MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490
E-mail: mag@azmag.gov ▲ Web site: www.azmag.gov

July 17, 2012

TO: Members of the MAG Solid Waste Advisory Committee

FROM: Christine Smith, Phoenix, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Tuesday, July 24, 2012 - 10:00 a.m.
MAG Office, Suite 200 - Saguaro Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Solid Waste Advisory Committee has been scheduled for the time and place noted above. Members of the Solid Waste Advisory Committee may attend the meeting either in person, by videoconference or by telephone conference call. Those attending by videoconference must notify the MAG site three business days prior to the meeting. If you have any questions regarding the meeting, please contact Chair Smith or Julie Hoffman at 602-254-6300.

Please park in the garage underneath the building, bring your ticket, and parking will be validated. For those using transit, Valley Metro/Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the MAG Solid Waste Advisory Committee does not meet the quorum requirement, members who arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged. If you are unable to attend the meeting, please make arrangements for a proxy from your entity to represent you.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Jason Stephens at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

TENTATIVE AGENDA

	COMMITTEE ACTION REQUESTED
1. Call to Order	
2. Call to the Audience An opportunity will be provided to members of the public to address the Solid Waste Advisory Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Solid Waste Advisory Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.	2. For information.
3. Approval of the April 19, 2012 Meeting Minutes	3. Review and approve the April 19, 2012 meeting minutes.
4. Southern California Conversion Technology Demonstration Project The Southern California Conversion Technology Demonstration Project is designed to promote the development of fully operational conversion technology facilities. As part of the project, the Los Angeles County Board of Supervisors approved three Memoranda of Understanding in April 2010 for three conversion technology projects to demonstrate how municipal solid waste can be converted into renewable energy, biofuels, and other beneficial products. Additional information on the Southern California Conversion Technology Demonstration Project is located at http://www.socalconversion.org/. A representative from the County of Los Angeles	4. For information and discussion.

will provide an overview of the project. Please refer to the enclosed material.

5. City of Glendale Landfill-Gas-to-Energy Facility

In January 2010, the landfill-gas-to-energy facility at the City of Glendale Landfill began operation. The renewable energy project is a public-private partnership that is generating power for approximately 750 homes in the West Valley by turning decomposed trash into electricity. An overview of the facility will be provided by the City of Glendale.

5. For information and discussion.

6. Solid Waste Best Practices Questionnaire

At the October 12, 2011 MAG Management Committee meeting, interest was expressed in reconvening the MAG Solid Waste Advisory Committee to share ideas on best practices within each jurisdiction. In March 2012 a survey was distributed to the Committee to assist with future discussions including best practices occurring in the region. At the April 19, 2012 MAG Solid Waste Advisory Committee meeting, some best practices were highlighted. In order to prepare a comprehensive list of solid waste best practices being implemented in the region, a draft questionnaire has been developed. Please refer to the enclosed material.

6. For information, discussion, and approval of the Solid Waste Best Practices Questionnaire for distribution.

7. MAG Regional Solid Waste Management Plan

As part of the Solid Waste Advisory Committee Survey conducted in March 2012, Committee members identified aspects of the 2005 MAG Regional Solid Waste Management Plan that would be most beneficial to review and update. In general, these areas included solid waste statistics on the regional waste stream, solid waste management facilities. and programs being implemented by municipalities. The potential for updating this information will be discussed. Please refer to the enclosed material.

7. For information, discussion, and possible action.

8.	Call for Future Agenda Items The Chair will invite the Committee members to suggest future agenda items.	8. For information and discussion.
9.	Comments from the Committee An opportunity will be provided for Solid Waste Advisory Committee members to present a brief summary of current events. The Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.	9. For information.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
SOLID WASTE ADVISORY COMMITTEE MEETING

Thursday, April 19, 2012
MAG Office Building
Phoenix, Arizona

MEMBERS ATTENDING

Christine Smith, Phoenix, Chair
Louis Andersen, Gilbert, Vice Chair
Cindy Blackmore, Avondale
Elizabeth Biggins-Ramer, Buckeye
Shereen Sepulveda, Chandler
* Robert Senita, El Mirage
Frank Lomeli, Glendale
Willy Elizondo, Goodyear
* Chuck Ransom, Litchfield Park
Will Black, Mesa
* William Mead, Paradise Valley
# Rhonda Humbles, Peoria
# Ramona Simpson, Queen Creek
Richard Allen, Salt River
Pima-Maricopa Indian Community
Manuel Castillo, Scottsdale
* James Swanson, Surprise
* Mary Helen Giustizia, Tempe
* Rick Austin, Wickenburg
* Rebecca Hudson, Arizona Chamber of Commerce and Industry
Veronica Garcia, Arizona Department of Environmental Quality
* Jennifer Gale, Keep Arizona Beautiful
Tim Phillips, Maricopa County
Dan Casiraro, Salt River Project
Alfred Gallegos, Valley Forward

*Those members neither present nor represented by proxy.
#Attended by telephone conference call.

OTHERS PRESENT

Julie Hoffman, Maricopa Association of Governments
Kara Johnson, Maricopa Association of Governments
Sam Brown, Scottsdale
Mariano Reyes, Mesa
Dave Hauser, Republic Services
Maher Hazine, Peoria
Patrick Murphy, Mesa
Lonnie Frost, Gilbert
Brian Kehoe, Maricopa County
Jack Minkalis, Gilbert
Terry Gellenbeck, Phoenix
Robert Amaya, Phoenix

1. Call to Order

A meeting of the MAG Solid Waste Advisory Committee (SWAC) was conducted on Thursday, April 19, 2012. Christine Smith, City of Phoenix, Chair, called the meeting to order at approximately 10:00 a.m. Shereen Sepulveda, City of Chandler; Ramona Simpson, Town of Queen Creek; and Rhonda Humbles, City of Peoria, attended the meeting via telephone conference call.

2. Call to the Audience

Chair Smith provided an opportunity for members of the public to address the Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG or items on the agenda for discussion, but not for action. She noted that according to the MAG public comment process, members of the audience who wish to speak are requested to fill out comment cards, which are available on the tables adjacent to the doorways inside the meeting room. Citizens are asked not to exceed a three minute time period for their comments. Chair Smith noted that no public comment cards had been received.

3. Approval of the February 16, 2012 Meeting Minutes

The Committee reviewed the minutes from the February 16, 2012 meeting. Elizabeth Biggins-Ramer, Town of Buckeye, moved and Richard Allen, Salt River Pima-Maricopa Indian Community, seconded, and the motion to approve the February 16, 2012 meeting minutes carried.

4. MAG Solid Waste Advisory Committee Survey Results

Julie Hoffman, Maricopa Association of Governments, provided an overview of the MAG Solid Waste Advisory Committee Survey results. She noted that a copy of the results were provided in the agenda packet. The survey was distributed March 8, 2012 to the MAG Solid Waste Advisory Committee to assist in stimulating future discussions and activities. Ms. Hoffman indicated that survey results will be very useful as the Committee moves forward.

Ms. Hoffman stated that the first question on the survey asked which solid waste issues/areas of interest would benefit most from regional collaborative efforts. She indicated that recycling participation ranked the highest. Ms. Hoffman noted that the presentation under agenda item eight, Valleywide Recycling Partnership, relates to the topic of regional recycling collaboration in the Valley.

Ms. Hoffman indicated that the second highest response to the first survey question was regional synchronization. She noted that regional synchronization was mentioned in relation to solid waste statistics, partnering on request for proposals (RFPs) and request for bids (RFBs) as well as recycling regional synchronization, in particular the different acceptable recycling items by municipality. Ranked third on the list of solid waste issues/areas of interest for regional collaborative efforts was employing new technologies followed by legislation, education and community outreach, household hazardous waste, solid waste statistics, environmental regulations, and job creation.

Ms. Hoffman stated that the second survey question asked about best practices that jurisdictions would like to share with the Committee. She indicated that responses were provided by Buckeye, Gilbert, Glendale, Mesa, Phoenix, Queen Creek and the Arizona Department of Environmental Quality. Ms. Hoffman commented that a couple of the best practices Committee members listed as wiling to share also appeared under question number three which asked about best practices Committee members would you like to learn more about.

Ms. Hoffman stated that the survey also asked about areas of the MAG Regional Solid Waste Management Plan that would be beneficial to update. She stated that the MAG Regional Solid

Waste Management Plan was last updated in 2005 and some Committee members have expressed interest in updating the statistics, facilities, jurisdiction information, and goals in the plan.

Ms. Hoffman stated that the final question on the survey asked about "hot topics" the Committee may be interested in discussing. The responses included: waste-to-energy and conversion technologies; funding mechanisms for recycling; recycling options and requirements; and zero waste.

Ms. Hoffman indicated that information from the MAG Solid Waste Advisory Committee Survey will be used to create a list of best practices. She noted that the MAG Management Committee had expressed interest in a list of solid waste best practices for the region. Chair Smith added that the focus of the list of best practices is on programs that can be grown into regional programs versus those that are tailored to specific community needs. She urged the Committee to keep a regional perspective with regard to best practice ideas.

Chair Smith stated that the agenda for this meeting was developed with the survey results in mind. She stated that there were some themes in the survey results, for instance household hazardous waste and green waste. Chair Smith mentioned that there are also topics in the survey results that lead to regional discussions, such as producer responsibility and conversion technology. She commented that the Committee has not talked in depth yet about those topics in particular. Chair Smith mentioned that the topic of conversion technology is a challenging one for this particular region due to the nonattainment area and regional markets. She stated that she is looking forward to more discussions with the Committee. Chair Smith asked if anyone had any comments on the MAG Solid Waste Advisory Committee Survey results.

Louis Andersen, Town of Gilbert, thanked the Committee for their responses to the survey. He commented that the survey is important on determining future direction for the Committee. Mr. Andersen stated that the best practices information provided is valuable.

5. Arizona Department of Environmental Quality Solid Waste Program

Veronica Garcia, Arizona Department of Environmental Quality, provided an overview of the Arizona Department of Environmental Quality Solid Waste Program, proposed rulemaking, and the Recycling Fund. She noted that her presentation slides have an emphasis on the new and revised fees for fiscal year (FY) 2013 because ADEQ is currently in the rulemaking process.

Ms. Garcia presented that one of the functions of the ADEQ Solid Waste Program is permitting facilities such as: solid waste landfills, biohazardous waste/medical waste treatment facilities, and special waste storage facilities. Ms. Garcia commented that there are no special waste storage facilities in the state currently; however, the state used to have such facilities. Another function of the ADEQ Solid Waste Program is to issue licenses and permits to other solid waste facilities and transporters. Ms. Garcia noted that septage waste haulers and biohazardous medical waste transporters would fall into this category.

Ms. Garcia stated that the ADEQ Solid Waste Program also conducts periodic inspection of facilities for compliance. She noted that there are a lot of complaint investigations. She indicated that the program also maintains compliance data for regulated entities; provides compliance assistance; and pursues enforcement actions for significant noncompliance.

Ms. Garcia stated that ADEQ also advocates solid waste reduction, reuse, and recycling despite the Recycling Fund sweeps for the past three years. She mentioned that the Recycling Program has been reduced due to the sweeps and ADEQ does not have spending authority for the funds. She

stated that fees are collected; however, they revert back to the General Fund. Ms. Garcia added that despite the diminished activity of the Recycling Program, the ADEQ Communications Officer feels strongly about e-waste recycling and has worked, outside of his normal duties, with communities on e-waste recycling events. She commented that the ADEQ Solid Waste Program staff is grateful for his assistance. Ms. Garcia stated that ADEQ Community Liaisons also work with communities on solid waste clean-up events as well as other solid waste issues such as illegal dumping.

Ms. Garcia stated that the ADEQ Solid Waste Program regulates over 460 facilities and over 1,600 activities. She stated that as part of the program ADEQ conducts approximately 260 inspections and investigates approximately 120 complaints annually. Ms. Garcia noted that ADEQ has seven inspector positions; however, only three positions are currently filled. She mentioned that based on feedback received during the new fee process, the Department has no plan to "grow the program" for the foreseeable future. Therefore, ADEQ plans to hire up to the seven inspector positions but no more. She also mentioned the two plan reviewer positions in the program that write the permits, which are called facility plan approvals.

Ms. Garcia discussed delegation agreements. She stated that ADEQ has delegation agreements with all of the Arizona counties with the exception of Navajo County. With these agreements, the counties determine which functions they will support. She noted that the only ADEQ determined function is landfill permitting; ADEQ is unable to delegate this duty. Ms. Garcia mentioned that functions such as illegal dumping complaints can be included in a county delegation agreement. She added that the county delegation agreements are all very different. Ms. Garcia noted that some delegation duties that the counties takes on give them the ability to charge fees.

Chair Smith asked if the number of inspections and complaints reported are the numbers serviced by ADEQ staff. Ms. Garcia responded yes. Chair Smith inquired about the number of inspections and complaints delegated to other agencies. Ms. Garcia replied that she did not have that number with her, but can report back. Chair Smith asked if there are categories or trends with regard to the complaints received. Ms. Garcia replied that ADEQ receives a lot of used oil complaints. She commented that a challenge in the Solid Waste Program is that there is no de minimis amount for used oil spills. Ms. Garcia indicated that when a used oil dumping complaint is reported, ADEQ investigates that complaint. She noted that ADEQ has a performance measure that is reported to the Legislature that requires the investigation of complaints within five days of receipt. Ms. Garcia stated that ADEQ places an emphasis on complaint investigation because some of the biggest enforcement cases have come from complaint investigations. She added that she will follow up on the number of complaints that have been delegated to the counties and the nature of the complaints.

Ms. Garcia indicated that historically the Solid Waste Program has been funded largely by the General Fund and limited fees from regulated facilities. The fees that have funded the program include landfill registration fees and the special waste management fees. Ms. Garcia commented that the Solid Waste Program is no longer receiving General Fund monies. She discussed that ADEQ was given the authority to establish emergency fees. Ms. Garcia stated that in FY 2009, ADEQ was given authorization for a one-year increase for three solid waste fees. In FY 2010, other funds helped subsidize the program on a temporary basis. Ms. Garcia noted that in FY 2011 and FY 2012, ADEQ was given the authority to increase fees on a temporary basis to allow time for ADEQ to go through the rulemaking process to set permanent fees.

Ms. Garcia stated that House Bill 2705 gave ADEQ the authority to establish new and revised fees for the Solid Waste Program, beginning in FY 2013, in an effort to make the program self-sufficient. She mentioned that it also gave the program the authority to use monies in the Recycling Fund to support other Solid Waste Program activities for services where they can not assess fees. For

example, the Recycling Fund monies could be used for complaint investigations or the used oil management program. Ms. Garcia discussed that following extensive stakeholder involvement, fee rules were drafted and formally proposed in September 2011. Final fee rules will be considered by the Governor's Regulatory Review Council (GRRC) on May 1, 2012. The fee rules are expected to be effective July 1, 2012 (FY 2013). Ms. Garcia commented that there have been some billing issues due to the changes.

Ms. Garcia provided an overview of the proposed fee that will be assessed. She commented that the new waste tire collection site registration fee is a new fee and does not apply to facilities that began operation prior to July 20, 2011. Ms. Garcia mentioned that this matter was negotiated during the stakeholder process. The proposed waste tire collection site registration fee consists of an initial $500 registration fee and an annual registration fee of $75, which neither would apply to existing waste tire collection sites operating before July 20, 2011.

Ms. Garcia discussed the used tire storage site registration fee. She commented that there is some conflict in statute on the definition between a waste tire and a used tire. Registration has normally focused on waste tire collection sites and not used tire facilities. Ms. Garcia mentioned that this may be changing.

Ms. Garcia presented on the proposed septage hauler vehicle license fee. She stated that previously ADEQ had been licensing septage haulers at no charge. However, vehicles licensed after June 30, 2012 would now pay an initial registration fee of $250, and annual renewal fee of $75. Vehicles licensed before July 1, 2012 pay an initial registration fee of $75 and annual renewal fee of $75. Ms. Garcia noted that the septage haulers were some of the most vocal stakeholders given that they are being charged fees by some of the counties already for licensing. She discussed that negotiations between ADEQ and the septage haulers occurred and that ADEQ is required to license the vehicle.

Ms. Garcia discussed the solid waste general permit fees. She stated that the use of general permit is new to the Solid Waste Program. Ms. Garcia indicated that fees are being established although no general permits have been developed or are in use. She noted that general permit fees are based on categories of solid waste. Ms. Garcia provided the fee amount for each category.

Ms. Garcia mentioned the solid waste landfill registration fee. The fee for municipal solid waste landfills is paid annually and based on annual tonnage of waste received at the landfill. She noted that the proposed landfill registration fees are less than the current fees. Ms. Garcia stated that the gained authority to charge fees and the additional new fees have lead to a lowering of the landfill registration fee.

Ms. Garcia discussed the new biohazardous medical waste transporter license fee. She stated that previously there was no charge for biohazardous medical waste transporters licensed by ADEQ; however, new fees include an initial licensing year fee and an annual fee. She noted that there is a maximum licensing year fee cap. Ms. Garcia indicated that stakeholders commented that it is important to have caps on some of the proposed larger fees, such as this one.

Ms. Garcia mentioned the solid waste plan review fee. She stated that this fee of $122 per hour is comparable to what other departments within ADEQ are charging for hourly permit fees. Ms. Garcia stated that self-certification fees have been in place; however, they not been assessed. The fee rule proposes to have them assessed. Ms. Garcia discussed the special waste management fee and that the proposed fees are lower than current fees.

Ms. Garcia stated that the ADEQ Solid Waste Program staff was asked to look for alternative sources of funding. She indicated that the goal of the program fee rules is to make ADEQ's Solid

Waste Regulatory Program self sufficient through a fee-based program that is not reliant on General Funds. Ms. Garcia noted that the annual budget necessary to operate ADEQ's Solid Waste Program is approximately $2.3 million. However, she stated that the fees to be implemented in July 2012 are not sufficient to sustain the program. The estimated revenue from the new and revised fees is approximately $1.1 million. The fees were calculated assuming a significant contribution from the Recycling Fund of about $1.2 million. Ms. Garcia noted that the Recycling Fund currently receives between $2.1 to $2.3 million. She noted that the Recycling Fund has not been available to the Solid Waste Program for the last three years since they have not had the spending authority. She indicated that ADEQ has been working with stakeholders in an effort to avoid another sweep of the Recycling Fund. Ms. Garcia commented that if the Recycling Fund is swept again, the potential for another fee increase may be sought. She stated that, if the Recycling Fund is not reverted back to the General Fund, ADEQ is looking for input on the future of the Recycling Program and how it will move forward.

Will Black, City of Mesa, inquired which stakeholders ADEQ is working with to avoid another sweep. Ms. Garcia replied that ADEQ is working with the Chamber of Commerce and a solid waste association. She also mentioned that Allied Waste and Waste Management were involved. Mr. Black expressed interest in being part of the process and asked if anyone on the Committee was part of that process. Mr. Andersen replied that he was not part of the ADEQ stakeholder process. He commented that cities are contributing 25 cents per ton into the Recycling Fund; however, they have no opportunity for input on what happens to the fund. Ms. Garcia noted that ADEQ is not part of the discussions on the fund either, other than to lobby to try to prevent the fund from being swept. Mr. Black indicated that Mesa contributes $56,000 per year into the Recycling Fund and would be interested in being a stakeholder. Ms. Garcia appreciated the interest and mentioned that the League of Cities and Towns as well as representatives from some municipalities did participate in the stakeholder process.

Chair Smith asked if anyone in the room was part of the stakeholder process. Ms. Biggins-Ramer stated that she involved herself in the process. She commented that there were some jurisdictions participating in the stakeholder process; however, she believes many of the representatives were not from the solid waste divisions. She added that the private industries were more involved. Ms. Biggins-Ramer commented on the fact that the fee of 25 cents per ton is based on material going in to the landfill. She noted that if recycling is done well, the 25 cent revenue stream will go down, thus hurting the Recycling Fund. Ms. Biggins-Ramer also discussed that the money from the Recycling Fund is not benefitting recycling. She stated that the 25 cent per ton charge is really a tax on disposal. Ms. Biggins-Ramer commented on receiving percentages versus budget numbers. She discussed involving those on the Committee in the process.

Ms. Garcia clarified that the discussions for the future of the Recycling Fund have not occurred yet. She indicated that the stakeholder process that she had mentioned was for the fee rulemaking process. Ms. Garcia discussed that ADEQ is seeking input on the future of the Recycling Fund. Mr. Black stated that it had sounded like the stakeholder process for the Recycling Fund had already started. Ms. Garcia replied that it has not started and the Solid Waste Advisory Committee would be a good forum to discuss the Recycling Fund. Chair Smith asked if there is a timeline in which this discussion would be initiated. Ms. Garcia responded soon and suggested discussing at a future meeting. Chair Smith thanked Ms. Garcia for her presentation.

6. City of Mesa Green Waste Barrel Program

Mariano Reyes, City of Mesa, presented the City of Mesa Green Barrel Program. Mr. Reyes stated that he is a Marketing Communication Specialist for the City of Mesa Solid Waste Management Department. He noted that with Earth Day coming up on April 22nd, the Green Barrel Program is a great topic to discuss. Mr. Reyes indicated that Mesa is proud to offer a program that allows residents to recycle green waste.

Mr. Reyes stated that in FY 2010/FY 2011, the City had 37,410 green barrels in service which equates to approximately one third of Mesa residents participating in the program. Through this program more than 19,000 tons of material was collected in FY 2010/2011. Mr. Reyes indicated that because green waste has a reduced processing fee as opposed to the traditional disposal fee, the City saved over $87,000 in landfill costs. He noted that four to six routes run daily and the operation runs six days per week. Mr. Reyes noted that the green barrel receptacle is placed on the curb the same day as the blue barrel.

Mr. Reyes stated that the program began with an initial survey to gauge resident interest in a green waste recycling program. After interest in the program was determined, the pilot program began in July 1996. The pilot program was launched in a small area in the southwest quadrant of the City, in a development that had a lot of mature landscaping and potential for green waste. Mr. Reyes added that in order to minimize initial costs for this pilot program, green lids were purchased and placed on existing black barrels instead of purchasing all new barrels. He noted that 50 ventilated barrels were also purchased to test effectiveness at controlling odors and insects; however, the ventilated barrels did not have an impact that warranted the additional cost. Therefore, the City did not move forward with these barrels after the pilot program. Mr. Reyes added that throughout the program, Mesa worked with Maricopa County Health Department to ensure health compliance.

Mr. Reyes stated that the pilot program was strengthened and expanded when a Waste Reduction Grant of $75,000 was received in December 1996. In September 1997, the program switched to green barrels. Mr. Reyes stated that the program was recommended for citywide expansion in March 1998. The goal for the expansion was to attain citywide implementation by mid 1999. Mr. Reyes indicated that the program was gradually implemented throughout the City, from West to East, to accrue density and maximize route effectiveness.

Mr. Reyes presented the keys to success for establishing the Green Barrel Program. The first key to success was to find a vendor that will accept the green waste material. Mr. Reyes stated that the next key to success was the gradual implementation of the program by geographic zones. He noted that it was important to heavily promote the program to residents in order to gain participation, but also to educate residents on what green waste is accepted. Mr. Reyes commented that their program currently accepts grass, yard clippings, and small tree branches. He stated that grant funding was another component that led to the success of the program. Mr. Reyes stated that the financial incentive to residents also aided in the success of their program. He indicated that the green barrel is half the cost of an additional black barrel. Mr. Reyes introduced Rich Allen, Salt River Pima-Maricopa Indian Community, to provide an overview of what happens to the green waste material.

Mr. Allen stated that when the City of Mesa approached Salt River Pima-Maricopa Indian Community about the Green Barrel Program they looked into processing the green waste themselves. He mentioned that initially the Salt River Landfill processed the green waste, but currently do not due to the high cost. Mr. Allen added that it was also difficult to market the processed material. He noted that an outside contractor, Western Organics, was hired to process the

green waste. Mr. Allen mentioned that Western Organics also contracts with the City of Phoenix for their Green Waste Program. He stated that the Western Organics facility is able to economically accommodate large amounts of green waste and has established markets for the processed material.

Mr. Allen discussed that the main reason for their involvement with the program is to keep the green waste out of the landfill and to extend the life of the facility. He stated that green waste programs do not result in big financial gain since there is a processing fee on the green waste and they do not receive the benefit of marketing the material.

Mr. Allen indicated that it is projected that the Green Barrel Program is saving approximately one year's worth of air space for every ten years. The Salt River Landfill receives about 40,000 to 50,000 tons of green waste per year from the City of Mesa as well as the Town of Gilbert and City of Scottsdale through their bulk pick up days. Mr. Allen noted that a little over half of the green waste is collected from landscaping companies or self haulers.

Mr. Allen provided an overview of the processing operations. He commented that the material is processed by Western Organics, a subsidiary of Gro-Well. Mr. Allen stated that the green waste is dried and then ground. Water is then added to the ground material. This material is then screened and shipped to another facility that finishes the processing for the marketable material. Mr. Allen stated that the final product is bagged and sold in Lowe's stores. He indicated that another market being explored is the opportunity to use the green waste processed material as a source for biomass fuel. Mr. Allen specified that biomass fuel requires the larger processed green waste material. Once the ground green waste is screened the fine material goes for compost and the larger material would potentially be used for biomass.

Mr. Allen stated that Waste Management is looking to start their own green waste program at the inactive Sierra Estrella Landfill. He stated that they may market their processed green waste material to the Frito-Lay facility in Casa Grande, which is interested in biomass fuel.

Mr. Allen discussed some challenges facing green waste. He indicated that contamination can pose problems for green waste programs. Mr. Allen noted that it is important to educate residents on a green barrel program and bulk green waste pickups in order to maximize the acceptable green waste materials. He added that sorting the green waste can get very costly.

Chair Smith inquired about the percentage of Mesa residents that participate in the Green Barrel Program. Mr. Reyes responded that about one third of residents participate in the program. He added that some residents have more than one barrel. Chair Smith asked Mr. Allen if there is an incentive for landscaping companies that drop off green waste to separate the materials. Mr. Allen replied that the landscaping companies can market that their green waste is not going to the landfill, but they do not receive discounts. He stated that discounts are given to jurisdictions that have agreements with the Salt River Landfill. Chair Smith inquired if palm frawns and oleanders are accepted. Mr. Allen replied that these materials are not accepted. He stated that the Salt River Landfill has an agreement with Western Organics that a certain percentage of ground material (mulch) is available at Salt River Landfill at no extra cost to residents.

Frank Lomeli, City of Glendale, inquired about the contamination rate. Mr. Allen indicated that the contamination rate depends on collection methods. For example, the City of Scottsdale use to collect their material all in one truck, which resulted in a high contamination rate. He noted that the City then had the waste sorted. Mr. Allen stated that if a green waste drop off was more than 40 percent contaminated it would go to the landfill. He added that Scottsdale has since changed its method of collection. Manuel Castillo, City of Scottsdale, stated that was correct; the green waste

could not be deposited if the contamination rate was beyond a certain threshold. Mr. Castillo indicated that Scottsdale has changed their collection methods in order to attain less contaminated loads. Mr. Andersen noted that Gilbert found it more expensive to segregate green waste versus collecting bulk green waste. He indicated that Gilbert does not segregate noncommercial bulk waste; it goes to the landfill. Mr. Allen mentioned that Mesa's contamination rate is lower due to their Green Barrel Program. He noted that the Salt River Landfill will direct landscapers and self haulers to the landfill if the green waste is too contaminated.

Cindy Blackmore, City of Avondale, inquired if the Salt River Landfill has issues with capacity. Mr. Allen responded that not chipping fast enough would be more of an issue. He discussed that the recent recession may have affected green waste production; however, new markets such as biomass may change things.

Mr. Andersen inquired about the set-out rate for the City of Mesa Green Barrel Program. Mr. Black stated that the set-out rate is about 30 percent of the one third. Mr. Andersen asked Mr. Allen if he had any information on the Frito-Lay biomass facility in Casa Grande. Mr. Allen responded that he did not have much information other than he had heard that Waste Management is going to be supplying the facility with the materials. He noted that he is not familiar with a time frame.

Chair Smith inquired if any municipalities take back the processed green waste materials for use in public areas. Mr. Reyes replied that the City of Mesa does not currently use the green waste processed material. Mr. Andersen noted that Gilbert has donated green waste, in particular Christmas trees, to their Wastewater Department.

7. Town of Gilbert Household Hazardous Waste Collection Program

Jack Minkalis, Town of Gilbert, provided an overview of the Town of Gilbert Household Hazardous Waste (HHW) Program. He stated that he is the Manager of the Household Hazardous Waste Facility. Mr. Minkalis indicated that the facility is located at the Public Works South Area Service Center and was opened in July 2007 with an approximate cost of $800,000. He stated that it is a 4,000 square foot standalone facility with an annual budget of approximately $350,000. Mr. Minkalis noted that only Town of Gilbert residents may use the facility since it is funded by charges included on the solid waste bill for Town residents.

Mr. Minkalis discussed the hours of the facility and stated that there are currently two full time HHW employees. He noted that approval has been received to add another full time HHW employee in FY 2013. Mr. Minkalis indicated that the HHW Collection Facility has served over 20,000 residents since their first day of operation on July 6, 2007. Since opening the facility has diverted over 1.5 million pounds of waste from the landfill.

Mr. Minkalis presented the pounds per month of HHW that the facility collects, which has slowed in the last few years to approximately a three to five percent annual increase. He discussed the cars served per month. Mr. Minkalis indicated that the cars served has slowed down recently; however, there is still a 10 to 15 percent increase in residents utilizing the facility.

Mr. Minkalis discussed acceptable items at the facility. Some acceptable items include: latex and oil based paints; rimless automobile tires; automotive fluids; pesticides; automobile and household batteries; pool chemicals; household cleaners; fluorescent and compact fluorescent lights (CFL); propane tanks; smoke detectors; fire extinguishers; electronic waste; and many more. Mr. Minkalis noted items that the Town of Gilbert's HHW Collection Facility does not accept. Some non-acceptable items include: business or commercial wastes (for now); tires with rims; ammunition;

fireworks; radioactive materials; 55 gallon drums of materials; large appliances; and medical waste/sharps.
Mr. Minkalis discussed building and worker safety. He stated that the HHW Program's first priority is worker safety. The facility has a ventilation system that provides constant air flow during operations to prevent accumulation of gases or vapors in the building. He mentioned that the building has no heat or air conditioning. Mr. Minkalis added that the facility has a combustible gas detection system, smoke and heat detectors, and overhead sprinklers. The facility is equipped with an explosion proof storage building for unknown materials and potentially reactive materials.

Mr. Minkalis provided an overview of the collection process and what happens to the materials. Once each vehicle is unloaded of their HHW, after verifying residency, the material is weighed and documented into a database. The materials are then sorted. Mr. Minkalis noted that corrosives and pesticides are bulked together and incinerated. Aerosol cans are punctured, emptied of their contents, and the cans are crushed, which are then recycled. Flammable liquids are sent out and reused in fuel blending. Household cleaners are bulked and sent out for disposal. Collected oil and antifreeze are picked up by a local recovery company and recycled into new oil and antifreeze.

Mr. Minkalis indicated that latex paint is recycled. If the collected paint is in good condition, it is reused as paint or primer. If the paint collected is unusable, it is bulked into 55 gallon drums and sent to Amazon Environmental to be recycled. Mr. Minkalis stated that the Amazon facility uses the paint in waste-to-energy burning. However, the reusable paint collected is mixed using a pneumatic mixer and when a consistent color is achieved, the paint is screened and poured into new buckets. This paint is then free to residents of the Town, but also donated to churches, schools, and non-profit organizations. Mr. Minkalis stated that since the facility opened, the HHW program has redistributed 26,344 gallons of latex paint. He indicated that latex paint comprises about 33 percent of the facility's total volume collected for FY 2011. He added that the metal paint cans are crushed and recycled.

Mr. Minkalis discussed other materials that the facility recycles. Fluorescent light and CFL bulbs are recycled. The bulbs are placed into a machine and pulverized. The mercury is captured by a vacuum filter which is then recycled. Mr. Minkalis stated that lead acid, alkaline, and all rechargeable batteries are recycled as well. He noted that the facility pays to have the alkaline batteries recycled instead of sending them to the landfill. Electronic waste is collected by a local electronics company that processes and recycles electronic equipment. He noted that the electronics company erases any hardrive or personal information from the devices. Mr. Minkalis stated that Maricopa County collects the tires at no charge to the Town which are recycled into rubberized asphalt. Propane tanks are picked up by a local refilling company and are recycled free of charge. Mr. Minkalis stated that any product that the HHW facility takes in that is still usable is placed into a swap shop. The swap shop gives away products that are reusable to the public.

Mr. Minkalis stated that the diversion rate for 2009 was 56 percent, 61 percent in 2010, and 85.5 percent in 2011. He stated that the facility has the goal of a 90 to 95 percent diversion rate for 2012. Mr. Minkalis noted that the diversion rate has increased so rapidly due to the recycling of unusable latex paint, which was not previously recycled.

Maher Hazine, City of Peoria, asked if the Town has any events for HHW drop off or if residents drop off HHW during hours of operation at the facility. Mr. Minkalis responded that residents drop off their waste during hours of operation at the site. Mr. Hazine inquired about the annual budget and monthly rate charged to residents. Mr. Andersen replied that it is approximately 50 cents per

month. He stated that Gilbert has approximately 67,000 residents paying the rate in their utility bill. Mr. Hazine asked about the Town's current residential solid waste rate. Mr. Andersen responded that the residential rate is $17.30 per month for a 96 gallon waste barrel, which includes the HHW facility usage. He stated that the Town is looking at a rate decrease of approximately 7 percent for next year.

Mr. Allen inquired if the Town of Gilbert has investigated working with other jurisdictions on HHW collection. Mr. Minkalis replied that Gilbert has spoken with Queen Creek on partnering. Ms. Biggins-Ramer asked if the full time employees were contracted by Amazon. Mr. Minkalis responded that they are Town of Gilbert employees. Chair Smith inquired if Gilbert evaluated the concept of privately operating the HHW Collection Facility. Mr. Andersen replied that both options of operation were explored. He stated that in the planning phases of the HHW Program, the Town had thought about having two contracted HHW facilities that would take drop offs on an appointment basis. Mr. Andersen noted that prior to the permanent HHW facility, the Town coordinated three HHW collection events per year to collect as much HHW as possible. He stated that the Town found the HHW Program would better serve citizens if run internally. Chair Smith inquired what percentage of residents use the HHW Collection Facility. Mr. Andersen replied that the percentage of residential usage of the facility is low. He stated that Gilbert is currently working on an outreach plan for the Town's recycling efforts which may increase usage of the HHW Collection Facility. Mr. Andersen noted that the facility is servicing approximately 5,000 cars per year and many are return customers.

Chair Smith inquired if any Committee members wanted to add information about HHW programs in their jurisdiction and if there were any other permanent facilities for HHW. Shereen Sepulveda, City of Chandler, stated that Chandler has a HHW program and facility. She noted that Chandler works hand in hand with Gilbert but the Chandler HHW Program differs. Ms. Sepulveda discussed that the Chandler facility does not have full time staff dedicated to HHW operations. The staff is also responsible for operating the recycling solid waste collection center. She added that staff in the field also occasionally work the facility. She indicated that the Chandler HHW facility operates on specific hour/day schedules and by scheduled appointments by Chandler residents. Ms. Sepulveda commented that the Chandler program serves approximately 3,000 residents. She noted that the numbers are comparable to Gilbert. She stated that approximately 65 to 70 percent of the HHW collected is being recycled or reused. The Chandler HHW program annual budget, not including employee salary and benefits, is approximately $65,000 per year due to the measures in place for material diversion. She commented on a paint reuse program. Ms. Sepulveda stated that Chandler looked strongly at what Tempe and Gilbert were doing in terms of their exchange program for residents. She added that Chandler works with clean up projects in the community and also self help programs. Ms. Sepulveda added that Chandler sends a large portion of their latex paint to Amazon Environmental.

Chair Smith inquired if the Committee was interested in discussing potential regional HHW collection events. She added that HHW was mentioned several times in the survey results. Ms. Biggins-Ramer responded that she would be interested in that discussion and also a discussion on potential regional use of the permanent HHW collection facilities in the Valley to serve as a clearinghouse.

Ms. Sepulveda stated that when Chandler investigated opening a permanent HHW collection facility versus holding HHW collection events periodically throughout the year, they found that despite the higher cost of operating a permanent facility, a permanent collection facility collected a higher

volume of HHW. She added that a permanent facility is more convenient for residents which will hopefully curb improper disposal of HHW.

8. Valleywide Recycling Partnership

Terry Gellenbeck, City of Phoenix, presented the history of the Valleywide Recycling Partnership (VRP). He stated that the program started from an Eastside Recycling Coordinators meeting with a desire for a recycling subcommittee that had a collaborative focus. Mr. Gellenbeck indicated that he volunteered to set up the VRP Program which started out with seven communities in 1999. The VRP focused on similarities between regional recycling programs, rather than differences. Mr. Gellenbeck stated that in 2001 Valleywide Recycling Partnership won a MAG Desert Peaks Award for the program's work. He mentioned that grant money assisted in starting VRP. The VRP now has 20 members. Mr. Gellenbeck introduced Robert Amaya, City of Phoenix, to discuss the current efforts of VRP.

Mr. Amaya noted that many communities participating in VRP are represented on the MAG Solid Waste Advisory Committee. He stated that VRP meets twice per year. Representatives from Arizona Food Marketing Alliance (AFMA) were present at the last VRP meeting and the president of AFMA, Tim McCabe, spoke on the issue of plastic bags. Mr. Amaya added that a representative from Strategic Materials Glass was also present at the most recent VRP meeting.

Mr. Amaya discussed that VRP aids members with regard to educational efforts. He indicated that VRP's website contains a link to each participating municipality website to view their educational effort. Mr. Amaya stated that most of the municipalities have their curriculum, usually for kindergarten through high school, available for use. Mr. Amaya stated that the VRP website also has radio and television advertisements available to view, but also for use as educational tools. Mr. Amaya played a short commercial that is available on VRP's website that talks about the benefits of recycling.

Mr. Amaya stated that VRP participates in community events like the Home and Garden Show. He thanked Maricopa County for assisting VRP at those events. VRP also has a community outreach booth at the Phoenix International Raceway for NASCAR events. Mr. Amaya noted that VRP partners with Basha's Grocery Store, in which VRP sets up information tables outside their stores. Mr. Amaya noted the Valleywide Recycling Partnership website, www.recyclevrp.com. Mr. Amaya thanked the VRP participants for their support. He noted that VRP is currently speaking with the Gila River Indian Community as they implement their recycling program.

Ms. Blackmore thanked VRP for their presentation. She stated that she regularly attends the VRP meetings and noted that VRP is a great resource for Recycling Coordinators. She indicated that VRP is a model for regional collaboration and a great group to be a part of.

Chair Smith stated that funding has been a significant challenge for many municipalities with the economy. She indicated that because of the economic times, advertising and outreach efforts have diminished. Despite this challenge, Valleywide Recycling Partnership has provided outreach and advertising tools for communities to utilize.

9. MAG Solid Waste Information Management System Database

Ms. Hoffman discussed the MAG Solid Waste Information Management System (SWIMS) database. She indicated that interest was expressed at a previous meeting about the database and the potential to update it. Ms. Hoffman stated that the SWIMS database was established as part of the 1991 MAG Regional Waste Stream Study. The SWIMS database was then used to produce the 1993 MAG Regional Solid Waste Management Plan. Ms. Hoffman stated that SWIMS was a planning instrument that incorporated socioeconomic, waste generation, waste disposal, and recycling assumptions. She indicated that the database could calculate past trends, current activities, and future projections based on different scenarios. Originally, SWIMS was created using 1989 data and was last updated in 1998 following a solid waste information collection effort and the 1997 ADEQ Annual Waste Reduction and Recycling Survey. She added that national data was also incorporated. In terms of updating the database, Ms. Hoffman noted that SWIMS was based on outdated technology platform that is no longer supported. In order to update the information, a new database would need to be created.

Mr. Andersen indicated that data collection for a potential plan update seems to be a more feasible option than recreating the SWIMS database. He mentioned that jurisdictions appear to be more interested in the data for benchmarking ability and general information which could be adequately supported through information collection rather than recreating a database.

10. Call for Future Agenda Items

Chair Smith asked the Committee for suggestions on future agenda items. She mentioned that the Committee is investigating a potential conference call with Los Angeles County on their recent efforts regarding conversion technologies. Mr. Andersen mentioned that an update on Arizona biomass facilities would be interesting. Mr. Allen stated that he can contact Western Organics regarding this matter. Chair Smith asked if the Committee had any successful public/private partnerships that they would like to share. No responses were noted.

11. Comments from the Committee

Chair Smith asked for any comments from the Committee. Mr. Allen mentioned that the Salt River Pima-Maricopa Indian Community is holding an Earth Day event on April 21, 2012. He stated that the Community will be coordinating numerous clean ups, planting trees, holding an Environmental Fair, and also collecting HHW.

Ms. Sepulveda commented on the suggestion for a future agenda item on biomass facilities. She indicated that Chandler has been contacted by companies involved in gasification systems. Ms. Sepulveda commented on including this during a potential discussion on biomass. She inquired if anyone else could share if they have been contacted by these companies and their experience. Chair Smith commented on including this discussion with a presentation from Los Angeles County on conversion technologies. She noted that City of Phoenix has been approached on the matter of biomass as well.

Chair Smith discussed having an agenda item discussing Glendale's Gas-to-Energy Project. Mr. Lomeli offered to present on the project or to set up a site tour of the facility. With no further comments, Chair Smith thanked the Committee for participating and called for adjournment of the meeting at 11:43 a.m.

THE SOUTHERN CALIFORNIA CONVERSION TECHNOLOGY PROJECT

"Converting waste into renewable resources"

www.SoCalConversion.org

The County of Los Angeles has been a consistent supporter of the development of conversion technologies. Development of in-County, commercial scale conversion technology facilities is a key element in the County's strategy for assuring long-term disposal capacity to meet the needs of over 10 million residents and thousands of businesses county-wide.

What are conversion technologies?

- Conversion technologies are thermal, chemical, mechanical, and/or biological processes capable of converting post-recycled residual solid waste into useful products and chemicals, green fuels like ethanol and biodiesel, and clean, renewable energy.
- More than 130 commercial facilities, processing a wide variety of wastestreams, operate in Europe and Asia as a safe and clean alternative to traditional waste management practices such as landfilling or waste-to-energy. Jurisdictions throughout the United States are considering these technologies because of their demonstrated benefits.
- The benefits of these technologies include 1) diversification of solid waste management options, 2) job creation, 3) biofuel and energy production, and 4) environmental benefits such as reduced GHG emissions from reduced truck traffic and landfill avoidance.

What is the Southern California Conversion Technology Project?

The project, spearheaded by the County of Los Angeles, promotes the development of fully operational conversion technology facilities. The goal of the project is to develop one or more projects within the County to demonstrate the technical, environmental and economic benefits of conversion technologies, and to forge permitting and legislative pathways for future commercial projects.

Conversion Technology Q&A:

Conversion Technologies Manage Waste That Would Otherwise Go To Landfills

Question: Should Conversion technologies be viewed as a solution to California's landfill problems?

Answer: Together with source reduction, recycling, and composting; conversion technologies are a critical component of the solid waste hierarchy and can help local jurisdictions divert materials from landfill disposal.

Question: Why should we change California's existing solid waste management system?

Answer: California's landfills are rapidly approaching capacity which necessitates the exporting of waste to remote locations and increases pressure to expand and build new landfills.

Puente Hills Landfill, California's largest landfill (located in Los Angeles County) closes in 2013[i]. As California's population increases (an additional 10 million by 2020) and disposal capacity in many jurisdictions is reduced, local governments will have to ship their solid waste hundreds of miles to dispose of it or expand capacity at urban landfills. Conversion technologies are an environmentally preferable local solid waste management solution.[ii]

Question: We've made great strides in recycling, shouldn't we continue to rely on the "3 Rs" to reduce our dependence on landfill disposal?

Answer: The California Integrated Waste Management Act requires municipalities to divert 50 percent of solid waste from landfill disposal or "transformation"[iii]. AB 341 (2011, Chesbro) updates this by declaring that it is California's policy goal that not less than 75% of solid waste generated be source reduced, recycled or composted by 2020.

However, after 22 years the state has not been able to significantly reduce the total volume of waste it is putting into landfills[iv]. With California's population continuing to grow, municipalities cannot continue to meet the State's waste diversion mandate, much less achieve "zero waste," relying on just reducing, recycling[v] and composting[vi].

Question: What are some of the specific benefits of conversion technologies versus continuing to dispose residual solid waste in landfills?

Answer: Space requirements are substantially greater for a landfill than a conversion technology facility. Small-scale conversion technology units need no more than one acre of land to operate on compared to hundreds of acres consumed by a typical landfill.

Conversion technologies are a more efficient way of producing domestic renewable energy than landfills, and they produce far fewer greenhouse gases and air pollution[vii].

The State of California requires extensive post-closure maintenance for landfills, including monitoring the site for gas and leachate for up to 30 years after the closure date of the landfill. Conversion technology facilities do not require post-closure maintenance after the facility closes.

Sources and Additional Information

[i] The Puente Hills landfill has been a key component of Los Angeles County's solid waste management infrastructure, providing up to one-third of the waste disposal capacity in the County.

[ii] Wastes now going to Puente Hills Landfill may have to be shipped over 200 miles to alternative landfill sites.

[iii] PRC 41780 (1989).

[iv] In 1989 when California passed its mandate for 50 percent recycling, the state landfilled 40 million tons of waste. In 2008, recycling advocates claimed a 58 percent recycling rate at the same time the state was still landfilling 40 million tons of waste. During the next 25 years, following the status quo, the state's population is expected to grow by 10 million people and place an additional one billion tons of municipal solid waste into landfills. In October 2010, the County of Los Angeles characterized conversion technology facilities as a viable and necessary alternative to landfilling wastes: "The County envisions one or more commercial conversion technology facilities…being developed throughout the County as a means to provide long-term solid waste management capacity, to reduce dependence on landfills, and to stabilize waste disposal rates." Board Motion of April 20, 2010, Item No.44 Conversion Technologies in Los Angeles County Preliminary Siting Assessment." At p 14.

[v] According to the U.S. International Trade Commission, scrap metal and waste paper are among the largest exports of materials by tonnage from the U.S., with the vast majority of this material being shipped to China and other Pacific Rim countries. Rather than creating American jobs and enhancing the environment, these materials are processed under environmentally questionable conditions in other countries, where investigative reports have exposed terrible working conditions for workers processing the recyclables. In addition, it is simply not economically feasible to recycle many waste materials, as a result these materials are sent to landfills or incinerators.

[vi] According to the California Integrated Waste Management Board (now Cal Recycle) composting emits VOCs. VOCs react with NOx and sunlight to create ground-level ozone. Local Air Districts are under pressure to reduce criteria pollutants stemming from composting.

[vii] According to the California Integrated Waste Management Board (now CalRecycle): "The landfill scenarios without gas collection and utilization had the highest net energy consumption. Even the best-case scenario (with gas collection and energy recovery) was significantly higher in energy consumption than the conversion technology scenario." New and Emerging Conversion Technologies, Report to the Legislature (2007) at P 61; also see, Los Angeles County Integrated Waste Management Task Force, "Conversion Technologies: An Opportunity to Enhance our Environment", May 12, 2011: "Conversion technologies are an effective and environmentally preferable alternative to landfilling."

For More Information, please visit
WWW.SoCalConversion.org

PUBLIC WORKS

Conversion Technology Q&A:

Conversion Technologies are not Incinerators

Question: Are conversion technologies another form of incineration, so called "incinerators in disguise"?

Answer: Incineration is literally the burning (combustion) of organic substances contained in waste materials in an oxygen-rich environment where the waste material combusts and produces heat and carbon dioxide, along with a variety of other pollutants including dioxins, furans, NOx and SOx.[i]

Conversion technologies (including gasification, pyrolysis, anaerobic digestion and other processes[ii]), unlike incinerators[iii], do not burn waste. They are **non-combustion** thermal, mechanical, and biological processes that convert post-recycled residuals (materials that would otherwise be sent to landfills) into green fuels like ethanol and biodiesel, clean renewable energy and other marketable products.

Question: Are conversion technologies, capable of effectively controlling the release of air pollutants?

Answer: Modern incinerators, also called transformation or waste to energy facilities when they create electricity, employ the most advanced pollution control devices and have substantially reduced their air emissions compared to just decades ago when they were first developed in large numbers.

However, unlike incineration, conversion technologies provide an intermediate gas clean-up step as part of the process, thereby allowing for a variety of air pollution control technologies that result in even cleaner emissions, in addition to a variety of products such as biofuels and chemicals which cannot be produced by an incinerator.

Additionally, conversion technology designs ensure significant emission reductions below applicable Air District standards.[iv]

Question: What are the benefits of conversion technologies over incineration?

Answer: Advanced thermal conversion technologies have several potential benefits over waste incineration[v], including lower environmental impacts, higher electrical conversion efficiencies, and greater compatibility with recycling[vi].

The volume of output gases as well as ash residual from a gasifier or a pyrolysis reactor is much smaller per ton of feedstock processed than from an incineration process.

Sources and Additional Information

[i] While incineration could successfully burn off any combustible elements, it must do so at extremely high and costly temperatures. Incineration cannot control the release of dioxins, furans, NOx, SOx and other pollutants without considerable expense and difficulty due to the intrinsic inefficient furnace design, inconsistent furnace temperatures, and failure to recirculate gases into the burner's high temperature zone.

[ii] Conversion technologies can be classified into three broad categories: thermochemical, biochemical, and secondary manufacturing (utilization of the mixed solid waste stream as raw materials in the manufacture of new products). Biochemical conversion technologies include anaerobic digestion, aerobic conversion and fermentation.

[iii] In distinguishing between combustion and non-combustion technologies, combustion is the thermal destruction, in an oxygen rich environment, of solid waste for the generation of heat and subsequent energy production; flame temperatures ranging from between 1500F to 3000F.

[iv] Conversion technologies operating in the U.S., Japan and Europe significantly meet or exceed air pollution standards for: PM, HCL, NOx, SOx, Hg and Dioxins/furans (ng/N-M3); see, University of California Davis and University of California Riverside, "Performance and Environmental Impact Evaluation of Alternative Waste Conversion Technologies in California" (2004); also see, Report on Worldwide Emissions Assessment of Thermal Conversion Technologies (2009) pp 8-30; University of California Riverside, "Evaluation of Emissions from Thermal Conversion Technologies Processing Municipal Solid Waste and Biomass" (2009).

[v] The volume of output gases from a gasifier or pyrolysis reactor is much smaller per ton of feedstock processed than an equivalent incineration process. While these output gases may be eventually combusted, the conversion/ process provides an intermediate step where gas cleanup can occur as opposed to mass burn incineration which is limited by application of pollution control equipment to the fully combusted exhaust only; gasification and pyrolysis produce intermediate synthesis gases composed of lower molecular weight species such as natural gas, which are cleaner to combust than raw MSW.

[vi] Center for the Analysis & Dissemination of Demonstrated Energy Technologies (CADDET) and the International Energy Agency (IEA) report (1998); also see, California Integrated Waste Management Board, New and Emerging Technologies Report to the Legislature (2007), p 66.

For More Information, please visit
WWW.SoCalConversion.org

Conversion Technology Q&A:

Conversion Technologies Complement Recycling

Question: Would conversion technologies hurt recycling?

Answer: Most conversion technology facilities are equipped with a highly specialized sorting system that removes recyclables *prior* to the conversion process[i]. Projects currently being developed in California are proposing to only handle post-MRF waste material that would otherwise be disposed in landfills, not separated recyclables.

Question: What type of materials do conversion technologies process? Do they require a constant feed of materials that could otherwise be recycled?

Answer: Conversion technologies have flexibility in the volume of waste they process, and can process a variety of feedstocks including medical waste, tires, biosolids, purpose grown energy crops, forest thinnings, and crop residues. Conversion technologies can manage materials that are not easily recyclable.[ii]

Homogenous feedstocks enhance the efficiencies of conversion technologies, therefore conversion technologies are designed to maximize the removal of materials that are not able to be converted; they should be viewed as complimentary to recycling[iii].

Question: Aren't waste reduction, recycling, and composting enough to divert materials from landfills?

Answer: Recycling alone will not solve California's waste management problems; even with a claimed recycling rate of 58 percent (12 percent of which is green waste placed in landfills for daily cover), California disposes between 35.5 and 43 million tons of post-MRF residuals annually[iv].

The nations that recover the greatest amount of energy from solid wastes are also the nations with the highest recycling rates[v].

Sources and Additional Information

[i] Conversion technologies require "up-front" sorting and/or preprocessing of post MRF residuals which would necessarily extract recyclable materials prior to thermal conversion.

[ii] Not all solid waste currently disposed can be recycled or composted. Contaminated organic materials, higher number plastics, and other materials, which cannot be recycled or processed in an economically feasible way are ideal feedstock for conversion technologies. Inorganic materials including glass, metals, and aggregate can reduce the efficiency of conversion technology operations; they have no value for conversion technologies thereby creating an incentive to separate and recover those materials for recycling prior to the conversion process.

[iii] According to a study prepared by the CIWMB (now CalRecycle) in 2007, certain materials such as glass and metals will reduce the efficiency of conversion technology operations: "There is a projected net positive impact on glass, metal, and plastic recycling…using mixed solid waste as feedstock, preprocessing results in removal of 7 to 8 percent of feedstock for recycling at gasification facilities and 12 to 13 percent of feedstock for recycling at acid hydrolysis facilities. This increase in recycling is related to conversion technology preprocessing operations". California Integrated Waste Management Board, *New and Emerging Conversion Technologies Report to the Legislature* (2007) at pp 74-75.

[iv] It is unrealistic to believe that the post-recycled fraction of municipal solid waste that is being placed in California's landfills can be significantly reduced through source reduction, traditional recycling and composting alone. In 1989, the state was landfilling 40 million tons of municipal waste per year. In 2008, even with a claimed recycling rate of 58 percent, California was landfilling between 35.5 and 43 million tons of MSW. The state's population is expected to grow by nearly 10 million people over the next 25 years adding another 800 million tons of post recycled material to landfills. "There is widespread agreement that the continued land disposal of waste in not a viable option in the state." University of California Riverside, *Evaluation of Emissions from Thermal Conversion Technologies Processing Municipal Solid Waste and Biomass* (2009); also see California Senate Environmental Quality Committee staff evaluation of policy concerns over Assembly Bill 222: "It is a fact that the greatest majority of all materials that are financially feasible for recycling are currently being removed from the waste stream. [Even including commercial and multi-family recycling], [i]t would be functionally and economically impossible to achieve "zero waste" by relying on the existing waste hierarchy in California, and the state would end up landfilling another billion or so tons of post-recycled municipal waste …"

[v] Brandes, Power Point, Chief Energy Recovery Branch, Office of Resource Conservation and Recovery, U.S. EPA (2009) at P 9.

For More Information, please visit
WWW.SoCalConversion.org

Conversion Technology Q&A:

Conversion Technologies Produce Green Energy

Question: Do conversion technologies produce "green" renewable energy?

Answer: Conversion technologies produce fuels[i] and electricity[ii] from a renewable supply of post-recycled materials that would otherwise be landfilled.[iii]

The United States Environmental Protection Agency (USEPA) and the State of California, among many other states that have renewable energy programs, have all classified municipal solid waste as a renewable resource.[iv]

Electrical energy produced by conversion technologies offsets electrical energy produced (from fossil fuels) in the utility sector.

Question: What are some of the benefits of energy production from conversion technologies?

Answer: The United States is in the midst of an energy crisis characterized by dependence on foreign oil[v] and environmental degradation from fossil fuel extraction and emissions[vi].

Renewable energy from conversion technologies is reliable, base load power[vii]. Facilities are also typically developed near large urban areas where the waste stream is located, eliminating the need for new electric transmission lines to be built in remote areas.

Neither California nor the U.S. can reach energy independence just relying on solar, wind, geothermal and small hydro electric sources[viii].

Projections show there would be a large net energy savings from conversion technologies as compared to alternative waste management scenarios. These estimates range from two times lower net energy consumption when compared to the Waste to Energy scenario to 11 times lower than landfilling without energy recovery scenarios.

Materials recovered from conversion technologies preprocessing steps and sent for recycling offset the extraction of virgin resources and production of virgin materials, which reduces energy consumption in addition to other environmental benefits.

Sources and Additional Information

[i] Fuels (and chemicals) are produced from the synthesis gas derived from gasification and pyrolysis of feedstocks: storable gas, liquid and chemicals. The secondary processing of synthesis gas can produce a range of liquid fuels (and chemicals) including methanol, dimethyl ether (DME), Fischer-Tropsch diesel fuel, hydrogen, ethanol, ethylene or substitute natural gas. (see, California Integrated Waste Management Board (now CalRecycle) "New and Emerging Conversion Technologies, Report to the Legislature" (2007) pp39-41. For example, Riceland Foods, Inc. Stuttgart, Arkansas gasifies 600 tons-per-day of rice hulls to produce a substitute natural gas, which in turn, fuels the production of 150,000 pph of steam and 12.8 MW of electricity.

[ii] Thermochemical conversion technology facilities that generate electricity are basically a combination materials recovery facility processing center and electrical generating facility that utilizes solid waste as the primary fuel instead of natural gas, oil, and/or coal to produce energy. The "refinery' produces the fuel, and the "utility' portion generates the electrical energy.

[iii] The majority of materials in the waste stream are biogenic organic materials (renewable materials generated from plant or animal sources), with the remaining materials being inorganic materials that can be recycled through the conversion process, and unrecyclable plastics that have no market value and are either converted to a fuel or pass through the conversion system unchanged. All of these materials are currently sent to landfills where they either take up valuable space or decompose and generate methane and other emissions that may be released to the atmosphere or leach into the groundwater table.

[iv] The issue of whether municipal solid waste counts as a source of renewable energy was settled upon final clarification of the USEPA rules published in the Federal Register (Feb 4,2010, RFS2), the biogenic portion of post-recycled MSW qualify as "renewable biomass" for the purpose of meeting the federal mandate for the production of advanced biofuels. Also see, Executive Order (October 5, 2009): "renewable energy means energy produced by solar, wind, biomass, landfill gas, ocean…geothermal, *municipal solid waste*, or new hydroelectric generation…"

[v] The world is rapidly running out of oil. In 2000 global production was 76 million barrels per day (MBD). By 2020, demand is forecast to reach 112 MBD, an increase of 47%. However, additions to proven reserves have virtually stopped and it is clear that pumping at present rates is unsustainable. Estimates of the date of "peak global production" vary with some experts saying that it has already occurred (New Scientist Magazine placed peak year production in 2004). In any event, with current demands exacerbated by growing fossil fuel economies in China and India oil will become an increasingly unstable source of energy within the next 50 years. See, Council on Foreign Relations National Security Consequences of U.S. Oil Dependency, Report of Independent task Force # 59 (2006).

[vi] According to the USEPA: "Rising average temperatures are already affecting the environment… Changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier ice-break up…shifts in plant and animal ranges and earlier flowering of trees…Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse gases to the atmosphere…Most of the United States is expected to experience an increase in average temperature." USEPA Global Research Program (2008); also see the Intergovernmental Panel on Climate Change (2007).

[vii] Renewable energy generated from solar and from wind technologies are not "firm power" because the power cannot be generated on a 24-hour basis. The generation of energy from the conversion of solid waste is the generation of firm power that can cover the base load needs of communities consistent with a distributed power generation approach.

[viii] According to the Lawrence Livermore National Laboratories, https://flowcharts.llnl.gov, only 3.8% of our energy consumption comes from non-biomass renewable sources, with biomass contributing an additional 4.4%. As energy usage continues to climb it is imperative to increase the use of biomass as a renewable energy source to meet energy demands and reduce dependence on foreign energy. [viii] Supra. Note i, "New and Emerging Conversion Technologies" (2007).

For More Information, please visit
WWW.SoCalConversion.org

Conversion Technology Q&A:

Conversion Technologies Reduce Greenhouse Gases and Air Pollution

Question: Do conversion technologies increase air pollution or greenhouse gas (GHG) emissions?

Answer: Conversion technologies *reduce* GHG emissions in multiple ways[i]: diverting waste from landfills where GHG emissions would be generated; reducing diesel trucking of waste; and displacing fossil fuels used for transportation and energy production.

On a net basis, conversion technologies result in cleaner air by offsetting higher emissions from other sources, such as coal power plants or petroleum extraction, refining and combustion[ii].

Question: Will conversion technologies be able to meet California's stringent air emission limits?

Answer: Independently verified emissions test results show that thermochemical conversion technologies are able to meet existing local, state, federal and international emissions regulations[iii].

Worldwide analysis shows gasification and pyrolysis facilities currently in operation meet each of their respective air quality emission mandates required by the U.S. Environmental Protection Agency (USEPA), the European Union and Japan.

Conversion technologies in operation have been shown to reduce dioxin and furan emissions to miniscule amounts that are dramatically below the USEPA limit[iv].

Question: Are conversion technologies cleaner than landfilling or incineration?

Answer: Many studies, including independent studies completed by leading universities and State agencies, have determined that conversion technologies have lower air emissions compared to both incineration and landfilling. This includes lower emissions of methane, CO_2, and other greenhouse gas emissions[v] as well as lower emissions of criteria air pollutants such as NOx[vi] and SOx[vii].

Conversion technologies would also significantly reduce emissions from fossil fuel trucks, mostly diesel, transporting wastes to landfills[viii].

Sources and Additional Information

[i] Conversion technologies reduce transportation emissions resulting from long distance shipping of waste, eliminate methane production from waste that would otherwise be landfilled, and displace the use of fossil fuels by net energy (fuel and electricity) produced by conversion technologies. Supra. note 2, Integrated Waste Management Board Report to the Legislature (2007).

[ii] "From an environmental perspective, the production of fuels and chemicals from materials that would otherwise be landfilled can provide environmental benefits by displacing the extraction of non-renewable petroleum resources such as crude oil and natural gas." California Integrated Waste Management Board (now CalRecycle) *New and Emerging Conversion Technologies, Report to the Legislature* (2007) p 60. Report also includes additional references to net reduction of air emissions from the use of conversion technologies compared to other solid waste management options..

[iii] "Today there are advanced air pollution control strategies and equipment that were not available ten years ago. It is obvious from the results that emissions control of thermochemical conversion processes is no longer a technical barrier." *University of California Riverside, Evaluation of Emissions from Thermal Conversion Technologies Processing Municipal Solid Waste and Biomass* (2009) p 37.

[iv] The low levels of oxygen present in pyrolysis and gasification processes inhibit the formation of dioxins and furans. See *University of California Riverside Report* (2009) Ibid, page 8; also see, California Integrated Waste Management Board (CIWMB, now CalRecycle), *New and Emerging Conversion Technologies Report to the Legislature* (2007). P 9: "A July 2004 technical report published by JFE Group of Japan reports the results of a study in which MSW was processed at a gasification facility in Chiba City, Japan. The concentration of dioxins in the synthetic gas was approximately 1,000 times less than the 0.1 ng-TEQ/Nm3 standard set by Japan's Ministry of Environment".

[v] The bacterial decomposition of landfilled material produces significant quantities of landfill gas that can be captured by landfill gas extraction methods; *however*, there is not 100 percent capture of landfill gas. The methane emissions from landfills are particularly important, since methane is 21 times more potent as a greenhouse gas than carbon dioxide. Landfills represent the second largest source of anthropogenic methane emissions. By contrast, thermal facilities are designed to produce a fuel gas or synthesis gas that may contain methane. In addition, thermal facilities are designed for 100 percent capture of the produced gas, including methane.

[vi] NOx emissions are largely the result of fuel combustion processes. Likewise, NOx emission offsets can result from the displacement of combustion activities, mainly fuels and electrical energy production. In a Life Cycle Analysis undertaken by the CIWMB the Board concluded: "the conversion technology scenario showed the lowest net levels of NOx emissions and resulted in a significant net NOx emissions avoidance… [as] a result of significant offsets of NOx emissions associated with the production of energy and recovery and the recycling of materials, coupled with the low amount on NOx emissions from the gasification plants…The land fill scenarios showed the highest levels of NOx emissions. The WTE scenarios showed about one-half to one-third of the NOx emission returned by the landfill scenarios." See, CIWMB New and Emerging Conversion Technologies supra. note 2 at p 61.

[vii] SOx emissions tested against the USEPA standard of 85.7 were found to be significantly lower: Bosung, Korea (OE Gasification) 18.7; Romoland, (pyrolysis/syngas boiler) CA 0.44; Richland, WA (Plasma Arc Gasification) ;Fayetteville, AK (gasification/biosynthesis); Gangjin, Korea (OE Gasification) 37.5; Heanam, Korea (OE Gasification) 37.5.

[viii] Puente Hills Landfill, California's largest landfill (located in Los Angeles County) closes in 2013. Wastes now going to Puente Hills Landfill may have to be shipped over 200 miles to alternative landfill sites. As California's population increases (an additional 10 million by 2020) and disposal capacity in many jurisdictions is reduced, local governments will have to ship their solid waste hundreds of miles to dispose of it or expand capacity at urban landfills.

For More Information, please visit
WWW.SoCalConversion.org

Conversion Technology Q&A:

Reliable and Operating Around the World

Question: Aren't conversion technologies still experimental and unproven?

Answer: Conversion technologies are not experimental; they are operating in 28 countries including: Australia, Europe, Japan, South Korea, South Africa and the United States. Several facilities have been operating commercially for well over a decade.

Question: What types of technologies are in operation around the world?

Answer: By the end of 2010, over 200 anaerobic digesters were processing nearly 6 million tons per year of biosolids and municipal solid waste in Europe. It is estimated that European capacity will increase to 9 million tons per year by 2015[i].

Since 2005, integrated facilities have become more common in Europe. Anaerobic digesters are used to process the wet component of the wastestream, while composting is used to process the digestate and the dry fraction of the wastestream[ii].

Zeus Global Gasification Database is tracking more than 300 existing gasification facilities worldwide. The United States Department of Energy found that world gasification capacity has grown to 56,000 megawatts thermal (MWth) of syngas output (roughly equivalent to 29,000 MWe) from 144 major operating plants that employ 427 gasifiers[iii].

Thermochemical conversion technologies are technically viable options for the conversion of waste streams, including post-recycled residuals[iv].

Gasification technology plants processing non-hazardous waste streams are already operating in the U.S., all reducing GHG emissions and operating below allowable air pollution standards[v].

Sources and Additional Information

[i] "Anaerobic Digestion of MSW in Europe", BioCycle, February 2010, Vol 51, No 2, p.24

[ii] "Anaerobic Digestion of MSW in Europe

[iii] An additional ten plants involving an additional 34 gasifiers of syngas capacity were expected to become operational in 2010, involving another 17,000 MWth of syngas capacity, an increase of 30 percent.

[iv] Conversion technologies have been well established in Europe and Asia for more than 20 years, and have been an integral part of meeting their recycling mandates, landfill phase-out mandates and greenhouse gas reductions. See, University of California Riverside, "Performance and Environmental Impact Evaluation of Alternative Waste Conversion Technologies in California" (2004); peer reviewed, RTI International, Life Cycle and Market Impact Assessment of Non-combustion Waste Conversion Technologies.

[v] In 2007, Intrinergy began producing green electricity and thermal energy (steam) from a Mississippi paper mill reducing the mill's carbon dioxide emissions by 20,000 tons per year. Its on-site energy unit provides up to 50,000 lbs/hour of process steam to fuel the mill's operations. PM, CO and NOx were measured significantly below allowable standards. In 2007, Nexterra Energy completed a gasification system that converts wood residues. The GHG reductions were estimated to be more than 22,000 tons per year. The plant provides 60,000 lbs/hour high pressure steam for district heating and power for the University of South Carolina. PM, CO, NOx and SO_2 were measured significantly below allowable limits. Prime Energy has developed a number of state-of-art biomass gasification facilities at several U.S. locations: St Joseph Missouri, Stuttgart, Arkansas, and Dalton, Georgia. These facilities are producing: ethanol, a substitute for natural gas, and steam energy. They are diverting waste from landfills, providing renewable energy and meeting all allowable air emission standards.

For More Information, please visit
WWW.SoCalConversion.org

Conversion Technology Q&A:

Why Clarity is Needed in California Regulations Regarding Conversion Technologies

Question: What does the California Public Resources Code (PRC) say about conversion technologies?

Answer: Existing California statutes and regulations offer an assortment of definitions and requirements regarding conversion technologies. Rather than being based in science, the definitions are capricious and inconsistent, with some conversion technologies defined as incineration, others defined as composting, one technology (gasification) defined incorrectly, and many technologies simply undefined, creating uncertainty for permitting and making it challenging to obtain financing for new projects.

Development of the most promising and cutting edge technologies in California has been stifled because of inconsistent and scientifically inaccurate definitions.

Question: Do inaccurate definitions create barriers to siting, permitting, constructing or operating conversion technologies in California? Can't developers build projects anyway?

Answer: California cannot develop a viable solid waste management infrastructure relying on scientifically inaccurate statutory definitions. For example, PRC Section 40117 is scientifically incorrect[i] and actually describes pyrolysis. This same incorrect definition is repeated in PRC 25741. In essence, this definition prohibits gasification technologies from using air or oxygen in the process, a restriction that serves no environmental benefit[ii] and unnecessarily prevents good technologies from being permitted.

Question: Won't correcting these definitions result in watering down California's environmental protections?

Answer: Correcting the inaccuracies in PRC 40117 and 25741 should not eliminate existing environmental protections, such as the requirement for sorting and/or preprocessing of residual materials prior to the conversion process in order to maximize the amount of recyclable materials extracted from the wastestream.

Question: Aren't these regulatory requirements for conversion technologies equivalent to requirements for other renewable energy processes?

Answer: No other technology or process is required to have zero emissions, including other technologies eligible for California's Renewable Portfolio Standard (RPS).[iii] Under current statutes, many conversion technologies are required to follow a more rigorous

permitting process than required for the siting, permitting and construction of a major solid waste landfill, making it unnecessarily cumbersome to develop new projects.

Question: Will it be difficult to correct these definitions?

Answer: There is strong support in Sacramento to correctly redefine gasification and other conversion technologies. Letters of support were signed by nine California legislators and the Chair of the California Air Resources Board (CARB), Vice Chair of the CEC and Acting Director of CalRecycle supporting such changes. In the 2009/2010 legislative session, AB 222, a bill proposing to correct many of these definitional issues, enjoyed strong bi-partisan support and was approved by several committees in the Senate and Assembly as well as the Assembly floor, but failed to pass a key vote in a Senate Committee.

In the meantime, State agencies have no choice but to evaluate technologies and make rulings on a case by case basis[iv], which discourages investment in California.

Question: What would be the benefits of revising the regulations regarding conversion technologies?

Answer: To date California's scientifically incorrect definition of gasification has delayed or deterred projects from being developed in California, resulting in a substantial loss of income and green jobs in our State[v].

Revising California's scientifically incorrect definition of gasification may prevent unnecessary and costly legal challenges[vi]. More importantly, revising the regulations would promote compliance with California's greenhouse gas reduction law (AB 32[vii]), renewable energy law[viii], and other progressive environmental goals and priorities.

Sources and Additional Information

[i] "Gasification" means a technology that uses a non-combustion thermal process to convert solid waste to a clean burning fuel for the purpose of generating electricity and at a minimum meets all of the following criteria: (a) the technology does *not use air or oxygen* in the conversion process, *except ambient air to maintain temperature control*; (b) the technology produces *no discharges of air contaminates* or emissions including greenhouse gases…; (c) the technology produces *no discharges to surface or groundwaters* of the state; (d) the technology produces no hazardous waste; (e) to the maximum extent feasible, the technology removes all recyclable materials and marketable green waste compostable materials from the solid waste stream prior to the conversion process and the owner or operator of the facility certifies that those materials will be recycled or composted…" PRC Section 40117.

[ii] Most thermal technologies that convert MSW to biofuels insert a small amount of oxygen into the gasification process for the purpose of improving the chemical conversion of organic waste materials to synthesis gas and/or biofuels.

[iii] Zero emissions are not a scientifically valid definition of gasification. The statute requires the technology to emit zero emissions, and it is unclear if this is from the entire energy production process (meaning not only zero from the disposal and destruction of waste, but zero from the biorefining process as well). No energy production technology can meet or has been required to meet a zero emissions standard. In 2008 the CEC testified that no such zero emission standards exists either in stature or in practicality and the "zero emissions" standard has no standing in the CEC's administrative policy regarding RPS.

[iv] On November 23, 2010, CalRecycle sent a legal opinion to Plasco Energy Group stating that Plasco's proposal to build a gasification conversion technology facility in California "appears to meet the definition of gasification set on in Public Resources Code 40117". In reaching this conclusion CalRecylce said: "The project…will use a non-combustion thermal process to convert solid waste to a clean burning fuel for the purposes of generating electricity; uses air/oxygen only to maintain ambient temperature; produces no air, water, or hazardous discharges in excess of standards…" In May 2011, the California Energy Commission (CEC) sent a corresponding letter to Plasco stating that its technology constitutes RPS eligible renewable energy and that it can count toward state recycling (diversion) targets. On March 9, 2011, a coalition of three senators (Cannella, Calderon, Padilla) and six Assembly members (Bradford, Buchanan, Conway, Fletcher, Fuentes, Ma) sent a letter to Secretary Laird expressing support for the Natural Resources Agency's support of Plasco Energy Group's proposed Salina Valley project stating: "As members of the California State Legislature, we feel it is critical that the Administration continue to support this innovative approach to resource management in California. Plasco's technology results in net reduction of greenhouse gas emissions and produces base load renewable power …not depend[ent] on additional transmission capacity."

[v] As a result of the inconsistencies in California law and the contention surrounding bioenergy development, California's bio-based technology companies have either located or moved out of the state resulting in up to a $1 billion loss of state income and the loss of new green jobs in California. For example, Fulcrum BioEnergy, a California company is now completing a $120 million US DOE loan guarantee with which it will construct a thermal conversion facility that will produce ethanol and electricity from solid waste in Nevada. BlueFire Renewables, another California company, is building a 19 million gallon/year cellulosic ethanol facility in Mississippi, relocating the facility and a $88 million US DOE loan guarantee from California due to the regulatory difficulties in developing projects in the State.

[vi] Under California Law, inconsistent statutes have to be reconciled. PRC 25741 and PRC 40117 are contradictory and mutually exclusive. Moreover, CARB's public transit bus fleet rule, adopted in 2000 creates a precedent for uniform standards being applied to different kinds of technologies. Under the rule California fleet operators have to choose between a "diesel path" and an "alternative path" for future urban bus procurements. Operators can choose either path provided: a NOx fleet average limit of 4.8g/bhp-hr is effective from 2002.10 for both diesel and alternative paths, and the total PM emission from the fleet must be reduced by 85% relative to the emissions in January 2002.

[vii] California's landmark greenhouse gas law requires a reduction in GHG emissions. The development of conversion technology facilities in California would aid municipalities and utilities in meeting the mandate – see the GHG emissions fact sheet for more information.

[viii] By law and Executive Order utilities are required to have 20 percent renewable energy in their portfolios by 2012 and 33 percent by 2020. Preventing the development of renewable energy from conversion technologies makes it far more challenging for utilities to meet these requirements.

For More Information, please visit
WWW.SoCalConversion.org

Agenda Item 4

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

GAIL FARBER, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

April 25, 2012

IN REPLY PLEASE
REFER TO FILE: EP-4
A3454-3

TO: Each Supervisor

FROM: Gail Farber
Director of Public Works

BOARD MOTION OF APRIL 20, 2010, ITEM NO. 44
CONVERSION TECHNOLOGIES IN LOS ANGELES COUNTY
SIX MONTH STATUS UPDATE: OCTOBER 2011, THROUGH APRIL 2012 UPDATE

On April 20, 2010, your Board unanimously approved three Memorandums of Understanding for three conversion technology demonstration projects and awarded a contract for consultant services for the demonstration and commercial phases of the Southern California Conversion Technology Demonstration Project for the purpose of developing solid waste alternatives to landfills within Los Angeles County.

At that time, your Board also instructed the Director of Public Works, in coordination with appropriate stakeholders, to assess the feasibility of developing a conversion technology facility at one or more County landfills; to identify other potentially suitable sites within Los Angeles County, and to report back to the Board within six months. In October 2010 Public Works submitted a preliminary siting assessment in response to this request and committed to providing your Board with a status report on our efforts every six months.

The attached status update summarizes the efforts Public Works has undertaken to advance conversion technology development in Los Angeles County during the period of October 2011 through April 2012. Highlights from the last six months include:

- Advanced discussions with several site owners and operators in Los Angeles County who are interested in developing a conversion technology facility in the County. More detailed updates regarding all of the sites are presented in the report.

- Expanded outreach efforts, including development of science-based stakeholder resources and an educational forum.

- Submitted a grant application to the California Energy Commission in the amount of $860,000 to create the Conversion Technology Center hosted by Public Works for a 33-month period.

- One of the three approved demonstration projects in the City of Perris, California, received City Planning Commission approval. Construction is anticipated to break ground later this year.

Public Works will continue to work with stakeholders to move forward with project development activity at the sites identified within the County. Our next status report will be submitted to your Board by October 20, 2012.

TM/CS:kp
P:\SEC\EP-4\ CT 6 month report cover memo - 4-20-12

Attach.

cc: Chief Executive Office
County Counsel
Department of Public Health
Department of Regional Planning
Los Angeles County Integrated Waste Management Task Force
Regional Planning Commission
Sanitation Districts of Los Angeles County

BOARD MOTION OF APRIL 20, 2010, ITEM NO. 44
CONVERSION TECHNOLOGIES IN LOS ANGELES COUNTY
SIX MONTH STATUS UPDATE: OCTOBER 2011 TO APRIL 2012

I. Introduction

On April 20, 2010, the Los Angeles County Board of Supervisors (Board) unanimously approved a Memoranda of Understanding (MOU) for three conversion technology (CT) demonstration projects and awarded a contract for consultant services for the demonstration and commercial phases of the Southern California Conversion Technology Demonstration Project. The purpose of this effort is to develop solid waste alternatives to landfills within the County of Los Angeles. At that time, your Board also instructed the Director of Public Works, in coordination with appropriate stakeholders, to assess the feasibility of developing a CT facility at one or more County landfills and to identify other potentially suitable sites within the County of Los Angeles, reporting back to your Board in six months with the Department of Public Works' (Public Works) findings.

In October 2010 Public Works submitted a Preliminary Siting Assessment to your Board. That report identified 11 stakeholders, representing cities, solid waste companies, industrial real estate developers, and 16 sites submitted by the stakeholders for consideration. Based on the general assessment provided in the report, Public Works determined that all of the sites merited further consideration. Since then, Public Works has continued to work with interested stakeholders to identify and evaluate potential project locations within the County, evaluate technologies, research funding and financing opportunities, and provide technical and planning assistance to potential project developers.

To keep the Board regularly informed on these developments, Public Works committed to providing a status report every six months. This status report provides a summary of key accomplishments during the months of October 2011 to April 2012, in advancing the development of CT projects within the County and facilitating the demonstration projects.

II. Project Background

For over a decade, Public Works has evaluated the development of CT facilities as alternatives to the continued landfilling of solid waste by municipalities and communities in the County. In addition to providing an alternative method of solid waste disposal, the creation of such facilities will produce sources of renewable energy (whether as electric power or gaseous or liquid fuels), reduce environmental impacts, and create local green-collar jobs.

Together with technical and public outreach consultants, Public Works has vetted various types of non-combustion thermal, biological, chemical, and mechanical

conversion technologies, assessed potential project sites, worked with local and State agencies to create a permitting pathway for these technologies, and created a Countywide public outreach plan to educate stakeholders about the benefits of these technologies. Over the last six months, Public Works has pursued a number of local and statewide public outreach and education opportunities.

III. Public Outreach

Public Outreach is a vital component of the County's efforts to advance the development of CTs. In 2007 Public Works established a public outreach contract with Cerrell Associates. Cerrell works directly with Public Works staff to establish working relationships with local and State agencies, conduct outreach to local stakeholders and the public, and develop materials for the purposes of educating a variety of stakeholders.

Since 2007, Public Works has maintained a website dedicated to the County's program and sends a monthly e-newsletter to over 1,000 recipients. Public Works Staff are regularly contacted by jurisdictions around the world seeking information on the County's program.

Over the last six months, Public Works' public outreach team continued focused outreach to specific stakeholders, including National Resources Defense Council (NRDC), Union of Concerned Scientists, and Sierra Club. These groups were engaged in ongoing dialog concerning their reports supporting biofuels derived from CTs.

On October 28, 2011, Public Works' public outreach team collaborated with California Department of Natural Resources in conducting a forum in Sacramento for scientists, environmentalists, and other key stakeholders. The purpose of this forum was to discuss the barriers to CT development in California, how facilities would be permitted, and what incentives should be provided by State and local government. That meeting resulted in two key next steps: (1) organize material recovery facility (MRF) tours for stakeholders to understand what types of materials can actually be recycled and what materials would be better utilized through a conversion process, (2) form a statewide "working group" tasked with developing a common set of science based facts defining CTs and their attributes.

Since that time, Public Works' public outreach team coordinated with two MRF locations, Rainbow Disposal Company in Huntington Beach and the City of San Jose, who are interested in hosting tours at their facilities. Tours are expected to take place later this Spring or in early Summer.

In March, Public Works' public outreach team created a set of educational factsheets called "The Facts about Conversion Technologies". The factsheets compile research from local, State, Federal, and university reports. Topics include landfilling, incineration, recycling, green energy production, air emissions reduction, regulations, and technical reliability of CT processes. The factsheets will be used in continued State and local outreach.

Public Works provided several presentations and educational briefings at State and local events over the last six months. These venues have provided an opportunity to reach a diverse set of stakeholders, including elected officials, environmental and environmental justice organizations, relevant CT and development companies, and interested community members. Participation has included:

- Waste Conversion Congress (December 2011)
- VerdeXChange (January 2011) – The County coordinated a panel on CTs, with panelists from the National Resources Defense Council (NRDC), Waste Management, the California Energy Commission, The Gas Company, and Plasco Energy, along with Public Works.
- San Gabriel Valley Council of Governments, "The Future of Solid Waste Management Forum" (January 2012)
- Renewable Energy World Conference and Expo (February 2012)
- County Engineers Association Conference (March 2012)
- Biocycle West Coast Conference (April 2012)

IV. The Conversion Technology Center

The CT Center concept is a unique proposal being promoted by Public Works and the first of its kind in California. The CT Center would serve as the principal resource in the County as well as the State for both the public and private sectors, for planning and implementing waste-based conversion technology projects. The CT Center will strengthen and expand the extensive research, evaluation, and outreach activities Public Works has conducted over the past decade. It will be hosted by Public Works and will be a local government-based, results-oriented, and proactive information-sharing service, leveraging Public Works' ongoing planning and implementation activities to benefit the County, the 88 cities that comprise Los Angeles County, and other communities throughout the State.

On February 22, 2012, Public Works submitted an application to the California Energy Commission (CEC) under the AB 118 Alternative and Renewable Fuel and Vehicle Technology Program: Biofuels Production Solicitation for a matching fund grant to create the CT Center. Public Works estimates it will cost $1.72 Million to establish and maintain the CT Center for a period of 33 months, and is seeking $860,000 in support from the CEC. If the grant proposal is accepted by the CEC, Public Works will seek approval from the Board to accept the funds.

The goals of the CT Center are to establish a virtual resource center and to advance project development locally and statewide.

Specifically, the CT Center's activities would include:

- planning advice, assistance and guidance relating to project development;
- information and proven models for project planning and procurement;
- information and proven models for increased recycling with conversion technologies;
- information on greenhouse gas and air emissions reductions from conversion technologies;
- funding research and advice; and
- permitting and CEQA advice and consultation

With grant support, the CT Center will directly benefit the County by providing funding and professional resources to continue and to expand on-going research, planning, outreach, and project development activities of Public Works and its stakeholders for CT projects.

V. Update on Phase III Demonstration Project Development

Over the past six months and for future activities, Public Work's attention and focus has shifted from the demonstration project phase of the program to the commercial project phase. One of the three demonstration projects, CR&R's anaerobic digestion (AD) project in Perris, California, has made significant progress and is well on its way to successful development. This project could potentially become the first of its kind in California. The status of the three demonstration projects are briefly noted below.

- ***CR&R, Inc.***

  CR&R, a local solid waste management company, is developing a 150 ton per day AD project at its MRF and Transfer Station (TS) in Perris, California. Public Works has been actively involved with CR&R, Inc., in pursuing funding opportunities, and as a result, CR&R, Inc., was awarded a grant of more than $4.5 Million from the CEC in January 2011. The project's Conditional Use Permit (CUP) was approved by the Perris Planning Commission in November 2011, and the project is on track to reach completion within 18 months. Following a meeting with CR&R, Inc., in January 2012 Public Works and CR&R, Inc., mutually agreed that the project is well on its way to being developed and is no longer in need of technical assistance from the County. Public Works and CR&R, Inc., will continue to communicate as the project moves forward. CR&R, Inc., will continue to routinely share project information with Public Works during design, construction, and operation to allow Public Works to monitor the facility's development, observe facility construction and operation, and review non-proprietary facility performance data. CR&R will also provide Public Works opportunities to tour the facility, for the purpose of showcasing it in operation as a

successful model. This collaborative arrangement is expected to be mutually beneficial to both CR&R and Public Works, to foster the development of conversion technologies on a broader scale.

- ***International Environmental Solutions (IES)***

  IES has recently undergone organizational changes within their company, including high-level management changes, putting all projects on hold until the company can reach an agreement with an equipment manufacturer. Creating standard equipment plans for their 8, 40, and 125 ton-per-day (tpd) pyrolysis units will enable them to pursue multiple project opportunities in a timely manner. During a January 2012 meeting with Public Works, IES expressed their interest in working with Public Works in the future on another project. However, due to current company organizational changes, equipment limitations, and lack of a viable site, they cannot proceed with the project as specified in the MOU.

- ***Rainbow Disposal Company (Rainbow)***

  As specified in the MOU between Public Works and Rainbow, the CT facility would be sited at Rainbow's Huntington Beach MRF/TS. The facility would be designed with an initial capacity of 360 tons per day, with an expansion capability of up to 1,000 tons per day. A particular hurdle for the project is a significant reduction in the anticipated volume of waste at the Huntington Beach MRF/TS since the MOU was signed. Public Works continues to remain in contact with Rainbow. However, it appears that the company is not in a position to immediately move forward with a project.

VI. Update on Project Development within the County of Los Angeles

Table 1 on the following page shows a summary of all the proposed sites and stakeholders that County personnel have held discussions with regarding the development of CT projects.

Table 1.
PROPOSED POTENTIAL LOCATIONS FOR ALTERNATIVE TECHNOLOGY FACILITIES IN LOS ANGELES COUNTY

NO.	STAKEHOLDERS	SITE NAME [SITE OPERATION]	SITE LOCATION	SITE OWNER	SITE ZONING	SITE ACREAGE	POTENTIAL CAPACITY (Tpd-6)
LANDFILL SITES							
1	County of Los Angeles/ City of Calabasas/ County Sanitation Districts	Calabasas Landfill [Landfill]	Calabasas	County of Los Angeles	Landfill	TBD	700
2	City of Glendale	Scholl Canyon Landfill [Landfill]	Glendale	City of Glendale/County	Landfill	500 acres	TBD
3	City of Avalon	Pebbly Beach Landfill [Landfill]	Avalon	City of Avalon	Landfill	7.7 acres	8.0
MATERIAL RECOVERY FACILITY (MRF) / TRANSFER STATION (TS) SITES							
4	Valley Vista Services	Valley Vista Grand Central [MRF/TS]	City of Industry	Valley Vista Services	Industrial	25 acres	250 tpd
5	Calmet Services	Paramount MRF [MRF/TS]	Paramount	Calmet Services	Industrial	10 acres	15-100 tpd
6	Waste Recovery & Recycling (WRR)	WRR MRF/TS [MRF/TS]	Gardena	WRR	Industrial	8.5 acres	TBD
7	Southland Disposal	City Terrace MRF [MRF/TS]	Unincorporated Los Angeles County	Southland Disposal	Industrial	1.6 acres	20-50 tpd
OTHER SITES							
8	Green City Development, Inc.	Real Estate [Oil drilling/vacant land]	Santa Clarita	Green City Development, Inc.	Industrial	115 acres	1500
9	Green City Development, Inc.	Real Estate [Oil drilling/vacant land]	Sylmar	Green City Development, Inc.	Industrial	15 acres	TBD
10	City of Carson	City Public Works Yard [Public works operations]	Carson	City of Carson	Industrial	14 acres	TBD
11	Ecolution/Organic Energy Corporation	Real Estate [Vacant land]	Lancaster	Lancaster, CA	Industrial	40 acres	2,000 tpd
12	Pacific Coast Waste & Recycling	Real Estate [Vacant land]	Compton	Pacific Coast Waste & Recycling	Industrial	10 acres	TBD
13	Pacific Coast Waste & Recycling	Real Estate [Vacant land]	Compton	Pacific Coast Waste & Recycling	Industrial	7 acres	TBD
14	City of Lancaster	Lancaster Landfill [Landfill]	Lancaster	Waste Management Inc.	Landfill	TBD	TBD
15	City of Long Beach	Real Estate [Pier A West]	Long Beach	City of Long Beach	Industrial	80 acres	TBD
16	City of Long Beach	Real Estate [Terminal Island]	Long Beach	City of Long Beach	Industrial	TBD	TBD
17	Mustang Power	Mustang Power [Storage facilities/Vacant land]	Lopez Canyon	Mustang Power	Industrial	36 acres	TBD
18	Interior Removal Specialists, Inc	South Gate MRF [C&D Recycling]	South Gate	Interior Removal Specialists, Inc	Industrial	14 acres	20-30 tpd

Landfill Sites

- ***Calabasas Landfill, City of Calabasas/County of Los Angeles***

  The Calabasas Landfill is owned by the County of Los Angeles and operated by the County Sanitation Districts (CSD). In 2011 Public Works conducted a preliminary feasibility analysis evaluating various options for siting a CT facility at the landfill that would 1) extend the life of the existing landfill, and 2) increase the financial viability of the landfill.

  The feasibility analysis determined that a 700 tpd AD project at the Calabasas Landfill could provide significant benefits to both the County and the CSD, including:

  - provide a high diversion rate (over 50 percent) for waste supply customers at market-competitive tipping fees;
  - generate biogas to supply the existing landfill gas-to-energy facility at the site that currently has excess capacity, enhancing economics and increasing renewable energy generation, and potentially using biogas for transportation fuel uses;
  - generate revenues to the landfill associated with disposal of residuals from the project;
  - increase recovery of recyclables for sale to markets;
  - enhance management of greenwaste at the Landfill; and
  - create local jobs (construction and operation).

  Public Works is currently working with the Chief Executive Office (CEO) and CSD to evaluate the feasibility and benefits of development of such a project. It is anticipated the CEO will be submitting a recommendation to your Board regarding the project in the Summer.

- ***Scholl Canyon Landfill, City of Glendale/County of Los Angeles***

  The landfill is located in the City of Glendale on property owned jointly by the City (90 percent) and the County (10 percent). It is operated by CSD. In 2007 the City of Glendale adopted a resolution supporting the development of a CT project at the landfill. The City engaged the services of the consulting firm HDR to assist with this effort, and in 2011 the City received 13 submittals in response to a Request for Information. Proposals were reviewed by the Glendale Public Works Department and the Department of Water and Power. Four companies were shortlisted and issued a Request for Qualifications and Technical Information (RFQ-TI). The objective of the RFQ-TI is to help the City assess the feasibility of developing a conversion technology project. The City received responses to the RFQ-TI from the companies in March 2012. Following the review and assessment of the additional information, the City may pursue a formal procurement with the highest-rated companies. While this process is driven by

the City, Public Works will continue to coordinate with and support the City on an as-needed basis. For example, the City has asked the County to be part of its assessment team for review and consideration of the recent responses to the RFQ-TI.

- ***Pebbly Beach Landfill, City of Avalon***

  In December 2011 the City of Avalon sent a letter to Public Works formally expressing their interest in participating in the County CT program. The City is interested in siting a small-scale conversion technology unit at the Pebbly Beach Landfill, a 7.7 acre site owned by the City and operated by Seagull Sanitation (Republic Services). This project would be part of the City's holistic approach to waste management that includes recyclables, green waste, biosolids, food waste, construction and demolition debris material, and other materials, as appropriate and feasible. The City's location on an island setting, with pronounced seasonal fluctuations in waste quantities associated with a tourism economy and limited remaining landfill capacity, poses unique challenges for cost-effective waste management strategies.

  Public Works' technical consultant is conducting a technology assessment for the City of Avalon. The assessment identifies several possible project configurations, inclusive of AD and thermal technologies. The configurations were identified based on communications with companies that have previously been in contact with the City as well as with companies from Public Works' technology database. Preliminary economic analyses are being conducted for these potential configurations, for key variables including a range of tipping fees and potential funding scenarios. The preliminary results indicate that gasification and pyrolysis technologies are the most cost effective, while achieving sufficient diversion to enable the Pebbly Beach Landfill to retain capacity for a 20-year project duration. The consultant is completing additional sensitivities to test the overall findings and is preparing a summary report for Public Works to discuss with the City.

<u>Material Recovery Facility (MRF)/Transfer Station (TS) Sites</u>

- ***Grand Central Recycling and TS, Valley Vista Services***

  Valley Vista Services is pursuing an AD project at their Grand Central Recycling and Transfer Station in the City of Industry. There are approximately four acres of land available for the project, which will utilize the technology developed by UC Davis and licensed by Onsite Power. Over the past year, the focus of the project has been on feedstock preparation. Valley Vista Services has shifted their focus from source-separated green and food waste, to post-recycled, post-MRF municipal solid waste. Valley Vista Services has developed a new 600 tpd MRF and start-up testing is underway. The next step in the process will be development of the AD portion of the project.

- ***Calmet Services MRF/TS***

  Calmet Services is evaluating the feasibility of installing an AD system at their Paramount Resource Recycling Facility. The company recently purchased a seven-acre parcel across the street from their facility that may be a suitable project location. In October members of the Calmet team completed a tour of four Kompoferm facilities in Germany as well as the Kompoferm manufacturing plant. These AD facilities ranged from 15 to 100 tpd and featured backend composting (windrow, GORE cover system, and in tunnel aerated static pile).

- ***Waste Recovery and Recycling MRF/TS***

  Waste Recovery and Recycling is proposing to locate a CT project on property adjacent to their MRF/TS in the City of Gardena. WRR is currently in escrow on the purchase of an additional four acres of land and they expect to have ownership by March 2012. They are also hoping to acquire a local railroad spur which would create a total site of 8 to 8.5 acres. WRR is proceeding with the permitting of their CT project while they complete the land acquisition.

- ***City Terrace MRF, Southland Disposal***

  City Terrace MRF/TS is located in East Los Angeles/Unincorporated Los Angeles County and is owned by Southland Disposal. The company has recently submitted a CUP application to the County Department of Regional Planning to expand their facility from 700 to 1,500 tpd. This application includes a small AD facility (15-20 tpd) that would receive food waste and green waste and a conditioning system to produce CNG truck fuel from the biogas. Public Works is closely monitoring this CT project as it is the first one in the County to go into permitting.

  This CT project could take advantage of existing infrastructure, including MRF/TS processing, administrative offices, scales, tipping areas, and residue load out. The site is zoned industrial and is surrounded by other industrial uses.

<u>Other Sites</u>

- ***Santa Clarita Site, Green City Development, Inc.***

  Green City Development, Inc. owns a former oil drilling site that occupies a total of 115 acres in the City of Santa Clarita. This brownfield site is accessible from the 210, 14, and 5 Freeways and is not within close proximity to residential neighborhoods. The property owner is currently discussing potential project options with a technology vendor that was shortlisted by Public Works in Phase II of the conversion technology program.

- ***Lopez Canyon Site, Green City Development, Inc.***

  Green City Development, Inc., is an industrial land developer who owns a 40 acre parcel of land in Lopez Canyon and has expressed interest in developing a CT facility at the site. The land is industrially zoned and is accessible by truck.

- ***Public Works Yard or other potential sites, City of Carson***

  The City of Carson owns a 14 acre parcel that is currently used to house the City's public works operations. The City intends to relocate these operations, which would make this site available for a possible CT project. This process could take up to 2-3 years to complete. In addition to this site, the City is in discussions with two large oil refineries in the City, who may be interested in developing an integrated CT project within their complex. Follow-up meetings are being coordinated with the City.

  A site in Carson previously considered is the Joint Water Pollution Control Plant (JWPCP), which is owned and operated by CSD. The JWPCP has about 30 acres to potentially use for a CT facility. At this time, however, the CSD has a pilot gasification facility on the site for biosolids management, and is focusing on the potential of using conversion technologies to manage biosolids on site rather than processing MSW.

  As appropriate, Public Works will work with City staff to complete an options analysis for a CT facility within the City of Carson, and will assist City staff in providing the information to City administration.

- ***Antelope Valley Site, New Generation Technology***

  The owner of a 320-acre parcel in the unincorporated area of the Antelope Valley is interested in developing a CT facility utilizing the New Generation Technology process on his property.

- ***Pacific Coast Waste & Recycling:***

  Pacific Coast Waste & Recycling identified four sites in the County, where they were interested in building a CT project. After further evaluation, the company has decided not to pursue projects at their 12-acre parcel in close proximity to the 605 Freeway or the 6-acre parcel in the City of Inglewood. The company is focusing their attention on project endeavors in the City of Compton and Lancaster. There are two sites (a 10-acre and a 7-acre parcel) within the City of Compton. Both sites are industrially zoned and serviced by local utilities.

  In Lancaster, Pacific Coast Waste & Recycling has partnered with Organic Energy Corporation to form Ecolution. This company will pursue a two-phase,

4,000 tpd Materials Recovery and Conversion Technology Facility. Additional information is listed below.

- ***Lancaster Area***

  The project proposed by Ecolution will begin with a highly efficient MRF system to recover 20 different material categories. Organic material recovered in the MRF will be sent to a modular, induced-bed reactor anaerobic digester. The first phase will process 2,000 tpd. On February 22, 2012, the Lancaster City Council approved a Memorandum of Understanding for the development of the facility.

  Lancaster will provide a 40-acre site and commit their waste stream of 800-900 tpd to the project. There are currently three site options that Ecolution is evaluating. It is anticipated that a site will be selected in April 2012.

  The AD system currently under consideration by Ecolution was developed at Utah State University. Biogas from the AD system will be cleaned and used to create electricity or biofuels depending on the end user. The anticipated tipping fee is $55/ton with 90-95 percent overall diversion; an aggressive recovery number reflecting an innovative and more intense sorting effort in the MRF.

  The next step for the project is to begin the permitting process, for which the City of Lancaster will serve as the lead agency.

  The City of Lancaster has expressed interest in developing a CT facility within the City or nearby in Unincorporated County areas as part of their Green Corridor. In addition to the Ecolution project, a number of other sites have been suggested for development, including the Lancaster Landfill.

  Lancaster Landfill is owned and operated by Waste Management, Inc., and is located in Unincorporated Los Angeles County. In 2011 the Los Angeles County Regional Planning Commission approved Waste Management's request for a revised CUP for Lancaster Landfill. The new CUP includes provisions to encourage the development of a CT project at the site. The revised CUP is expected to take effect later this year.

- ***City of Long Beach***

  The City of Long Beach has expressed interest in developing a CT facility, and has identified two potential sites. The Port of Long Beach owns approximately 80 acres at Pier A West, of which a portion could possibly be used for a non-port use such as a CT project. This location is surrounded by heavy industrial uses and several rail and trucking operations. The Port of Long Beach is planning the re-alignment of the Terminal Island Freeway, which would free up land in the harbor for a potential CT project. At this time though, the re-alignment project is not firmly funded or scheduled.

- ***Sylmar Site, Mustang Power***

  Mustang Power, a CT development company and the selected CT vendor in Santa Barbara County's project at the Tajiguas Landfill, is proposing a 36-acre site that it owns for a CT project. The site is located near the Lopez Canyon Landfill in Unincorporated Los Angeles County and is currently being used for storage and as a trailer park. County Staff and project team members have had recent discussions with Mustang Power regarding this site. Project planning and development activities could begin in the near future with the identification of waste commitments for a project at this location. County staff is continuing its discussions with Mustang Power regarding the potential for a CT project at this location.

- ***South Gate MRF, IRS Demo***

  IRS Demo has continued to investigate the development of a conversion technology project at their site. They have expressed interest in thermal technologies, which may be best-suited for the waste materials they handle on site. The County continues to support IRS Demo. Based on available information to the County through the technology database, the City of Avalon technology assessment, and other project resources, the County is developing recommendations for the next steps and a timeline for moving forward at the site.

VII. Update on Request for Expressions of Interest

In June 2011, Public Works issued a Request for Expressions of Interest (RFEI) to technology vendors and financial institutions. The purpose of the technical RFEI was to obtain information on CTs that are available in the U.S. market and would be available for application for one or more projects in Los Angeles County, California. Through this RFEI, the County requested from conversion technology providers and/or project developers representing such providers, information on their technology as well as qualifications and resources of their company. Another RFEI for financial service firms that are in the business of assisting in the structuring and financing of conversion technology projects was issued in parallel to the technical RFEI. In August 2011 Public Works received responses from 36 technology vendors and 11 financial firms.

The information collected through the RFEI process was reviewed, evaluated, and tabulated into a searchable/sortable database format. Following confirmation of the summary information with the RFEI respondents, the databases were uploaded onto the www.SoCalConversion.org website. The user-friendly database is intended to describe technologies and technology providers, including their capabilities and experience, to allow the County and other public and private project developers to initially identify and assess technologies that are ready for commercial application and that may be suited to their project-specific goals and objectives, and to encourage partnering for the development of commercial projects. To expand the database and ensure the

information remains current, Public Works is planning to open the RFEI process on a regular schedule, potentially on an annual basis, to provide a means for additional companies to submit information for review and publication. As previously noted, Public Works has applied for grant funding from CEC for a CT Center. If Public Works is successful with the grant application, it will be able to significantly enhance the content and expand the functionality of the databases.

VIII. **Next Steps**

Over the next six months, Public Works will continue to facilitate the development of local projects, including the following key activities:

- Pursue the necessary Public Works and Board of Supervisors' approvals should Public Works receive the grant from the CEC.

- Identify alternate sources of funding for the CT Center should Public Works not be awarded the requested grant funding from CEC.

- In coordination with the Third District, the CEO's Office, and CSD identify possible wastestreams from nearby jurisdictions and facilities for proposed potential AD facility at the Calabasas Landfill.

- Develop public ownership options and RFP recommendations for an AD facility at the Calabasas Landfill, in coordination with the Third District and the CEO's Office, should the County decide to pursue a project at this location.

- Present the findings of the conversion technology assessment to the City of Avalon, for a potential project at the Pebbly Beach Landfill.

- Continue to coordinate with the City of Glendale as it conducts its independent work to develop a conversion technology facility and to identify site-specific viable technologies.

- Monitor the development of Valley Vista Services' proposed conversion technology facility at Grand Central Recycling, providing support as is mutually beneficial.

- Complete an options analysis for a conversion technology facility for the City of Carson and assist City staff in providing the information to City administration.

- As mutually beneficial and in correlation with individual stakeholder project development activities and schedules, conduct more detailed site evaluations to support and facilitate project development activities.

- Continue to work with current and newly-identified stakeholders to determine their goals and objectives and to facilitate the development of suitable projects.

- Continue efforts to develop and provide information useful to stakeholders, including completion of an interactive economic model and the expansion of informational databases of conversion technologies, companies, and financial service providers to assist stakeholders in evaluating and implementing projects.

TM:kp
P:\SEC\EP-4\ 4-20-12 CT 6 Month Status Update

Table 4.1
RESIDENTIAL AND COMMERCIAL BREAKDOWN OF SOLID WASTE GENERATION
(Number of Tons 2002)

CITY	RESIDENTIAL	MULTI-FAMILY	TOTAL RESIDENTIAL	ASSUMPTIONS	COMMERCIAL/ INDUSTRIAL	ASSUMPTIONS
APACHE JUNCTION†						
AVONDALE	24,767		24,767	Based on actual landfill tipping fee reports received monthly. All solid waste is delivered to the same landfill, which provides the city with a monthly report of tonnages and fees, by vehicle. City does not include multi-family solid waste in residential calculation. (Data available prior to July 2002 only includes total amount landfilled. Assume 80 percent of total is single family residential and 20 percent is commercial to estimate the residential/commercial tons for portion of 2002 prior to July.)	6,158	Based on 20 percent of total from Jan-Jun. From Jul-Dec, based on actual landfill tipping fee reports received monthly. All solid waste is delivered to the same landfill, which provides the city with a monthly report of tonnages and fees, by vehicle. All multi-family materials are included in commercial calculation. (Assume 20 percent is commercial waste).
BUCKEYE†	5,143		5,143	Based on 2.36 pounds/capita/day and population of 11,955.	2,615	Based on 2.02 pounds/employee/day and employment of 7,100.
CAREFREE†	1,355		1,355	Based on 2.36 pounds/capita/day and population of 3,150.	552	Based on 2.02 pounds/employee/day and employment of 1.500.
CAVE CREEK†	1,731		1,731	Based on 2.36 pounds/capita/day and population of 4,025.	295	Based on 2.02 pounds/employee/day and employment of 800.
CHANDLER	85,165.55 FY 2001-02 (July 1, 2001-June 30, 2002)		85,165.55 FY 2001-02 (July 1, 2001-June 30, 2002	All multi-family collected by private sector and not recorded by City. Private hauler-Waste Management. Information as of 3/17/2003.	25,331.29 FY 2001-02 (July 1, 2001-June 30, 2002	Only a portion of commercial is brought to Chandler Landfill. Majority collected by private sector. The multi-family portion of the waste stream is collected by the private sector.
EL MIRAGE†	8,881		8,881	Based on 2.36 pounds/capita/day and population of 20,645.	700	Based on 2.02 pounds/employee/day and employment of 1,900.
FOUNTAIN HILLS†	9,352		9,352	Based on 2.36 pounds/capita/day and population of 21,740.	1,584	Based on 2.02 pounds/employee/day and employment of 4,300.
GILA BEND†	867		867	Based on 2.36 pounds/capita/day and population of 2,015.	442	Based on 2.02/pounds/employee/day and employment of 1,200.

Table 4.1
RESIDENTIAL AND COMMERCIAL BREAKDOWN OF SOLID WASTE GENERATION
(Number of Tons 2002)

CITY	RESIDENTIAL	MULTI-FAMILY	TOTAL RESIDENTIAL	ASSUMPTIONS	COMMERCIAL/ INDUSTRIAL	ASSUMPTIONS
GILA RIVER INDIAN COMMUNITY†	1,179		1,179	Based on 2.36 pounds/capita/day and population of 2,740.	1,363	Based on 2.02 pounds/employee/day and employment of 3,700.
GILBERT	FY2002-2003 Total 72,005.6 Refuse 52,976 Bulk tsh 5,130 Recycle 13,285 Green wst 615 CY2002 Total 67,541.2 Refuse 49,631 Bulk tsh 4,773 Recycle 12,581 Green wst 557		FY2002-2003 Total 72,005.6 Refuse 52,976 Bulk tsh 5,130 Recycle 13,285 Green wst 615 CY2002 Total 67,541.2 Refuse 49,631 Bulk tsh 4,773 Recycle 12,581 Green wst 557	Amount from multi-family not tracked separately. Green Waste Collection Program (a separate uncontained service) was implemented Town-wide in March 2000.	FY2002-2003 Total 21,808.9 Refuse 21,397 Recycle 412 CY 2002 Total 21, 939.5 Refuse 21,510 Recycle 429	Amounts shown reflect tonnages collected and disposed of by the Town of Gilbert, but not by private solid waste haulers. Roll-off service (20- and 40- cubic yard containers) was initiated in January 2001.
GLENDALE	FY2001-2002 86,185	FY2001-2002 26,981	FY2001-2002 113,166	Source of information from landfill data and reports from reciprocal agreement with Phoenix. Indudes single family homes collected by City of Glendale and residents disposing at the landfill. FY data includes 11,590 tons uncontained waste collection and 8,834 tons delivered to landfill by Glendale residents. Residential tonnage landfilled decreased due to City implemented phased curbside recycling program July-November 2000.	FY2001-2002 40,472	Commercial/Industrial wastes from Glendale taken from landfill data. Includes apartment complexes and trailer parks served by container service. Multi-family waste factored out from Commercial/Industrial total and added to Residential total.
GOODYEAR	FY2002-2003 12,416		FY2002-2003 12,416	Residential includes 803 tons uncontained. Private hauler- Allied Waste collects the contained refuse and City forces collect the uncontained refuse.	5,119	Based on 2.02 pounds/employee/day and employment of 13,900.
GUADALUPE†	2,080		2,080	Based on 2.36 pounds/capita/day and population of 5,325.	520	Based on 2.02 pounds/employee/day and employment of 600.
LITCHFIELD PARK†	1,656		1,656	Based on 2.36 pounds/capita/day and population of 3,850.	442	Based on 2.02 pounds/employee/day and employment of 1,200.
MESA	FY 2002 135,902	FY 2002 44,679	FY 2002 180,581	Residential waste is 80 percent of total.	64,418	Commercial waste is 20 percent of total.
PARADISE VALLEY†	6,061		6,061	Based on 2.36 pounds/capita/day and population of 14,090.	1,989	Based on 2.02 pounds/employee/day and employment of 5,400.

Table 4.1
RESIDENTIAL AND COMMERCIAL BREAKDOWN OF SOLID WASTE GENERATION
(Number of Tons 2002)

CITY	RESIDENTIAL	MULTI-FAMILY	TOTAL RESIDENTIAL	ASSUMPTIONS	COMMERCIAL/ INDUSTRIAL	ASSUMPTIONS
PEORIA†	52,763		52,763	Based on 2.36 pounds/capita/day and population of 122,655.	10,496	Based on 2.02 pounds/employee/day and employment of 28,400.
PHOENIX	434,215	92,745	526,961	Breakdown of multi-family tonnage based on percent of dwelling units that have City service and that are du-plex, tri-plex, and apartments.	280,472	Does not include non-profits.
QUEEN CREEK†	2,338		2,338	Based on 2.36 pounds/capita/day and population of 5,435.	626	Based on 2.02 pounds/employee/day and employment of 1,700.
SALT RIVER PIMA MARICOPA INDIAN COMMUNITY†	2,895		2,895	Based on 2.36 pounds/capita/day and population of 6,730.	2,689	Based on 2.02 pounds/employee/day and employment of 7,300.
SCOTTSDALE	111,634	19,255	130,889	Includes multi-family residential and uncontained waste. Estimated to be 50 percent of commercial tonnage.	28,406	Data from City of Scottsdale. Includes roll-off and 50 percent of commercial tonnage. Based on FY 2000/2001 budget projections for City. Does not include waste material collected by private companies.
SURPRISE	12,574		12,574	Assumes 80 percent of total waste is residential.	3,144	Collected by Waste Management and Parks & Sons. Assumes 20 percent of total waste is commercial.
TEMPE†	68,580		68,580	Based on 2.36 pounds/capita/day and population of 159,425.	60,031	Based on 2.02 pounds/employee/day and employment of 162,400.
TOLLESON†	2,172		2,172	Based on 2.36 pounds/capita/day and population of 5,050.	4,714	Based on 2.02 pounds/employee/day and employment of 12,800.
WICKENBURG†	2,366		2,366	Based on 2.36 pounds/capita/day and population of 5,500.	1,510	Based on 2.02 pounds/employee/day and employment of 4,100.
YOUNGTOWN†	1,417		1,417	Based on 2.36 pounds/capita/day and population of 3,295.	442	Based on 2.02 pounds/employee/day and employment of 1,200.
UNINCORPORATED MARICOPA COUNTY†	93,062		93,062	Based on 2.36 pounds/capita/day and population of 216,335.	11,748	Based on 2.02 pounds/employee/day and employment of 31,800.
TOTALS*	1,234,298	183,660	1,417,958		578,218	

Source: MAG Solid Waste Information Collection Efforts, 1998, 2001, 2003; MAG Member Agency Interviews.
† Where data was not readily available, Maricopa County average was used.
*Totals rounded to nearest whole number.

Table 6.1
MEMBER AGENCY SOLID WASTE MANAGEMENT PLAN

	ENTITIES E = Existing P = Proposed C = Under Consideration by GRIC= Gila River Indian Community SRPMIC=Salt River Pima-Maricopa Indian Community COMPONENTS	APACHE JUNCTION	AVONDALE	BUCKEYE	CAREFREE	CAVE CREEK	CHANDLER	EL MIRAGE	FOUNTAIN HILLS	GILA BEND	GRIC	GILBERT	GLENDALE	GOODYEAR	GUADALUPE	LITCHFIELD PARK	MARICOPA COUNTY	MESA	PARADISE VALLEY	PEORIA	PHOENIX	QUEEN CREEK	SRPMIC	SCOTTSDALE	SURPRISE	TEMPE	TOLLESON	WICKENBURG	YOUNGTOWN
SOURCE REDUCTION	Goals																												
	Studies													E				E			E			E					
	Programs						E							E				E			E				P				
	• Waste reduction education						E					E	E	E				E			E		E	E	P	E			
	• Other													E															
RECYCLING	Goals																	E			E		E	E	E	E			
	Studies						E					E		E				E			E		E	E	E	E			
	Programs		E	C	E	E	E					E	E	E		C		E		E	E	C	E	E	P	E			
	• Buyback center																												
	• Curbside recycling		E		E	E	E		E			E	E	C				E	E	C	E		C	E	P	E	C		C
	• Drop-off recycling	E		C	E	E	E	C		E		E	E	E	E	E		E		E	E		E	E	P	E	C		E
	• Education		E		E	E	E			E		E	E	E		E		E			E		C	E	P	E	P		P
	• Landscape waste composting			C						C								E					E		P				
	• Landscape waste mulching			C				E		C								E		C	E		E	E	P				
	Facilities																												
	• Combined materials recovery transfer facility																				E								
	• Materials recovery facility												E								E		E						
WASTE ERGY/LF GAS	Goals																												
	Studies																				E								
	Waste-to-Energy facility						E														C		E						
	Landfill gas to Energy facility												C								C		E						
LANDFILLING	Goals																							E					
	Studies (for landfills or transfer stations)						E														E		E				E		
	Facilities																												
	•Landfill	E					E						E				C				E	E	E						
	• Transfer station		E			E	E				E			C			E				E			E				E	
	• Permanent household hazardous waste collect ctr						P					P														E			
OTHER	• Sludge waste study						E										E	E			E			E	E	E		E	
	• Liquid waste study																	E			E			E	E	E			
	• Household hazardous waste collection	E	C		E	E	E	P		E	E	E	E	E		E		E		E	E		C	E	P	E			P
	• Brownfields cleanup & redevelopment activity		E				E										E				E					E			

Source: MAG Solid Waste Information Collection Survey 2003, MAG Member Agency Interviews and Web sites and publications 2003.

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

OPERATING SOLID WASTE LANDFILLS						
LANDFILL NAME	REMAINING CAPACITY (Million Cubic Yards)	REMAINING YEARS	ANTICIPATED YEAR OF CLOSURE	OWNER	LOCATION	OTHER COMPONENTS
Apache Junction		10	2012	Allied Waste Industries, Inc.	Tomahawk & Baseline. 4050 Tomahawk Road Apache Junction, Arizona	
Butterfield Station		108	2110	Waste Management, Inc.	One mile north of 238 on 99th Ave. 40404 South 99th Avenue Mobile, Arizona 85239	Generally accepts MSW, C & D debris, special wastes, non-hazardous de-watered sludges, green waste, NHLW.
Chandler	13,888 (250,000 tons) Assuming 1,800 lbs = 1 ton	2.5	June 2005	City of Chandler	Northwest corner of Ocotillo Road & McQueen Road. 3200 South McQueen Road Chandler, Arizona	Life Cycle. Current last cell is Subtitle D.
Glendale	39	43	2046	City of Glendale	115th Ave & Glendale Ave (½ mile east of Agua Fria River). 11480 West Glendale Avenue Glendale, Arizona	Landscape waste grinding was discontinued July 2002.
Northwest Regional	85	99	2102	Waste Management Inc.	Deer Valley Road & 195th Avenue. 19401 West Deer Valley Road Surprise, Arizona 85387	Waste tire collection center.
Queen Creek		2	2003-2005	Allied Waste Industries, Inc.	½ mile south of Chandler Heights Road on Hawes Road.	Local concerns; availability of new Southeast regional facility. Planned site for composting of NHLW. Potential consideration of expansion.
Salt River Landfill		12	2015	Salt River Pima Maricopa Indian Community (SRPMIC)	SR 87 & Gilbert Road. 13602 East Beeline Highway Scottsdale, Arizona	Life Cycle. Green waste mulching and composting, white goods program.

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

LANDFILL NAME	REMAINING CAPACITY (Million Cubic Yards)	REMAINING YEARS	ANTICIPATED YEAR OF CLOSURE	OWNER	LOCATION	OTHER COMPONENTS
Skunk Creek	1 million cubic yards as of September 2004.	1.5	January 2006	City of Phoenix	1/4 mile west of I-17 on Happy Valley Road. 3165 West Happy Valley Road Phoenix, Arizona	
Southwest Regional	26	48	2051	Allied Waste Industries, Inc.	8 miles south of Buckeye, east of State Highway 85. 24427 South Highway 85 Buckeye, Arizona 85326	

PLANNED SOLID WASTE LANDFILLS

LANDFILL NAME	PLANNED CAPACITY (YEARS)	PLANNED SIZE (ACRES)	EXPECTED YEAR OF OPENING	OWNER	LOCATION	ADDITIONAL COMPONENTS (Conceptual)
SR 85	Approx. 50	2,652	2006	City of Phoenix	West of Southern Route (SR) 85 & south of Patterson Road.	
Southpoint Environmental				Southpoint Environmental Services	In Maricopa County, approx. 200 feet from Pinal County line, north side of SR 238. Mobile, Arizona	
Cactus Waste			Under construction 2004	Capital Environmental Resources, Inc./Waste Services, Inc.	22841 E Deepwell Road Florence, Arizona (In Pinal County)	

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

CLOSED SOLID WASTE LANDFILLS				
LANDFILL NAME	YEAR OF CLOSURE	OWNER	LOCATION	REMARKS ON CLOSURE
Cave Creek	1999	Maricopa County	3 miles west of Cave Creek Road, south side of Carefree Highway.	Life Cycle. Transfer station constructed.
Gila Bend	1997	Maricopa County	50252 South Old US 80.	RCRA regulations. Closed.
Gila River Indian Community (GRIC) District 6	1995	GRIC	Between 51st Avenue & the Gila River.	Life Cycle. Closed.
Hassayampa	1997	Maricopa County	Salome Highway & Ward Road/ Baseline Road.	RCRA regulations. Closed.
New River	1997	Maricopa County	3½ miles west of I-17 on New River Road.	Closed. Transfer station constructed.
Sacaton	N/A	GRIC	South of the City limits of Chandler & East of I-10 in Pinal County.	Life Cycle. Closed, transfer station constructed.
Tri-City	N/A	SRPMIC	11630 East Beeline Highway. Scottsdale, Arizona 85256 South side of State Highway 87	Closed. Gas to energy conducted at capped landfill.
27th Avenue	1995	City of Phoenix	27th Avenue & Lower Buckeye Road. 3060 South 27th Avenue Phoenix, Arizona	Closed. City developing end use master plan for Center for Environmental Learning and Enterprise.
Wickenburg	1997	Town of Wickenburg	NE quarter, Section 7, township 7N, range 5W.	Closed October 1, 1997.

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

INACTIVE LANDFILLS				
LANDFILL NAME	YEAR BECAME INACTIVE	OWNER	LOCATION	REMARKS ON INACTIVITY
Sierra Estrella	Unknown	Waste Management Inc.	22087 N Ralston Road Maricopa, Arizona (In Pinal County)	Reportedly still a permitted facility.

EXISTING TRANSFER FACILITIES				
TRANSFER FACILITY NAME	OWNER/OPERATOR	LANDFILL FOR DISPOSAL	TYPES OF WASTE ACCEPTED	TRANSFER STATION LOCATION
Aguila	Maricopa County	Northwest Regional	Residential	3 miles west of Aguila on State Highway 60. 48848 North 531st Avenue Aguila, Arizona 85320
Avondale	City of Avondale	Glendale	Residential	South of Lower Buckeye Road & 4th Street, adjacent to old treatment plant site. 395 East Lower Buckeye Road Avondale, Arizona 85323
Chandler	City of Chandler		(Mini facility)- Accepts approximately 20 percent of Chandler residential waste.	McQueen Road & Queen Creek Road 3200 McQueen Road Chandler, Arizona
Cave Creek	Maricopa County	Northwest Regional	Residential	8.3 miles east of I-17 on S Side State Highway 74. 3955 East Carefree Highway Carefree, Arizona 85331
Deer Valley	Waste Management, Inc.	Northwest Regional	Generally accepts: MSW, C & D debris, site cleanup, paper products, landscape trimmings, commercial hauling.	½ mile north of Deer Valley Road, just east of I-17. 2120 West Adobe Drive Deer Valley, Arizona 85027
Lone Butte	Waste Management, Inc.	Butterfield Station	Generally accepts: C & D debris, site cleanup, paper products, landscape trimmings.	On Kyrene, south of Chandler Boulevard. 1000 South Kyrene Road Chandler, Arizona 85226
Morristown	Maricopa County	Northwest Regional	Residential	North of 60-89-93 by Morristown Overpass 40135 North Highway 60 Morristown, Arizona 85342

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

TRANSFER FACILITY NAME	OWNER/OPERATOR	LANDFILL FOR DISPOSAL	TYPES OF WASTE ACCEPTED	TRANSFER STATION LOCATION
New River	Maricopa County	Northwest Regional	Not available.	3 ½ miles west of I-17 on New River Road. 41835 North Lake Pleasant Road New River, Arizona
Paradise	Allied Waste Industries, Inc.	Not available.	Not available.	South of Lower Buckeye Road, east of 51st Avenue. 4845 West Lower Buckeye Road Phoenix, Arizona 85043
Rainbow Valley	Maricopa County	Southwest Regional	Residential	3 miles south of Ray Road on Rainbow Valley Road. 17795 South Rainbow Valley Road Goodyear, Arizona 85338
Sacaton	GRIC	Butterfield	Residential	2 miles south of Casa Blanca Road (BIA#1) on Casa Grande Highway (BIA#7). South of Chandler city limits & east of I-10 in Pinal County
Scottsdale	City of Scottsdale	SRPMIC	Residential, Commercial & Recyclables.	West of Pima on Union Hills. 8417 East Union Hills Scottsdale, Arizona 85255
Skunk Creek	City of Phoenix	Transferred to MRF	City of Phoenix residential commingled recyclables.	1/4 mile west of I-17 on Happy Valley Road. 3165 West Happy Valley Road Phoenix, Arizona
Sky Harbor	Waste Management, Inc.	Not available.	Generally accepts: Municipal, commercial haulers, general public.	North of University Drive, east of 40th Street. 2425 South 40th Street Phoenix, Arizona 85034

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

TRANSFER FACILITY NAME	OWNER/OPERATOR	LANDFILL FOR DISPOSAL	TYPES OF WASTE ACCEPTED	TRANSFER STATION LOCATION
Wickenburg	Maricopa County	Northwest Regional	Residential	NE quarter, section 7, township 7N, range 5W. 3305 Sabine Brown Road Wickenburg, Arizona 85390
PLANNED TRANSFER FACILITIES				
Cactus Waste	Capital Environmental Resources, Inc. (formerly owned by Cactus Waste Systems)	Planned landfill in Pinal County, near Picacho Peak area.		Pecos Road & Mountain Road (on Mesa side of Meridian Line).
East Valley	Waste Management Inc.	Butterfield	Planned design capacity 12,000 tons per day, planned to open 2004.	80th Street & Warner Road.
Gila River Indian Community District 6	GRIC	Butterfield	Residential	On Riggs Road, approx. 3 miles east of 51st Avenue.
West Valley	Waste Management Inc.	Northwest Regional	Planned design capacity 12,000 tons per day, planned to open 2004.	Perryville & McDowell Roads.
Name undetermined (East Valley)	Undetermined			Elliott & 88th Street (Hawes).

CLOSED TRANSFER FACILITIES				
TRANSFER FACILITY NAME	OWNER/OPERATOR	LANDFILL FOR DISPOSAL	TYPES OF WASTE ACCEPTED	TRANSFER STATION LOCATION
Glendale	City of Glendale	Glendale	Residential	6210 W Myrtle Glendale, Arizona.

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

RECYCLING/MATERIALS RECOVERY FACILITIES (MRFs)						
FACILITY NAME	STATUS	OWNER/OPERATOR	AREAS SERVED	MATERIAL RECOVERY CAPACITY	LANDFILL FOR REJECTS	MRF LOCATION
Abitibi (f.k.a. Valley Recycling)	Operating	Abitibi	Chandler, Mesa, Gilbert	8,580 Tons per Year. (33 tons per day x 5 days per week)	Salt River	Ray Road & Chandler Blvd.
Glendale	Operating	City of Glendale	Glendale	65,000 Tons per Year. (250 Tons per day x 5 days per week)	Glendale	6210 West Myrtle Glendale, Arizona
19th Street & University (f.k.a. Hudson Baylor)	Operating	Hudson Baylor	Phoenix (south), Scottsdale	78,000 Tons per Year. (300 Tons per day x 5 days per week)	Skunk Creek	19th Street & University. 1919 E University Drive Phoenix, Arizona
Salt River MRF	Operating	SRPMIC	Mesa, Scottsdale, SRPMIC	74,880 Tons per Year. (288 Tons per day x 5 days per week)	Salt River	13602 East Beeline Hwy Scottsdale, Arizona 85256
Western Organics-27th Avenue	Operating	Western Organics	Phoenix	17,420 Tons per Year. (67 Tons per day x 5 days per week)	Skunk Creek	2807 South 27th Avenue Phoenix, Arizona 85009
Recycle America Phoenix I	Operating	Waste Management, Inc.	Tempe, Fountain Hills, Tucson	Not available.	Butterfield Station	3115 East Madison Phoenix, Arizona 85034
Recycle America Phoenix II	Operating	Waste Management, Inc.	Not available.	250 Tons per day x??= ??	Butterfield Station	3060 South 7th Avenue Phoenix, Arizona 85041
PLANNED MATERIALS RECOVERY FACILITIES (MRFS)						
N/A						

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

COMBINED MATERIALS RECOVERY FACILITIES/TRANSFER FACILITIES							
FACILITY NAME	STATUS	OWNER/OPERATOR	AREAS SERVED	(TONS/DAY) CAPACITIES TRANSFER	(TONS/DAY) RECOVERY	LANDFILL FOR DISPOSAL	FACILITY LOCATION
27TH Avenue Transfer Station/MRF	Operating	City of Phoenix	Phoenix (south)	4,500	320 Residential.	Skunk Creek (will switch to SR85 when open).	27th Avenue & Lower Buckeye Road.
PLANNED COMBINED MATERIALS RECOVERY FACILITIES/TRANSFER FACILITIES							
FACILITY NAME	STATUS	OWNER/OPERATOR	AREAS SERVED	(TONS/DAY) CAPACITIES TRANSFER	(TONS/DAY) RECOVERY	LANDFILL FOR DISPOSAL	FACILITY LOCATION
North Gateway Transfer/ Recycling Station	Planned 2006	City of Phoenix	North portion of Phoenix	4,000	320	SR85	3 miles north of Happy Valley Road, east of I-17.

RUBBISH/CONSTRUCTION & DEMOLITION DEBRIS LANDFILLS				
LANDFILL/OWNER NAME	SIZE (ACRES)	REMAINING CAPACITY	REMAINING YEARS	LOCATION
Bradley 40th Street/Bradley Corporation	Not available.	Not available.	Not available.	North Side of Magnolia Street, 1/4 mile east of 40th Street. 4346 East Magnolia
CalMat/Vulcan	Not available.	Not available.	Not available.	11923 W Indian School Rd.
Deer Valley Landfill (f/k/a Knuoechel Brothers)/Waste Management, Inc.	Not available.	Not available.	Not available.	24802 N 14th Street, at 14th Street and Alameda.
Glenn Weinberger Rainbow Valley/Weinberger	Not available.	Not available.	Not available.	3410 S 39th Avenue (39th Avenue & Lower Buckeye Road).
Lone Cactus (f/k/a Arizona Crushers) Current owner: Waste Management, Inc.	Not available.	Not available.	Not available.	Northwest corner of 7th Street & Beardsley Road. 21402 N 7th Street Phoenix, Arizona 85024

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

COMPOSTING FACILITIES			
FACILITY NAME	OWNER/OPERATOR	MATERIALS ACCEPTED	LOCATION
Western Organics	Private	Green wastes, biosolids, agricultural wastes, solid wastes.	2807 S 27th Avenue, Phoenix.
Urban Forest Products	Private	Green wastes, wood wastes, agricultural wastes.	3330 W Broadway Road, Phoenix.
Salt River Landfill Mulching/Composting	SRPMIC	Green wastes.	SR 87 & Gilbert Road. Scottsdale, Arizona
PLANNED MUNICIPAL SOLID WASTE COMPOSTING FACILITIES			
FACILITY NAME	OWNER/OPERATOR	MATERIALS ACCEPTED	LOCATION
N/A			

COMMERCIAL MEDICAL WASTE TREATMENT FACILITIES			
FACILITY NAME	OWNER/OPERATOR	MATERIALS ACCEPTED	LOCATION
Stericycle	Stericycle, Inc.	Generally treats waste from hospitals, medical and dental offices, mortuaries, and research institutes. Stopped incinerating in November 2002. Currently uses autoclaving technology.	Gila River Indian Community on northern edge of Reservation in Lone Butte Business Park.

COMMERCIAL MEDICAL WASTE TRANSFER STATIONS			
FACILITY NAME	OWNER/OPERATOR	MATERIALS ACCEPTED	LOCATION
Envirosolve	Envirosolve LLC	Not available.	2844 West Broadway Road Phoenix, Arizona 85041
Milum Textile Services	Milum	Not available.	2600 South 7th Avenue Phoenix, Arizona 85007

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

OPERATING PERMANENT HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITIES				
FACILITY NAME	OWNER/OPERATOR	SERVICE AREA	MATERIALS ACCEPTED	LOCATION
Tempe Household Hazardous Products Collection Center	City of Tempe	Tempe, Guadalupe	Generally accepts household and automotive waste.	1320 East University Drive Tempe, Arizona

PLANNED PERMANENT HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITIES				
FACILITY NAME	OWNER/OPERATOR	SERVICE AREA	MATERIALS ACCEPTED	LOCATION
Chandler Hazardous Household Waste Collection Center	City of Chandler	Chandler	Plans to generally accept household and automotive waste.	Not available.
Gilbert Household Hazardous Waste Collection Center	Town of Gilbert	Gilbert	Plans to generally accept household and automotive waste.	Gilbert South Area Service Center NW corner of Queen Creek & Greenfield Rd.

WASTE TIRE COLLECTION SITES			
FACILITY NAME	OWNER/OPERATOR	SERVICE AREA	LOCATION
Queen Creek Waste Tire Collection Site	Maricopa County Solid Waste Department.	Not available.	Entrance of Riggs Road, 1/4 mile west of Ellsworth Road. 26402 South Hawes Road
Defense Reutilization and Marketing Office at LAFB	Defense Reutilization & Marketing Office.	Luke Air Force Base.	North of Glendale Avenue, 2 miles east of Luke Air Force Base. 7011 North El Mirage Road Glendale, Arizona 85307
City of Chandler Waste Tire Collection Site	City of Chandler Solid Waste Management.	Chandler	3200 South McQueen Road Chandler, Arizona
City of Glendale Waste Tire Collection Site	City of Glendale Municipal Solid Waste.	Glendale	11480 West Glendale Avenue Glendale, Arizona 85307
27th Avenue Waste Tire Collection Site	City of Phoenix Department of Public Works.	Phoenix	South of Buckeye Road. 3060 South 27th Avenue Phoenix, Arizona 85009
Skunk Creek Waste Tire Collection Site	City of Phoenix Department of Public Works.	Phoenix	One half mile west of I-17. 3165 West Happy Valley Road Phoenix, Arizona 85027

TABLE 6.2
MAG SOLID WASTE MANAGEMENT FACILITIES SUMMARY
2002

FACILITY NAME	OWNER/OPERATOR	SERVICE AREA	LOCATION
EnviroTech Industries International Waste Tire Collection Site	EnviroTech Industries International LLC.	Not available.	6.5 miles west of Mobile, Arizona on SR 283 (Maricopa Gila Bend Road).
USMX, Inc. Waste Tire Collection Site	USMX, Inc.	Not available.	1/4 mile east of 35th Ave, on Broadway Road. 3106 West Broadway Road Phoenix, Arizona 85041
Recovery Technologies of Arizona, Inc. - Buckeye Waste Tire Collection Site	Recovery Technologies Group.	Not available.	½ mile west of Oglesby Road (SR 85) on Baseline Road.
All Mighty Metals Processing Waste Tire Collection Site	All Mighty Metals Processing.	Not available.	East of 35th Avenue, on Broadway Road. 3408 West Broadway Road Phoenix, Arizona 85041
Weinberger Rainbow Valley Waste Tire Collection Site	GMW Enterprises, Inc.	Not available.	On SR 283 (Maricopa Gila Bend Road). 39500 South 99th Avenue Mobile, Arizona
Pep Boys #747 Waste Tire Collection Site	Ronald Knopf	Phoenix	Northwest corner of 35th Ave & Cactus Rd. 3528 West Cactus Road Phoenix, Arizona 85029
Pep Boys #779 Waste Tire Collection Site	Davis Marentes	Glendale	Southwest corner of 63rd Ave & Bell Road. 6311 West Bell Road Glendale, Arizona 85308

Sources: 1991 MAG Regional Waste Stream Study; MAG Solid Waste Information Collection Efforts: 1998, March 2001 and January 2003; MAG Member Agency Interviews and Web sites; ADEQ Directory of Arizona's Waste Tire Collection Sites January 2003; ADEQ Directory of Arizona Biohazardous Medical Waste Handlers.