3.0 RESPONSE TO COMMENTS ON DRAFT EIR REGARDING WASTE PROCESSING TECHNOLOGIES

3.1 INTRODUCTION
This chapter provides the response to comments on the Draft EIR regarding waste processing technologies and a discussion of their feasibility, either separately or in combination, as an option to solid waste disposal in Santa Barbara County.

Several of the Draft EIR comment letters have stated that the County should pursue one or a combination of waste processing technologies in lieu of expanding the Tajiguas Landfill. In these letters, commenters have proposed a range of potential waste processing technologies. (Table 3-1 provides a listing of the type of waste processing technologies mentioned in the various comments.) According to the commenters, if the County pursues a combination of some or all of these waste processing technologies, the County may be able to significantly reduce or eliminate its need for additional landfill capacity.

As stated in Draft EIR Section 1.5.2, the County is subject to the 50 percent diversion requirement established by Assembly Bill (AB) 939. The proposed Tajiguas expansion assumes the County will comply with the AB 939 diversion requirement. In fact, the unincorporated County’s current diversion rate reached 57 percent in 2000 (Solid Waste and Utilities Division, 2002). The purpose of the expansion project is to provide 15 years of capacity for that portion of the waste stream that is not diverted from landfilling (Draft EIR Section 1.4).

A recommendation to rely on other waste processing technologies is, in effect, a recommendation to achieve a diversion rate in excess of the 57 percent the County currently diverts. From a practical perspective, if the County achieves a greater diversion rate, and does not exceed the projected growth rate, then the undiverted residual solid waste disposed of at Tajiguas or at another landfill would be proportionately reduced. This could result in the need for less landfill capacity than with the proposed project, while still providing 15 years of disposal capacity as required by AB 939 and the project objectives.

The proposed project focuses on providing adequate disposal capacity at Tajiguas, in light of current and projected disposal rates in the County. The proposed project does not revise the whole of the County’s solid waste management system. Such reconsideration is beyond the scope of both the proposed Tajiguas Landfill expansion project and this EIR. The County Board of Supervisors could, at its discretion, revise the project objectives to consider the whole of the County’s solid waste management system, including diversion rates and other waste processing technologies. However, in August 1999, the Board of Supervisors directed County staff to analyze the impacts of expanding Tajiguas to provide 15 years of additional disposal capacity; the EIR focuses on a project that is consistent with this direction. If the Board of Supervisors directs County staff to expand its analysis to embrace the whole of the solid waste management system, then further consideration of waste processing technologies and higher diversion rates may be appropriate. Absent such direction, the current scope of the EIR is appropriate.

The Court of Appeals’ decision in National Parks and Conservation Association v. County of Riverside (1996) 42 Cal.App.4th 1505 (National Parks) indicates that Santa Barbara County...
need not expand its analysis to consider other aspects of the solid waste system, above and beyond landfilling. In National Parks, the EIR analyzed a proposed, new waste-by-rail landfill located in eastern Riverside County (Eagle Mountain Landfill). The proposed landfill would be authorized to receive waste only after the waste was processed at a materials recovery facility (MRF). The petitioners argued that Riverside County should have expanded the EIR to analyze the impacts of siting, constructing and operating the MRFs that would process the waste. The Court disagreed. According to the Court, the EIR did not need to analyze the impacts of the MRFs because: the County did not know where these MRFs would be located, the County did not know how these MRFs would be operated and, further, environmental review of the MRFs would be performed by the agencies where the facilities would be located rather than by the County. Therefore, the Court concluded that Riverside County could treat the MRFs as separate projects outside the scope of the EIR.

In another case (Christward Ministry v. County of San Diego [1993]), 13 Cal.App.4th 31, the Court determined that the County of San Diego did not need to revise an EIR for a landfill expansion project to consider other aspects of the County’s solid waste management system.

For purposes of analyzing the impacts of the Tajiguas expansion project, the EIR assumes that jurisdictions within the landfill service area (County of Santa Barbara and cities of Santa Barbara, Goleta, Solvang and Buellton) will, at a minimum, maintain the 50 percent diversion rate established by AB 939. The County concludes that adherence to the 50 percent diversion rate is a reasonable assumption for purposes of calculating the residual solid waste stream that will have to be disposed of, either at Tajiguas or at another landfill. The County already has assumed implementation of methods necessary to achieve this diversion rate. The EIR is framed accordingly. The court decisions cited above indicate that this approach is appropriate.

Although a discussion of optional waste processing technologies is not required, in light of comments on the Draft EIR that propose one or more waste processing technologies other than landfill disposal, the County provides the following information regarding these technologies and their potential to divert solid waste from landfilling.

3.2 WASTE DIVERSION IN SANTA BARBARA COUNTY
The proposed Tajiguas expansion is just one aspect of the County’s comprehensive integrated waste management program. The programs for jurisdictions in the Tajiguas wasteshed (unincorporated southern Santa Barbara County, Santa Ynez and Cuyama valleys, and the cities of Santa Barbara, Goleta, Solvang and Buellton) consists of the following:

- Collection of municipal solid waste, commingled recyclables and green waste from residences and businesses.
- Processing of green waste.
- Separation of construction and demolition waste for recycling.
- Sorting and consolidation of waste and recyclables at the Santa Barbara Transfer Station and Foxen Canyon Landfill.
• Collection of household and small quantity business-generated hazardous waste.
• Public education regarding recycling and beneficial reuse of municipal solid waste.
• Disposal of residual waste at Tajiguas Landfill.
• Disposal of residual waste at Foxen Canyon Landfill (scheduled for closure in 2004).

These programs have resulted in an overall diversion rate for the unincorporated Santa Barbara County wasteshed that has increased from 30 percent in 1995 to 57 percent in 2000 (most recent data available) (see Table 3-2). The County anticipates ongoing improvements in waste diversion, although the rate of increase is expected to slow as the “easy” elements of diversion already are occurring. Additional programs are being considered for development and implementation to further improve the diversion of municipal solid waste and decrease the portion of the waste stream that is “residual” and requires disposal at a landfill.

Existing programs within the Tajiguas wasteshed consist of a variable can rate system, whereby waste collection rates vary according to the amount of trash disposed. With this system, customers pay more for disposing of more trash, thereby encouraging waste reduction by each household and/or business. Consistent with this program, the County and cities provide curbside collection of residential and commercial commingled recyclables. Green waste also is collected separately from residences and businesses. Construction and demolition (C&D) waste (concrete, lumber, rebar) is separated for recycling at the Santa Barbara Transfer Station. In addition, several private haulers contract directly with remodeling and construction sites for collection and recycling of construction waste, collecting and recycling more than 60,000 tons per year. Seasonal waste diversion programs include collection of phone books and Christmas trees. The County program also has an extensive educational component. The County conducts a multimedia recycling education program, with information provided via radio, television, newspaper and brochures. The County contracts with a non-profit organization for children to visit a facility, where they learn about recycling and make objects from waste materials as art projects. Additionally, the County contracts with a waste processor to organize trips for school children to visit a North County MRF.

Within the past year, as part of its hazardous waste collection program, the County has begun collecting cathode ray tubes and small electronics such as coffee makers and hair dryers, and also removes these items from the waste stream at the Santa Barbara Transfer Station. The County also conducts electronic collection events at three different sites each year. In May 2002, the County received the California EPA award for having the best household hazardous waste program in the state.

For the future, the County is working to increase its collection of commercial recyclables in the near-term. For the long term, the County is working with a regional multi-jurisdictional task force to investigate other potential diversion activities and develop waste processing technologies that will further enhance waste reduction and diversion.
3.3 EVALUATION OF WASTE PROCESSING TECHNOLOGIES

3.3.1 EXPANSION OF EXISTING WASTE REDUCTION/RECYCLING

3.3.1.1 Enhanced Recycling
The County Solid Waste and Utilities Division has an active and proactive program for implementing various waste reduction and recycling programs to divert waste from the Tajiguas Landfill wasteshed. In addition, the City of Santa Barbara and other cities within the Tajiguas wasteshed are proactive in developing and implementing recycling and waste reduction programs. The waste diversion rate in the unincorporated Santa Barbara County wasteshed increased from 30 percent in 1995 to 57 percent in 2000 (see Table 3-2). These rates are anticipated to continue to increase, although the most easily obtained waste already is diverted from the waste stream. Additional information on the County Department of Public Works recycling programs is provided in Final EIR Section 3.2.

3.3.1.2 Waste Reduction
Waste reduction involves diverting discarded materials out of the waste stream, thereby reducing the volume of waste that is disposed of at landfills. Measures to accomplish this include recycling of usable manufactured materials, recycling of usable C&D waste, diverting green waste for mulching, composting and other uses, and converting waste materials to other products, such as building materials, ethanol, and gas.

For the unincorporated Santa Barbara County wasteshed, the waste stream currently was reduced by 57 percent in 2000 (the most recent data available). This reduction was accomplished through curbside recycling of metal, glass, plastic, paper, cardboard and other substances, and diversion of green waste and C&D waste. Based on current and planned programs, the County continues to expand its existing waste reduction activities and adopt additional ones as they become feasible. Current measures being investigated include, for the near term, an increase in commercial recycling and, for the long term, consideration of potential waste processing technologies by the multi-jurisdictional task force. These measures involve policy decisions to be made by the County Board of Supervisors and cities in the Tajiguas wasteshed, implementation by waste haulers, and acceptance by the public.

3.3.1.3 Source Reduction
Source reduction involves reuse of products so they stay in circulation or are used a number of times before they are recycled or disposed as waste. Essentially, this is recycling prior to discarding the material, rather than recycling after the material is discarded. Examples include reuse of grocery and other shopping bags, minimization of disposable product packaging and reuse of beverage containers. One way this is encouraged in the Tajiguas wasteshed is through the existing variable can rate system for waste disposal, which encourages source reduction. Residents and businesses in the Tajiguas wasteshed are charged for waste pick-up service based on the number of cans of waste that are collected for disposal.

One study of variable rate systems found that, of the communities sampled, those with variable rates had average waste generation rates 16 percent lower than those in non-variable rate
communities, based on a combination of recycling, green waste diversion and source reduction (Skumatz, 2000).

In the Tajiguas watersheds, existing recycling, source reduction, and green waste and C&D diversion programs accomplish an overall diversion rate of 57 percent. As a result, while the County continues to evaluate measures to increase the diversion rate, as the more easily diverted materials are already removed from the waste stream, waste reduction will continue to improve, but is expected to improve at a slower rate. Source reduction may be a primary mechanism for additional waste reduction.

3.3.1.4 Materials Recovery Facility
A materials recovery facility (MRF) is a facility where waste is received and usable recyclable materials are sorted and packaged for transport to other facilities where they are again made into usable products. There are two basic types of MRFs: “dirty” MRFs and “clean” MRFs.

A “dirty” MRF is a facility that receives a stream of raw solid waste and sorts and processes recyclables directly from the waste stream. A “dirty” MRF typically is used in communities that have no curbside recycling programs. The sorting systems can be fully or partly automated or entirely a manual sorting system. A properly designed system can process and recover between 5 and 45 percent of incoming material as recyclables, depending on the content of the waste stream (U.S. Department of the Navy, no date).

A “clean” MRF is a facility that receives recyclable materials that already have been separated from the waste stream. Examples include metal cans, glass, plastic, computer paper, cardboard boxes and newsprint.

Operation of a MRF involves contracts with recyclers that purchase and transport the bundled separated materials for re-manufacture and reuse. The market price for recyclables is volatile and, since there are no long-term markets for recyclables, operators of MRFs must research markets frequently. The volatility of the market place requires MRF operators to avoid long-term contracts to stay on top of changing commodity prices and not get locked into a contract that ultimately will not be profitable. The County continues to evaluate the Tajiguas waste stream to implement programs to divert additional recyclables. This includes evaluation of a program to separate out commercial loads that contain a high content of dry cardboard and paper suitable for recycling.

The curbside recycling program in the Tajiguas watersheds currently diverts approximately 8 percent of the overall solid waste streams (an additional 49 percent of the waste streams is diverted through the ongoing green waste and construction and demolition debris programs) (Santa Barbara County, 2002). Curbside recyclables from the Tajiguas watersheds are currently routed to the Del Norte Regional Recycling and Transfer Station in Oxnard, California, Gold Coast Recycling in Ventura, California, and the North County MRF in Santa Maria. Currently the curbside commingled recyclables collected in the southern unincorporated County and the cities of Santa Barbara and Goleta are routed through the Santa Barbara Transfer Station, from where they are transported to the Del Norte and Gold Coast facilities in County-owned transfer
trucks. The curbside commingled recyclables collected in the unincorporated Santa Ynez Valley and the cities of Solvang and Buellton are routed through the North County MRF.

A decision to site a new clean MRF in the Tajiguas wasteshed would not necessarily result in an increase in the diversion rate. However, a new “dirty” MRF could facilitate an increase in the diversion rate. Implementation of a “clean” or “dirty” MRF involves a site of several acres in an area of appropriate land use. Issues of public perception and acceptability include noise, traffic, dust and odor. MRFs frequently generate significant opposition from residents and businesses located nearby. Such a facility would require CEQA documentation and evidence of compliance with both state and local environmental regulations. Siting, permitting and construction of such a facility could take several years.

3.3.1.5 Combined Transfer Station/MRF
Typically, a combined transfer station/MRF (TS/MRF) is a facility that receives waste materials that are delivered in haul vehicles, as well as source-separated recyclables, such as from curbside recycling programs. The TS/MRF receives the waste materials from the haul vehicles (usually about 8-ton capacity) and loads this waste into larger (usually about 20-ton capacity) “transfer” vehicles that transport the waste to a landfill for disposal. The MRF receives the recyclable materials for sorting and packaging for shipment. A “dirty” MRF also could function as a combined TS/MRF.

As with a MRF, implementation of a transfer station involves a site of several acres in an area of appropriate land use. In addition to issues of noise, traffic, dust and odor are issues of litter and vectors. These issues may be perceived as being greater than with a clean MRF, as a transfer station processes either an entire waste stream or a waste stream from which recyclables have already been removed. Such a facility requires CEQA documentation and evidence of compliance with both state and local environmental regulations. Siting, permitting and construction could take several years.

3.3.1.6 Expanded Reuse and Recycling
The County continues to explore additional programs to increase the amount of diversion within the Tajiguas wasteshed, including expanded reuse and recycling of municipal solid waste materials. As discussed above, the current overall diversion rate in the unincorporated Santa Barbara County wasteshed is 57 percent, which is greater than the statewide goal of 50 percent required by AB 939. As additional programs are evaluated, they are referred to the Board of Supervisors and to the cities within the Tajiguas wasteshed for policy decisions regarding their potential implementation.

3.3.2 COMPOSTING
Composting is a feasible technology that involves the processing of wood/yard waste (green waste) and also may include other organics, such as food waste and other organic components of the solid waste stream. The product from composting can be used as soil amendment for a
variety of agricultural purposes. However, long-term end-users and/or end-markets for the compost must be identified and the specific product component needs to be established.

Composting of the green waste collected in the Tajiguas watershed is technically feasible; however, since the green waste is already diverted from the Tajiguas waste stream and is ground/chipped into mulch, composting of green waste would not result in diversion of additional waste from Tajiguas. As stated in Draft EIR Section 1.5.3, the County currently diverts approximately 140 tons per day of green waste from the Tajiguas waste stream. The green waste is ground either at Tajiguas or at the South Coast Transfer Station for a variety of end uses. The ground green waste is sold or is distributed to Caltrans, the public, nonprofit or other government agencies, agricultural ranches and/or is used out-of-County as fuel for biomass conversion. Some of the ground green waste is utilized at Tajiguas for erosion control or alternative daily cover on rainy days. Green waste from the cities of Solvang and Buellton and the unincorporated Santa Ynez Valley is ground at the North County MRF in Santa Maria; a portion of it is composted at a facility in Santa Maria.

3.3.2.1 Development and Implementation Considerations
To establish a composting facility for the green waste and/or organics from the waste stream would involve specific facility siting and design considerations. These include sufficient size to accommodate facility design, a convenient location to minimize haul distances, adequate buffer between the facility and nearby land uses, and suitable site topography and soil characteristics. Other considerations include existing infrastructure (utilities, storage space, paved access roads), zoning, site ownership and nearby land uses (EPA, 1994).

To implement a green waste/food waste composting program and facility in the Tajiguas watershed would require multi-jurisdictional commitments to guarantee feedstock and provide the necessary long-term contracts to assure a steady wastestream to the composting facility. Such a combined composting facility would eliminate the current green waste mulching program in the Tajiguas watershed that has been operating successfully for a number of years.

3.3.2.2 Environmental Considerations
Environmental considerations include, but are not limited to, air emissions, odors, water pollution, noise, vectors, fire and litter. Concerns regarding air emissions are related primarily to vehicle traffic and dust. Odor is a major related concern, as feedstock can contain odorous compounds. Odors can be produced during collection, transport and storage of feedstock or discards, or as a result of improper composting procedures (EPA, 1994). Concerns about odors often force composting facilities (especially municipal solid waste composting facilities) to be sited away from ideal collection and distribution locations. Noise is related to transport trucks entering and leaving the facility. Composting equipment, especially hammermills and other shredding/grinding machines, can measure approximately 90 dB at the source (EPA, 1994).

Proximity to certain water sources, such as floodplains, wetlands, surface waters, groundwater also is a consideration, as these need to be protected from facility runoff or leachate. Further, the
facility needs to be protected from run-on, which could interfere with processing of the compost material.

Other environmental considerations include vectors, which are small animals or insects that carry disease (mice, rats, flies, mosquitoes) and are attracted to the decaying organic materials. Fire also is a concern, as spontaneous combustion is possible if compost material becomes too dry.

Litter also is a concern. Litter can occur from yard trimmings and municipal solid waste delivered to the compost facility in open loads. Plastic and paper can blow away from windrows, and reject materials can blow away during preliminary screening procedures. Litter can be controlled by operational procedures, such as requiring incoming materials to be delivered in closed trucks, use of litter fences, regular litter collection, and enclosed areas for some procedures.

Because green waste from the Tajiguas watershed is already diverted and ground/chipped for mulch, composting of green waste alone would not further reduce waste disposal at Tajiguas. Although the technology exists to compost a combination of green waste and other organics (e.g., food waste), the food waste component of the Tajiguas waste stream is only 10 percent. Because less than one-half of this could be feasibly and economically diverted from the waste stream, limited additional diversion opportunity is available (Santa Barbara County, 2002). Based on the combination of development, implementation and environmental considerations, it is speculative as to whether a green waste/food waste composting facility could be in place and operating within the time frame of the Tajiguas expansion project.

3.3.3 CONVERSION TECHNOLOGIES

In addition, “Conversion” or “transformation” technologies may be defined as technologies that change one material or product to another – such as rice and straw to ethanol. As defined by the CIWMB, “conversion” means the processing, through non-combustion thermal means, chemical means, or biological means, other than composting, of residual solid waste from which recyclable materials have been substantially diverted and/or removed to produce electricity, alternative fuels, chemicals or other products that meet quality standards for use in the marketplace, with a minimum amount of residuals remaining after processing (CIWMB, 2002a).

Some leading conversion technologies are hydrolysis, high solids anaerobic digestion, gasification and landfill gas recovery. These technologies compete with materials used by conventional composting and recycling systems, such as organic waste and paper. When demand is high, certain technologies might compete for higher value source-separated materials. It is expected that these conversion technologies will be commercialized only incrementally over the next decade (2000-2010), a period when continued growth and improvement in composting, recycling and source reduction is expected (Wright and Meyer, 1999).

Issues regarding feedstock (i.e., waste stream) and flow control (i.e., reliability of the waste stream), permitting and public perception are common to the various conversion technologies. Access to feedstock is important, as most conversion technologies are capital-intensive and, therefore, require long-term contracts to guarantee feedstock. Further, there is competition for this feedstock, between landfill, recycling and conversion destinations. Because of this
competition for feedstock, some may perceive conversion technologies as weakening the recycling industry; others may see new technologies as the basis to resolve many environmental issues. As a result, it may take considerable time to build public support for conversion technologies (Wright and Meyer, 1999).

Permitting a facility to utilize conversion technology may take considerable time. To reduce the current rigors of permitting for a conversion facility, it will take time to alter the regulations and permitting requirements and to reduce the time required. In addition, depending on the amount of waste a facility converts, it may be classified either as a processing plant or a solid waste facility (Wright and Meyer, 1999), which will determine the lead permitting agencies and the specific regulatory requirements.

3.3.3.1 Development Considerations
There are various considerations regarding development and implementation of conversion technologies. Development issues include siting and financing issues. Conversion technologies may be able to use only certain types of feedstocks, and operating efficiencies may depend on the type of feedstock converted. The type of technology and the feedstock utilized may result in varying emissions and varying residuals from production.

Conversion technologies raise a number of siting and permitting issues, including whether or not facilities should be sited near feedstock supplies, such as at a MRF. In addition, such facilities raise questions as to which agencies have permitting jurisdiction over, for example, a conversion facility co-located at a MRF. Existing regulations do not address whether permit requirements must be modified for such a facility or whether existing regulations are applicable. Related effluent/ emissions/ materials management issues may impact other required permits, such as air permits or waste discharge permits (CIWMB, 2001).

In addition, financing and commercialization issues are involved. There need to be technologies that can utilize municipal residuals as feedstock that are ready for commercialization. Once commercialization is determined, there need to be methods to secure public and/or private funding for construction and operation, or it may be necessary to determine how a “first” conversion project can be funded (CIWMB, 2001). Due to high capital costs, 20-year contracts are normally required to commit the waste stream to the facility, to allow the capital cost of the facility to be amortized over that period of time. Currently, many waste-collection contracts are 7 to 10 years in duration (Wright and Meyer, 1999), which could result in the need to amortize the capital cost over this shorter time period. The potential related effect would be an increase in the per-ton cost for processing waste through the facility, thereby making the facility less economic.

Ultimately, the long-term end use must be identified. For example, for a gasification plant, the gas could be used to generate electricity. This means that either the gasification plant needs to be sited adjacent to an existing power plant, or a power plant needs to be built near the gasification plant, or a mechanism must be identified for transporting the gas to the power plant. The end user must be able to use the gas generated on a long-term basis, as the gas cannot be stored. For example, if the gas would fuel a power plant, it would need to be a baseload plant – a plant that
is intended to generate electricity all the time, not a peaker plant that operates only during periods of daily or seasonal high demand.

Economic and market issues are paramount. The long-term viability of a conversion facility is dependent on a number of factors, including access to feedstock (amount and term of contract) and markets for products (CIWMB, 2001). In addition, there are transportation costs of feedstock if the conversion facility is not co-located at a MRF, as well as cost savings if the facility is co-located at a MRF. There are questions regarding the status of markets/end-users for conversion products and about potential benefits. Are the benefits real? Will implementation of conversion technologies result in reduced landfill emissions and leachate, reduced air pollution, reduced transport costs, and in the economic production of fuels and other products (CIWMB, 2001)?

3.3.3.2 Environmental Issues
Related to any technology that is perceived as “new,” there are potential public perception issues because the outcome of implementing the technology is not known. These may include concerns over environmental impacts, environmental justice issues, support of a new/unknown technology, cost and the potential to weaken existing recycling programs (CIWMB, 2001).

3.3.3.3 Implementation Considerations
There are various implementation considerations related to conversion technologies that need to be addressed in order to establish a viable commercial-scale facility. These considerations include those described above related to development, plus the following, as presented at a CIWMB-sponsored forum – Conversion Technologies for Municipal Residuals, May 3-4, 2001 (CIWMB, 2001):

- **Lack of Political Leadership and Support:** There is a lack of credible leadership and/or constituency at both the state and local levels that is capable of promoting conversion technologies.

- **Statutory Constraints:** There is a lack of statutory framework to promote conversion technologies. Further, there are statutory disincentives, and there is no state policy directive.

- **Lack of Coordinated and Streamlined Regulatory Framework:** There is a lack of streamlining in the regulatory process, and an uncertainty of the regulatory environment. Agencies are fragmented in their definition of and regulatory approach to conversion technologies. Further, the time lag between plan development and when a permit finally is issued is too long, making implementation difficult.

- **Lack of Funding:** Funding limitations due to absence of proven technology demonstration and use. This leads to an unwillingness to take risks on the part of both the public and private sectors.

Additionally, the Tax Reform Act of 1986 affected the ability of public entities to obtain funding. The Act restricts states and localities in the
amount of revenue bond financing they may undertake for public/private projects. Prior to passage of the Act, many waste processing technologies were financed with public monies and then were owned and operated by private companies.

- **Economics and Markets:** Under current market conditions, conversion technologies are not perceived as economically competitive. Compared to landfiling, they are expensive. Compared to many alternatives, the capital costs are greater. The conversion technologies are not yet economical in the free market. Further, because of the volatility of energy prices, long-term contracts, which are needed to assure funding, are difficult to get at the needed rates.

- **Public Perception and Understanding:** Overall, there is a lack of knowledge on the part of the public, as well as public leaders and elected officials regarding the benefits of conversion technologies. There is a related lack of knowledge regarding potential incentives, investors, and other resources contributory to commercial implementation.

- **Lack of Data:** Because the technology is not widely implemented, there is a lack of reliable data on lifecycle benefits and emissions, technology performance, feedstock availability and vendor availability.

- **Feedstock Access:** There is competition for feedstock and, in some cases, a lack of access to necessary feedstock. These factors are related to the feedstock delivery infrastructure, changing value of feedstocks, reliability (in terms of quality, quantity, price), competition with other technologies (such as composting) for green waste and food feedstocks, inability of local jurisdictions to commit supply, and the related issue of feedstock flow.

- **Diversion Credit:** As of April 2002, the CIWMB (in Resolution 2002-177 [Revised]) determined that jurisdictions could obtain a maximum 10 percent diversion credit for the amount of waste utilized in a conversion facility, provided the following conditions were met — (1) the jurisdiction continues to implement the recycling and diversion programs in its source reduction and recycling element or its modified annual report, (2) the facility complements the existing recycling and diversion infrastructure and is converting solid waste that was previously disposed, (3) the facility maintains or enhances environmental benefits and (4) the facility maintains or enhances the economic sustainability of the integrated waste management system (CIWMB, 2002a).

Although these implementation issues can be resolved, it could require considerable time and effort. In Santa Barbara County, there are various jurisdictions involved with waste disposal in the Tajiguas watershed (i.e., the County, and the cities of Santa Barbara, Goleta, Solvang and Buellton.) As a result, it will be necessary to establish multi-jurisdictional commitments to guarantee feedstock and provide the necessary long-term contracts for flow control to allow a
select conversion technology to be implemented. Based on the combination of development and implementation considerations, it is speculative as to whether a conversion technology could be in place and operating within the time frame of the Tajiguas expansion project.

3.3.3.4 Example Conversion Technologies Using Municipal Solid Waste
Biomass consists of organic materials that comprise a portion of the municipal solid waste stream that typically is landfilled. Examples of biomass include yard, tree and brush trimmings (green waste), construction waste such as sawdust and wood debris, agricultural residues such as corn stalks and rice and wheat straw, used vegetable oils and paper. These materials can be used as feedstock for processes to produce secondary products. New conversion technologies such as hydrolysis, gasification and anaerobic digestion have the potential to convert biomass to energy, alternative fuels and other products (CIWMB, 2002). The conversion technologies discussed below have similar environmental issues.

For example, ethanol facilities can be located in urban areas, co-located with MRFs where materials are collected and the existing solid waste transport system can be utilized, although siting is “no easy task” (CIWMB, 2001a). According to the CIWMB, no information is available on actual emissions and environmental performance of such a facility, and CIWMB staff is unaware of any existing commercial hydrolysis plants that use MRF residuals as feedstock (CIWMB, 2001d). Although under development, the long-term environmental impacts would be difficult to analyze accurately.

Green waste already is separated out of the Tajiguas waste stream. As stated in Draft EIR Section 1.5.3, this green waste is sold, or is distributed to Caltrans, the public, nonprofit or other government agencies, agricultural ranches and/or is used out-of-County as fuel for biomass conversion. Some of the material is used for erosion control and alternative daily cover at the Tajiguas Landfill. Utilization of all of this feedstock for biomass-to-energy or other products would eliminate other uses. Other materials would need to be utilized to provide the same benefits as the current uses of green waste.

3.3.3.4.1 Hydrolysis/Ethanol
Hydrolysis is the chemical decomposition of substances using water. Feedstocks typically are plant-based materials that include forest material and sawmill residue, agricultural residue, urban waste and waste paper. With hydrolysis, these materials are broken down into their component sugars, which then can be fermented to produce ethanol. The sugars also can be converted into acids to be used in fuels, herbicides, pesticides and in the food industry (CIWMB, 2001d).

Hydrolysis currently is used in the midwestern U.S. to convert corn residue to ethanol (CIWMB, 2001a). Capital costs for an ethanol facility vary depending on the technology used and the size of the facility. For ethanol facilities co-located at a biomass facility and using urban residuals as feedstock, capital investment could range from $76 million for a 30-million gallon per year facility to $176 million for a 50-million gallon per year facility (CIWMB, 2001a).
It is technically feasible to produce ethanol (a gasoline fuel additive) from organic materials (including the organic component of municipal solid waste), or biomass. Conversion technologies for producing ethanol from biomass resources such as forest materials, agricultural residues and urban wastes are under development, but have not been demonstrated commercially (California Energy Commission, 2001). Although ethanol produced from biomass offers potential for meeting California's oxygenated gasoline needs, there are major challenges (California Energy Commission, 1999). First, the cost of producing ethanol is high and requires government price supports to make it a competitive fuel additive. Second, developing a California ethanol industry will require a state government role to overcome economic, technical and institutional barriers. Third, California-produced ethanol will face stiff competition from out-of-state ethanol supplies and in-state petroleum products (California Energy Commission, 1999).

Further, the cost/benefit equation is uncertain. Because the technologies are evolving, they present investors with greater risks than other investments. Production costs are expected to drop in the long term, making biomass-to-ethanol more competitive with ethanol from other sources. The size and duration of the market for ethanol is uncertain, so producers find it difficult to enter into long-term contracts at favorable prices (California Energy Commission, 2001). The ethanol that is produced from biomass must compete with ethanol from the Midwest, and the combination of technology and market risk makes investors reluctant to invest (California Energy Commission, 2001).

Establishing a waste-biomass ethanol industry in California will likely depend on further state government actions aimed at assuring development of feedstock supply, production facility construction and operation, and markets for ethanol and co-products. Biomass (cellulosic) waste-based ethanol production is an unproven technology on a commercial scale. Therefore, conventional ethanol production in California using agricultural commodities and agricultural processing wastes could contribute to the state's ethanol needs sooner than a waste biomass-based ethanol industry.

For an ethanol facility that uses urban waste, feedstock includes waste paper, tree prunings, urban wood waste and yard waste. The majority of these wastes already are being diverted from the Tajiguas waste stream for recycling or green waste mulch. Therefore, use of municipal solid waste from the Tajiguas wasteshed would require use of materials that currently are being recycled.

3.3.3.4.2 Plasma Arc
This is a technically feasible, non-incineration thermal process that uses extremely high temperatures in an oxygen-starved environment to decompose waste. This decomposition produces a gas that may be used for industrial processes, including generation of electricity and production of methanol and ethanol. Slag is produced by the inorganic material in the feedstock and can be used in the construction industry for road paving. Long-term end users must be provided for both the gas and the slag.
3.3.3.4.3 Anaerobic Digestion
Anaerobic digestion is the breakdown of organic materials in the absence of oxygen. This process produces a gas (biogas) composed primarily of methane (55%-75%) and carbon dioxide. Feedstocks include sewage sludge, livestock manure and wet organic materials (CIWMB, 2001b).

3.3.3.4.4 Gasification
Gasification is the use of heat, pressure and steam to convert feedstock materials (agricultural, forestry, green waste and solid waste residuals) into a carbon monoxide/hydrogen gas. Feedstocks include coal, petroleum-based materials (plastics), and organic materials. Gasification technologies require a separate energy source to generate heat and begin processing. Gasifiers can range in size and require as little as 24 tons of feedstock per day to 1,000 tons of feedstock per day (Wright and Meyer, 1999). The gasification product, a synthetic gas (syngas), can be used as a fuel to generate electricity or steam or as a component for other uses (CIWMB, 2001c). Gasification technology can convert 1,000 tpd of MRF residuals to produce nearly 25 MW of electricity. Gasification is used in Australia to convert sorted municipal solid waste into energy.

The inorganic material in the feedstock is converted to slag, which is inert and has a variety of uses in the construction and building industries. It is necessary to have a ready, long-term end user for both the gas and the slag.

These facilities can be co-located at MRFs to take advantage of solid waste transportation infrastructure. This also ensures that recyclable materials are removed beforehand and only municipal solid waste residuals are sent to a gasifier.

Emissions and byproduct can include mineral matter and particulates in the form of ash, and nitrogenous products such as ammonia and NOx. Volatile organic emissions in the form of tars and oils also may occur. Air emissions of carbon dioxide, NOx and non-methane hydrocarbons, and sulfur oxides occur primarily in feedstock production and from use of the gas by the end-user. Therefore, air emissions occur not only from the gasification process, but also, for example, from the generation of the electricity or steam that is produced by the gas.

For implementation by the County, this technology would require a MRF of sufficient size to provide the necessary feedstock. Other major issues include a long-term end user for the gas, such as an electrical or steam generation facility. This would need to be a baseload generation facility or steam plant; it would need to operate on a routine basis, as the gas cannot be stored. To be most economic, the end user and the gasification plant would need to be co-located.

3.3.4 WASTE-TO-ENERGY
The technology for waste-to-energy using municipal waste combustion involves the incineration of waste and use of the heat to generate steam, hot water or electricity – using mass burn, modular or refuse-derived fuel. In the 1980s and early 1990s, mass burn technologies were the most common waste-to-energy technologies utilized in the U.S. This technology processes raw
municipal solid waste “as is,” with little or no sizing, shredding or separation (U.S. Department of Energy, 2002a). Modular facilities use one or more small-scale combustion units to process lesser quantities of waste than mass burn. They usually generate steam that can be sold and/or used to generate electricity. Refuse-derived fuel (RDF) technologies employ a 2-stage incineration system. Wastes are pre-processed to provide a more homogenous fuel. The RDF is sold or is burned in a “dedicated” furnace.

The waste-to-energy industry experienced a dramatic decline in the 1990s, after rapid growth in the 1980s. In 1990, there were more than 50 facilities in California with a generating capacity of nearly 800 megawatts (MW) (average 16 MW each). However, with deregulation of the California electricity market, the number of facilities has decreased. Many plants have closed because, prior to deregulation, they operated under contracts that guaranteed higher-than-market prices for their energy. With deregulation, as the contracts expired, approximately one-half of the plants were unable to compete in the open market. In 1999, there were 29 operating biomass-to-energy plants in California. By 2001, that number had decreased to 26, generating a total of approximately 300 MW (CIWMB, 2001).

3.3.4.1 Development Considerations
Environmental regulations and government policies that once encouraged waste combustion into energy changed to emphasize pollution control at waste-to-energy facilities and recycling as the preferred disposal option. Federal tax policy no longer favors investments in capital-intensive waste-to-energy facilities. Energy regulations that once required utilities to buy energy from such facilities at favorable rates are being revamped to promote regional competition and lower energy prices. There are three primary factors involved in this change:

- **Tax Reform Act of 1986**: This legislation made it more difficult to publicly finance projects that were not controlled entirely by a public entity. Previously, many waste-to-energy projects (and other waste processing technologies) were financed with public monies and then owned and operated by private companies. Under this legislation, this type of public/private sector arrangement no longer qualifies as “public purpose.” States and localities are restricted in the amount of revenue bond financing for public/private sector joint financing they can undertake, and solid waste projects must compete with other infrastructure projects for financing. It is no longer easy to secure low-cost public financing for a privately owned and operated project, and tax law changes have eliminated some of the advantages of private ownership (U.S. Department of Energy, 2002b).

- **1994 Supreme Court Decision (C & A Carbone, Inc. v. Town of Clarkstown)**: This decision struck down local flow control ordinances that required waste to be delivered to municipal waste combustion facilities rather than to landfills that may have had lower tipping fees (U.S. Department of Energy, 2002b). This was important because waste-to-energy projects must secure a waste flow – through interlocal agreements, contracts and other arrangements. Previous to the Carbone decision, “put-or-pay” contracts were signed. These obligated
municipalities to provide a certain amount of waste to a facility and pay a per-ton fee, even if the projected amount was not forthcoming. Many facilities also relied on flow control legislation to ensure that the waste would be delivered.

- Prior to the Carbone decision, industry developments upset the flow control situation. First, the projected amount of waste did not materialize, so revenue targets were not met. Factors that led to this were increased recycling, a recession in the early 1990s and the availability of cheaper landfill space. Therefore, localities challenged the “put-or-pay” contracts or waited until they ended and did not renew them. As a result, the waste-to-energy facilities raised their tipping fees to provide increased revenues, effectively driving away customers.

- Increasingly Stringent Environmental Regulations: As a result of increasingly stringent environmental regulations, there has been an increase in the capital cost to construct and maintain municipal waste combustion facilities. At the same time, waste streams have continued to drop as a result of national environmental policy. With implementation of AB 939 and state-mandated waste diversion rates in California, waste reduction, reuse and recycling are being promoted – rather than incineration.

- Mega-Landfills: The emergence of large, privately-owned megafills with low tipping fees has made it problematic for more expensive waste-to-energy plants to compete without guaranteed put-or-pay contracts or a locked-in supply of MSW (Hickman and Eldredge, 2002).

Costs also are an issue. On average, the initial capital cost of a waste-to-energy facility, indexed to 1999 dollars, is $77 million. Additional capital investment per plant is $22 million in 1999 dollars (U.S. Department of Energy, 2002a).

3.3.4.2 Environmental Issues
For a variety of reasons, siting a waste-to-energy facility is a difficult task. Many residents and citizen groups oppose the construction of any waste-to-energy plant in their area. Concerns include air pollution and related health effects, as well as truck noise, traffic and odor. The primary environmental hazard with respect to the ash residue is fly ash, as heavy metals and organic compounds tend to be concentrated in the fly ash as a product of combustion (U.S. Department of Energy, 2002a).

Emissions and byproduct can include mineral matter and particulates in the form of ash, and nitrogenous products such as ammonia and NOx. Volatile organic emissions in the form of tars and oils also may occur. Air emissions of carbon dioxide, NOx and non-methane hydrocarbons, and sulfur oxides occur primarily in feedstock production and power plant operations.

There also are potential environmental justice issues – restrictions on siting “high-impact environmental projects” in low-income areas with high percentage of minority residents. There
are zoning and CEQA issues that require analysis, and both provide multiple opportunities for public review and comment. As a result, procedures make permitting a facility a long and arduous process that can take 5 to 7 years – or more (U.S. Department of Energy, 2002b).

3.3.5 OTHER
3.3.5.1 Bio-Solids Composting
The Tajiguas Landfill does not accept sludge (i.e., bio-solids) from wastewater treatment plants. Therefore, although bio-solids can be managed through composting (often in conjunction with green waste composting), bio-solids composting does not represent an alternative to the disposal of municipal solid waste at Tajiguas. Implementation of a bio-solids composting program would not increase the diversion of municipal solid waste in the Tajiguas wasteshed.

3.3.5.2 Rail Transport of Waste
The transport of waste by rail could be a potential future alternative to the disposal of waste at Tajiguas, based on the existence of a landfill that is open to receive such waste and on appropriate rail infrastructure for waste generated in the Tajiguas wasteshed. It is not an alternative waste technology, however. The potential for rail transport of waste generated in the Tajiguas wasteshed is addressed in Draft EIR Section 4.3.3.

3.3.5.3 Fuel Cells
A fuel cell is an electrochemical energy conversion device that converts hydrogen and oxygen into electricity and heat. It is similar to a battery that can be recharged while power is being withdrawn from it (Fuel Cells 2000, 2002a). A fuel cell consists of two electrodes sandwiched around an electrolyte. Oxygen passes over one electrode and hydrogen over the other, generating electricity, water and heat (Fuel Cells 2000, 2002a). Applications for fuel cells include primary or back-up power, power for vehicles, power for personal electronics and landfill/wastewater treatment, for generating power from methane gas (Fuel Cells 2000, 2002b).

There are many types of fuel cells, with different uses. These include:

- **Proton exchange membrane.** Most promising. Will be used to power motor vehicles.
- **Alkaline fuel cell.** Very expensive. Unlikely to be commercialized. Used in the space program since the 1960s.
- **Phosphoric-acid fuel cell.** Potential for use in small stationary power-generation systems.
- **Solid oxide fuel cell.** Best suited for large-scale stationary power generators
- **Molten carbonate fuel cell.** Best suited for large stationary power generators (Nice, 2002).

Some of the more promising fuels for use in fuel cells are natural gas, propane and methanol. Methanol is a liquid fuel that has similar properties to gasoline and may be a likely candidate to power fuel-cell cars (Nice, 2002).
One technical issue with fuel cells is that the hydrogen used to produce electricity has some limitations that make it impractical for use in most applications, as it is difficult to store and distribute (Nice, 2002). Various technical and engineering challenges remain, and fuel cells are still too expensive to produce and sell for widespread use. At the present time, not enough are being made to allow economies of scale (Fuel Cells 2000, 2002b). Even so, it is estimated that, by 2004, there will be a $2.4 billion market for fuel cells in electric power generation, motor vehicles, portable electronic equipment, military/aerospace, and other uses (Fuel Cells 2000, 2002c).

Although fuel cells offer promise for convenient sources of power in the future, they do not currently provide an alternative to landfill disposal of municipal solid waste. As indicated, the fuel cells may be able to use methanol (which may be produced from municipal solid waste) as a fuel, and methane gas may be used with fuel cells to generate power. Landfill gas can be used for fuel cells if the gas is of appropriate quality. However, the composition of gases in a landfill varies, depending on the make-up of the decomposing material. As a result, landfill gas is unreliable as a source of energy for fuel cells (O’Brien, 2002). Currently, the approximately 3 MW of power generated at Tajiguas from the recovery of landfill gas (which contains methane) is being used to generate electricity and is being fed into the Southern California Edison electrical transmission grid.

3.3.6 SUMMARY OF EVALUATION

As discussed above, there are numerous issues that must be addressed in the process of developing and implementing waste processing technologies. These issues include, but are not limited to siting, permitting, identification of end users, economics, financing, market acceptability, political leadership and support, statutory constraints, regulatory framework, public perception and understanding, available data, feedstock reliability and flow control. These issues must be resolved either individually or jointly by the various jurisdictions within the Tajiguas watershed in order for one or a combination of the technologies to be developed. To agree upon a specific strategy regarding waste processing technologies and to implement such a strategy, decisions and agreements would be required among the various jurisdictions within the Tajiguas watershed. Although such actions have occurred previously (current franchise agreements are evidence of such cooperation), the actions require sufficient lead time to be implemented. Therefore, it is speculative as to whether these complex actions that involve multiple jurisdictions may occur within the time frame of the proposed project.

As discussed in Draft EIR Section 4.4.4 – Other Developmental Technologies, the current developing waste processing technologies hold promise for the future. Many of the obstacles to developing and marketing these technologies will likely be overcome in the future, enabling them to be considered as part of long-term planning to meet the waste disposal needs of Santa Barbara County. Virtually all of the processes addressed are technically viable, and many are being implemented in other countries or locations within the United States; however, based on the development and implementation considerations discussed in this chapter, these technologies also require sufficient lead time to be implemented. Therefore, it is speculative to assume one or more of these processes could be implemented within the Tajiguas Landfill watershed within the time frame of the proposed project.
3.4 CEQA REQUIREMENT FOR ALTERNATIVES ANALYSIS

Within the context of this EIR, it is necessary to consider the requirements of the California Environmental Quality Act (CEQA) in considering whether one or more of the waste processing technologies represent a potential alternative to the proposed project. It then is necessary to assess whether one or more of the potential waste processing technologies would meet the requirements of CEQA as a true alternative to the proposed project.

The Guidelines for Implementation of CEQA (CEQA Guidelines) provide the framework for analyzing alternatives to a proposed project as part of an EIR in Section 15126.6 – Consideration and Discussion of Alternatives to the Proposed Project. The following parts of this Section 15126.6 are of interest as they pertain to consideration of waste processing technologies as alternative(s) to the proposed Tajiguas expansion project:

“(a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible.”

“(c) Selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. ... Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.”

“(f) Rule of reason. The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.”

“(I) Feasibility. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site . . .”

3.4.1 FRAMEWORK FOR EVALUATING POTENTIAL ALTERNATIVES UNDER CEQA

As stated above, per CEQA Guidelines (§15126.6), for an alternative to be considered feasible, it must “... attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project ... The discussion of alternatives shall focus
on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

As addressed and evaluated in the Draft EIR, the proposed Tajiguas expansion project would result in significant unavoidable adverse impacts (Class I, per Santa Barbara County Planning Department guidelines) in four resource areas: Air Quality, Biological Resources, Cultural Resources and Visual Resources. In accordance with the CEQA Guidelines, for an alternative to be considered feasible, it would need to avoid or substantially lessen one or more of the identified significant impacts for the project, while meeting the project objective of 15 years of disposal capacity for residual solid waste in the area served by the Tajiguas Landfill. Based on the analysis provided in the Draft EIR, the rock shelter would have to be avoided to eliminate the impact to Cultural Resources; the expansion area would have to be decreased to reduce impacts to Biological Resources (impacts to biological resources can be reduced but not avoided); the portion of the landfill expansion that is visible over the permitted landfill would have to be decreased to reduce the impacts to Visual Resources, and onsite activities would have to be reduced to result in decreased impacts to Air Quality (impacts to air quality can be reduced but not avoided).

As described in the CEQA Guidelines, the two primary issues in considering potential alternatives are feasibility and the ability of an alternative to avoid or substantially lessen significant impacts. For the proposed project, a feasible alternative is one that generally meets the same time frame as the proposed expansion, i.e., 15 years, beginning when the currently permitted landfill reaches capacity. To avoid or substantially lessen significant impacts in this case, the alternative must decrease the amount of residual waste that is landfilled and/or reduce the space necessary for disposal of the residual waste. There must be enough reduction to significantly reduce the daily volume of waste delivered to the landfill in order to result in a smaller landfill footprint. At the same time, however, the alternative must provide for 15 years of disposal capacity for residual solid waste generated by southern Santa Barbara County, the Santa Ynez and Cuyama Valleys, and the cities of Santa Barbara, Goleta, Solvang and Buellton.

Based on the combination of the CEQA Guidelines direction for alternatives and the four Class I impacts that result from the proposed Tajiguas expansion project, one or a combination of feasible waste processing technologies must result in sufficient additional diversion from the waste stream within the time frame of the proposed project to allow for a landfill configuration that would:

- Avoid entirely the Cultural Resources impact by reducing the size of the expansion (i.e., modifying the landfill footprint) to avoid the rock shelter altogether.
- Reduce by 50 percent the visibility of the landfill from Viewpoint 5.
- Reduce impacts to Biological Resources by reducing the size of the expansion (in essence this would be achieved by modifying the landfill footprint to avoid the rock shelter).
- Reduce daily onsite activities to the extent that onsite air emissions would be reduced. In essence, this occurs with the reduced daily volume.
and a smaller landfill footprint (achieved by modifying the landfill footprint and landfill height to avoid the rock shelter and reducing the height to reduce the visibility of the landfill) and meeting the basic overall objective of the project, which is to provide for 15 years of disposal capacity.

The above measures would avoid or substantially lessen the four significant impacts of the project. Implementation of these measures would result in a landfill that is approximately 32 percent smaller than the proposed expansion and has a corresponding 32 percent reduction in daily and total disposal capacity, as follows:

- Decrease in expansion footprint by 24.5 acres (from 71 acres of new disturbance shown in the Draft EIR to 46.5 acres of new disturbance).
- Decrease in height of the landfill by 60 feet in the area where the landfill is visible from Viewpoint 5 (from 620 feet in elevation shown in the Draft EIR to 560 feet in elevation).
- As a result of the decrease in the area of the landfill footprint and the decrease in the height of the landfill, there would be a 2.6 million cubic yard decrease in the total capacity (air space) of the landfill (from 8.2 million cubic yards shown in the Draft EIR to 5.6 million cubic yards).
- Decrease in landfill capacity (air space) by 720,000 cubic yards to account for material to be relocated from the southeast corner of the landfill (from 5.6 million cubic yards shown in the Draft EIR to 4.9 million cubic yards).
- Total new capacity = 4.9 million cubic yards available for new municipal solid waste disposal. This would be 15 years of capacity after an overall 32 percent reduction in the daily disposal rate, as shown in Table 3-3.

The above measures, which result in a reduced volume of air space (cubic yards) for the landfill expansion, also reduce the total number of tons of municipal solid waste that can be placed in the landfill.

Table 3.11-9 of the Draft EIR estimates the average tons per day of municipal solid waste that will be placed in the landfill during the 15-year life of the proposed expansion. The values in Table 3.11-9 reflect the base year (1998-1999) average daily tonnage of municipal solid waste brought to Tajiguas for disposal. These values then were projected to the year 2020 in...
Table 3.11-9, with increases based on estimates of population growth. These estimates, and the reduction in average tons per day with a 32 percent smaller landfill, are shown in Table 3-3.

**TABLE 3-3**

**REDUCTION IN WASTE DISPOSAL RATES**

<table>
<thead>
<tr>
<th>Year of Operation</th>
<th>Estimated MSW (TPD)</th>
<th>Percent Reduction</th>
<th>Required Reduction in MSW (TPD)</th>
<th>Overall Decrease in MSW (TPD)</th>
<th>Revised MSW (TPD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>= 847</td>
<td>X 0.32</td>
<td>= 271</td>
<td>847 - 271</td>
<td>= 576 tpd</td>
</tr>
<tr>
<td>2010</td>
<td>= 874</td>
<td>X 0.32</td>
<td>= 280</td>
<td>874 - 280</td>
<td>= 594 tpd</td>
</tr>
<tr>
<td>2015</td>
<td>= 901</td>
<td>X 0.32</td>
<td>= 288</td>
<td>901 - 288</td>
<td>= 613 tpd</td>
</tr>
<tr>
<td>2020</td>
<td>= 929</td>
<td>X 0.32</td>
<td>= 297</td>
<td>929 - 297</td>
<td>= 632 tpd</td>
</tr>
</tbody>
</table>

Note: The above numbers are projected rates of disposal from Draft EIR Table 3.11-9.

With a landfill that is sized to avoid or substantially lessen significant impacts of the proposed project and maintain 15 years of disposal capacity, it will be necessary to increase the diversion rate by an average of 32 percent (over and above the 57 percent diversion rate already achieved) over the 15-year life of the expansion project to reduce the daily tonnage of municipal solid waste disposed of at the reduced-capacity landfill. The increase in waste diversion can occur only if one or a combination of waste processing technologies is increased and jointly implemented by the County of Santa Barbara and cities of Santa Barbara, Goleta, Buellton and Solvang. The potential for this to occur depends on a variety of factors that include, but are not limited to:

- Environmental considerations/permitting
- Siting issues
  - Land use
  - Community attitudes
  - Accessibility
  - Proximity to other compatible/incompatible uses
- Implementability
  - Regulatory constraints (state, county, city)
  - Time requirements
  - Public acceptance
  - Cost
- Policy decisions
  - County of Santa Barbara
  - City of Santa Barbara
  - City of Goleta
  - City of Buellton
  - City of Solvang
  - Waste flow control
  - Economics
3.4.2 POTENTIAL TO MEET CEQA REQUIREMENTS

As shown above, there are numerous issues associated with development and implementation of waste processing technologies. To provide a feasible alternative to the proposed project, these and other issues must be resolved either individually or jointly by the various jurisdictions within the Tajiguas watershed and within the 15 years of the proposed landfill expansion.

The County controls 24.5 percent (approximately 190 tpd) of waste disposed at the Tajiguas Landfill (based on the most recently available data). The remainder is controlled by the cities of Santa Barbara, Goleta, Solvang and Buellton. To provide sufficient feedstock for a feasible alternative to the proposed Tajiguas expansion, the amount of feedstock would need to be sufficient on both a short-term (daily) and long-term (annual) basis. Therefore, for the County to provide the appropriate quantity of feedstock over a sufficient period of time, it would need to gain control of the municipal solid waste generated within the cities of Santa Barbara, Goleta, Solvang and Buellton. This would require multi-jurisdictional agreements and, potentially, control of solid waste and green waste that currently is being diverted for recycling purposes.

The Tajiguas Landfill expansion is proposed to provide 15 years of disposal capacity for jurisdictions within the Tajiguas watershed. To be a feasible alternative to the proposed project, that alternative would have to avoid or substantially lessen the significant impacts of the proposed project. As described above, to meet these requirements would require a landfill that is 32 percent smaller than the proposed project. A reduction of less than 32 percent would have little effect in reducing significant impacts, due to engineering requirements that would be implemented. Existing regulations require standards for slope stability and other elements of construction that would otherwise require the disturbance footprint to be similar to the proposed project. As noted on Table 3-3, it would be necessary to divert nearly 300 tpd from Tajiguas in order to achieve the necessary additional diversion of 32 percent (over and above the 57 percent diversion that already is achieved). Even if it were possible for the County to divert all of the 190 tpd under its control, this would not be sufficient to accomplish the 32 percent decrease in waste disposed at Tajiguas to accomplish the goals of an alternative to the proposed project, as defined under CEQA. Further, due to the extent and complexity of developing and implementing an alternative and the lead time associated with its development, to accomplish a 32 percent reduction in the amount of waste disposed at Tajiguas, it is speculative to assume this reduction could be achieved within the 15-year time frame of the proposed expansion project.

3.4.3 DIVERSION OF WASTE TO EXISTING IN-COUNTY LANDFILLS

In addition to the various comments regarding other waste processing technologies, several comments suggested that, in combination with implementation of other waste processing technologies, waste be diverted from Tajiguas to other existing in-County landfills (i.e., Foxen Canyon, Lompoc, Santa Maria and USAF Vandenberg Landfills). As discussed in Responses 3-100, 3-101, 3-102, 3-103, 3-104, 3-107 and 3-108 and below, there are various reasons why an alternative that involves implementation of other waste processing technologies, in combination with diversion of waste from Tajiguas, is not feasible.

Under existing policies of the Santa Barbara County Board of Supervisors, the City of Santa Maria, the City of Lompoc, and the United States Air Force, it is not feasible to dispose of waste

Final EIR, July 2002

3-23

Tajiguas Landfill Expansion
from the Tajiguas Landfill in the Foxen Canyon Landfill, the Santa Maria Landfill, the Lompoc Landfill or the Vandenberg Air Force Base Landfill. See Draft EIR Sections 4.2.1.1 - Foxen Canyon Landfill, 4.2.1.2 - Lompoc Landfill, 4.2.1.3 - Santa Maria Landfill and 4.2.1.4 - Vandenberg Air Force Base Landfill.

For the purpose of this EIR, an alternative is considered infeasible if it would involve a change in policy of a governing agency. It is speculative to assume that the County Board of Supervisors will change policy to re-open the Foxen Canyon Landfill. It is speculative to assume that the City of Lompoc and City of Santa Maria would change their policies and begin accepting waste that currently is disposed at the Foxen Canyon Landfill or to accept waste disposed at the Tajiguas Landfill. It is also speculative to assume that the United States Air Force will change its policy and accept waste from the Foxen Canyon and/or Tajiguas landfills. Moreover, the CEQA Guidelines (§15144) state that, in preparing an EIR, while foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can. This section of CEQA limits the requirement for forecasting to that which could be reasonably expected under the circumstances and is part of the effort to provide a general "rule of reason" for EIR contents. In regard to forecasting, the Laurel Heights Court commented that an agency is required to forecast only to the extent that an activity could be reasonably expected under the circumstances. An agency cannot be expected to predict the future course of governmental regulation or exactly what information scientific advances may ultimately reveal (see Laurel Heights Improvement Association v. Regents of the University of California [1988] 47 Cal. 3d 376). In accordance with the CEQA Guidelines (§15126.6[f][3]), "An EIR need not consider an alternative whose... implementation is remote and speculative."

In addition to the policies of the cities of Lompoc and Santa Maria regarding not accepting waste disposed at the Foxen Canyon and/or Tajiguas landfills, the County of Santa Barbara's 1997 Countywide Integrated Waste Management Plan (CIWMP) plans for regional solid waste management. The CIWMP assumes the current wastesheds. In accordance with state regulations, the CIWMP was approved/adopted by the County, the cities within the County and the California Integrated Waste Management Board (CIWMB). The wastesheds identified in the CIWMP for the Lompoc and Santa Maria landfills do not include the Santa Ynez Valley (served by Foxen Canyon) or southern Santa Barbara County (served by Tajiguas). Therefore, not only would the policies of the cities of Lompoc and Santa Maria need to be changed to accept waste currently disposed at Foxen Canyon and/or Tajiguas, but the CIWMP would need to be revised to reflect changes in the wastesheds for the in-County landfills. The CIWMP revision would need to be approved/adopted by the County, the cities in the County, and the CIWMB.

In addition to the wastesheds defined in the County's CIWMP, for southern Santa Barbara County (including the cities of Santa Barbara and Goleta) and the Santa Ynez Valley (including the cities of Solvang and Buellton), there are existing franchise agreements for solid waste services, specifying that waste for disposal shall be routed to Tajiguas. The existing franchise agreements have varying expiration dates over the next 10 to 15 years. Therefore, in addition to the need to change the policies of the cities of Lompoc and Santa Maria, and the need to redefine the wastesheds and reapprove/adopt the CIWMP, the existing franchise agreements would require re-negotiation in order for waste currently disposed at Foxen Canyon and/or Tajiguas to
be redirected to another in-County landfill (i.e., Lompoc and/or Santa Maria) or to an out-of-County landfill. It is speculative as to whether this combination of factors might be changed and approved and is beyond the sole jurisdiction of the County Board of Supervisors. Therefore, the alternative of re-directing waste that currently is disposed at Foxen Canyon and/or Tajiguas to the Lompoc and/or Santa Maria landfills is not a feasible alternative to the proposed Tajiguas expansion project.

The specific issues associated with the diversion of waste to the four existing in-County landfills (i.e., Foxen Canyon, Lompoc, Santa Maria, and Vandenberg Air Force Base) are as follows:

- **Foxen Canyon Landfill**: As discussed in Draft EIR Section 4.2.1.1, the Santa Barbara County Board of Supervisors has made the decision to not expand, but rather to close, the Foxen Canyon Landfill and build a transfer station at the site of the closed landfill. Currently, the Foxen Canyon Landfill is scheduled to close in 2004.

  County staff's Board Letter, dated June 24, 1997, for subsequent action on July 7, 1997, stated that the Foxen Canyon Landfill would be closed (Santa Barbara County, 1997). In addition, the Board Letter stated the Foxen Canyon Landfill expansion previously proposed and analyzed in 90-EIR-14 would not be implemented. The Board of Supervisors adopted the staff recommendations in the Board Letter.

  The decision was based on a determination by the Board of Supervisors that, due to changes in landfill design regulations (Subtitle D of the federal Resource Conservation and Recovery Act and California Code of Regulations [CCR] Title 23 - now part of CCR Title 27), expansion of the Foxen Canyon Landfill would be so expensive as to be economically infeasible. In 1995, County staff estimated that, to meet the new Subtitle D requirements, a composite liner system would need to be installed as part of the expansion of the Foxen Canyon Landfill at a cost of approximately $250,000 per acre. A subsequent analysis determined it would be more economic to close the Foxen Canyon Landfill and convert it to a transfer station than to expand it. In addition, this action enabled the County to avoid an adverse impact to sensitive biological resources (i.e., loss of 46 mature oak trees) that would have occurred if the Foxen Canyon Landfill had been expanded.

  Economic factors in addition to the cost of the liner system for expansion of the Foxen Canyon Landfill involve the County's lease agreement with the owner of the landfill property and make the expansion uneconomic. Under the current lease agreement, the County tipping fee at the Foxen Canyon landfill can be increased by only 50 cents per year for self-haul, which is not sufficient to defray the cost of the liner system that would be required for the expansion. In addition, under the current lease agreement, should the County decide to dispose of waste from outside the Santa Ynez Valley School District at the Foxen Canyon Landfill, the property owner would receive the entirety of the tipping fee for each ton of waste that originated outside this area.
These two lease issues make it uneconomic to expand the Foxen Canyon Landfill and/or to divert waste from Tajiguas to Foxen Canyon.

Based on the above, it is speculative whether the County Board of Supervisors would change its decision regarding closure of the Foxen Canyon Landfill. Therefore, the alternative of keeping Foxen Canyon open to continue to accept waste from the Santa Ynez Valley (i.e., diverting it from Tajiguas as part of the proposed project) is not a feasible alternative.

In addition, to keep the approximately 100 tpd of Foxen Canyon waste at the Foxen Canyon Landfill for disposal rather than transporting it to Tajiguas for disposal would not result in a sufficient reduction in the daily/annual tonnage of solid waste disposed of at Tajiguas to allow a reduction in the size of the proposed expansion.

Due to the topography of Cañada de la Pila and the engineering requirements of the Tajiguas Landfill expansion project, the expanded Landfill footprint would not be smaller, even if the approximately 30,000 tons per year (460,000 tons over the 15-year life of the expansion project) of waste currently disposed at the Foxen Canyon Landfill were not disposed at Tajiguas. Therefore, not only is the expansion of Foxen Canyon Landfill speculative and not a feasible alternative, it would not significantly affect the size of the proposed Tajiguas expansion, and it therefore would not lessen the impacts to biological, cultural or visual resources associated with the proposed expansion of Tajiguas.

- **Lompoc Landfill:** The City of Lompoc would have to decide whether it is willing to accept waste that now goes to the Foxen Canyon Landfill. As stated in Draft EIR Section 4.2.1.2 (page 4-10), the City of Lompoc's policy is to protect the value of the Lompoc Landfill air space for the City of Lompoc and its wastewater and not to accept waste from outside the Lompoc wastewater. Further, the City of Lompoc has previously made it known that it would not accept waste from the Tajiguas wastewater. The cities of Buellton and Solvang and other areas of the Santa Ynez Valley that utilize the Foxen Canyon Landfill do not fall within the Lompoc wastewater (King, 2002). Therefore, based on the current policy of the City of Lompoc, when the Foxen Canyon Landfill closes in 2004, that waste cannot be disposed at the Lompoc Landfill.

As the County of Santa Barbara has no jurisdiction over the City of Lompoc decision to not accept waste that now goes to the Foxen Canyon Landfill, it is speculative to assume that that City of Lompoc would change its policy and choose to receive that waste. In accordance with the CEQA Guidelines (§15126.6[f][3]), "An EIR need not consider an alternative whose ... implementation is remote and speculative."

To divert the approximately 100 tpd of solid waste currently being disposed of at the Foxen Canyon Landfill to the Lompoc Landfill rather than transporting it to Tajiguas for disposal would not result in a
sufficient reduction in the daily/annual tonnage of solid waste disposed of at Tajiguas to allow a reduction in the size of the proposed expansion. As discussed above, such a diversion is not feasible under the current policy of the City of Lompoc, the existing County CIWMP, or the existing waste services franchise agreements.

Due to the topography of Cañada de la Pila and the engineering requirements of the Tajiguas Landfill expansion project, the expanded Landfill footprint would not be smaller, even if the approximately 30,000 tons per year (460,000 tons over the 15-year life of the expansion project) of waste currently disposed at the Foxen Canyon landfill were not disposed at Tajiguas. Therefore, not only is a diversion of Foxen Canyon waste to the Lompoc Landfill speculative and not a feasible alternative, the size of the expanded Tajiguas Landfill would remain the same. Therefore, the diversion would not lessen the impacts to biological, cultural or visual resources associated with the proposed expansion of Tajiguas.

- **Santa Maria Landfill:** As stated in Draft EIR Section 4.2.1.3 (page 4-11), the Santa Maria Landfill has a permitted daily capacity of 740 tpd and a current waste disposal rate of 375 tpd. A permit to expand the Santa Maria Landfill within the existing landfill property was issued by CIWMB on September 28, 2001. At the current average disposal rate of 375 tpd, the expansion provides capacity to 2017 (Schmaeling, 2001). The addition of waste from the Santa Ynez Valley (57 tpd) and the Foxen Canyon Transfer Station (52 tpd) would increase the waste disposal rate at the Santa Maria Landfill to approximately 484 tpd, thereby decreasing the life of the landfill by approximately 20 percent. The primary impact of diverting Santa Ynez Valley and Cuyama Valley waste to the Santa Maria Landfill would be an increase in the daily waste tonnage at this landfill and the resulting reduction of the projected life of the Santa Maria Landfill. As a result, the City of Santa Maria Landfill would not be able to provide 15 years of capacity to its waste disposal service area or 15 years of disposal capacity for the Tajiguas waste from the Santa Ynez and Cuyama Valleys. This would be inconsistent with the purpose of the proposed Tajiguas expansion project, which is to provide 15 years of additional reliable and cost-effective municipal solid waste disposal services for the residents of southern Santa Barbara County, and the Santa Ynez and Cuyama Valleys.

The City of Santa Maria's objective for the 15-year expansion of the Santa Maria Landfill is to provide sufficient time for that city to identify and select a new landfill site. The City of Santa Maria has stated it will not accept waste from outside the Santa Maria Landfill wasteshed (i.e., northern Santa Barbara County), as it does not want to jeopardize the 15-year life of the recent expansion. Specifically, the City of Santa Maria has indicated it will not accept waste from the Santa Ynez Valley.
or from southern Santa Barbara County. It is speculative to assume the City of Santa Maria might change its policy regarding receipt of waste from outside the watershed of the Santa Maria Landfill. Therefore, the suggested alternative of diverting waste that is currently disposed at Foxen Canyon to the Santa Maria Landfill rather than to Tajiguas as part of the expansion project is not a feasible alternative. Similarly, diverting waste from southern Santa Barbara County to the Santa Maria Landfill also is not a feasible alternative.

In addition, as discussed in Draft EIR Section 4.2.1.3, the Santa Maria Landfill is approximately 34 miles from the designated waste generation area of the Santa Ynez Valley and approximately 30 miles from the Foxen Canyon Transfer Station. This compares to the Tajiguas Landfill, which is approximately 23 miles from the designated waste generation area of the Santa Ynez Valley and approximately 27 miles from the Foxen Canyon Transfer Station. Therefore, an increase in vehicle miles traveled would be required to dispose of waste generated in the Santa Ynez Valley at the Santa Maria Landfill rather than at the Tajiguas Landfill. This increase in vehicle miles would have the potential to result in increased waste disposal costs, vehicular emissions and other transportation-related impacts.

- **USAF Vandenberg Landfill**: As discussed in Draft EIR Section 4.2.1.4, based on personal communication with personnel at Vandenberg AFB, the Vandenberg Landfill is limited to use by the USAF, and does not accept waste from other jurisdictions. Any decision for the County or other entity to use the Vandenberg Landfill would not be made at the base level; it would be made at the Air Force level, in Washington, D.C. As a result, disposal of waste from the Santa Ynez Valley to the Vandenberg AFB Landfill (via the transfer station at the Foxen Canyon Landfill) is not a feasible alternative.

To divert the approximately 100 tpd of solid waste currently being disposed of at the Foxen Canyon Landfill to the Vandenberg Landfill rather than transporting it to Tajiguas for disposal would not result in a sufficient reduction in the daily/annual tonnage of solid waste disposed of at Tajiguas to allow a reduction in the size of the proposed expansion. As discussed above, such a diversion is not feasible under the current policy of the USAF.

Due to the topography of Cañada de la Pila and the engineering requirements of the Tajiguas Landfill expansion project, the expanded Landfill footprint would not be smaller, even if the approximately 30,000 tons per year (460,000 tons over the 15-year life of the expansion project) of waste currently disposed at the Foxen Canyon Landfill were not disposed at Tajiguas. Therefore, not only is diversion of Foxen Canyon waste to the Vandenberg Landfill speculative and not a feasible alternative, the size of the expanded Tajiguas Landfill would remain the same. Therefore, the diversion would not lessen the impacts to
biological, cultural or visual resources associated with the proposed expansion of Tajiguas.

As discussed in Draft EIR Section 4.4.4 and in Section 3.3.6 of this Chapter 3.0 of the Final EIR, virtually all of the waste processing technologies noted by the comments are technically viable. It is speculative as to whether one or a combination of such technologies could be implemented during the time frame of the proposed Landfill expansion due to development considerations (e.g., siting, environmental, regulatory, financial) and implementation considerations (e.g., multi-jurisdictional policy and contract issues). Therefore, not only is the diversion of waste from the Foxen Canyon Landfill to either the Lompoc, Santa Maria or Vandenberg AFB Landfills speculative and not feasible based on the current policies of those jurisdictions, the existing County CIWMP, or the existing waste services agreements, but the increased diversion of waste from the Tajiguas Landfill through implementation of other waste processing technologies also is speculative during the time frame of the expansion project and, therefore, does not represent a feasible alternative to the proposed project.

Based on the above, the diversion of the Santa Ynez Valley waste from the Tajiguas Landfill to an expanded Foxen Canyon, Lompoc, Santa Maria or Vandenberg Landfill is not a feasible alternative to the proposed expansion project. In addition, the diversion of Santa Ynez Valley waste from the Tajiguas expansion to one of these existing in-County landfills in combination with implementation of other waste processing technologies also is not a feasible alternative.

3.5 TAJIGUAS LANDFILL WASTE STREAM
Waste that reaches Tajiguas for disposal is generated in the unincorporated portions of southern Santa Barbara County, the cities of Santa Barbara, Goleta, Buellton and Solvang, and in the unincorporated portions of the Santa Ynez Valley and the Cuyama Valley. At the present time, a relatively small amount of waste (approximately 100 tons per day [tpd]) that is generated in the Santa Ynez Valley goes to the Foxen Canyon Landfill for disposal. The Foxen Canyon Landfill is anticipated to reach capacity and close as of 2004. At that time, waste that had been transported to Foxen Canyon for disposal will, instead, go to Tajiguas.

As shown in Draft EIR Table 1-1, for purposes of the EIR, the baseline is an average daily disposal rate of 738 tpd and a peak day disposal rate of 1,161 tpd. Of this waste, approximately 48 percent is from the City of Santa Barbara, 22.5 percent is from the City of Goleta, 3 percent is from the City of Solvang, 2 percent is from the City of Buellton, and 24.5 percent is from the unincorporated portions of southern Santa Barbara County, and the Santa Ynez Valley and the Cuyama Valley.

Other waste generated in the County is in the wastesheds of Santa Maria and the Santa Maria Landfill, Lompoc and the Lompoc Landfill, and Vandenberg Air Force Base (VAFB) and the VAFB Landfill.

The County Public Works Department, Solid Waste and Utilities Division (SWUD), is responsible for the Tajiguas Landfill and disposal of residual waste within the wasteshed for the Landfill. As noted above, the Landfill receives waste from the cities of Santa Barbara, Goleta,
Solvang and Buellton and the unincorporated portions of southern Santa Barbara County, the Santa Ynez Valley and the Cuyama Valley. However, the cities of Santa Barbara, Goleta, Solvang and Buellton are not necessarily required to send their waste to Tajiguas. As discussed above in Final EIR Section 3.4.3, the cities have franchise agreements with waste haulers whereby they haul their waste to Tajiguas, but the agreements could be changed, whereby the haulers could transport the waste to other locations for processing or disposal. As a result, although the County provides a disposal site for waste from these areas, the County has long-term flow control (control of waste) only from the unincorporated portions of southern Santa Barbara County, the Santa Ynez Valley and the Cuyama Valley. Therefore, in considering the total waste stream of the Tajiguas wasteshed, as described above, the County has long-term control over 24.5 percent of the total waste stream (Solid Waste and Utilities Division, 2002), or approximately 190 tpd of waste that was disposed of at Tajiguas, based on landfill data for 2000. The remainder of the Tajiguas wasteshed waste stream is controlled by the cities of Santa Barbara, Goleta, Solvang and Buellton.

To provide sufficient feedstock for one or a combination of waste processing technologies that may be feasible as an alternative to the proposed Tajiguas expansion, the amount of feedstock would need to be sufficient on both a short-term (daily) and long-term (annual) basis. Therefore, for the County to provide the appropriate quantity of feedstock over a sufficient period of time, it would need to gain control of the municipal solid waste generated within the cities of Santa Barbara, Goleta, Solvang and Buellton. Due to the structure of existing franchise agreements, this goal could not be accomplished until the terms of the agreements expire or are renegotiated. Also, for the County to gain control of sufficient feedstock, it would need to implement multi-jurisdictional agreements and, potentially, obtain control of solid waste and green waste that currently is being diverted for recycling purposes.

As discussed above, the Tajiguas Landfill expansion is proposed to provide 15 years of disposal capacity for jurisdictions within the Tajiguas wasteshed. To be a feasible alternative to the proposed project, that alternative would have to avoid or substantially lessen the significant impacts of the proposed project. As discussed above, to meet these requirements would require a landfill that is 32 percent smaller than the proposed project. Due to the extent and complexity of developing and implementing such an alternative waste technology to accomplish a 32 percent reduction in the amount of waste disposed at Tajiguas, it is speculative to assume this reduction could be achieved within the 15-year time frame of the proposed expansion project.

3.6 CONCLUSIONS
As discussed above, alternatives to ongoing recycling and disposal programs for the Tajiguas wasteshed involve a host of issues to be resolved. These include, but are not limited to:

- **Development and implementation considerations:** As discussed above, there are numerous issues to be considered in the process of developing and implementing waste processing technologies. These include, but are not limited to siting, permitting, identification of end users, financing, economics, market acceptability, political leadership and support, statutory constraints, regulatory framework, public perception and understanding, available data, feedstock access and flow control. To
provide a feasible alternative to the proposed project, these issues must be resolved either individually or jointly by the various jurisdictions within the Tajiguas wasteshed and within the 15 years of the proposed landfill expansion.

- **Multi-jurisdictions:** To agree upon a specific strategy regarding waste processing technologies and to implement such a strategy, decisions and agreements would be required among the various jurisdictions within the Tajiguas wasteshed. Although such actions have occurred previously (current franchise agreements are evidence of such cooperation), it is unknown and speculative as to whether these complex actions that involve multiple jurisdictions are feasible within the time frame of the proposed project.

- **Flow control:** The County controls 24.5 percent (approximately 190 tpd) of the waste disposed at Tajiguas, based on landfill data for 2000. The remainder of the Tajiguas wasteshed waste stream is controlled by the cities of Santa Barbara, Goleta, Solvang and Buellton. Therefore, the County has long-term control over approximately 190 tpd of waste without affecting ongoing recycling and diversion programs. To provide sufficient feedstock for a feasible waste processing technology, the amount of feedstock would need to be sufficient on both a short-term (daily) and long-term (annual) basis. Therefore, for the County to provide the appropriate quantity of feedstock over a sufficient period of time, it would need to gain control of the municipal solid waste generated within the cities of Santa Barbara, Goleta, Solvang and Buellton. Due to the structure of existing franchise agreements, this goal could not be accomplished until the terms of the agreements expire or are renegotiated. For the County to gain control of sufficient feedstock, it would need to implement multi-jurisdictional agreements and, potentially, control of solid waste and green waste that currently is being diverted for recycling purposes. This would require multi-jurisdictional agreements and, potentially, control of solid waste and green waste that currently is being diverted for recycling purposes.

- **Project Time Frame:** The Tajiguas Landfill expansion is proposed to provide 15 years of disposal capacity for jurisdictions within the Tajiguas wasteshed. To be a feasible alternative to the proposed project, that alternative would have to avoid or substantially lessen the significant impacts of the proposed project. As discussed above, to meet these requirements would require a landfill that is 32 percent smaller than the proposed project. Due to the extent and complexity of developing and implementing one or a combination of waste processing technologies to accomplish a 32 percent reduction in the amount of waste disposed at Tajiguas, it is speculative to assume this reduction could be achieved within the 15-year time frame of the proposed expansion project.
The Draft EIR evaluates alternative disposal technologies in Section 4.4. The Draft EIR considers recycling, composting, waste-to-energy, conversion technologies and other developmental technologies. As discussed in Draft EIR Section 4.4.4 – Other Developmental Technologies, although the current developing waste processing technologies hold promise for the future, the current project objective is to provide waste disposal capacity at the Tajiguas Landfill for 15 years. Many of the obstacles to developing and marketing waste processing technologies will likely be overcome in the future, enabling these technologies to be considered as part of long-term planning to meet the waste disposal needs of Santa Barbara County.

Based on the discussions provided in this response to comments on waste processing technologies, the conclusions remain the same as stated in the Draft EIR Section 4.4.4. Although virtually all of the waste processing technologies addressed are technically viable, and many are being implemented in other countries or other locations within the United States, based on the development and implementation considerations discussed in this chapter, it is speculative to assume one or more of these technologies could be implemented within the Tajiguas Landfill wasteshed within the time frame of the proposed project. Therefore, in accordance with the CEQA Guidelines (§15126.6), waste processing technologies do not represent a feasible alternative to the proposed Tajiguas expansion project.

### 3.7 REFERENCES AND RESOURCES FOR WASTE PROCESSING TECHNOLOGIES


Kitto, B. “Biogass: An opportunity fuel that will be increasingly used in the future.” <http://bioprodcts-bioenergy.gov/pdfs/bcota/abstracts/2/z237.pdf> (June 10, 2002).


Sonoma Compost Community Composter. Volume III, Number 1. No Date.


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<th>Technology</th>
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<td>Rail Transport of Waste</td>
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<td>Fuel Cells</td>
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TABLE 3-2
UNINCORPORATED SANTA BARBARA COUNTY WASTE DIVERSION RATE

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SOURCE: COUNTY SOLID WASTE AND UTILITIES DIVISION (JUNE 2002).