Solid Waste

The solid waste management system infrastructure provides an essential public service to the citizens of California. There are three basic components in the solid waste management system: collection, processing to remove recyclable and compostable materials, and disposal of waste that cannot be recycled. These three components, coupled with the implementation of waste reduction and recycled material market development programs, ensure that the integrity of the solid waste management system is well maintained for the citizens of California.

Timely and adequate collection of solid waste protects public health and safety, and the environment. An effective collection system prevents unsightly, vector-propagating, and odorous waste accumulation outside of residences and businesses. This also results in minimizing illegal disposal, discharge of waste to surface water bodies, and impacts to ecologically sensitive habitats.

Processing of waste involves the systematic separation and removal from the waste stream of valuable and recyclable materials, and of illegally disposed hazardous waste. Processing is done at transfer/processing facilities or conventional recycling centers prior to landfilling of residual waste.

Processing also involves converting green waste into biofuel, mulch, and compost. Removing recyclable materials and producing biofuel, mulch, and compost conserves scarce natural resources and assists jurisdictions in meeting the State's 50 percent waste reduction mandate. Processing

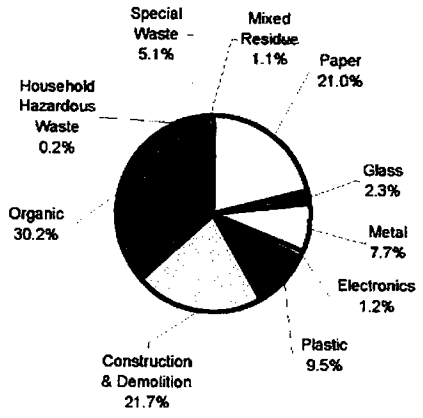

Figure 1:
Material Classes in California's Overall Disposed Waste Stream, 2003

is also crucial in maximizing the life of landfills. California landfills play a vital role in managing the variety of wastes generated by residents and businesses daily. They operate under some of the most stringent environmental standards in the country.

Findings

This evaluation indicates that a strong and sound solid waste management system exists in California. The long-range vision of policy decision makers, solid waste facility operators, manufacturing companies, and citizens are key elements to a properly managed solid waste management system. The State has sufficient long term disposal capacity to meet the demands of the population beyond 2025. To conserve the State's disposal capacity and preserve its natural resources, Californians have made a conscious effort to recycle 48 percent of all waste. A synopsis of the solid waste infrastructure is described below:

Collection Facilities: Most collection vehicle fleets are modern and have an average age of less than eight years. A majority of these vehicles are automated. Reducing improves safety and reduces reliance on manpower injuries. Furthermore, most hauling companies have scheduled vehicle preventive maintenance programs to minimize breakdown and lost of collection services. Employees also receive safety training on a routine basis to further reduce injuries and improve service to the public. To assist in recycling efforts, many collection companies provide multiple bins that allow source separation of recyclables and green waste from the waste stream. Some jurisdictions offer services for bulky items pick up. In addition, some companies specialize in the collection of single stream recyclables which further increases diversion. Most air districts are also requiring the collection vehicles to use alternative fuels which will improve air quality.

Transfer / Processing and Composting Facilities: California's transfer/processing and composting facilities are considered to be among the best in the nation with respect to policy, technology, and effectiveness. Although current levels of capacity are sufficient, new facilities or upgrades to existing facilities will be necessary to meet the demands of future population growth within the State. Continued development and expansion of high-value recyclable markets, including construction and demolition and organic materials, as well as improvements in processing technologies, will further expand the State's diversion capabilities and increase processing efficiency. Increased public recycling awareness and education along with manufacturer responsibility to use and produce recyclable materials are critical to achieving California's recycling goals.

Disposal Facilities: Since the implementation of Federal regulation Subtitle D in 1993, new landfills and expansion of existing landfills are subject to strict liner system design requirements. A large number of active landfills that commenced operation prior to Subtitle D, and are unlined, will be entering the post-closure maintenance period in the next 10 years. Due to the potential environmental impacts of landfills, the disposal system is heavily regulated by a multitude of regulatory agencies. As a result, operators are required to implement best management practices and abide by permit conditions that would ensure environmentally sound and safe operation of a landfill. Controlling air emissions, preventing groundwater impacts, and preventing landfill gas migration needs to be a priority of all landfill facilities.

Policies and Programs: For over a decade, local governments have been the leaders in implementing a host of award-winning recycling, waste reduction and pollution prevention programs in the State. The public's increasing sensitivity to the environment has resulted in continually increasing levels of waste reduction, from 25 percent in 1995 to 48 percent in 2004. The CIWMB adopted a zero waste goal, and the State Legislature is currently considering increasing the statewide diversion rate above 50 percent. Some jurisdictions have even reached diversion rates of 60 percent. Many California landfills, composting facilities, transfer/ processing facilities, and manufacturing companies have garnered recognition and won awards from various organizations and regulatory agencies for their state-of-the-art design, operation, and effective waste reduction programs.

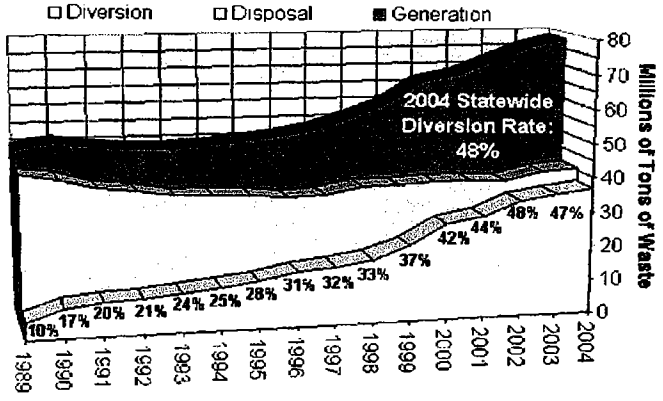

Figure 2:
Annual Waste Generated, Diverted, and Disposed from 1989 to 2004

However, population and economic growth continues to drive development in California, increasing waste generation and utilization of natural resources. These trends, coupled with reduced availability of suitable sites for new solid waste management facilities, will require public policy makers to continue finding creative solutions to meet solid waste management needs. State and local governments must rethink thaeir programs to incorporate intrinsic environmental protection and meet new challenges by considering multi-disciplinary perspectives. This includes incorporating "Green Building" practices and shifting incentives to promote "greener" industries and processes. Government and the private sector must also continue to improve public educational programs and facilitate participation in recycling programs for residents and businesses to better utilize our limited resources. Manufacturing companies must also further the implementation of onsite recycling programs, use recycled materials in the manufacturing process, and produce goods that can be easily recycled, while minimizing products that will harm the environment. The overall grade for Solid Waste in California is B.

Public Policy Considerations

Notwithstanding its present favorable condition, there are some challenges that must be addressed to ensure that the system continues to provide the high level of service expected by the citizens of California. Continued development and funding will be required for these solid waste infrastructure needs:

- Conversion technologies need to be studied and developed that environmentally, technically, and economically feasible. They will optimize waste diversion systems and extract energy from materials that cannot be easily recycled.
- Waste reduction and diversion strategies must continue to be pursued to minimize environmental impacts associated with mining of materials and product manufacturing. Furthermore, markets for recycled materials, specifically construction and demolition debris and organics, need to be expanded.
- Transfer/processing facilities, recycling centers, and composting facilities need to be established and/or expanded where needed to ensure that California's infrastructure serves the total population.
- Energy recovery from landfill gas must be fully implemented to reduce dependence on fossil fuels.

- Agreements and legislation must be established to increase the role of manufacturers in designing products using recycled materials and to minimize environmental impacts throughout the production and consumption cycle. Furthermore, manufacturers must be encouraged to create products and components that are economical to recycle and/or environmentally friendly once they enter the waste stream.
- Public education must be increase in order to transition from a "Throw Away" society to a "Zero Waste" society.
- Collection centers must be established in remote rural communities in order to minimize illegal disposal of tires, household hazardous waste, and electronic waste.

Security

Overall, the solid waste management system is adequately secure. Many of the facilities are surrounded by man-made barriers or natural barriers that deter acts of crime and property damage. However, as urban sprawl continues and encroaches upon these facilities, operators will need to reevaluate their existing security systems and make improvements as needed.

Infrastructure Funding

The cost to maintain the current B grade for the solid waste infrastructure (i.e. collection, processing, landfilling, policy and programs) is estimated at $5 billion per year or $50 billion over the next 10 years. In addition to maintaining current structures and operations, this money is also used to meet the many federal, state, and local regulations that the solid waste industry (and landfills in particular are) is subject to. This money is also needed to close landfills as they reach capacity and to site new ones to meet the needs of California's growing population. The current funding levels meet the projected needs as long as agencies and facility operators continue programming funds at present levels.