

Electronic Waste

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

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Responses from eight audited state agencies as of December 2009

The Joint Legislative Audit Committee asked the Bureau of State Audits to review state agencies' compliance with laws and regulations governing the recycling and disposal of electronic waste (e-waste). 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.

Finding #1: State agencies appear to have improperly discarded some electronic devices.

In a sample of property survey reports we reviewed, two of the five state 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 other 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 a total of more than 350 of these items in the trash.

State regulations require waste generators to determine whether their waste, including e-waste, is hazardous before disposing of it. However, none of the five state agencies in our sample could demonstrate that they took steps to assess whether their e-waste was hazardous before placing that waste in the trash. Further the California Integrated Waste Management Board (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."

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.*

To avoid contaminating the environment through the inappropriate discarding of electronic devices, we recommended that state agencies 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.

State Agencies' Actions: Partial corrective action taken.

According to their one-year responses to our audit report, four of the five state agencies we sampled have implemented our recommendation. The four state agencies are CHP, Motor Vehicles, Caltrans, and Employment Development. CHP stated that it developed an e-waste disposition process and updated desk procedures and a standard operating procedure. These procedures include indicating whether any e-waste items were disposed of in accordance with CHP's e-waste program and defining all electronic devices as universal waste that require disposal only by authorized e-waste recyclers. Motor Vehicles stated that as of August 1, 2008, it does not allow any electronic equipment to be disposed of in a landfill. It also stated that it 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. Caltrans stated that it established a recycling program and, as part of this program, all electronic waste will be treated as universal waste and recycled. Employment Development stated that all staff responsible for the disposition of surplus items have been trained on the proper disposition of electronic equipment and e-waste. It also stated that it identified and is using an accredited e-waste recycler.

The fifth state agency—Justice—stated that it continues to educate staff regarding the proper disposal of all waste and surplus items, including e-waste. It also stated that it is still in the process of revising its property control manual that will further emphasize the proper disposal and documentation of all assets. Justice indicated that conflicting priorities and staff shortages have delayed completion of this manual until February 2010.

Finding #2: Opportunities exist to efficiently and effectively inform state agencies about the e-waste responsibilities.

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, such as the Department of Toxic Substances Control (Toxic Substances Control), the Waste Management Board, and the Department of General Services (General Services) 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.

Further, 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 guidelines in 2003. These guidelines state: "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.

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. 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.

While Justice's initiative is laudable, 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 director or other appropriate official, such as the recycling coordinator or chief information officer, at each state agency conveying how each agency should dispose of its e-waste. Other approaches include:

- Having the Waste Management Board implement a recycling program for electronic devices owned by state agencies.
- Including e-waste as part of the training related to recycling provided by the Waste Management Board.
- Having 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.
- Modifying an existing executive order or issuing a new one related to e-waste recycling that incorporates requirements aimed at e-waste disposal.

To help state agencies' efforts to prevent their e-waste from entering landfills, we recommended that Toxic Substances Control, the Waste Management Board, and General Services 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.

State Agencies' Actions: Corrective action taken.

The three oversight agencies included in our audit—General Services, Toxic Substances Control, and the Waste Management Board—stated that they have worked collaboratively to implement solutions for ensuring that e-waste from state agencies is managed legally and safely. General Services stated that the three entities emphasized the need for proper e-waste management to department directors and jointly provided training about recycling and e-waste disposal to approximately 200 state employees. Further, General Services stated that after receiving input from the other two entities, it amended the State Administrative Manual to clearly require state entities to dispose of irreparable and unusable e-waste using the services of an authorized recycler. The California Environmental Protection Agency also stated that Toxic Substances Control and the Waste Management Board coordinated with General Services to create an informational poster about e-waste for mounting by state agencies in locations where e-waste items may be handled and disposed of by staff.

Finding #3: State agencies report inconsistently their data on e-waste diverted from municipal landfills.

Most of the five state agencies in our sample 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 describe their status on meeting this goal by submitting reports indicating the tons of various types of waste diverted. A component of the report pertains specifically to e-waste. 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 reports that were not specific to e-waste.

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 amount for 2007 include data only from its Northern California warehouse; the amount 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 instructions 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.

If the Legislature believes that state agencies should track more accurately the amounts of e-waste they generate, recycle, and discard, we recommended it consider imposing a requirement that agencies do so.

Legislative Action: Unknown.

We are not aware of any legislative action at this time.

Finding #4: 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. We 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.

Local agencies certified by the California Environmental Protection Agency 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. 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. 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 (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.

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. General Services' reviews of state agencies are 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 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." 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."

If the Legislature believes that more targeted, frequent, or extensive oversight related to state agencies' recycling and disposal of e-waste is necessary, we recommended that the Legislature consider assigning this responsibility to a specific agency.

Legislative Action: Unknown.

We are not aware of any legislative action at this time.

Finding #5: Some state agencies use best practices to manage e-waste.

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. 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.

We recommended that state agencies consider implementing the two best practices we identified.

State Agencies' Actions: Corrective action taken.

Regarding a thorough duty statement for a recycling coordinator, we mentioned in our audit report that Justice already follows this best practice. In their follow-up responses to our audit report, the other four entities—CHP, Motor Vehicles, Caltrans, and Employment Development—stated that they had created or updated the duty statements for their recycling coordinators or updated other comparable documents such as desk procedures and standard operating procedures.

Regarding the use of recyclers from the master services agreement, we noted in our audit report that CHP, Caltrans, Justice, and Employment Development all used vendors from the master services agreement. In its follow-up response to our audit report, Motor Vehicles stated that it had developed guidelines on the use of the DGS master service agreement for e-waste disposal and procedures for handling e-waste.