



## Electronic Waste:

Some State Agencies Have Discarded Their Electronic Waste Improperly, While State and Local Oversight Is Limited

November 2008 Report 2008-112



CALIFORNIA  
STATE AUDITOR

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**Elaine M. Howle**  
State Auditor  
**Doug Cordiner**  
Chief Deputy

# CALIFORNIA STATE AUDITOR

## Bureau of State Audits

555 Capitol Mall, Suite 300

Sacramento, CA 95814

916.445.0255

916.327.0019 fax

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November 18, 2008

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The Governor of California  
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State Capitol  
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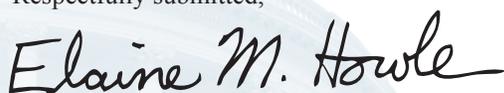
Dear Governor and Legislative Leaders:

As requested by the Joint Legislative Audit Committee, the Bureau of State Audits presents its audit report concerning the disposal of electronic waste (e-waste) by state agencies. This report concludes that a lack of clear communication from oversight agencies, coupled with some state employees' lack of knowledge about e-waste, contributed to state agencies improperly disposing of some electronic devices in the trash. We reviewed the disposal practices of five state agencies, and found that all five had either discarded some of their electronic devices in the trash, or indicated they had done so. The Department of Motor Vehicles and the Employment Development Department collectively discarded 26 electronic devices in the trash. These items included fax machines, speakers, calculators, and a videocassette recorder. The three remaining state agencies in our sample—the California Highway Patrol, the Department of Transportation, and the Department of Justice—did not have records clearly indicating how they disposed of 382 electronic devices; however, they asserted that more than 350 of these items were discarded in the trash.

As a result, oversight agencies such as the Department of General Services (General Services), the California Integrated Waste Management Board (Waste Management Board), and the Department of Toxic Substances Control have an opportunity to collaboratively find ways to more effectively communicate how state agencies should manage their e-waste. Because e-waste can contain toxic metals such as lead and mercury, the improper disposal of this waste by state agencies can have adverse consequences for the environment and the public's health. It is difficult to quantify the amount of e-waste that state agencies generate and dispose of. At most, we saw that some state agencies annually report the amount of solid waste they divert from municipal landfills. Although some state agencies include information specific to e-waste in these reports, the Waste Management Board explained that e-waste is not solid waste, thus state agencies are not required to report this information.

Finally, our review found that state and local oversight of e-waste is infrequent and may not always identify instances when state agencies improperly dispose of e-waste. A state agency's decision regarding how to dispose of its e-waste is subject to review by General Services and local entities. General Services' reviews have focused on whether a state agency obtained proper approval prior to disposing of its surplus property, which can include e-waste items, and whether it disposed of these items promptly. Until recently, these reviews did not evaluate how a state agency actually disposed of its e-waste. For state agencies located within its jurisdiction, Sacramento County performs periodic inspections of those that generate hazardous waste; however, these reviews do not take place for those that only generate universal waste—a less-regulated type of hazardous waste that includes e-waste. Instead, Sacramento County will evaluate a state agency's compliance with universal waste requirements if it is also a generator of hazardous waste.

Respectfully submitted,



ELAINE M. HOWLE, CPA  
State Auditor

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## Summary

### Results in Brief

Contrary to regulations of the State, some state agencies appear to have improperly discarded some electronic devices, or electronic waste (e-waste), by throwing the devices in the trash. Records indicate that the Department of Motor Vehicles and the Employment Development Department (Employment Development)—two of the five large state agencies we examined as part of our audit—improperly disposed of 26 electronic devices between January 2007 and July 2008. These electronic devices included fax machines, calculators, a videocassette recorder, and a radio. The disposal records for the remaining three departments in our sample—the California Highway Patrol, the Department of Transportation, and the Department of Justice (Justice)—did not clearly indicate how they disposed of some of their e-waste; however, all three departments indicated that they too have discarded some e-waste in the trash. For example, one of the units within the California Highway Patrol indicated that it threw in the trash 354 electronic devices, such as stereos, fax machines, and cameras. Because e-waste can contain toxic metals such as lead and mercury, these state agencies may have contributed to environmental contamination that can pose a threat to public health and safety. Our review found that oversight agencies can more clearly communicate to state agencies their responsibilities for handling e-waste. The lack of clear communication, coupled with some state employees' lack of knowledge about appropriate e-waste management practices, contributed to these instances of improper disposal.

State agencies also do not consistently report the amount of e-waste they divert from municipal landfills. Although state law requires them to track only their amounts of solid waste, some state agencies report annually the amounts of e-waste they divert from the municipal waste stream. However, the state agencies we reviewed did not consistently calculate the amounts reported. For instance, for their 2007 amounts, Employment Development did not include information from its warehouse in Southern California and Justice reported the number of *items* diverted rather than the number of *tons* diverted.

A state agency's decision regarding how to dispose of e-waste is subject to review by the Department of General Services (General Services) and by local entities. However, our audit found that these reviews occur infrequently and that they may not always identify instances in which state agencies have improperly discarded e-waste. According to its audit plan, General Services conducts audits of other state agencies to determine whether they comply with requirements that are under the purview of certain divisions or offices within General Services. One such office is General Services' Office of Surplus Property and Reutilization, which

### Audit Highlights . . .

*Our review of five state agencies' practices for handling electronic waste (e-waste) revealed that:*

- » *The Department of Motor Vehicles and the Employment Development Department improperly disposed of electronic devices in the trash between January 2007 and July 2008.*
- » *The California Highway Patrol, Department of Transportation, and Department of Justice did not clearly indicate how they disposed of some of their e-waste; however, all indicated that they too have discarded some e-waste in the trash.*
- » *The lack of clear communication from oversight agencies, coupled with some state employees' lack of knowledge about e-waste, contributed to these instances of improper disposal.*
- » *State agencies do not consistently report the amount of e-waste they divert from municipal landfills. Further, reporting such information on e-waste is not required.*
- » *State and local oversight of e-waste generators is infrequent, and their reviews may not always identify instances when state agencies have improperly discarded e-waste.*

reviews and approves requests submitted by state agencies to dispose of their surplus property, including electronic devices that can be considered e-waste. As part of its audit of a state agency's compliance with requirements related to disposing of surplus property, General Services' auditors focus on whether the agency obtained proper approval for the disposal and whether the state agency disposed of the property promptly; they do not currently focus on *how* a state agency actually disposed of its surplus property. Its audit plan indicates that between 1999 through 2004, General Services had audited the five state agencies we examined and that it plans to perform another review of these agencies within the next seven to eight years.

Certain local agencies also have an oversight role over those that generate e-waste. Under a regulatory program established by the California Environmental Protection Agency, the local entities that can review e-waste disposal—referred to as *program agencies* in this report—typically are county or city agencies. These program agencies inspect such entities as private businesses or state agencies that generate hazardous waste to determine their compliance with applicable laws and regulations. Because many state agencies have offices in Sacramento County, we included Sacramento County's program agency as part of our review. For the five state agencies in our sample, we asked the Sacramento County program agency to provide us with inspection reports performed under its hazardous waste generator program. We received seven reports covering inspections performed between 2005 and 2008. The Sacramento County program agency explained that although it will inspect for violations related to universal waste, it targets its inspections toward generators that have hazardous waste and not generators that have only *universal waste*—a less-regulated type of hazardous waste that includes e-waste. As a result, the Sacramento County program agency may never inspect a state agency if that agency generates only universal waste.

### Recommendations

To avoid contaminating the environment through the inappropriate disposal of electronic devices, state agencies should determine whether they can place in the trash the electronic devices they need to discard.

To assist state agencies in their efforts to keep their e-waste out of landfills, the Department of Toxic Substances Control, the California Integrated Waste Management Board, and General Services should collaborate to identify and implement methods

to communicate clearly to state agencies their responsibilities for properly handling and disposing of e-waste and the resources available to assist the agencies.

If the Legislature believes that state agencies should track more accurately the amounts of e-waste they generate, recycle, and dispose of, it should impose such a requirement. Further, if the Legislature believes that more targeted, frequent, or extensive oversight related to state agencies' recycling and disposal of e-waste is necessary, it should assign this responsibility to a specific agency.

### **Agency Comments**

The agencies we reviewed generally agreed with the report's findings and recommendations.

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## Introduction

### Background

According to a report prepared for the U.S. Congress in August 2007 that analyzed the states' practices for managing electronic waste, known as *e-waste*, state and local agencies have become increasingly concerned about the landfill disposal or incineration of e-waste because of the large volumes generated and the hazardous materials the waste may contain. Although this report asserts that there is no universally accepted definition of *e-waste*, and the California Integrated Waste Management Board (Waste Management Board) affirms that no clear definition<sup>1</sup> of this term exists, one can think of *e-waste* as electronic devices at or near the end of their useful lives. Examples of these devices include televisions, computers, stereos, videocassette recorders, and fax and copy machines.

The improper disposal of e-waste in the State may present health problems for its citizens. According to the U.S. Environmental Protection Agency (USEPA), computer monitors and older television picture tubes each contain an average of four pounds of lead and require special handling at the end of their useful lives. The USEPA states that human exposure to lead can present health problems ranging from developmental issues in unborn children to brain and kidney damage in adults. In addition to containing lead, electronic devices can contain other toxic materials such as chromium, cadmium, and mercury. Humans may be exposed to toxic materials from e-waste if its disposal results in the contamination of soil or drinking water.

According to the USEPA, in 2005 consumers generated approximately 2 million tons of used or unwanted electronics. Of that amount, less than half a million tons were recycled, and consumers discarded at least 1.5 million tons of e-waste, primarily in landfills. The Waste Management Board believes that rapid advances in technology and consumers' demand for new features in their electronics have accelerated the generation of e-waste, resulting in a growing challenge for businesses, consumers, and local governments as they search for ways to reuse, recycle, or properly dispose of this equipment.

<sup>1</sup> State law or regulations define terms related to e-waste, such as *electronic devices*, *universal waste electronic devices*, and *covered electronic devices*, but neither state law nor regulations define the term *e-waste*.

The Legislature has recognized these challenges, and it highlighted them when passing the Electronic Waste Recycling Act in 2003, which provided funding for the safe recycling of certain electronic devices. In this act, the Legislature stated the following:

- Electronic waste represents one of the fastest growing and most hazardous components of California's waste stream.
- Due to the presence of lead, mercury, and other hazardous or potentially hazardous materials, electronic waste poses a particular threat to public health and the environment when improperly discarded.
- Electronic waste recovered for recycling, including devices from California's public agencies, has been illegally handled and discarded in developing countries, posing a significant threat to public health, worker safety, and the environment in those countries.

### Hazardous Waste and Its Characteristics

**Hazardous waste:** Waste substances that can pose a substantial or potential hazard to human health or the environment when improperly managed. Hazardous waste possesses at least one of the following four characteristics or are wastes specifically designated as hazardous by the U.S. Environmental Protection Agency:

- **Toxicity:** Toxic wastes are harmful or fatal when ingested or absorbed. Examples are wastes containing mercury or lead. When toxic wastes are discarded in a landfill, the toxic materials may leach from the waste and pollute ground water.
- **Ignitability:** Ignitable wastes can create fires under certain conditions, can undergo spontaneous combustion, or have a flash point less than 140 degrees Fahrenheit.
- **Corrosivity:** Corrosive wastes are materials, including solids, that are acids or bases or that produce acidic or alkaline solutions. The characteristic is defined by a waste's pH\* and its ability to corrode steel.
- **Reactivity:** Reactive wastes are unstable under normal conditions. They can cause explosions or release toxic fumes, gases, or vapors when heated, compressed, or mixed with water.

Source: Department of Toxic Substances Control.

\* pH is a measure of acidity or alkalinity.

- A study for the National Safety Council projects that more than 10,000 computers and televisions become obsolete in California every day, and that three-quarters of all computers ever purchased in the United States remain stockpiled in storerooms, attics, garages, and basements.

### California's Hazardous Waste Laws and Regulations Cover E-Waste

Congress enacted the Resource Conservation and Recovery Act of 1976 (RCRA) to protect human health and the environment from the hazards posed by waste disposal, to conserve energy and natural resources, to reduce or eliminate the amount of waste generated, and to ensure that waste is managed in a manner that protects human health and the environment. The RCRA's provisions cover the management of solid waste, hazardous waste, and underground storage tanks containing hazardous substances and petroleum products.

In California, the Department of Toxic Substances Control (Toxic Substances Control), part of the California Environmental Protection Agency (CalEPA), regulates hazardous waste under state law consistent with RCRA. The text box defines hazardous waste and its characteristics. State laws

and regulations generally prohibit land disposal of hazardous wastes. Under state regulations, the term *disposal* means the discharge or dumping of any waste into or on any land or water so that the waste enters the environment. When a person generates waste, state regulations require that person to first determine whether the waste is hazardous before taking steps to dispose of it legally.

### ***E-Waste Is a Type of Universal Waste***

Under state law, one type of hazardous waste is *universal waste*. According to Toxic Substances Control, universal wastes are hazardous wastes that are more common and that pose a lower risk to people and the environment than do other types of hazardous wastes. Examples of universal waste include certain nonautomotive batteries, lightbulbs or tubes from fluorescent lamps, and thermostats containing mercury. Most e-waste—such as cathode ray tubes (CRTs) found in items such as televisions and computer monitors, and electronic devices—are universal waste. Further, some electronic devices are subject to the Electronic Waste Recycling Act of 2003, which refers to these devices as *covered electronic devices*, as we describe in the next section. Figure 1 on the following page depicts the different types of waste and how they fit into the category of hazardous waste.

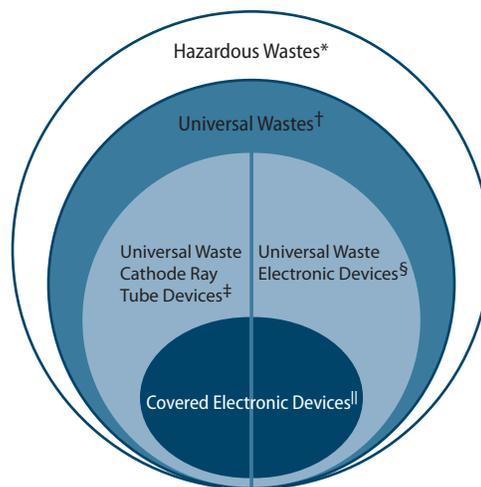
Recognizing the relatively lower risks associated with universal waste when compared to other types of hazardous waste, state regulations establish an alternative, less restrictive set of management standards that *generators*—the individuals and entities that generate this waste—must follow. These alternative management standards, for example, do not require universal-waste generators to complete a manifest and comply with the packaging, labeling, and record-keeping requirements when such waste is transported.<sup>2</sup> According to a supervising scientist at Toxic Substances Control, state law is silent on where universal waste should go. State regulations prohibit discarding and incinerating universal waste, and they limit but do not prohibit storage of such waste. This situation leaves recycling as the remaining option for disposing of universal waste.

California regulations state that generators may manage their discarded electronic devices as a universal waste if that device only exhibits the characteristic of toxicity. On the other hand,

<sup>2</sup> A *manifest* is a shipping document that travels with hazardous waste from the point of generation through transportation to the final treatment, storage, and disposal facility. Each party in the chain of shipping, including the generator, signs and keeps one copy of the manifest, creating what is referred to as a *cradle-to-grave* tracking of the hazardous waste.

regulations require generators to handle discarded electronic devices as a hazardous waste when it exhibits one of the other characteristics of hazardous wastes—ignitability, corrosivity, or reactivity. Generators can throw in the trash only electronic devices that exhibit none of the four characteristics of hazardous waste. The Waste Management Board has advised consumers that “unless you are sure [the electronic device is] not hazardous, you should presume [that] these types of devices need to be recycled or disposed of as hazardous waste and that they may not be thrown in the trash.”

**Figure 1**  
Relationships Among Types of Hazardous Waste



Sources: Department of Toxic Substances Control and the California Code of Regulations.

Note: The characteristics of hazardous waste are toxicity, ignitability, corrosivity, and reactivity. Wastes with any of these characteristics can be considered hazardous waste.

\* *Hazardous wastes* are wastes with properties that make them potentially dangerous or harmful to human health or the environment. They can be liquids, solids, or gases. Entities or individuals that generate hazardous waste must keep records and label the waste before transporting it off-site.

† *Universal wastes* are a subset of hazardous wastes that are common and pose a lower risk to people and the environment than other types of hazardous wastes. Universal wastes are regulated under less stringent standards for handling and recycling than other types of hazardous wastes. Examples of universal wastes include such items as batteries, fluorescent light tubes, and *some* electronic devices.

‡ *Universal waste cathode ray tube devices* are electronic devices used to convert an electrical signal into a visual image. They include computer monitors, televisions, cash registers, and oscilloscopes.

§ *Universal waste electronic devices* are discarded electronic devices that are hazardous solely because the device exhibits the characteristic of toxicity. Examples include computers, telephones, stereo equipment, and calculators.

|| *Covered electronic devices* are electronic wastes subject to the Electronic Waste Recycling Act of 2003, which allows authorized recyclers of this waste to receive payments from the California Integrated Waste Management Board.

California law defines *electronic devices* as computers, computer peripherals, telephones, answering machines, radios, stereo equipment, tape players or recorders, phonographs, videocassette players or recorders, compact disc players or recorders, calculators, and some appliances. Also, according to its Web site, Toxic Substances Control considers cell phones to be a type of universal waste because of the hazardous material they contain. Toxic Substances Control has stated in a document available on its Web site that the category of *universal waste electronic devices* does not include all electronic devices that simply use or transfer electrical power. According to Toxic Substances Control, electronic devices that contain circuitry and are programmable, such as programmable coffee makers and toasters, are likely to be universal waste electronic devices. However, state regulations make waste generators responsible for determining whether their electronic devices are hazardous or universal waste.

### **Several Entities Play Roles in the Recycling and Disposal of State-Generated E-Waste**

Four primary entities at the state and local levels have roles related to e-waste recycling and disposal practices. Toxic Substances Control is responsible for developing regulations for managing and disposing of hazardous waste, while the Waste Management Board is responsible for developing regulations for the handling and disposal of solid waste. The Department of General Services (General Services) establishes statewide policy regarding surplus property, which can include such electronic devices as computers or televisions, and it reviews and approves how state agencies dispose of their surplus property. Lastly, certified unified program agencies (program agencies) typically are local government agencies that conduct inspections of entities, including state agencies, that generate hazardous waste to determine the entities' compliance with applicable laws and regulations.

Toxic Substances Control has the authority to adopt regulations to implement applicable provisions of state law pertaining to the management of hazardous waste. Violations of that law can be enforced by administrative, civil, or criminal actions. Toxic Substances Control has administrative enforcement authority and can issue orders requiring compliance with state law as well as impose penalties when it finds a violation of state law. In addition, state law authorizes Toxic Substances Control to revise its regulations as necessary to ensure that the State maintains consistency with federal law enacted under RCRA. Based on this authority, Toxic Substances Control has adopted regulations governing how generators manage and dispose of their hazardous

waste and universal waste, which includes e-waste. In addition to adopting regulations governing e-waste, Toxic Substances Control has a regulatory assistance office where the public can ask questions and receive informal guidance.

In June 2008 Toxic Substances Control requested the public's feedback on proposed regulations that would consolidate current regulations for universal waste and clarify the proper treatment of e-waste. It expects to finalize and formally adopt these proposed regulations by mid-December 2008. The broad objectives of these new regulations include the following:

- Reorganizing existing regulations to make them more user-friendly and to align state regulations with new federal regulations on management standards for mercury-containing equipment and the export of certain CRTs containing wastes. Additionally, the reorganization would consolidate management standards for CRT material handlers and small- and large-quantity handlers of universal waste under a single category.
- Establishing restrictions on the use of heavy metals—including cadmium, chromium, lead, and mercury—in electronic devices subject to the Electronic Waste Recycling Act of 2003 and manufactured after January 1, 2007, that exceed the maximum concentrations allowed by the European Union,<sup>3</sup> as required by state law.
- Implementing the Electronic Waste Recycling Act of 2003 regarding the identification and management of electronic devices covered by the act.<sup>4</sup>

The Waste Management Board's primary role concerning e-waste issues stems from its involvement in the Electronic Waste Recycling Act of 2003. The Legislature established a funding system for the collection and recycling of certain electronic devices known as *covered electronic devices*, meaning that they are covered under the act. This act defines a *covered electronic device* as a device containing a video display screen greater than four inches,

<sup>3</sup> According to its Web site, the European Union is a political and economic partnership among 27 European countries. The European Union issued a directive that, among other things, restricted the use of certain hazardous substances in electronic equipment.

<sup>4</sup> In June 2004 Toxic Substances Control implemented emergency regulations concerning the identification and management of covered electronic devices in accordance with the 2003 act; however, these emergency regulations will expire by 2010 unless Toxic Substances Control adopts them permanently.

measured diagonally. (For example, most computer screens exceed this measurement.) According to the Waste Management Board, this act includes these key elements:

- Reduction in hazardous substances used in certain electronic devices sold in California.
- Collection of an e-waste recycling fee at certain products' point of sale.
- Distribution of payments to qualified entities to cover the cost of e-waste collection and recycling.

In addition, the Waste Management Board is responsible for establishing the State's e-waste recycling goals and for posting information on its Web site about the amounts of covered electronic devices sold in the State during the prior year as well as amounts recycled during that period.

General Services' oversight is limited to reviewing and approving how state agencies intend to dispose of their surplus property, which can include e-waste. Before disposing of state-owned surplus property, other than vehicles and mobile equipment, state agencies must submit to General Services a property survey report. This report shows the agency's intended disposal method, which is approved or rejected by General Services. Specific disposition options include donating property to eligible public schools, sending the property to a scrap or salvage dealer, and legally disposing of the property (for example, in the trash). After General Services approves the request, the state agency is responsible for disposing of the property in the approved manner. In fact, General Services' property survey report form instructs state agencies: "Do not dispose of any electronic equipment in a landfill." To ensure compliance with surplus property requirements found in the *State Administrative Manual*, General Services also audits state agencies to determine whether they properly complete their property survey reports.

Another service General Services provides is the establishment of a master services agreement for the recycling of universal wastes, including e-waste. Generally, a master services agreement is an agreement with vendors that provide a service used by a number of state agencies. General Services places the names of the contracted vendors on a list from which state agencies can select service providers without having to conduct their own extensive bid assessments. Under the master services agreement for universal waste, state agencies can often select from multiple recyclers to accept their e-waste. Depending on the amount of universal waste a state agency has, some recyclers will even pick up the waste free of

charge. We summarize the fees charged by recyclers for e-waste and CRT recycling services listed on the master services agreement in the Appendix. By providing their universal waste to vendors listed on the master services agreement, state agencies benefit by paying little to no cost for recycling services.

General Services also makes available on its Web site a best practices manual for environmentally preferable purchasing. This manual encourages take-back or trade-in clauses in leasing agreements and purchase contracts. It further indicates that these clauses should contain provisions requiring vendors to recycle the electronic devices they obtain from state agencies.

At the local level, program agencies are involved in the oversight of hazardous waste generators, such as private businesses and public state agencies, and their compliance with universal waste laws and regulations. Legislation enacted in 1993 required CalEPA to establish the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency management programs:

- Hazardous Waste Generator and On-Site Hazardous Waste Treatment
- Hazardous Materials Release Response Plans and Inventory
- California Accidental Release Prevention
- Underground Storage Tanks
- Above-Ground Petroleum Storage Act Program
- Uniform Fire Code Hazardous Material Management Plans and Hazardous Material Inventory Statement

According to CalEPA, it coordinates the administration of the Unified Program and certifies program agencies. CalEPA reports that it has certified 84 program agencies, which typically are county or city agencies. State law assigns program agencies the responsibility to implement and enforce hazardous waste laws and regulations for all hazardous waste generators. They are responsible for inspecting hazardous waste generators and for assessing penalties as a result of enforcement activities. Because state agencies generate universal waste, which is a subset of hazardous waste, program agencies are responsible for overseeing the proper handling of this waste at state agencies.

## Scope and Methodology

The Joint Legislative Audit Committee (audit committee) asked the Bureau of State Audits (bureau) to review state agencies' compliance with laws and regulations governing the recycling and disposal of e-waste. Specifically, the audit committee asked the bureau to identify the roles of the various entities involved in developing regulations and setting policies and procedures for state agencies in implementing e-waste recycling and disposal programs. The bureau was also asked to review and assess the statewide policies for handling e-waste to ensure that the policies comply with laws and regulations. We were also asked to determine how appropriate entities oversee e-waste recycling and disposal to ensure that state agencies adhere to such policies. Further, the audit committee asked us to identify and assess for a sample of state agencies the policies and procedures regarding recycling and disposal of e-waste to ensure that these policies and procedures comply with laws, regulations, and statewide policies. For these sampled state agencies, the bureau was also to determine whether the agencies' practices follow their respective policies and procedures. The bureau was to calculate any cost incurred or revenues generated from the sampled agencies' recycling and disposing of e-waste, to review any contracts for recycling and disposing of e-waste, to assess whether state agencies evaluated the effectiveness of the contractors' performance, and to identify any best practices for recycling and disposing of e-waste. Lastly, the bureau was to estimate, to the extent possible, the amount of e-waste generated, recycled, and disposed of by the sampled state agencies.

To identify the roles of the various entities involved in developing regulations and setting policies and procedures for state agencies in implementing e-waste recycling and disposal programs, we reviewed state laws, regulations, and state agencies' Web sites, and we interviewed management and staff of several state agencies.

To review and assess statewide policies for handling e-waste to ensure that they comply with laws and regulations, we examined state laws and regulations and interviewed management and staff of several state agencies. Although we found no statewide policies related directly to e-waste management, we compared relevant statewide policy and guidance to critical sections of laws and regulations to ensure consistency. The statewide policy and guidance included sections of the *State Administrative Manual* that related to recycling in general and to managing surplus property, state-issued guidance for managing electronic equipment, and information provided on state agencies' Web sites. In reviewing the State's relevant policies and guidance, we found that they were consistent with critical sections of law and regulation.

To determine how appropriate entities oversee the recycling and disposal of e-waste to ensure that state agencies comply with statewide policies, we examined state laws and regulations and interviewed management and staff of several state agencies. In addition, we obtained and analyzed applicable documentation, such as audit plans and inspection reports, from relevant oversight entities. Because many state agencies have offices in Sacramento County, we also reviewed documents and interviewed management and staff at Sacramento County's program agency.

To identify and assess state agency policies and procedures regarding recycling and disposal of e-waste to ensure that they comply with laws, regulations, and statewide policies, we first selected five state agencies with relatively large numbers of employees to review as part of this audit. The five state agencies we selected were the California Highway Patrol, the Department of Justice (Justice), the Department of Motor Vehicles, the Department of Transportation (Caltrans), and the Employment Development Department. To ensure that these five state agencies were appropriate to include as part of our audit, we confirmed that they owned their computers—electronic devices that can be considered e-waste when they are at or near the end of their useful lives—and that the agencies each maintained in a central location the property disposal records for the agency. For each of these five state agencies, we asked whether it had any internal policies and procedures related to the recycling and disposing of e-waste. Although none of the agencies had established policies or procedures specifically for e-waste recycling or disposal, all had established at least some policies that were consistent with statewide requirements for e-waste. For example, written policies for Caltrans require employees to recycle computer equipment. Similarly, written policies for Justice prohibit throwing computers and computer monitors in the trash. We also obtained policies and procedures related to disposing of surplus property, which may indirectly address e-waste recycling and disposal. We then ascertained that the provisions of these indirect policies and procedures are consistent with requirements in the *State Administrative Manual*.

To determine whether the practices of the sampled state agencies comply with their own policies and procedures, we reviewed a sample of property survey reports and related support. Additionally, we analyzed a sample of property survey reports in which state agencies had identified their surplus property as "valueless." We did so because we believed that state agencies that listed e-waste as valueless were at greater risk of discarding these items in the trash. When reviewing these property survey reports, we identified how state agencies disposed of these devices.

To assess whether state agencies incurred costs or generated revenue from recycling or otherwise disposing of their e-waste, we interviewed staff at the sampled state agencies. Representatives of the five state agencies we reviewed told us that their state agencies did not earn any revenue from their e-waste recycling efforts. To the extent that state agencies indicated they had incurred recycling costs, we reviewed available documentation to determine the amounts paid.

To establish whether the sampled state agencies evaluated the effectiveness of contractors' performance for recycling and disposing of e-waste, we interviewed staff to identify recyclers or collectors that state agencies used to recycle e-waste. We also interviewed staff at General Services to see whether any state agencies submitted performance reports for those contractors that General Services included on the master services agreement for universal waste disposal. We summarize aspects of this master services agreement that relate to e-waste in the Appendix.

To identify any best practices for recycling and disposing of e-waste by the sampled state agencies, we looked for such practices while we reviewed agency documents and performed audit tests. Specifically, we looked for policies and procedures that went beyond those required by law and appeared to help state agencies better ensure that they kept e-waste out of the trash. We also examined a report titled *Best Management Practices for Electronic Waste* produced for the Waste Management Board in April 2004. However, this report was aimed more at assisting local governments in their efforts to set up e-waste recycling programs than at state agencies.

Finally, because state agencies are not required to track the amounts of e-waste they generate, recycle, or dispose of, we identified the quantities of e-waste diverted from landfills as reported to the Waste Management Board by the five sampled state agencies as part of their annual State Organization and Agency Recycling Database reports. We considered the e-waste totals reported for 2004 through 2007 because the state agencies in our sample did not report e-waste data before 2004.

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## Audit Results

### State Agencies Appear to Have Improperly Discarded Some Electronic Devices

When the State Legislature passed the Electronic Waste Recycling Act of 2003, it found that “due to the presence of toxic lead, mercury, and other hazardous or potentially hazardous materials in [electronic waste], this waste presents a particular threat to public health and the environment when improperly discarded.” State regulations impose restrictions on how those who generate electronic waste, or e-waste, can properly dispose of this material, and these regulations prohibit the land disposal or incineration of universal waste, a category of hazardous waste that includes e-waste. Further, the Department of Toxic Substances Control (Toxic Substances Control) indicates that the disposal options available to e-waste generators are limited to the storage of e-waste, within certain limits, or recycling. However, in reviewing a sample of five large state agencies that generate e-waste, we found that all five agencies appear to have improperly disposed of some of their e-waste by discarding it in the trash.

In a sample of property survey reports<sup>5</sup> we reviewed, two of the agencies in our audit sample—the Department of Motor Vehicles (Motor Vehicles) and the Employment Development Department (Employment Development)—collectively reported discarding 26 electronic devices in the trash. These 26 electronic devices included such items as fax machines, tape recorders, calculators, speakers, and a videocassette recorder that we believe could be considered e-waste. The property survey reports for the remaining three state agencies in our sample—the California Highway Patrol (CHP), the Department of Transportation (Caltrans), and the Department of Justice (Justice)—do not clearly identify how the agencies disposed of their electronic devices; however, all three indicated that their practices included placing some of these items in the trash. State regulations require waste generators to determine whether their waste, such as e-waste, is hazardous before disposing of it. However, none of the five state agencies in our sample could demonstrate that it took steps to assess whether its e-waste was hazardous before placing that waste in the trash. Table 1 on the following page presents the results of our review.

<sup>5</sup> As we mention in the Introduction, a state agency must submit a property survey report to the Department of General Services for approval before the agency disposes of its surplus property.

**Table 1**  
**Electronic Devices Improperly Discarded by Five State Agencies**  
**January 2007 Through July 2008**

STATE AGENCY	NUMBER OF PROPERTY SURVEY REPORTS REVIEWED*	NUMBER OF ELECTRONIC DEVICES <sup>†</sup> IMPROPERLY DISCARDED IN THE TRASH PER THE PROPERTY SURVEY REPORTS	NUMBER OF ELECTRONIC DEVICES <sup>‡</sup> FOR WHICH THE DISPOSAL METHOD WAS UNCLEAR	EXAMPLES OF ELECTRONIC DEVICES IDENTIFIED
California Highway Patrol	10	–	375 <sup>‡</sup>	Televisions, stereos, fax machines, cameras
Department of Motor Vehicles	10	23	0	Fax machines, videocassette recorder, calculator
Department of Transportation	2 <sup>*</sup>	–	4 <sup>§</sup>	Telephones, calculator
Department of Justice	3 <sup>*</sup>	–	3	Copiers, camera
Employment Development Department	1 <sup>*</sup>	3	0	Radio, speakers

Sources: State agencies' property survey reports and supporting documentation.

\* At each agency we attempted to review at least 10 property survey reports that indicated that electronic devices were "valueless." Three of the state agencies in our sample did not have 10 property survey reports meeting this criterion.

† Consistent with the California Integrated Waste Management Board's definition, we defined e-waste generally as electronic devices at the end of their useful lives. The Department of Toxic Substances Control advises that electronic devices that contain circuitry and are programmable should be considered universal waste electronic devices. Therefore, we have included in our analysis electronic devices that could be programmable, such as telephones and computers.

‡ The property survey reports from the California Highway Patrol's supply services unit were nondescriptive when explaining how it discarded the electronic devices shown in the table. In all 10 property survey reports we reviewed, the supply services unit indicated only that the property was "disposed of locally" or "disposed of by the [supply services unit]."

§ We could not determine how the Department of Transportation (Caltrans) discarded its e-waste because the corresponding property survey report does not describe the disposal method. A Caltrans property controller asserted that the agency had discarded these items in the trash.

As Table 1 illustrates, when compared to the other four state agencies in our sample, the CHP had the most electronic devices on its property survey reports. We identified 375 electronic devices on 10 property survey reports completed by the CHP's supply services unit.<sup>6</sup> However, as we describe in Table 1, these property survey reports do not clearly indicate how the CHP disposed of the electronic devices. In all 10 property survey reports we reviewed, the supply services unit indicated only that its electronic devices were "disposed of" without clearly stating the disposal method used. This vague description could refer to disposal methods other than the discarding of items in the trash, such as the donation or recycling of the waste.

Given this lack of clarity, we asked a materials and stores specialist (specialist) within the CHP's supply services unit about that unit's disposal practices. The specialist had signed the 10 property survey reports we reviewed, certifying that the CHP had disposed of the

<sup>6</sup> The first footnote in Table 1 explains that we attempted to review at least 10 property survey reports for each state agency that list that agency's electronic devices as "valueless." We did so because we believed that agencies that listed e-waste as valueless were at greater risk of discarding these items in the trash, and we focused most of our work in these areas.

375 electronic devices in our sample. He indicated that the supply services unit has regularly disposed of televisions using an e-waste recycler. To support this assertion, the specialist provided us with documentation indicating that a recycler had collected 19 old televisions from the CHP in May 2008. The specialist also explained that before June 2008, the supply services unit had discarded in the dumpster all other devices, such as fax machines, projectors, and calculators. However, the specialist indicated that since June 2008 the supply services unit has used an approved recycler from the master services agreement established by the State's Department of General Services (General Services). The specialist stated that he learned of these recyclers through discussions with staff from the city of West Sacramento.

Based on the specialist's comments, we noted that 21 of the 375 electronic devices shown in Table 1 were televisions, leaving 354 electronic devices that the CHP may have discarded in the trash. The CHP's supply services unit disposed of all of these items before June 2008, the month when, according to its specialist, the supply services unit began consistently using an e-waste recycler. These 354 electronic devices include such items as cameras, telephones, microwaves, videocassette recorders, and calculators. The specialist indicated that the supply services unit had not received any guidance, policies, or procedures from General Services, Toxic Substances Control, or the California Integrated Waste Management Board (Waste Management Board) regarding the disposal of this e-waste.

According to a manager in the CHP's supply services unit, in addition to having potentially discarded 354 electronic devices in the trash, the unit regularly destroys confiscated cell phones with a hammer and discards them in the trash. This manager estimated that the unit destroys as many as 40 confiscated cell phones in this manner each year. The manager explained that the supply services unit follows this practice based on CHP policy and additional guidance provided by General Services. However, the manager was unable to direct us to the CHP policy and guidance from General Services that mandates destroying cell phones and discarding them in this manner. When we spoke with the manager of General Services' Office of Surplus Property Reutilization about this matter, the manager indicated that General Services has not instructed state agencies to destroy unclaimed or confiscated cell phones.

Although it appears that the CHP's supply services unit may have improperly discarded some of its electronic devices, other units within the CHP appear to have disposed of their e-waste appropriately. There are six sections within the CHP that regularly submit property survey reports to General Services, and one of these sections is the supply services unit. Three of the remaining

*Although it appears that the CHP's supply services unit may have improperly discarded some of its electronic devices, other units within the CHP appear to have disposed of their e-waste appropriately.*

five sections either did not have e-waste on their property survey reports or reported electronic devices as having been lost or stolen. Therefore, we excluded those three sections from further review. The two remaining sections within the CHP appear to have disposed of their e-waste appropriately.

The two remaining sections within the CHP, the information technology and telecommunications sections, appear to have donated their e-waste; thus their information does not appear in Table 1. The information technology section is responsible for managing outdated computer equipment, such as laptop and desktop computers. Our review of property survey reports from this unit indicated that this section intended to donate this e-waste; however, the property survey reports do not clearly specify whether it actually donated the devices. We spoke with a property controller from the information technology section, the same individual who certifies the final disposition of e-waste, and he stated that his section donates all computer equipment, with the exception of laptops, to the Computers for Schools Program. The CHP explained that it sends laptops back to General Services. The property controller indicated that he follows the guidance in the *State Administrative Manual* and the CHP's surplus property policies to guide his decisions regarding e-waste disposal. The *State Administrative Manual* requires that state agencies donate their state property only to eligible entities. According to General Services, donating computers to the Computers for Schools Program is an allowable method that state agencies can follow when disposing of this equipment.

***The CHP's telecommunications section was able to provide us with an example of a property survey report showing that the section uses an e-waste recycler.***

The CHP's telecommunications section was able to provide us with an example of a property survey report showing that the section uses an e-waste recycler. For example, in January 2007, this section provided more than 350 cell phones to a recycler. When we asked a property inspector within the CHP's telecommunications section how he knew to use a recycler, he indicated that he had worked in his current role for only three months and that the previous person in that role had passed on this information.

As Table 1 shows, after the CHP, Motor Vehicles had the next highest number of electronic devices listed on its property survey reports. In the 10 property survey reports we reviewed, we identified a total of 23 electronic devices that could be considered e-waste, and all of these items were discarded in the trash. These devices included fax machines, electric typewriters, tape recorders, and a videocassette recorder. According to a manager in Motor Vehicles' asset management section, some field offices have been discarding surplus electronic devices in the trash because these offices relied on an *approved donee* list maintained by General Services on its Web site. However, the manager indicated that

General Services discontinued this list and now allows state agencies to donate electronic equipment only to public schools, and the manager claimed that this restriction has severely limited Motor Vehicles' options for donating surplus equipment. Further, the manager indicated that General Services had advised Motor Vehicles that after an unsuccessful effort to find a public school, salvage dealer, or recycler, it is acceptable to throw away surplus property through the municipal waste stream.

We spoke with the manager of General Services' Office of Surplus Property Reutilization about this assertion by the manager in Motor Vehicles' asset management section. The General Services manager indicated that his office has advised state agencies that if material is not reusable, they are to throw it away. However, in the case of obsolete, broken information technology, the manager told us that agencies are to recycle the material. We saw evidence of this advice when reviewing approved property survey reports at Motor Vehicles. On the approval/rejection form that accompanies each approved property survey report, General Services consistently indicated that agencies should "if possible, use a local recycler/salvage company." Further, on the actual property survey report forms, General Services includes the statement "Do not dispose of any electronic equipment in a landfill."

We also found evidence that Motor Vehicles did not always wait to receive General Services' approval before disposing of its surplus property. In January 2008 Motor Vehicles certified that it discarded four calculators and two chairs in the trash. However, General Services did not approve the related property survey report until nearly a month later, in February 2008. The manager we spoke with at Motor Vehicles acknowledged that her department is now aware of General Services' master services agreement for the recycling of universal waste and indicated that Motor Vehicles is exploring options to advise its field offices to begin using recyclers from this agreement.

Caltrans had four electronic devices for which the disposal method was unclear, as shown in Table 1. One property survey report lists these four electronic devices, but it does not explain how Caltrans disposed of them and does not certify that the disposal took place. We spoke with the property controller at Caltrans about these four electronic devices. The property controller indicated Caltrans discarded the items through the regular trash stream because none represented what Caltrans considers e-waste. We further inquired as to what items the property controller believed constituted e-waste. The property controller indicated that Caltrans generally recycles what it considers to be "common-sense" e-waste items, such as computers, monitors, and household wastes banned from landfills. Caltrans considers other obsolete items that are no

*The property controller indicated Caltrans discarded the items through the regular trash stream because none represented what Caltrans considers e-waste.*

***We saw evidence of Caltrans' recycling of more "common-sense" e-waste items, such as recycling 188 obsolete computers that had been stored in its warehouse for three years.***

longer in working condition to be acceptable for disposal in the municipal waste stream. We saw evidence of Caltrans' recycling of more "common-sense" e-waste items. The other property survey report we reviewed includes 188 obsolete computers that appear to have been stored in Caltrans' warehouse for three years. Caltrans certified on its property survey report that it provided these computers to a recycler approved under General Services' master services agreement.

The property controller at Caltrans indicated that his department relies on General Services to communicate how surplus property should be disposed of when General Services approves the property survey reports with the correct disposition code. The property controller maintained that items on property survey reports approved with a disposition code of 3—indicating that the property is valueless and must be disposed of legally and safely—can be discarded in the trash. However, this position is not consistent with state regulations. As we state earlier in this report, state regulations prohibit the land disposal of universal waste.

Table 1 also shows that Justice had three electronic devices—two copiers and one camera—for which the disposal method was unclear. For example, property survey reports indicate only that the two copiers were "disposed," and they do not describe how the disposal took place. Justice was able to provide evidence that it had intended that a vendor remove these copiers when the new ones were delivered; however, Justice was unable to supply evidence demonstrating that this removal actually occurred. Our review also found that Justice's property survey report does not describe how the agency discarded its camera. We spoke with Justice's property controller regarding the agency's disposal practices. The property controller indicated that Justice's practice has been to donate e-waste rather than to classify this waste as valueless and to discard it in the trash. We were able to corroborate the property controller's claim by reviewing other property survey reports indicating that Justice donated obsolete computer equipment to the Computers for Schools Program or to scrap or salvage dealers. On one property survey report, Justice certified that it had donated more than 100 computer-related items, such as monitors, laptops, and printers. However, in the case of the camera we refer to in Table 1, the property controller indicated that the Justice employee who discarded the camera lacked an understanding of how to handle this waste; therefore, the employee placed the camera in the trash.

According to a property survey report we reviewed, Employment Development discarded three electronic devices—one radio and two speakers—in the trash. Our first footnote in Table 1 explains that for the period reviewed, Employment Development was one of

the three agencies that could not supply 10 property survey reports indicating that the e-waste listed on the reports was “valueless.” Therefore, we did not examine Employment Development’s management of e-waste except in the case of the radio and two speakers. We spoke with the warehouse operations manager at Employment Development to understand the department’s e-waste disposal practices and to ask why the agency discarded these items in the trash. The warehouse operations manager asserted that Employment Development would normally recycle these items through a vendor listed on General Services’ master services agreement, and he stated that he did not know why the agency instead discarded these items in the trash. We were able to corroborate the assertion by obtaining other property survey reports, which make clear that Employment Development has normally disposed of e-waste through recycling. For example, in October 2007, Employment Development donated nearly 350 monitors to a recycler for salvaging.

***Although Employment Development discarded three electronic devices in the trash, we saw evidence that it also donated nearly 350 monitors to a recycler for salvaging.***

### ***State Employees Have Had to Seek Out Information on How to Manage E-Waste Properly***

Because all five state agencies in our sample had either discarded some of their e-waste in the trash or staff asserted that the agencies had done so, we concluded that some staff members at these agencies may lack sufficient knowledge about how to dispose of this waste properly. We therefore examined what information oversight agencies provided to state agencies and what steps state agencies took to learn about proper e-waste disposal. Staff members at the five state agencies we reviewed—including those in charge of e-waste disposal, recycling coordinators, and property survey board members who approve e-waste disposal—stated that they had received no information from Toxic Substances Control, the Waste Management Board, or General Services related to the recycling or disposal of e-waste.

Based on our review of these three oversight agencies, it appears they have not issued instructions specifically aimed at state agencies describing the process they must follow when disposing of their e-waste. At most, we saw evidence that General Services and the Waste Management Board collaborated to issue a document in 2003 titled *Guidelines for the Procurement, Use and End-of-Life Management of Electronic Equipment*. This document informs state agencies to consider energy efficiency, materials efficiency,<sup>7</sup> and toxics reductions when managing the purchase, use, and disposal

<sup>7</sup> According to the guidelines, materials efficiency is defined as minimizing the consumption and processing of materials, which in turn minimizes associated environmental impacts such as waste generation and natural resource consumption.

*When responding to questions from state agencies, the manager indicated that Toxic Substances Control does not distinguish between the agencies and any other hazardous or universal waste generator.*

of electronic equipment. Further, the document states: “For all damaged or nonworking electronic equipment, find a recycler who can handle that type of equipment.” However, the Waste Management Board indicated that state agencies are not required to adhere to these guidelines; General Services deferred to the Waste Management Board’s opinion.

Instead, these oversight agencies generally provide guidance only when reacting to state agencies’ questions. In response to questions about whether Toxic Substances Control has provided any guidance on e-waste specifically targeted at state agencies, a manager with its Office of Pollution Control and Green Technology indicated that his department has issued regulations and fact sheets, provided training, and posted information on its Web site. However, this information is directed to all hazardous and universal waste generators and does not provide specific guidance targeted to state agencies on how to dispose of e-waste properly. When responding to questions from state agencies, the manager indicated that Toxic Substances Control does not distinguish between the agencies and any other hazardous or universal waste generator. General Services’ manager of its Office of Surplus Property Reutilization also stated that when state agencies ask for help, General Services would provide guidance, such as supplying information related to its master services agreement for recycling universal waste. However, General Services does not believe it has the authority to establish rules governing the disposal of e-waste. A senior integrated waste management specialist with the Waste Management Board indicated that her department will help state agencies “find appropriate management strategies” for e-waste when contacted for help.

The Waste Management Board provides public service announcements that focus on e-waste, and it believes that these announcements, combined with the procurement and end-of-life disposition document that it issued jointly with General Services, give adequate direction and information to state agencies. In addition, the Waste Management Board believes that by establishing a fee system for electronic devices covered by the Electronic Waste Recycling Act of 2003, which the Introduction discusses, the State has engineered a profit motive, which in turn is creating a market for e-waste items. According to the Waste Management Board, this e-waste market is generating sufficient public awareness of collection and recycling efforts. Recyclers publish information about upcoming and ongoing collection events to acquire covered electronic devices. However, these efforts tend to address the general public rather than state agencies. Moreover, none of these activities directly provide guidance to state agencies about the proper handling and disposal of their e-waste.

Alternatively, some state agencies we spoke with learned about e-waste requirements through their own research. For example, the recycling coordinator at Justice conducted her own on-line research to identify legally acceptable methods for disposing of e-waste after concluding that state agencies lack guidance on this matter. Through her research of various Web sites at the federal, state, and local government levels, she determined which electronic devices Justice would manage as e-waste and located e-waste collectors who would pick up or allow Justice to drop off its e-waste at no charge. Similarly, a staff member of the CHP's surplus supply unit indicated that his unit now uses e-waste recyclers that the city of West Sacramento referred to him.

Researching proper management practices for e-waste using state agency Web sites is not difficult. The Web sites for Toxic Substances Control, the Waste Management Board, and General Services all include information stating that electronic devices should not be discarded in the trash. For example, from the home page for Toxic Substances Control's Web site, we easily navigated in two clicks to a page with information about e-waste, which included general guidance to waste generators not to discard e-waste in the trash. From the home page for the Waste Management Board's Web site, we navigated in three clicks to a page with information describing e-waste and what to do with it. The Waste Management Board encourages generators to recycle e-waste and refers them to a directory that lists recyclers. From the home page for General Services' Web site, we searched for the term *e-waste* and easily found a page explaining that hazardous waste generally may not be discarded in the trash. General Services' Web site also provides links to Toxic Substances Control and the Waste Management Board, as well as to information regarding its master services agreement for e-waste recycling services.

State agencies can consider several alternatives when determining how to dispose properly of an electronic device at or near the end of its useful life. One method found in state regulations is to determine whether a specific electronic device is considered hazardous waste. However, this process can be complicated. The Waste Management Board has advised consumers: "Unless you are sure [the electronic device is] not hazardous, you should presume [that] these types of devices need to be recycled or disposed of as hazardous waste and that they may not be thrown in the trash."

Moreover, low-cost and no-cost options exist for state agencies to recycle their universal waste. One such option is to use recyclers available under the master services agreement for universal waste. Under the agreement, state agencies can select a recycler that is already under contract with General Services. The master services agreement offers reduced rates based on aggregated

*The recycling coordinator at Justice conducted her own on-line research to identify legally acceptable methods for disposing of e-waste after concluding there was a lack of guidance on this matter.*

*Some state agencies may not be aware that it is illegal to discard certain types of electronic devices in the trash, and it may never occur to them to perform such research, and even if they did, having staff at each of the more than 200 state agencies perform the same type of research is duplicative.*

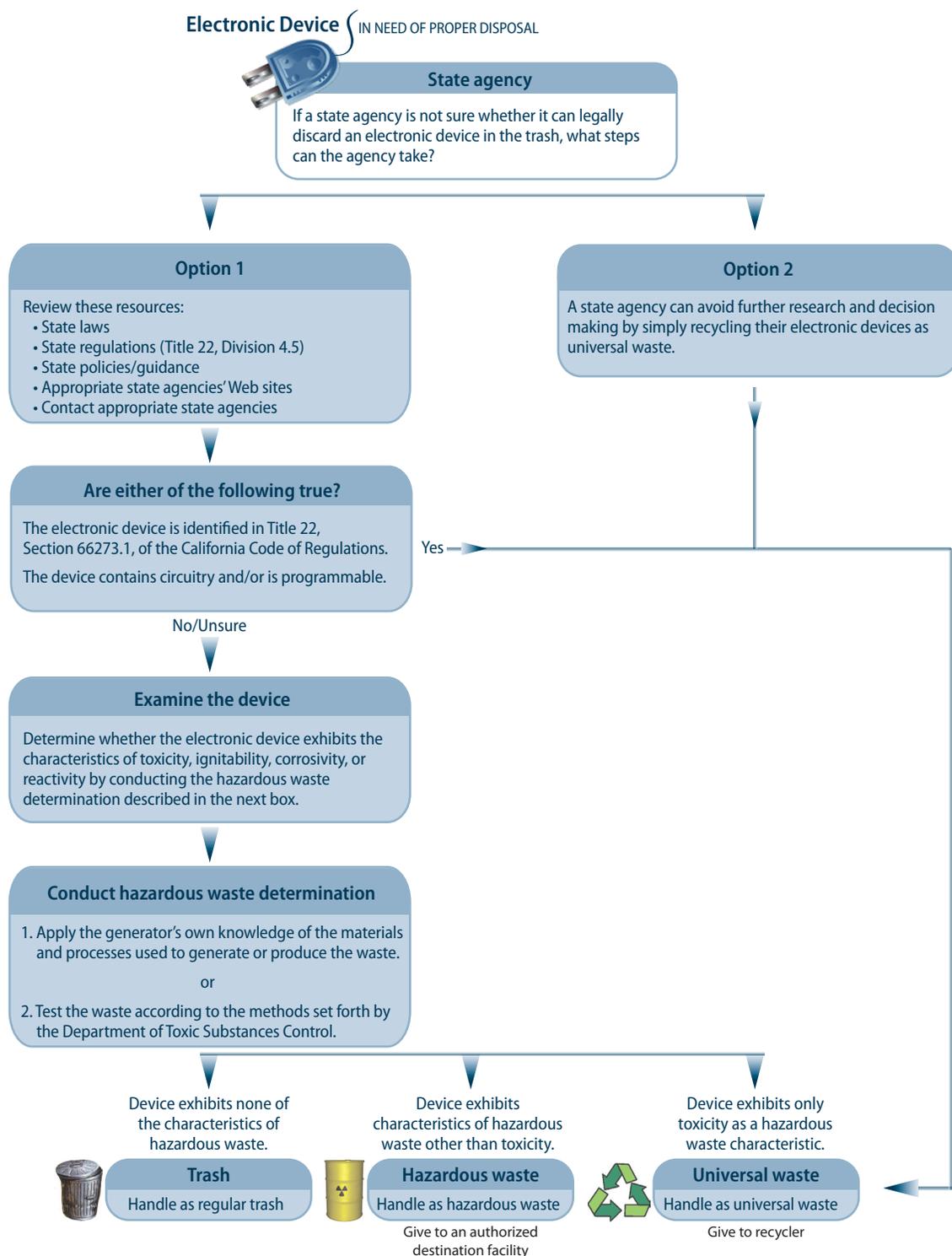
statewide volumes. For example, in the Sacramento area, General Services identifies four contractors that provide e-waste collection services. Of these four, two will pick up e-waste for free without any minimum weight requirements. Although the agreement does not cover small and major appliances, it does cover many electronic devices, such as televisions, computers, monitors, and printers. Because some contractors will pick up a state agency's e-waste for free, it may be more cost-effective for state agencies to simply recycle their electronic equipment and devices that are at or near the end of their useful lives as universal waste rather than to invest the time to determine whether a specific electronic device is hazardous. Figure 2 presents a decision tree showing the steps that a state agency might take to determine how to dispose of its e-waste properly.

#### ***Opportunities Exist to Inform State Agencies Efficiently and Effectively About Their E-Waste Responsibilities***

Despite the ease of finding e-waste-related information on the Web sites for Toxic Substances Control, the Waste Management Board, and General Services, we believe that it is neither effective nor efficient to expect staff at all state agencies to identify e-waste requirements on their own. Some state agencies may not be aware that it is illegal to discard certain types of electronic devices in the trash, and it may never occur to them to perform such research before throwing these devices away. Further, having staff at each of the more than 200 state agencies perform the same type of research is duplicative.

The State could use any of at least five approaches to convey to state agencies more efficiently and effectively the agencies' e-waste management responsibilities. One approach would be to have Toxic Substances Control, the Waste Management Board, or General Services, either alone or in collaboration with one or more of the others, directly contact by mail, e-mail, or other method the directors or other appropriate officials, such as the recycling coordinators or chief information officers, at each state agency. These communications could convey how each agency should dispose of its e-waste. State law requires most state agencies to establish a recycling coordinator to implement an integrated waste management plan. The Waste Management Board indicates that it has the names and contact information for the recycling coordinators at state agencies, and it could thus establish either a mailing list of these coordinators or a Web-based bulletin board for their use.

**Figure 2**  
Steps a State Agency Could Take to Determine How to Dispose of an Electronic Device



Sources: California Code of Regulations, Title 22; the *State Administrative Manual*; the Department of Toxic Substances Control; the California Integrated Waste Management Board; and the Department of General Services.

Another approach would be to have the Waste Management Board implement a recycling program for electronic devices owned by state agencies. Section 12165(a) of the Public Contract Code requires the Waste Management Board to implement a recycling plan at state agencies for items such as office paper, cardboard, and newsprint. This section also allows the Waste Management Board to include in the plan any other material at its discretion. Although the Waste Management Board has not done so, it could include e-waste as part of this plan.

A third approach entails including e-waste as part of the training related to recycling. According to its Web site, the Waste Management Board assists state agencies and facilities in reducing the amount of waste they generate and dispose of by implementing waste prevention, reuse, and recycling programs. This assistance includes training and advising state employees and recycling coordinators. According to a senior integrated waste management specialist at the Waste Management Board, her department provides one-on-one training and assistance to recycling coordinators who specifically request such assistance, but it does so only after being contacted by a state agency with a specific need or issue. The training provided does not target e-waste. However, as part of its efforts to provide one-on-one training to recycling coordinators at state agencies, the Waste Management Board could include a discussion of how to properly dispose of e-waste.

Still another approach would be to have General Services, Toxic Substances Control, and the Waste Management Board work together to amend applicable sections of the *State Administrative Manual* that pertain to recycling to specifically include electronic devices. Beginning with Section 1930, the manual describes the State's waste prevention and recycling program for nonhazardous waste, which has the primary objective of reducing the amount of waste materials generated at state facilities and increasing the materials that are recycled. The *State Administrative Manual* currently addresses solid waste items such as office paper, newspaper, and cardboard; it does not specifically mention electronic devices.

Finally, the governor could modify an existing executive order or issue a new executive order related to e-waste recycling that incorporates requirements aimed at e-waste disposal. In April 1991 then-Governor Wilson signed Executive Order W-7-91, requiring all state agencies to provide for the collection and recycling of aluminum, glass, plastic, and metal containers. The executive order also required state agencies to provide for the collection and recycling of office paper, newspaper, cardboard, surplus reusable equipment, and other materials generated in sufficient quantities for viable recycling and reuse efforts. Through such an executive order, the governor could choose to impose e-waste collection and recycling requirements directly.

***As one alternative, the governor could choose to impose e-waste collection and recycling requirements by issuing an executive order.***

**State Agencies Report Inconsistently Their Data on E-Waste Diverted From Municipal Landfills**

Although Table 1 on page 18 indicates that the five state agencies we examined had either disposed improperly of some of their e-waste by placing it in the trash or asserted that they had done so, most of these state agencies also reported diverting e-waste from municipal landfills. Waste diversion includes activities such as source reduction or recycling waste. In 1999 the State enacted legislation requiring state agencies to divert at least 50 percent of their solid waste from landfill disposal by January 1, 2004. State agencies annually report their status on meeting this goal by submitting State Organization and Agency Recycling Database (recycling database) reports indicating the tons of various types of waste diverted. A component of the recycling database report pertains specifically to e-waste. Table 2 presents the amounts reported by the five state agencies we reviewed. Between 2004 and 2007, four of the five state agencies in our sample reported diverting a combined total of more than 250 tons of e-waste. The fifth state agency, Caltrans, explained that it reported its e-waste diversion statistics in other categories of its recycling database reports that were not specific to e-waste.

**Table 2**  
**Tons of E-Waste Reported as Diverted From Municipal Landfills by Five Large State Agencies**  
**2004 Through 2007**

STATE AGENCY	YEAR DIVERTED				TOTALS
	2004	2005	2006	2007	
California Highway Patrol	1.0	36.0	36.0	0.8*	73.8
Department of Motor Vehicles	2.0	18.7	37.4	13.1	71.2
Department of Justice	0.0	0.0	69.8	0.0†	69.8
Employment Development Department	0.0	0.0	0.0	38.6‡	38.6
Department of Transportation headquarters	0.0§	0.0§	0.0§	0.0§	0.0
<b>Total tons diverted from municipal landfills</b>	<b>3.0</b>	<b>54.7</b>	<b>143.2</b>	<b>52.5</b>	<b>253.4</b>

Sources: Data submitted by state agencies to the California Integrated Waste Management Board (Waste Management Board), as well as clarification of these amounts by the above agencies' staff as noted below.

- \* Beginning in 2007 the California Highway Patrol (CHP) reported the majority of its e-waste amounts in other diversion categories. During this year, the CHP assigned this reporting responsibility to another employee, who interpreted the Waste Management Board's reporting instructions differently than her predecessor.
- † The Department of Justice (Justice) reported 3,951 e-waste *items* diverted, not *tons* of e-waste diverted. Justice explained that due to constraints on staff availability, it did not convert items into tons as it had done in the prior year.
- ‡ The Employment Development Department explained that it reported e-waste data for the first time in 2007, and that its data for that year is incomplete and does not include information from its Southern California warehouse.
- § The Department of Transportation's headquarters explained that it reports all e-waste amounts in other diversion categories.

***The Waste Management Board explained that e-waste is not solid waste, and thus state agencies are not required to report how much they divert from municipal landfills.***

Several factors cause us to have concerns about the reliability and accuracy of the amounts that these state agencies reported as diverted e-waste. First, these state agencies were not always consistent in the way they calculated the amount of e-waste to report or in the way they reported it. For example, Employment Development's amounts for 2007 include data only from its Northern California warehouse; the amounts did not include information from its Southern California warehouse. Also for 2007, the CHP included its diverted e-waste in other categories, while Caltrans did so for all years reported. Further, although the recycling database reports call for reporting quantities in tons, for 2007 Justice reported 3,951 e-waste *items* diverted. Moreover, diversion of e-waste does not count toward compliance with the solid waste diversion mandate, so state agencies may not include it. The Waste Management Board explained that e-waste is not solid waste, and thus state agencies are not required to report how much they divert from municipal landfills.

The Waste Management Board also allows state agencies to use various methods to calculate the amounts that they report as diverted. For instance, rather than conduct on-site disposal and waste reduction audits to assess waste management practices at every facility, a state agency can estimate its diversion amounts from various sampling methods approved by the Waste Management Board.

### **State Agencies' Compliance With E-Waste Requirements Receives Infrequent Assessments That Are Simply Components of Other Reviews**

A state agency's decision regarding how to dispose of e-waste is subject to review by local entities, such as cities and counties, as well as by General Services. As we discuss in the Introduction, local agencies certified by the California Environmental Protection Agency (CalEPA) are given responsibility under state law to implement and enforce the State's hazardous waste laws and regulations, which include requirements pertaining to universal waste. These local agencies, referred to as *program agencies*, perform periodic inspections of hazardous waste generators. Further, the *State Administrative Manual* establishes a state policy requiring state agencies to obtain General Services' approval before disposing of any state-owned surplus property, which could include obsolete or broken electronic devices. In addition to reviewing and approving these disposal requests, General Services periodically audits state agencies to ensure they are complying with the *State Administrative Manual* and other requirements. However, our audit found that the Sacramento County program agency and

General Services perform reviews infrequently, and these reviews may not always identify instances in which state agencies have disposed of e-waste improperly.

The inspections performed by the program agency for Sacramento County are infrequent and may fail to include certain state agencies that generate e-waste. According to this program agency, which has the responsibility to inspect state agencies within its jurisdiction, its policy is to inspect hazardous waste generators once every three years. State regulations do not impose requirements that prescribe how often program agencies must inspect hazardous waste generators. Instead, a program agency must develop its own written plan outlining how it intends to inspect and enforce the State's hazardous waste laws. A local entity that is applying to become a program agency submits this written plan to CalEPA. For the five state agencies in our sample, we asked the Sacramento County program agency to provide us with the inspection reports that it completed under its hazardous waste generator program. The inspection reports we received were dated between 2005 and 2008. We focused on the hazardous waste generator program because Sacramento County's inspectors evaluate a generator's compliance with the State's universal waste requirements under this program. As we describe in Figure 1 in the Introduction, universal waste is a subset of hazardous waste, and it may include e-waste. In its response to our request, the Sacramento County program agency provided seven inspection reports that covered four of the five state agencies in our sample. The Sacramento County program agency provided three inspection reports for Caltrans, one report for Justice, one for the CHP, and two inspection reports for Motor Vehicles. The program agency did not provide us with an inspection report for Employment Development, indicating that this department is not being regulated under the program agency's hazardous waste generator program. The Sacramento County program agency explained that it targets its inspections specifically toward hazardous waste generators and not generators that have universal waste only, although the program agency will inspect for violations related to universal waste during its inspections. As a result, the Sacramento County program agency may never inspect Employment Development if it generates only universal waste.

General Services' reviews of state agencies are also infrequent, and it is unclear whether these reviews would identify state agencies that have inappropriately disposed of their e-waste. According to its audit plan for January 2007 through June 2008, General Services conducts "external compliance audits" of other state agencies to determine whether they comply with requirements that are under the purview of certain divisions or offices within General Services. One such office is General Services' Office of Surplus Property and Reutilization, which reviews and approves the property survey

*The Sacramento County program agency explained that it targets its inspections specifically towards hazardous waste generators. As a result, the Sacramento County program agency may never inspect Employment Development if it generates only universal waste.*

*General Services' auditors focus on whether state agencies properly complete the property survey reports and not on how the agencies actually dispose of the surplus property.*

reports that state agencies must submit before disposing of surplus property. According to its audit plan, General Services' auditors perform reviews to assess whether state agencies completed these reports properly and disposed of the surplus equipment promptly. General Services' audit plan indicates that it audited each of the five state agencies in our sample between 1999 through 2004, and that it plans to perform another review of these agencies within the next seven to eight years.

When General Services does perform its reviews, it is unclear whether General Services would identify instances in which state agencies improperly discarded e-waste by placing it in the trash. General Services' auditors focus on whether state agencies properly complete the property survey reports and not on how the agencies actually dispose of the surplus property. For example, according to its audit procedures, General Services' auditors will review property survey reports to ensure that they contain the proper signatures and that the state agencies disposed of the property "without unreasonable delay." To ensure that we understood General Services' audit methodology, we reviewed examples of its work to evaluate whether it had identified instances in which agencies disposed of e-waste improperly. Our review confirmed that General Services does not focus on identifying such instances during its reviews. However, after the end of our fieldwork, General Services revised its audit procedures to ensure that its auditors evaluate how state agencies are disposing of their e-waste. General Services provided us with its final revised audit guide and survey demonstrating that its auditors will now "verify that disposal of e-waste is [sent] to a local recycler/salvage company and not sent to a landfill."

### **Although Some State Agencies Use Best Practices to Manage E-Waste, Agencies Could Further Improve Their Management Efforts**

During our review we identified some state agencies that engage in activities that we consider best practices for managing e-waste. These practices went beyond the requirements found in state law and regulations, and they appeared to help ensure that e-waste does not end up in landfills. One best practice we observed was Justice's establishment of very thorough duty requirements for its recycling coordinator. These requirements provide clear guidelines and expectations, listing such duties as providing advice and direction to various managers about recycling requirements, legal mandates, goals, and objectives. The duties also include providing training to department staff regarding their duties and responsibilities as they pertain to recycling. In addition, the recycling coordinator maintains current knowledge of recycling laws and works with the Waste Management Board and other external agencies in meeting

state and departmental recycling goals and objectives. Three of the remaining four state agencies in our sample did not have detailed duty statements specifically for their recycling coordinators. These three state agencies—the CHP, Motor Vehicles, and Employment Development—briefly addressed recycling coordination in the duty statement for the respective individual’s position. Caltrans, the remaining state agency in our sample, indicated that it did not have a duty statement for its recycling coordinator. The creation of a detailed duty statement similar to the one used by Justice would help state agencies ensure that they comply with mandated recycling requirements, that they maintain and distribute up-to-date information, and that agencies continue to divert e-waste from municipal landfills.

A second best practice we noted was state agencies’ use of recycling vendors from General Services’ master services agreement. General Services established this agreement to provide state agencies with the opportunity to obtain competitive prices from prequalified contractors that have the expertise to handle their e-waste. For a contractor to be listed on General Services’ master services agreement, it must possess three years of experience in providing recycling services to universal waste generators, be registered with Toxic Substances Control as a hazardous waste handler, and ensure that all activities resulting in the disposition of e-waste are consistent with the Electronic Waste Recycling Act of 2003. The master services agreement also lists recycling vendors by geographic region, allowing state agencies to select vendors that will cover their area. As we show in the Appendix, many recycling vendors under the agreement offer to pick up e-waste at no cost, although most require that state agencies meet minimum weight requirements. Based on a review of their property survey reports, we saw evidence that the CHP, Caltrans, Justice, and Employment Development all used vendors from this agreement to recycle some of their e-waste.

In addition to noting some best practices, we also observed instances in which state agencies could improve how they manage their e-waste. For example, the five state agencies in our sample have not formally evaluated the performance of their e-waste recyclers. Four of the five state agencies in our sample use vendors under General Services’ master services agreement. The agreement contains a performance evaluation form that state agencies can use to report to General Services the good or poor performance of e-waste recyclers. According to the contract administrator at General Services who oversees the agreement, no state agencies have submitted these evaluations. On the other hand, as the contract administrator confirmed, state agencies are not required to do so. Unlike the other four departments in our sample, Motor Vehicles does not use vendors from General Services’ master

*Many recycling vendors under the master services agreement offer to pick up e-waste at no cost, although most require that state agencies meet minimum weight requirements.*

*Motor Vehicles' decision to not use vendors from General Services' master services agreement may have resulted in it incurring unnecessary costs to remove obsolete equipment.*

services agreement. As in the cases of the other four agencies, Motor Vehicles has not formally evaluated the performance of its recyclers. Instead, Motor Vehicles indicated that it evaluates informally the performance of one of its recyclers through monthly face-to-face meetings.

Motor Vehicles' decision not to use vendors from General Services' master services agreement may have resulted in it incurring unnecessary costs to remove obsolete equipment. Of the five state agencies we examined, only Motor Vehicles indicated that it had incurred costs for recycling its e-waste. According to a manager at Motor Vehicles, in the past the agency has paid \$132 per copier to vendors that have picked up the old equipment. Although Motor Vehicles indicated that it could not be certain how many times it has paid this fee, it was able to provide an example of an invoice from a vendor that charged \$132 to remove one copier in September 2007. Motor Vehicles provided us with a list of all the copiers it had purchased between January 2007 and May 2008, indicating that it had purchased 96 new copiers. Assuming that Motor Vehicles paid \$132 to remove each of its 96 old copiers, we calculate that the agency would have paid more than \$12,000 to remove all of them. However, as the Appendix illustrates, numerous vendors are willing to pick up electronic devices at no charge.

According to a manager at Motor Vehicles, the department's headquarters does not use recyclers under the master services agreement because doing so would not be cost-effective due to mileage charges and weight minimums charged by some vendors. However, Table A.1 in the Appendix shows that two vendors offer free pickup of e-waste without any weight requirements in the service area that includes Sacramento, home of Motor Vehicles' headquarters. The manager further stated that Motor Vehicles' field offices are responsible for locating a recycler in their areas and that they may or may not use recyclers on the master services agreement.

### **Recommendations**

To avoid contaminating the environment through the inappropriate discarding of electronic devices, state agencies should ascertain whether the electronic devices that require disposal can go into the trash. Alternatively, state agencies could treat all electronic devices they wish to discard as universal waste and recycle them.

To help state agencies' efforts to prevent their e-waste from entering landfills, Toxic Substances Control, the Waste Management Board, and General Services should work together to identify and implement methods that will communicate clearly to state agencies

their responsibilities for handling and disposing of e-waste properly and that will inform the agencies about the resources available to assist them. This report identifies five specific approaches that the State could use to implement this recommendation. One approach is to have General Services, in consultation with Toxic Substances Control and the Waste Management Board, amend applicable sections of the *State Administrative Manual* to include e-waste among the items that state agencies are required to recycle.

If the Legislature believes that state agencies should track more accurately the amounts of e-waste they generate, recycle, and discard, it should consider imposing a requirement that agencies do so. Moreover, if the Legislature believes that more targeted, frequent, or extensive oversight related to state agencies' recycling and disposal of e-waste is necessary, the Legislature should consider assigning this responsibility to a specific agency.

Finally, state agencies should consider implementing the two best practices we identified: developing a thorough duty statement for recycling coordinators that includes a list of responsibilities related to e-waste and using vendors from General Services' master services agreement when the agencies need recycling services.

We conducted this review under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted government auditing standards. We limited our review to those areas specified in the audit scope section of the report.

Respectfully submitted,



ELAINE M. HOWLE, CPA  
State Auditor

Date: November 18, 2008

Staff: Grant Parks, MBA, Project Manager  
Dale A. Carlson, MPA, CGFM  
Beka Clement, MPA  
Joe Jones, CPA, CIA  
Dave Morris

For questions regarding the contents of this report, please contact Margarita Fernández, Chief of Public Affairs, at 916.445.0255.

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## Appendix

### RECYCLING COST AND REVENUE INFORMATION UNDER THE MASTER SERVICES AGREEMENT FOR UNIVERSAL WASTE

Tables A.1 and A.2 on the following pages provide information regarding the lowest cost charged by vendors under the Department of General Services' master services agreement for recycling universal waste, which includes electronic waste (e-waste). In some instances, vendors will pay state agencies for the agencies' waste. For these cases, we have also listed the highest amount that the vendors will pay. Table A.1 provides cost and revenue information for e-waste collection services,<sup>8</sup> while Table A.2 offers similar information for the collection of cathode ray tubes (CRTs).<sup>9</sup> Under the master services agreement, vendors are listed under 12 geographic regions that cover the entire state. State and local agencies can use Figure A, along with Tables A.1 and A.2, to identify vendors that will collect e-waste and CRTs in their areas.

<sup>8</sup> Under the terms of the master services agreement, items considered e-waste include televisions, computers, computer monitors, printers, videocassette recorders, cell phones, radios, personal digital assistants, compact discs, digital video disc players, and microwave ovens.

<sup>9</sup> Under the terms of the master services agreement, a CRT is a type of vacuum or picture tube that converts an electronic signal into a visual image. Computer monitors and televisions often contain CRTs.

**Figure A**  
Electronic-Waste Pickup and Drop-Off Opportunities Under the Department of General Services' Master Services Agreement



Source: Department of General Services' master services agreement.

\* State agency offices located in these service areas have no opportunity for the free pickup of their electronic waste under the master services agreement. However, free pickup of cathode ray tubes is offered in all service areas.

**Table A.1**  
**Cost and Revenue Information for State Agencies That Recycle Their Electronic Waste Under the Department of General Services' Master Services Agreement**

SERVICE AREA	COUNTIES INCLUDED	RECYCLER NAMES*	PICKED UP BY VENDOR		DROPPED OFF BY AGENCY	
			LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS	LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS
1	Del Norte, Humboldt, Lake, Mendocino	AERC Recycling Solutions	\$0.35	300	Free	No minimum
		California Electronic Asset Recovery	0.15	No minimum	Free	No minimum
2	Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, Trinity	AERC Recycling Solutions	0.35	300	Free	No minimum
		California Electronic Asset Recovery	0.25	No minimum	Free	No minimum
3	Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, Yuba	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound
		California Electronic Asset Recovery	Free	No minimum	Free	No minimum
		HMR	Free	500	Free	No minimum
		M <sup>3</sup> (M cubed)	Free	No minimum	Free	No minimum
4	Alameda, Contra Costa, Marin, Napa, San Francisco, Santa Clara, San Mateo, Solano, Sonoma	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound
		California Electronic Asset Recovery	Free	No minimum	Free	No minimum
		Direct Computer Disposal	0.25	500	Free	No minimum; vendor pays 5 cents per pound for 300 pounds or more
		E-Recycling	0.05	No minimum	Free	No minimum
		HMR	Free	500	Free	No minimum
M <sup>3</sup>	0.31	300 <sup>†</sup>	NA	NA		
5	Santa Barbara, San Benito, San Luis Obispo, Santa Cruz, Monterey	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
		California Electronic Asset Recovery	0.25	No minimum	Free	No minimum
6	Fresno, Kern, Kings, Madera, Tulare	M <sup>3</sup>	0.28	500	\$0.23	500
		AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
7	Los Angeles, Ventura	Electronic Recyclers	0.10	No minimum	0.10	No minimum
		M <sup>3</sup>	0.28	500	0.23	500
		AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound
8	Riverside, San Bernardino	E-Recycling	0.05	No minimum	Free	No minimum
		HMR	Free	500	Free	No minimum
		M <sup>3</sup>	Free	No minimum	Free	No minimum
		AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
9	Inyo, Mono	M <sup>3</sup>	0.32	500	0.27	500
		AERC Recycling Solutions	0.35	300	Free	No minimum
10	Alpine, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
		California Electronic Asset Recovery	0.15	No minimum	Free	No minimum
		HMR	Free	500	Free	No minimum
11	Imperial, San Diego	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
		E-Recycling	0.05	No minimum	Free	No minimum
12	Orange	AERC Recycling Solutions	Free	300	Free	No minimum; vendor pays 3 cents per pound for 500 pounds or more
		E-Recycling	0.05	No minimum	Free	No minimum
		HMR	Free	500	Free	No minimum
		M <sup>3</sup>	0.32	500	0.27	500

Source: Department of General Services' master services agreement.

NA = Not Applicable

\* All recyclers are on the list of approved collectors or recyclers maintained by the California Integrated Waste Management Board.

† 31 cents per pound applies to quantities of 300-499 pounds.

**Table A.2**  
Cost and Revenue Information for State Agencies That Recycle Their Cathode Ray Tubes Under the Department of General Services' Master Services Agreement

SERVICE AREA	COUNTIES INCLUDED	RECYCLER NAMES*	PICKED UP BY VENDOR				DROPPED OFF BY AGENCY				
			LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS	HIGHEST PRICE PER POUND PAID BY VENDOR	MINIMUM NUMBER OF POUNDS	LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS	HIGHEST PRICE PER POUND PAID BY VENDOR	MINIMUM NUMBER OF POUNDS	
1	Del Norte, Humboldt, Lake, Mendocino	AERC Recycling Solutions	Free	300	\$0.20	500	Free	No minimum	\$0.25	No minimum	500
		California Electronic Asset Recovery	Free	No minimum	0.00	No minimum	Free	No minimum	0.20	No minimum	No minimum
2	Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, Trinity	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	No minimum	500
		California Electronic Asset Recovery	Free	No minimum	0.00	No minimum	Free	No minimum	0.20	No minimum	No minimum
3	Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, Yuba	AERC Recycling Solutions	Free	300	0.25	500	Free	No minimum	0.25	No minimum	500
		California Electronic Asset Recovery	Free	No minimum	0.20	No minimum	Free	No minimum	0.20	No minimum	No minimum
		HMR	Free	500	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
		M <sup>3</sup> (M cubed)	Free	No minimum	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
4	Alameda, Contra Costa, Marin, Napa, San Francisco, Santa Clara, San Mateo, Solano, Sonoma	AERC Recycling Solutions	Free	300	0.25	500	Free	No minimum	0.25	No minimum	500
		California Electronic Asset Recovery	Free	No minimum	0.20	No minimum	Free	No minimum	0.20	No minimum	No minimum
		Direct Computer Disposal	Free	300	0.10	500	Free	No minimum	0.25	No minimum	No minimum
		E-Recycling	Free	No minimum	0.22	No minimum	Free	No minimum	0.25	No minimum	No minimum
5	Santa Barbara, San Benito, San Luis Obispo, Santa Cruz, Monterey	HMR	Free	500	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
		M <sup>3</sup>	NA	NA	0.00	300	NA	NA	0.00	NA	300
		AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	No minimum	500
		California Electronic Asset Recovery	Free	No minimum	0.00	No minimum	Free	No minimum	0.20	No minimum	No minimum
6	Fresno, Kern, Kings, Madera, Tulare	M <sup>3</sup>	\$0.28	500	0.00	300	\$0.20	500	0.00	300	300
		AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	No minimum	500
		Electronic Recyclers	Free	No minimum	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
		M <sup>3</sup>	0.28	500	0.00	300	0.20	500	0.00	300	300
7	Los Angeles, Ventura	AERC Recycling Solutions	Free	300	0.25	500	Free	No minimum	0.25	No minimum	500
		E-Recycling	Free	No minimum	0.22	No minimum	Free	No minimum	0.25	No minimum	No minimum
		HMR	Free	500	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
		M <sup>3</sup>	Free	No minimum	0.00	No minimum	Free	No minimum	0.00	No minimum	No minimum
8	Riverside, San Bernardino	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	No minimum	500
		E-Recycling	Free	No minimum	0.22	No minimum	Free	No minimum	0.25	No minimum	No minimum
		M <sup>3</sup>	0.32	500	0.00	300	0.24	500	0.00	300	300
		M <sup>3</sup>	0.32	500	0.00	300	0.24	500	0.00	300	300

SERVICE AREA	COUNTIES INCLUDED	RECYCLER NAMES*	PICKED UP BY VENDOR			DROPPED OFF BY AGENCY				
			LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS	HIGHEST PRICE PER POUND PAID BY VENDOR	MINIMUM NUMBER OF POUNDS	LOWEST PRICE PER POUND PAID BY STATE	MINIMUM NUMBER OF POUNDS	HIGHEST PRICE PER POUND PAID BY VENDOR	
9	Inyo, Mono	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	500
10	Alpine, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	500
		California Electronic Asset Recovery	Free	No minimum	0.20	No minimum	Free	No minimum	0.20	No minimum
		HMR	Free	500	0.00	No minimum	Free	No minimum	0.00	No minimum
11	Imperial, San Diego	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	500
		E-Recycling	Free	No minimum	0.22	No minimum	Free	No minimum	0.25	No minimum
12	Orange	AERC Recycling Solutions	Free	300	0.20	500	Free	No minimum	0.25	500
		E-Recycling	Free	No minimum	0.22	No minimum	Free	No minimum	0.25	No minimum
		HMR	Free	500	0.00	No minimum	Free	No minimum	0.00	No minimum
		M <sup>3</sup>	0.32	500	0.00	300	0.24	500	0.00	300

Source: Department of General Services' master services agreement.

NA = Not Applicable

\* All recyclers are on the list of approved collectors or recyclers maintained by the California Integrated Waste Management Board.

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*(Agency response provided as text only.)*

California Environmental Protection Agency  
1001 I Street  
Sacramento, California 95814

October 24, 2008

Ms. Elaine M. Howle\*  
State Auditor  
555 Capitol Mall, Suite 300  
Sacramento, California 95814

Re: Bureau of State Audits Report No. 2008-112

Dear Ms. Howle:

Thank you for the opportunity to respond to the audit on state agency electronic waste (e-waste) recycling and disposal. The California Environmental Protection Agency (Cal/EPA) appreciates your audit team's recommendations to improve state agency e-waste management programs, as well as state and local e-waste enforcement and compliance assistance activities.

Cal/EPA, the Department of Toxic Substances Control (DTSC) and the California Integrated Waste Management Board (CIWMB) support the report's principal recommendation – that DTSC, the CIWMB and the Department of General Services should strengthen the way we communicate to state agencies their responsibilities for properly disposing of e-waste and the resources available to assist them. Clearly, state government, like most Californians, should work to ensure its compliance with e-waste and universal waste standards.

The Cal/EPA Unified Program, DTSC and CIWMB also have more specific comments on the redacted draft copies of the audit report with which we were provided. Their specific comments are enclosed. We should note that because significant portions of the draft audit report with which we were provided were redacted, Cal/EPA, DTSC and CIWMB could not comment on those portions, and we reserve the right to do so at a later time when an unredacted audit report is made available to us.

①

Again, thank you for your interest in this important environmental protection issue.

Sincerely,

(Signed by: Linda S. Adams)

Linda S. Adams  
Secretary for Environmental Protection

Enclosures (3)

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\* California State Auditor's comments begin on page 47.

Specific Cal/EPA Unified Program Comments on Redacted Draft Bureau of  
State Audits Report No. 2008-112

Comment 1

- ② The last sentence on page 16 of the report states, "Since state agencies generate universal waste, which is a subset of hazardous waste, program agencies are responsible for overseeing the proper handling of this waste at state agencies." This statement is factually incorrect.
- ③

Any entity that generates hazardous waste is responsible under state law for overseeing the proper handling of that waste. The local program agencies, also called CUPAs, are responsible for monitoring and enforcing program standards and requirements that are developed by the state. However, the state agencies generating the waste are responsible for overseeing the proper handling of their own waste.

The paragraph would be correct with the deletion of the last sentence.

Comment 2

- ② ④ The last two sentences on page 37 imply that there is some e-waste program "review" process performed by program agencies (CUPAs) that is distinct from "inspections". Program agencies inspect regulated entities on a regular basis, and also on the basis of complaints that may be received. During these inspections, a review of certain program plans and other documents may be conducted, depending on the purpose of the inspection. However, this should not be confused with some kind of internal business program review. Program agencies have many kinds of outreach programs, some of which may include program reviews. However, there is no statewide requirement for program agencies to conduct regular program reviews.
- ④
- ① It was not possible to use the preceding text in the report as a reference to clarify this comment because it was redacted.

Comment 3

- ② ⑤ The last sentence of the first paragraph on page 12 is difficult to understand. Some minor punctuation would correct the issue. The sentence should read:  
  
"Lastly, certified unified program agencies (program agencies) typically are local government agencies that conduct inspections of entities, including state agencies, [remove comma] that generate hazardous waste, [insert comma] to determine their compliance with applicable laws and regulations."
- ⑤ Additionally, the author may want to replace "program agencies" throughout the report with the term CUPA, which is in general use in many other documents.

Comment 4

- ② ⑥ The second sentence of the paragraph on page 16 is slightly inaccurate. It would be better if the sentence read:  
  
"Cal/EPA reports that there are currently 84 program agencies that cover the entire state, which are typically county or city agencies."

Comment 5

Page 37 of the redacted draft audit states that state agencies' compliance with e-waste requirements is assessed infrequently, and is simply a component of other reviews (i.e., inspections). The discussion on pages 37-39 of the redacted draft audit report suggests that CUPAs should inspect hazardous waste generators more frequently, and that they should also inspect facilities that generate only e-waste or other universal waste.

②

② ⑦

The Unified Program, and the CUPAs it represents, are fully committed to encouraging and to the maximum extent feasible ensuring compliance with all of the environmental laws and regulations that they have been charged with. CUPAs are responsible for compliance with the broad spectrum of hazardous waste handling by generators of hazardous wastes within their jurisdiction, including the management of electronic wastes. Subject to certain minimum standards established and overseen by the Unified Program, each CUPA establishes its own inspection priorities based on the public health and environmental needs within its jurisdiction and the resources that are available to it. The Bureau of State Audits report provides useful information regarding the waste management practices of state agencies, which in most instances are under the jurisdiction of the CUPAs. Although not identified as a recommendation in the draft report, Cal/EPA's Unified Program intends to inform CUPAs throughout the state about the report, so that they may have the information available as they prioritize future inspection and enforcement efforts.

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## Comments

### CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

To provide clarity and perspective, we are commenting on the response from the California Environmental Protection Agency (CalEPA). The numbers below correspond to the numbers we have placed in the margin of CalEPA's response.

California Government Code, Section 8545(b), prohibits the State Auditor from releasing to the public any information about an audit that is not yet completed. Thus, when there are multiple entities involved in an audit, as was the case here, we can only share information that pertains to a particular entity with that entity while the audit is ongoing. For this reason, we redacted text that did not pertain to CalEPA or its departments.

①

While preparing our draft report for publication, page numbers shifted. Therefore, the page numbers that CalEPA cites in its response do not correspond to the page numbers in our final report.

②

CalEPA has misinterpreted the meaning of our use of the term "overseeing." Our use of this term was in the context of describing a program agency's responsibilities for overseeing waste generators. Our report acknowledges a waste generator's responsibility to properly handle its waste. On page 7 of the Introduction, our report clearly states that waste generators are responsible for determining whether their waste is hazardous before taking steps to legally dispose of it. However, program agencies are responsible for enforcing the State's hazardous waste laws and for inspecting hazardous waste generators. We discuss these inspections in more detail beginning on page 30 of the audit report. As a result, we believe our use of the phrase "overseeing" is accurate and we stand behind our report's text.

③

Our use of the term "review" is purposefully broad and refers to both the inspections performed by program agencies, as well as the audits performed by the Department of General Services (General Services). In the draft report we provided to CalEPA for comment, we redacted text pertaining to General Services because this information did not pertain to CalEPA. Our comment #1 explains our rationale for redacting the report. Finally, on page 31 of the audit report we acknowledge that state regulations do not impose requirements that prescribe how often program agencies must inspect hazardous waste generators.

④

- ⑤ Notwithstanding CalEPA's comment that certain text was difficult to understand, we believe that we wrote our report in a clear and concise manner. We thank CalEPA for its editorial advice regarding comma placement and acronym usage but choose to not make the changes it suggests.
- ⑥ We changed the text on page 12 of our report to reflect the more recent information provided by CalEPA regarding the number of program agencies it has certified. The evidence on which we based the original statement—a page from CalEPA's Web site—was dated June 3, 2008.
- ⑦ Our audit report does not suggest that program agencies should inspect hazardous waste generators more frequently. Instead, our report points out that the inspections performed by the program agency in Sacramento County are infrequent. We discuss how often the program agency in Sacramento County inspected the five state agencies in our sample on page 31. Nevertheless, we report this condition so that the Legislature can consider whether more targeted, frequent, or extensive oversight of state agencies' recycling and disposal of electronic waste is necessary.

*(Agency response provided as text only.)*

California Integrated Waste Management Board  
1001 I Street  
Sacramento, California 95814

October 23, 2008

Ms. Elaine M. Howle\*  
California State Auditor  
Bureau of State Audits  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

RE: Bureau of State Audits Report #2008-112

Dear Ms. Howle:

Thank you for the opportunity to respond to the November 2008 audit report entitled "Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight is Limited." The California Integrated Waste Management Board (CIWMB) is committed to protecting and preserving the public health and safety, the natural resources, and the environment of the State of California. We are proud of our track record in working toward and accomplishing these goals, and we look forward to addressing the issues presented in the audit report. ①

The proper management of all wastes generated in California, especially those generated by State agency operations, is of paramount importance and we welcome the interest of the Joint Legislative Audit Committee and the Bureau of State Audits.

The proper management of electronic wastes in particular is governed by an interrelated network of statutes and regulations that spans state, federal, and international law. The CIWMB is committed to working closely with the Department of Toxic Substances Control (DTSC), the Department of General Services (DGS), and other appropriate entities to ensure that obsolete, unwanted, or waste electronic devices generated by State agencies are managed safely and legally.

The audit report asserts an overarching recommendation that DTSC, CIWMB, and DGS collaborate to more efficiently and effectively communicate to State agencies regarding their responsibilities for properly managing electronic wastes. The report proposes five approaches that the State could use to implement this recommendation, four of which directly or potentially involve the CIWMB. The CIWMB concurs that these would likely result in improvements to the proper management of State-generated electronic waste.

CIWMB responses to each of these four approaches are respectfully summarized and submitted as follows. ②

1. **Approach:** *DTSC, CIWMB, and/or DGS communicate with State agency directors and other officials via mail, e-mail, or other methods regarding proper electronic waste management.*

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\* California State Auditor's comments appear on page 53.

Ms. Elaine M. Howle  
October 23, 2008  
Page 2

**Response:** *This is a low-impact approach that by itself could easily provide general awareness, or be complementary to other approaches mentioned in the audit report. The CIWMB has routinely communicated with State agencies on recycling issues via a regular newsletter primarily targeted at local governments.*

2. **Approach:** *CIWMB implements a recycling program for electronic waste similar to programs administered for other commodities (paper, cardboard, newsprint, etc) pursuant to Public Contract Code section 12165(a).*

- ③ **Response:** *Of all approaches outlined, this presents the most potential for unnecessary resource impacts and duplication of efforts. The State already maintains contracts for the management (recycling) of electronic waste, administered by DGS, and oversees an established process for the reutilization of still useable electronic equipment via the surplus property survey protocol, also administered by DGS. The CIWMB collaborated with DGS on the scope of work for the recycling contracts. Widespread adherence and use of the existing material management procedures and opportunities (reutilization, recycling, etc) would help to ensure that electronic waste is not inappropriately disposed by individual agencies. The CIWMB could easily direct State agencies to these existing material management outlets via established training activities mentioned in the following approach and response.*

3. **Approach:** *CIWMB incorporates electronic waste recycling guidance into existing training to agency recycling coordinators.*

**Response:** *While the audit report correctly notes that electronic waste is a hazardous waste and therefore does not count toward State agency solid waste recycling goals, the CIWMB could easily incorporate electronic waste recycling information into existing guidance and educational efforts directed at agency recycling coordinators. This could include directing agencies to make proper use of established recycling contracts for electronic waste, as mentioned in the previous response.*

4. **Approach:** *DGS, DTSC, and CIWMB work together to amend the State Administrative Manual (SAM) to improve electronic waste management.*

**Response:** *The CIWMB would have to consult with DGS and DTSC to more closely review existing provisions in SAM before recommending whether augmentations are warranted. Existing law requires that all wastes be properly managed. Electronic wastes are generally considered to be hazardous wastes, but can be managed as universal waste with lowered regulatory overhead if recycled. It is generally the obligation of a waste generator to understand and comply with waste management requirements, however effective guidance can increase compliance considerably.*

We agree that any of these approaches would best be implemented, as suggested by the report, as a collaboration between DGS, DTSC, and CIWMB. Since DGS currently has contracts in place for the recycling of these materials and control over the disposition of surplus property, DTSC has enforcement responsibilities for the proper management of many of these items, and the CIWMB has the strategic position of communicating directly with state agency recycling contacts, a synergistic effect could be achieved by working together in a collaborative manner.

Ms. Elaine M. Howle  
October 23, 2008  
Page 3

In the spirit of resource conservation, we also respectfully suggest that the focus on proper electronic waste management not be limited to the back-end of consumption, when it is time to dispose or recycle. As noted in the publication "Guidelines for Procurement, Use and End-of-Life Management of Electronic Equipment", which was collaboratively developed by the CIWMB and DGS in 2003, a concerted effort to make informed decisions about what devices are purchased or leased and how they are used and maintained can have substantial impacts on the resources that those devices consume over their lifetime, and how they are managed when they reach the end of their useful life. For example, the procurement specification that a computer can be upgraded to add memory can reduce the need to purchase a new machine, and the costs and resources needed manufacture a new one and dispose of the old one. Similarly, a computer or printer that is set to enter a sleep mode when left idle will reduce the energy consumption and subsequent emissions from the energy production and energy costs. ④

The CIWMB is confident that the prudent implementation of the suggested approaches would improve performance in the other areas of concern expressed in the report, namely inconsistent reporting of electronic waste diversion, infrequent assessment of compliance with requirements, and inconsistent implementation of best practices for electronic waste management. The CIWMB stands ready to collaborate and assist DGS and DTSC, who respectively have primary responsibility for managing and regulating this growing portion of the State's waste stream. We look forward to working with them and other appropriate agencies to ensure that all electronic waste generated by the State of California is managed correctly.

Again, thank you for the opportunity to provide comments to the audit. Please contact Tom Estes, Deputy Director of the Administration and Finance Division, at (916) 341-6090 if you have any questions.

Sincerely,

(Signed by: Mark Leary)

Mark Leary  
Executive Director

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## Comments

### CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

To provide clarity and perspective, we are commenting on the response from the California Integrated Waste Management Board (Waste Management Board). The numbers below correspond to the numbers we have placed in the margin of the Waste Management Board's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by the Waste Management Board.

①

In its response, the Waste Management Board discusses its views on the merits of following four approaches designed to better inform state agencies of their electronic waste (e-waste) responsibilities. To avoid confusion, the report outlined five approaches, with the fifth approach being directed to the governor. We discuss this fifth approach on page 28 of the audit report.

②

We recognize that the Waste Management Board and the departments of Toxic Substances Control and General Services may have their own perspective on how to more effectively and efficiently inform state agencies of their e-waste responsibilities. The approaches mentioned on pages 26 through 28 of the audit report are offered only as suggestions for their consideration. As we state on page 34, our recommendation is that these three oversight agencies work collaboratively to more clearly communicate state agencies' responsibilities for handling and disposing of e-waste.

③

The Joint Legislative Audit Committee asked us to review state agencies' compliance with laws and regulations governing the recycling and disposal of e-waste. Therefore, our audit focuses on what state agencies did with their electronic devices once these devices reached the end of their useful lives. As we state in our comment #3, our recommendation is that oversight agencies need to effectively and efficiently communicate e-waste requirements to state agencies. When communicating with state agencies, we encourage the Waste Management Board to include other information it deems important—such as the additional guidance discussed in its response—that will better inform state agencies.

④

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*(Agency response provided as text only.)*

Department of Toxic Substances Control  
1001 I Street  
Sacramento, California 95814

October 24, 2008

Ms. Elaine M. Howle\*  
California State Auditor  
Bureau of State Audits  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

Dear Ms. Howle:

Thank you for the opportunity to comment on the November 2008 draft audit report entitled: "Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight is Limited." The Department of Toxic Substances Control's (DTSC) mission is to: restore, protect and enhance the environment; to ensure public health, environmental quality, and economic vitality; by regulating hazardous substances, conducting and overseeing cleanups, and developing and promoting pollution prevention. The appropriate management and disposal of hazardous wastes in California is integral to DTSC's fulfillment of its mission. ①

As acknowledged in the draft audit report, the management of electronic wastes generated by state agencies is overseen by a number of state and local agencies, including DTSC, the California Integrated Waste Management Board, and the Certified Unified Program Agencies, or CUPAs. Two of the approaches described in the draft audit report that were available for DTSC's review advocate these oversight agencies increase their communications to other state agencies regarding proper electronic waste management, and to amend the relevant sections of the State Administrative Manual to include information about proper management of electronic waste. Thank you for these suggestions.

The draft report makes passing reference to recent efforts, but I wanted to highlight that DTSC has been working diligently over the past several years to implement the Electronic Waste Recycling Act and to amend its universal waste rules to ensure that electronic wastes are managed properly in California. We have made significant progress. After the adoption of the final regulations for electronic wastes, DTSC intends to focus its efforts on compliance with those rules. DTSC appreciates the audit highlighting that State agencies may be a sector that warrants targeted attention and outreach as DTSC, along with CUPAs, focus attention on compliance.

DTSC acknowledges the benefits of working collaboratively with DGS, CIWMB and CUPAs to disseminate information to state agencies about proper electronic waste management, and concurs that increased communication would likely result in improved electronic waste management practices by state agencies. DTSC looks forward to working with DGS, CIWMB, CUPAs and other state agencies to ensure that all electronic wastes generated by state agencies are managed appropriately.

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\* California State Auditor's comment appears on page 57.

Ms. Elaine M. Howle  
October 24, 2008  
Page 2

Again, thank you for the opportunity to review and comment on the draft report. Please contact Mr. Karl Palmer, Performance Manager, Office of Pollution Prevention and Green Technology at (916) 445-2625, or email at [kpalmer@dtsc.ca.gov](mailto:kpalmer@dtsc.ca.gov) if you have any questions.

Sincerely,

(Signed by: Odette Madiago for)

Maureen F. Gorsen  
Director

## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

To provide clarity and perspective, we are commenting on the response from the Department of Toxic Substances Control (Toxic Substances Control). The number below corresponds to the number we have placed in the margin of Toxic Substances Control's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by Toxic Substances Control.

①

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*(Agency response provided as text only.)*

State and Consumer Services Agency  
915 Capitol Mall, Suite 200  
Sacramento, CA 95814

October 24, 2008

Elaine Howle, State Auditor\*  
Bureau of State Audits  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

Dear Ms. Howle:

Enclosed is our response prepared by the Department of General Services to the Bureau of State Audits' Report No. 2008-112 entitled, *Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight Is Limited.* A copy of the cover letter and response are also included on the enclosed CD. ①

If you have any questions or need additional information, please contact me at 653-4090.

Sincerely,

(Signed by: Rosario Marin)

Rosario Marin, Secretary  
Enclosures

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\* California State Auditor's comment appears on page 61.

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## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE STATE AND CONSUMER SERVICES AGENCY**

To provide clarity and perspective, we are commenting on the response from the State and Consumer Services Agency. The number below corresponds to the number we have placed in the margin of this agency's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by the State and Consumer Services Agency.

①

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*(Agency response provided as text only.)*

*Department of General Services*

**Date:** October 24, 2008

**To:** Rosario Marin, Secretary  
State and Consumer Services Agency  
915 Capitol Mall, Suite 200  
Sacramento, CA 95814

**From:** Will Bush, Director  
Department of General Services

**Subject:** RESPONSE TO BUREAU OF STATE AUDITS' REPORT NO. 2008-112

Thank you for the opportunity to respond to the Bureau of State Audits' (BSA) Report No. 2008-112 which addresses a recommendation to the Department of General Services (DGS) resulting from the BSA's audit of State agencies' compliance with laws and regulations governing the recycling and disposal of e-waste. The DGS will take appropriate actions to address BSA's recommendation.

In summary, BSA found that the five State agencies<sup>1</sup> examined as part of its audit appear to have in some instances improperly thrown electronic devices, or e-waste, in the trash. According to BSA, the lack of proactive guidance from oversight agencies, coupled with some State employees' lack of knowledge about proper e-waste management practices, contributed to the instances of improper disposal. In addition to DGS, the Department of Toxic Substances Control (DTSC) and the California Integrated Waste Management Board (CIWMB) have oversight responsibilities related to the State's e-waste recycling and disposal program. The DGS' Office of Surplus Property Reutilization (OSPR) is responsible for reviewing and approving all State agency dispositions of State-owned personal property, which can include e-waste devices such as computers and televisions.

As recommended by BSA, DGS will collaborate with DTSC and CIWMB to ensure that additional actions are taken to improve the oversight of the State's e-waste recycling and disposal program. To date, DGS has taken the following significant actions to ensure that e-waste is recycled or disposed of in an environmentally responsible manner.

- Established a statewide universal waste recycling master services agreement (MSA) for the use of State and local governmental agencies. The MSA allows users to select from multiple recyclers to process their electronic waste, cathode ray tubes, fluorescent light tubes and batteries.
- Maintains information on DGS' internet site that hazardous waste must not be disposed of in the trash. Further, the site provides links to DTSC and CIWMB sites governing the disposal of e-waste.

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<sup>1</sup> DGS was not one of the five agencies included in the BSA's examination of e-waste disposal practices.

Rosario Marin

-2-

October 24, 2008

- Requires State agencies to use a standard property survey report form to document the surplus property disposal process that contains the following statement, "Do not dispose of any electronic equipment in a landfill." In its daily communications with State agency personnel seeking advice on property disposition requirements, OSPR staff also provide guidance regarding the proper disposal of e-waste devices, including providing a list of contractors on the universal waste recycling MSA.
- Issued an environmentally preferable purchasing (EPP) best practices manual for the use of State agencies. EPP is the procurement of goods and services that have a reduced impact on human health and the environment as compared to other goods and services serving the same purpose. The manual encourages take-back or trade-in clauses in contract agreements, which include provisions for vendors to recycle e-waste they obtain from State agencies.
- Recently revised its State agency compliance audit activity to ensure that it includes an evaluation of the proper disposal of e-waste devices.

The following response addresses the only recommendation that was contained in the redacted copy of the draft report provided to DGS for review and comment.

#### RECOMMENDATION

**RECOMMENDATION:** *To assist state agencies in their efforts to keep their e-waste out of landfills, the Department of Toxic Substances Control, the California Integrated Waste Management Board, and General Services should collaborate to identify and implement methods to clearly communicate to state agencies their responsibilities for properly handling and disposing of e-waste and the resources available to assist them. In our report we identified five approaches that the State could use to implement this recommendation. One approach would be to have General Services, in consultation with Toxic Substances Control and the Waste Management Board, amend applicable sections of the State Administrative Manual to include e-waste among the items that state agencies are required to recycle.*

#### DGS RESPONSE:

The DGS will collaborate with the DTSC and CIWMB to seek additional methods to clearly communicate to State agencies their responsibilities for properly handling and disposing of e-waste and the resources available to assist them. After consultation with DTSC and CIWMB, the DGS will amend applicable sections of the State Administrative Manual to ensure that they clearly require the recycling or disposal of e-waste in accordance with applicable laws, regulations and policies.

Rosario Marin

-3-

October 24, 2008

### CONCLUSION

The DGS appreciates BSA's in-depth audit and will promptly and completely address the issues identified in the audit report. The DGS remains firmly committed to fully contributing to the State operating in an environmentally friendly manner.

If you need further information or assistance on this issue, please call me at (916) 376-5012.

(Signed by: Will Bush)

Will Bush, Director  
Department of General Services

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*(Agency response provided as text only.)*

Business, Transportation and Housing Agency  
980 9th Street, Suite 2450  
Sacramento, CA 95814-2719

October 24, 2008

Elaine M. Howle, State Auditor\*  
Bureau of State Audits  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

Dear Ms. Howle:

Attached please find the responses from the California Highway Patrol, Department of Transportation and Department of Motor Vehicles (Departments) to your draft audit report *Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight is Limited* (#2008-112). Thank you for allowing the Departments and the Business, Transportation and Housing Agency (Agency) the opportunity to respond to the report. ①

As noted in their responses, the Departments concur with the findings noted in the report, and either have implemented or are in the process of implementing the recommendations. We appreciate your identification of opportunities for improvement and your recommendation for best practices the Departments can follow.

If you need additional information regarding the Departments' responses, please do not hesitate to contact Michael Tritz, Agency Deputy Secretary for Audits and Performance Improvement, at (916) 324-7517.

Sincerely,

(Signed by: Michael Tritz for)

DALE E. BONNER  
Secretary

Attachments

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\* California State Auditor's comment appears on page 69.

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## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE BUSINESS, TRANSPORTATION AND HOUSING AGENCY**

To provide clarity and perspective, we are commenting on the response from the Business, Transportation and Housing Agency. The number below corresponds to the number we have placed in the margin of this agency's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by the Business, Transportation and Housing Agency.

①

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*(Agency response provided as text only.)*

Department of California Highway Patrol  
P.O. Box 942898  
Sacramento, California 94298-0001

October 22, 2008

File No.: 001.A14635.010

Dale E. Bonner, Secretary\*  
Business, Transportation and Housing Agency  
780 Ninth Street, Suite 2450  
Sacramento, CA 95814-2719

Dear Secretary Bonner:

I am pleased to provide our response to the Bureau of State Audits' (BSA) report entitled, "Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight Is Limited." ①

At the request of the Joint Legislative Audit Committee (Audit Committee), BSA conducted an audit of the Department of California Highway Patrol's (CHP) compliance with laws and regulations governing the recycling and disposal of electronic waste (e-waste). Specifically, the Audit Committee requested that the BSA identify and assess various State agencies' policies and procedures to ensure compliance with laws, regulations, and statewide policies. In addition, BSA was requested to determine whether the various State agencies incurred costs or generated revenues from recycling and disposing of e-waste, to determine whether State agencies evaluated the effectiveness of the contractors' performance, and to identify any best practices for recycling and disposal of e-waste.

BSA concluded that State agencies appear to have improperly discarded some electronic devices in the trash and some State agencies use best practices to manage e-waste, but improvements can be made.

Additionally, State agencies should consider implementing the two best practices: developing a thorough duty statement for recycling coordinators, including responsibilities related to e-waste; and when recycling, using vendors from the Department of General Services' (DGS) master service agreement.

### **CHP Response**

The CHP concurs with BSA finding and will establish additional internal policies and procedures to ensure future compliance with e-waste standards. Furthermore, the CHP would like to thank the BSA for suggesting two best practices. We plan to report future e-waste program improvements in the CHP's 60-day response.

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\* California State Auditor's comment appears on page 73.

Dale E. Bonner, Secretary  
Page 2  
October 22, 2008

We appreciate the opportunity to provide a response to the draft report. If you have any questions, or require further information, please contact Assistant Commissioner Max Santiago at (916) 657-7255.

Sincerely,

(Signed by: J.A. Farrow)

J. A. FARROW  
Commissioner

## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**

To provide clarity and perspective, we are commenting on the response from the California Highway Patrol (CHP). The number below corresponds to the number we have placed in the margin of the CHP's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by the CHP.

①

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*(Agency response provided as text only.)*

Department of Motor Vehicles  
P.O. Box 932328  
Sacramento, CA 94232-3280

October 23, 2008

Dale E. Bonner, Secretary\*  
Business, Transportation and Housing Agency  
980 9th Street, Suite 2450  
Sacramento, CA 95814

Dear Secretary Bonner:

I am pleased to provide our response to the Bureau of State Audits' (BSA) report entitled, the "Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight is Limited." ①

At the request of the Joint Legislative Audit Committee (audit committee) BSA conducted a review of the Department of Motor Vehicles' (DMV) compliance with laws and regulations governing the recycling and disposal of electronic waste (e-waste). Specifically, the audit committee requested that BSA identify and assess the DMV's policies and procedures to ensure compliance with laws, regulations, and statewide policies. In addition, BSA was requested to determine whether the various agencies incurred costs or generated revenues from recycling and disposing of e-waste, to determine whether State agencies evaluated the effectiveness of the contractor's performance, and identify best practices for recycling and disposal of e-waste.

BSA concluded that State agencies appear to have improperly discarded some electronic devices, or e-waste in the trash. BSA determined that between January 2007 and July 2008, DMV improperly discarded 23 electronic devices in the trash that could be considered e-waste. The BSA also found evidence that on one occasion the Department of General Services (DGS) did not approve the related property survey report until nearly a month after the e-waste was discarded. In addition, BSA determined that DMV incurred unnecessary costs to remove obsolete equipment.

BSA is recommending that the State agencies treat all electronic devices as universal waste and recycle them. Additionally, State agencies should consider implementing the two best practices: developing a thorough duty statement for recycling coordinators, including responsibilities related to e-waste; and when recycling, using vendors from the DGS master service agreement.

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\* California State Auditor's comment appears on page 77.

Dale E. Bonner, Secretary  
October 23, 2008  
Page 2

**DMV Response:**

The DMV concurs with the BSA findings that it improperly discarded e-waste in the trash and that it incurred unnecessary costs to remove obsolete equipment.

As of August 1, 2008, the DMV Property and Equipment Control Unit (PECU) does not allow any electronic equipment to be disposed of in the land fill. DMV donates operable equipment to public schools and equipment in poor condition is disposed of through an approved recycler or an e-waste event that will properly dispose of the electronic equipment. In addition, PECU will make a more diligent attempt to have the property survey report approved by DGS prior to disposal of equipment.

In the future, the PECU will make an effort to utilize the DGS master service agreement when disposing of obsolete equipment. PECU will work with the CalCard Coordinator to establish procedures to keep track of obsolete equipment picked up by a vendor and track any costs that may be incurred. Approved local recyclers will be used at headquarters and field office locations.

The DMV's Asset Management Section will adopt the BSA best practice recommendation and develop guidelines on the utilization of the DGS master service agreement recycling vendors for disposal of e-waste. These guidelines will ensure that e-waste is disposed of properly at a minimum cost to the department. The guidelines will be disseminated to all departmental divisions by February 2009 by a policy memorandum providing clear directions on the implementation of these guidelines.

To provide assurance that DMV follows the best practices for the recycling coordinator duties and responsibilities outlined in the BSA report, DMV will request a copy of the recycling coordinator duty statement cited in the report by November 31, 2008. DMV will review the duty statement and determine those duties that are in the scope of our recycling coordinator and analytical staff responsibilities and will enhance the duty statements accordingly, updating the duty statements with our Human Resources Branch and procedural manuals by January 31, 2009.

DMV appreciates the opportunity to provide a response to the draft report. If you any questions, please contact Aimee Booth, Manager, Administrative Services Division, Asset Management Section at (916) 657-8836 or Jerry McClain, Chief of Audits at (916) 657-0455.

Sincerely,

(Signed by: George Valverde)

GEORGE VALVERDE  
Director

## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE DEPARTMENT OF MOTOR VEHICLES**

To provide clarity and perspective, we are commenting on the response from the Department of Motor Vehicles (Motor Vehicles). The number below corresponds to the number we have placed in the margin of Motor Vehicles' response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by Motor Vehicles.

①

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*(Agency response provided as text only.)*

Department of Transportation  
1120 N Street  
Sacramento, CA 95814

October 22, 2008

Dale E. Bonner\*  
Secretary  
Business, Transportation and Housing Agency  
980 9<sup>th</sup> Street, Suite 2450  
Sacramento, CA 95814

Dear Secretary Bonner:

I am pleased to provide our response to the Bureau of State Audits' (BSA) report entitled, "Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight is Limited." ①

At the request of the Joint Legislative Audit Committee (Audit Committee), BSA conducted an audit of the California Department of Transportation's (Caltrans) compliance with laws and regulations governing the recycling and disposal of electronic waste (e-waste). Specifically, the Audit Committee requested that the BSA identify and assess various State agencies' policies and procedures to ensure compliance with laws, regulations, and statewide policies. In addition, BSA was requested to determine whether the various agencies incurred costs or generated revenues from recycling and disposing of e-waste, to determine whether State agencies evaluated the effectiveness of the contractors' performance, and to identify any best practices for recycling and disposal of e-waste.

BSA concluded that State agencies appear to have improperly discarded some electronic devices in the trash and some State agencies use best practices to manage e-waste, but improvements can be made.

BSA is recommending that State agencies treat all electronic devices as universal waste and recycle them. Additionally, State agencies should consider implementing the two best practices: developing a thorough duty statement for recycling coordinators, including responsibilities related to e-waste; and when recycling, using vendors from the Department of General Services' (DGS) master service agreement.

**Caltrans Response:**

Caltrans concurs with the recommendation that the State should treat all electronic devices as universal waste and recycle. Caltrans will recycle the electronic equipment and devices that are at or near the end of their useful lives as universal waste rather than determine whether a specific electronic device is hazardous. Caltrans currently uses DGS' master service agreement vendors and will continue to use them.

In addition, Caltrans will review its structure and processes, and consider alternatives which could improve the oversight and delegation of authority, and the coordination and flow of information. Further, Caltrans will ensure that manuals are updated, and training on e-waste disposal is adequately addressed. Caltrans will

\* California State Auditor's comment appears on page 81.

Dale E. Bonner, Secretary  
October 22, 2008  
Page 2

also consider how to address the best practice of incorporating recycling coordination language into duty statements, as appropriate. Subsequent to the review, Caltrans will issue a memorandum to staff responsible for disposing of e-waste, clarifying responsibilities and providing direction on implementation of new electronic disposal procedures to include managing all electronic equipment as if it contains hazardous waste.

Caltrans appreciates the opportunity to provide a response to the draft report. If you have any questions, or require further information, please contact Jan Smelser, Chief, Division of Procurement and Contracts, at (916) 227-6100, or Gerald A. Long, Deputy Director, Audits and Investigations, at (916) 323-7122.

Sincerely,

(Signed by: Randell H. Iwasaki for)

WILL KEMPTON  
Director

## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE DEPARTMENT OF TRANSPORTATION**

To provide clarity and perspective, we are commenting on the response from the Department of Transportation (Caltrans). The number below corresponds to the number we have placed in the margin of Caltrans' response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by Caltrans.

①

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*(Agency response provided as text only.)*

Department of Justice  
P.O. Box 944255  
Sacramento, CA 94244-2550

October 23, 2008

Elaine M. Howle, State Auditor\*  
Bureau of State Audits  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

RE: Bureau of State Audits Draft Report 2008-112  
*Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the  
Trash, While State and Local Oversight is Limited*

①

Dear Ms. Howle:

The Department of Justice (DOJ) has reviewed the Bureau of State Audits' (BSA) draft report regarding electronic waste disposal and wishes to provide the following comments.

In regard to the DOJ's reporting of electronic waste by number of items diverted rather than the number of tons diverted (page 4 of the draft report), as stated in your report, state agencies are not required by law to report the amount of electronic waste they divert from the waste stream and there is no standard reporting method employed by all state agencies to report such waste. The DOJ did report the number of electronic waste items in our 2007 annual report to the California Integrated Waste Management Board (CIWMB) as a side note to let the CIWMB know that we did make the effort to identify electronic waste and dispose of it in an acceptable manner. In addition, the DOJ was without a recycling coordinator at the time the 2007 CIWMB report was being finalized and rather than miss the deadline for submitting this report, we opted to report this non-required information in terms of items rather than tons.

②

Regarding the disposition of the two copy machines (page 28 of the draft report), on October 16, 2008, the DOJ submitted to the BSA a memo from the Special Agent in Charge of the Bureau of Investigation and Intelligence office in San Francisco attesting to the proper disposal of these two copiers.

② ③

DOJ concurs with the draft report's recommendations and will continue to dispose of our surplus equipment through recycling and impress upon our employees the need to properly dispose of items rather than throwing them in the trash.

\* California State Auditor's comments appear on page 85.

Elaine M. Howle, State Auditor  
October 23, 2008  
Page 2

Thank you for the opportunity to review and comment on this draft audit report. The DOJ appreciates that the BSA recognizes the positive efforts we've made regarding surplus property/electronic waste disposal. If you have any questions or concerns regarding this matter, please contact either me at the telephone number above or Tammy Lopes, MAPD Unit Manager, at (916) 324-0259.

Sincerely,

(Signed by: William Wong for)

ANDREW J. KRAUS III, Director  
Office of Program Review and Audits

## Comments

### CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE DEPARTMENT OF JUSTICE

To provide clarity and perspective, we are commenting on the response from the Department of Justice (Justice). The numbers below correspond to the numbers we have placed in the margin of Justice's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by Justice.

①

While preparing our draft report for publication, page numbers shifted. Therefore, the page numbers that Justice cites in its response do not correspond to the page numbers in our final report.

②

We acknowledge that Justice provided us with a memo in October 2008 that described how the two copying machines mentioned in Table 1 on page 18 of the report were disposed of. However, we do not believe Justice's testimonial evidence is sufficient for us to definitively conclude how these two devices were disposed of. In the draft redacted report we provided to Justice for comment, as well as in the final report, we include Justice's perspective.

③

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*(Agency response provided as text only.)*

California Labor and Workforce Development Agency  
801 K Street, Suite 2101  
Sacramento, California 95814

Ms. Elaine M. Howle, CPA\*  
State Auditor  
555 Capitol Mall, Suite 300  
Sacramento, CA 95814

Dear Ms. Howle:

As requested in your letter dated October 20, 2008, the California Labor and Workforce Development Agency (LWDA) is submitting this letter in response to the findings identified in the draft audit report prepared by the Bureau of State Audits (BSA) on electronic waste (e-waste). The Employment Development Department (EDD), which is a State department within the LWDA, was one of five State departments or agencies your agency audited on this subject.

The audit report titled: Electronic Waste: Some State Agencies Have Improperly Discarded Their Electronic Waste in the Trash, While State and Local Oversight Is Limited identified several findings on how EDD handled the disposal of e-waste and its related policies. Below are LWDA's responses to the four findings in the draft audit report.

①

#### **FINDING ONE**

Three e-waste items were not disposed of properly (1 radio and 2 speakers).

Response: The EDD understands the importance of and is committed to the proper disposal of e-waste items. In comparison to the high volume of e-waste that a department of EDD's size generates, the three items identified as being improperly disposed demonstrates the department's exceptionally high compliance rate for e-waste disposal. Furthermore, it appears this incident of improperly disposing of a radio and two speakers was an isolated case and does not appear to be a systemic problem of EDD's handling of e-waste. Each year, EDD has thousands of electronic items that become obsolete or are no longer operable that require proper disposal. To address this finding and ensure full compliance to e-waste disposal requirements, EDD will take the following corrective actions:

- Evaluate the opportunity to dispose of all of its electronic devices as universal waste.
- Educate and train employees responsible for the disposition of items classified as hazardous and/or e-waste.
- Identify businesses accredited as e-waste recyclers to use for EDD's e-waste disposal needs.

\* California State Auditor's comment appears on page 89.

Labor &amp; Workforce Development Agency

BSA Response

Page 2

**FINDING TWO**

E-waste items from the EDD Southern Warehouse were not included in the annual recycle report.

Response: The BSA reported State agencies are not required to track the amounts of e-waste generated, disposed, or recycled. While EDD did not violate any annual e-waste reporting requirements, EDD proactively reports e-waste and will continue to improve its reporting process by including the Southern California Warehouse Operations in the annual State Organization and Agency Recycling Database report

**FINDING THREE**

There is a lack of processes and procedures to ensure EDD employees have information and an understanding of the e-waste disposal and recycle requirements.

Response: To ensure full compliance EDD will take the following corrective actions:

- Update the EDD Recycle Coordinator's desk procedures to include guidelines on how to properly dispose or recycle hazardous and/or e-waste.
- Disseminate an Administrative Circular department-wide and update the EDD Business Office Management Handbook to educate staff about the requirements for e-waste disposal.
- Install an Intranet hyperlink on EDD's website that provides easy access to information about e-waste disposal and recycling requirements.

**FINDING FOUR**

The EDD Recycle Coordinator's role and responsibilities need to be better defined and documented.

Response: The EDD will review its EDD Recycle Coordinator's position statement to ensure it includes responsibilities related to e-waste and will update the position statement as needed.

I want to take this opportunity to thank the BSA auditors for working with EDD on this e-waste audit. LWDA is highly committed to ensuring its departments and boards comply with e-waste requirements by properly disposing or recycling electronic products that protect the environment and the public. If you have any questions regarding this response, please contact Greg Riggs, Deputy Director Program Review Branch at 916-654-7014.

Sincerely,

Doug Hoffner  
Acting Secretary

## Comment

### **CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE CALIFORNIA LABOR AND WORKFORCE DEVELOPMENT AGENCY**

To provide clarity and perspective, we are commenting on the response from the Labor and Workforce Development Agency. The number below corresponds to the number we have placed in the margin of this agency's response.

While preparing our draft report for publication, some wording changed, including the report's title that is referred to by the Labor and Workforce Development Agency.

①

cc: Members of the Legislature  
Office of the Lieutenant Governor  
Milton Marks Commission on California State  
Government Organization and Economy  
Department of Finance  
Attorney General  
State Controller  
State Treasurer  
Legislative Analyst  
Senate Office of Research  
California Research Bureau  
Capitol Press