the rural transfer site system (or its alternative, illegal disposal) are arguably also "system costs" that should be borne by the entire County. Export of waste in the short-term, whether through County contract as described above for Alternative 1, or by decision of individual jurisdictions heightens the need to ensure these costs are met by means other than, or in addition to, County landfill tip fees.

Options for Agency Organization and Responsibility

Numerous solid waste joint powers agencies (JPAs) across the state have substantially larger roles and responsibilities than the Agency currently has. The following is summary information for a sampling of JPAs, and in the case of Santa Barbara County a long-term planning body:

- **Humboldt County.** The Humboldt Waste Management Authority (Authority) is an enterprise fund with its own staff that finances, owns, and contracts for the operation of a transfer station that manages the majority of the waste stream. Solid waste is exported out-of-County for disposal. The Authority is exercising a buy-out clause, and intends to take over full operation of the facility and disposal contracting.
- **Monterey County - Marina Regional Waste Management District.** The District covers the coastal area of the County, owns and operates the Monterey Regional Landfill with its own staff, and contracts for private collection on behalf of its member agencies. The District operates award-winning diversion programs at the MRF located at the landfill.
- **Monterey County - Salinas Valley Solid Waste Authority.** The Authority owns two active landfills that are operated privately under contract and upon pending termination of an existing private sector agreement will also own a transfer station and contract for its operation. The Authority's members contract individually for collection services. The Authority is also responsible for long-term closure/post-closure of several landfills that were formerly County-owned. The Authority also provides AB939 compliance, household hazardous waste and public education services to its member agencies.
- **Napa County.** The Napa-Vallejo Waste Management Authority (Authority) serves the southern portion of Napa County, and Vallejo in Solano County. The Authority owns a transfer station and contracts for facility operations and export for disposal. The Authority is currently developing a construction and demolition debris recycling program.
- **Santa Barbara County.** Santa Barbara County owns and operates a major landfill and several transfer stations. In 2001, the County and the cities created the Multi-Jurisdictional Solid Waste Task Group. This group evolved from a smaller more informal group with a charge to "provide a forum to discuss and plan countywide long-term solid waste management strategies and facilities." The Group has met on a continuous basis, developed a "Long-Term Solid Waste Management Plan" with a focus on diversion programs. The members are elected officials and the Group has a technical advisory

committee with a range of public agency staff. Understandably, Agency members will probably need resolution of, or at least greater certainty regarding current Regional Water Board issues related to the Central Landfill in order to see any benefit to initiate the Sonoma County Waste Management Agency's role in disposal.

The following are a range of options that provide a greater role for the existing Agency. The options are not mutually exclusive, or in any particular order. The options reflect various JPA structures, roles and responsibilities that work effectively around the state.

- Strengthen role of Agency in identifying and recommending jurisdictional diversion programs.
- Restrict representation on the Board to elected officials, with jurisdictional staff serving as a technical advisory committee.
- Modify the voting system to reflect the will of the majority, possibly with some degree of weighting based on population or other characteristics.
- Develop an Agency that is a fully autonomous or nearly fully autonomous from the County, for instance by developing an enterprise fund and providing full staffing.
-
- Member jurisdictions commitment to cover System costs (long-term landfill closure and post-closure costs) to the County or to the Agency through the JPA agreement.
- Facilitate flow control to the County or to the Agency through bilateral agreements between individual jurisdictions and the County or Agency.
- Form a special district in order to take advantage of taxation powers.

Options for Funding Ongoing System Costs

Jurisdictions with publicly-owned facilities have addressed the issue of unfunded system costs in a variety of ways. Following are sample solutions to the problem.

- **The City of San Diego** levies a franchise fee of $12 per ton for all waste generated in the city, regardless of where it is disposed. The intent of the fee is to ensure full contribution to closure and post-closure costs for closed portions of the City's Miramar Landfill.
- **Lane County, Oregon** (County seat, Eugene) owns and operates a system of transfer and disposal facilities. In 1998, in the absence of any contractual flow control commercial haulers began to take increasing tonnages out-of-county for disposal. The County developed a "system benefit charge" (SBC) to fully fund County programs that was implemented by County ordinance. The SBC stipulates a per-ton surcharge for all tons generated in the County, is part of the system fee at County facilities, and is remitted by all haulers that do not use the County system. The SBC began as the equivalent of $16 per ton and is now $17.60, and covers:

  - Closure and post-closure cost for older portions of the landfill that had been used in the past by all generators.
  - The cost of the rural container sites, including the cost of transfer to the landfill, but not the cost of disposal.
  - The entire cost of County recycling and waste prevention programs at the rural sites and at the central transfer station.
  - The entire cost of the special waste and HHW programs, except for disposal costs associated with inadvertent County collection of such wastes at the central transfer station and landfill.
  - The allocated share of County staff and overhead costs directly related to providing the above services.

- **The Mendocino County** disposal stream is exported out-of-county. Mendocino County levies a surcharge of $4.50 per ton of waste to fund the Mendocino County Solid Waste Authority that manages AB 939 reporting for each of the jurisdictions, and conducts recycling, HHW and e-waste collection, and public education programs. The surcharge applies to all jurisdictions that are Authority members.

While each of the above examples involves different circumstances, different types of costs, and use of different but related mechanisms, each jurisdiction's goal was the same; to ensure full funding of specific systems costs, regardless of where waste is disposed. Legal counsel should review the application of an SBC-type charge for applicability of Proposition 218. However, in general most attorneys do not believe that Proposition 218 applies to solid waste charges. Note that:

- The entire purpose of an SBC is to create a targeted user fee.
- In the case of Lane County, the SBC is a redistribution of existing charges and thus has not direct impact on ratepayers.
- Should the County institute an SBC that has an added component(s) to meet previously unfunded expenses and that would thus impact ratepayers, then perhaps Proposition 218 would apply (if at all) to just the new added increment of the charge.

With or without implementation of these options by the Agency, the County needs to fund past liabilities and ongoing System components. Currently, all of the funding for these expenses are being charged through the tipping fees at County disposal sites. With one jurisdiction already leaving the System and others potentially to follow, these costs need to be separated from the landfill tipping fee and charged directly to the users. As discussed, these charges are already included in the current tipping fee rate and just require reallocation (not raising). The County needs to carefully assess and appropriately allocate these costs. Costs for current and projected users of the landfill need to be charged for day-to-day landfill operations; cost for System components and past landfill liabilities need to be allocated and charged to the responsible jurisdictions. The County needs to finalize the cost

allocations and begin discussions with the various jurisdictions regarding the responsible sharing of these costs.

Although, as part of this study we will be reviewing the reduction of the landfill tip fee through reallocation of current fees, the County in cooperation with the JPA members may want to consider the following:

- Conducting a cost of service study to identify, and to accurately and defensibly allocate all County expenses that should be considered "system costs". (The Lane County example indicates a level of specificity that is useful in distinguishing "system costs".)
- Conducting an analysis of County solid waste programs, staffing, and costs to ensure cost-efficiency and appropriateness. The County project team has collected initial information for a range of other California counties with substantial rural areas regarding the number of transfer and disposal facilities in each system, and the days and hours of their operation. Preliminary analysis supports the County staff sense that some cost savings can be realized by reducing days and/or hours of operation at several of the transfer sites.
- Reexamining the fee structure at all of the facilities, and particularly the smaller facilities with relation to cost coverage. Identifying any alternative means (such as a gate surcharge for self-haulers, and a collection surcharge to subscription customers using those sites) to cover some or all of the cost of the smaller facilities that by their nature are relatively more expensive on a per-ton basis.

Evaluation

A. Operating History – Score 5

There are numerous, well-functioning solid waste joint powers agencies in California that have a role and level of responsibility that exceed that of the Agency as currently constituted. Many of these manage waste streams of comparable or greater size. There are successful models for every type of potential change in the Agency.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 4

The diversion effect of a larger role for the Agency is potentially positive, depending on the level of increase in diversion program responsibilities by the Agency.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 3

The economic and social benefits of an expanded role for the Agency are, in and of themselves, neutral. Whether a change in Agency role and/or structure will have a positive or negative impact with regard to this criterion depends on the nature of future decisions made by the Agency.

D. Environmental Consequences – Score 4

The structure of the Agency is at least neutral with regard to environmental impact and mitigation, and social justice issues. But to the extent that the Agency provides a cohesive approach to solid waste planning, there will be reduced environmental impact and fewer or less serious social justice issues.

E. Role of Public Sector Entities and JPA Participation Potential – Score 5

This alternative directly and fully addresses this criterion.

F. Regulatory Cooperation – Score 3

This alternative does not have appreciable impact on regulatory risk or cooperation.

G. Disposal Needs and Obligations – Score 3

This alternative does not, in and of itself, affect short-term disposal needs or obligations. However, the alternative could form the basis for concrete long-term solutions to disposal needs.

H. Capital Costs – Score 3

Not applicable.

I. Operating Costs – Score 3

There may be increased costs for the Agency, such as staffing depending on the type and degree of change in its role and responsibilities, but these costs would be offset by savings to the County and possibly other jurisdictions.

J. Cost Per Ton – Score 3

This alternative should either have no significant impact on cost per ton, or a slightly positive effect due to economies of scale depending on the type and degree of change in the Agency's role and responsibilities.

K. Siting, Design, Permitting and Construction Requirements – Score 2

Given the current uncertainties in regard to regulatory issues at Central Landfill and the associated liabilities, it will likely be difficult to develop consensus for an expanded role for the Agency during the short-term planning horizon. However, the timeframe is more than adequate to address the issue of unfunded expenses.

L. Effect on Current System Costs – Score 3

This alternative should either have no significant impact on system costs, or a slightly positive effect due to economies of scale depending on the type and degree of change in the Agency's role and responsibilities. In addition, as part of this alternative system, costs that are not now funded may become funded.

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Analysis

The 2003 Countywide Integrated Waste Management Plan has identified policies and programs to reach 70 percent diversion by 2015. The County achieved 55 percent diversion in 2003. As an alternative or complement to facility development and exporting of solid waste generated in the County, the County and the Cities should accelerate and enhance their source reduction and recycling plans to maximize diversion. The County should also establish specific zero waste policies and programs to reduce the generation of materials that need to be recycled or disposed.

Short-term Policies

- **Accelerate plans for 70 percent diversion goal**. The County has established a countywide diversion goal of 70 percent by 2015 and has developed a recycling plan that identifies the programs, costs, and funding to reach 70 percent diversion.
- **Mandatory source-separation**. The County is already in the process of considering a mandatory recycling opportunity ordinance, which would require all residents and businesses to have available access to recycling programs Additional diversion could be achieved by having, all jurisdictions implement a mandatory source-separation ordinance requiring the separation of recyclable materials into the appropriate containers. Aside from the staff time required to develop the ordinance, there are no specific costs associated with the mandatory source-separation ordinance. However, the ordinance may require additional resources for outreach and enforcement. For purposes of evaluating this component, we will assume that the additional resources needed for code compliance and outreach personnel would amount to one full-time equivalent staff person or $100,000 per year.
- **Landfill bans**. The County has already banned disposal of green waste, wood waste, cardboard and scrap metal. The County may wish to consider adding materials such as paper and food waste (when organics processing facility is available) to the landfill ban and conducting more aggressive enforcement of the current ban. To more aggressively enforce the landfill ban, personnel at the fee gate at each transfer station and at the landfill would need to check each load and redirect

self-haulers to the appropriate drop-off locations. The County would also need to work closely with the cities and the franchised haulers to ensure that the source-separation programs are being implemented effectively. The County would need to conduct periodic checking of loads from the franchised haulers to determine program effectiveness and recommend corrective action. The County already conducts a load-checking program for hazardous wastes. It is possible that the County could conduct these additional load-checking activities with the staff and contractor resources currently in place at landfill and transfer stations.

- **Countywide construction and demolition debris diversion ordinances**. The County has regulated construction and demolition debris (C&D) by restricted disposal of wood waste, cardboard and scrap metal at the landfill. However, C&D remains a component of the County's waste stream and some C&D may by-pass the County system and disposed in landfills outside of the County. The City of Santa Rosa passed a C&D ordinance requiring all C&D haulers to obtain a non-exclusive franchise from the City that requires 50 percent diversion of all C&D collected in the City. The cities of San Jose and Stockton require all C&D generators to demonstrate 50 percent recycling, as a condition of the building permit. The County and the cities may wish to consider establishing even higher recycling requirements for C&D haulers or generators. The San Jose C&D program includes a deposit system where building permit applicants place a deposit based on the square footage of the project. Once the applicant has demonstrated that it has recycled C&D either through one of the C&D diversion facilities certified by the City or by providing receipts documenting diversion, the deposit is returned to the applicant. The City employs two staff to implement the C&D program, who are responsible for certifying C&D facilities, reviewing reports prepared by C&D generators, and managing the deposit system. A portion of the program costs are paid by the "float" from the deposits held by the City. For purposes of evaluating this component, we will assume that the additional resources needed for C&D program management would amount to one full-time equivalent staff person or $100,000 per year.

- **Product stewardship**. Product stewardship places the responsibility or cost of disposal or recycling of particular materials on the manufacturers of products. An example of this is the State's original bottle bill (AB 2020) processors fee. Another example is new Senate Bill, SB 20 which will place a $6 to $10 charge to the consumers on all CRT containing devices such as computer monitors. This bill will be effective January 1, 2005. Most product stewardship programs require implementation on the State level. However some programs lend themselves to implementation on the County level. One program the County could implement is to

require building construction contractors to build “green buildings” or require some recycled content use. This would put the responsibility on the building manufacturers to use recyclable building materials. The County has already focused on product stewardship for household hazardous wastes and electronics. The Waste Management Agency has been involved in local organizing and lobbying efforts to influence regulatory product stewardship efforts at the state and federal level. The County could take the further step of adopting a precautionary principle approach, including full-cost accounting, to reduce the impacts on human health and the environment in all County decision-making. Other than staff time within available staffing resources, no additional costs are anticipated.

- **Zero waste funding**. Should the County develop a zero waste goal, the County may need to establish a specific funding source, such as a landfill tipping fee surcharge or collection rate surcharge to fund these projects. The voters in Alameda County passed Measure D in 1990 which included a $6 per ton tipping fee (adjusted annually for inflation) to fund programs to reach 75 percent diversion and beyond. Fifty percent of the funds are distributed to the cities in the County to fund local programs and countywide programs are administered by the Alameda County Source Reduction and Recycling Board. The annual budget for the Board and its sister agency, the Alameda County Waste Management Authority, was $19 million for fiscal year 2004-2005. The joint agency does not own or operate facilities and does not manage collection contracts. The resources of the agency are dedicated to waste prevention and recycling programs.

Short-term Programs

- **Changing public behavior**. The Waste Management Agency has implemented efforts in community based social marketing to increase participation in recycling and composting programs. To build upon this effort, the County and the cities may wish to implement a more aggressive outreach and technical assistance program. To significantly increase program participation countywide with a goal of diverting an additional 5 percent per year, the County would need to spend at least about $150,000 per year.
- **Commercial, institutional and industrial outreach and technical assistance**. The Countywide Integrated Waste Management Plan anticipates the development of a new comprehensive business-centered program for the commercial/industrial sector. The City of Rohnert Park currently provides recycling technical assistance to commercial businesses and multi-family dwellings through a $30,000 annual contract. Countywide commercial technical assistance program costs range from $200,000 per year in San

Francisco to $570,000 per year in Alameda County (for hard costs not including staff costs). For purposes of evaluating this component, we will assume that the additional resources needed for staff and contractor assistance to implement this program in the County total about $100,000 per year.

- **Market development**. Developing local and regional markets for recyclable materials, particularly those materials that are prevalent in the County's waste stream but have limited markets, such as plastics, food waste, and reusable materials, could provide significant new diversion opportunities. The County may wish to assist local markets by more actively participating in the Sonoma/Mendocino/Lake Counties Recycling Market Development Zone. The most successful Recycling Market Development Zone (RMDZ) in the state are those that have staff dedicated to recycling market development. Support for retaining, expanding and attracting businesses to the County could be provided through siting assistance, businesses plan review, and direct financial assistance. The County may wish to consider establishing a grant program or revolving loan fund for local recycling and reuse businesses. Development of an eco-park or resource recovery park for recycling and reuse businesses located in Santa Rosa or adjacent to one of the transfer stations, could provide additional diversion outside of Recycle Town. Dedicated RMDZ staff and market development support to recycling and reuse businesses could amount to about $200,000 per year.
- **Salvaging for reuse at the landfill and transfer stations**. Nationally recognized Recycle Town at the Central Landfill is one of the pre-eminent drop-off programs for reusable materials located at a disposal site. A number of landfills and transfer stations, including the Berkeley Transfer Station and Sanitary Fill in San Francisco also employ staff or contractors to salvage reusable materials from loads that are being disposed at the tipping area. At Sanitary Fill, Norcal employees fill trailers with reusable items to be shipped to St. Vincent de Paul in Eugene, Oregon. Berkeley contracts with Urban Ore, a company that generates over $1.5 million in gross revenues per year, to salvage reusable material from the tipping area at the transfer station. The County may wish to consider licensing a scavenger to salvage reusable material from the landfill or transfer station tipping areas. The County could also station 40 cubic yard bins at the transfer stations for transporting reusable items from the transfer stations to Recycle town.
- **Bulky item collection**. Many communities offer bulky item collection programs specifically designed for reuse and recycling. The Central Contra Costa Solid Waste Authority contracts with Pacific Rim Recycling to collect items for resale and reuse through the East Bay Depot for Creative Reuse. San Francisco's Bulky Item Collection Program is an on-call collection program that targets the following items for recycling:

scrap metal, green waste, appliances, mattresses, and electronics. Costs for scheduled or on-call service range from $1-2 per household per month to $15 per pickup.

- **Source-separated organics**. Several Bay Area communities have implemented source-separated organics programs, targeting food waste, food-contaminated paper, waxed cardboard and other compostables. In some jurisdictions, such as Berkeley, Oakland, and San Francisco, special front-end loader commercial routes have been established for commercial food waste generators, including restaurants, and produce marts. In other jurisdictions, such as Alameda, Fremont and San Francisco, organic materials are co-collected with green waste and incorporated into the green waste collection program. The County intends to maintain separate collection for green waste composting locally. However, the County could consider implementing a dedicated route for source-separated organics generated by commercial businesses. Based on County staff estimates, there could be sufficient generators countywide to dedicate one collection route to source-separated organics. The material could be hauled to a compost facility outside of the County, such as Jepson Prairie Organics in Solano County. Assuming 500 pickups per day, five days per week at 7 tons per day. The County could divert approximately 1,820 tons per year at a cost of $230,000 or $127 per ton (assuming $80 per hour for transport and $35 per ton tipping fee).

Evaluation

A. Operating History – Score 5

Most of the zero waste policies or strategies for maximizing diversion identified above have an established precedent or regional example familiar to the County. Faced with dwindling landfill capacity and public pressure to conserve resources, many communities have established goals beyond 50 percent diversion and are implementing aggressive new recycling and waste prevention programs.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 4

All of the zero waste policies and strategies for maximizing diversion are consistent with AB 939 and the integrated waste management hierarchy. Zero waste policies based on source reduction or waste prevention are at the top of the hierarchy. Diversion potential for each approach varies from conceptual to significant.

C. Distribution of Economic Benefits, Social Equity, and Impacts – Score 5

Many of these policies are focused on local economic development, local program implementation and increases in jobs and social benefits. For example, Urban Ore in

Berkeley, operates a landfill salvage program and generates $1.5 million in gross revenues and employs 25 people.

D. Environmental Consequences – Score 5

Accelerating plans and programs to reach diversion rates in excess of 70 percent will have a positive effect on the local environment by reducing disposal. Alternatives that include transportation out-of-County or increased collection within the County, such as taking source-separated organics to Solano County or implementing new bulky item collection programs, may result in some air quality and traffic impacts. Development of new facilities such as resource recovery parks or eco-parks could have land-use planning impacts.

E. Role of Public Sector Entities and JPA Participation Potential – Score 5

Many of the zero waste policies and programs would require regional cooperation between the County and the cities. Most of the initiatives could be undertaken by the Waste Management Agency on behalf of the County and the Cities.

F. Regulatory Cooperation – Score 3

Most of the zero waste policies do not require cooperation from regulatory bodies.

G. Disposal Needs and Obligations – Score 4

This alternative has the potential to reduce the disposal needs of the County and the Cities.

H. Capital Costs – Score 3

Capital costs for this alternative are minimal; they include:

- Dedicating the principal funding for the revolving loan fund
- Development of a resource conservation park or eco-park

I. Operating Costs – Score 2

Annual operating costs for this alternative include:

- Mandatory source-separation - $100,000 for outreach and enforcement
- C&D program - $100,000 for implementation
- Changing public behavior - $150,000 for staff and contractor resources
- Commercial outreach and technical assistance - $100,000 for staff and contractor resources
- Market development - $200,000 for dedicated staff and business assistance
- Bulky item collection - $1-2 per household per month

- Source-separated organics - $230,000 for dedicated collection route
- Zero waste research and development - $56,000 annual grant to university

J. Cost Per Ton – Score 2

A number of the policies and initiatives include no new costs or costs for staff support only. Program costs for source-separated organics collection is estimated to be $127 per ton. Program costs for bulky item collection is estimated to be $150 per ton, based on $15 per pickup of 100 pounds of reusable or recyclable materials. Costs can be recovered by expanding the current AB939 fees to include zero waste programs and policies. In addition, a ballot initiative (like Measure D in Alameda County) could be placed on the ballot as a user fee, requiring only majority vote.

K. Siting, Design, Permitting and Construction Requirements – Score 3

Not applicable for most zero waste components. Siting of a resource conservation park adjacent to a County transfer station or in an industrially zoned area of Santa Rosa could have moderate permitting and construction issues. These issues could be mitigated somewhat by co-locating the park with existing hauler operations.

L. Effect on Current System Costs – Score 2

The zero waste policies and programs for maximizing recycling could be funded through user fees (such as for bulky item pickup and source-separated organics collection) or a new tipping fee or collection rate surcharge, as described above.

Alternative 4 – Expansion of Central Disposal Site

Analysis

An integrated waste management system must include a disposal element. Even the most aggressive diversion systems have residual wastes, which require disposal. Typically, a centrally located disposal facility within a defined geographical or political region provides its communities the highest level of control while also providing the lowest cost as compared to disposal at out of region disposal facilities. A locally owned and operated disposal facility eliminates costly transfer and transport expenses. Also, a publicly owned disposal facility provides its member agencies control over costs, service levels and environmental compliance when compared to privately owned facilities.

Presuming the local disposal facility operates within a similar regulatory requirement and operational capacity as disposal facilities in neighboring regions, the local disposal facility should have generally similar costs to other disposal facilities. The fundamental cost components of a disposal site could be summarized to include:

- Land purchase,

- Site infrastructure (access roads, entrance scales, environmental control facilities, etc.),
- Containment systems (Liner and closure improvements),
- Operations, and
- Management.

The Central Disposal Site is owned by the County. The site has been developed with the necessary site infrastructure to function accordingly. The cost of operations at the site appears within the range of other landfills with similar volume of waste. Similarly, the cost of management (administrative burden) of the site appears within the range of similar sized organizations. The primary challenge of this site is the potential cost of the containment systems. At the Central Disposal site groundwater can be shallow or surface in springs, therefore, the prescriptive standard of 5 ft. separation distance between groundwater and the bottom of the containment system is not achievable and an engineered alternative must be designed. The cost of installing an engineered alternative containment system, which will satisfy the RWQCB may be significantly higher than disposal facilities in other regions of California. Further complicating this issue is the fact that, at this time the RWQCB has not approved a containment system for any further expansion. So cost estimates contained herein are based on the liner system currently being discussed with RWQCB staff. Additionally, given the County's recent experience with the East Canyon Phases 1 and 2, each future phase of construction will likely require a separate approval by the RWQCB and therefore, the requirements could be subject to future changes.

The expansion of the Sonoma County Central Disposal Site entails development of one or more of three distinct areas on the site, the East Canyon, the Rock Extraction Area, and the North Area Expansion (Compost Operations Area). With all planned expansions the Central Disposal Site could provide capacity until approximately 2017, depending on the rate of refuse inflow. These are summarized as follows:

- **East Canyon Area:** The total estimated waste capacity of the East Canyon is approximately 6.9 million cubic yards. This includes approximately 2.2 million cubic yards of permitted capacity in Phases I and II (County staff estimates that Phases I and II portion of the East Canyon will be exhausted of its capacity by approximately July 2005 at current fill rates) and 4.7 million cubic yards of unpermitted capacity in Phases III, IV and V (representing approximately 7.8 additional years of capacity assuming a disposed capacity of approximately 600,000 cubic yards per year). The East Canyon Area is currently fully permitted by the CIWMB. However, the permitting and construction of Phases III and IV, and the subsequent Phase V, are suspended at this time pending the results of various studies and remedial actions required by the RWQCB, related to constituents of concern detected in water collected from the under drain below Phases I and II and areas of potential impact to ground water adjacent to the perimeter of the original Central Landfill.

- **Rock Extraction Area**: The total estimated waste capacity of the Rock Extraction Area is approximately 3.3 million cubic yards. By using the County's assumed landfill density and historic tonnage in-flow amounts, the Rock Extraction Area contains approximately 5.5 years of capacity. At the present time the County has had consultants prepare a conceptual design study. Full documentation for permit applications for regulatory submittals are in progress and not planned for submittal until the end of 2004. Therefore, there are no permits in place for this expansion at this time, the RWQCB has indicated that use of this area will depend on the outcome of the leachate and landfill gas extraction effort in the original landfill.
- **North Expansion Area:** The North Expansion Area would be a vertical expansion in the area currently being used as the Compost Operations area. County staff reports that the area can hold approximately two million cubic yards of capacity, equaling approximately 3.5 years of site life. We understand from County staff that the RWQCB requires a substantial liner for this expansion to separate the two waste management units. According to County staff, no design or permitting documents are in progress at this time. Therefore, the North Expansion Area is not permitted at this time to receive wastes.

When combining the potential expansions of the East Canyon, Rock Extraction Area and North Expansion Area at the Central Disposal Site, a total of up to approximately 12.2 million cubic yards of landfill capacity may be realized. Using an estimated flow rate of approximately 600,000 cubic yards of capacity per year, the proposed Central Disposal Site expansions represent approximately 16.8 years of capacity. However, according to County staff, the proposed expansions are contingent on various remedial measures for the existing Central Landfill and East Canyon required by the RWQCB. Accordingly, due to the lack of permits, the Central Disposal Site currently has permitted waste capacity only through July 2005.

As a result, the primary risk of the expansion of the Central Disposal Site is obtaining regulatory agency approval for the containment improvements. More specifically, the challenge is procuring regulatory approval that can be relied upon for the duration of the waste placement activities. The North Coast RWQCB appears understandably reluctant to approve of waste placement adjacent to the older fill modules due to various leachate and gas issues. While RWQCB staff is working cooperatively with the County to analyze the efforts being made by the County to demonstrate adequate control of leachate and landfill gas, it is uncertain at what point the RWQCB will be assured enough on these issues to allow waste placement in these areas. The possibility of initially securing a permit at the commencement of a containment system improvement and at a later time having the regulatory agency retract the permit appears to exist. . This permit predicament renders this alternative potentially unreliable.

The RWQCB issues Waste Discharge Requirements (WDR) that govern the placement of wastes at the site within the California Code of Regulations. The WDR describes that the

County discovered a release of waste constituents from the landfill to the shallow groundwater aquifer beneath the site. Further, the WDR describes the County's attempt to implement corrective actions to this release by implementing an Evaluation Monitoring and Corrective Action Program (EMCAP). The RWQCB issued a prohibition on the placement of wastes at the site beyond the currently permitted waste management units (East Canyon Phase I/II) as follows:

> *"Disposal of waste outside of the permitted footprint for Landfill I, Phases I and II of Landfill 2 as described in Report of Waste Discharge/Joint Technical Document is prohibited"*

The RWQCB cites the rationale for this action is the corrective action as follows:

> "*Monitoring information obtained following construction and commencement of operations of Phase I and II have indicated that this EAD (Engineering Alternative Design) may not be adequately protective of water quality. Efficacy of the EAD liner design is currently under review. These WDR's do not permit any landfill construction for further expansion*"

The RWQCB has not provided specific performance goals that the County must adhere to in order to resume with the expansion of the site. Consequently, it is not possible at this time to estimate with assurance the cost or extent of improvement needed to comply with the RWQCB. Further, it is not possible to estimate the amount of time necessary to secure regulatory approval. However as an attempt to develop a more robust containment system design, the County has developed conceptual designs which although not approved are believed to be acceptable to the RWQCB. The costs of these improvements are described in more detail under the economic issues below.

In spite of these uncertainties, the cost of this alternative should be the lowest cost of all of the alternatives as it does not require transportation of wastes out of the County or extensive capital improvements in addition to containment systems as are required in the West Expansion and New Landfill Alternatives.

Evaluation

A. Operating History – Score 5

The Central Disposal site has been operating since 1971. The Central Disposal Site has performed as the primary landfill for the region and has adequately accommodated the waste stream through these years of operation, accepting increasing quantities as smaller landfills within the County closed in recent years. The Central Disposal site has been reliable in its ability to handle the current and historical waste stream. Landfilling is the standard disposal methodology for the solid waste industry in California. Although, with the growth of urban development combined with increased land values, some urban landfills have been closed, landfilling remains the lowest cost, most common method of managing wastes in modern times.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

Continued operation of the existing landfill and expansion of the Central Disposal site does not affect the diversion potential of the County. The County may employ diversion plans without affecting the viability of this alternative. Landfill operations are consistent with the State's AB 939 hierarchy insomuch as landfills are the lowest option for sanitary management of municipal waste residues. This alternative does not directly contribute to educating the public about diverting waste, although funding of this education can be accomplished by appropriate financial management. This alternative does not have an impact on the long-term viability of working towards a zero waste goal. This alternative does not prohibit the highest and best use of materials in diversion processes.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 3

Continued operation of the existing landfill and expansion of the Central Disposal site does not affect the distribution of economic benefits, social equity or impacts. This alternative does not increase or decrease the potential for creating and maintaining employment or growth opportunities for residents, businesses and industries within the County. This alternative does not affect social equity.

D. Environmental Consequences – Score 3

Presuming the protective design features in combination with the prescribed corrective actions protect groundwater in compliance with CCR 27 at the Central Disposal Site, the environmental consequence of this Alternative is benign. The County has implemented a groundwater protection program that entails the extraction of the impacted shallow groundwater. The shallow groundwater is directed to the sanitary treatment facility where it is treated to appropriate discharge levels before being discharged. In this, the County has already implemented appropriate mitigation measures to this impact. The primary positive environmental benefits from implementing this alternative include avoidance of air quality and traffic impacts related to hauling wastes out of the County. This alternative does not generate environmental justice issues.

E. Role of Public Sector Entities and JPA Participation Potential – Score 3

Continued operation and expansion of the Central Disposal Site continues the existing role of the public sector entities. Reduced participation of the various entities extends the remaining life of the site, albeit at a higher per ton cost.

F. Regulatory Cooperation – Score 1

Based on conversations with County staff, correspondence and Waste Discharge Reports from the Regional Water Quality Control Board (RWQCB) it appears regulatory agency approvals at this site in the future are uncertain. The inability for the County to rely upon the

acceptable permit status condition of the site affects the County's ability to reliably depend upon the landfill as a long term disposal facility. As a result, the primary regulatory risk related to implementation of the alternative is the unreliability of the regulatory agency approval. The financial and legal impact of lack of regulatory approvals is the fact that the County is unable to be relied upon by the various jurisdictions directing their wastes to the facility. Aside from legal clarification of an acceptable corrective action program, it is unclear how regulatory cooperation can be accomplished.

G. Disposal Needs and Obligations – Score 4

Expansion of the Central Disposal Site can provide necessary disposal needs to the County and its contributing jurisdictions for about 13 years. This alternative does not reduce the need for disposal. This alternative will assist the County in meeting its disposal capacity needs. The expansion of the Central Disposal site is within the County. Lack of regulatory cooperation is the primary risk regarding capacity associated with the alternative

H. Capital Costs – Score 2

County staff reported the Phases I and II area had a cost of approximately $15.3 million and contained 2.2 million cubic yards. Using a refuse density of 1,500 pounds per cubic yard inclusive of daily cover, this area had a cost of approximately $9.25 per ton.

Estimates provided by the County in early 2004 indicate the capital cost of the East Canyon Phase IV to be approximately $4.04 million (which is the lowest bid from a competitive procurement process). This cost represents liner construction for approximately 14 acres. The corresponding cost per acre for this liner is approximately $290,000 per acre which is generally within the typical range of costs for this industry within California. In response to regulatory concerns about the containment design, the County revised the estimated cost of the Phase IV liner to be approximately $16.6 million. This cost represents an increased footprint of the liner improvement for an area of approximately 19.3 acres. The corresponding cost per acre for this liner system which would presumably be acceptable to the regulatory agencies is approximately $860,000 per acre. This area is reported to allow the placement of approximately 1.5 million cubic yards of capacity. Using the refuse density of 1,500 pounds per cubic yard, the resulting cost of this area is about $14.77 per ton.

Using the estimated cost of the robust Phase IV liner as the basis for projecting the future liner cost in Phases III and V, the approximate cost of Phase III is $7.2 million and Phase V is $11.5 million. The cumulative capital cost of the East Canyon (inclusive of Phases III, IV and V) is approximately $35.3 million. The cumulative capacity for this area (inclusive of Phases III, IV and V plus "tie in" fill area) is approximately 4.7 million cubic yards. The overall cost for this area is approximately $10.00 per ton for the containment systems.

The County has had extensive discussions with the RWQCB regarding the need for a more robust containment system design for the future containment system improvements in the Rock Extraction Area (REA). The County estimates the REA Phases I, II and III will cost

about $26 million. These phases represent 30 acres. The unit cost per acre for these containment systems are very high compared to the industry standards. The REA is estimated to contain a total capacity of approximately 3.3 million cubic yards. Using the same refuse density as above, the REA containment system is estimated to cost approximately $10.50 per ton.

The County is in the process of evaluating the cost of the containment system for the compost area. The compost area received wastes prior to 1997 and was unlined. The compost area is approximately 33 acres in size. The County estimates the cost of installing a containment system in this area is estimated to cost $9.2 million. This represents a cost of between $280,000 per acre. This area is estimated to contain approximately 2 million cubic yards of capacity. Using the same refuse density, this equates to a cost of between $6.00 per ton.

The total capital cost of the combined East Canyon improvements and the REA total approximately $70.4 million. Assuming the total capacity of these improvements provide approximately 10 million cubic yards of capacity, the resulting life of these expenditures is approximately 16.8 years. The average cost per ton for these improvements is estimated to be $9.32.

I. Operating Costs – Score 3

The operating cost of this alternative includes the following cost components:

- Operating the existing scale house,
- Operations of the waste receipt and placement activities including amortization of the equipment, staffing, etc.,
- Environmental control system operations, and
- Administrative management.

The historical cost is approximately $41 per ton.

J. Cost Per Ton – Score 3

The historic operating cost of the Central Disposal Site has been approximately $41per ton. This amount represents a fully burdened cost without capital improvements. The County reports the cost of the more robust containment system to be approximately $9.32 per ton as described above. Accordingly the new cost per ton would be approximately $50. As discussed above, this reflects the capital cost of the robust liner design specified by the RWQCB, the projected closure cost, and the continued landfill operations cost.

K. Siting, Design, Permitting and Construction Requirements – Score 2

The steps associated with the process of securing permits for the expansion of the Central Disposal Site include the following:

- Preparation of a technical document (a Joint Technical Document including a Report of Waste Discharge and a Report of Disposal Site Information) describing the methods intended to be employed to protect groundwater quality, air quality, prevent human and animal contact, protect the environment from the presence of the waste.
- Processing of an evaluation of the project in accordance with CEQA.
- Coordination and cooperation with the regulatory agencies to secure their approval of the proposed methods as intended by the development of appropriate facilities.

This process typically requires six months to a year from the time of submittal to securing regulatory approval, depending upon the level of complexity, availability of regulatory staff for the review of the submittal, and type of CEQA process employed.

The RWQCB has specified unique design and construction requirements for the Central Disposal Site expansion. These include the installation of a double composite liner. Although these requirements exceed the prescribed Title 27 design requirements, the RWQCB maintains they are necessary to protect groundwater at this site. RWQCB maintains this robust design is necessary due to the presence of shallow groundwater and the geologic regime at this site.

L. Effect on Current System Costs – Score 3

Assuming facility design and improvements comply with the regulatory agency directives, the cost per ton will need to be approximately $50 per ton. This represents approximately the current cost of operations.

Alternative 5 – Subregional Waste System

Analysis

This alternative reflects a potential downsizing of the Sonoma County Waste Management Agency (Agency). This would occur if a majority of the jurisdictions decided to handle their own waste and not utilize the County Solid Waste Management System. It was assumed that the County and possibly a couple of the smaller jurisdictions would maintain some form of the current Agency and establish a subregional waste system. This subregional system would be responsible for operations and maintenance of a solid waste infrastructure to handle its own waste. For purposes of analysis, it was further assumed that the size of this subregional entity would be about 50% of the current System or generate about 250,000 tons per year (TPY) for disposal, with the remainder of the cities leaving the regional system and managing their own waste disposal

Under this scenario mandatory collection of waste and flow control agreements with participating jurisdictions would be required. Depending on the remaining participating jurisdictions, some or most of the transfer stations would either be closed or operated with reduced hours. Depending on the outcome of issues related to expansion of Central, the

landfill may need to be closed and waste exported outside of the County. Under the 50% waste stream reduction the Central Landfill could still be operated, however tip fees would need to be increased to cover the costs of operations. Current costs to operate the landfill are about $50 per ton. This cost may need to be increased to as much as $65 to $70 per ton to cover those portions of the operating cost that are “fixed” and not tonnage driven. If the cost to export waste out-of-County is less then the amount of this fee, exportation for the subregional system should be considered.

For the subregional system to be successful, the overall cost (as much as possible, see above), liability, regulatory requirements, and system management would need to be reduced. As discussed in Alternative 2, certain costs of past liabilities, such as closed portions of Central and other closed landfills will need to be funded by those past users of the site(s). These costs will need to be separated from the new subregional costs. One of the initial steps in development of the subregional entity is to establish the cost for use of the new System from its commencement date forward. All costs from past use will need to be spread over the historic users of the sites, and be paid for.

Several counties throughout California have had jurisdictions leave or not participate in their JPA; these include Imperial, Humboldt, Central Contra Costa, and Los Angeles. We understand the reasons for leaving or non-participation varied from cost to control issues.

If jurisdictions opt to leave the County System and the Agency is downsized, the County would be required to take the following steps to implement this subregional entity:

- Establish who the participating members in the new entity will be
- Analyze the infrastructure requirements based on the participating members (transfer stations in areas of participation, sizing disposal needs, etc.). At the appropriate level of downsizing several transfer stations may need to be closed or have hours reduced
- Separate the costs out for past liabilities and establish a cost for the new participants
- Pass a mandatory collection ordinance to ensure all waste and recyclables are being collected
- Implement flow control for the members in the subregional agency ensuring all collected materials are delivered to the new System
- Charge-out costs for past liabilities to historic system users (whether or not they continue participation in the new System)

Evaluation

A. Operating History – Score 3

Although reducing a regional solid waste system is not commonplace there are several counties within California in which that has occurred. These JPAs have continued their successful operations.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 2

The diversion potential of this scenario would be potentially lower, due to reduction in waste flow and thus revenues to fund programs and facilities for waste diversion.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 2

The alternative would not create new jobs. In fact, some jobs may be lost or transferred due to the downsizing of the Agency and the reduced operational needs of the system. .

D. Environmental Consequences – Score 2

Potential negative impacts include increased vehicle traffic due to each jurisdiction's independent handling and transporting of their recyclables and waste. Environmental justice issues may or not be met as many more entities will be involved and the chance for meaningful involvement reduced.

E. Role of Public Sector Entities and JPA Participation Potential – Score 1

The alternative reduces the authority of the County or JPA in managing the solid waste system.

F. Regulatory Cooperation – Score 2

Regulatory cooperation could be jeopardized by the splitting of the System into many other minor subcomponents. This will be more difficult for the regulatory agencies to handle.

G. Disposal Needs and Obligations – Score 4

The alternative reduces the need for disposal of waste.

H. Capital Costs – Score 3

There should be little to no capital cost involved with development of the subregional System.

I. Operating Costs – Score 2

The operating cost on a per ton basis will be increased as fewer tons will be available to cover certain fixed costs of operation.

J. Cost Per Ton – Score 2

The cost per ton would increase as discussed above; however certain decreases will be realized due to transfer of past system costs to the historic users of the system.

K. Siting, Design, Permitting and Construction Requirements – Score 3

This alternative would require certain ordinances, agreements, analyses, etc.; however could be implemented in 3 or less years.

L. Effect on Current System Costs – Score 2

There will be an increase on current system costs as fewer tons will be available to cover certain fixed costs of operation.

Long-Term Alternatives

Alternative 1 – Exporting of Solid Waste Outside of County

Analysis

See Short-Term Alternative 1 for a general discussion and analysis of the export of solid waste for disposal out-of-county. As discussed with regard to Short-Term Alternative 1, the County is planning that as of July 2005, most or all of the solid waste generated in Sonoma County will require out-of-county disposal for a period of one to three years. There are no operating landfills in Sonoma County, other than Central, and the County now exports a relatively small amount of waste 300 TPD to save limited capacity at Central. The following analysis focuses on the use of longer-term export for an indefinite period beyond 2008.

As discussed, the County has developed, and released an RFP for transport and out-of-County disposal of solid waste. The County intends this RFP to cover short-term capacity for only the next one to three years. We believe the County should consider also addressing a guarantee of disposal capacity beyond the short-term (three year) window in the RFP as an option. This can easily be handled through an addendum by adding a paragraph to the RFP that states, “the County intends the focus of the RFP to be short-term only, however at the option of the proposer, proposals will be considered for longer-term guarantees”. It would be advantageous to use the current competitive RFP process to obtain these longer-term prices, should export need to continue. However, we understand the CoIWMP has a goal to maintain local disposal capacity to handle its own waste and so the contract should not put the County under any obligation to continue export beyond 2008 in a manner that would impact the feasibility and/or timing of more preferable alternatives for maximizing recyclables and organics diversion, and the possibly more preferable alternative of developing new local disposal capacity. In addition, should market prices for disposal decrease in the next few years, the County should preserve its contractual ability either to void the contract(s) or to capture a reduction to reflect the new lower market price.

In any case, 1) unless there is an change in policy to export waste long-term, as has been made by several nearby counties (such as Mendocino, Napa and Humboldt) longer-term

export should be thought of as a last resort, and 2) any planning for longer-term disposal (whether exported or local) should reflect the goal of ongoing reduction in the percentage of generated waste requiring disposal. Conversely, the availability of the longer-term export option provides a safety net should other more preferable options take longer to develop than anticipated. Note that longer-term reliance on export rather than development of new longer-term publicly-owned local capacity minimizes the risk associated with capital investment in terms of guesstimating how much capacity will actually be needed, and when - as long as export contracts do not contain "put or pay" or unreasonable minimum tonnage requirements. Obviously, any minimum tonnage commitment must reflect the commitment by some or all of the jurisdictions, or possibly just of the County unincorporated area to direct waste to the County system. The risk that a host landfill may for whatever reason, be unable to take County waste increases over time. While guarantee of capacity can be dealt with contractually, the cost of that capacity may go up due to increased distance to another site and/or a higher transport and disposal fee.

Longer-term export of waste may require additional capital expenditures to expand the Tipping Facility at the CDS to handle the larger amounts of transferred waste over the long-term. Operating costs will be similar to those discussed in the Analysis section of Alternative 1 Short-Term, but will reflect CPI or other adjustments necessary over the longer time period.

As discussed above with regard to Alternative 1 Short-Term and Alternative 2, regardless of how or whether waste leaves the County, the County incurs and will continue to incur costs related to past disposal as well as other System costs. This issue must be resolved during the Short-Term period, with mechanisms put in place to ensure that all system costs are funded. Thus, unfunded system costs should not be a factor in decisions regarding longer-term disposal needs.

Evaluation

A. Operating History – Score 5

Landfill disposal has a long and proven track record and is the industry standard. Landfill disposal is the best of several options for final disposal of solid waste, and is cited in the AB 939 hierarchy as preferable to transformation. Within the longer timeframe, one or more conversion or diversion technologies as discussed in Alternatives 9 and 10 may provide an alternative to or a reduction in landfill disposal.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

This alternative does not impact diversion objectives, plans or activities as long as there is no contractual “put or pay” or minimum tonnage commitment. If this alternative is implemented long-term, the County should review options with its potential export contractors to identify potential diversion options.

C. Distribution of Economic Benefits, Social Equity, and Impacts – Score 2

This alternative continues the initial loss of local jobs, income, and investment that occurs with Alternative 1 Short-Term. As with the Short-Term Alternative, these impacts can be somewhat mitigated to the extent that a preference is given for transporters that are headquartered in the County and/or that hire locally. If export is the primary longer-term disposal option, additional decisions will need to be made about longer-term reductions in, or reassignments of County staff.

D. Environmental Consequences – Score 2

The environmental consequences of longer-term export of solid waste, including issues of environmental justice are generally the same as discussed above for this criterion with relation to Alternative 1 Short-Term. The possible mitigations discussed above for Alternative 1 Short-Term are also generally applicable to the longer-term. Several exceptions include:

- Air quality impacts of transport will decrease to the extent that fuel mileage and emissions improve over time with new technologies, including compliance with the new California state regulations for alternative fuel use. Green house gas decreases will be primarily a function of improved efficiency and mileage per unit of fuel.
- The longer-term risk of contamination of soil and or groundwater at the disposal site increases with ongoing disposal, except to the extent that disposal practices and technology continue to improve over time.

Any longer-term disposal contract should provide the County assurance that the site(s) maintain or surpass initial levels of safety, and that operations reflect any ongoing improvements in disposal technology.

E. Role of Public Sector Entities and JPA Participation Potential – Score 4

Unless the longer-term County export agreement applies only to the unincorporated waste stream or a subregional waste system as described in Alternative 5, longer-term export will require some form of commitment of the incorporated area waste stream whether bilaterally between the County and individual jurisdictions, or more broadly through modification of the current JPA agreement. With the longer timeframe there is sufficient time to address these issues. In short, longer-term export provides both the need and opportunity for greater cooperation. See Alternative 2 for detailed discussion and analysis of organizational options for the County, the other jurisdictions, and the JPA.

F. Regulatory Cooperation – Score 3

This alternative does not particularly affect, and is not affected by regulatory issues and relationships.

G. Disposal Needs and Obligations – Score 3

The alternative does not add to disposal need, and thus is neutral in impact with regard to this criterion.

H. Capital Costs – Score 3

There may be some capital costs required to expand the existing Tipping Facility at the CDS to handle the increased tonnage over the long-term. Amortization of the capital cost could add $1 to $2 per ton to the tipping fee.

I. Operating Costs – Score 3

Operating costs should be in the range of $30 to $35 per ton (escalated by contractual terms) as described above for Alternative 1 Short-Term and thus are less expensive than current Central Landfill operating costs.

J. Cost Per Ton – Score 3

Combined cost per ton for transport and disposal should be in the likely range of $31 to $37 in 2005 dollars, including capital expenses for expansion of the Tipping Facility, excluding any host fees. These fees are lower than current Central Landfill operating costs and will be escalated per contractual terms.

K. Siting, Design, Permitting and Construction Requirements – Score 4

There are few significant implementations or timing issues that will affect the County's ability to contract for longer-term disposal capacity, assuming that any discussion regarding waste stream commitment begin substantially prior to 2008. The expansion of the Tipping Building at Central can be accomplished in a relatively short manner.

Host county concerns, and possible host fees are the same for the longer-term option as discussed above for this criterion under Alternative 1 Short-Term. Any potential perceived economic benefit to a host county associated with a longer-term contractual County commitment may be balanced by the corresponding longer-term impacts of import.

L. Effect on Current System Costs – Score 3

As noted in discussion of this criterion for Alternative 1 Short-Term, the longer-term alternative will have some impact on decreasing System costs, with the estimated contractual cost for exportation lower than Central Landfill operating costs. However, to the extent that the County system manages and exports tonnages from only a portion of the County, mechanisms must be put in place in the short-term to ensure that any unfunded system costs are funded. Taking into account these system costs, overall costs may not be affected.

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Analysis

The 2003 Countywide Integrated Waste Management Plan has identified policies and programs to reach 70 percent diversion by 2015. The County achieved 55 percent diversion in 2003. As an alternative or complement to facility development and exporting of solid waste generated in the County, the County and the cities should accelerate and enhance their source reduction and recycling plans to maximize diversion. The County should also establish specific zero waste policies and programs to reduce the generation of materials that need to be recycled or disposed.

Long-term Policies

- **Product bans**. Bans of specific products (such as Styrofoam packaging in Berkeley) or fees on products (such as take-out containers in Pittsburg or plastic bags as proposed in San Francisco) may not result in significant diversion. However, they can focus on specific problem materials that cannot be effectively recycled or reused. No direct costs are associated with product bans or fees on products.
- **Zero waste research and development**. Maximizing diversion is an interim step on the path to zero waste. True reduction in generation is the goal of zero waste (so that discarded materials do not have to be handled through either diversion or disposal programs). To reduce the generation of waste, the County will need to develop a zero waste plan and may need assistance in identifying zero waste initiatives and policies. For example, the Lawrence Berkeley Laboratory and the Rocky Mountain Institute have been leaders in the development of specific practices and technologies for increasing energy efficiency. The County could partner with Sonoma State University or other institutions to research specific strategies or approaches for achieving zero waste. Research and development projects may be eligible for grant funding through private foundations or the County may dedicate specific funds to research and development. The annual budget for the Center for the Development of Recycling at San Jose State University is $56,000. An annual expenditure of this amount, dedicated to zero waste research and development, could result in the identification of significant new approaches and alternatives.

Long-term Programs

- **Wet-dry collection**. An emerging strategy for diverting more materials, particularly for the commercial sector, has been the development of wet-dry collection systems. The dry fraction includes source-separated recyclables, including cardboard, glass and plastic and other residuals (which are screened out at the recycling facility) and the wet fraction includes organics, particularly food waste, food-soiled paper, other compostable paper,

and other residuals (which are screened out at the compost facility). In San Jose, 500 commercial businesses participate in wet-dry collection. This approach would require that the County change its current approach to collection and processing. The Countywide Integrated Waste Management Plan anticipates on-going collection of three steams of material (recyclables, green waste, and solid waste) with future plans to address the solid waste stream through pre-processing at a MRF and anaerobic digestion or other treatment of the residual materials. As described in Alternatives 9 and 10, this approach can be costly and is currently unproven at the scale required in the County. An alternative collection and processing system could include the approach that is currently being proposed for the City of Petaluma, including wet-dry collection. Wet-dry collection requires processing of the dry fraction at a MRF designed to handle source-separated recyclables along with dry residue. The wet-fraction, which would include all compostables could be processed at a compost facility designed to accept all compostable materials (including green waste, food waste, and contaminated paper) like Jepson Prairie Organics in Solano County or Z-Best Compost Facility in Santa Clara County. The Z-Best Compost Facility includes significant pre-processing capabilities such that some operators (including Green Waste and Green Team) direct loads of "gray cart" wet waste (from multi-family and commercial businesses) and co-collected loads of "green cart" and "gray cart" materials (from single-family) including the residual fraction to Z-Best. The dry fraction in San Jose, Portola Valley and Woodside does not include residuals. The overall residual fraction at Jepson Prairie Organics is 6 percent and the residual fraction at Z-Best is 15 percent. Wet-dry collection is an industry trend currently being proposed by major collection companies specifically to reduce the cost of collection and disposal. In the cities of Portola Valley and Woodside, wet-dry collection resulted in a 20 percent reduction in collection rates. The County has investigated wet-dry collection and because of the product quality and potential long-term market and uses, it was not further analyzed in this study.

Evaluation

A. Operating History – Score 5

Most of the zero waste policies or strategies for maximizing diversion identified above have an established precedent or regional example familiar to the County. Faced with dwindling landfill capacity and public pressure to conserve resources, many communities have established goals beyond 50 percent diversion and are implementing aggressive new recycling and waste prevention programs.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 5

All of the zero waste policies and strategies for maximizing diversion are consistent with AB 939 and the integrated waste management hierarchy. Zero waste policies based on source reduction or waste prevention are at the top of the hierarchy. Diversion potential for each approach varies from conceptual to significant.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 5

Many of these policies are focused on local economic development, local program implementation and increases in jobs and social benefits. For example, Urban Ore in Berkeley, operates a landfill salvage program and generates $1.5 million in gross revenues and employs 25 people.

D. Environmental Consequences – Score 5

Accelerating plans and programs to reach diversion rates in excess of 70 percent will have a positive effect on the local environment by reducing disposal. Alternatives that include transportation out-of-County or increased collection within the County, such as taking source-separated organics to Solano County or implementing new bulky item collection programs, may result in some air quality and traffic impacts. Development of new facilities such as resource recovery parks or eco-parks could have land use planning impacts.

E. Role of Public Sector Entities and JPA Participation Potential – Score 5

Many of the zero waste policies and programs would require regional cooperation between the County and the cities. Most of the initiatives could be undertaken by the Waste Management Agency on behalf of the County and the Cities.

F. Regulatory Cooperation – Score 3

Most of the zero waste policies do not require cooperation from regulatory bodies.

G. Disposal Needs and Obligations – Score 5

This alternative has the potential to reduce the disposal needs of the County and the Cities.

H. Capital Costs – Score 3

Capital costs for this alternative are minimal; they could include the following, depending on which did not get implemented in the short-term:

- Dedicating the principal funding for the revolving loan fund
- Development of a resource conservation park or eco-park

I. Operating Costs – Score 2

Annual operating costs for this alternative could include the following, depending on which did not get implemented in the short-term:

- Mandatory source-separation - $100,000 for outreach and enforcement
- C&D program - $100,000 for implementation

- Changing public behavior - $150,000 for staff and contractor resources
- Commercial outreach and technical assistance - $100,000 for staff and contractor resources
- Market development - $200,000 for dedicated staff and business assistance
- Bulky item collection - $1-2 per household per month
- Source-separated organics - $230,000 for dedicated collection route
- Zero waste research and development - $56,000 annual grant to university

J. Cost Per Ton – Score 2

A number of the policies and initiatives include no new costs or costs for staff support only. Program costs for source-separated organics collection is estimated to be about $127 per ton. Program costs for bulky item collection is estimated to be about $150 per ton, based on $15 per pickup of 100 pounds of reusable or recyclable materials.

K. Siting, Design, Permitting and Construction Requirements – Score 3

Not applicable for most zero waste components. Siting of a resource conservation park adjacent to a County transfer station or in an industrially zoned area of Santa Rosa could have moderate permitting and construction issues. These issues could be mitigated somewhat by working with a third-party developer.

L. Effect on Current System Costs – Score 2

The zero waste policies and programs for maximizing recycling could be funded through user fees (such as for bulky item pickup and source-separated organics collection) or a new tipping fee or collection rate surcharge, as described above.

Alternative 6 – Development of West Expansion Area

Analysis

Similar to Alternative 4, expansion of the Central Disposal Site, the West Expansion provides similar benefits to the County and its member jurisdictions. The site is centrally located thereby avoiding the cost of transport to a distant landfill. Also, many of the fundamental costs of a disposal site are complete. For example, the site infrastructure would generally remain the same with the addition of on-site circulation roads accessing the new disposal areas. The West Expansion area is mostly owned by the County but will require the purchase of some additional land.

The West Expansion Area of the Central Disposal Site is estimated to cover approximately 144 acres of land outside the current waste placement limits. This area is planned for excavation per the conceptual design prepared by Vector Engineering in January 2004.

The resulting excavation volume is estimated to be approximately 19 million cubic yards of soil and rock (80 to 90 percent rock) within the expansion area. The rock extraction process is estimated to require six to eight years to complete. This process is estimated to provide a slight financial benefit to the county. The County estimates the revenues from the rock extraction contract will be approximately $5 million.

The total estimated waste capacity of the West Expansion Area is approximately 24.3 million cubic yards. The West Expansion is still in the concept development phase and has not been permitted by the appropriate regulatory agencies. In addition, CEQA has not been initiated on this project at this time.

The risk of developing the West Expansion Area is similar to the expansion of the Central Disposal Site but complicated with the addition of a massive rock quarry extraction element and the need to acquire property and initiate residential relocation. As a consequence, this alternative has more regulatory approval risk than the Central Disposal site alternative. Although not in writing, the RWQCB has reportedly informed County staff that they may reserve judgment about the viability of West Expansion for a landfill until the rock mass has been removed and the suitability of the geologic and ground water conditions are confirmed. If the RWQCB assumes this posture, their approval of the project could conceivably be many years after the project commencement. This would require the County to have expended significant quantities of money without the promise of securing a permit, yielding the project unviable. This predicament of securing only tentative regulatory approval renders this alternative potentially unreliable. It should be noted that one of the RWQCB issues is that a portion of the ultimate West Expansion would overlap onto the original Landfill and over the REA. The RWQCB may not be receptive to this, depending on the situation with leachate and gas control at the time. A reduction of the volume of the West Expansion was assumed as an option to avoid the overlap.

A. Operating History – Score 4

The Central Disposal site has been operating since 1971. The existing landfill at the Central Disposal Site has performed as the primary landfill for the region and has adequately accommodated the waste stream through these years of operation, accepting increasing quantities as smaller landfills within the city closed in recent years. It is presumed the West Expansion Area will perform much like the Central Disposal site insomuch as providing a reliable method of handling the future waste stream. Landfilling is the standard for disposal in California. Although with the growth of urban development combined with increased land values, some urban landfills have been closed, landfilling remains the lowest cost, most common method of managing wastes in modern times.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

Development of the West Expansion Area at the Central Disposal Site does not affect the diversion potential of the County. The County may employ diversion plans without affecting the viability of this alternative. Landfill operations are consistent with AB 939. Landfill

operations are consistent with the State's AB 939 hierarchy insomuch as landfills are the lowest option for sanitary management of municipal waste residues. This alternative does not directly contribute to educating the public about diverting waste although funding of this education can be accomplished by appropriate financial management. This alternative does not have an impact on the long-term viability of working towards a zero waste goal. This alternative does not prohibit the highest and best use of materials in diversion processes.

C. Distribution of Economic Benefits, Social Equity, and Impacts – Score 3

Expansion of the West Area at the Central Disposal site does have minor affects with regard to Social Impacts. The West Expansion requires the acquisition of portions of the land used for the existing dairy located south west of the existing perimeter boundary. Expansion impacts are presumed to require the relocation of the dairy away from the area. No other Economic or Social Equity impacts are anticipated as a result of this alternative. This alternative does not increase or decrease the potential for creating and maintaining employment or growth opportunities for residents, businesses and industries within the County.

D. Environmental Consequences – Score 2

Presuming that the protective design features, in combination with the prescribed corrective actions protect groundwater in compliance with CCR 27 at the Central Disposal site, the environmental consequence of this Alternative is benign. The relocation of an adjacent dairy and incorporation of this property into the disposal site has been determined to have relatively minor environmental affects. A preliminary wetlands analysis concluded the potential for some minor habitat issues which could be incorporated in the mitigations for the expansion design.

The County has implemented a groundwater protection program that entails the extraction of the impacted shallow groundwater. The shallow groundwater is directed to the sanitary treatment facility where it is treated to appropriate discharge levels before being discharged. In this, the county has already implemented appropriate mitigation measures to this impact. The primary positive environmental benefits from implementing this alternative include air quality, traffic impacts related to hauling wastes out of the county. This alternative does not generate environmental justice issues.

E. Role of Public Sector Entities and JPA Participation Potential – Score 3

The West Expansion Area at the Central Disposal site continues the existing role of the public sector entities. Also, similar to the Central Disposal Site Alternative above, if entities within the County region elect to direct their wastes elsewhere, this alternative remains viable. Reduced participation of the various entities extends the remaining life of the site, albeit at somewhat higher per ton cost.

F. Regulatory Cooperation – Score 1

Based on correspondence and Waste Discharge Reports from the Regional Water Quality Control Board (RWQCB) for the Central Disposal Site, we believe regulatory agency cooperation in the future is unlikely. The inability for the County to rely upon the acceptable permit status condition of the site affects the County's ability to reliably depend upon the landfill as a long-term disposal facility. As a result, the primary regulatory risk related to implementation of the alternative is the unreliability of the regulatory agency approval. The financial and legal impact of the lack of regulatory cooperation is that the County is unable to be relied upon by the various jurisdictions directing their wastes to the facility. This lack of reliability will cause these jurisdictions to seek long-term disposal contracts elsewhere rendering the West Expansion Area without wastes and economically non-viable. Aside from legal clarification of an acceptable corrective action program, it is unclear how regulatory cooperation can be accomplished.

G. Disposal Needs and Obligations – Score 5

West Expansion of the Central Disposal Site provides on-going disposal needs to the County and its contributing jurisdictions. The County currently disposes of approximately one million cubic yards of material annually. This alternative can accommodate approximately twenty two years of disposal capacity for the County. This alternative does not reduce the need for disposal. This alternative will assist the County in meeting its disposal capacity needs. The West Expansion Area is within the County. Lack of regulatory approval and the unreliability of the waste flow quantity are the primary risks regarding capacity associated with the alternative.

H. Capital Costs – Score 2

The West Expansion area consist of two capital projects; a rock quarry project followed by a containment system improvement. The rock quarry project is estimated to entail the removal of approximately 19 million cubic yards of material. This project is estimated to require approximately six to ten years to complete. The County anticipates procuring a private company who will perform the quarry activities and pay the County a royalty based on the quantity of materials sold from the site.

Estimates provided by the County indicate the capital cost of installing the containment system improvements is approximately $125.6 million for a robust system comparable to that highlighted for the Rock Extraction Area. The West Expansion area would provide 24.3 million cubic yards of solid waste capacity. Using this capital cost, the West Expansion area is projected to cost between $6.89 per ton for the containment system (excluding the cost of the rock quarry operation which is estimated to be profitable or neutral to the County).

I. Operating Costs – Score 3

The operating cost of the existing landfill is presumed to continue equivalent to the existing operations cost. The historical operations cost is approximately $41 per ton.

The operating cost of this alternative includes the following cost components:

- Operating the existing scale house,
- Operations of the public receiving and transfer facility,
- Operations of the waste receipt and placement activities including amortization of the equipment, staffing, etc.
- Environmental control system operations, and
- Administrative management.

The new operating cost of the West Expansion would not need to change from the current $41 per ton except for inflationary figures.

J. Cost Per Ton – Score 3

Projected cost per ton of the facility operation is estimated to be approximately $48 per ton, fairly consistent with current costs.

K. Siting, Design, Permitting and Construction Requirements – Score 2

The steps associated with the process of securing permits for the expansion of the West Expansion Area include the following:

- Preparation of a technical document (a Joint Technical Document including a Report of Waste Discharge and a Report of Disposal Site Information) describing the methods intended to be employed to protect groundwater quality, air quality, prevent human and animal contact, protect the environment from the presence of the waste.
- Processing of an evaluation of the project in accordance with CEQA.
- Coordination and cooperation with the regulatory agencies to secure their approval of the proposed methods as intended by the development of appropriate facilities.

This process typically requires more environmental review and regulatory oversight than a horizontal expansion. We estimate approximately two to three years is needed from the time of submittal to securing regulatory approval, depending upon the level of complexity, availability of regulatory staff for the review of the submittal, and type of CEQA process employed.

Based on requirements the RWQCB imposed at the Central Disposal Site, it is presumed a similar unique design and construction requirements will be required for the West Expansion Area. Although these requirements exceed the prescribed Title 27 design requirements, the RWQCB believes they are necessary to protect groundwater at this site. RWQCB maintains

this robust design is necessary due to the presence of shallow groundwater and the geologic regime at this site.

L. Effect on Current System Costs – Score 3

Assuming facility design and improvements comply with the regulatory agency directives, the cost per ton will need to be approximately $48 per ton. This is fairly consistent with the current cost of operations.

Alternative 7 – Development of New Long-Term Landfill Capacity in the County

Analysis

Presuming the new long-term landfill is located centrally and is operated within a similar regulatory requirement and operational capacity as disposal facilities in neighboring regions, the local disposal facility should have generally similar costs to other disposal facilities. The new long term landfill would need to include all of the fundamental cost components of a disposal site. These include:

- Land purchase,
- Site infrastructure (access roads, entrance scales, environmental control facilities, etc.),
- Containment systems (liner and closure improvements),
- Operations, and
- Management.

Of these cost components, the existing operations and management costs would presumably remain the same as the existing landfill. The remainder of the components would need to be developed at the new site.

Although a concept design for the development of a new long-term landfill within the County has not been fully developed, a preliminary Biological Study for Four Alternative Class III Landfill Sites was prepared in 1990. This study, prepared by Woodward Clyde Consultants, identified the environmental conditions of four previously studied sites.

Without conceptual designs, we have proceeded with the assumption that the development of a new landfill in the County will need to provide at least 50 or more years of capacity.

The risk of developing a new long-term landfill within the County is similar to the West Expansion Area, but potentially complicated with the additional impacts of an entirely new community including but not limited to traffic, property devaluation, odors, noise, water quality, etc. Also, the potential of environmental issues such as habitat or protected species

impact may affect the selection and viability of a potential site. As a consequence, this alternative has more regulatory approval risk than the West Expansion Area alternative.

A. Operating History – Score 1

Development of a new landfill within the State of California is very difficult. Almost no sites have been developed in California in over 10 years. Keller Canyon Landfill is the most recent landfill opened in Northern California. It was opened 12 years ago in 1992.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

Development of a new landfill within the County does not affect the diversion potential of the County. The County may employ diversion plans without affecting the viability of this alternative. Landfill operations are consistent with AB 939. Landfill operations are consistent with the State's AB 939 hierarchy insomuch as landfills are the lowest option for sanitary management of municipal waste residues. This alternative does not directly contribute to educating the public about diverting waste although funding of this education can be accomplished by appropriate financial management. This alternative does not have an impact on the long-term viability of working towards a zero waste goal. This alternative does not prohibit the highest and best use of materials in diversion processes.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 2

Development of a new landfill in the County may have significant impacts on social equity, depending upon the location and specific conditions of the potential site. This alternative does not increase or decrease the potential for creating and maintaining employment or growth opportunities for residents, businesses and industries within the County.

D. Environmental Consequences – Score 1

Presuming the protective design features, the environmental consequence of this Alternative with respect to groundwater is anticipated to be benign. However, environmental consequences as a result of other impacts are unknown. Other environmental impacts include but are not limited to traffic, air quality, disturbances to biological habitat or species, economic degradation of property, etc.

E. Role of Public Sector Entities and JPA Participation Potential – Score 3

The development of a new local landfill would continue the existing role of the public sector entities.

F. Regulatory Cooperation – Score 1

Based the history at the Central Disposal Site, we believe regulatory agency cooperation in the future is unlikely.

G. Disposal Needs and Obligations – Score 5

Development of a new landfill in the County would provide on-going disposal needs to the County and its contributing jurisdictions. The County currently disposes of approximately 600,000 cubic yards of material annually. This alternative will assist the County in meeting its disposal capacity needs. The new landfill site would be identified within the County.

H. Capital Costs – Score 1

The capital cost for a new landfill is unknown at this time. For evaluation purposes, we developed an estimate of capital costs inclusive of the following:

- Land acquisition
- Environmental Impact Report preparation
- Mitigation measures
- Development of new access roads
- On-site infrastructure (administration, entrance scales, gate houses, etc.)

Our estimate of these development costs is approximately $28 million based on historic development costs for other California landfills. We have estimated the cost for the required containment system to be consistent with the robust design discussed for the Rock Extraction Area and the Western Expansion Area above. Approximately $211 million will be needed for approximately 48.6 million cubic yards of capacity. This calculates to approximately $5.79 per ton for the new landfill.

I. Operating Costs – Score 3

The operating cost of the existing landfill is presumed to continue equivalent to the existing operations cost. The operations cost is approximately $41 per ton as reported by the County. The operating cost of this alternative includes the following cost components:

- Operating the existing scale house,
- Operations of the waste receipt and placement activities including amortization of the equipment, staffing, etc.
- Environmental control system operations, and
- Administrative management.

J. Cost Per Ton – Score 3

The development of a new landfill would require installation of significant infrastructure, access roads, environmental control features, etc. The new landfill cost is estimated to be approximately $47 per ton.

K. Siting, Design, Permitting, and Construction Requirements – Score 1

The steps associated with the process of siting and securing permits for a new landfill within the county include the following:

- Conducting a site selection analysis of the County taking into account federal, state, and local regulatory limitations, community growth goals, access and traffic considerations, environmental concerns, local and regional economics, etc.
- Preparing an unbiased rating process whereby the preferred site(s) may be evaluated in further detail,
- Preparation of a technical document (a Joint Technical Document including a Report of Waste Discharge and a Report of Disposal Site Information) describing the methods intended to be employed to protect groundwater quality, air quality, prevent human and animal contact, protect the environment from the presence of the waste.
- Processing of an evaluation of the project in accordance with CEQA.
- Coordination and cooperation with the regulatory agencies to secure their approval of the proposed methods as intended by the development of appropriate facilities.
- Secure property ownership voluntarily or through condemnation.

This process typically requires more environmental review and regulatory oversight than a horizontal expansion. We estimate approximately five to eight years is needed from the time of submittal to securing regulatory approval, depending upon the level of complexity, availability of regulatory staff for the review of the submittal, type of CEQA process employed, and public opposition.

L. Effect on Current System Costs – Score 3

Assuming facility design and improvements comply with the regulatory agency directives, the cost per ton will need to be approximately $47 per ton. This is fairly consistent with the current cost of operations.

Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County's Waste

Analysis

The existing County system could be expanded into a multi-county regional system including one or more nearby counties, to handle, process, divert, and or dispose of waste materials. This would increase the amount of waste handled by the region and could potentially allow opportunities for cost savings through economies of scale. The County identified and has approached staff at four near-by or adjacent counties to assess interest in participating in some form of regional system. The Counties of Del Norte, Humboldt, Mendocino, and Napa are in relatively close proximity to Sonoma County and are each exporters of solid waste. All of these Counties lie along the highway 101 corridor for easy transportation access, except for Napa County which is adjacent to the east.

Currently there are two possible opportunities for future cooperation with one or more of these counties:

- Share in use of a Regional Landfill, were a new landfill to be sited and developed within the five county area, and/or
- Participate in an export agreement to transport solid waste to a landfill(s) located outside of the five county areas, should larger volume result in a lower price.

Note that processing of the waste materials to divert from landfilling may be a component of either of these scenarios. Potential cooperative roles for materials recovery and composting, could be a subset of Alternative 9 or 10.

BVA staff interviewed senior staff overseeing solid waste management for the four neighboring counties regarding the above scenarios as well as information on organizational and institutional issues. As part of the interviews, BVA staff also collected solid waste system financial information that will be used in later analysis. This included analysis of the economic feasibility of the above two scenarios. It was determined that staff of three of the four counties (Humboldt, Mendocino, and Napa) exercise varying degrees of flow control, are not locked into long-term disposal agreements, and would be interested in possible joint disposal arrangements and/or other areas of cooperation. Humboldt and Mendocino Counties have conducted unsuccessful landfill sting processes in their counties and are not interested in a repeat effort. Napa County has no plans to develop local capacity. Del Norte County has a long-term disposal commitment and thus is not a viable partner.

The opportunities identified above can be further separated into four options for regional cooperation regarding disposal, two each for import to Sonoma County and two each for export:

- Option 1 - Import additional waste into the current County System,

- Option 2 - Import waste into the County for disposal at a new landfill,
- Option 3 - Export Sonoma County waste to an existing or new landfill located in one of the nearby counties, or
- Option 4 - Export waste jointly with one or more nearby counties to a host landfill in another location.

With regard to Option 1, Mendocino County staff expressed potential interest in exporting waste to the Sonoma County system, depending of course on capacity, pricing and assuming the lifting of the current import ban.

Option 2 can be thought of as a subset of Alternative 7 (development of a new local landfill). The impacts are essentially the same as those evaluated for Alternative 7, except with some potential additional economic benefit such as a host fee balanced by additional environmental consequences due to greater landfill capacity, increased truck traffic, etc. Again, Mendocino County presumably may have some interest in participating in this Option.

Options 3 and 4 are in effect subsets of Long-Term Alternative 1 Export, with the impacts similar to those identified for that alternative. As noted above, with regard to Option 3 there is little enthusiasm in any of the other counties for developing a landfill to import waste. In addition, Sonoma County has a strong history of solving problems internally rather than exporting them. Del Norte, Humboldt and Mendocino Counties are exporting all of their waste, and Napa County exports a significant portion of its waste. Napa's Clover Flats is the only real option, and it is not a great one due to limited availability of capacity, traffic access through Napa County, and a current relatively high tip fee. In summary, Option 3 is unlikely to occur.

Option 4 has the most potential of the four options identified above, if for no other reason, ease of implementation. It just requires new or modified contracts rather than development of new landfill capacity. Several key questions would need to be addressed, including:

- Would the waste streams from two or more counties be physically combined, or just contractually combined? The latter seems more likely than the former, although as Napa County noted, there may be the opportunity to accept additional transfer vehicles at the Devlin Road Transfer Station. This facility has rail haul access and there is a rail line that could potentially deliver waste from Humboldt and/or Mendocino Counties. However, the rail spur line into the site would require capital investment prior to use. Humboldt County already has a transfer station and there is little value in transferring waste twice.
- Should Sonoma County negotiate a new contract and potentially invite other counties to join them, or work with another county to amend their disposal contract to add Sonoma County's waste stream? The County would presumably wish to pursue the former approach; however, there may be some advantage to the latter approach. In either case, it is an opportune time to discuss the issue with Humboldt County staff since they are in

the process of buying out their current transfer and disposal contract, in part to gain more flexibility regarding disposal.

However, there are two factors that could ultimately reduce the value of Option 4 to Sonoma County:

- With relationship to potential partner counties, Sonoma County's waste stream is by far the largest. Mendocino County probably has the most potential as a partner; some of Mendocino County waste is now transferred through the County's Annapolis Transfer Station and private collectors use MRF's in Santa Rosa to process recyclables from Mendocino County. Mendocino County's disposal stream is only about 200 TPD, or about 15 to 20 percent of Sonoma County's. Thus any monetary value associated with combining waste streams is likely to accrue much more to generators in Mendocino County than in Sonoma County. (Conversely, Mendocino County staff in particular expressed concern about the market effect of the sudden appearance of Sonoma County's waste stream and the impact it may have on pricing for counties with smaller waste streams.)
- The current state of disposal in much of northern and central California, at least for private site operators with whom we spoke is that capacity is available, but facility owners feel no need to sign large tonnage, discounted contracts in order to maximize short-term gains. In comparison to the past ten years, the focus is increasingly shifting to maintaining capacity for all users and especially for municipalities with whom the various companies hold collection franchises. It may be that Sonoma County would see little monetary advantage to combining waste streams, but that (as noted in discussion of Alternative 1, short-term and long-term) the County may need to enter into contracts with several landfills in order to meet capacity needs.

Evaluation

The evaluation is based on Option 4 for joint disposal contracting, as described above.

A. Operating History – Score 3

There are examples of contractual inter-county or cross-county cooperation for disposal, including, for instance, the Napa-Vallejo Waste Management Authority (portions of Napa and Solano Counties). While it is not an option that is in widespread use there are no inherent reasons it cannot be done.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 3

This alternative does not impact diversion objectives, plans, or activities as long as there is no contractual "put or pay" or minimum tonnage commitment.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 2

This alternative results in reduced local jobs, income and investment. These impacts can be somewhat mitigated to the extent that the County contracts with transporters that are headquartered in the County and/or that hire locally.

D. Environmental Consequences – Score 2

Environmental consequences are essentially identical to those for Alternative 1, Long-Term, including air quality, traffic impacts, disposal impacts and issues of environmental justice related to the transport route and/or disposal site location.

E. Role of Public Sector Entities and JPA Participation Potential – Score 4

As with Alternative 1, Long-Term, unless the longer-term County export agreement will apply only to the unincorporated waste stream, longer-term export requires some form of commitment of the incorporated area waste stream whether bilaterally between the County and individual jurisdictions or more broadly through modification of the current JPA agreement. With the longer timeframe there is sufficient time to address these issues. Longer-term export provides both the need and opportunity for greater cooperation.

F. Regulatory Cooperation – Score 4

This alternative provides the opportunity for, and requires cooperation with one or more nearby counties.

G. Disposal Needs and Obligations – Score 3

This alternative addresses existing disposal needs through a multi-county system of disposal options.

H. Capital Costs – Score 3

There may be some minimal capital costs required to expand the existing Tipping Facility at Central to handle the increased tonnage over the long-term.

I. Operating Costs – Score 4

The County presumably will not pursue this alternative unless it is of monetary benefit with relationship to exporting alone (as analyzed for Alternative 1 Export Long-Term).

J. Cost Per Ton – Score 4

The County presumably will not pursue this alternative unless it is of monetary benefit with relationship to exporting alone (as analyzed for Alternative 1 Export Long-Term).

K. Siting, Design, Permitting and Construction Requirements – Score 4

Implementation needs and timing are both reasonable. More effort is required than for Alternative 1 Export, Long-Term due to the need to cooperate with other public entities and to negotiate a more complex contract.

L. Effect on Current System Costs – Score 4

The County presumably will not pursue this alternative unless it is of monetary benefit with relationship to exporting alone (as analyzed for Alternative 1 Export Long-Term) – with the result that system costs should remain the same or possibly decrease.

Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Handle Source Separated and Non-Source Separated Recyclables

Analysis

Materials Recovery Facilities (MRFs) have been developed and utilized for many years throughout California, the US, and the world to successfully recover recyclable materials from waste. There are many types of MRFs to handle the various waste streams generated by residents and commercial businesses. MRFs can be designed to accept and process a variety of materials including source separated materials such as recyclables from curbside collection, or recyclables from commercial businesses. MRFs can also be designed to handle non-source separated materials such as mixed refuse. MRFs can contain highly mechanized processes or very simple manual labor sorting processes.

Currently, only North Bay Corporation (North Bay) and Empire Waste Management (Empire) operate Materials Recovery Facilities (MRFs) within Sonoma County. North Bay is attempting to develop a new MRF in Santa Rosa to handle curbside collected single-stream mixed recyclables, construction and demolition wastes and some other mixed loads of refuse. Each of these MRFs is utilized by their respective hauler to process source separated recyclables collected from their curbside routes. These routes represent the bulk of source separated recyclables generated by residents within the County. Empire indicates that they have 50% of their overall processing capacity available, while North Bay indicates that they have reached capacity at their current facility (this is a reason they are attempting development of another facility). Understanding these factors indicates that the County does not need to develop any new MRF capacity to handle the source separated materials collected curbside. The private sector indicates that they can handle processing of these materials.

Although sufficient MRF capacity exists to process the County's source separated materials, a MRF should be considered to handle non-source separated mixed materials generated by the County's residents and businesses. The MRF facility could accept and process those

materials targeted for landfill disposal to recover recyclable and reusable materials and reduce the amount of materials destined to be landfilled. Table 3 shows the composition of those mixed waste materials based on the 1999 California Integrated Waste Management Board's Statewide Study, including 2004 and 2025 estimates of tonnage based on CoIWMP and updated 2003 figures. Based on our knowledge of industry practice we have also included potential recovery estimates for those materials such as paper, glass, metal, plastic, organics and construction and demolition (C&D) materials. The MRF diversion rate for this type of facility is estimated to be about 17% based on the amount and composition of incoming Sonoma County waste. Overall additional Countywide diversion, based on a total of 1,105,841 tons estimated to be disposed and diverted in 2004, (averaged from CoIWMP and updated figures) is approximately 7.7%.

A facility of this type should be centrally located for easy access by all jurisdictions. Locating the MRF at or near the existing Central Disposal Site (CDS) might be beneficial for several reasons:

- Centrally located
- Transport infrastructure, including transfer stations exist
- Assist in reducing materials destined for landfill at Central or export
- Existing CDS Tipping Facility and Recycle Town could be expanded to incorporate MRF functions.

Expansion of the CDS Tipping Facility would need to be investigated for developing a MRF to handle the approximate 1,400 tons per day (TPD) in 2004 to about 1,700 TPD in 2025. A facility to handle this waste stream would need to be approximately 120,000 to 140,000 square feet in size. The facility would include a large tipping floor to receive and conduct some initial floor sorting of the waste. The waste material could then be loaded onto a system of processing lines to handle the large capacity. Large bulky items, such as wood and brush could be removed at the pre-processing stations. A series of screens could be used to size and separate materials to improve the efficiency of the manual sorting process. Manual sorters would be used to separate the paper, plastic, glass, and some non-ferrous metals. An overhead belt type magnet could be used to recover ferrous metals. Recovered materials such as glass and bulky metals could be stored in large debris boxes for transport to market. Other materials such as paper, plastics, aluminum and ferrous containers could be baled prior to shipment to market. The facility would incorporate other functions already active such as the Recycle Town reuse center, HHW facility, recyclables drop-off facility.

The capital cost of this size and type of facility would be approximately $15,000,000 to $25,000,000. Operating costs would be approximately $30 to $45 per ton for this size and type of facility. A list of California MRF tip fees is shown in Table 4; these figures represent the overall cost including operations and repayment or amortization of capital costs. Typical overall tipping fees for this facility would be in the range of $35 to $55 per processed ton.

The MRF could be developed and owned by the County, the JPA, or a private entity. Likewise the MRF could be operated by the County, the JPA, or a private entity. Ownership by the County or the JPA would have some advantages. These include:

- Control of waste,
- Control of diversion levels and new programs,
- Rate stabilization, and
- Risk aversion.

Although the County or JPA could own the facility, public or private operations may be considered.

The MRF could be developed as a front-end to the proposed Organic Processing Facility discussed in Alternative 10 below. The Organics Processing Facility requires “clean-up” of the feed stock to remove as much non-organic material as possible prior to processing. The MRF would be able to remove these non-organic recyclables and waste prior to processing.

Table 3 | Estimated MRF Recovery

Material Type	Totals Est. %	2004 Est. Tons	2025 Est. Tons	Estimated Recovery Rate Est. %	Assumed Recovered 2004 Est. Tons	Assumed Recovered 2025 Est. Tons
Paper	**30.99%**	**152,264**	**186,101**	**n/a**	**37,341**	**45,640**
Uncoated Corrugated Cardboard	5.19%	25,507	31,175	60%	15,304	18,705
Paper Bags	0.79%	3,863	4,722	40%	1,545	1,889
Newspaper	4.63%	22,748	27,804	40%	9,099	11,121
White Ledger	1.77%	8,720	10,657	40%	3,488	4,263
Color Ledger	0.16%	800	978	40%	320	391
Computer Paper	0.31%	1,526	1,865	40%	610	746
Other Office Paper	1.42%	6,958	8,505	40%	2,783	3,402
Magazines and Catalogs	1.81%	8,907	10,886	40%	3,563	4,355
Phone Books and Directory	0.32%	1,570	1,919	40%	628	768
Other Miscellaneous Paper	4.55%	22,336	27,299	0%	-	-
Remainder/Composite Paper	10.04%	49,328	60,290	0%	-	-
Glass	**3.40%**	**16,694**	**20,404**	**n/a**	**3,787**	**4,629**
Clear Glass Bottles and Containers	1.54%	7,560	9,240	30%	2,268	2,772
Green Glass Bottles and Containers	0.48%	2,342	2,862	30%	703	859
Brown Glass Bottles and Containers	0.55%	2,722	3,327	30%	817	998
Other Colored Glass Bottles and Containers	0.02%	85	104	0%	-	-
Flat Glass	0.16%	767	937	0%	-	-
Remainder/Composite Glass	0.65%	3,218	3,934	0%	-	-
Metal	**5.58%**	**27,404**	**33,494**	**n/a**	**9,434**	**11,530**
Tin/Steel Cans	1.06%	5,210	6,368	60%	3,126	3,821
Major Appliances	0.04%	220	269	80%	176	215
Other Ferrous	1.91%	9,393	11,480	50%	4,696	5,740
Aluminum Cans	0.25%	1,242	1,518	60%	745	911
Other Non-Ferrous	0.28%	1,380	1,686	50%	690	843
Remainder/Composite Metal	2.03%	9,962	12,175	0%	-	-
Plastic	**9.26%**	**45,486**	**55,595**	**n/a**	**10,490**	**12,821**
HDPE Containers	0.89%	4,360	5,329	60%	2,616	3,198
PETE Containers	0.48%	2,368	2,895	60%	1,421	1,737
Miscellaneous Plastic Containers	0.68%	3,330	4,071	0%	-	-
Film Plastic	4.38%	21,509	26,288	30%	6,453	7,887
Durable Plastic Items	1.47%	7,225	8,830	0%	-	-
Remainder/Composite Plastic	1.36%	6,693	8,180	0%	-	-
Other Organic	**37.59%**	**184,701**	**225,747**	**n/a**	**11,142**	**13,618**
Food	19.21%	94,380	115,353	0%	-	-
Leaves and Grass	7.42%	36,484	44,592	25%	9,121	11,148
Prunings and Trimmings	1.61%	7,897	9,651	25%	1,974	2,413
Branches and Stumps	0.04%	186	228	25%	47	57
Agricultural Crop Residues	0.00%	12	15	0%	-	-
Manures	0.28%	1,400	1,711	0%	-	-
Textiles	2.48%	12,204	14,917	0%	-	-
Remainder/Composite Organic	6.54%	32,138	39,280	0%	-	-
Construction and Demolition	**8.63%**	**42,391**	**51,811**	**n/a**	**12,470**	**15,241**
Concrete	0.46%	2,284	2,792	50%	1,142	1,396
Asphalt Paving	0.09%	438	536	0%	-	-
Asphalt Roofing	0.02%	77	94	0%	-	-
Lumber	3.84%	18,880	23,075	60%	11,328	13,845
Gypsum Board	1.08%	5,304	6,483	0%	-	-
Rock, Soil and Fines	1.54%	7,569	9,252	0%	-	-
Remainder/Composite Construction and Demolition	1.60%	7,839	9,581	0%	-	-
Household Hazardous Waste	**0.26%**	**1,274**	**1,557**	**n/a**	**-**	**-**
Paint	0.13%	651	796	0%	-	-
Vehicle and Equipment Fluids	0.01%	31	38	0%	-	-
Used Oil	0.00%	14	18	0%	-	-
Batteries	0.06%	313	382	0%	-	-
Remainder/Composite Household Hazardous	0.05%	264	323	0%	-	-
Special Waste	**2.33%**	**11,432**	**13,972**	**n/a**	**-**	**-**
Ash	0.04%	200	244	0%	-	-
Sewage Solids	0.00%	-	-	0%	-	-
Industrial Sludge	0.01%	46	57	0%	-	-
Treated Medical Waste	0.02%	74	91	0%	-	-
Bulky Items	1.24%	6,073	7,423	0%	-	-
Tires	0.29%	1,402	1,714	0%	-	-
Remainder/Composite Special Waste	0.74%	3,635	4,443	0%	-	-
Mixed Residue	**1.98%**	**9,729**	**11,891**	**n/a**	**-**	**-**
Mixed Resdue	1.98%	9,729	11,891	0%	-	-
Totals	**100%**	**491,375**	**600,573**	**n/a**	**84,664**	**103,478**

Diversion	**17%**	**17%**

Table 4 | MRF – Year 2000 CIWMB Tipping Fee Survey

California MRF- Site Name	Rate $/Ton
TEHACHAPI RECYCLING, INC	$29.00
WASTE MANAGEMENT SOUTH GATE TRANSFER	$33.00
MAMMOTH RECYCLING FACILITY AND TS	$43.00
MRWMD MATERIALS RECOVERY FACILITY	$30.00
NAPA GARBAGE SERVICE MRF	$45.00
WESTERN PLACER WASTE MGMT AUTHORITY MRF	$72.75
EASTERN REGIONAL MRF	$59.00
WEST VALLEY MATERIALS RECVR'Y FACILITY	$33.00
VICTOR VALLEY MRF & TRANSFER STATION	$65.00
LOVELACE TRANSFER STATION	$38.15
TULARE COUNTY RECYCLING COMPLEX	$54.00
WESTERN EL DORADO RECOVERY SYSTEMS MRF	$53.00
PARAMOUNT RESOURCE RECYCLING FACILITY	$34.00
RAINBOW RECYCLING/TRANSFER STATION	$43.75
PERRIS MATERIAL RECOVERY FACILITY	$40.00
SACRAMENTO RECYCLING & TRANSFER STATION	$38.50
SUNNYVALE MATERIAL & RECVR'Y & TRNSFR ST	$33.34
BERTOLOTTI TRANSFER & RECYCLING CENTER	$52.25
CAL SIERRA TRANSFER STATION	$83.00
GOLD COAST RECYCLING FACILITY	$33.50
DEL NORTE REGIONAL RECYCLING & TRANSFER	$33.50

Evaluation

A. Operating History – Score 4

MRFs have been successfully operated using similar waste streams at comparable sizes for many years. They are used as an industry standard to recover materials. Operations of a MRF are safe if the operator takes care to implement appropriate safety plans.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 4

The diversion potential of this scenario is moderately high, recovering approximately 17% of the incoming refuse stream; overall County-wide diversion from these operations is

estimated at approximately 7.7%. The alternative is consistent with the AB939 hierarchy, using methodologies to recycle waste. The MRF could contain a public education center. The alternative works towards the zero waste goals. The alternative will achieve the highest and best use of materials through reuse and recycling of materials.

C. Distribution of Economic Benefits, Social Equity, and Impacts – Score 4

The alternative would create many new jobs, including many that require little education. The alternative has the potential of teaching workers new skills and is socially equitable enabling all people to gain access to good jobs, education and training, and needed services.

D. Environmental Consequences – Score 3

Potential negative impacts include dust, noise and odors from operation of the MRF. All impacts can be mitigated through appropriate designs and operations of the facility. Positive environmental impacts include reducing the amount of refuse and contaminants applied to land through landfilling. Environmental justice issues are met through the potential for meaningful involvement including: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

E. Role of Public Sector Entities and JPA Participation Potential – Score 4

The alternative maintains the authority of the County or JPA in managing the solid waste system. The County and or JPA could own and or operate the MRF. The MRF would give these entities control over diversion and costs for processing waste. The MRF may give an added benefit for JPA members to participate in the system through guaranteed handling and diversion of waste.

F. Regulatory Cooperation – Score 3

If developed and operated appropriately and within permit limitations, regulatory risks and exposure can be minimized. This alternative has the potential to handle waste in an enclosed environmentally controlled building minimizing regulatory risks. The alternative provides the potential for regulatory cooperation with the RWQCB by reducing the amount of waste landfilled.

G. Disposal Needs and Obligations – Score 4

The alternative reduces the need for disposal of waste by 17% of the incoming waste; 7.7% overall. The alternative assists the County in meeting its disposal needs by reducing the amount of waste for disposal. The alternative is not a direct disposal alternative and thus does not contain disposal capacity.

H. Capital Costs – Score 1

The capital cost is in the range of approximately $15,000,000 to $25,000,000. The capital components could include design and engineering, equipment, site work, building, off-site improvements, and spare parts. The facility life would be 20 to 30 years.

I. Operating Costs – Score 1

The operating cost is in the range of approximately $30 to $45 per ton. Operating costs for this alternative could include labor, stationary and rolling stock maintenance and fuel, utilities, equipment leasing, consumables, G&A, insurance, etc. It should be noted that this cost for materials processing is in addition to disposal costs for the remaining 83% of the incoming waste stream.

J. Cost Per Ton – Score 1

The cost per ton for the alternative is approximately $35 to $55 per ton. This includes deduction in costs for potential materials revenues. It should be noted that this cost for materials processing is in addition to disposal costs for the remaining 83% of the incoming waste stream.

K. Siting, Design, Permitting and Construction Requirements – Score 3

This alternative would require siting, design, permitting and construction. Assuming that the CDS could be used for siting the MRF development time could be reduced. However, the project will require full CEQA review and permitting through the State and local agencies including the CIWMB; the Local Enforcement Agency would lead this process. The schedule for development of the MRF could be 3 to 4 years.

L. Effect on Current System Costs – Score 1

The effect on current system costs would be an increase of $35 to $55 per ton for processed materials. This cost is in addition to the cost for subsequent disposal of the remaining 83% of the waste stream after processing at the MRF. The only offset to this huge increase is the savings for not out-hauling 17% of the refuse for disposal.

Alternative 10 – Development of an Organics Processing Facility

Analysis

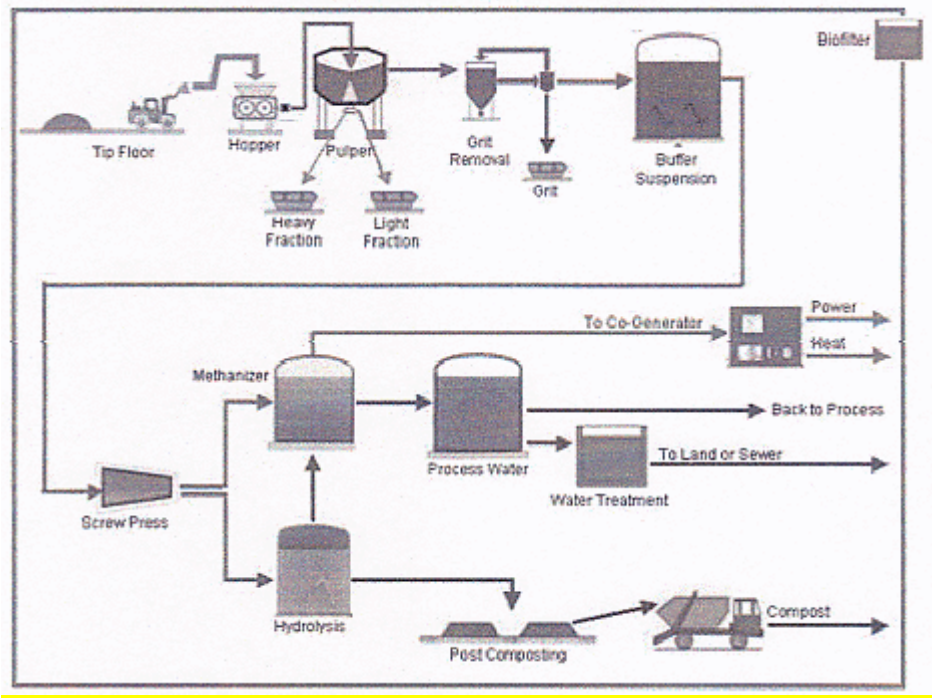
BVA has reviewed the past work the County commissioned reviewing the technical, environmental and economic feasibility of developing an Organics Processing Facility utilizing the technologies of Anaerobic Digestion and Biorefining. For the purpose of our analysis, anaerobic digestion is defined as a natural biological process of treating biodegradable waste by means of bacterial action, but in the absence of oxygen. The process generates a biogas mixture of methane (CH4) and carbon dioxide (CO2) with some other gases depending on the feedstock. The biogas can be used to fuel an engine for electrical production and thermal generation. The process requires stable conditions for temperature and moisture. Likewise, Biorefining which is also a biochemical fermentation process, employs hydrolysis and fermentation to produce different products such as ethanol and lignin. Ethanol can be used as a vehicle fuel. Lignin can conceivably be used to fire a solid fuel boiler for steam or electricity production.

Although both of these conversion technologies have promise as a means to beneficially extract energy from mixed MSW, the current state of development does not support consideration by the County in the near to mid-term. Interest exists internationally to develop and demonstrate reliable and cost effective technology employing both processes, but to date much of the work has been on a small scale pilot basis or on larger scale projects utilizing mainly non-MSW feedstocks or targeted organic components of the MSW stream.

We have been monitoring the Canada Compost Inc. (CCI) anaerobic digestion plant outside of Toronto, Canada in Newmarket, Ontario (See Figure 1 below). The plant began operations in 2000. The plant, costing approximately $26 million, was designed to handle approximately 150,000 tons per year of high organic content MSW, producing 880 million cubic feet of biogas, generating 5.5 MW of power and thermal energy and 60,000 tons of compost. We understand the Plant has required modifications and a local recycling company (Halton Recycling Limited) bought the plant and is making these modifications to support daily operations. The plant requires separate collection of organics, as described in Alternative 3 to operate efficiently. CCI indicates that the cleaner feedstock helps produce more marketable materials. CCI is also operating a similar, but much smaller pilot-scale anaerobic digestion plant in Toronto. According to information gathered from a European study on this technology, “The Role of New & Emerging Technologies”, by Associates in Industrial Ecology (AIE), November 2002, an anaerobic digestion plant of the size and type required by the County could cost as high as $150 million, with operating costs in the mid $60 per ton. AIE states that the commercial status is proven on sewage sludge and some pilot-trials on source separated organics, however the technology needs a medium to large scale commercial MSW pilot as a test-bed. The organization Biogas Works conducted a survey of anaerobic digestion plants throughout the world processing MSW and listed 14

such facilities. Eight of these plants were listed as under construction. The other operating plants of 500 tons per year (TPY) to 85,000 TPY were sized much smaller than the County's requirements of a plant of about 500,000 TPY.

Figure 1 | CCI'S Newmarket, Ontario Anaerobic Digestion Plant



In regards to Biorefining, according to the U.S. Department of Energy's Energy Efficiency and Renewable Energy Department, the concentrated sulfuric acid process has been commercialized in the past, particularly in the former Soviet Union and Japan. However, these processes were only successful during times of national crisis, when economic competitiveness of ethanol production could be ignored. Conventional wisdom suggests that these processes cannot be economical because of the high volumes of acid required. Improvements in acid sugar separation and recovery have opened the door for commercial application. Two companies in the United States are currently working with DOE and NREL to commercialize this technology by taking advantage of niche opportunities involving the use of biomass as a means of mitigating waste disposal or other environmental problems. One of these companies, Masada located in Vestavia Hills, Alabama, has applied this technology to municipal solid waste (MSW). Masada holds several patents related to MSW-to-ethanol conversion. DOE and NREL have been working with Masada to support their MSW-to-ethanol plant, which will be located in Middletown, New York. The plant will process the lignocellulosic fraction of municipal solid waste into ethanol using technology based on Masada's concentrated sulfuric acid process. The robustness of this process makes it well suited to complex and highly variable feedstocks like municipal solid waste. Masada's New

York project takes advantage of relatively high tipping fees available in the area for collection and disposal of municipal solid waste. Masada is finalizing engineering and project financing, and expects to break ground on the plant in 2004-2005. Masada's CES OxyNol™ processing facility integrates a materials recovery facility (MRF) with an ethanol production plant in a continuous process. All non-hazardous municipal solid waste is processed in the MRF: metal, glass and plastics are separated for recycling. Remaining waste is dried and shredded, thereby eliminating odor. Once dried and shredded, the waste becomes "biomass feedstock" for the integrated ethanol production plant.

Much of the challenge of going commercial with this technology has to do with the heterogeneous nature of MSW and the effect the material has, even after preprocessing, on the subsequent biochemical process and equipment. Therefore at this stage, reliable performance and cost information are not available. Although these technologies hold a lot of promise and the County should continue to monitor the progress of these technologies, currently embarking on development of an anaerobic digestion or biorefining project is a risky R&D effort. However, if the County develops the MRF discussed in Alternative 9 above, an organics processing facility might fit in well as an adjunct process to handle the large amounts of organic materials separated from recyclables. Again, this alternative should be revisited in a few years when more reliable actual operating history is available.

Another emerging technology which holds promise is the use of steam to separate the organic materials in MSW from the inorganic portions (glass, metals etc.). The organic fraction can then be further separated into long fibers which can be used as feedstock for pulp and paper mills and short fibers which can be digested to produce biogas and compost. The traditional recyclable materials are also recovered. There is one small pilot plant utilizing this technology in Nevada. The first small commercial scale (250 ton per day) demonstration project is currently under construction in St. Paul, Minnesota. If this demonstration project proves successful, this technology may be appropriate for consideration by the County.

Evaluation

A. Operating History – Score 1

Organics Processing Facilities handling the type of waste (MSW) and the amounts required by the County have little to no operating history. One of the largest facilities of this type in Newmarket, Ontario is currently making modifications to its process; note this Facility is less that 1/3 the size needed by the County. They are not used as an industry standard to process MSW. Operations of an Organics Processing Facility should be relatively safe if the operator takes care to implement appropriate safety plans; however there is little industry experience to base on.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 5

The diversion potential of this scenario is very high, however there is little to no experience in the United States that justifies these rates. The facility could contain a public education center. The alternative works towards the zero waste goals. The alternative may achieve the highest and best use of materials through reuse and recycling of materials.

C. Distribution of Economic Benefits, Social Equity, and Impacts – Score 4

The alternative would create many new jobs, including many that require little education. The alternative has the potential of teaching workers new skills and is socially equitable enabling all people to gain access to good jobs, education and training, and needed services.

D. Environmental Consequences – Score 2

Potential negative impacts include dust, noise and odors from operation of the facility. All impacts should be able to be mitigated through appropriate designs and operations of the facility; however there is little to no experience that supports this. Positive environmental impacts include reducing the amount of refuse and contaminants applied to land through landfilling. Environmental justice issues are met through the potential for meaningful involvement including: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

E. Role of Public Sector Entities and JPA Participation Potential – Score 4

The alternative maintains the authority of the County or JPA in managing the solid waste system. The County and or JPA could own and or operate the facility. The facility would give these entities control over diversion and costs for processing waste. The facility may give an added benefit for JPA members to participate in the system through guaranteed handling and diversion of waste.

F. Regulatory Cooperation – Score 2

If developed and operated appropriately and within permit limitations, regulatory risks and exposure should be minimized; however little to no experience to support this exists. This alternative has the potential to handle waste in an enclosed environmentally controlled building minimizing regulatory risks. The largest risk for permitting is from the Bay Area Air Quality Management District (BAAQMD) for air emissions.

G. Disposal Needs and Obligations – Score 5

This alternative greatly reduces the need for disposal of waste. The alternative assists the County in meeting its disposal needs by reducing the amount of waste for disposal. The alternative is not a direct disposal alternative and thus does not contain disposal capacity.

H. Capital Costs – Score 1

The capital cost for an anaerobic digestion facility sized for the entire Sonoma waste stream could be in the range of $75 to $150 million. The capital components could include design and engineering, equipment, site work, building, off-site improvements, and spare parts. The facility life would be 20 to 30 years.

I. Operating Costs – Score 1

The operating cost is extremely expensive, in the range of approximately $60 to $70 per ton. Operating costs for this alternative could include labor, stationary and rolling stock maintenance and fuel, utilities, equipment leasing, consumables, G&A, insurance, etc. plus the cost of operating a MRF on the front-end.

J. Cost Per Ton – Score 1

While there are no operating facilities in the US to base accurate cost estimates on, studies performed by BVA and others indicate that the cost per ton for this alternative is in the $75 to $100 per ton range. This includes credit for potential materials revenues.

K. Siting, Design, Permitting and Construction Requirements – Score 1

This alternative would require siting, design, permitting and construction. Assuming that the CDS could be used for siting the Facility development time could be reduced. However, the project will require full CEQA review and permitting through the State and local agencies including the CIWMB; the Local Enforcement Agency would lead this process. Again, the BAAQMD would require control of air emissions from the facility. The schedule for development of the Facility could be 4 or more years.

L. Effect on Current System Costs – Score 1

The effect on current system costs would be to significantly increase costs.

Alternative 11 – Privatization of All or Part of the Solid Waste System

Analysis

Introduction

The consolidation of solid waste systems has increased the amount of private company investment in developing, constructing and owning facilities. For this alternative, the County would consider selling all or a portion of the publicly-owned solid waste system to a private entity. The potential benefits of privatization, including potential cost savings and reduction in responsibility and possible long-term liability must be balanced with the potential loss of control over guaranteed disposal capacity and cost. In addition, the Sonoma County CoIWMP currently includes a strong and explicit provision to keep the system publicly-owned, and this provision would need to be revised prior to privatization. The benefits and risks to the County and other member jurisdictions need to be considered in any analysis of potential privatization.

In California, there is a broad range of experience with privatization. "Privatization" is an often used term that includes a variety of circumstances. Stockton recently sold a landfill and post-closure responsibility for several closed landfills. San Diego County sold its entire landfill system and retains no direct control over capacity or pricing. Riverside County recently decided to privatize transfer station ownership but keep landfills publicly-owned. San Bernardino County and the Salinas Valley Solid Waste Authority retains facility ownership but provides for long-term operations contracts that also privatize the day-to-day management of the system.

The private sector is often touted as being more “efficient”. Some of this efficiency is quite real, such as the ability to rapidly make decisions and act on them. Larger waste management companies have a wealth of experience to draw on from around the country, and of course immediate access to capital. However, other "efficiencies" can be false economies such as poorer wage and benefit packages. For some larger waste management companies, a high internal return on capital is a key profit center with the company acting as its own bank, and the public sector may well have access to less expensive capital. The private sector has a cost that the public sector does not have - the need for a ten to fifteen percent (or higher) corporate overhead and profit margin that can balance out much of the real or perceived gains from efficiency. In summary, while privatization has its benefits it is not always the best solution.

Key Issues for the County

The following are some of the questions that the County should consider prior to deciding to implement privatization. These range from issues of policy, to specific items that can be effectively managed with a well-drafted contract. The most difficult issues are those for

which the financial incentive for a private owner might run counter to the public good - such as maintaining increases in diversion over time and management of the rural transfer stations.

- What are the County's motives for privatization? For instance, would it be an attractive alternative other than for the current difficulties with the Central Landfill? The answers to these questions can help determine the scope of any privatization.
- Should operations be privatized with a public agency retaining ownership, or is asset sale preferred?
- Should privatization include both transfer and disposal facilities, or just one or the other?
- Should privatization include responsibility for closed sites?
- If privatization includes Central Landfill, and assuming there is future capacity how will the sale contract include guarantee of capacity for jurisdictions in the County?
- If privatization includes Central Landfill, can the County effectively transfer all long-term liabilities associated with the site?
- How can the County best ensure long-term tip fee protection? Will there be a competitive marketplace in the immediate area after the sale, such that there are other landfills to provide effective control over tip fees?
- How can the County create incentives and disincentives for the new owner(s) to aggressively pursue diversion efforts? In particular with relation to a zero-waste goal?
- How would contractual provisions providing for ongoing decreases in disposal tonnage affect a sale price?
- Would the County allow the new owner/operator to import waste from other counties, and if so with what controls?
- If the County were to sell the transfer system, how would it ensure that services are still available to rural customers and that service reductions do not result in increased illegal disposal that would then become the County’s unfunded problem?
- Should the County adopt a policy of private ownership and/or operation for future facilities developed to meet recycling and organics processing needs?
- How will the County address issues of reduced staffing related to the transfer of operations?

A key issue related to a privatization of Central Landfill is timing. There are significant trade-offs in terms of County risk and reward:

- Should the County pursue a sale now while there is uncertainty about future use of the site? The result may be a lower price but the County would be free of the short-term and long-term liabilities associates with the site.

- Should the County first continue the effort to negotiate a resolution to the regulatory issues at the Central Landfill in an effort to reduce uncertainty about future use of the site? Should the issues be resolved, the County would be in a far better negotiating position and the sale price would be higher. On the other hand, if the issues were to be resolved would the County still wish to consider privatization?
- Finally, the County might continue, but be unsuccessful in an effort to negotiate a resolution to the regulatory issues at the Central Landfill. In this instance the sale price might well be lower than prior to removal of uncertainty.

Examples of Privatization

Riverside County: The County has a combination of public and privately-owned and operated landfills. The County operates the gatehouse and sets the tip fee at the private landfill. The Riverside County Waste Management District was formed in the early 1990's to purchase the principal transfer stations that were then privately owned and operated. Subsequently, the decision was made to instead privatize the publicly-owned portions of the transfer system, but keep most landfill ownership public. The District was later disbanded.

San Bernardino County: The County owns a system of transfer stations and landfills and currently contracts all operations, including day-to-day management to Burrtec Waste, Inc. In 1995, the County contracted with Norcal for the privatization of management of the solid waste system and the operation of all County facilities. This agreement was dissolved in 2001 following indictments of several senior County and company officials on corruption charges.

San Diego County: In the late 1990's San Diego County became the only California county to completely privatize a formerly publicly-owned facility system. The County received $170 million for sale of the system to Allied. The County had developed the North County Resource Recovery Facility (NCRRF) waste-to-energy facility with contractual put-or-pay tonnage obligations tied to facility financing, but did not have the flow control requirements in place necessary to bring the required tonnage. The County closed the facility and sold the County system (two large, one medium, and one small sized landfill; one transfer station; 11 container sites; and the NCRRF) as a means of financing the debt. There have been significant concerns that Allied would have monopoly control of facility pricing, but rates have remained stable because the City of San Diego continues to own and operate the Miramar Landfill that accepts waste from other jurisdictions in the County.

City of Stockton: In 2000, Stockton completed sale of two landfills to Allied, Inc. The Austin Road Landfill was located adjacent to Allied's Forward Landfill and Allied has consolidated the landfill with Forward. The City also sold French Camp Landfill to Allied and it is now in closure. The sale took several years to complete, and for an interim period the city conducted an RFP process and contracted with Allied to deliver tonnage to the landfill in order to continue the revenue stream to the city. Initially there had been other interested buyers but in addition to owning Forward, Allied collects a sizable portion of the local waste

stream and could thus guarantee itself an immediate revenue stream. Thus the sale was effectively made on a sole source basis. City staff believes that Allied did not really wish to purchase the landfills but also did not want to provide entry to a competitor. The sale price was a single payment of $14.9 million, with four years of annual AB 939 program payments to the city totaling about $1.5 million. The contract provides for a reduced tip fee for residential waste through 2007 with no comparable reduction for commercial waste. There are no explicit long-term protections for the city regarding tip fee, except to the extent that the city that can influence Allied through its collection franchise with the city. All closure and post-closure liability for the two sites, with the exception of third-party suits was transferred to Allied as part of the sale.

In summary, the above experiences indicate that much depends on the specifics of the situation:

- In San Diego County the market controls tip fees for now but there is no long-term protection once the County's? landfills close.
- In San Bernardino County, a combination of privatizing the management of the system and the amounts of money resulted in enticing opportunities for corruption.
- For the City of Stockton, due to site location and local collection arrangements, marketplace, there was only one serious bidder - thus the sale was effectively a sole source arrangement.
- Riverside County decided to retain control of disposal sites but privatize the rest.

In some cases, a comparison of public and private options indicates that public ownership makes sense:

- The city of Colusa recently continued its municipal collection operation after developing its own proposal and effectively participating in a competitive procurement with the private sector.
- When the city of Citrus Heights incorporated it conducted a procurement to determine whether it would retain Sacramento County as its collector. The County developed a proposal to provide the service and obtained the new contract.
- Lane County Oregon considered privatizing its transfer station system, but following an independent review indicating efficient public operation, the county board decided to keep the system publicly-owned.
- The Humboldt Waste Management Authority is now in the process of exercising a buy-out clause in its transfer station development and operation contract with Waste Solutions Group, Inc. The Authority intends to operate the facility and directly negotiate for disposal capacity at out-of-county landfills.

Steps in Pursuing Privatization

The following are key steps for the County in pursuing a privatization of one or more facilities:

- Obtain an independent and confidential assessment of the savings to be gained by private operations and appropriate sale price if this is part of the privatization program.
- Conduct a competitive process for the operations and/or sale similar to that the County is pursuing for obtaining out-of-county landfill capacity.
- Do not entertain sole source proposals.

Evaluation

A. Operating History – Score 3

While there is significant experience with privatization the picture is mixed and the results are often specific to the given situation.

B. Diversion Potential/Consistency with AB 939 Hierarchy – Score 1

It is difficult to maximize the incentive for diversion when privatizing a facility system. If a private company buys a landfill, they will certainly wish to use it. Privatization could be particularly incompatible with a zero waste goal.

C. Distribution of Economic Benefits, Social Equity and Impacts – Score 2

Economic benefits and impacts could be neutral if the purchaser is a local company and most of the revenue stays within the County. Economic benefits and impacts will be negative if the purchaser is a larger company and much of the revenue is taken out-of-county. Impact will be positive to the extent that jobs stay within the County.

D. Environmental Consequences – Score 3

Environmental consequences should be generally neutral, assuming a good environmental review process and a strong contract.

E. Role of Public Sector Entities and JPA Participation Potential – Score 3

The Agency will presumably have a significant role in making the decision to privatize, but would have little ongoing role following any sale.

F. Regulatory Cooperation – Score 3

This alternative is neutral with regard to this criterion.

G. Disposal Needs and Obligations – Score 3

This criterion is generally neutral, except to the extent that a sale results in greater incentive to dispose of waste rather than recover it.

H. Capital Costs – Score 3

This criterion is generally neutral; while private sector cost of capital may not be lower there may be an attractive initial cash payment to the County.

I. Operating Costs – Score 3

Assuming efficiencies balance with corporate overhead and profit and higher costs of capital, operating costs should be similar to current costs. Operating costs could drop if the new owner delivers waste from other jurisdictions.

J. Cost Per Ton – Score 3

This criterion is generally neutral in impact.

K. Siting, Design, Permitting and Construction Requirements – Score 3

As a long-term alternative, there is sufficient time to consider and act on the issue. A longer time frame provides for resolution of regulatory issues regarding Central Landfill - one way or the other.

L. Effect on Current System Costs – Score 4

System costs should remain about the same, or possibly decrease somewhat.

Summary Tables

A summary of each evaluation listing all alternatives and 11 criteria is shown in the two attached tables. Table 5 represents a qualitative analysis of the alternatives, while Table 6 represents a quantitative analysis of the alternatives using the weights and scoring system described above.

Table 5 | Qualitative Summary

	Operating History	Diverison Potential & Consistency with AB 939 Hierarchy	Distribution of Economic Benefits, Social Equity and Impacts	Environmental Consequences	Role of Public Sector Entities & JPA Participation Potential	Regulatory Cooperation	Disposal Needs and Obligations	Capital Costs	Operating Costs	Cost Per Ton	Siting, Design, Permitting & Construction Requirements	Effect on Current System Costs
Short-Term Alternatives												
1 - Exporting Solid Waste Outside of County	Conducted for many years	Little to no impact	Potential in-county loss of jobs	Increased transporation impacts	Promotes coordination	Maintain level of cooperation	Meets Disposal Needs	Little to no increase	Overall little impact	Overall little impact	Minimal level of requirements	Overall little impact
2 - Joint Powers Agency Assumes Greater Responsibility for Solid Waste	Many examples available	Increased potential due to economies of scale and more oversight	Little to no impact	Increases potential environmental benefits	Maximizes JPA Participation	Maintain level of coordination	No effect on disposal needs	Little to no increase	Little to no increase	Little to no increase	Moderate level of requirements	Little to no impact
3 - Maximize Diversion in the County through Zero Waste Policies	Many programs implemented	Increased potential	Maximizes benefits and equity	Increases environmental benefits	Maximizes JPA and Public Participation	Maintain level of coordination	Reduces disposal needs	Little to no increase	Moderate Increase	Moderate Increase	Requirements not significant	Increase of costs
4 - Expansion of Central Disposal Site	Expansions are commonplace	Little to no impact	Little to no impact	Impacts remain the same	Little to no impact	Receviing minimal cooperation	Provides Additional Capacity	Moderate Increase	No significant increase	No significant increase	Moderate level of requirements	No significant increase
5 - Subregional Waste System	Less common	Less effective due to less tons and revenues for programs	Decreases benefits and equity	Increased transporation impacts	JPA disbans	Decreased Cooperation	No effect on disposal needs	No increase	Moderate Increase	Moderate Increase	Requirements not significant	Increase of costs
Long-Term Alternatives												
1 - Exporting Solid Waste Outside of County	Conducted for many years	Little to no impact	Potential in-county loss of jobs	Increased transporation impacts	Promotes coordination	Maintain level of cooperation	Meets Disposal Needs	Little to no increase	Overall little impact	Overall little impact	Minimal level of requirements	Overall little impact
3 - Maximize Diversion in the County through Zero Waste Policies	Many examples available	Maximizing potential	Maximizes benefits and equity	Increases environmental benefits	Maximizes JPA and Public Participation	Maintain level of cooperation	Reduces disposal needs	Little to no increase	Moderate Increase	Moderate Increase	Requirements not significant	Increase of costs
6 - Development of West Expansion Area	Development common, but more likely in already existing area	Little to no impact	Little to no impact	Potential environmental impacts	Little to no impact	Decreased Cooperation	Provides Additional Capacity	Moderate Increase	No significant increase	No significant increase	Moderate level of requirements	No significant increase
7 - Development of New Long Term Landfill Capacity in the County	Very difficult to site and develop	Little to no impact	Little to no impact	Potential for increased environmental impacts	Little to no impact	Decreased Cooperation	Provides Additional Capacity	Significant Increase	No significant increase	No significant increase	High level of requirements	No significant increase
8 - Develop Multi-County Regional System by Incorporating Adjacent County's Waste	Less common	Little to no impact	Decreases benefits and equity	Increased transporation impacts	Promotes coordination	Increased cooperation	Meets Disposal Needs	Little to no increase	Reduction in Costs	Reduction in Costs	Minimal level of requirements	Little to no impact
9 - Regional Cooperation to Develop a Materials Recovery Facility to Handle Recyclables	Many MRFs in operation	Increased diversion	Adds new jobs and skill oportunities	Impacts can be mitigated	Promotes coordination	Maintain level of cooperation	Reduces disposal needs	Significant Increase	Significant Increase	Significant Increase	Requirements not significant	Significant increase of costs
10 - Development of an Organics Processing Facility	Not much sucessful history	Large diversion potential	Adds new jobs and skill oportunities	Most impacts should be able to be mitigated	Promotes coordination	Potential for decreased cooperation	Reduces disposal needs	Significant Increase	Significant Increase	Significant Increase	High level of requirements	Significant increase of costs
11 - Privatization of All or Part of the Solid Waste System	Can be common arrangement	May have loss of control in diversion activities	May lose in-county jobs	Little to no impact	Little to no impact	Maintain level of cooperation	No effect on disposal needs	Little to no increase	Little to no increase	Little to no increase	Requirements not significant	Little to no impact

Table 6 | Quantitative Summary

Criteria	Operating History	Diverison Potential & Consistency with AB 939 Hierarchy	Distribution of Economic Benefits, Social Equity and Impacts	Environmental Consequences	Role of Public Sector Entities & JPA Participation Potential	Regulatory Cooperation	Disposal Needs and Obligations	Capital Costs	Operating Costs	Cost Per Ton	Siting, Design, Permitting & Construction Requirements	Effect on Current System Costs	Total Weighted Score
Weights	**6**	**14**	**6**	**10**	**7**	**7**	**9**	**6**	**7**	**9**	**9**	**10**	
Short-Term Alternatives													
1 - Exporting Solid Waste Outside of County	5	3	2	2	4	3	3	3	3	3	4	3	312
2 - Joint Powers Agency Assumes Greater Responsibility for Solid Waste	5	4	3	4	5	3	3	3	3	3	2	3	341
3 - Maximize Diversion in the County through Zero Waste Policies	5	4	5	5	5	3	4	3	2	2	3	2	355
4 - Expansion of Central Disposal Site	5	3	3	3	3	1	4	2	3	3	2	3	292
5 - Subregional Waste System	3	2	2	2	1	2	4	3	2	2	3	2	232
Long-Term Alternatives													
1 - Exporting Solid Waste Outside of County	5	3	2	2	4	3	3	3	3	3	4	3	312
3 - Maximize Diversion in the County through Zero Waste Policies	5	5	5	5	5	3	5	3	2	2	3	2	378
6 - Development of West Expansion Area	4	3	3	2	3	1	5	2	3	3	2	3	285
7 - Development of New Long Term Landfill Capacity in the County	1	3	2	1	3	1	5	1	3	3	1	3	236
8 - Develop Multi-County Regional System by Incorporating Adjacent County's Waste	3	3	2	2	4	4	3	3	4	4	4	4	333
9 - Regional Cooperation to Develop a Materials Recovery Facility to Handle Recyclables	4	4	4	3	4	3	4	1	1	1	3	1	278
10 - Development of an Organics Processing Facility	1	5	4	2	4	2	5	1	1	1	1	1	248
11 - Privatization of All or Part of the Solid Waste System	3	1	2	3	3	3	3	3	3	3	3	4	276