

ZERO WASTE PLAN

for Santa Cruz County



ZEROWASTE

Zero waste is the next logical step beyond the short-term goals established for recycling. Zero waste means swimming upstream to the sources of waste generation, rather than merely reducing the downstream impacts of waste. It is the cornerstone of a sustainable materials economy. Instead of managing waste, zero waste teaches us to manage resources and eliminate waste.

It represents a new planning approach encompassing the principles of conserving resources, minimizing pollution, maximizing employment opportunities, and providing the greatest degree of economic self-reliance. Zero waste is an integral part of a green economy.

Excerpted from: **Discarding the Idea of Waste: The Need for a Zero Waste Policy Now**
by Michael Jessen



TABLE OF CONTENTS

Introduction	3
Zero Waste Strategy Components	4
Zero Waste Policy Objectives	5
Zero Waste Challenges	6
The County Waste Stream	7
Legislation and Policy Support	8
Facilities and Infrastructure	9
Activities and Programs	10
Green Practices	11
Education and Behavioral Change	12
Other Considerations	13
Conclusions	14



INTRODUCTION

The County of Santa Cruz (County) has a long history of progressive waste management policies, programs and facilities. As early as November of 1999 the Board of Supervisors encouraged Zero Waste strategies such as recycling and in 2005 the Board established, by resolution, Zero Waste as a long-term goal for the County and set a 75 percent diversion rate by the year 2010 as a milestone toward meeting that goal.

The County has met that goal and continues to be a leader in the reduction in the amount of waste being disposed as well as spearheading efforts to minimize upstream impacts on materials through sustainable manufacturing and consumerism.

Zero Waste is theoretically simple: “a systems approach to avoid the creation of waste in the first place.” In practice, it is far more difficult to achieve. The notion of Zero Waste challenges our basic assumptions, business practices, and day-to-day behavior in making decisions about what we buy and consume, and how we handle the materials and by-products left over from those decisions.

Zero Waste follows a hierarchy, focusing first on *reducing* the volume and toxicity of waste by eliminating them in the first place. Zero Waste then focuses on *reusing* materials and products for their original intended uses, and then for alternative uses, before recycling. Once materials have been reduced and reused as much as possible, then Zero Waste focuses on *recycling* and *composting* all remaining materials for their highest and best use. Zero Waste encourages local and regional public-private partnerships to provide the infrastructure and services needed to accomplish all of these functions. In a Zero Waste system, any materials that cannot be easily and conveniently reduced, reused, recycled or composted are either returned to the manufacturer directly or through retail channels, or no longer used.

This Zero Waste Plan is intended to guide County officials in the planning & decision making process to achieve Zero Waste goals. To achieve this vision, we will will work toward Zero Waste by:

1. Supporting legislation and adopting policies that require minimized environmental impacts and reduce the waste stream;
2. Ensuring that facilities and infrastructure are in place to properly manage all recovered materials;
3. Continuing to implement activities and programs that support the County’s Zero Waste Policy;
4. Fostering sustainable green practices and business; and
5. Educating and engaging businesses, organizations, public agencies and residents to encourage zero waste behavior change.



Zero Waste Strategy Components

The Zero Waste Plan should guide the County's solid waste management programs and the way future waste management decisions are made. County programs, policies, rates, and financial and contractual commitments should be adjusted to help achieve the Zero Waste goal as follows:

◆ **Encourage All Sectors to Implement Zero Waste.** Zero waste programs should be configured to service all generator sectors including residential, commercial, industrial, and government. For example a "commercial" program must differentiate between restaurant zero waste and grocery stores, as "residential" must differentiate between multi-family and single family. Encouragement should initially be by education, economic incentives and then finally bans and mandates.

◆ **Develop Infrastructure Beyond Recycling.** The County currently relies on the Ben Lomond Transfer Station and the Buena Vista Landfill for its solid waste infrastructure needs. With the completion of the final buildable module at the landfill, the need for a lot of additional local infrastructure can be lessened so long as the County promotes both expanded independent service provider programs through Grey Bears and the Valley contracted collections to aggressively pursue materials. Future well-placed infrastructure programs by providing services that do not However, zero waste goals could provide a businesses to emerge that provide specialized

◆ **Lead by Example and Advocate Zero Waste.** generator. The County could policy through changes in its own aggressively towards reducing paper large quantities of waste through projects. More extensive reuse and business and residents the way.

◆ **Update Waste Data and Develop Zero Waste Operational Plan.** This plan was developed with best estimates of waste generation data; however some of the data was over five years old. Any Zero Waste programs should have effective metrics, and regular collection of waste data to guide program development. This plan is meant to help guide County officials in long-range policy formation. A Zero Waste Operational Plan (ZWOP) should be developed over time that would provide descriptions of the program elements that spring from the Board's vision and strategy. It is expected that the ZWOP would provide a description, budget and facility requirements, consideration of whether the program is County or non-County operated, and the education and incentives to secure adoption.

County consideration of a zero waste plan is timely. Garbage collection and disposal costs will continue to rise. Long-term landfill capacity within reasonable hauling distance is not guaranteed, putting the community at risk to significantly higher rates in the future. Continued long term dependence on landfilling our present waste stream also only adds to the uncertainty of the environmental liabilities we carry that are associated with those landfills far into the future.



programs , such as our recycling Women's Club, coupled with County a much higher diversion of recyclable could complement our current exist today, such as organics recycling. major source of opportunity for new reuse or recycling services.

County operations are a major waste demonstrate its commitment to the operations, such as moving more in its operations. The County generates capital improvement and maintenance recycling of all waste could show



ZEROWASTE

Zero Waste Policy Objectives

The Zero Waste Plan establishes the following Zero Waste Policy Objectives:

1. Reduce the amount of waste being disposed;
2. Encourage residents, businesses and agencies to reuse, reduce and recycle materials judiciously;
3. Empower consumers to use their buying power to demand non-toxic, easily reused, recycled or composted products;
4. Encourage manufacturers to produce and market less toxic and more durable, repairable, reusable, recycled and recyclable products;
5. Lobby regional, state and federal legislators to implement laws, policies and regulations that promote Zero Waste;
6. Work locally and regionally to assist in Zero Waste planning;
7. Lead by example and implement Zero Waste goals for all County buildings and projects;
8. Put policies in place that favor environmentally sustainable practices; and,
9. Provide the community with information about Zero Waste that includes annual reports that measure progress.





Zero Waste Challenges

There are significant challenges in achieving Zero Waste within Santa Cruz County. Some of these challenges we can control and others we have limited or no influence upon. These challenges include:

- **The Land Use Challenge.** It will be extremely difficult to develop additional facilities to accommodate additional diversion programs due to the coastal land-use regulatory environment, zoning restrictions, community resistance, and issues of economic justice.
- **The Risk Assessment Challenge.** The way in which environmental risks are calculated today understates the potential for future unknown costs to remediate potential problems associated with stormwater management, degradation at our sites, and impacts from natural disasters.
- **The Regional Capacity Challenge.** Serious capacity limitations exist in our facilities as well as in neighboring jurisdictions, such as with food waste composting. This will be exacerbated as demands by all of us within the County to reach Zero Waste goals are brought to bear.
- **The Economics Challenge.** The current business model for solid waste relies heavily on disposal rates to generate revenues to support programs. As the amount of material disposed decreases, the financial stability to maintain current programs or support future programs erodes.
- **The Climate Change Challenge.** While waste reduction is an essential element of the County's climate change strategy, Zero Waste programs may require long-distance hauling in order to manage diverted materials. Additionally, with our County landfill currently located within the coastal zone, climate change may impact ongoing operations in unknown ways.
- **A Challenge Greater than Santa Cruz County.** Waste generation is designed into the economy, and the County is limited in its capacity to bring about change in consumer habits and business practices.

These challenges lead us to certain premises in our approach to a Zero Waste Plan, including:

- **Focus on Upstream Purchasing as well as Downstream Recycling.** Zero Waste as a comprehensive approach, is distinguished from traditional recycling in that it systematically addresses not just the diversion of materials downstream but also what causes waste in the first place. The County might encourage smarter consumption without overstepping its role in governance so long as it stays clear of discriminatory policies that could be interpreted as limiting consumer choice or exercising unfair restraint of trade. The county's educational programs should address this aspect in addition to maximizing recycling choices.
- **Encourage Private Waste Diversion.** Private service providers, such as A&S Metals or Goodwill, now perform many aspects of waste diversion, and it is widely felt that these programs are effective. The County should encourage these programs to flourish as their success relieves the County of the burden of directly funding programs for those materials.
- **Develop Services for Each Waste Fraction, and then Improve the Services.** Services to provide for the recovery of materials should be identified and developed to reach all sectors, including single-family, multi-family residential, commercial, and industrial. Ultimately, the quality and efficiency of the recovery effort should improve over time.
- **Apply a Regional Approach.** The County's tradition has been to have many of its recovery services within its boundaries. Given land use constraints, this is not likely to continue. The County should strive to create new services in the region and develop stronger regional alliances.

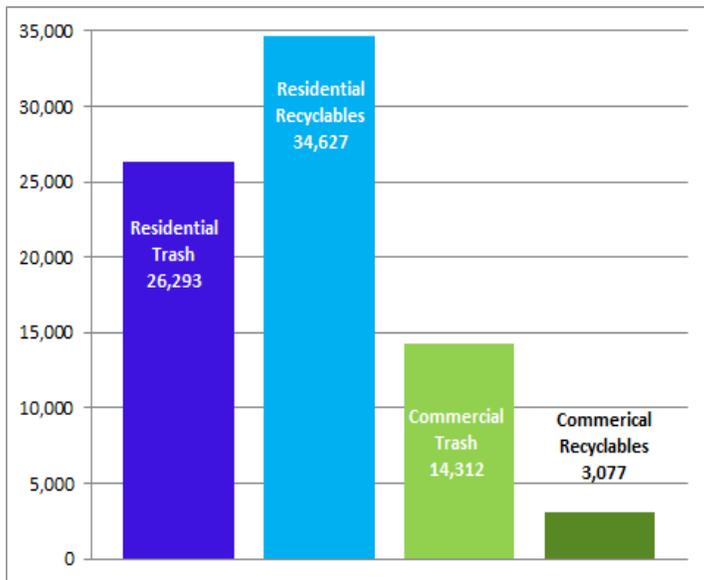


ZEROWASTE

THE COUNTY WASTE STREAM

The Buena Vista Landfill and the Ben Lomond Transfer Station accept materials from self-haulers, our franchise hauler, GreenWaste Recovery, and commercial drop-box haulers. Nearly 141,000 tons of materials were sent to these two facilities in 2014. For the same year our franchise hauler collected 78,310 tons of material and diverted 37,704 or 48% of the materials collected at curbside. The charts below show the breakdowns between residential collections and commercial collections. For all curbside collections the recycling rate is at 48%, including food waste for some commercial customers and all yard waste.

Curbside Collection Tonnage

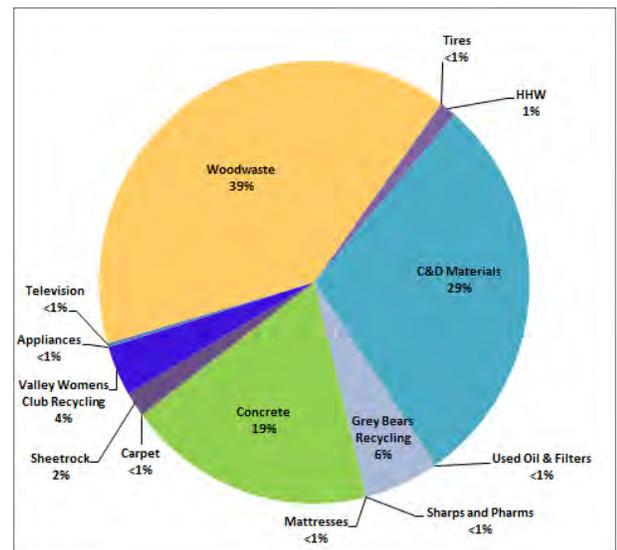


In addition to our franchise hauler, the County supports a number of programs to divert materials from disposal through source reduction, reuse, recycling, and other activities. In 2014, over 46,150 tons were diverted. These included the recycling operations performed by Grey Bears, Valley Women’s Club and Vision Recycling at County facilities, our County-wide household hazardous waste collection program, our construction and demolition (C&D) debris program, as well as programs for appliances, tires, concrete, sheetrock, carpet and other materials, as noted in the chart below. It should also be noted that diversion takes place in many other ways through our partner programs for sharps and pharmaceuticals, fluorescent lights, batteries and used oil as well as non-County programs such as thrift centers, textile donation boxes, home composting and community e-cycle events.

One of the key tools to identify priorities for Zero Waste policies and programs is an analysis of wastes that are currently being landfilled. The last waste characterization study performed by the County in 2009 identified vegetative food waste, compostable landscaping debris, and compostable/soiled paper as the primary items that could be removed from the waste stream. These items comprised approximately 23.5% of the disposed waste stream. In addition, other potentially recoverable materials such as textiles, hard plastics, carpet and C&D materials comprised another 33% of the disposed waste stream.

By analyzing waste stream and collection data, we can begin to understand the diversion potential associated with various diversion options and determine the best strategy for addressing those options including enhancing current programs, developing new programs or examining new technologies for diversion.

Non-Curbside Diverted Materials



1. LEGISLATION & POLICY SUPPORT

Solid Waste and recycling operations are a tightly regulated area of local government. Several different state agencies, such as the California Department of Resources Recycling and Recovery (CalRecycle), the Water Resources Control Board, the Department of Toxic Substances Control and the Air Resources Board, set regulatory standards, maintain records, require regular reports and conduct inspections of County solid waste and recycling facilities.

In 1989 the California State legislature passed AB 939, known as the Integrated Waste Management Act. This was the first recycling legislation in the country to mandate recycling diversion goals. AB 939 required diversion goals of 25% by 1995 and 50% by the year 2000. California has successfully used AB 939 to motivate cities and counties to reduce reliance on landfill disposal and increase waste diversion through recycling. In addition, AB 939 established a disposal reporting system, required facility and program planning and also instituted an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.



More recent State legislation includes:

AB 341 which requires CalRecycle and local agencies to develop strategies to divert 75 percent of the solid waste generated in the state from disposal by January 1, 2020 and for the first time required businesses to recycle.

AB 1826 requires businesses to arrange for recycling services for organic waste. Local jurisdictions are also required to adopt an organic waste recycling program.

In addition, a number of state laws and regulations also impose requirements on specific materials. Numerous items such as paint, batteries, and tires are now banned from disposal in the landfill and frequently expensive special handling and diversion programs. This is a high-priority area for California, and new legislation is to be expected. Santa Cruz County should continue to participate in the legislative process by advocating for bills which assist local agencies in increasing waste diversion and reducing landfill disposal as well as meeting critical County objectives such as financial stability. We will monitor proposed new legislation and regulations and undertake a coordinated effort through the Integrated Waste Management Task Force to support state and national efforts to adopt:

- Extended producer responsibility;
- Deposit programs;
- Funding of Zero Waste initiatives through statewide support and extended producer responsibility charges;
- Full cost accounting for waste disposal;
- Packaging levies (e.g., on plastic bags);
- Minimum recycled content standards for additional products;
- Design for the environment programs;
- Green procurement and green building guidelines for the public sector;
- National measuring, monitoring and reporting in achieving zero waste goals; and
- New mechanisms for financial assurance for post-closure liabilities for landfills.

State legislation often leaves gaps, for example statutes which ban disposal of problematic products but offer no alternatives. Other times state action is too slow to meet local priorities. Local ordinances can fill in the gaps and advance the County's Zero Waste goals. Some examples include the recent enactment of Universal Service requirements, bans on products such as plastic bags and Styrofoam, and regulations on the recycling of electronic waste. The County should continue to advance Zero Waste goals through local ordinances, where appropriate.



ZEROWASTE

2. FACILITIES AND INFRASTRUCTURE

The County's solid waste infrastructure has historically been provided by the Ben Lomond Transfer Station and the Buena Vista Landfill. Additional off-site recycling capacity is provided through our franchise hauler, GreenWaste Recovery. The County has recently completed the buildout of the final landfill disposal space available on site at the Buena Vista Landfill and new legislation aimed at organics diversion will require additional infrastructure for which we have no current capacity.

Ben Lomond Transfer Station



Last Disposal Module at Buena Vista Landfill



Our current infrastructure is also in need of improvements, particularly in the realm of equipment needs. Additional zero waste programs must consider not only physical and staff capacity issues, but also the added strains on equipment use.

The County should continue to work cooperatively with City jurisdictions within the County to develop regional facilities to take advantage of economies of scale for the processing of some materials and to limit the land-use impacts of recycling and disposal facilities on all jurisdictions. The cooperative approach could also be employed to examine opportunities for other methodologies of diversion, such as anaerobic digestion at local wastewater treatment plants or capacity beyond the County's borders.

Additionally, in planning future programs, the County needs to consider additional opportunities for public-private partnerships. For example, all of our facilities currently have methane gas capture systems in place, as well as co-generation facilities for producing energy with the gas. The County maintains and operates the gas capture system while a private entity manages the energy conversion and shares the revenue with the County.

The County has not historically encouraged private sector development but could consider such an option, especially where there are service voids, such as organics diversion or increased C&D processing, or where an investment by the County in pilot programs may spur new conversion technologies developed in the private sector. In addition, the County could help spur economic development through the encouragement of private sector development in businesses that require diverted products. As recent economic events have devalued the market price for materials such as plastics and glass, it is important to continue to encourage private sector development that will maintain the stability of these markets for materials.



3. ACTIVITIES AND PROGRAMS

The County has developed a number of programs to assist with waste diversion, including the joint County/Cities Household Hazardous Waste collection program, partnerships with local pharmacies and retailers for various take-back programs on items such as drugs, sharps, fluorescent lights, batteries, and used oil and filters and our on-site programs for recycling a wide variety of materials from mattresses and concrete to plastics, glass and cardboard.

The next steps in determining what new programs or activities to implement in our drive for zero waste are partially driven by legislation – such as the need to begin an organics diversion program in 2016 due to AB 1836. However, in assessing the various available diversion options, the quantities of material diverted and the associated cost per diverted ton are important considerations. The diversion options that the County implements, therefore, need to strike an appropriate balance between the quantity, quality, and cost of diversion. For example, our current data shows that the recycling rate for commercial waste generated and hauled by our franchise hauler, GreenWaste Recovery, is about 22% for all waste generated in this category. While significant opportunities may exist to increase diversion from the commercial sector, it may require significant investments in education, outreach and even hauler infrastructure, who may be hesitant due to a lack of a guaranteed customer base. Another example is multi-family residents. Recycling and waste programs are difficult to implement in this sector for a number of reasons. Effective outreach to this population has been challenging since apartment dwellers are a more transient population with diverse language requirements. Multi-family buildings often suffer from the “tragedy of the commons” problem, where no one takes responsibility for shared trash and recycling areas.

It is critical for more data to be collected in order to accurately assess the costs of diversion per ton of diverted materials – by material, by sector, and even by geographic location – to understand where best to focus new programs and activities to meet the Zero Waste goal.



A uniquely beautiful area with many special attractions, Santa Cruz County has always drawn large numbers of visitors. While this provides for a vibrant local culture and benefits the local economy, it also brings the challenge of addressing the impact of so many guests on our local environment and infrastructure. Santa Cruz County has made great strides in recent years in requiring recycling programs at special events and tourist venues, but much work remains to be done. Striving for Zero Waste special events and further reducing littering and improving recycling on the part of visitors should be priorities in coming years

Special events provide a unique opportunity for the County to teach its residents, businesses, and visitors about Zero Waste. County-sponsored events should practice Zero Waste activities such as water stations instead of bottled water, recycling collection (including separate organics diversion) and the use of compostable products for plates and silverware at food areas. Our new franchise agreement will require the franchise hauler to provide assistance with zero-waste public events. Special events permitted by the County should be required to include Zero Waste practices as part of the permitting procedure. The County could also develop a resource kit to assist event organizers in reducing the waste generated at their events.



ZEROWASTE

4. GREEN PRACTICES

Santa Cruz County promotes green practices in a number of already established programs such as our Green Business and Green Schools programs. With over 75 elementary and high schools in Santa Cruz County, and 21 alternative education schools, expansion of the Green Schools Program from our current participation base of approximately 25 schools is critical to achieving our Zero Waste goal.

K-12 students comprise the next generation of environmental stewards. Students who recycle at school encourage their families to recycle at home. By focusing on the next generation, the County is investing in the program participants of the future. To continue this investment the County should seek out additional partners, including local businesses and civic organizations, to broaden support for the schools program. In addition, the County should continue to support school efforts to become a certified Green Business, which includes standards for water and energy conservation as well as Zero Waste goals.



Construction and demolition debris (C&D) is another area where the County could work cooperatively to implement broader green practices. A significant amount of waste from construction projects, including roofing projects, is included in the self-haul and our independent roll-off box franchised haulers. C & D diversion is an area that could lend itself to improved green practices and greater diversion within the County.

Because C&D recycling requires larger amounts of space for sorting and storage, this is an area where developing public/private partnerships or developing economic incentives to encourage development of C&D debris recycling infrastructure could be beneficial to the County while also encouraging the creation of new jobs.



Another method to encourage C&D recycling is through the building permit process itself. For example, when applying for a building permit, prospective permittees who meet a minimum threshold pay a deposit based on the square footage and type of project. To receive a refund of the deposit, permittees provide documentation that they have diverted at least 50 percent of the C&D debris generated by the project. Permittees can demonstrate diversion by documenting their specific recycling efforts or by submitting documentation that they have delivered their construction and demolition debris to a certified facility, even one outside of the County.

Providing incentives for salvaging and adaptive reuse, or even certifying building contractors and specialty contractors, such as roofers through the Green Business Program may be other methods for encouraging green practices and moving towards Zero Waste.



ZEROWASTE

5. EDUCATION & BEHAVIORAL CHANGE

Ongoing outreach and education are critical for a successful waste reduction program. Residents and businesses need information on program changes, products that can be newly recycled, alternatives such as retail takeback programs and reusable item pickups and more. It's vital to continually stress the connections between such efforts and other desirable outcomes such as protecting the local environment, mitigating climate change and efficient use of government resources.

Regular newsletters like the *Curbsider* and *Wasteline* are currently used to help keep County businesses and residents informed. Targeted newsletters for special needs populations such as multi-family housing residents should be considered. Public Works is also in the process of updating their web presence and beginning to make use of social media for informing the public. In addition, the Citizen Connect app allows citizens to communicate concerns about illegal dumping from their smart phones and other mobile devices.



Students learn about the impacts of plastics in the ocean on the O'Neill Sea Odyssey.

Bilingual education materials are crucial to the success of our outreach efforts and partnerships are an essential component of successful outreach and education programs. The County has worked with the franchise waste hauler, local and regional governments, and local non-profits on coordinated outreach efforts, and these should continue and expand to the extent possible.

There are also opportunities for interagency cooperation beyond the borders of Santa Cruz County. Through the Central Coast Recycling Marketing Council (CCRMC), agencies throughout Santa Cruz, San Benito and Monterey Counties pool their limited advertising resources to produce professional quality outreach and education material and to purchase airtime on local radio and television stations as well as in social media to promote our Zero Waste message.

Besides outreach and education, the County must continue to employ other methods to induce behavioral change around waste. For example, continuing to support Extended Producer Responsibility (EPR) initiatives. EPR means that whoever designs, produces, sells, or uses a product shares responsibility for minimizing the product's environmental impact throughout all stages of the product's life cycle, including end of life management. EPR helps shift our product waste management system from one focused on government-funded and ratepayer-financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability. Our own "Safe Drug and Sharps Disposal Ordinance," is the first local ordinance which requires producers to share in the responsibility for and cost of ultimate disposal of their products. This ordinance can serve as a model for future EPR ordinances.



ZEROWASTE

OTHER CONSIDERATIONS

Over 70% of the waste and recyclables in Santa Cruz County are collected by either our exclusive franchise waste hauler, GreenWaste Recovery, or private non-exclusive roll-off box haulers (NERO) who are under contract to the County and must provide recycling services.



GreenWaste Recovery provides curbside collection to most of the County's residents and businesses, transports material for recycling, composting or disposal, and sells recyclable materials to a global market. The exclusive franchise hauler also provides substantial revenue and is an essential partner in waste reduction efforts. As we are about to enter into a new franchise agreement, it is vital to critically evaluate proposals to ensure that they are consistent with the County's Zero Waste goals, and that agreements provide flexibility to adopt new waste reduction strategies which might emerge during the contract period. Another aspect of our hauler agreement relates to the collection vehicles. Every

day large, heavy vehicles traverse miles of county roads collecting trash, recyclables and organic material. While these vehicles have mandatory emission controls, they still burn a great deal of fuel and emit a large amount of greenhouse gases. New low- and zero-emission vehicles are becoming available for such uses, and these should be employed wherever practical. As diversion efforts increase and collection volumes decline, strategies should be developed to reduce overall vehicle miles travelled.

As the Board begins to develop its priorities for Zero Waste, staff must continue to ask these questions:

- How much additional diversion the County could expect to achieve by simply enhancing its existing source separation programs;
- What types of enhancements to existing source separation programs and new source separation programs would need to be implemented to achieve a higher diversion rate;
- What level of additional recovery of mixed waste would require additional infrastructure and what would the investments in that infrastructure need to be; and
- What level of diversion may potentially be achieved by using waste-to-energy conversion technology, assuming that is a viable option in the future?



ZEROWASTE

CONCLUSION

Zero Waste takes into account the whole materials management system, from product design and the extraction of natural resources, to manufacturing and distribution, to product use and reuse, to recycling or disposal. In developing policies and programs to achieve Zero Waste, the County can both maximize diversion from landfills (through program implementation and facility development) and reduce generation of waste (through Zero Waste policies and education).

Achieving Zero Waste entails encouraging the County, its residents, and its businesses to reevaluate what we view as waste. Ultimately, Zero Waste contributes to achieving a greener community. In order to reach true sustainability, Zero Waste Plan strategies must address People, Planet, and Profit as a “triple bottom line,” achieving social, environmental, and economic sustainability and should include:

- Modifying existing revenue streams to mitigate funding lost from Zero Waste efforts.
- Supporting the implementation of Zero Waste policies locally, regionally, and statewide, such as regional landfill bans of targeted materials and Extended Producer Responsibility.
- Continuing to implement mixed waste recycling of single-family residential garbage and recycling processing residue to ensure that all recyclable and compostable materials are diverted from landfills.
- Developing and strengthening markets for recoverable and reusable materials, and lead by example, requiring recycled content in County purchased materials, and encouraging local market development.
- Promoting the future development of energy conversion technologies for converting residual wastes into energy.
- Educating the public about the benefits of reducing wasteful consumption.

Long-range waste reduction policies are a logical and economically viable and important alternative today to help free the County of its current dependence on landfilling its wastes.

