

Outreach Plan for the Collection of Mercury-Added Thermostats in California

Audiences: Groups B & C

Presented to

California Department of Toxic Substances Control (DTSC)

Submitted by

Thermostat Recycling Corporation (TRC)*

Prepared by

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Background/Consent Order Requirements

Thermostat Recycling Corporation (“TRC”) submits this draft Outreach Plan for Audiences: Group B and C in accordance with Paragraph B-1.3 of Exhibit B – Respondents’ Plan for Compliance to that certain Consent Order dated February 10, 2016 by and among Respondents and the California Department of Toxic Substances Control.

Paragraph B-1.3 of Exhibit B of the Consent Order requires that Respondents shall develop and submit to the Department for its review and approval a draft Outreach Plan. The goal of the plan is for the Respondents to make contact with persons, entities or businesses that may generate or collect mercury-added thermostats (at a minimum, the list in Exhibit A) for purposes of increasing Program participation so that the number of collected mercury-added thermostats increases. The activities in the Outreach Plan shall be designed to provide education about the Respondents’ collection program and to engage and secure the participation of additional Program participants from the potential Program participant groups listed in Exhibit A. The outreach activities described in the Plan are to include provision of materials and program engagement tools developed for each potential program participant and outreach timelines for each participant, and must seek the placement of additional bins to collect mercury-added thermostats from the identified Program participants.

The draft Outreach Plan for Group B and C is respectfully submitted by Thermostat Recycling Corporation on behalf of the following Consent Order Respondents; Bard Manufacturing Company, Inc., Burnham Holdings, Inc., Carrier Corporation, Chromalox, Crane, Climate Master, Inc., Empire Comfort Systems, General Electric Company, Honeywell International Inc, Hunter Fan Company, Invensys, Inc., ITT Corporation, Johnson Controls, Lear Siegler, Lennox International Inc., Lux Products Corporation, The Marley Wylain Company, Nortek Global HVAC LLC, Sears Holdings, Thomas & Betts Corporation, Trane Residential Systems, Uponor, Inc., Valliant Corporation, W.W. Grainger, and White-Rodgers.

Scope of Work

Thermostat Recycling Corporation (“TRC”) submits this Group B and C Outreach Plan in accordance with the requirements listed in the DTSC “Approval of Outreach Plan and Pilot Programs Plan with Modifications” letter dated October 7, 2016. The plan follows the conditions stipulated in Paragraph B-1.3 of Exhibit B – Respondents’ Plan for Compliance to the Consent Order dated February 10, 2016 by and among Respondents and the California Department of Toxic Substances Control (the “Consent Order”) and takes into consideration the comments provided by DTSC in their letter of April 7, 2017 regarding the initial Group B Outreach Plan submittal.

Paragraph B-1.3 of Exhibit B of the Consent Order indicates that the Respondents’ Outreach Plan shall:

1. Be executed in a way that makes contact with audiences likely to generate or collect mercury-added thermostats for the purpose of increasing Program participation so that the number of collected mercury-added thermostats increases.
2. Include activities that account for the provision of materials and program engagement tools developed for each potential Program participant and outreach timelines for each participant, and must seek the placement of additional bins to collect mercury-added thermostats from the identified Program participants.

According to Appendix A of the Consent Order, potential program target audiences include:

Group A:

1. Household hazardous waste collection facilities
2. HVAC contractors
3. Demolition contractors
4. General contractors
5. Consumers
6. Retailers

Group B:

1. Local building departments
2. Utility companies
3. School districts
4. Universities and colleges

Group C:

1. Property management companies of multi-family housing developments
2. Property management companies of commercial/industrial properties
3. Hotel/motel managers and maintenance companies

Scoping: Research Methodology

Approach

This plan is based on exploratory research which uses an inductive approach to gathering data. Although an oversimplification, the inductive paradigm favors a person-centered approach that values *depth* compared to a deductive paradigm which is a variable-centered approach that values *breadth*.¹ The inductive approach relies on qualitative data collection methods including interviews, observations, and content analysis.² Rather than start with a hypothesis, this approach allows the data to inform the patterns which may eventually become hypotheses. In other words, the respondents drive the direction of the research. This approach comes from the fields of public health and environmental health.

Data Collection Method

The data collected as part of this research relied on semi-structured phone interviews. A general list of questions was drafted for each audience and the researcher had the opportunity to alter the direction of the conversation based on the respondent's answers. This method is in concert with an inductive approach which does not presuppose to know all of the important themes before the research begins. A list of the questions used for each audience can be found in the Appendix. In some instances, in-person visits and unobtrusive observations were done to supplement the phone interviews, including a visit to a building department permit counter, face-to-face conversations with facility managers, meetings with property manager and others.

Sampling

The research used quota sampling to collect a diversity of perspectives. Pre-set criteria were established (e.g., geographic area, size, etc.) for each audience with a corresponding quota (e.g., no more than half, at least 3, etc.). Snowball sampling (interviewees suggest other people to interview) was also used, as appropriate. The scoping calls were made with diversity in mind, both in terms of size of the organization as well as its location. Given the notable characteristics of San Bernardino, Fresno and Stockton, at least one interview per target audience was made in one of the three locations.

¹ Padgett, D.K. (2012). *Qualitative and mixed methods in public health*. Thousand Oaks, CA: Sage.

² Lincoln, Y. (1992). Sympathetic Connections between Qualitative Methods and Health Research. *Qualitative Health Research*, 2(4), 375-391. <http://dx.doi.org/10.1177/104973239200200402>.

Timeline

Outreach Plan Phase Timelines			2017-2018											
			Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Group B	Utility companies	12 months	Tactic #1		Tactic #2									
				Tactic #3										
	Local building departments	12 months	Tactic #1			Tactic #2			Tactic #3					
							Tactic #4							
Group B	School districts	12 months			Tactic #1						Tactic #1			
					Tactic #2						Tactic #2			
	Universities and colleges	12 months	Tactic #1						Tactic #1					
				Tactic #2 & #3										
Group C	Property management companies of multi-family housing developments	12 months			Tactic #1						Tactic #1			
			Tactic #2 & #3											
	Property management companies of commercial/industrial properties	12 months	Tactic #1, #2 & #4											
					Tactic #3						Tactic #3			
Group C	Hotel/motel managers and maintenance companies	12 months	Tactic #1											
				Tactic #2 & #3										

Outreach Tactics by Program Participant

Group B: Local Building Departments

Participant Overview

A total of 482 municipalities and 58 counties operate in California and a large portion of them maintain independent building departments for projects occurring within their jurisdictions (note, some cities choose to contract this work out to the county department, but in those cases usually have an office in their jurisdiction). The size of these departments is dependent on the size of the municipality and vary widely. For example, the City of Los Angeles and the City of Vernon (both located in Los Angeles County) operate autonomous building departments; however, the former covers an area of 500 square miles and serves 3.8 million people compared with the latter which is slightly larger than five square miles with a population of just over 100 people.

Scoping Methods

Contact was attempted with 16 organizations as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from 11 organizations including eight municipalities (ranging in size from 36,000 to 1 million people), two State-level government agencies, one trade association, and independent online research. This includes an onsite visit to a building department permit counter, a posting to the California Building Officials (CALBO) trade association listserv, a posting to the California Resource Recovery Association (CRRA) listserv, and correspondences with 14 people in positions such as: permit counter check-in clerk, plan checker, engineer, head building official, construction & demolition recycling coordinator, and environmental programs manager. A list of the organizations contacted and interviewed can be found in the Appendix.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by serving as a communication and regulatory conduit to people applying for building permits. Building departments have the capacity to provide information to applicants about locations to properly dispose of mercury-added thermostats and to include instructions about the proper disposal of this material on their project application and compliance forms. Conversations with municipalities revealed that participation was not popular unless required by a building code mandate or State directive. This was especially the case for placing a bin within the department. The reasons given usually fell into the following categories: (1) For placing bins, approval would be an onerous process for the building department without reciprocal benefits to meeting the building departments' goals and objectives (they see this as an environmental programs objective not theirs) (2) again they see this as more of an environmental program effort, specifically for collecting universal waste, no precedence for collecting this type of material within the building department (again most see it as another's objective, i.e., HHW programs) (3) concerned about the cost and time involved with training City/County building department employees, most are time and resource strapped for their main objective of plan approvals (especially in the case hosting a bin and concerns of broken mercury-added thermostats) (4) contractors (i.e., the people actually removing the thermostats from the wall) are not typically the audience who visit the counter to apply for a permit.

However, we do see a collaborative role between the building departments and City/County environmental programs. Specifically, in the area of new CALGreen regulations and regulations from CalRecycle on Construction & Demolition diversion programs (i.e., reducing waste going to the landfill).

Tactics for Local Building Departments

Tactic #1: Inclusion of Mercury Thermostat Call Out in Requirements and/or Checklist for Building Departments

Description

Work with DTSC to convene governmental stakeholders (CalRecycle, local building department representatives, and municipal environmental coordinators) to ensure inclusion of mercury thermostats call out in requirements or to create a checklist for universal waste identification and proper disposal. The universal waste checklist will highlight mercury thermostat disposal and provide municipalities with the flexibility to extract content and add it to their existing construction & demolition diversion forms. (Note: Since 2011, construction projects have submitted construction & demolition diversion forms to demonstrate compliance with CalRecycle requirements).

Reasoning

CalRecycle updated the California Green Building Standards Code (CALGreen) and one of the changes (effective January 1, 2017) includes the verification of the proper disposal of universal wastes for non-residential additions and alterations. Mercury-containing equipment (including thermostats) are one of the seven universal waste categories, as such, the revised CALGreen requirements offer a timely opportunity to address mercury-added thermostats in the context of universal waste disposal.

“Someone at the State level needs to require this. If DTSC is telling us it is mandatory it will get included, otherwise if it is not in the [building] code, plan checkers don’t have time.”

-- former Division Manager, Building and Safety Division
(Los Angeles County Public Works)

A conversation with environmental programs representatives from two jurisdictions revealed they are aware of the CALGreen requirements and both jurisdictions either planned to or had recently updated their construction & demolition diversion application/compliance forms to include information about universal waste (see the Appendix for an example). This change is in concert with the recommendations from the California Building Standard Commission’s Guide on how to comply with CALGreen which suggests that jurisdictions: “Show on the construction documents with the list of universal waste materials that need to be diverted from landfills and the type of disposal facility that will accept universal waste.”³ The formation of a group of interested governmental stakeholders to develop the checklist will provide a valuable sounding board to ensure the checklist is useful to the jurisdictions it is intended to help.

A conversation with the CA Building Standards Commission outreach coordinator revealed that their

³ California Building Standards Commission and the International Code Council. (2016). *Guide to the 2016 California Green Building Standards Code (Nonresidential)*. Retrieved from <https://www.documents.dgs.ca.gov/bsc/CALGreen/CALGreen-Guide-2016-FINAL.pdf>

education for local building departments does not include specifics regarding how to comply with the universal waste requirements, rather, these requirements are mentioned as one of the many changes building departments are expected to implement to comply with CALGreen. Furthermore, CalRecycle indicated they will not conduct outreach to promote the new CALGreen requirements. This presents an opportunity to provide jurisdictions with content to update their construction & demolition diversion forms to comply with CALGreen's new universal waste requirements.

Data to be Collected

- Number of comments received and stakeholders (municipalities, state agencies, trade organizations) involved in the development of the checklist

Tactic #2: Create a Contact Database

Description

Develop a contact database through organic searches and purchased lists, as appropriate. The database will include building officials, directors of building & safety, construction & demolition coordinators, recycling coordinators, and environmental programs managers (prioritized according to size of the municipality).

Reasoning

None of the building departments mentioned the CALGreen update or were familiar with any departmental efforts to address mercury thermostat disposal. In fact, most of building departments rely on their environmental programs departments to help ensure compliance with CalRecycle's special disposal requirements. This is exemplified by the fact that CalRecycle's construction & demolition diversion requirements are typically managed via the environmental programs departments who are responsible for developing the application/compliance forms and providing this information to the building department to pass along to the construction permit applicants. Furthermore, effective mercury thermostat recycling outreach requires outreach to two audiences--building departments and environmental programs departments.

Data to be Collected

- Number of contacts gathered and overall (jurisdiction) population numbers those contacts represent

Tactic #3: Distribute the Requirements/Checklist to Municipalities throughout the State

Description

Use a tiered approach to disseminate the checklist to the contacts from the database. Begin with an email and track open and click through of the emails sent. Use these indicators of interest to follow up with additional emails or another communication modality (e.g., phone calls). Prioritize larger municipalities in key geographic areas (e.g., inland, older structures, etc.) and follow up to ensure the checklist reaches the area's most likely to have large concentrations of mercury-added thermostats.

Reasoning

Estimates show that California may be home to more than 500 building departments. While an effort will be made to reach as many as possible, prioritizing the municipalities according to size and likelihood of containing mercury-added thermostats allows the program to target the outreach where it can have the most impact. A component of the outreach will involve encouraging municipalities to use the checklist and make it their own. A universal finding is that none of the departments are conducting mass promotions to the people who apply (or have applied) for a building permit, instead, they rely on one-on-one outreach with this audience. The only materials that are consistently reaching permit applicants across all jurisdictions are the application and compliance forms they are required to submit for their projects. Beyond this, there is considerable variation in how building departments are supplying important information to applicants. Some offer informational packets, others provide educational handouts at the permit counter, and others provide information via their website.

Data to be Collected

- Number of municipalities reached
- Number of times the checklist is downloaded
- Population size (reach) of the municipalities that use the checklist

Tactic #4: Partner with Organizations that Cater to Building Department Officials

Description

Collaborate with the California Building Officials (CALBO) trade association, local chapters of the International Code Council, and the California Building Standards Commission to increase awareness about the proper disposal of mercury-added thermostats and CALGreen's new universal waste requirements among building officials. Focus on promoting the issue of mercury thermostat disposal through the existing promotional channels of the aforementioned industry organizations, including newsletter announcements, website notices, etc.

Reasoning

Although none of the building department representatives were familiar with efforts to encourage mercury thermostat recycling, many of them were curious about the issue and a couple even asked for recommendations to promote it.

“Interesting question, it hasn't come up here in the County of Riverside. I've always thought it was the contractor's responsibility.”

-Director of Building & Safety (Riverside County)

Although building officials are not usually the lead on enforcing the disposal of special wastes (see tactic #1), increasing their awareness is a valuable step towards expanding the collection of unwanted mercury-added thermostats from construction projects. In some cases, it may be the building department official who reaches out to his/her colleagues in the environmental programs department to ensure the jurisdiction is doing its part to promote mercury thermostat recycling. The two environmental programs representatives interviewed as part of this research were referred by contacts in the building department which is indicative of an existing relationship between the two departments.

Data to be Collected

- Number of placements received
- Number of impressions

School Districts

Participant Overview

According to the CA Department of Education, for the 2015-2016 school year, there are more than 1,000 school districts in the state. Enrollment in these districts ranges from 5 students (Alpine County Office of Education) to approximately 640,000 students (LA Unified). The 25 largest school districts in the state cover approximately 30% of all enrolled students. Each of the school districts we contacted (even the smaller ones) had an onsite facilities manager and/or safety and hazards/environmental compliance managers. While some districts had very formal policies and procedures for mercury equipment removal and disposal, we did find multiple anecdotal instances of mercury-added thermostats being collected informally in a “pile” or “barrel” (i.e. in their “maintenance shop” or “operations area”) when removed from buildings before they are collected by a waste company (a similar finding that DTSC found in one school district). However, no evidence was found of improper disposal of mercury-added thermostats. All school districts contacted reported to have a contract with a waste disposal company that picked up mercury-added thermostats on call. Some of the companies mentioned include Shoreline, Ambient Environmental, Veolia Hazardous Waste Compact, and Mercury Disposal Systems. Maintenance oversight varies from district to district and were reported to fall under the responsibility of mechanical division managers, safety department secretaries, and external companies. Each school district maintains a facilities or safety department that oversees renovations.

Scoping Methods

Contact was attempted with 22 school districts as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from seven school districts ranging from small to large enrollment size. Phone interviews were conducted with school districts in Berkeley, CA, Huntington Beach, CA, Twentynine Palms, CA, Stockton, CA, Merced, CA, Santa Monica, CA and Los Angeles, CA. This includes conversations with 7 individuals in positions such as: Director of Maintenance, Manager of Maintenance, Environmental Compliance Manager, and Secretary of Facilities. A list of the organizations contacted and interviewed can be found in the appendix.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by instating a standardized process of identifying, removing, and properly disposing of mercury-added thermostats. Our interviews with school districts revealed that while school district facilities managers tended to be aware that mercury-added thermostats should not be trashed, there were no standardized process for removing or recycling these. Interviewees had a difficult time describing exact chain of command for removing a mercury thermostat but attributed this to the fact that they rarely have them. Most of the interviewees were not familiar with a written protocol for the disposal process, but our interviews did reveal that most school districts have a HVAC district employee who is the designated contact for facility maintenance requests. Our suggested tactics below entail providing school districts with a more standardized process of identification, removal, and convenient disposal specifically targeted at schools that have recently

received or are applying for Prop 39 funds (California Clean Energy Jobs Act) to conduct HVAC and other building renovations and upgrades to reduce energy consumption.

Tactics for School Districts

The following three tactics would work together to create an overall outreach effort to reach schools and the two main pathways that thermostats are likely to be removed from a school building (maintenance employee or third-party contractor).

Tactic #1: Bin Placement at Schools + Partner with Facility Maintenance Organizations to Promote Issue

Description

The focus will be on schools that have onsite staff manage maintenance and removal, ensuring they know what to do with mercury-added thermostats and provide collection bins based on volume and on an as-needed-basis. To promote the issue Statewide and maximize visibility of the issue within the school maintenance field of work, we would partner with organizations that promote safety in school facilities. We would partner with the organizations that currently have established communication channels with school facilities departments to increase awareness of proper thermostat disposal to facilities staff and promote receiving a free bin for the school's use.

Example of potential partners include:

- California Department of Education's School Facilities and Transportation Services Division
- National Council on School Facilities
- California's Coalition for Adequate School Housing (CASH)
- Academic Facilities Council

Reasoning

All the onsite facility managers we interviewed knew that mercury-added thermostats were a hazardous waste and did not belong in the trash, however; most did not have a clear understanding of what to do once they were removed. Most of the schools we interviewed had a third-party contractor manage the waste, which was cited as a barrier to proper disposal (because there was often significant process or cost involved with obtaining that contractor's services), leading some managers to simply collect them and forget them -- leaving them in a bucket in a closet on school property.

Providing a school and maintenance staff a bin directly alleviates this issue and makes removal of the mercury-added thermostats more convenient and simple. Also, by partnering with organizations that have contacts with facilities departments allows us to provide proper education surrounding the next steps. This education would include information on removing thermostats from buildings and simple steps required to request a bin to keep on the premise, thus eliminating an additional barrier and increasing recycling rates.

Data to be collected

- Newsletter impressions
- Impressions garnered through announcements posted to AFC and other partner's list serves
- Bin placements

- Number of mercury thermostats collected

Tactic #2: Direct Outreach Prop 39 Grant Recipients

Description

Conduct outreach calls and emails to recipients of Prop 39 funds and those in the application process. Inquire whether mercury-added thermostats are present at their renovation/construction sites and provide information regarding proper disposal of mercury-added thermostats and obtaining a collection bin.

Reasoning

Our research indicates that schools replace thermostats either when they fail or during a large-scale modernization/renovation project. Two of the six schools interviewed cited large-scale renovation projects for the reason behind removing their mercury-added thermostats. The advantage to targeting schools amid a modernization or renovation project is the larger quantity of thermostats that are being replaced and disposed of. Contact during this time is crucial to ensure proper disposal. Prop 39, which awarded 1,400 schools with HVAC upgrade funds, provides an excellent opportunity to contact schools who are actively upgrading their HVAC systems.

Data to be Collected

- Number of schools contacted who are upgrading HVAC and have mercury-added thermostats
- Number of schools or affiliated contractors who request a bin
- Awareness of proper disposal of mercury-added thermostats among these schools
- Number of thermostats collected

Tactic #3: Capture Mercury Stream from Third-Party Waste Haulers and Contractors

Description

Work with school districts to gather contact information of the third-party waste haulers and contracting companies that service their properties. Create a database of third-party waste haulers and contractors that collect mercury-added thermostats from this audience. Use the database to perform direct outreach to third-party waste haulers and contractors to encourage their participation in TRC through receiving a free collection bin and the new contractor bin return incentive program. This effort would be coordinated with outreach to HVAC and environmental contractors (an “Other” category included in Group A).

Reasoning

Our interviews revealed that school districts frequently hire third-party waste haulers and environmental or HVAC contracting companies to install, remove and dispose of mercury-added thermostats. Follow up interviews with a few of these third-party waste haulers uncovered that they frequently handle large volumes of thermostats. While these haulers and contractors were aware that there was a legal requirement to recycle mercury-added thermostats, often they were not utilizing TRC’s free mercury thermostat disposal chains to process their waste and mentioned other indirect chains of disposal. Thus, through partnering with TRC, third-party waste haulers and contracting companies can save the school

districts money by receiving mercury-disposal services through having their own free collection bin, while making \$5.00 per mercury thermostat sent in a TRC bin.⁴

Data to be Collected

- Number of contractors contacted
- Information collected regarding their mercury recycling practices and logistics
- Number of bins placed
- Number of thermostats collected

⁴Contractor order form available at: recyclethermostats.org/order

Universities and Colleges

Participant Overview

There are a total of 496 colleges and universities that operate in California (33 public universities, 150 private non-profit colleges/universities, 200 private for profit institutions and 113 community colleges)⁵. These institutions typically contract third-party contractor compliance companies to remove hazardous waste from the institution and conduct routine building maintenance. These institutions tend to consistently track the removal of hazardous materials from campus buildings, as their funding can be dependent on their compliance with state and federal compliance laws. In general, universities and colleges seem more systematic and deliberate in their management of hazardous/universal waste. Academic institutions will usually conduct renovations during the holiday seasons when fewer students are using facilities.

Scoping Methods

Contact was attempted with 33 universities/colleges as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from interviews with eight universities/colleges (ranging in size from 2,240 to 37,446 students). A total of eight people were interviewed in positions such as: environmental health and safety coordinator/manager/director, facilities manager, environmental compliance manager, maintenance engineer, facilities operator/manager. All interviews were conducted by phone with one follow-up interview taking place in person. A list of the educational institutions contacted and interviewed can be found in the Appendix. In addition, online research was conducted to locate written policies regarding mercury-added thermostat disposal (an example of a policy can be found in the Appendix).

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by serving as a conduit to the waste haulers or contracting companies that service their facilities. None of our interviews with facilities managers demonstrated a lack of knowledge that mercury-added thermostats should stay out of the trash. Unlike school districts that have highly variant removal and disposal processes, universities and colleges we have interviewed typically have a third-party contractor that is responsible for removing hazardous materials such as mercury-added thermostats and ensuring its safe disposal. There did seem to be some guesswork about how exactly they would dispose of them with one of the interviewees giving a couple scenarios of “how it could go,” but if anything, it seemed like this is because they rarely have to dispose of this material or have not had to dispose of any during their time at their position, plus it could be dependent on the type of thermostat (mercury, wired/programmable, battery based, etc.). One interviewee reported that employees “don’t even go near mercury” because they have a contract with a waste company that handles the entire process. We believe this audiences’ mercury-added thermostats are not ending up in the trash, but also are not being counted as mercury-added thermostats collected by TRC. The below tactics involve partnering with universities/colleges’ facilities managers to capture the stream of mercury-added thermostats that are being retrieved by special waste companies.

⁵ Public Policy Institute of California, “Higher Education in California,” April 2016

Tactics for Universities and Colleges

The following three tactics would work together to create an overall outreach effort to reach universities and colleges and the two main pathways that thermostats are likely to be removed from a school building (maintenance employee or third-party contractor).

Tactic #1: Create Database and Perform Direct Outreach to Colleges and Universities

Description

Conduct outreach calls and emails to Universities and Colleges in California to inquire about any renovations, provide information regarding “next steps” and increase awareness around the legality of improperly disposing of mercury-added thermostats.

Reasoning

The research supporting outreach to Universities and Colleges in Tactic #1 is also the supporting evidence for Tactic #2. Universities and Colleges that are using in-house maintenance staff to remove mercury-added thermostats are not disposing of them in the trash, but there is a lack of awareness around “what comes next.” This outreach will be timed to align with two events: changes of season, which is when staff tend to realize that their old thermostats have failed, and the winter and summer breaks, when students are not in class and maintenance staff will perform planned modernizations and updates to facilities.

“We try to do it (replacement) during a time when students aren't around, during the holidays, but if it's immediate they will clear out an area to work on it right away” --San Joaquin Delta College

“We remove any toxic materials during a “safe time,” particularly when class isn't in session” --Cal Tech Pasadena

Data to be Collected

- Number of schools contacted
- Number of schools entering renovation
- Number of schools or affiliated contractors who request a bin
- Number of thermostats collected

Tactic #2: Partner with Facility Maintenance Organizations

Description

Obtain partnership with organizations that promote safety in universities that currently have established communication channels with health and safety department of universities in order to increase awareness of proper thermostat disposal to relevant staff using organization as communication conduit.

Example of potential partners include:

- Academic Facility Council
- The Campus Safety, Health, and Environmental Management Association
- American College Health Association

Reasoning

All the onsite facility managers we interviewed knew that mercury-added thermostats were a hazardous waste and did not belong in the trash, however; most did not have a clear understanding of what to do once they were removed. All the Universities and Colleges we interviewed had a third-party contractor manage the large-scale replacements, in the case of one or two replacements, there was a higher likelihood of replacement from an internal facility manager making the replacement. These instances are perhaps the only area of concern with regards to proper disposal as they did not always know off hand the specific procedures for disposal. Partnering with an organization that provides direct contact with facility staff allows us to provide proper education surrounding the next steps. This education would include information on next steps and increase awareness of recycling options that create convenience, such as requesting a bin to keep on the premise, thus eliminating an additional barrier and increasing recycling rates.

Data to be Collected

- Newsletter impressions
- Impressions garnered through announcements posted to AFC and other partner's list serves
- Number of schools or affiliated contractors who request a bin

Tactic #3: Capture Mercury Stream from Third-Party Waste Haulers and Contractors

Description

Work with universities and colleges to gather contact information of the third-party waste haulers and contracting companies that service their properties. Create database of third-party waste haulers and contractors that collect mercury-added thermostats from this audience. Use database to perform direct outreach to third-party waste haulers and contractors to encourage their participation in TRC recycling by receiving a free collection bin and the new contractor bin return incentive program.

Reasoning

Our interviews revealed that universities and colleges frequently hire third-party waste haulers and contracting companies to install, remove and dispose of mercury-added thermostats. Follow up interviews with a few of these third-party waste haulers uncovered that they frequently handle large volumes of thermostats. While these haulers and contractors were aware that there was a legal requirement to recycle mercury-added thermostats, often they were not utilizing TRC's free mercury thermostat disposal chains to process their waste and mentioned other indirect chains of disposal. Thus, through partnering with TRC, third-party waste haulers and contracting companies can save money by receiving mercury-disposal services through having their own free collection bin, while making \$5.00 per mercury thermostat sent in a TRC bin.

Data to be Collected

- Number of contractors contacted
- Information collected regarding their mercury recycling practices and logistics
- Number of bins placed
- Number of thermostats collected

Utility Companies

Participant Overview

A total of 59 Electric-Load Serving Entities (LSEs), commonly referred to as utility companies, operate in California. They can be further divided into the following subgroups: 6 Investor-Owned Utilities (IOUs), (i.e. Bear Valley Electric Service, Liberty Utilities, Pacific Gas and Electric Company (PG&E), PacifiCorp, San Diego Gas & Electric, and Southern California Edison); 46 Publicly Owned Load-Serving Entities (LSEs); 4 Rural Electric Cooperatives; and 3 Community Choice Aggregators.⁶ The California Public Utilities Commission (CPUC) regulates utility service for approximately 10.8 million customers as well as all energy programs by mandating electric costs, electronic power procurement and generation, infrastructure, customer energy resources, energy efficiency, energy advice letter and tariff information, and electric rates.

Scoping Methods

Contact was attempted with 13 utility companies as part of the scoping effort. Of the 13 utility companies contacted, 8 successful interviews were conducted. 2 of the 8 interviews were with large investor owned utility companies while the remaining 6 were conducted with smaller publicly owned LSEs. Online research was also conducted as part of the scoping effort. The following organizations participated in our scoping interviews: SoCal Edison, Burbank Water and Power, PG&E, “Banning, City of Electric Department,” Biggs Municipal Utilities, Port of Stockton, City of Rancho Cucamonga, Modesto irrigation district. Interviewee positions include: customer service representative, program manager, administrative assistants, and public services technician.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by entering partnerships with TRC to work towards shared goal of safe and efficient energy management throughout California. Utility companies have a legislative need to lower energy consumption in the region in which they provide their services--each year, they are expected to lower energy consumption by 1 to 2% from the previous year. Rebates on thermostats are implemented by utility companies for this reason. This provides TRC with an opportunity to forge partnerships with utility companies to provide materials, resources, and processes for free mercury thermostat replacement to make room for energy and cost saving alternatives. Furthermore, TRC can capitalize on utility companies' existing networks of contractors and customers to promote the safe removal and disposal of mercury-added thermostats and replacement with low-energy, cost-saving alternatives. This shared approach aligns with the California Public Utilities Commission's (CPUC) statewide initiative called “Upgrade Energy California” aimed at motivating and educating California residents and small businesses about reducing energy consumption with smarter energy alternatives.

Tactics for Utility Companies

The following three tactics would work together to create an overall outreach effort to reach utility companies and the three main pathways that thermostats are likely to be removed from utility customer

⁶ Electric Service Area: www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf
Contact info for CA Utilities: www.energy.ca.gov/almanac/electricity_data/utilities.html

homes (homeowner/do-it-yourselfer, utility company employee or third-party contractor).

Tactic #1: Create Database and Perform Outreach to Utility Companies Who Perform Thermostat Installation or Offer Customer “Self-Install”

Description

Create a database of California utility companies who perform thermostat installations or whose customers are offered a “self-install” thermostat replacement. Perform outreach inquiring about their installation and removal processes, the frequency in which they encounter mercury-added thermostats, the socioeconomics and average age of dwellings residing in their territory.

Reasoning

Creating a database of utility companies that perform mercury thermostat installations or offer “self-install”, will provide us with the foundation of our outreach efforts for this audience. Building a database of these utility companies will provide access to contractors who may be removing mercury-added thermostats and disposing of them as part of a utilities company driven program. The customers performing “self-install”, are also a key target as they will be removing their old thermostat and may be unaware of whether their thermostat contains mercury and how to properly dispose of it. Outreach will serve to identify utility companies that fit into these two categories, are encountering mercury-added thermostats and are willing to partner in mercury thermostat recycling efforts.

Data to be Collected

- Number of contacts added to database
- New partnerships

Tactic #2: Partner and Place Bins

Description

Identify which utility companies fit our partner parameters and establish partnerships, placing bins and integrating tactics #3-4, which will provide motivation to both the utility companies and customers to participate.

Reasoning

Creating partnerships with utility companies who fit our partnership parameters of: regularly performing thermostat installations or offering self-installations, encountering mercury-added thermostats and having customers residing in dwellings built before 2006 will allow TRC to reach the contractors performing installations and will enable us to provide them with disposal protocols and a TRC bin for recycling. These partners will also provide us access to consumers who are performing self-installations, who may not be aware that their thermostats contain mercury. We will provide these customers with printed materials, including our identification checklist as well as a rebate form and directions to find their local collection location on the TRC website. Utility companies will also be advised to include information concerning proper thermostat disposal alongside their rebate offers as part of this effort.

Data to be Collected

- Number of partnerships attempted
- Number of partnerships established
- Number of bins placed
- Number of thermostats collected

Tactic #3: Outreach to Utilities' Customer Base

Description

Perform outreach to customers being served by our utility partners, to provide them with materials educating them on identifying mercury-added thermostats as well as to provide easy to follow instructions on how to be a part of the available TRC rebate programs for consumers. The information will be disseminated to the utility company's customers through the use of the utilities' communication channels, such as website, quarterly newsletters and bill inserts.

Furthermore, utility companies with self-install rebate programs will be contacted and advised to include information concerning proper identification and disposal of mercury containing thermostats as well as provide information on TRC's consumer rebate program alongside their self-install rebate program information webpage and other materials.

Reasoning

Performing outreach to customers of the utility companies will serve our program in multiple ways. First, it will act to increase the number of mercury-added thermostats being removed as identification and education is often a barrier to removal and proper disposal. Outreach materials will aim to remove that barrier and make it clear to residents whether they have a mercury thermostat, alert them that it is a hazard to their family (which our research shows is a key motivator for families), and provide next steps to contact their utility company for proper removal and disposal. The second purpose of this tactic is to provide a mutually beneficial partnership and motivation to the utility companies. As utility customers become more aware of mercury in their homes our outreach materials will direct them to their utility companies for replacement, thus increasing business for the utility companies in the form of thermostat installation.

Data to be Collected

- Number of residential customers reached
- Number of thermostat replacement requests, pre-and post-outreach
- Feedback from Utility companies regarding process

Group C: Commercial Property Management Companies

Participant Overview

Property managers are the party responsible for ensuring that thermostats are up to date within the buildings they manage. Rather than management conducting periodic checks, thermostats tend to be switched out when tenants make a request. It is notable that there is no discussion, training, or agreement to a policy pertaining to harmful waste disposal between the external contractor and property management. The potential legal and financial repercussions of improper waste disposal can be a powerful motivator to property management companies.

Scoping Methods

Contact was attempted with 10 commercial property management companies as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from 7 companies ranging from small to large property size. Interviews were conducted with property management companies in Fresno, CA, Sacramento, CA, and Long Beach, CA. This includes conversations with 7 individuals in positions such as: Senior Property Manager, Property Manager, President, Maintenance Engineer, and Employee. A list of the organizations contacted and interviewed can be found in the Appendix.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by being able to properly identify and promote the safe removal and disposal of mercury-added thermostats within their properties. Property managers have the capacity to coordinate the removal and installation of thermostats in numerous units, but will typically hire a contractor or their onsite maintenance to handle the removal and disposal process. Our interviews revealed that most property managers do not have a policy or understanding of the issue and place the responsibility on the hired contracting company or handyman to take care of the thermostat after it is removed. Our tactics below outline how we will outreach to property managers to ensure they can properly identify a mercury-added thermostat and provide them with the tools to ensure their safe removal and disposal via TRC bins.

Tactics for Commercial Property Management Companies

The following three tactics would work together to create an overall outreach effort to reach commercial property management companies (i.e., the building they serve) and the two main pathways that thermostats are likely to be removed from their building(s)(maintenance employee or third-party contractor).

Tactic #1: Outreach Emphasizing Legality of Proper Disposal and Convenience (free bin option)

Description

A clear motivator of property management companies is profitability. Messaging in outreach efforts will aim to focus on and create awareness of the legality of proper disposal of mercury as a universal waste. This message will inform property managers of the proper method of disposing thermostats as well as

highlight potential legal and consequent financial repercussion of improper thermostat disposal. After our audience understands that it is illegal to dispose of mercury-added thermostats in the trash, we will then provide them with convenient next steps and tools for proper disposal (i.e., free bin + plus incentive similar to large contractors).

Reasoning

Number of the property management companies interviewed did not have a clear picture of what the rules were regarding mercury thermostat disposal. Several of our interviews uncovered that management companies who were not working with third party contractors were disposing of their thermostats in the trash.

“Our building engineer said the process after removing it is just throwing them in the trash. I did not know if there were any protocols for disposing or handling of mercury-added thermostats.” --Adler Realty

And at the same time, some companies went to the other extreme and believed that all thermostats (regardless of if they contained mercury) needed special disposal. It was not clear if they believed it was e-waste or were overly cautious to ensure they were not saying the wrong thing. But clearly there is a knowledge gap and educating them on proper protocol is important.

Providing them with simple protocol to identify mercury-added thermostats and emphasizing that disposal is illegal, will act not only as a deterrent to improper disposal but will also create awareness around the proper protocols for recycling. Behavior change research emphasizes that legal regulation can accomplish its goals through fear of sanctions or desire for rewards. Laws have been found to be a significant deterrent of engaging in an illegal behavior. They provide significant “negative consequences to discourage anti-sustainable behaviors.”⁷ Motivating, supporting, and prompting a target audience to adopt legal activities is therefore an effective approach to changing behaviors.⁸ Furthermore, it is important to educate individuals that engaging in this behavior is illegal through messaging, because “people are more likely to act in environmentally sustaining ways if they understand the threats faced by the environment and the implications of their behavioral choices.”⁹

Tactic #2: Establish Key Partnerships to Reach Property Management Companies

Description

Identify and establish key partnerships within the California commercial property management community, including: property management companies that manage properties with more than 100,000 square feet and associations such as California Business Properties or Building Owners and Managers Association. These partnerships will serve to support and enable the outreach efforts outlined in the tactics: #1 and #3.

Example of potential partners include:

- Building Owners and Managers Association (BOMA)

⁷ Clayton & Myers, (2010). “Conversation Psychology.” p. 148.

⁸ Bilz, Kenworthy and Janice Nadler (2014). “Law, Moral Attitudes, and Behavior Change.”

⁹ Clayton & Myers (2010). “Conversation Psychology.” p. 151

- California Business Properties Association (CBPA)
- Commercial Real Estate Development Association (NAIOP)

Reasoning

An underlying theme in the seven property management companies we interviewed, was the general lack of care or awareness around the hazards of mercury-added thermostats on multiple levels, which will be addressed in the subsequent tactics. Partnerships will play a pivotal role in message dissemination by engaging key players in the industry and companies most likely to come into contact with mercury-added thermostats. Organizations embedded in the industry such as the California Business Property Association is an examples of an organization we would target for a partnership.

Data to be Collected

- Database of potential partners
- Number of partnerships created
- Impressions/number of members in partner organizations

Tactic #3: Capture Mercury Stream from Third-Party Waste Haulers and Contractors

Description

Work with commercial property managers to gather contact information of the third-party waste haulers and contracting companies that service their properties. Create database of third-party waste haulers and contractors that collect mercury-added thermostats from this audience. Use the database to perform direct outreach to third-party waste haulers and contractors to encourage their participation in TRC recycling by receiving a free collection bin and the new contractor bin return incentive program (this effort aligns with the environmental contractor outreach and will serve to buildout that effort).

Reasoning

Our interviews revealed that commercial property managers frequently hire third-party waste haulers and contracting companies to install, remove and dispose of mercury-added thermostats. Follow up interviews with a few of these third-party waste haulers uncovered that they frequently handle large volumes of thermostats. While these haulers and contractors were aware that there was a legal requirement to recycle mercury-added thermostats, often they were not utilizing TRC's free mercury thermostat disposal chains to process their waste and mentioned other indirect chains of disposal. Thus, through partnering with TRC, third-party waste haulers and contracting companies can save money by receiving mercury-disposal services through having their own free collection bin, while making \$5.00 per mercury thermostat sent in a TRC bin (part of the large contractor incentive program).

Data to be Collected

- Number of contractors contacted
- Information collected regarding their mercury recycling practices and logistics
- Number of bins placed
- Number of thermostats collected

Residential Property Management Companies

Participant Overview

Property managers are often the party responsible for ensuring that thermostats are up to date within the buildings they manage. Typically, tenants will request thermostat replacements when a thermostat breaks rather than management conducting periodic checks. It is notable that there is no discussion, training, or agreement to a policy pertaining to waste disposal between the external contractor and property management. All property managers we spoke with stated that the contractors are hired and are trusted to dispose of the thermostats properly. This lack of awareness of the legal repercussions from the manager's standpoint could provide an opportunity for outreach and engagement.

Scoping Methods

Contact was attempted with 17 property management companies as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from 6 companies ranging from small to large property size. Interviews were conducted with property management companies in Fresno, CA, Stockton, CA, Riverside, CA, El Segundo, CA, and Long Beach, CA. This includes conversations with 6 individuals in positions such as: Property Manager, Maintenance Manager, Vice President, Director of Property Management, Resident Manager, and Employee. A list of the organizations contacted and interviewed can be found in the Appendix.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by being able to properly identify and promote the safe removal and disposal of mercury-added thermostats within their properties. Property managers have the capacity to coordinate the removal and installation of thermostats in numerous units, but will typically hire a contractor or their onsite maintenance to handle the removal and disposal process. Our interviews revealed that most property managers do not have a policy or understanding of the issue and place the responsibility on the hired contracting company or handyman to take care of the thermostat after it is removed. Our outreach will focus on partnering with management companies that are more likely to be involved in the disposal process and can institute a policy with their onsite maintenance, as opposed to companies that leave this to the contracting firms. Our tactics below outline how we will outreach to property managers to ensure they can properly identify a mercury thermostat and provide them with the tools to ensure their safe removal and disposal in TRC bins.

Tactics for Residential Property Management Companies

The following three tactics would work together to create an overall outreach effort to reach residential property management companies (i.e., the building they serve) and the two main pathways that thermostats are likely to be removed from their building(s) (maintenance employee or third-party contractor).

Tactic #1: Work with Trade Associations to Establish Key Partnerships

Description

Identify and establish key partnerships within the California Residential Property Management Community, focusing on property management companies that manage properties built before 1990 and associations such as the California Apartment Association or Building Owners and Managers Association. These partnerships will serve to support and enable the outreach efforts outlined in tactic #3

Example of potential partners include:

- California Apartment Association
- International Realty & Investments
- Apartment Association of Greater Los Angeles (AAGLA)
- Building Owners and Managers Association (BOMA)
- Major CA-based MFP Management Companies: Irvine Company, Alliant Capital, Essex Property, WNC & Associates, Fairfield Residential, Steadfast, JRK Property Holdings, FPA Multifamily, FPI Management, Greystar, UDR, Equity Residential, Camden, Garden Communities, Avalon

Reasoning

We encountered similar results with our research into residential property management companies as we did with commercial property management companies, namely: there was a lack of awareness surrounding identification of mercury-added thermostats, understanding of what to do once one was found and of the legality of improperly disposing of mercury in the trash.

“I don’t know if there are mercury thermostats on our properties...I don’t know of the process or if there were any protocols we’re supposed to be following...”
--Alcole Properties Inc.

Building partnerships allow for a broader scale of outreach and message dissemination to establish a basic understanding and awareness of the identification and procedures surrounding mercury thermostat recycling.

Data to be Collected

- Number of partnerships created
- Impressions/number of members in partner organizations

Tactic #2: Work with County/City Housing Departments to Reach Residential Property Owners

Description

Reach out to county/city housing departments that engage with residential property owners in their jurisdiction. Housing department are more likely to work with landlords for lower income housing and that was built housing pre-1990, which are more likely to have a mercury-added thermostats. This tactic would work like Tactic #1, trying to build partnerships to push out our message to large numbers of residential property owners.

Reasoning

In speaking with two housing departments (City of Los Angeles and County of Orange), both engage closely with residential property owners who rent to lower income residents. In addition, both used various distribution databases they had to communicate various educational messages to property owners (i.e., landlords) regarding their responsibilities, changes in rules and various opportunities to improve tenant conditions.

As stated in Tactic #1, building partnerships will allow for a broader scale of outreach and message dissemination to establish a basic understanding and awareness of the identification and procedures surrounding mercury thermostat recycling. Working through housing departments also adds a level of credibility and importance to the message, because it is coming from a third party.

Data to be Collected

- Number of partnerships created
- Impressions/number of members in partner organizations

Tactic #3: Outreach Emphasizing Legality of Proper Disposal and Convenience (free bin option)

Description

Messaging in outreach efforts will focus on the legal repercussions of improper mercury disposal as well as lay out convenient next steps for mercury disposal.

Reasoning

Number of property management companies interviewed reported that they were unclear of whether a mercury added thermostat was on their property -- despite many of the buildings being built prior to 2006. Providing information on how to identify mercury-added thermostats is the first step to proper disposal for this audience. Many of the management companies interviewed showed hesitancy and uncertainty in discussing the proper protocols of disposing mercury-added thermostats.

"I don't know which facilities has them, but I assumed that there are some on our properties that were built in the '70s." --Garibaldi Company

Providing tools for proper identification of mercury-added thermostats and creating awareness and urgency of the legality of proper disposal will act to remove the barriers and motivate this audience.

Furthermore, during our interviews with property management companies it was reported that convenience was a barrier for recycling thermostats and had led to them being stored within their facility, neither being thrown in the trash nor recycled.

"(He) takes them off the wall, keeps it in the toolbox in his car, and then puts it in a box at his supply house." --Lozano Indoor Environmental

“It would have to be very easy to (properly dispose), not an out-of-the-way process for mercury thermostat disposal for us to consider doing it - unless it was illegal and required by law.” --Alcole Property Inc.

While this points to some knowledge that they should not be thrown in the trash, it highlights the part that convenience plays in improper disposal. Giving property managers the knowledge and tools for proper disposal, whether through an onsite bin (plus an incentive similar to large contractors) or pointing them to the TRC website where they can locate a local collection site, will remove mercury-added thermostats from their storage areas and place them in the recycling stream.

Data to be Collected

- Number of contacts to receive message
- Number of hits to collection site locator map
- Number of bins placed
- Number of thermostats collected

Tactic #4: Capture Mercury Stream from Third-Party Waste Haulers and Contractors

Description

Work with residential property managers to gather contact information of the third-party waste haulers and contracting companies that service their properties. Create database of third-party waste haulers and contractors that collect mercury-added thermostats from this audience. Use database to perform direct outreach to third-party waste haulers and contractors to encourage their participation in TRC recycling by receiving a free collection bin and the new contractor bin return incentive program.

Reasoning

Our interviews revealed that residential property managers frequently hire third-party waste haulers and contracting companies to install, remove and dispose of mercury-added thermostats. Follow up interviews with a few of these third-party waste haulers uncovered that they frequently handle large volumes of thermostats. While these haulers and contractors were aware that there was a legal requirement to recycle mercury-added thermostats, often they were not utilizing TRC’s free mercury thermostat disposal chains to process their waste and mentioned other indirect chains of disposal. Thus, through partnering with TRC, third-party waste haulers and contracting companies can save money by receiving mercury-disposal services through having their own free collection bin, while making \$5.00 per mercury thermostat sent in a TRC bin.

Data to be Collected

- Number of contractors contacted
- Information collected regarding their mercury recycling practices and logistics
- Number of bins placed
- Number of thermostats collected

Hotels and Motels

Participant Overview

There are approximately 23,000 hotel/motels operating in California according to the CA Department of Finance. Our interviews revealed that hotels and motels typically replace thermostats on an as needed basis. Furthermore, hotels tend to renovate over the years to keep up appearances, but it is uncertain whether these renovations also involve thermostat replacement. The hotels and motels we have contacted have already replaced mercury-added thermostats. Some motels do not have thermostats in their units. Instead, they have an AC unit that functions on desired level of power rather than on a predefined temperature. Majority of hotels and motels have designated maintenance engineers that deal with thermostat replacement and general maintenance. One hotel maintenance engineer mentioned that he has kept the old thermostats in storage. For many of our audiences, the issue is not the proper disposal of mercury-added thermostats during future renovations that is of concern, it is the proper disposal of thermostats that have already been taken down.

Scoping Methods

Contact was attempted with 40 motels and hotels as part of these scoping efforts. The tactics proposed for this audience are based on information gathered from 3 motels and 4 hotels ranging in size from 20 to 175 rooms. Interviews were conducted with 7 individuals in positions such as: Representatives of hotel, Receptionists, Managers of motels, Director of Engineering Departments, and Maintenance Engineers. A list of the businesses contacted and interviewed can be found in the appendix.

Role in the Collection of Mercury-Added Thermostats

This audience can best support the collection of mercury-added thermostats by being able to properly identify the correct disposal of mercury-added thermostats within their properties. Our interviews revealed that most hotels and motels have a maintenance engineer that is responsible for thermostat upkeep and removal. Since hotels/motels typically conduct renovations every 5-7 years and mercury-added thermostats have been banned in California since 2006, this audience is less likely to have mercury-added thermostats than buildings that are not routinely renovated like schools or residential and commercial properties. However, we did learn that some hotels/motels keep old thermostats in storage when they need to conduct piecemeal replacements. Our outreach approach, then, will target the maintenance engineers working at hotels/motels to ensure they can properly identify a mercury-added thermostat and are provided with the tools to ensure their safe removal and disposal in TRC bins.

Tactics for Hotels and Motels

The following three tactics would work together to create an overall outreach effort to reach hotels and motels and the two main pathways that thermostats are likely to be removed from their building(s)(maintenance employee or third-party contractor).

Tactic #1: Partner with Hotel Associations

Description

Contact and partner with hotel associations, like California Hotel and Lodging Association and the

American Hotel and Lodging Association, to provide us with an outlet to reach this audience and distribute our messaging.

Example of potential partners include:

- California Hotel & Lodging Association (CH&LA)
- California Association of Boutique & Breakfast Inns (CABBI)
- California Green Lodging Program

Reasoning

The hotel industry is a widely-segmented industry with an array of categories including: bed and breakfasts, local boutique hotels, resort hotels, extended stay hotels, franchised hotels/motels, etc. Partnering with respected associations will provide us with outlets to reach the various hotel/motel segments through their websites, newsletters and listservs for message distribution. Many of the smaller hotels and motels refer to these communities for referrals and advice surrounding processes including repairs and contractor hiring. An example of this in action is The American Hotel & Lodging Association, who offer a “Best Practices Center”, on their website, where they offer members tips and resources to help hotels and motels become more sustainable, along with help adhering to new regulations. Tapping into these partner’s resources and utilizing their message distribution will allow us to reach a wide variety of establishments efficiently.

Tactic #2 Create Outreach Materials To Educate and Obtain Free Bins

Description

Create outreach information to assist maintenance staff understand the process of identification of Mercury-Added Thermostats and provide convenient next steps to hotel and motel maintenance staff to order a TRC bin or direct them to a local collection site. Utilizing our partnerships, online media outlets and email campaigns, we will distribute the information to the hotel/motel community.

Reasoning

All six of the hotel and motels interviewed in our research, reportedly did not have Mercury-Added Thermostats. It’s uncertain whether the thermostats were removed and replaced, the buildings were built after mercury-added thermostats were phased out, or the staff was not able to differentiate between mercury-added thermostats and a non-mercury-added thermostats. What was apparent was that maintenance staff did not have a clear understanding of the hazards and legality surrounding mercury in thermostats and did not have necessary protocols for removing and disposing of them.

“(We) don't have any protocols in place. The hotel is planning on upgrading every 5-6 years.” --Belmond El Encanto Hotel

“There is no process implemented because we don't have any mercury-added thermostats. We've never come across them.” --Motel 6

Creating a information to educate maintenance staff through proper identification of a mercury thermostat and outlining convenient next steps may uncover mercury-added thermostats in locations where they were previously thought to be absent. Once that realization is made, staff will be equipped

with convenient options and procedures to properly dispose, either by requesting a TRC bin or visiting a local collection site.

Working with established partners to include the information on their websites, newsletters and other outlets will serve as valuable endorsement of TRC and its message. Email campaigns will serve to cover a large audience and deliver the checklist and procedures directly into our audience's inbox, where they can print out the email's content and post in their maintenance offices or directly click on links to arrive at the TRC website to order a collection bin or find the nearest collection location. These distribution methods incorporate trust and authority while providing education and convenience to enable our desired behavior of proper mercury disposal.

Data to be Collected

- Number of Impressions
- Number of emails sent
- Number of emails opened
- Click through rate to TRC website
- Number of bin requested
- Number of thermostats collected

Tactic #3: Capture Mercury Stream from Third-Party Waste Haulers and Contractors

Description

Work with hotels/motels to gather contact information of the third-party waste haulers and contracting companies that service their properties. Create database of third-party waste haulers and contractors that collect mercury-added thermostats from this audience. Use database to perform direct outreach to third-party waste haulers and contractors to encourage their participation in TRC through receiving a free collection bin and the new contractor bin return incentive program.

Reasoning

Our interviews revealed that hotels/motels frequently hire third-party waste haulers and contracting companies to install, remove and dispose of mercury-added thermostats. Follow up interviews with a few of these third-party waste haulers uncovered that they frequently handle large volumes of thermostats. While these haulers and contractors were aware that there was a legal requirement to recycle mercury-added thermostats, often they were not utilizing TRC's free mercury thermostat disposal chains to process their waste and mentioned other indirect chains of disposal. Thus, through partnering with TRC, third-party waste haulers and contracting companies can save money by receiving mercury-disposal services through having their own free collection bin, while making \$5.00 per mercury thermostat sent in a TRC bin.

Data to be Collected

- Number of contractors contacted
- Number of bins placed
- Number of thermostats collected

Appendix

Table 1. Log of Contacts: University/College

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Size
Humboldt State University	707-826-3646	Arcadia	Yes	Sabrina Zink	EH&S Coordinator	Medium
Sacramento City College	916-558-2453	Sacramento	Yes	Karen Chewing	Facilities manager	Medium
San Joaquin Delta College	209-954-5835	Stockton	Yes	Stacy Pinola	Environmental Compliance manager	Medium
Stanislaus State University	209-667-3211	Turlock	Yes	Louie	Maintenance Engineer	Medium
Palo Alto University	650-433-3853	Palo Alto	Yes	Fernando	Facilities Operator	Small
Cal Tech Pasadena	720-355-5355	Pasadena	Yes	Matthew Narez	Facilities manager	Small
Sonoma State University	707-664-2932	Rohnert Park	Yes	Craig Dawson	Environmental Hazards & Safety Director	Medium
CSU Long Beach	562-985-8893	Long Beach	Yes	Peer Gerber	Environmental Hazards manager	Large
UCLA	310-825-1527	Los Angeles	Made contact, no interview	---	---	Large
CSU East Bay	510-885-4024	Hayward	Made contact, no interview	---	---	Medium
San Jose State University	408-924-2152	San Jose	Made contact, no interview	---	---	Large
California Lutheran University	805-493-3215 ext. 3217	Thousand Oaks (Central CA)	Made contact, no interview	---	---	Small
Pacific Union College	707-965-7150	Angwin	Made contact,	---	---	Small

			no interview			
University of the Pacific	209-946-2285	Stockton	Made contact, no interview	---	---	Medium
San Diego Miramar College	619-388-7800	San Diego	Made contact, no interview	---	---	Medium
Cerritos College	562-860-2451 ext. 2315	Cerritos	Made contact, no interview	---	---	Large
San Bernardino Valley College	909-382-4006	San Bernardino	Made contact, no interview	---	---	Medium
Fresno City College	559-244-5987	Fresno	Made contact, no interview	---	---	Large
Diablo Valley College	925-969-4282	Pleasant Hill	Made contact, no interview	---	---	Medium
Santa Clara University	408-554-5078	Santa Clara	Made contact, no interview	---	---	Medium
Merced College	209-384-6135	Merced	Made contact, no interview	---	---	Medium
William Jessup University	916-577-2380	Rocklin (Central CA)	Made contact, no interview	---	---	Small
Fielding Graduate University	805-898-2937	Santa Barbara (Central CA)	Made contact, no interview	---	---	Small
Thomas Aquinas College	805-421-5938	Santa Paula (Central CA)	Made contact, no interview	---	---	Small

UC Santa Barbara	805-893-3293	Santa Barbara (Central CA)	Made contact, no interview	---	---	Large
Westmont College	805-565-6042	Santa Barbara (Central CA)	Made contact, no interview	---	---	Small
Point Loma Nazarene University	619-849-2440	San Diego	Made contact, no interview	---	---	Small
USC	707-826-3646	LA	Made contact, no interview	---	---	Large

Table 2. Interview Notes: University/College

Organization	Question Set 1*	Question Set 2*
Humboldt State University	<p>(1) When they are no longer useful, the Environmental Health and Safety department supplies materials/containers for departments to put the waste in.</p> <p>(2) There are multiple, it could be through an email but to contact the contractor we send request for pick up through the mail.</p> <p>(3) Whenever they need to be replaced. (</p> <p>4) No, it's whenever needed</p> <p>(5) For the mercury-added thermostats, they stored it for pick up (contact RM&SS)</p>	<p>(6) Not much, they should all be electronic now</p> <p>(7) Well if they have the mercury in them, if they're usually older</p> <p>(8) It's time consuming but it is necessary</p> <p>(9) Can't say</p> <p>(10) Not for mercury-added thermostats but for all hazardous materials which thermostats lies in that category, they abide by the California Code of Regulations</p>
Sacramento City College	<p>(1) When they disposed of ALL of their mercury-added thermostats, technicians were in charge of this disposal.</p> <p>(2) Their typical process is for making announcements to these staff: It is through written data sheets because every two years they are required to review their hazardous materials</p> <p>(3) They have NO MORE mercury-added thermostats, they made sure they disposed of them all. (replaced them with mercury free ones</p> <p>(4) When they disposed of it, they had to have a Safety Data Sheet (provides info on medical, disposal, and storage of the waste), the Operations Technician reviews these sheets, and they forward this information to the appropriate groups (technicians who would dispose of it).</p> <p>(5) None</p>	<p>(6) She said she wouldn't say there were any</p> <p>(7) Not any specifically for mercury-added thermostats but the Operations technicians make sure to follow OSHA and ADA regulations when compiling report.</p> <p>(8) When school is not in session.</p>
San Joaquin Delta College	<p>(1) They have technicians organize the waste (including mercury-added thermostats) and hire a contractor to come pick it up. (Premier Chemical)</p> <p>(2) Face to face.</p> <p>(3) There were about two areas of mercury-added thermostats, and now there are close to none since they are now replacing them with 'electronic' mercury free ones. Now she would say less than 5.</p> <p>(4) Technicians have to profile the hazardous waste (including thermostats), obtain permits and ID number, label it, and</p>	<p>(6) She said there's nothing in particular that makes it any easier.</p> <p>(7) Delta college enforces EPA's regulations and requires hazardous management staff to be well trained in proper labeling and recordkeeping. They don't have one specifically on mercury-added thermostats</p> <p>(8) They try to do it during a time when students aren't around but if it's immediate they will clear out an area to work on it</p>

they hire a contractor to pick it up (shipments).
 (5) She said nothing, because it doesn't matter how much it costs, they have to get rid of it and abide by state counties and federal laws. She did mention that it is a long process.

<p>Stanislaus State University</p>	<p>(1) Mentioned mercury-added thermostats. The environmental safety team deals with it, they are sent to a facility on campus that stores it, and they hire a contractor (EHNF Division? didn't really hear correctly even after asking him to spell it out). For hazardous materials, their contractor usually comes in once a month, but for mercury-added thermostats it's only occasionally. (2) Face to face (3) It's an ongoing process and they only replace them when they are broken, and in that case they replace them with newer versions, electronic ones (4) No, it's ongoing (5) Environmental safety team stores it in a facility on campus where they prepare it for pick up</p>	<p>(6) Not a lot, it's occasionally since now they are mostly new ones. (7) It's pretty clear when they are a mechanical device (8) He doesn't know. (9) Doesn't know. (10) Not specific to, in general for hazardous materials because there are just so many of them it would be a disaster to try making a policy for each.</p>
<p>Palo Alto University</p>	<p>(1) Have a third party that manages that/ contractor they hire: (2) in person (3) Once every two years, it's more by demand. If they fail or by request then they'll take care of it. (4) No not really (5) They hired the contractor to come and get them, they will rebuild them if they can (a metal component that can be reused)</p>	<p>(6) They were all removed in 2008. He wasn't around there in 2008 but he's pretty sure a contractor was in charge of removing all of that. (7) Generally if they're older and have that mercury tube in them (8) I couldn't say, that is mostly in part of the contractor (9) Again, not too sure. (10) No not really</p>
<p>Cal Tech Pasadena</p>	<p>(1) For old thermostats, they use the recycling service 'Encore Environment', they have around 15 technicians, but he's unsure if they are directly involved with the removal of thermostats (he's assuming some internal employees are involved with the process and he said he will email me more information after talking to the Safety and Hazards department). (2) Face to face interaction. (3) He couldn't give me an estimate because they're constantly renovating and he mentioned that they are implementing</p>	<p>(6) They are privately funded and have a budget for renovating so the commitment on behalf of the university to comply with environmental regulations makes it easier. (7) He said he doesn't know and will get back to me about that. (Having the means to do so makes it easier) (8) They remove any toxic materials (his guess was that mercury-added thermostats is part of that) during a safe time, particularly when class isn't in session. NOTE: What I basically got out</p>

mercury free thermostats as well, he's unsure because there may some old buildings with mercury-added thermostats but for the most part, everything is pretty much new.

(4) They call a contractor, he is unsure whether they have an agreement in place for mercury-added thermostats so he will get back to me on that after talking with Safety and Hazards (he is the facilitator manager for all departments and mainly works with maintenance but he is going to get that information for me)

(5) He said there aren't really any barriers because Cal Tech has a budget for it.

of him was that they weren't really focused on mercury-added thermostats, and he did tell me that this interview made him think about it more.

Sonoma
State
University

(1) Asked me if I meant regular or mercury-added thermostats, I said mercury and he said the environmental health and safety faculty (collects them from anyone who has them on campus), a few people works on those. (2) It could be through call or through email (3) We did one whole big process (removing as many as possible) in the mid -2000s. Once in a while stumbles across one and routes them to environmental health and safety dept.

(4) Doesn't remember exactly when the removal took place, but that it most likely took place when it was most convenient (summer time)

(5) They break it down as much as possible to adjust the cylinder component assuming it's got an open system and store it in a waste container for a waste contractor, have a contract with Millistate Environmental.

(6) Once in a while, stumbles across one that was missed.

(7) When they're old they most likely will have mercury in them.

(8) No not really

(9) I wouldn't say so

(10) No, we don't we are fortunate enough where we have a small campus and can handle all of the hazardous waste but we don't have a policy for mercury-added thermostats in particular.

CSU Long
Beach

(1) They contract it out to compliance company named 'Stericycle'

(2) They contact via email

(3) Doesn't have a general estimate because he stated that they are using less and less mercury thermometers (installing mercury free thermometers) said there may be some left but he's unsure.

(4) They have an agreement with Stericycle based on 'CA hazardous waste regulations', they fill out a 'Hazardous Waste Manifest Standard CA' form and put their EPA

(6) Good to have vendors who are willing to take that waste, they can't be there dictating what materials lab prof are using so having a safety officer makes it easier to keep track of all the toxic wastes

(7) Have to Reuse, recycle waste, and prevent it from getting into the landfill. Contractors certify and sign off on that. 90% no waste in landfill policy is going to come into action soon, all hazardous

number that they give to the compliance company, then they have to verify waste is being packaged properly (HW technician manages this, Peer stated that lab professors are helpful in separating their wastes through Lab packing so everyone's involved with ensuring these wastes are properly disposed of), when mercury waste arrives at the facility they track shipment of waste (HW technician visits facility) and they get signatures back

(5) It's expensive, it takes up a lot of time, hazardous waste technician on campus has to go there to ensure it's being properly sanitized and stored in the proper container and label has to be placed on it, waste has to be consolidated with other wastes. It's a long process.

waste is '100% has to be recycled properly'

(8) They do it when they pick up the waste of the labs when class is over. (during summer sessions) waste is ready to pick up by, they have a satellite accumulation point

Question Set 1: (1) Would you know who actually has direct contact with removing and disposing of air conditioning thermostats in your facilities? (2) Typical process for contacting staff concerning thermostat removal (3) how often would you say you actually replace a thermostat? (4) Are there any seasonal considerations that you take into account with replacing thermostats? (5) What do you do with the thermostat when you remove it from the wall?

Question Set 2: (6) How often does your university/college come across mercury-added thermostats? (7) What do you find is the easiest way to identify a mercury-added thermostats? (8) What are the factors that make it difficult to properly dispose of mercury-added thermostats? (9) Factors that make it easier? (10) Do you have any written protocols in place for the disposal of mercury-added thermostats?

Table 3. Log of Contacts: Hotels/Motels

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	# of rooms
Clarion Hotel	707-442-3261	Eureka	Yes	Enrique	Maintenance Engineer	74 rooms
Motel 6	559-485-5019	Fresno	Yes	Pat	Manager	55 rooms
Belmond El Encanto Hotel	805-845-5800	Santa Barbara	Yes	Joe Vogul	Director of Engineering	92 rooms and 7 meeting spaces
Super 8	714-527-2201	Buena Park	Yes	Babu	Manager	n/a
Lamplighter Motel	707-443-5001	Eureka	Yes	Gigi	Receptionist	20 rooms
Andaz Napa	707-687-1234	Napa	Yes	Dwayne Heskett	Director of Engineering	145 rooms
Red Lion Hotel	707-445-0844	Eureka	Yes	Mariana	receptionist/ Representative of Hotel	175 rooms
Hotel Paradox	831-425-7100	Santa Cruz	Made contact, no interview	---	---	---
Comfort Inn	415-928-5000	San Francisco	Made contact, no interview	---	---	---
Sunshine Motel	909-888-1514	San Bernardino	Made contact, no interview	---	---	---
Motel 6	760-596-4000	Victorville	Made contact, no interview	---	---	---
Kings Canyon Motel	559-255-7877	Fresno	Made contact, no interview	---	---	---
Ayres Hotel	909-335-9024	Redlands	Made contact, no interview	---	---	---
Desert Palm Hotel And Suites	714-535-1133	Anaheim	Made contact,	---	---	---

			no interview			
Hyatt	951-321-3500	Riverside	Made contact, no interview	---	---	---
Cardinal Hotel	650-323-5101	Palo Alto	Made contact, no interview	---	---	---
Double Tree by Hilton Hotel	213-629-1200	Los Angeles	Made contact, no interview	---	---	---
Best Western Plus Hacienda Hotel	619-298-4707	San Diego	Made contact, no interview	---	---	---
Hyatt Centric	562-432-1234	Long Beach	Made contact, no interview	---	---	---
Riviera Motel	714-776-9100	Anaheim	Made contact, no interview	---	---	---
Calarion Inn and Suites	714-966-5200	Santa Ana	Made contact, no interview	---	---	---
Del Marcos Hotel	800-676-1214	Palm Springs	Made contact, no interview	---	---	---
Best Western Plus Yosemite Inn	559-683-2378	Yosemite	Made contact, no interview	---	---	---
Chancellor Hotel	415-362-2004	San Francisco	Made contact, no interview	---	---	---
Hollywood Celebrity Hotel	323-850-6464	Los Angeles	Made contact,	---	---	---

			no interview			
West Coast Inn	714-554-0085	Santa Ana	Made contact, no interview	---	---	---
The Hotel	714-891-0123	Huntington Beach	Made contact, no interview	---	---	---
Travelodge	310-839-1111	Culver City	Made contact, no interview	---	---	---
Sheraton Grand Sacramento Hotel	916-447-1700	Sacramento	Made contact, no interview	---	---	---
Motel 6	909-884-6268	San Bernardino	Made contact, no interview	---	---	---
All Suites Islander Motel	510-796-8200	Fremont	Made contact, no interview	---	---	---
Super 8	714-545-9471	Costa Mesa	Made contact, no interview	---	---	---
Motel 6	510-793-4848	Fremont	Made contact, no interview	---	---	---
Townlodge Motel	909-381-4291	San Bernardino	Made contact, no interview	---	---	---
Motel 6	209-946-0923	Stockton	Made contact, no interview	---	---	---
Stockton Travelers Motel	209-466-8554	Stockton	Made contact, no interview	---	---	---

Super 8	559-268-0621	Fresno	Made contact, no interview	---	---	---
Hilton Anaheim	714-750-4321	Anaheim	Made contact, no interview	---	---	---
Omni Los Angeles Hotel	213-617-3300	Los Angeles	Made contact, no interview	---	---	---

Table 4. Interview Notes: Hotel/Motel

Organization	Question Set 1*	Question Set 2*
Clarion Hotel	<p>(1) doesn't replace very often, their ac's are relatively new (not mercury), replaces things when old not just if it breaks</p> <p>(2) don't use too many thermostats just keep it in a bag in storage, don't throw anything away, has been working there for 2 years and doesn't know what the last engineer did with them. He just checks them at least once a month to make sure everything is working properly</p>	<p>(3) only he replaces them (have them in units no longer on the wall), has more people on his team but they don't do any of that, use a face to face method of communication</p> <p>(4) Don't have any mercury-added thermostats because ac's are relatively new so no factors affect maintenance. there are no seasonal considerations</p>
Motel 6	<p>(1) They don't have any thermostats. they have air conditioning systems plugged into 220 voltage air containing wall units</p> <p>(2) No process implemented because they don't have any thermostats. Has never come across them so there is no protocol</p>	<p>(3) Only have one maintenance person. He is an official worker (job is not contracted out). Typical process for making announcements is face to face.</p>
Belmond El Encanto Hotel	<p>(1) Haven't had to replace anything. The hotel is only 4 years old. Will be replacing them in the near future because they dislike them and would like to upgrade. Said they have dico thermostats, water tower cooling system, and individual units</p> <p>(2) Don't have any mercury-added thermostats, only digital thermostats. Don't have any protocols in place. Hotel is planning on upgrading every 5-6 years.</p>	<p>(3) No one has had to replace any thermostats because everything is relatively new. Will be contracting that job out but haven't given much thought to who. Typical process for making announcements is through a daily review in which they go over the day's events. Also create a newsletter each month for workers.</p> <p>(4) No factors because they don't have any mercury-added thermostats.</p>
Super 8	<p>(1) If it works fine, leave everything as is. Only replace them if they break or not working good.</p> <p>(2) If broken or not working, they just call the air conditioning professional people. Only have digital thermostats. Don't ever run into mercury-added thermostats.</p>	<p>(3) Every week the thermostats are checked by motel but if don't work they c all the air conditioning professional people. Typical process for making announcements to staff is by holding meetings.</p> <p>(4) None because don't have any mercury-added thermostats.</p>
Lamplighter Motel	<p>(1) Replace the thermostats when they stop working. Do this at least once a year</p> <p>(2) She's only ever seen digital thermostats in the motel</p>	<p>(3) Have one internal employee who handles that, they don't contract it out. When I asked if he has an official job title, simply said they just call him the maintenance dude. Typical process for making announcements is via phone</p> <p>(4) none that she is aware of, has never seen mercury-added thermostats there</p>

Andaz Napa

(1) They replace them when broken however they will be in the process of replacing all in 2 months. Although they still work, they will be replacing them because they want to go to a higher grade thermostat which can be used through cell phones and integrated into their computer system.

(2) Normally take their thermostats stat don't work and put them in recycling bins. Don't have any mercury-added thermostats on property. The hotel is pretty new, has been opened since 2009 so they have always had digital thermostats. Don't have any protocols for mercury-added thermostats.

(3) He had direct contact with replacing the thermostats. He has 3 other employees in the engineering department who help him out with replacing them. Their typical process for making announcements is through daily pass downs. They have chats pre-shift and after shifts to talk about any changes and about the job.

(4) None because don't have any mercury-added thermostats on property.

Question Set 1: (1) How often do you replace thermostats? What prompts you to replace them? (2) What is your thermostat removal process? How often do you come across mercury-added thermostats? Any protocols for mercury-added thermostats?

Question Set 2: (3) Who has direct contact with replacing thermostats? How many people are in this position? What is the typical process of making announcements to them? (4) Factors that make it difficult or easier to properly dispose of mercury-added thermostats? Seasonal considerations?

Table 5. Log of Contacts: Utility

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Size
SoCal Edison	800-655-4555	Southern California	Yes	Elizabeth Rolito	Customer representative	Large
Burbank Water and Power	818-238-3730	Burbank, CA	Yes	Jack Corbett	Program Manager	Small
PG and E	800-468-4743	California	Yes	n/a	Customer representative	Large
Banning, City of Electric Department	951-922-3260	Banning	Yes	Amber Rockwell	utility services assistant	small
Biggs Municipal Utilities	530-868-5493	Biggs	Yes	Marlee Mattos	admin assistant	Small
Port of Stockton	209-946-0246	Stockton	Yes	Debbie Calley	utilities manager	Small
rancho Cucamonga	909-477-2740	rancho Cucamonga	Yes	Sandra Madina	public services technician	Small
Modesto Irrigation District	209-526-7373	Modesto	Yes	Blanca	Clerk	Small
Lodi Electric Utility	209-333-6762	Lodi	Made contact, no interview	---	---	Small
Riverside, City of	951-826-5532	riverside	Made contact, no interview	---	---	Small
Moreno Valley Utility (MVU)	877-811-8700	Moreno valley	Made contact, no interview	---	---	Small
Alameda Municipal Power	510-748-3905	alameda	Made contact, no interview	---	---	Small
Anaheim, City of Public Utilities Department	714-765-5156	Anaheim	Made contact, no interview	---	---	Small

Table 6. Interview Notes: Utilities

Organization	Question Set 1*	Question Set 2*
SoCal Edison	<p>(1) Yes we are running a rebate program with smart thermostats</p> <p>(2) I only know of the rebates that are running right now</p> <p>(3) sometimes we take on contractors but not sure if we do for thermostat installations</p>	<p>(4) don't know</p> <p>(5) I don't think so</p>
Burbank Water and Power	<p>(1) We are running smart thermostat rebate program</p> <p>(2) this is the third or fourth year of the thermostat rebate</p> <p>(3) No we don't contract for thermostat. Only for more work extensive programs like HVAC tune up</p>	<p>(4) We trust the contractors to know what to do with hazardous waste.</p> <p>(5) Do not advertise the rebates. We rely on mostly word of mouth. Sometimes we include it in our quarterly letters (misc.) we are incentivized to run programs like thermostat installation because there is a state legislation that requires reduction of energy usage by 1 to 2% annually. We don't think smart thermostats help out much in terms of actual amount of energy saved but believe it to be a good initial step towards adoption of other smart appliances, which would be impactful</p>
PG and E	<p>(1) We used to have a thermostat rebate program with Honeywell. I don't think we have that anymore</p> <p>(2) I don't know</p> <p>(3) we never contract anyone for thermostat installation</p>	<p>(4) don't know</p> <p>(5) I don't think so</p>
Banning, City of Electric Department	<p>(1) No rebate on thermostats. We do have rebates on house insulation and other energy smart appliances</p> <p>(2) none on thermostat to my understanding</p> <p>(3) we do not contract for thermostats</p>	<p>(4) I do not think so</p> <p>(5) we have information on rebates at our front desk and we have a webpage</p>
Biggs Municipal Utilities	<p>(1) We are running a rebate on programmable thermostats I believe</p> <p>(2) unsure</p> <p>(3) we do not contract for thermostats</p>	<p>(5) no advertising is done</p>
Port of Stockton	<p>(1) We only do rebates for commercial properties because that is our only customers. The rebates from my knowledge has never been about thermostats. We are running window sealing at the moment.</p>	<p>(5) no advertising is done</p>

	(2) window insulation, energy efficiency checks and improvement (3) never contract for thermostat installation	
Rancho Cucamonga	(1) We have not done thermostats. Unsure if it makes sense for them because they service mostly commercial and some apartments (2) unsure but most likely not (3) we hire contractors to make assessments when it comes to energy efficiency or insulation type of tasks but they do not need to hire the contractor to do the installation itself, only the assessment	(4) I do not think we have requirements for contractors (5) we advertise on our quarterly newsletter and website
Modesto Irrigation District	(1) We are running a rebate program on AC units and window insulation. I don't think for thermostat rebates (2) never done thermostat rebates (3) everything we do is self service	(4) everything is self-serviced (5) we sometimes do radio advertising but it's mostly the webpage

Question Set 1: (1) Does your utility encourage customers to upgrade their HVAC systems or replace their thermostats? If yes, how? (2) What type of incentives are offered (historically)? (3) Do you contract with a company to replace the thermostats (if so who), or is this done with in-house staff?

Question Set 2: (4) Do you know what the contractor (or their technicians) do with the thermostats once they are removed? Do you instruct contractors with protocol on dealing with hazardous waste? (5) Do you do any promotion besides your online listing that encourage your customers to upgrade or replace their thermostats? If yes, what are they?

Table 7. Log of Contacts: Property Management (Commercial)

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Size
Boese Commercial (Fresno)	559-369-2750	Fresno	Yes	Sarkis Basmajian	Property Manager	52
Ocean West Management (Long Beach)	213-223-7018	Long Beach	Yes	Tony	Maintenance Engineer	15 properties in Socal, just 1 in Long Beach
William Morris Commercial	562-552-8874	Long Beach	Yes	Toliver Morris	Owner/President	Over 50
Maximum Air	559-307-0363	Fresno	Yes	Michelle	Employee/Secretary	n/a
Adler Realty	562-349-0333	Long Beach	Yes	Kathie Bostian	Senior Property Manager	26 nationwide, 8 in California
TRI Commercial	916-669-4500	Sacramento	Yes	Raquel Carillo	Property Manager	8 property managers, at least 50 buildings
Ensemble Real Estate Solutions	562-436-1359	Long Beach	Yes	Francis Amati	Senior Property Manager	5 commercial buildings in california
Argent Retail Advisors	949-380-7600	Mission Viejo	Made contact, no interview	---	---	---
WIG Properties	949-726-9792	Tustin	Made contact, no interview	---	---	---

Table 8. Interview Notes: Property Management (Commercial)

Organization	Question Set 1*	Question Set 2*
Boese Commercial (Fresno)	<p>(1) Replace them as necessary</p> <p>(2) Our vendor does it: Maximum Air. We don't have mercury-added thermostats, they are all digital. Not sure what the process is.</p>	<p>(3) Maximum Air vendor. Contact name is Michelle.</p> <p>(4) Asked if there were factors that make this process easier or more difficult and he said no. Usually summertime is when people call to check on their thermostats since that's when they start to use them more.</p>
Ocean West Management (Long Beach)	<p>(1) Around every two years. Replace them as necessary</p> <p>(2) No protocol for disposing of mercury-added thermostats. Has not come across them. In the beginning, their contractor Coastline Development came to install the new thermostats, but after that it's just Tony who does the maintenance and removal. For disposal of thermostats, he takes them to the HVAC store where they got them from.</p>	<p>(3) Just me, no one else.</p> <p>(4) Asked if there were factors that make this process easier or more difficult and he said no. Did not notice any seasonal differences for thermostat service or removal.</p>
William Morris Commercial	<p>(1) As needed basis</p> <p>(2) For buildings that are less than 50k sq. ft., they usually pay and contract out for their maintenance with probably no policy or procedure manual. For buildings that are larger, like Ocean West, over 100k sq. ft., they will have in-house maintenance staff and more possibility of having a policy book for them to follow - although not sure the policy will be as detailed to cover as specific as mercury-added thermostats.</p>	n/a
Maximum Air	<p>(1) Replaces them on a need-by basis; no set time period for check up</p> <p>(2) They remove them and return them to the manufacturer where they got them from. She's worked there for four years and never came across a mercury thermostat; maybe ten years ago, is what she said. No protocols for those.</p>	<p>(3) They have five staff, all of them are in direct contact with replacing thermostat. Mainly communicate via text.</p> <p>(4) Not applicable; no mercury-added thermostats.</p>
Adler Realty	<p>(1) Replaces them on a need by basis.</p> <p>(2) Doesn't know if they have any mercury-added thermostats. Said she spoke with her building engineer and he said that their process after removing it is just throwing them in the trash. Did not know if there</p>	<p>(3) She has the building engineer and also their third party contractor who handles the AC stuff. That company is called Mission Air. She said for making announcements it's a combo between face-to-face and email communication depending on the urgency.</p>

	were any protocols for disposing or handling of mercury-added thermostats.	(4) Did not know of any factors or seasonal considerations.
TRI Commercial	<p>(1) Wasn't sure; said she'll get back to me on this after she asks the proper staff UPDATE: They're replaced as needed when they malfunction</p> <p>(2) Wasn't sure; said she'll get back to me on this after she asks the proper staff; did not know if they had any mercury-added thermostats on facility UPDATE: We do have mercury-added thermostats. We have come across a few recently. They tend to be the really old manual ones. We are currently holding on to them until we find a method of disposal since they have mercury in them.</p>	<p>(3) One to two people are in direct contact (maintenance supervisor and porter). She usually contacts with them face to face.</p> <p>(4) Wasn't sure; said she'll get back to me on this after she asks the proper staff UPDATE: N/A Haven't disposed of any yet. Still have them.</p>
Ensemble Real Estate Solutions	<p>(1) Hardly ever replace the stats</p> <p>(2) In ten years, we have seen minimal number of mercury-added thermostats. 90% of the building is pneumatic thermostats. We treat them as hazardous material and reach out to qualified company for disposal and pay for that service. We haven't replaced any here and can't even recall where we have them.</p>	<p>(3) Direct contact is with the contracting company. Don't know how many people are in that position - depends on the company. Usually contact through phone.</p> <p>(4) n/a</p>

Question set 1: (1) how often do you replace thermostats? What prompts you to replace them? (2) What is your thermostat removal process? How often do you come across mercury-added thermostats? Any protocols for mercury-added thermostats?

Question set 2: (3) who has direct contact with replacing thermostats? How many people are in this position? What is the typical process of making announcements to them? (4) Factors that make it difficult or easier to properly dispose of mercury-added thermostats? Seasonal considerations?

Table 9. Log of Contacts: Property Management (Multi-family)

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Size
So Cal Management Inc. (Riverside)	951-249-7766	Riverside	Yes	Cliff	Property Manager	90-100
Majestic Management (Stockton)	209-473-9300	Stockton	Yes	Molly	Maintenance Manager	140
Alcore Properties Inc.	818-508-0705	El Segundo	Yes	Chris	Owner and Director of Property Management	14
Garibaldi Company	209-955-0535	Stockton	Yes	Matt Errecart	Vice President	10
Lozano Indoor Environmental	209-368-5458	Stockton	Yes	Ronaldo	Employee	n/a
Pacific Court Apartments	562-368-4464	Long Beach	Yes	Yamel Delgado	Resident Manager	49 units
Regency Property Management	559-221-3170	Fresno	Made contact, no interview	---	---	---
Jackson Property Management	909-332-5759	San Bernardino	Made contact, no interview	---	---	---
Spellacy Property Management	909-886-4146	San Bernardino	Made contact, no interview	---	---	---
Calvo Group	626-814-8000 ext. 153	San Bernardino	Made contact, no interview	---	---	---
Bos Commercial	909-917-6886	San Bernardino	Made contact, no interview	---	---	---
Omnia Real Estate Services	702-371-7974	Las Vegas	Made contact, no interview	---	---	---
Southern California Property Management	909-548-0044	Chino Hills	Made contact, no interview	---	---	---
Basdakís Apartments	714-813-2158	Long Beach	Made contact, no interview	---	---	---
Brimco Management	323-460-6788	Los Angeles	Made contact, no interview	---	---	---

Table 10. Interview Notes: Property Management (Multi-family)

Organization	Question Set 1*	Question Set 2*
So Cal Management Inc. (Riverside)	<p>(1) The last time was a year ago. Only as necessary.</p> <p>(2) Haven't seen mercury thermostat in 5-8 years. All digital now. No protocols.</p>	<p>(3) James and Omar, my AC guys. Will get you in contact with them. Not sure what they do with the thermostats when they dispose of them. Mentioned that he thought they could be e-waste and so not trashed normally.</p> <p>(4) Usually summertime people will call for thermostat maintenance more.</p>
Majestic Management (Stockton)	<p>(1) Said she did not know, never had to replace them.</p> <p>(2) She sounded vague and like she did not know what she was talking about. Said she did not know what to do in the case of needing to dispose of a thermostat, asked me if we do it. I said that maintenance is usually responsible for handling that or they hire a general contractor. Asked her what kind of thermostats they use on their property and she said she did not know but they are not mercury.</p>	<p>(3) Said she is the only one who was responsible.</p> <p>(4) Not applicable</p>
ALCOLE PROPERTIES, INC.	<p>(1) Said he couldn't remember the last time they had to replace a thermostat</p> <p>(2) Did not know if they had mercury-added thermostats on their properties. Their process is, if someone is having trouble with a thermostat, their maintenance staff would take care of it and make the executive decisions for what to do with it. Did not know of the process or if there were any protocols.</p>	<p>(3) Said their maintenance manager would make the decisions for whatever happens to the thermostats. Did not know of the process, but assumed that they would just throw them in the trashcan. Usually contacts them via email.</p> <p>(4) Said it would have to be a very easy, not out-of-the-way process for mercury thermostat disposal for them to consider doing it - unless it was illegal and required by law.</p>
Garibaldi Company	<p>(1) Not very often; maybe every few years; no set procedure</p> <p>(2) Matt himself did not know what the procedures or protocols were for disposal. As for mercury-added thermostats, he said he did not know which facilities had them but assumed that there were some on their properties that were built in the '70s.</p>	<p>(3) When someone is experiencing trouble with a thermostat, the facilities' maintenance manager will come to assess the problem. If the thermostat needs to be replaced/disposed of, they will call their third party HVAC company (the Stockton facilities use Environmental Engineering with Ronaldo) to make the decision for what needs to be done with it. The only involvement Matt has is to give approval for the</p>

		<p>HVAC company to do work on that facility. (4) Said he did not know of any.</p>
<p>Lozano Indoor Environmental</p>	<p>(1) Not one mercury thermostat and he started working with them in 2002; once in a while he'll come across a mercury thermostat in other companies (not Garibaldi). (2) For mercury-added thermostats, he'll collect them in box that is kept at his supply house. Doesn't know what the handler does with them for disposal, but he knows they're not supposed to be trashed. Said there weren't any written protocols.</p>	<p>(3) Just him, one man show. He makes around 5 service calls a day, 20 a week. Rarely comes across mercury-added thermostats. He mentioned that they were more common around 8 years ago, but since then PG&E had a program that if you returned a mercury thermostat they would give you another thermostat for free. Recommended getting in touch with them to see what programs they ran for mercury thermostat retrieval. (4) Said no factors that make it easier or more difficult in terms of what he is doing. He just takes them off the wall, keeps it in the toolbox in his car, and then puts it in the collection box at his supply house.</p>
<p>Pacific Court Apartments</p>	<p>(1) As needed. The building has been around since the 90's and it has all been upgraded to digital thermostats (wasn't sure when though). (2) Not often; they do not have any mercury-added thermostats or protocol for them. For their thermostats (all digital), when they dispose of them they take them back to Johnson the HVAC company.</p>	<p>(3) The maintenance crew has direct contact with replacing thermostats (they have 15-16 people). This maintenance is done in-house (they do not contract out). The maintenance crew are told what to do [with thermostats, including disposal] by the property. They email or call to contact with them. (4) n/a</p>

Question set 1: (1) how often do you replace thermostats? What prompts you to replace them? (2) What is your thermostat removal process? How often do you come across mercury-added thermostats? Any protocols for mercury-added thermostats?

Question set 2: (3) who has direct contact with replacing thermostats? How many people are in this position? What is the typical process of making announcements to them? (4) Factors that make it difficult or easier to properly dispose of mercury-added thermostats? Seasonal considerations?

Table 11. Log of Contacts: Schools (K-12)

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Size
Stockton Unified School District	209-933-7045 ext. 2341	Stockton	Yes	Butch Schmidt,	Environmental Compliance Manager	Large
Merced City School District	209-381-2840	Merced	Yes	Tania Masseroni	Department Secretary	Medium
Berkeley Unified School District	510-644-8764; 510.644.6250	Berkeley	Yes	Steve Collins, Timothy White	Maintenance Manager, Facilities Director	Medium
Morongo Unified School District	760-367-9191	Twentynine Palms	Yes	Delbert Kent	Safety Compliance Officer	Small
Huntington Beach Union High School District	714-903-7000	Huntington Beach	Yes	Jeff Hutchings	Maintenance Manager	Medium
Torrance Unified School District	310-972-6500	Torrance	Yes	n/a	n/a	Medium
Santa Ana Unified School District	714-558-5501	Santa Ana	Yes	Tommy Portugal	Maintenance Manager	Large
Santa Barbara Unified School District	805-963-4338	Santa Barbara	Made contact, no interview	---	---	Medium
Alameda Unified School District	510-337-7090	Alameda	Made contact, no interview	---	---	Small
Clovis Unified School District	559-327-9500	Clovis	Made contact, no interview	---	---	Large
Sacramento City Unified School District	916-643-9000	Sacramento	Made contact, no interview	---	---	Large
Chino Valley Unified School District	909-628-1201	Chino	Made contact, no interview	---	---	Large

Garden Grove Unified School District	714-663-6133	Garden Grove	Made contact, no interview	---	---	Large
San Bernardino City Unified School District	909-381-1100	San Bernardino	Made contact, no interview	---	---	Large
Fresno Unified School District	559-457-3000	Fresno	Made contact, no interview	---	---	Large
Orange Unified School District	714-628-4000	Orange	Made contact, no interview	---	---	Medium
Pajaro Valley Unified School District	831-786-2100	Watsonville	Made contact, no interview	---	---	Large
Yuba City Unified School District	530-822-5200	Yuba City	Made contact, no interview	---	---	Medium
Redlands Unified School District	909-307-5300	Redlands	Made contact, no interview	---	---	Large
Laton Joint Unified School District	559-922-4015	Laton	Made contact, no interview	---	---	Small
Warner Unified School District	760-782-3517	Warner Springs	Made contact, no interview	---	---	Small
<i>Lincoln Unified School District</i>	209-953-8585	Stockton	Made contact, no interview	---	---	Large
Santa Monica/Malibu Unified	310-396-2640	Santa Monica	Made contact, no interview	---	---	Large

Table 12. Interview Notes: Schools (K-12)

Organization	Question Set 1*	Question Set 2*
Stockton Unified School District	<p>(1) Veolia hazardous waste company theoretically picks them up once environmental compliance head calls; environmental compliance makes sure they get them</p> <p>(2) 10 years ago replaced all of them</p>	<p>(3) He has not seen 1 in the past 10 years since replaced. they have training for hazardous waste but doesn't include mercury thermostat removal, don't allow mercury thermometers-- outlawed through school district</p> <p>(4) easy to call company</p>
Merced City School District	<p>(1) the HVAC crew replaces them so if have to replace put in pile in maintenance shop and when they are accumulated we give them to the vendor</p> <p>(2) only as needed, 50 were replaced in the beginning of fiscal year</p>	
Berkeley Unified School District	<p>(1) It's a variety of people. if they do a project to replace all in school it's a public works it's an outside heating controls contactor i.e. Johnson or Sizico (Allerton) replace the whole system and they dispose, they actually do everything. If just one-- several HVAC technicians that respond to work orders to try and troubleshoot if not they replace it</p> <p>(2) not so sure we have many with mercury</p>	<p>(3) Would be surprised if there were any left with mercury; replace all thermostats-- al heating controls replacements 8 schools in past 10 years (every single one replaced) a couple times a year for a regular work order thermostat (5 total all schools). Oldest portables are 15-20 years old, been through a lot of modernization because "we have more money than average district".</p> <p>(4) we do HAZMAT training every year by OSHA" take the thermostats to plant operations and then shoreline picks them up</p> <p>(5) expensive-- have to pay a special licensing district has to pay for them</p> <p>(7) hire a hazmat consulting firm, not sure if they ever mention mercury in thermostats but mostly in fluorescent lightbulbs, unclear if they mention thermostats and training</p>
Morongo Unified School District	<p>(1) district staff did the replacing</p> <p>(2) For regular thermostats replace them as needed.</p>	<p>(3) got rid of all of them 3-4 years ago through energy company that gave them money for it for each thermostats they "had a mercury spill that came from a student" where a student brought mercury from home</p>

and spilled it in class so district decided to remove all of them from the schools

Huntington Beach Union High School District	(1) Abatement company environmental company came in to physically took them off the walls "logged and did a manifest for everything" They do this for any chemicals as well. (3) went through 400 million dollar mod that ended 4 years ago and re-did every school and went to central control system via computer so do not control through the computer, they were all removed and taken off site during modernization. we abated all lead, asbestos, and mercury" starting 12 years ago, physically started 10ya, last school 5 years	(7) He did not know the process before except ambient environment took them.
Torrance Unified School District	(1) We actually use an outdoor vendor that takes care of all of that, so other than that I do not have that much information. They are called Encorp and I believe they are located in Orange County. Don't know much beyond that	
Santa Ana Unified School District	(1) I am actually the person that has direct contact along with another one of our secretaries, but we mainly just receive the work orders if we need to dispose of something. (2) is a very rare case if something with mercury is needed of disposing	(4) We have a company called MDS Mercury Disposal that takes care of most of it but it mainly disposes of mercury lightbulbs

Question Set 1: (1) Who has direct contact with replacing thermostats in your facilities? (2)How often does your district replace thermostats?

Question Set 2: (3) How often does your (district) come across mercury-added thermostats? Either installed or in need of disposal? (4)Once a mercury thermostat is removed, what is the district's typical process for disposing of it? (5)What are the factors that make it difficult to properly dispose of mercury-added thermostats? (6) Do you have any written protocols in place for the disposal of mercury-added thermostats?

Table 13. Log of Contacts: Building Departments

Organization	Phone Number	City	Obtained Interview	Interviewee Name	Interviewee Title	Population Size of City
City of Stockton	209-937-8444	Stockton	Yes	Ziggy	Plan check engineer	298,000
City of Redding	530-225-4013	Redding	Yes	Jim Wright	Building official	89,000
City of Pasadena	626-744-7311	Pasadena	Yes		Environmental programs manager	140,881
Amador County	209-223-6422	Amador County	Yes	Mark Williams	Plan Reviewer	36,742
El Dorado County	530-621-5355	El Dorado County	Yes	Mark Williams	Plan Reviewer	183,087
California Building Officials (CALBO)	916-457-1103	Sacramento	Yes	Lauren Herman	Director of training and communications	N/A
CalRecycle	916-322-4027	Chino	Yes	multiple	Senior integrated waste management specialist	N/A
CA Building Standards Commission	916-263-0916	Sacramento	Yes	multiple	Architectural associate and Education coordinator	N/A
City of Folsom	209-559-1686	Folsom	Made contact, no interview	---	---	75,361
County of Riverside	951-955-1000	County of Riverside	Made contact, no interview	---	---	364,413 (unincorporated areas)
Los Angeles County	213-974-1311	Los Angeles County	Made contact, no interview	---	---	1,095,592 (unincorporated areas)
City of LA	213-482-6556	Los Angeles	Made contact, no interview	---	---	3.8 million
City of San Bernardino	909-384-5057	San Bernardino	Made contact,	---	---	209K

no
interview

City of Fresno	559-621-8082	Fresno	---	---	509K
City of San Jose	408-975-2533	San Jose	---	---	1 million
City of Irvine	949-724-6000	Irvine	---	---	250K

Table 14. Interview Notes: Building Department

Organization	Question Set 1*	Question Set 2*
City of Stockton	<p>(1) GENERAL CONTRACTORS MAINLY. THE GC ARE ALSO GETTING THE DEMO PERMITS, NOT SO MUCH THE DEMO CONTRACTORS.</p> <p>(2) HEY NEED TO PULL A DEMO PERMIT. THE OWNER CAN PULL IT OR THE CONTRACTOR CAN PULL THE PERMIT REPRESENTING THE OWNER. ARE REQUIRED TO COME IN PERSON. BEFORE YOU PULL A DEMO PERMIT YOU NEED TO MAKE SURE THAT THE PLANNING IS OK. SO FIRST THEY GET THEIR PLANS APPROVED AND THEN THEY PULL THE PERMIT.</p> <p>(3) HE'S NOT SURE. FOR TOXIC MATERIALS HE KNOWS THE CONTRACTORS ARE REQUIRED TO FILL OUT SPECIAL FORMS. ONE IS A DEBRIS FORM FROM THE CITY THAT INDICATES HOW THEY HANDLE HAZARDOUS MATERIALS. THE OTHER IS FROM SAN JOAQUIN COUNTY AND IT'S A FORM FOR HAZARDOUS MATERIALS. ZIGGY WILL SEND THEM BOTH TO ME. THEY DON'T PROVIDE A STANDARD SET OF INFORMATIONAL MATERIALS TO CONTRACTORS.</p>	<p>(4) EVERYTHING IS ONE ON ONE.</p>
City of Redding	<p>(1) VERY SMALL PERCENTAGE OF THEIR PERMITS ARE FOR DEMOS OR FOR DEALING WITH DEMO CONTRACTORS.</p>	<p>(5) PLACING A COLLECTION BIN WOULD REQUIRE CITY COUNCIL APPROVAL.</p>
City of Pasadena	<p>(3) UPDATE THE APPLICATION AND THE REPORTING FORM. CAL GREEN AS OF JANUARY 1, 2017 REQUIRES THAT CONSTRUCTION PROJECTS ACCOUNT FOR U-WASTE. THEY HAVE INFO MATERIALS THEY PROVIDE TO THE BUILDING DEPT TO PASS ALONG TO THE CONTRACTORS; GABRIEL SAYS THE BUILDING DEPT HAS AN INFO PACKET THAT THEY HAND OUT AND THE MATERIAL GOES IN THERE BUT HE WASN'T TOO CLEAR ON WHO IS RESPONSIBLE FOR GIVING THE CONTRACTORS THE PACKET OR EXACTLY HOW IT'S PROVIDED TO THEM (HARD</p>	<p>(4) PASADENA RESIDENTS CAN BRING MERCURY T-STATS INTO ANY HARDWARE STORE THANKS TO A PARTNERSHIP WITH MECURY DISPOSAL SERVICES (BASED IN TUSTIN). THEY REACHED OUT TO STORES THAT HAVE ALREADY BEEN COLLECTING BATTERIES AND FLUORESCENTS AND ASKED IF THEY WOULD BE WILLING TO ADD ANOTHER BIN. NO COST FOR THE CITY-- MDS GETS MONEY FROM THE GOVT.</p>

COPY, ELECTRONICALLY) HE DOESNT THINK THEY'VE GOTTEN AROUND TO ACTUALLY UPDATING THE APPLICATION OR THE FORM THE CONTRACTORS NEED TO TURN IN TO AFTER THE PROJECT TO INCLUDE INFO ABOUT U-WASTE.

Amador County	(2) IN EL DORADO AND AMADOR COUNTY THEY HAVE TO PHYSICALLY COME IN TO PULL PERMITS (HE'S NEW TO AMADOR BUT HE USED TO WORK AT EL DORADO) (3) THERE IS ON-DEMAND INFORMATIONAL MATERIALS AVAILABLE FOR CONTRACTORS AT THE PERMIT. THERE ARE RACKS OF FORMS AND GENERAL INFORMATION. NOT PROVIDED WITH ANY TYPE OF INFORMATIONAL.	(4) WITHIN THE LAST YEAR THERE WAS SOME GROUP ACTIVITIES RELATED TO TESTING OF FIRE SPRINKLERS. GROUP DISCUSSIONS ARE PRETTY RARE. (5) HE SEEMED INTRIGUED BY THIS BUT HASN'T SEEN ANY BINS HOSTED IN EITHER EL DORADO OR AMADOR. WOULD NEED TO BE APPROVED BY BOARD OF SUPERVISORS HE THINKS, BUT BUILDING OFFICIAL WOULD KNOW.
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California Building Officials (CALBO)	(misc.) AS FAR AS SHE KNOWS, SHE HASN'T HEARD OF ANY OF THE COMMITTEES WORKING ON MERCURY T-STAT RECYCLING OR UNIVERSAL WASTES FOR THAT MATTER. SHE SAID THEY RUN A LISTSERV THROUGH THE LEAGUE OF CA CITIES AND THAT WOULD BE A GOOD PLACE TO INCLUDE A QUESTION. SHE WILL EMAIL ME THE INFO. ALSO RECOMMENDS GETTING IN TOUCH WITH THE CONTRACTORS STATE LICENSE BOARD. Contractors state license board--they might be a good source of information for us.
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CalRecycle	(misc.) 4.17: SPOKE WITH HOROWITZ AND SAID RUSS CARTER WOULD BE BETTER TO SPEAK TO. 4.18: RUSS CALLED ME. (CAL RECYCLE) I EXPLAINED TO HIM THE LINK BETWEEN THE NEW C&D REQUIREMENTS AND MERCURY T-STATS. HE SAID HE WOULD CHAT WITH SOME PEOPLE AND GET BACK TO ME. I SENT HIM AN EMAIL WITH MY QUESTIONS. 4.18: GREG DICK (CAL RECYCLE) CALLED ME--THEY DON'T HAVE ANY TARGETED OUTREACH PLANNED. THE MAJORITY OF THEIR CONTACT COMES FROM THE RECYCLING COORDINATORS. LOCAL ASSISTANCE DIVISION DOES ANNUAL
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REVIEWS OF THEIR DIVERSION GOALS BUT THERE ARE NO PENALTIES SO IT'S MORE LIKE AN OUTREACH CHECK IN. THEY DO NOT CORRESPOND DIRECTLY WITH BUILDING DEPTS. RECOMMENDS SPEAKING WITH THE CA BUILDING STANDARDS COMMISSION WHO MAY BE DOING WORK TO EDUCATE BUILDING DEPTS ABOUT THE NEW UNIVERSAL WASTE REQUIREMENTS. REALLY NICE GUY, SAID TO GET IN TOUCH ANYTIME WITH ADDITIONAL QUESTIONS.

CA Building Standards Commission

4.18: YARA FARR (CA BUILDING STANDARDS COMMISSION) : THEY DO EDUCATION AND OUTREACH. OUTREACH IS BUILDING DEPTS AS WELL AS THE REST OF THE REGULATED COMMUNITY. NEXT WEEK THEY ARE ATTENDING THE CA GREEN SUMMIT IN SACRAMENTO IT'S A THREE DAY EDUCATIONAL EVENT WHERE THEY WILL BE HOSTING SEVERAL EDUCATION SESSIONS. THERE WILL BE A MENTION OF THE UNIVERSAL WASTE AND THE PURPOSE IS TO GO OVER WHAT'S CHANGED IN THE C&D FROM CAL GREEN. THEY WILL MENTION THAT THIS IS BEEN ADDED BUT WON'T GO INTO A LOT OF DETAIL THAN THIS. THEY PRIMARILY ATTEND EVENTS BASED ON REQUESTS. THEY ALSO PUBLISH CERTAIN GUIDES. THEY ARE PLANNING ON STARTING UP A NEW VIDEO SERIES ON DIFFERENT TOPICS.

4.18: CYNTHIA BIEDERMANN (EDUCATION COORDINATOR FOR CA BUILDING STANDARDS COMMISSION): CAL GREEN IS THE NAME OF THE BUILDING CODE. THEY ARE NOT DRILLING DOWN TO SPECIFIC MATERIALS LIKE. INTERNATIONAL CODE CHAPTER COUNCILS ARE THROUGHOUT THE STATE AND THEY WOULD BE GOOD TO REACH OUT TO. THEY ALSO HAVE A QUARTERLY NEWSLETTER THAT GOES OUT. (<http://www.bsc.ca.gov/pubs/newsltr.aspx>). THEY ARE TRYING TO MOVE MORE TOWARDS DOING WEB-BASED RATHER THAN IN PERSON BECAUSE THEY HAVE A SMALL STAFF. SHE SAID SOMETHING AS SPECIFIC AS MERCURY T-STATS IS NOT SOMETHING THEY WOULD PROBABLY DO A LOT FOR BUT THEY ARE OPEN TO INCLUDING SOMETHING IN THEIR MATERIAL. THEY ALSO DO WEBINARS. SHE SAID TO CALL BACK WITH ANY QUESTIONS

City of Folsom

(misc.) Have you incorporated the CalGreen requirements? YES, HE'S ALREADY UPDATED HIS FORM DECEMBER 2016. WILL SEND ME A COPY. NONE OF THE PROJECTS HAVE BEEN COMPLETED SINCE THE FORM WAS UPDATED SO HE WASN'T ABLE TO GIVE ME A SENSE OF HOW IT WAS GOING. CITY HAS A PROPRIETARY SYSTEM (HTE) WHERE MARK IS ABLE TO CHECK THE STATUS OF A PROJECT AND WHETHER ITS COMPLETED OR NOT. What's your process for working with local building

(misc.) What do you think about hosting a mercury t-stat collection bin at the permit counter? MOST JURISDICTIONS ARE NOT GOING TO WANT TO DO THIS FOR A FEW REASONS (1) WOULD NEED TO TRAIN PERMIT STAFF TO HANDLE UNIVERSAL WASTE. (2) NOTIFY DTSC THAT THEY ARE A UNIVERSAL WASTE HANDLER. (3) PERMIT COUNTERS ARE ALREADY REALLY BUSY, THEY DON'T WANT ONE MORE THING TO DO. (4) CITY DOES HOST A BATTERY AND BOTTLES & CAN RECYCLING BINS BUT THESE ARE REALLY LOW MAINTENANCE AND YOU

dept.? SOME HISTORY---BACK IN 90'S WHEN CALRECYCLE REQUIRED SPACE FOR RECYCLING BINS IN NEW DEVELOPMENTS IS WHEN ENV'T PROGRAMS & BUILDING DEPTS STARTED WORKING TOGETHER AND THIS REALLY TOOK OFF WITH C&D RECYCLING REQUIREMENTS. IT'S FAIR TO SAY THAT IT'S REALLY THE ENV'T PROGRAMS FOLKS THAT ARE PRIVVY TO CALGREEN/CAL RECYCLE REQUIREMENTS AND THAT THE BUILDING DEPTS RELY ON ENV'T PROGRAM PEOPLE TO GET INFO TO THEM. ALL JURISIDCTIONS ARE DIFFERENT BUT IN MOST PLACES ENVT PROGRAMS AND BUILDING DEPTS WORK CLOSELY TOGETHER. MARK RELIES ON BUILDING DEPTS TO GIVE THE APPLICATION FORMS TO THE APPLICANTS AND THEN MARK IS THE ONE WHO REVIEWS THE SUBMITTED APPLICATIONS. WHEN IT COMES TO TRC HE'S AWARE OF THEM BECAUSE HE HOSTS A BIN AT THE HHW CENTER (WHICH HE ALSO OVERSEES) BUT HE SAYS MANY OF HIS HHW COLLEGEUES AREN'T AWARE SO LET ALONE THE BUILDING DEPT FOLKS.

DON'T HAVE THE LIABILITY OF A T-STAT MERCURY CAPSULE BREAKING. HAVING AND KNOWING HOW TO USE A MERCURY T-STAT KIT IS EXPENSIVE. Are contractors the ones coming to the permit counter? NOT REALLY. THAT'S SELDOM. IT'S MAINLY PROPERTY MGRS, SUBDIVISION MGRS, AND FOLKS WHO SPECIALIZE IN OBTAINING THE PERMITS. YOU DON'T HAVE THE SAME PEOPLE WHO REMOVE THE THERMOSTATS FROM THE WALL ALSO APPLYING FOR A PERMIT. What are your thoughts about how to ensure the info about t-stat/u-waste disposal gets seen? YOU CAN PUT UP A POSTER AT PERMIT COUNTERS BUT NOT ALL COUNTERS ALLOW THIS. YOU CAN PROVIDE A BROCHURE BUT THEY USUALLY HAVE SO MANY THAT IT'S EASY FOR THEM TO GET LOST. ONLY SUREFIRE WAY IS TO INCLUDE INFORMATION IN THE APPLICATION ITSELF What do you think about an outreach strategy that puts together some language/guidelines that jurisdictions can use to incorporate new u-waste requirements into their application forms? YES, THIS WOULD BE HELPFUL AS LONG AS YOU UNDERSTAND THAT EACH CITY DOES IT DIFFERENTLY. NO STANDARD C&D FORM OR PROCESS SO NEED TO CREATE SOMETHING THAT WOULD BE FLEXIBLE AND THAT JURISDICTIONS CAN PULL FROM AS THEY SEE FIT.

Question Set 1: (1) What type of contractors are most likely to interact with the building department? (2) How do contractors typically interact with the department? (Phone, website, in person, snail mail, email)? (3) Is the process for properly disposing of mercury-added thermostats mentioned in any of the materials you have available to contractors?

Question Set 2: (4) Do you ever send out announcements to all of the contractors you've worked with, or are all of your interactions on a one-to-one basis? If no, why not? (5) Do you think it would be useful to host a mercury thermostat collection bin at the City? Why or why not?