**SPECIAL RECOVERABLE MATERIALS COMMITTEE REPORT**

Special Recoverable Materials Committee and its purpose:

The second version of the State Solid Waste Management Plan (hereinafter "State Plan") went into effect on April 1, 2014. The State Plan has six categories of "action items" assigned to the Regional Solid Waste Management Districts (hereinafter "RSWMDs") or the Arkansas Department of Environmental Quality (hereinafter "ADEQ"). One of the categories is Special Recoverable Materials. The first action item under this category requires the following to be accomplished:

***Establish a series of workshops and/or committees to explore the alternative uses of special recoverable materials in other states.***

ADEQ chose to form a committee to review alternative uses of special recoverable materials in other states. ADEQ contacted various groups requesting representatives to serve on the committee. The groups contacted were chosen in an effort to get representation from a variety of groups. The following individuals agreed to serve on the committee:

| Committee Member | Organization Represented |
|---|---|
| Ben Jones | ADEQ |
| Al Eckert | Arkansas Environmental Federation |
| Kendrick Ketchum | Arkansas Chapter of Solid Waste Association of North America |
| Don Curran | State Marketing Board for Recyclables |
| Cherie O'Mary | Arkansas Recycling Coalition |
| Kristin Higgins | Cooperative Extension Services |
| Carol Bevis | RSWMDs of Arkansas; Pulaski County RSWMD |
| Bryan Leamons | ADEQ |
| Teresa Bechtel | ADEQ |

The committee first met on September 2. At that meeting the committee determined what materials it would research as well as what states. The sub-committee that developed the action items for Special Recoverable Materials did not provide a definition for special recoverable materials. To determine what materials to be researched the committee applied the following definition for special recoverable materials:

> *Materials that can be potentially be reused or recycled but are not accepted at most recycling facilities.*

This definition was chosen based on conversations with members of the Special Recoverable Materials Sub-Committee. Applying this definition the following items were chosen to be researched:

1. Wax Cardboard
2. Rice Hulls
3. Yard Waste
4. Shingles
5. Tires
6. Fly Ash
7. Steel Slag
8. Food Waste
9. Glass
10. Wood Waste
11. Number 7 Plastics
12. Plastic Shrink Wrap
13. Contaminated Plastic Bags
14. Styrofoam
15. Fluorescent Lamps
16. Fiberglass

The states chosen to be researched are as follows:

1. Louisiana
2. Minnesota
3. Mississippi
4. Missouri
5. Oklahoma
6. Oregon
7. Tennessee
8. Texas
9. Washington

In addition to the states listed above it was decided that EPA Region 6 would also be contacted. These states were chosen based on two different reasons. The states surrounding Arkansas were chosen as those states would be representative of Arkansas in a variety of ways as well as any potential markets for a special recoverable material found in a neighboring state could potentially be utilized by facilities in Arkansas. The remaining states were chosen based on the committee's opinion that these states are progressive in the field of recycling and reuse in solid waste management.

The Committee's Search and the Results:

Each member of the committee was assigned a state to research to see what, if anything, these states did to promote, incentivize, recycle or reuse any of the materials identified in the list above. The following sections provide the information found by the committee members for each material on the list. The information provided in these sections represent the recycling opportunities, markets, laws, or other items noted in other states but not currently used, or not widely used, in Arkansas. Many of the states polled utilize the same means and opportunities for recycling or re-using the listed materials as found in Arkansas. These sections will not discuss further the means and opportunities for recycling and re-using the listed materials found in other states that are already utilized in Arkansas.

**Contaminated Plastic Bags:**

The states that we polled didn't provide much information about the recycling or re-use for contaminated plastic bags. In some states they could not provide information because contaminated plastic bags are not specifically tracked for purposes of recycling information. In many states contaminated plastic bags are lumped into categories with similar materials like plastic wrap.

Oregon did state that there were plans to build a pyrolysis unit that would use plastic bags as feedstock. However, at the time the information was provided the pyrolysis unit was not operating and no information could be provided on the results of that operation. Texas supports a website called Renew. This website is a material exchange site with the Region VI states Texas, Oklahoma, Arkansas,

Louisiana, and New Mexico which serves as a bulletin board for advertising available materials to give or sell or vendors wanting to purchase certain materials. Some posts looking for material included plastics bags.

**Fiberglass:**

There was not much information provided from the states researched about the recycling of fiberglass. Missouri stated it is working with a group that the state hopes will develop a recycling opportunity for fiberglass. It may be possible that fiberglass is exchanged on the Renew website that is operated by Texas. No posts regarding fiberglass were noted at the time this report was drafted.

**Fluorescent Bulbs:**

One measure discovered for increasing the recycling of fluorescent bulbs was found in Washington. Washington instituted a law, 70.275 RCW, that require the recycling of fluorescent bulbs by January 1, 2013. Fluorescent bulbs were effectively banned from being sent to landfills. The recycling program is financed in whole, or in part, by the producers of the fluorescent bulbs. This law has promoted the development of private businesses to address the need for recycling of fluorescent bulbs. While Oregon doesn't have any law or program in place like Washington to increase the recycling of fluorescent bulbs it may take steps to minimize the adverse impact from fluorescent bulbs. Bills to reduce the amount of mercury in fluorescent bulbs and to increase the lifespan of bulbs are being considered to reduce the potentially negative impact of disposing of fluorescent bulbs.

**Fly Ash:**

Minnesota, Missouri, and Texas all utilize fly ash in some form in road projects. Specifically, Missouri and Texas utilize use of fly ash in road projects through their respective Department of Transportation. In these states' road projects fly ash is used for concrete, subgrade or base stabilizer, mineral filler, and supplementary cementing material. This may be an avenue to start, or increase, the recycling and re-use of fly ash in the state without the need for legislation or rule-making.

**Food Waste:**

Two states have in place, or are developing, interesting programs to recycle or re-use food waste that is either not currently used in Arkansas or not widely used. In Missouri a biodigestor is in the process of being installed in St. Louis. The goal of the biodigestor is to convert food waste into energy and biofuel. Oregon has a grant program in place that provides funds to organizations to collect edible food waste destined for disposal. This edible food that was to be disposed is used to feed individuals in need. While there may be organizations that collect edible food waste to be disbursed to those in need as of the date of this report there is no knowledge of a state grant program funding such an effort.

**Glass:**

There are many interesting opportunities for recycling or re-using glass that may not be implemented in Arkansas currently. In the state of Oregon there is a law that is referred to as the Bottle Bill. This law requires that glass containers manufactured in the state or manufactured within 750 miles and filled within the state must be made with a minimum of fifty percent of recycled glass. This law has resulted in a high recovery of glass beverage bottles.

Some states use glass in construction projects. Minnesota and Missouri reported using glass as an aggregate in either road base or sewer lines. Washington reports that approximately twenty-five percent of its recycled glass is used in unspecified construction projects. Missouri and Tennessee both use glass in glassphalt. Glassphalt is an asphalt mixture that contains approximately ten to twenty percent of glass by weight. Tennessee also uses recycled glass in beautification projects. Minnesota allows for the re-use of glass in surface-cleaning applications in place of traditional sandblasting media.

One final interesting use of recycled glass is from a company called Master Marble located in Missouri. Master Marble actually uses recycled glass to make counter tops. These counter tops are marketed as having properties similar to the stone materials typically used for counter tops. The recycled glass is mixed with other components to produce the counter top material. It also is worth

noting that one of the largest recyclers of glass in the region is located in Kansas City. That facility currently collects glass from many locations in the northern half of Arkansas.

**No. 7 Plastics:**

None of the states surveyed provided any specific information about the recycling or re-use of No. 7 plastics. Most reported that some recyclers pick up No. 7 plastics with other plastics as is done by some recyclers in Arkansas.

**Plastic Shrink Wrap:**

Like Arkansas many states provided information reflecting some opportunities to recycle plastic shrink wrap. The one state that stood out was Minnesota. The Recycling Association of Minnesota has a program for businesses that provides for the recycling of plastic shrink wrap at a low cost. Minimizing the costs of recycling a material is an effective way to promote recycling.

**Rice Hulls:**

Most states didn't provide any information or simply stated that the hulls could be composted. Louisiana responded by providing the name of a company that utilizes rice hulls in its process. The company is named Rice Hull Specialty Products, Inc. and it is actually located in Stuttgart, Arkansas. This company grounds the rice hulls and sells the ground hulls as a material to be used by its customers in their own processes.

**Shingles:**

All of the states with exception of Mississippi and Oklahoma reported allowing some use of shingles in road projects. Some states are more restrictive than others in that they only allow for the use of scrap shingles from a manufacturer to be used in road projects. Many of the states though allow for the use of residential "tear-off" shingles in road projects or are in the process of evaluating the use of residential "tear-off" shingles.

**Steel Slag:**

Only one state reported an opportunity for recycling or re-use of steel slag. Texas allows for the use of blast-furnace slag as aggregate in several Texas Department of Transportation projects.

**Styrofoam:**

None of the states surveyed report any unique or innovative recycling or re-use of Styrofoam. Missouri and possibly Mississippi can provide regional markets for Styrofoam. A company named All Points Recycling located in Cassville, Missouri recycles Styrofoam as does EPC located in St. Louis. Mississippi is the home of a company called Dart Chemical that is evaluating accepting Styrofoam for recycling.

**Tires:**

Many of the states contacted reported re-uses and recycling uses of waste tires similar to those utilized in Arkansas. Some states reported though the use of waste tires in road construction and other construction applications. Minnesota allows for the use of waste tires in asphalt paving as a substitute for rubber, as lightweight fill in public road construction, and as a substitute for conventional aggregate in other construction applications. Missouri allows for the use of ground tires in a modified asphalt mix. Washington reported that a portion of the tires recycled in the state are baled and used as barriers.

**Wax Cardboard:**

None of the states provided any information on incentivizing or promoting the recycling or re-use of wax cardboard. The state of Oregon does promote a preference for the grocery industry to move to alternatives to wax cardboard in an effort to minimize the amount of it used in the state.

**Wood Waste:**

Many of the states surveyed recycle wood waste in manners similar to Arkansas. One state contacted provided some interesting information on the recycling or re-use of wood waste. There is a company in Missouri that mills wood waste from trees cleared from urban areas to make what it refers

to as “urban lumber”. Missouri is also home to several companies that make furniture or other products from wood waste.

**Yard Waste:**

Washington was the only state to report that it does more than Arkansas in the recycling and re-use of yard waste. Washington has programs in place that offers technical and some financial assistance to promote the diversion of yard waste. The financial assistance comes in the form of grants to local governments, citizen groups, and non-profits to address solid waste issues including yard waste.

## Conclusion

The search results show that there are ways and methods to increase recycling and re-use of some of these materials that the state of Arkansas is not currently utilizing. It is the hope of this committee that the information presented herein will prompt action to implement some of these ideas for recycling and re-use where it is feasible. For some of the materials listed the states contacted do no more, or less, that what is currently done in the state of Arkansas for recycling and re-use. In addition to showing that there are ideas Arkansas may implement, the search results also show that the state of Arkansas does well in many avenues of recycling and re-use.

Attached is a chart that provides a quick reference to some of the information provided herein.