

# SHB 2308

## Scrap Tire Report



**Washington State Department of Ecology**  
**Solid Waste and Financial Assistance Program**  
**Publication # 02-07-029**  
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# Executive Summary

Effective scrap tire management in Washington has waned since pioneering efforts were implemented in the late-1980s through mid-1990s. Since the sunset of the scrap tire program in the mid-1990s, there has been little progress made in cleaning up remaining tire piles. Tire piles present fire and public health hazards. Other states have improved on early tire management programs such as the one originally implemented in Washington, by supporting product markets.

Most states and provinces have active scrap tire programs, typically funded through a fee of \$1 per tire to support tire cleanup, enforcement, and market support. Effective state-run scrap tire programs have the following features, based on the research and experience of the Rubber Manufacturers Association (RMA):

- Funding source for grants/loans for projects and equipment.
- Focuses on research, development, and demonstration projects.
- Diversified markets approach.
- Emphasis on in-state end uses.
- Fee deposited into a dedicated tire fund
- Create strong regulations and enforcement on tire dumping.
- Amnesty days and abatement to remove tires.
- Create a level playing field for tire products, allow the market to work.

The original Washington scrap tire program included these features:

- A funding source for projects
- A dedicated fund
- Tire removal
- Some minor emphasis on research and demonstration projects

So, at best, Washington's original program included only half of the critical eight program features now thought to be required for a successful state scrap tire program.

Enhancing and supporting scrap tire markets is a key part of the integrated management system described above. Substitute House Bill 2308 (SHB 2308) recognized this fact in requiring this report to include:

The feasibility of establishing and maintaining an incentive program for market development for scrap tires. This shall include, but not be limited to, the results of research into the availability of funding for such a program and proposed criteria for the program that favors projects utilizing higher end value uses of scrap tires.

In fulfilling the reporting requirements of the SHB 2308, the Department of Ecology (Ecology) performed research that reached to other states and various scrap tire industry contacts in North America. In addition, the recommendations from a legislative scrap tire task force in Oregon were examined. Its executive summary is included in Appendix C of this report.

SHB 2308's focus on high end-value markets points toward encouraging markets for crumb rubber from scrap tires. Nationally, this is a growing market, but in the Northwest there are

missing pieces of the market, specifically crumb rubber used in road construction and other civil engineering projects. Fortunately, there is a lot of research which can be used to address the cost and technical issues surrounding the support of this market in Washington.

The following table summarizes the program elements RMA considers to be most important for a state scrap tire program to be successful. Shown in the last three columns of the table are the comparable program element in Washington, the state law related to each element, and what our state’s relevant needs may be.

**Table ES-1**

<b>Ideal Scrap Tire Program Elements</b>			
<b>Program Element</b>	<b>Exists in WA</b>	<b>RCW</b>	<b>Needs</b>
1) Funding source for grants/loans.	No, Vehicle Tire Recycling Account Fee sunset in 1994.	70.95.510-535	Re-establish or otherwise fund at an appropriate level.
2) Program focuses on scrap tire research, market development, and demonstration projects.	Demonstration projects at local level only.	70.95.535(2)(a)	Expand to state level agencies.
3) Diversified markets approach.	Yes.	70.95.535	Include DOT and DCTED.
4) Emphasis on in-state end uses.	Not explicitly.	None	Prioritize promotion of end-use, in state.
5) Fee deposited into a dedicated tire fund.	No, Vehicle Tire Recycling Account Fee sunset in 1994.	70.95.510-535	If re-established, create a variable fee. See note 1.
6) Create strong regulations and enforcement on tire dumping.	No, enforcement is locally specific. No tracking of tires, limited bond for \$10,000 per storage site is inadequate. See note 3.	70.95.500, 70.95.555, 70.95.560, and 70.95.565	Statewide tracking, uniform strong statewide enforcement, & significant financial assurance.
7) Amnesty days and abatement to remove tires.	Yes for abatement, no statewide amnesty days.	70.95.530	Amnesty tire public turn ins.
8) Create level playing field for tire products, allow the market to work.	No, illegal tire dumping and whole tire disposal competes directly with recyclers.	None.	See item 6 in this table.
9) A <u>user fee</u> is assessed (most efficiently at the point of vehicle registration).	No, fee was on a new vehicle tire basis.	70.95.510	Consider optional funding bases.
10) Funds are used to stimulate end-user markets. See note 2.	Not specific, law generally encourages recycling.	70.95.020(6)	Prioritize stimulation of end-use markets.

Notes:

- 1)The fee is reduced when stockpiled tires have been eradicated and when ample and sustainable markets exist for future generated scrap tires. A nominal fee may be needed to maintain continued enforcement and oversight.
- 2)Contracts are awarded to those who exhibit economical and environmentally sound end-use markets
- 3)The proposed solid waste rule 173-350 WAC will strengthen the financial assurance requirements for tire storage.

The table above illustrates where existing Washington law provides, partially provides, or lacks what is needed to create a viable scrap tire program that actively supports proper management of scrap tires from generation to end-use or disposal. A viable scrap tire program must also provide the required enforcement and marketing incentives for reuse and recycling markets. To establish and maintain a comprehensive scrap tire management system in Washington, legislative and agency action would be required. An example of how Illinois chose to address most of these issues is contained in the text of Appendix E. Illinois is especially strong in its market support provisions. An example of a comprehensive scrap tire enforcement and tracking system is from Missouri. The Missouri scrap tire enforcement program is described in the “Scrap Tire Generation, Use, and Enforcement” section 3.0 of this report.

A comprehensive scrap tire management system would require legislation to re-establish a fee for the Vehicle Tire Recycling Account (VTRA) to support the following:

1. Expand scrap tire demonstration projects to include state agencies.
2. Strengthen existing provisions for market development for in-state diverse markets.
3. Strengthen the scrap tire tracking and enforcement provisions of existing law including a per-tire-in-storage financial assurance instrument.
4. Support statewide illegal tire pile cleanup and citizen scrap tire amnesty events.
5. Prohibit whole-tire landfill disposal.

The fee could be based on a point of sale tire fee as before or other fee revenue sources. If the per tire fee were re-established, it should be implemented as a variable fee. The need for a variable fee is based on anticipated changes over time in the performance of the management of scrap tires in Washington. As the management of tires improves, the fee would be reduced. A beginning fee of \$1 per new vehicle tire could be re-established as in the original legislation.

The beginning fee would then be adjusted based on performance measures. Performance measures might include indexing to the percent of non-disposal tire recovery as well as an estimate of remaining tires in piles needing cleanup. As the level of tires in piles remaining to be cleaned up decreases and the level of tire recovery increases, the fee per tire would decrease to a support level of perhaps 25 cents per tire.

The support level would remain to provide funding for tracking, enforcement, ongoing public information and education, and administrative costs. The system tracking would be needed to monitor the ongoing performance of the scrap tire management system and trigger any required changes in the fee.

The frequency of change for a variable tire fee should be averaged over time. This will provide relative stability in the face of tire markets which can vary quickly, tire piles which are not always easy to locate, and frequent changes in fees which can be confusing to the public. A three- to five-year running average might be an appropriate time frame to consider changes in the fee structure.

The use of the fee would be best split between a number of state agencies for scrap tire enforcement, technical assistance, marketing, procurement, and research interests. Some

elements of such programs are contained in the body of this report, but the division of the variable fee, based on system performance, would need to be determined.

It would be very beneficial to leverage the expertise of the private sector and natural markets to the greatest extent possible. There is discussion in this report of opportunities and approaches to this collaboration including industry support for education and technical assistance. These industry stakeholders will be more likely to assist if a scrap tire program is re-established in Washington.

Most programs in the US are run by state agencies. The option for an industry or industry/government run scrap tire program is also discussed in this report and offers certain advantages and difficulties. This is often called a “product stewardship” approach. Although there are examples of product stewardship for other product types in the US (such as Ni-Cd and other rechargeable batteries) and elsewhere (waste paint and other hazardous consumer waste products in BC), it has not yet been attempted in the US for scrap tires. This option could be explored further and could be instituted in various ways through legislation.

Finally, as directed by SHB 2308, Ecology investigated the use of scrap tires for use as alternative daily cover as a substitute for soil at landfills in this report. Based on that analysis, Ecology will develop guidance to encourage this use of scrap tires in Washington.

## 1.0 Introduction

This report was written to satisfy the requirements of Substitute House Bill 2308 (SHB 2308), passed in the 57<sup>th</sup> session. In part, SHB 2308 directed the Department of Ecology (Ecology) to:

investigate and draw conclusions by December 31, 2002, on the following:

(1) The use of scrap tires as alternative daily cover for landfills. This shall include, but not be limited to, a review of alternative daily cover specifications that have been developed by other states, and either an analysis of those specifications' applicability to Washington or recommendations for developing alternative daily cover specifications that are unique to Washington;

(2) The feasibility of establishing and maintaining an incentive program for market development for scrap tires. This shall include, but not be limited to, the results of research into the availability of funding for such a program and proposed criteria for the program that favors projects utilizing higher end value uses of scrap tires.

In addition, SHB 2308 directed Ecology to “track and report annually to the legislature the total increase or reduction of tire recycling or reuse rates in the state for each calendar year and for the cumulative calendar years from the effective date of this act.”

This report is organized to provide the current context for scrap tire management in Washington and the region while also meeting legislative requirements of SHB 2308 cited above. There are many types of scrap tire management programs which provide information, examples, and lessons learned. Capturing some of those key experiences here provides a basis for improving scrap tire management in Washington State.

## 2.0 Scrap Tires in Washington

### Overview of Scrap Tire Issues

Waste tires have been a difficult issue in Washington and across the country for many years. There have been many instances where tire piles have accumulated legally or illegally and then caused health and safety problems due to rats, mosquitoes, or tire fires. In addition, with the arrival of the West Nile virus in Washington State, transmitted to humans by mosquitoes, controlling the creation of new piles and cleanup of existing tire piles, which support mosquito breeding, is a renewed public health issue.

### **Vehicle Tire Recycling Account and Cleanup Program, 1989-1998**

In 1989, the Legislature established a one-dollar-per-tire fee on the retail sale of new vehicle tires (RCW 70.95.510). The funds were primarily used to clean up existing unpermitted tire piles around the state. The tire fee sunset in 1994, and the account was fully spent by 1998.

The Everett tire fire in 1984 provided impetus for the original state Vehicle Tire Recycling Account (VTRA) and associated tire pile cleanup program. The smoke from the Everett tire fire temporarily closed Interstate 5 and received national media attention.



*Fig. 1* September 24, 1984, Everett tire fire; Jim Leo, The Herald (used with permission )  
(<http://www.heraldnet.com/leo/Leopage9.htm>)

After the Everett tire fire was extinguished, significant contamination remained on the site from the byproducts of combustion and heavy metals such as zinc, which is toxic to fish. The site is adjacent to a slough that connects to Puget Sound through the Snohomish River system. Subsequent to the fire, millions of dollars have been spent to remediate the site. This contamination was complicated by the fact that the tire pile had been created on top of a solid waste landfill that had served the community for many decades.



*Fig. 2 Ecology staff evaluating the impact of the Everett tire fire.*

The tire cleanup program allowed Ecology and local jurisdictional health departments to create a prioritized cleanup list of 25 illegal tire pile sites located in seven counties across Washington. The first tire pile cleanup contracts were executed in May 1991. By the end of 1995, Ecology had completed the cleanups of all 25 originally identified sites. During the process of cleaning up the original 25 piles, the cost per site decreased, and funds remained for additional tire pile cleanups.

The 1996 legislature appropriated the remaining Vehicle Tire Recycling Account (VTRA) fund balance to clean up additional illegal tire piles. In April 1996, cleanup of a Lewis County site (Winlock Tire Pile) commenced and was completed in June 1998. The final estimate of tires cleaned up at Winlock was 4 million tires. The cleanup of the Lewis County site exhausted all remaining funds in the Tire Account. The contract cost of properly disposing of these unauthorized tire piles was approximately \$1 per tire through a competitive bidding process. The VTRA ultimately cleaned up more than 8 million tires in 27 large illegal tire piles throughout Washington. Many smaller tire piles were not cleaned up and still remain.



*Fig. 3* A tire pile in Thurston County on the top 25 priority list before being cleaned up

Tire piles are relatively easy to create but can cause problems and be a drain on public resources. An example of the ongoing history and problems of tire piles, before, during and after the VTRA and cleanup program was active, is exemplified by the Dorman Tire Pile in Pierce County.

### **Dorman Tire Pile / Tire Fire**

Located eight miles east of Roy in rural Pierce County, the Dorman Tire pile began taking tires in about 1978. By 1984 there were between three and five million tires on this eight-acre site, at which time a tire fire consumed most of those tires.

From 1984 through 1995, the Dormans collected another five to ten million tires on the same site. In 1995 the state tire fee funded the shredding and removal of the whole tires at a cost of approximately \$1.3 million. After the tires were removed, Ecology cleaned up the contaminated soil left from the 1984 tire fire at a cost of approximately \$219,500 from the State Toxics Cleanup Account. During the cleanup, 5,833 tons of melted tires, ash, and contaminated soils were taken away for disposal from approximately two acres of the site.

The Dormans (now deceased) gained income from accepting scrap tires for many years, but contributed nothing, except access to their property, to removal of the tires or to the subsequent cleanup of contaminated soils from the tire fire. The costs above do not include the cost of state staff to manage and oversee the cleanup of the tire wastes and contaminated soils.



*Fig. 4. Test pit to determine the extent of contaminated soil at the Dorman Tire Fire site.*

The Dorman site history illustrates the repeated use of the same site for the improper collection and storage of scrap tires. The illegal collection and storage of unprocessed whole tires remains relatively easy due to lack of a dedicated, comprehensive tire tracking and pile enforcement program. This allows illegal tire piles to exist and flourish while placing legitimate scrap tire businesses, who find end-use markets and provide ongoing disposal of scrap tires, at an unfair competitive disadvantage. In order to support scrap tire end-use markets the tire pile creation and enforcement issues needs to be addressed.

#### **Tire Fee after 1994**

Presently, many, but not all, tire retailers continue to collect a tire disposal “fee,” typically one or a few dollars per tire. These monies are used by those businesses for scrap tire management. These monies are not provided for state use since the tire fee authorization ended in 1994, although that may not be clear to citizens that pay the continuing “fee.” Some retail tire businesses, such as Les Schwab, include scrap tire management costs in the price of the tires sold and do not list a separate used tire disposal fee on customers’ bills.

An informal survey of tire dealer tire disposal fees was performed by Ecology in Thurston County during September 1999. The majority of tire dealers, 56 percent, charge a tire disposal fee. Where a fee was charged, it averaged \$2.05 per tire when a new tire was purchased from that retail store. The results of this one-county survey are shown below.

**Table 2.1**  
**Used Tire Disposal Fee of**  
**Tire Dealers in Thurston County**

Disposal Fee	
Tire Dealer	Fee per Tire
A	None
B	None
C	None
D	\$ 1.50
E	None
F	\$ 3.00
G	\$ 2.50
H	\$ 2.50
I	\$ 2.00
J	\$ 1.00
K	\$ 2.00
L	\$ 2.00
M	\$ 2.00
N	\$ 2.00
O	None
P	None
Q	None
R	None
No. w/fees	10
% w/fees	56%
Avg. fee	\$ 2.05

Total number of tire dealer locations in Thurston County during the survey was 18. Results are from an anonymous phone survey conducted on September 20 and 21, 1999.

One tire dealer representative explained that the fee is to pay for government agencies to track the tires so that the right thing happens to them and they are not dumped.

### **Current Scrap Tire System and Problems**

#### **Washington and Local Tire Programs**

Currently there are minimal requirements for waste tire transportation and tire pile permitting; however, these programs do not have specific funding, lack enforcement, and are not comprehensive. Any enforcement is done only at the county health department level and varies greatly from county to county. In most counties there are little or no resources devoted to tire pile identification, mitigation, and enforcement.

There has not been a comprehensive attempt to quantify the actual number and size of tire piles since the tire cleanup program ended. Consequently, the number and quantity of tire piles in

Washington is unknown. There is anecdotal evidence that tire piles are a continuing problem in Washington. The current system does not appear to prevent tire pile problems in Washington.

Piles of up to 800 tires are allowed before they are required to be permitted as a solid waste site by the local health department. Local health departments typically respond to tire piles based on citizen reports. If a pile is largely out of public view, it may become very large before local authorities are aware of its existence. The civil penalty for illegal dumping or stockpiling vehicle tires is \$200 to \$2,000 per offense, section 70.95.500 RCW..

Tire haulers are supposed to obtain a special license from the Department of Licensing, but there is no enforcement to assure that is happening. The rule implementing the existing waste tire carrier system, promulgated in 1989, includes only administrative fee provisions, which have not sunset.

**WAC 173-314-200** Waste tire carrier license.

- (1) Applicability. All waste tire carriers are required to obtain a waste tire carrier license from the department of licensing.
- (2) After April 1, 1989, all waste tire carriers must obtain a waste tire carrier license from the department of licensing. The department of licensing will process and issue licenses as quickly as possible after receiving a completed application.
- (3) Application forms for a waste tire carrier license will be available at unified business identifier service locations located throughout the state.
- (4) An application for a waste tire carrier license and a cab card for one vehicle shall include a two hundred fifty dollar application fee, fifty dollars of which shall be nonrefundable. Each additional vehicle cab card to be used by the licensee requires an additional fifty dollar fee. The application fee may be refunded following submittal of an application under the following conditions.
  - (a) Ecology determination that a license is not required.
  - (b) The applicant withdraws the application before Ecology has approved or denied the application.
- (5) The application shall include a bond in the sum of ten thousand dollars in favor of the state of Washington, or other financial assurance.
- (6) A waste tire carrier license shall be valid for one year from the time of application. Licensees who want to renew their licenses will be notified forty-five days prior to their expiration date in order to maintain a current license.

[Statutory Authority: RCW 70.95.555. 89-03-047 (Order 88-33), § 173-314-200, filed 1/13/89.]

### **Current Scrap Tire Problems in Washington**

King and Cowlitz Counties have recently taken action to remediate individual tire piles. These are documented in articles from the media in Appendix A. The following paragraphs summarize these reports. Other known tire piles from around the state are also described in this section.

Since 1998, Cowlitz County has been trying to force a landowner to remove an illegal tire pile, now estimated at 20,000 tires, from their property. Cowlitz County is trying to avoid having to take responsibility for the cost of removal and disposal of the tire pile.

A Kent junk yard has been under the scrutiny of the Washington State Patrol (who regulate junk yards) and King County Water and Land Resources (environmental releases). One of the owners

has reportedly estimated that approximately 300,000 scrap tires are on the site. Because many of the tires were in place before the current owners bought the property, they do not want to bear the total cost of scrap tire removal and disposal. Freon, used oil, and other uncontrolled automotive wastes from junk cars have reportedly contaminated the site near the Green River.

The unpermitted tire pile on the right is near Pasco. It had about 20,000 scrap tires, but was reduced by half because the local PUD paid to remove about 10,000 tires under their power lines. The possible damage to their power distribution system if a tire fire were to occur was a risk that the PUD was willing to mitigate.



*Fig. 5 Unpermitted tire pile*

The next set of still existing tire piles that would have been cleaned up with the tire fund monies are in Lewis County. The Lewis County sites included five tire piles listed below.

**Table 2.2**

<b>Remaining Tire Piles in Lewis County as of 1995</b>	
<b><u>Unpermitted Tire Pile Sites</u></b>	<b><u>Estimated Number of Tires</u></b>
Sommerville	82,000
Huff, Stansell, and Ross	24,700
Petty	165,000
<b>Total</b>	<b>271,700</b>

Local environmental health departments and Ecology staff have found scrap tire piles, without tire pile permits, at various locations throughout the state.

A large unpermitted tire pile with many thousands of tires in Yakima County is pictured below.



*Fig. 6 Pump House Road Tire Pile, Yakima County June 2001 (close-up [top] and vicinity [bottom])*

## Scope of the Issue – Scrap Tire Generation Estimates

Because scrap tire generation, use, and disposal have not been tracked in Washington, the use of industry estimates can help set the stage for scrap tire management. The following information is based on national estimates for 2001 from the Rubber Manufacturers Association. National tire generation estimates were adjusted for Washington State population (6 million) relative the entire United States (281 million).

**Table 2.3**

<b>Scrap Tires in Washington, based on U.S. Avg.</b>	
Scrap Tires Generated per year	5.9 million
Scrap Tires Stockpiled (legally or not)	6.29 million

In the July 2001 “Scrap Tire Recycling Task Force Report to Representative Kelli Linville” (Washington Task Force), the scrap tire generation range of 0.8 to 1.0 passenger tire equivalents per year was assumed. Using this range in combination with 6 million Washington citizens results in an estimate of 4.8 to 6.0 million scrap tires generated per year.

The number of scrap tires stockpiled in Washington is unknown but some tire piles are causing problems. This has been reported in the press recently in King and Cowlitz Counties (See Appendix A for details.)

The single largest tire pile in Washington is permitted as a tire pile by the local health department near Goldendale in Klickitat County. Although its permit has occasionally lapsed, overall this tire pile has been growing since the end of the state tire fee and cleanup program. This is one indicator that the rate of supply of scrap tires is exceeding the market demand.



**Fig. 7 Goldendale tire pile, Klickitat County, 2002.  
Over 1,000,000 tires.**



*Fig. 8* Goldendale tire pile, Klickitat County, 2002.  
Over 1,000,000 tires in storage and growing.

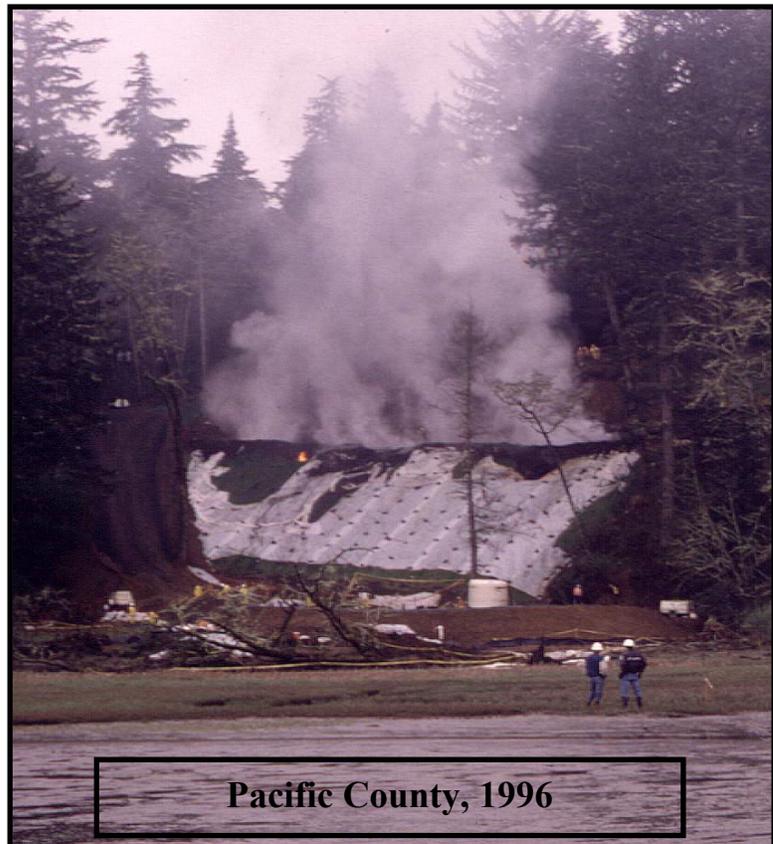
## **Scrap Tire Markets**

One of the key factors that influence proper tire management is market demand. Each potential use of scrap tires has unique issues of economics, public concern, permitting, and end-use markets. Citizens are often concerned about tire piles but have also expressed concern over how other uses for scrap tires might affect their community's aesthetics, health, and environment. For instance, when the City of Tacoma was permitting a steam-electric plant to use various fuels, the concept of using scrap tires was strongly resisted. While citizen response can be hard to accurately gauge, other factors are important in influencing the scrap tire market. The following discussion provides an overview of the current market condition for scrap tires and the potential for use of scrap tires as alternative daily cover at landfills, followed by an examination of national markets for scrap tires.

### **Lack of Northwest Scrap Tire Markets**

In Washington during the past few years, fewer markets have been available for tires and no significant large volume new markets have emerged. There are some new technologies and uses being proposed, but none have yet been widely developed, and none have consumed significant quantities of scrap tires in Washington. Notably, a few years ago there were stronger markets for tire-derived fuels used at various industrial boilers, such as cement kilns in the Puget Sound area.

Because of two shredded scrap tire fires in road fills in 1996, the Washington State Department of Transportation (DOT) has avoided the use of shredded tires in road fill.



*Fig. 9* Tire shred road fill fire, State Route 100 near Ilwaco, 1996

These fires led to research that resulted in a national standard limiting the thickness and use of tire shreds in road fill construction. There have been no thick tire-shred road fills built since 1996 in the United States and no such fires have occurred. Because of a lack of basic research to determine the mechanisms that lead to such road fill fires, Washington DOT is not yet comfortable in using shredded tires as road fill material.

In some areas, DOT has chosen to use recycled materials, specifically by using compost as an erosion control material and by reusing aluminum signs in concert with the Department of Corrections. DOT and Ecology worked through technical and quality issues over a number of years to gain acceptance and use of compost for roads projects. Over the past three years, DOT has salvaged 144,527 square feet of aluminum sheets, at a fraction of the cost of new aluminum sheets. About \$91,000 has been paid to correctional institutions for their work in the program. During this period, the recycling program saved \$291,000 from the cost of purchasing new aluminum sheets<sup>1</sup>. A potentially large market for scrap tires is in road construction use of scrap tire crumb rubber mixed with asphalt pavements. DOT will be researching this potential use under provisions of SHB 2308.

Other potential markets for scrap tires have different issues to overcome. The broad lack of markets for scrap tire products was recently verified in an examination of the statewide recycling industry by King County in their *2001 Survey of Recycled Material Collectors and Haulers, Transporters, Processors, and Re-Manufacturers Final Report* (September 2002). The survey was intended to measure levels of employment, capital investment, and material handling in the year 2001 in order to assess trends, emerging markets, and possible opportunities in the recycling industry of King County and Washington State.

Selected key statewide findings that included scrap tire recycling are the following:

- **Washington State's recycling industry is a significant component of the State's economy.** Washington State's recycling industry employs at least 3,620 people and has invested over \$850 million in capital assets. The number of people employed by the recycling industry is comparable to other resource-producing industries. For example, employment in the recycling industry is larger than in the mining industry, and ranks just behind employment in primary aluminum production.
- **There is a possible opportunity for the establishment of local plastics and tires/rubber re-manufacturers.** Washington companies that re-manufacture these materials have gone out of business or scaled back their use of recycled feedstock. However, large quantities of plastics and tires/rubber continue to be collected, and are likely either stockpiled or sent out of state (or out of the country) for re-manufacture.

Also, an October 2002 report to the Oregon Legislature mirrors the lack of markets in the region. The Oregon legislative Tire Recycling Task Force found that:

a steep decline in scrap tire recovery was precipitated by the loss of a major fuel market in Lewiston, Idaho. Although remaining market outlets continued to utilize Oregon scrap tires in the manufacture of rubber products or for fuel, the majority of scrap tires suddenly lacked markets. Several landfills in Oregon emerged during this time as low-cost, high-volume

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<sup>1</sup> Measures, Markers and Mileposts - The Gray Notebook for the quarter ending September 30, 2002  
WSDOT's quarterly report to the Washington State Transportation Commission on transportation programs and department management, page 13.

management options for scrap tires. Landfill disposal soon became the predominant outlet for scrap tires, and by 2000 the recovery rate fell to 32 percent.

(See Appendix C for the Oregon Task Force’s Executive Summary.)

The phenomena of having more tires generated than demanded by the marketplace is also played out at the national level. The Rubber Manufacturers Association (RMA) has identified the fastest growing markets for scrap tires as playgrounds covers, soil amendments, flooring/matting, and landfill construction materials. In the table below, the total of scrap tires generated is not matched by current markets. It is interesting to note that for Washington and Oregon some large markets for scrap tires have not yet been developed. This is especially clear for the lack of use of scrap tires in civil engineering applications in this region.

The 2001 Washington Scrap Tire Recycling Task Force Report to Representative Kelli Linville identified similar markets for recovered scrap tires. In addition, the Linville report also identified a list of barriers that would need to be overcome in order to get scrap tire products into various markets or categories of use. Some barriers were based on perception of the public or potential users of scrap tire products; others were technical or financial hurdles. Successful marketing is clearly a complex issue for scrap tires. What is clear is that markets need to be further developed and supported so that the supply and demand are in closer balance.

**Table 2.4**  
**National Existing Markets for Scrap Tires, 2001**  
 (Rubber Manufacturers Association)

Scrap Tire Market	Millions of Tires per Year	Proportion
Total Generation Estimate	281	100%
Tire-Derived Fuel (TDF) cement kilns (36 facilities), pulp and paper mills (18), industrial boilers (17), and utility boilers (11)	115	41%
Civil Engineering Applications (rubberized asphalt, road base, etc.)	40	14%
Ground (crumb) Rubber Products (mats, fields, various other)	33	12%
Exported	15	5.3%
Scrap tires punched or stamped into products	8	2.8%
Pyrolysis Processes	0	0%
Other markets	7	2.5%
<b>Total Market Use of Scrap Tires</b>	<b>218</b>	<b>77.6%</b>

This market use rate of nearly 78 percent is a significant improvement from the approximately 66 percent market use rate estimate from 1998. This has occurred from a combination of efforts, mainly at the state level, to encourage and support market use of scrap tires.

Currently there are approximately 23 businesses who process or use scrap tires in the region. These firms are listing in Appendix D. Most are from Washington and Oregon, but there are also firms listed from Idaho, Utah, Montana, and British Columbia. This reflects the regional nature of tire transportation and use.

One civil engineering application market for which SHB 2308 called for closer examination was the use of tire shreds as alternative daily cover at landfills. That issue is addressed in the following section.

### **Scrap Tires Used as Landfill Alternative Daily Cover**

In accordance with SHB 2308, Ecology staff reviewed alternative daily cover (ADC) specifications in other states. Ecology staff also discussed with other states the efficacy of their specifications and experience with the use of tire shreds as ADC.

Tire shreds can substitute for soil to cover wastes daily at landfills. Functionally, tire shreds provide most of the same properties as a daily cover of six inches or more of soil. The use of tire shreds as ADC is typically driven by the relative location (cost of transport) and workability of local soils as daily cover. If soils are not close at hand or are difficult to work during wet or freezing weather, tire shred ADC can be an advantageous cover material.

More effective coverage of solid waste in landfills as well as lower processing cost is achieved through the use of larger tire pieces, four inches and larger. Smaller tire shreds are less effective in covering the waste; they tend to sift down into the waste and cost more to produce. Larger tire shreds do not sink into the waste and allow the waste compaction equipment to transmit their weight more effectively through the tire layer into the underlying waste.

To avoid tangling and other workability issues, the tires need to go through a process that results in relatively clean cuts. In general, specifications call for tires to be cut into pieces at least one-quarter the size of a tire.

At the Headquarters Road Landfill, an industrial landfill in Cowlitz County, tire shreds are used as a drainage layer for the waste. Ecology is not aware of any other landfills in Washington that use shredded tires in landfill construction or operations.

Ecology believes that use of shredded tires for ADC should not cause problems and in some circumstances may be a significant benefit to some landfill operators who do not have ready sources of soil material.

Alternative daily cover is currently allowed by rule at landfills under Section 173-351-200(2)(b) WAC:

**(2) Cover material requirements.**

(a) Except as provided in (b) of this subsection, the owners or operators of all MSWLF units must cover disposed solid waste with six inches (fifteen

centimeters) of earthen material, i.e., soils, at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

(b) Alternative materials of an alternative thickness other than at least six inches (15 centimeters) of earthen material may be approved by the jurisdictional health department if the owner or operator demonstrates during the permit process of WAC 173-351-700 that the alternative material and thickness control disease vectors, fires, odors, blowing litter, provides adequate access for heavy vehicles, will not adversely affect gas or leachate composition and controls and scavenging without presenting a threat to human health and the environment.

Ecology contacted other state agencies and investigated studies and landfill operation reports regarding the use of tire shreds as ADC. There does not appear to be any adverse effect to the landfill gas or leachate composition, scavenging, or access by heavy vehicles compared with the use of soils. In some instances the access by heavy vehicles can be increased by use of large tire shreds. In addition, tire shreds can control disease vectors, odors, and blowing litter. The one area where tires do not function as well as soil is as a fire break in the waste. Although it is difficult to cause tire shreds to burn, they will combust given certain conditions. A weekly cover of soils might serve to mitigate this particular characteristic of tire sheds.

Specifications for the use of tire shreds as ADC and landfill disposal allowance for tire shreds in other states are summarized in the table below.

**Table 2.5  
2002 Survey of Tire Shred Disposal and  
Alternative Daily Cover Landfill Requirements**

State	Contact	Tire Shred Landfill Disposal Allowed?	Disposal Sizes Allowed	Alternative Daily Cover (ADC) Allowed?	ADC Size	Soil-to-Tire Shred Ratio
CA	Novak, Elaine			Yes		50/50
CO	Forlina, Bob			Yes	Prefer >6"	
FL	Clark, Jan	Yes		Yes	2"-5.5"	
IL	Marvel, Todd	Yes by permit	1/4 cut or shredded	Yes	6"-12"	
KS	Graves, Paul	Yes	Several	Yes	3" to bagel size	None
KY	Gilbert, George	Yes	1/4 cut	Trial	<3"	
MO	Fester, Dan			Yes		50/50
NE	Gibson, Hoot	No	n/a	Yes	3"	50/50
NY	Phaneuf, Bob	Yes	cut or shred	Yes		50/50
OH	Large, Bob			No	n/a	n/a
SC	White, Jana	Yes	1/8 cut	No*	n/a	n/a
VA	Lassiter, Allan	Yes	2 pcs.or rough shred	Yes	max 4" x 10"	50/50

\* No ADC due to fire and odor concerns, landfill drainage layer material is allowed.

- Data sources: 1) Spreadsheet from Toni Duggan, New Mexico Environment Department, Spring 2002.  
2) Correspondence with state regulatory agencies by David Nightingale, Dept. of Ecology.  
3) Postings by state representatives to National Scrap Tire List Serve.

To support the market of tire shred as ADC it would be useful to create guidance for local health departments and landfill operators. Consequently, Ecology will develop a guidance document regarding the use of shredded tires for ADC. In addition, Ecology will examine additional landfill applications that may be suitable for use of shredded tires for potential approval.

## **Establishing and Maintaining Scrap Tire Market Development Incentives**

Nationally and regionally, the generation of scrap tires continues to exceed the market demand. There are many ways to create market demand. Many specific market barriers were identified in the Linville report for various uses of scrap tires. One obvious factor which dramatically affects the demand for scrap tire products is their market price or changes in where in the market revenues are available.

### **Market Subsidies Per Tire**

Some market demand programs involve financial incentives which subsidize the collection, processing, or use of the scrap tire. These subsidy programs create market conditions which do not survive when the subsidy is removed.

For a few years, Texas provided processors of scrap tires with financial incentives per tire shredded. Now that the subsidy has expired, many of the processing firms that formed to take advantage of the subsidy have gone out of business, and the state is having to deal with large stockpiles of shredded tires. The subsidy provided enough money to create some profitable tire shredding enterprises, but did not actually result in getting the processed tires into an end-market.

Similar temporary subsidy programs have created market expansions and collapses in other states and provinces. If there is going to be a government-run subsidy program, it should be permanent, but that may be politically difficult to maintain over time. Furthermore, such a direct subsidy to private businesses would be problematic in Washington due to the constitutional prohibition on such use of public funds.

### **Capital Assistance for Infrastructure and Innovation**

Another kind of subsidy involves providing capital assistance or incentives to encourage the purchase or upgrading of equipment to process tires or to convert tire derived material into products. Capital assistance allows the lowering of market entry barriers and encourages new or expanded infrastructure by increasing the financial attractiveness to capitalize scrap tire ventures. Because capital assistance does not directly affect routine operating costs, it does not impact the market price as much as a per-tire subsidy.

Capital subsidies must be implemented carefully to avoid putting existing businesses, who have already made capital investments, at competitive disadvantages. Because the scrap tire businesses are regional, there may be issues of fairness between in-state and out-of-state

subsidies. As with direct subsidies on a per-tire basis, this may be a problematic issue due to the constitutional prohibitions on the use of public credit for private purposes. Another approach would be to provide low-interest loans and or capital expenditure sales tax relief for businesses in the scrap tire recycling business. This approach would have a less dramatic impact but provide the same kind of positive influence for these businesses. Such alternative approaches would need to be coordinated with the Office of Trade and Economic Development and Department of Revenue.

### **Market Research, Promotion of Markets, Barriers Removal, and Demonstration Projects**

A more sustainable approach would be to provide incentives that remove barriers and provide pilot and demonstration projects which engender the development of multiple market demands. This can be supplemented with promotion of innovative technologies and consumer marketing for recycled content products.

While more subtle in its approach, this allows the marketplace to develop in a more natural fashion. Such market growth increases the innovation and resiliency of the markets by allowing experimentation and risk-taking. This approach can be implemented by state or private organizations.

Ecology already has authority to work in this area according to section 70.95.020(6) RCW which directs the agency to encourage “recycling of discarded vehicle tires and to stimulate private recycling programs throughout the state.” If there were a new emphasis provided in this area, it would be good for Ecology to work closely with the Office of Trade and Economic Development on this.

### **Balancing Scrap Tire Generation, Market Capacity, and Subsidy Choices**

The California Integrated Waste Management Board has increased their scrap tire market during the past 12 years to the point where it is now consuming approximately 75 percent of the tires generated. Other states and provinces with well-developed scrap tire management programs report similar results. California is now considering adjustments to their system, including an analysis of subsidies and other options to expand tire recycling and diversion. It is unclear whether it is possible to consistently consume all the scrap tires generated in a particular region by the use of nonsubsidized market incentive alone. It is clear that a closer balance is possible between scrap tire supply and demand than what currently exists in Washington.

One factor that could influence the generation part of the equation is a change in purchasing practices regarding preferred tire life. Tire manufacturers are capable of providing longer-lasting tires. New cars may be equipped with shorter-life tires to be more cost competitive and therefore the tires need to be replaced relatively soon after purchase. Encouraging the specification of new vehicle fleets as well as replacement tires with longer-lasting tires would reduce the number of scrap tires generated per year. This could also be encouraged at the individual consumer level through public outreach and education. These and other similar approaches are supported by section 70.95.010(4) RCW, which states it is “necessary to change manufacturing and purchasing practices and waste generation behaviors to reduce the amount of waste that becomes a governmental responsibility.”

Ultimately, from the public policy perspective, the objective of scrap tire programs must include matching market demand to scrap tire generation rates. Because the marketplace is a complex and changing system, a static one-size-fits-all approach is not an effective tool. The following section provides an overview of some of the common approaches taken by other states in an attempt to manage the scrap tire problem.

## **State Scrap Tire Programs**

Regardless of how markets are influenced by scrap tire programs, most states have active programs for scrap tire management. Both Oregon and Washington are currently re-evaluating their scrap tire programs which have sunset.

This parallel initiative in both states provides an opportunity to collaborate in establishing a regional complementary approach to scrap tire management. This following text provides background information on what has been learned and options that can be considered for implementation in the region.

### **Common Features of Successful State Run Tire Recovery Programs**

An evaluation of states with programs that supported markets without subsidies was provided by the Rubber Manufacturers Association (RMA) to the Oregon Legislative Task Force on Tire Recycling meeting on December 7, 2001. Based on RMA's experience, effective state-run scrap tire programs have the following features:

1. Funding source for grants/loans.
2. Focuses on research, development, and demonstration projects.
3. Diversified markets approach.
4. Emphasis on in-state end uses.
5. Fee deposited into a dedicated tire fund (Washington's Vehicle Tire Recycling Account still exists with a \$0 balance).
6. Create strong regulations and enforcement on tire dumping.
7. Amnesty days and abatement to remove tires.
8. Create level playing field for tire products, allow the market to work.

The original scrap tire program in Washington was an early program in the United States and did not have the benefit of the experiences of the many programs that followed. The original Washington scrap tire program included these features:

- A funding source (#1).
- A dedicated fund (#5).
- Tire removal (#7).
- Some minor emphasis on research and demonstration projects (#2).

So, at best, Washington's original program included only half of the critical eight program features now thought to be required for a successful state program.

A list of states that have effective programs, and the markets that are developed in each state according to RMA, are shown in the table below:

**Table 2.6**

State with Effective Tire Programs	Developed Local Scrap Tire Markets
<b>Illinois</b>	<b>Tire-derived fuel (TDF), civil engineering, retread tires</b>
<b>Florida</b>	<b>TDF, civil engineering, ground rubber, rubber products</b>
<b>California</b>	<b>TDF, civil engineering, ground rubber, rubber products</b>
Iowa	TDF, civil engineering
S. Carolina	TDF, ground rubber, civil engineering
Georgia	TDF, civil engineering, ground rubber
Arizona	Ground rubber, civil engineering
Maine	TDF, civil engineering
Maryland	Civil engineering, TDF
Virginia	TDF and alternative daily cover for landfills

The first three states listed have been especially successful in developing multiple (diverse) markets. An example of what Illinois has accomplished and how their tire management system works is contained in Appendix E. Diverse markets provide the additional benefits of market resiliency and a more competitive and sustainable market system.

RMA has developed additional advice on what makes scrap tire programs function well in addition to the features suggested above. These include:

- A user fee is assessed (most efficiently at the point of vehicle registration).
- Funds are used to stimulate end-user markets.
- Contracts are awarded to those who exhibit economical and environmentally sound end-use markets.
- The fee is reduced when stockpiled tires have been eradicated and when ample and sustainable markets exist for scrap tires generated in the future. A nominal fee may be needed to maintain continued enforcement and oversight.

### **Structure of Existing Tire Program Fees in Other States**

The first feature listed by RMA of a successful scrap tire program is a funding source. RMA has compiled the current state of these programs based on a 1999 EPA report and other data sources. The RMA data on state tire program fees are summarized below. Details on the state-by-state analysis are provided in Appendix B of this report.

- 35 states have tire fee programs.
- 5 have sunset programs (including Washington).
- Most programs use a tire dealer fee program.

- 29 states have some form of per-tire fee, from \$0.25 to \$2.00 per passenger tire with most at \$1.00 per tire. Other states have an additional income tax, title surcharge tax, or other forms to support their scrap tire programs.

States with active programs or fees:	35
Tire dealer collects fee	25
State collects fee:	7
Wholesale level collects fee:	1
Tire dealer license fee:	1
Importer pays fee (Hawaii):	1
States with programs that have sunset:	5
Tire dealer collected fee:	4 (including Washington)
State collected fee:	1
States with no fees (past or present):	10

## **Opportunities for Scrap Tire Management and Market Development**

There are many options for improving the way in which tires are regulated, managed, transported, and marketed. There are also many stakeholders that have interests in the various parts of the existing waste tire system.

Existing scrap tire collection and tire processors in the region should be considered integral parts of any change in the current scrap tire management system. There are currently scrap tire collection firms, tire product manufacturers, crumb rubber producers, and tire shredding and baling companies in the region. The two largest scrap tire collection and processing companies in the region are located in the Portland area. Those companies are Tire Disposal & Recycling and RB Rubber. Tire and automotive dealers, as well as other stakeholders, will also have interests in any changes to the scrap tire management system.

This section provides a brief overview of some current opportunities for scrap tire market incentive programs as well as some options for development of scrap tire management programs that are not currently active in the region. Some of these are private industry opportunities, some are public sector options, and others are a combination of public and private.

### **Ford/RTG Program**

Ford Motor Company, in a partnership with the Recovery Technologies Group (RTG), has developed a collection system serving Ford and Mercury dealers and supplies innovative market initiatives and demonstration projects that do not include landfilling or tire-derived fuels.

They have sponsored over 100 projects in environmentally responsible uses for tires. RTG provides tire collection services and produces tire shreds and crumb rubber. Some RTG plants make crumb rubber by freezing tires with liquid nitrogen, magnetically separating the steel, and blowing off the fiber to create tire crumb rubber. The nearest plant is currently located in Southern California. RTG plans on expanding their national infrastructure.

Ford is interested in being a catalyst for market development in providing materials and seed money for projects in the United States that use scrap tires. Example projects have included:

- Supplying 1.5 million pounds of scrap tire crumb rubber to pave 152 miles of Highway 54 with rubberized asphalt in New Mexico.
- Supplying 150,000 pounds of scrap tire crumb rubber for Arizona to use rubberized asphalt.
- Playground material for schools (cushions the play of children).
- Horse arena (tire crumb mixed with soil is easier on horses).
- Donated rubber to construct the Dallas Cowboys football field.

Based on preliminary contacts with Ford, this program is about to end. However, because Ford has not implemented any projects and has market demonstration needs, if Washington was interested in developing demonstration projects to encourage the use of tire products, Ford would be interested in assisting.

For instance, if a local high school needed a new sports field, Ford might help supply the rubber material. Or, if there was a need to create a demonstration project using rubberized asphalt, they would be interested in providing materials and providing contacts with the technical expertise required for a successful project.

### **Product Stewardship Models – RBRC, B.C., and Alberta Models**

Product stewardship calls for the producers of goods to accept responsibility for their products at the end of their service life, especially when there are special problems and needs required when their products become wastes. Washington could take a product stewardship approach and require tire manufacturers/retailers to manage the reuse/recycling/disposal of tires. They would influence an increase in markets by finding solutions for management and markets for scrap tires. Some examples of existing product stewardship programs are described below.

The Rechargeable Battery Recycling Corporation (RBRC) was created by the major battery manufacturers in North America to collect and recycle heavy metals from their members' rechargeable batteries. This is a national program operated by a private nonprofit company and is funded by a weight-based fee paid by battery producers. This occurred after an industry sponsored bill was passed by Congress mandating this system and exempting this activity from antitrust litigation.

In British Columbia, the provincial government imposed an "Eco-Fee" based on the quantity of paint, fuels, pesticides, and other hazardous materials sold at retail and commonly found in the waste stream. The brand owners are responsible for collecting the "Eco-Fee" at the point of sale. The majority of the fee is remitted to an industry run nonprofit corporation called Product Care. In response to the legislation, Product Care was formed by industry to manage these wastes from throughout the Province. British Columbia created the fee structure and simultaneously required industry to provide the infrastructure and meet performance goals.

Alberta has a tire management program that is run by a combined industry-government board. The Tire Recycling Management Association of Alberta (TRMA) was created by the Alberta Legislature. TRMA has sponsored a number of projects to investigate potential new technologies for tire recycling, and to demonstrate new uses or products and the benefits that they can bring to users. It has also cleaned up tire piles throughout the province and is funded with a \$4 (Canadian) Advance Disposal Surcharge.

Between the inception of TRMA in 1992 and 1996, an estimated 4 million tires had been processed but had not found markets. To alleviate the glut of processed tires, the TRMA began focusing more on development of markets for processed tires. This was successful in reducing the accumulated backlog of processed tires and 80 percent of the recycled material produced in 1997/98 was used in Alberta. (Much more information about the Alberta model can be found at their website <http://www.trma.com/web/sitemap.cfm>.)

The Linville Tire Task Force examined this model and did not reach consensus on the appropriateness of such a model for Washington. The Alberta model has been criticized for unnecessarily subsidizing markets, skewing nearby markets, and being market intrusive. It has also been lauded for being comprehensive, flexible, and innovative.

An advantage of product stewardship models is that they can provide a level playing field for all businesses. In addition, by using the existing expertise from the private sector these models have the potential to minimize costs. Although the Alberta and the British Columbia models are hybrid government/business solutions, they still take advantage of the business sector expertise to some extent. In considering product stewardship models, careful attention to the impact on existing scrap tire businesses is required.

The Rubber Manufacturers Association or a consortium/association of regional tire business interests would be the most likely candidates to create a scrap tire product stewardship program. Neither of these groups has taken such a role elsewhere in the United States. If industry volunteered, or was required through legislation, to provide the solution to scrap tire management, additional legislation would still be needed to avoid improper collection and storage. The resources to provide consistent enforcement could be a private function through industry-imposed requirements; however, enforcement is more typically realized through allocation of public resources. If an Alberta model were considered, legislation would also be required to create a special authority for a tire management entity.

### **Government Procurement and Specifications**

State and local governments are large consumers of vehicles and replacement tires. In Washington, there could be more effort to encourage the purchase of longer-life tires and retreaded tires, and there could also be disposal contracts for unusable tires. The Department of General Administration (GA) and individual agencies could be encouraged to adjust their purchasing habits to reduce the rate of scrap tire generation. The International Tire and Rubber Association, EPA Guidelines for Retread Tires, and other resources could be leveraged to generate less tire waste.

To close the recycling materials loop, government agencies could provide leadership in evaluating and specifying scrap tire materials. Examples could include:

- Specifications for school playmat pads which include crumb rubber content - OSPI, GA.
- Specifications for septic system drain field aggregate - DOH, Local Health Departments.
- Specifications for rubberized asphalt and road fill - DOT, Local Public Works.



*Fig. 10 Crumb rubber can be used in many products*

This initiative is already supported by of Governor Locke’s recent Executive Order #02-03 which sets long-term goals for agencies including:

- Shift to nontoxic, recycled, and remanufactured materials in purchasing and construction.
- Expand markets for environmentally preferable products and services.
- Reduce or eliminate waste as an inefficient or improper use of resources.

### **RMA Technical Assistance**

The Rubber Manufacturers Association (RMA) assists in promoting scrap tires as a valuable commodity in all ways that are economically and environmentally sound. Its goal is to develop sound markets for all newly generated scrap tires. Its activities include market development, collection and dissemination of information on scrap tire research, and legislative and regulatory activity.

RMA has assisted the Oregon and Washington Tire Task Forces in their work. RMA has also offered to provide market development workshops on the following topics to assist in stimulating interest in scrap tire markets:

- Tire-derived fuel.
- Civil engineering road construction.
- Landfill applications (including alternative daily cover, ADC).
- Rubber modified asphalt.

The standing offer from this manufacturers association may provide key technical market development impetus to Washington and should be used strategically.

### **King County Department of Natural Resources**

The LinkUp program encourages businesses and manufacturers to incorporate more recycled materials into their products. The program, sponsored by the Solid Waste Division of the King County Department of Natural Resources, offers free, customized technical and promotional market support to eligible businesses throughout Puget Sound. LinkUp is currently providing assistance to L&S Tire Company in market research and business planning to evaluate the tire-derived fuel and crumb rubber markets in the Puget Sound.

If a renewed scrap tire program were authorized, local programs such as LinkUp could be enhanced or expanded to support statewide markets for scrap tire materials and products.

### **Scrap Tire Use and Market Research and Promotion**

The following organizations in the region can be encouraged to assist the region in research into options for scrap tire use and market development.

- Ecology – promotion of retreaded tires to the general public and governments, purchasing of scrap tire products, investigation of regulatory barriers to use as a fuel, grants to local governments for demonstration projects.
- Department of Community, Trade, and Economic Development – economic development loans to business, promotion of end-use products, research on economic opportunities.
- Department of Transportation – demonstration projects, pavement life-cycle costs, and specifications for use of rubber materials in road construction.
- University of Oregon - civil engineering research, demonstrations, and specifications.
- University of Arizona - civil engineering research, demonstrations, and specifications.
- University of Maine - civil engineering research, demonstrations, and specifications.
- Washington Universities - civil engineering research, demonstrations, and specifications.

There has been a paucity of scrap tire marketing and applied research in the region since the mid-1990s. During that time there have been a lot of projects and research performed in other parts of North America. There have also been a number of new markets for scrap tire feedstock.

Without “reinventing the wheel,” state government would benefit by looking at the current state of research on the use of scrap tire products and processes with fresh eyes. This could be done in concert with regional research institutions and subsequent demonstration projects sponsored by state agencies. Agencies likely to have significant roles are General Administration, Department of Transportation, and Ecology.

Ecology has existing authority for the following in existing statute, section 70.95.535 RCW, regarding the vehicle tire recycling account “Disposition of fee”:

- grants to local governments for pilot demonstration projects for tires from unauthorized dump sites, and
- product marketing studies for recycled tires and alternatives to landfill disposal.

The Department of Transportation routinely contracts with universities and contractors for their research needs. The use of scrap tire products in road construction projects has an increasing body of literature which could be accessed to frame pilot projects as suggested in SHB 2308.

General Administration can provide assistance in creating specifications that include and encourage the consumption of higher-mileage tires and the use of products containing scrap tire products.

### **Focus on Higher End-Value Uses of Scrap Tires – Crumb Rubber**

SHB 2308 specifically calls for Ecology to draw conclusions regarding incentive programs that favor “projects utilizing higher end value uses of scrap tires.” In terms of scrap tires, more highly valued end products are those produced by the crumb rubber part of the market.

A study of the alternative uses of scrap tires was prepared by the Solid Waste Association of North America for the Maryland Department of Environmental Services. One of the conclusions was that crumb rubber has the highest return on investment (higher end value) of any scrap tire market and is a growing part of the scrap tire product market. Between 1994 and 2000, the use of crumb rubber increased 400 percent (SWANA, Wastecon 2002, Long Beach, California). Therefore, the “feasibility of establishing and maintaining an incentive program” (SHB 2308) that supports the uses for crumb rubber, a higher end value scrap tire product, is examined in the following text.

Nationally, the market for crumb rubber is approximately:

- 30 percent rubber molded products.
- 30 percent asphalt-rubber pavement.
- 40 percent a large variety of newer products (SWANA, 2002).

In this region there are market actors in molded rubber and newer crumb rubber products but virtually no activity in the asphalt-rubber pavement market. The potential use of crumb rubber in pavement is very large and an undeveloped market in Washington. If this market were to be developed, it would support a more robust and competitive tire recycling industry. The use of scrap tire rubber in a three-inch layer of new rubber modified asphalt concrete can consume about 10,000 tires in a mile of two-lane road.

Although the Federal Highway Administration has promoted the use of asphalt-rubber pavements as well as other uses of scrap tire products, there have been differing responses by the various state transportation departments. States that have had good experience with asphalt-rubber pavements include California, Connecticut, New York, Arizona, and Texas. Arizona has been a national leader in the research and development of asphalt-rubber pavements.

The image at the right shows Interstate 40 near Flagstaff, Arizona, in a deteriorated state. Many large pavement cracks are evident in this 1989 photo. This section of freeway was then paved with asphalt-rubber pavement.

After 10 years of use, the asphalt-rubber pavement of I-40 is in remarkably good condition.



*Fig. 11 I-40 near Flagstaff, before (above) 10 years after (below)*

States that have had problems with asphalt-rubber pavement include Illinois, Maryland, Oklahoma, and Ohio. The problems have often centered around initial installation costs and pavement installation quality. The initial cost of asphalt-rubber pavement is more expensive. The states where pavement installation quality problems were experienced may be related to the learning curve associated with use of a new material in practice. There are different critical factors to installing asphalt-rubber



pavements versus conventional asphalt pavements. If the contractor is not aware of these factors, or inexperienced in using the material, the installation may fail or may underperform based on the quality of the installation or asphalt mix preparation alone. The Rubber Manufacturers Association and others now offer technical assistance to overcome this technical hurdle.

Use of asphalt-rubber pavement has historically been more costly to install, however over the life cycle of the pavement, it has clear economic and other performance advantages. The 2002 SWANA national study summarized the advantages and disadvantages of asphalt-rubber pavement as follows:

**Table 2.7**

<b>Asphalt-Rubber Pavement (ARP) Advantages and Disadvantages</b>		
<b>Feature</b>	<b>Advantages of ARP</b>	<b>Disadvantages of ARP</b>
Cost	Lower life-cycle cost	Higher initial cost/mile, modifications cost for equipment & plant changes
Construction	Less noise and traffic inconvenience due to longer life and fewer repairs	“Wet” ARP requires installation within hours of production.
Mixture	Increases temperature viscosity and ductility of pavement at low temps.	Increases mixing temperature, unique mix design, more filler and cement.
Road Performance	Improved cracking resistance, longer lasting markings, tougher surface, and greater flexibility	None
Vehicles	Greater skid adhesion, road holding, and less surface spalling of the road; increases safety – fewer accidents	None
Scrap Tires & Environment	Provides significant volume, high value market alternative to disposal	Concerns about recyclability of ARP, air emissions and worker exposure
Road Noise	Reduces traffic noise, less need for noise barrier construction	None
Drainage	Improves drainage and road spray	None

The cost of transportation is a major concern in Washington. If the cost conclusions of the SWANA study are correct, the use of asphalt-rubber pavements could lower the overall cost of road construction and maintenance while improving road safety in the coming years. Although

more expensive to initially install than conventional pavement, asphalt-rubber pavement offers both longer service life and lower overall construction costs for repair and periodic inspections. There are also real costs of inconvenience to the public of noise, traffic, loss of productive time, and increased road safety that are not usually accounted for by road-building agencies.

A recent study of life-cycle costs was performed by the Arizona State University’s Department of Civil Engineering. It examined 11 years of service life between conventional asphalt and asphalt-rubber pavement on contiguous sections of road and extrapolated the findings to a 25-year service life. The study was conducted on a stretch of Interstate 40 near Flagstaff, Arizona. Four miles of each pavement type were compared using a life-cycle costs analysis (LCCA). The results showed both that the net present value and annual maintenance cost to the road agency were reduced by using asphalt-rubber pavement compared to conventional pavement as follows:

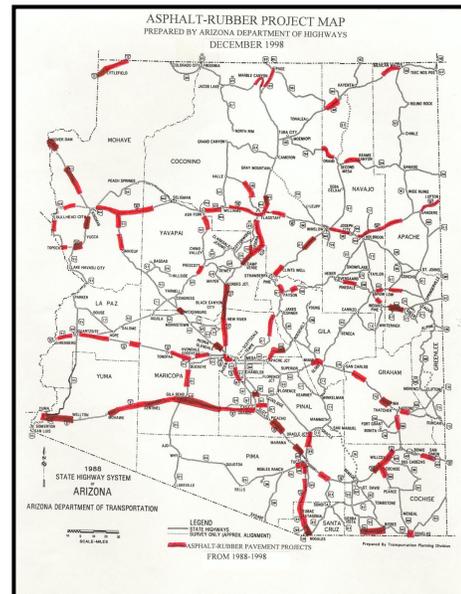
**Table 2.8**

Arizona Highways Cost Comparisons	Conventional Pavement, 4 miles	Asphalt-Rubber Pavement, 4 miles	Cost Savings using ARP per mile
Net Present Value	\$1,788,509	\$ 994,750	\$ 198,440
Annual Maintenance Costs	\$ 26,836	\$ 14,926	\$ 2,977

This long-term study indicates that asphalt-rubber pavement is more cost-effective compared to conventional asphalt pavement over the service life of the road.

The cost of operating vehicles is affected by the general condition and roughness of the road. The conventional road surface deteriorated relatively quickly compared to the asphalt-rubber pavement. The vehicle operating cost increases on rougher roads and was calculated in the Arizona study. In addition, the value of time delays (lower average speed) for vehicles on the rougher road was calculated to estimate the lost productivity due to increased travel time.

The net present value increase in vehicle-operating costs due to conventional pavement equaled \$9,340,000. The net present value increase in travel-time cost due to conventional pavement equaled \$3,288,000. These values are in addition to those comparative cost advantages of asphalt-rubber pavement construction and maintenance cited above.



*Fig. 12* Arizona map of rubber-asphalt pavement highways

The additional estimated increased cost of \$12.5 million experienced by vehicles driving on conventional pavement is more than 10 times the amount of money already saved by the road agency. (See full report at: <http://www.rubberpavements.org/library/LCCA-RPA2002.pdf>.)

The overall findings in Arizona indicate the advantages of asphalt-rubber pavement, in addition to cost-effectiveness, to be the following:

- Reduction in reflective cracking in hot mix asphalt rehabilitation overlays
- Reduced inspection and maintenance of pavement
- Longer-lasting smoothness of roads
- Increased skid resistance
- Tougher surface that stands up well to snow plows, and
- Reduced tire-on-pavement noise.

The map of Arizona highways above shows the extent to which that state has been successful in using asphalt-rubber pavement.

Regarding the technical characteristics of asphalt-rubber pavement, Arizona State University recently published *Performance Evaluation of Arizona Asphalt Rubber Mixtures Using Advanced Dynamic Materials Characterization Tests*.

([http://www.dot.state.az.us/about/materials/pavedsgn/asu\\_performance\\_evaluation.pdf](http://www.dot.state.az.us/about/materials/pavedsgn/asu_performance_evaluation.pdf).)

The SWANA and Arizona studies provide impetus for examining the potential use of crumb rubber in road construction projects in Washington. These studies and other work done on these technical and economic issues of using scrap tire products in roads during the past decade will assist the Department of Transportation as it satisfies its work as required under SHB 2308.

In addition, local contractors and public works road departments can be encouraged to examine the efficacy of using crumb rubber in their road projects. Such encouragement could come from Ecology, GA, and other agencies interested in exploring improved cost-effectiveness in road construction. Leveraging the assistance available from the Rubber Manufacturers Association, Ford, and other industry experts may also accelerate this education and demonstration process.

Another market for larger crumb rubber which is not yet developed in the region is as a substitute aggregate for septic tank drain fields. This application has the potential to use large quantities of scrap tires and has been widely used in a few states. There may be a need to provide regulatory permission from the state Department of Health for use of this material. If that issue is resolved, local health departments and contractors will need to be encouraged to use this material where appropriate.

### **State Programs**

As described in earlier sections of this report, it is common to use agencies to create and coordinate programs. This approach can be effective if it follows the lessons learned from other states. Combined state/private programs and pseudogovernmental programs are also possible but fewer examples are available to model such a program.

Appendix B shows a summary of how scrap tire programs are structured in other states. Appendix E has a summary of the Illinois scrap tire program which has a balanced program including tire pile abatement, demonstration projects, and market promotion. The following section describes some possible approaches to creating a Washington scrap tire management program.

## An Approach to a Washington Scrap Tire Management Program

The Rubber Manufacturers Association (RMA) is widely recognized for its knowledge regarding the varied programs for scrap tire management in North America. Based on RMA writings, the following table summarizes the 10 program elements RMA considers to be most important for a state scrap tire program to be successful. Shown in the last three columns of the table are any comparable program element in Washington, the state law related to each element, and what our state's relevant needs may be.

**Table 2.9**

<b>Ideal Scrap Tire Program Elements</b>			
<b>Program Element</b>	<b>Exists in WA</b>	<b>RCW</b>	<b>Needs</b>
1) Funding source for grants/loans.	No, Vehicle Tire Recycling Account Fee sunset in 1994.	70.95.510-535	Re-establish or otherwise fund at an appropriate level.
2) Program focuses on scrap tire research, market development, and demonstration projects.	Demonstration projects at local level only.	70.95.535(2)(a)	Expand to state level agencies.
3) Diversified markets approach.	Yes.	70.95.535	Include DOT and DCTED.
4) Emphasis on in-state end uses.	Not explicitly.	None	Prioritize promotion of end-use, in state.
5) Fee deposited into a dedicated tire fund.	No, Vehicle Tire Recycling Account Fee sunset in 1994.	70.95.510-535	If re-established create adjustable fee. See note 1.
6) Create strong regulations and enforcement on tire dumping.	No, enforcement is locally specific. No tracking of tires, limited bond for \$10,000 per storage site is inadequate. See note 3.	70.95.500, 70.95.555, 70.95.560, and 70.95.565	Statewide tracking, uniform strong statewide enforcement, & significant financial assurance.
7) Amnesty days and abatement to remove tires.	Yes for abatement, no amnesty days.	70.95.530	Amnesty tire public turn ins.
8) Create level playing field for tire products, allow the market to work.	No, illegal tire dumping and whole tire disposal competes directly with recyclers.	None.	See item 6 in this table.
9) A <u>user fee</u> is assessed (most efficiently at the point of vehicle registration).	No, fee was on a new vehicle tire basis.	70.95.510	Consider optional funding bases.
10) Funds are used to stimulate end-user markets. See note 2.	Not specific, law generally encourages recycling.	70.95.020(6)	Prioritize stimulation of end-use markets.

Notes:

- 1) The fee is reduced when stockpiled tires have been eradicated and when ample and sustainable markets exist for future generated scrap tires. A nominal fee may be needed to maintain continued enforcement and oversight.
- 2) Contracts are awarded to those who exhibit economical and environmentally sound end-use markets
- 3) The proposed solid waste rule 173-350 WAC will strengthen the financial assurance requirements.

The table above illustrates where existing Washington law provides, partially provides, or lacks what is needed to create a viable scrap tire program that actively supports proper management of scrap tires from generation to end use or disposal. A viable scrap tire program must also provide the required enforcement and marketing incentives for reuse and recycling markets. To establish and maintain a comprehensive scrap tire management system in Washington, significant legislative and agency action would be required. An example of how Illinois chose to address most of these issues is contained in the text of Appendix E.

A comprehensive scrap tire management system would require legislation to re-establish a variable fee for the Vehicle Tire Recycling Account (VTRA) to support the following:

1. Expand scrap tire demonstration projects to include state agencies.
2. Strengthen existing provisions for market development for in-state diverse markets.
3. Strengthen the scrap tire tracking and enforcement provisions of existing law including a per-tire-in-storage financial assurance instrument.
4. Support statewide illegal tire pile cleanup and citizen scrap tire amnesty events.
5. Prohibit whole-tire landfill disposal.

Details on how some of these changes might be implemented and special considerations not previously mentioned are discussed in the following text.

### **Re-establishing a Variable Vehicle Tire Recycling Fee**

If the per tire fee were re-established, it should be implemented as a variable fee. The need for a variable the fee is based on anticipated changes over time in the performance of the management of scrap tires in Washington. As the management of tires improves, the fee would be reduced. A beginning fee of \$1 per new vehicle tire could be established as in the original legislation.

The beginning fee would then be reduced based on performance measures. Performance measures might include indexing to the percent of non-disposal tire recovery as well as an estimate of remaining tires in piles needing cleanup. As the level of tires in piles remaining to be cleaned up decreases and the level of tire recovery increases, the fee per tire would decrease to a support level of perhaps 25 cents per tire.

The support level would remain to provide funding for tracking, enforcement, ongoing public information and education, and administrative costs. The system tracking would be needed to monitor the ongoing performance of the scrap tire management system and trigger any required changes in the fee.

The frequency of change for a variable tire fee should be averaged over time. This will provide relative stability in the face of tire markets which can vary quickly, tire piles which are not always easy to locate, and frequent changes in fees which can be confusing to the public. A three- to five-year running average might be an appropriate time frame to consider changes in the fee structure.

## **Landfill Disposal Prohibition and Financial Assurance**

Prohibiting whole tires from solid waste disposal at landfills is already a policy in many locations in Washington. Making such a prohibition statewide and consistent would provide increased feedstocks for potential tire recyclers and eliminate this as a low cost, low value default option. Whole tires are already problematic to handle in the solid waste system, while tire shreds are relatively easy to handle and dispose of.

Because a whole tire disposal ban would require processing, it would make recycling of tires more competitive. It would also encourage tire generators to seek out existing and new recycling options other than disposing of truckloads of whole tires at the local landfill where that is still allowed. Stevens County still accepts whole tires and has so many that it is becoming problematic to dispose of them in their local landfill the northeast area of Washington.

There may be a lag between a ban and the new equilibrium in the recycling market. Also, unless Oregon instituted a similar whole-tire ban, the effectiveness of this action may be diminished by the availability landfills in Oregon.

Another objective of a Washington scrap tire management program could be to remove excess tire piles and prevent future speculative accumulation of tire or processed tires. Large tire piles present a fire hazard and are breeding grounds for mosquitoes which harbor various diseases, such as West Nile virus. A method to limit the creation of new piles and reduce the excess of existing tire piles has been used in Oregon. Oregon requires a financial assurance instrument for each tire stored, often in the neighborhood of \$2 per passenger tire equivalent for whole or processed tires. This is adequate to remediate tires from a site that has been abandoned.

To avoid hurting existing legitimate scrap tire recycling businesses, such a requirement should have a delayed implementation date. Ecology is currently in a solid waste rulemaking process where the financial assurance requirements for tire piles will be strengthened within existing authority. If passed as proposed this requirement would become effective two years from the effective date, which will likely be in early 2003. The proposed rule would require a financial assurance instrument adequate to provide funds for a third party to clean up the maximum number of tires permitted for storage.

Currently there are few state or local resources available to enforce the laws regarding tire piles as well as tire transportation. With the lack of enforcement, there is an unfair advantage to people who choose to ignore existing law.

### 3.0 Scrap Tire Generation, Use, and Enforcement

This section constitutes the first annual legislative reporting of tire use and recycling as directed by SHB 2308.

#### Introduction

The United States Environmental Protection Agency (U.S. EPA) estimates that in 1998, 270 million scrap tires were generated in the United States. If the average weight of a tire is 20 pounds, this means that 2.7 million tons of tires reached the end of their lives that year.

Generation of used tires actually declined from 1980 to 1990, as smaller, longer-lasting tires were produced. Tire generation leveled and began to increase in the early 90's with the greater number of cars on the road, increasing the amount being retired to scrap. Modest growth in the generation of tires is projected by the U.S. EPA into the next century (see Table 1 for the generation and recovery of tires in the United States from 1975 through 1998).

**Table 3.1**  
**Generation and Recovery of Used Tires**  
**in the United States<sup>2</sup>**  
**(millions of tons)**

	1975	1980	1985	1990	1996	1998
<b>Generation</b>	2.5	2.6	1.9	1.8	2.7	2.7
<b>Recovery<sup>3</sup></b>	0.2	0.1	0.1	0.3	2.1	1.8
<b>Recovery Rate</b>	8%	4%	5%	17%	76%	66%

#### Methodology for Determining Used Tire Recycling Rates

The estimates of generation, reuse, recycling, energy recovery, and disposal of used tires in Washington State were developed using a combination of the Ecology annual recycling survey, estimation models, and published information.

A model based on vehicle registration was used to estimate used tire generation. Some assumptions were incorporated into the model about the useful life of the average tire, the weight of passenger car and truck tires, and the use of recapped tires. The estimate of recapped tires was based on figures from the National Tire Dealers and Retreaders Association. Recycling and energy recovery of tires was determined through a combination of data from Ecology's annual recycling survey and a telephone survey of firms that transport and process used tires. Data on

<sup>2</sup> Sources: U.S. EPA and Scrap Tire Management Council.

<sup>3</sup> Recovery includes recycling, recapping, and tire derived fuel.

the disposal of used tires was obtained through annual reports from landfills and a telephone survey of tire handlers.

### **Tire Generation, Recycling and Disposal Rates**

Based on the average of the estimation models, approximately 4.7 million used tires were generated in Washington State in 2001, including tires from all registered vehicles. Of the estimated total of 4,674,733 tires generated in 2001, Ecology has information on the end use of 65%, or 3,010,170 tires. Of the 3,010,170 tires tracked for 2001, 21% were recapped, 35% were recycled, and 8% were used as tire derived fuel (see Table 2). The remaining 36% were disposed of in permitted public or private landfills.

**Table 3.2  
Generation, Recycling, and Disposal of Used Tires in Washington State  
(2001)**

	<b>Tons of Used Tires<sup>4</sup></b>	<b>Number of Used Tires<sup>5</sup></b>	<b>Percent</b>
<b>Generation</b>	79,000	4,675,000	100%
<b>Unknown Uses</b>	27,827	1,664,830	35%
<b>Reported Uses:</b>	51,173	3,010,170	65%

**Breakdown of Reported Uses:**

<b>Recapping</b>	10,900	641,159	21%
<b>Recycled</b>	17,787	1,046,291	35%
<b>Incineration</b>	3,962	233,049	8%
<b>Landfill Disposal</b>	18,524	1,089,671	36%

#### **Generation of Used Tires**

Two models were considered to estimate the generation of used tires: First, a model based on vehicle registration, and second, a model based on population.

The estimation model based on vehicle registration assumed a tire lasts about four years, and therefore each passenger car and light truck would generate one used tire per year. This model also assumed that 40 percent of heavy trucks would generate one tire per year, and the remaining trucks would use recapped tires. Based on these assumptions, the vehicle registration model estimated that approximately 4,675,000 used tires were generated in 2001.

The 4.7 million tires generated in Washington State in 2001 represent approximately 1.7 percent of the national total of 281 million used tires generated. That figure is 0.9 percent lower than

<sup>4</sup> Assumes an average weight of 34 lbs per tire. Passenger car tires are assumed to weigh 20 lbs; truck tires are assumed to weigh 100 lbs.

<sup>5</sup> Assumes 40% of trucks use new tires and 60% of trucks use recapped tires.

Washington’s share of the number of registered vehicles in the United States in 2001. The estimated 5,545,601 registered vehicles in Washington State in 2001 represent approximately 2.6 percent of the 217,308,687 registered vehicles in the United States.<sup>6</sup>

Table 3 shows that passenger tires account for approximately 80 percent of all used tires. The model assumed that each passenger car generates one used tire per year. “Other Vehicles,” including mopeds, motorcycles, and off-road vehicles, are assumed to generate 0.5 used tires per year. Gasoline-fueled trucks, diesel-fueled trucks, trailers, and miscellaneous vehicles are assumed to generate 0.4 tires in this model.

**Table 3.3  
Generation of Used Tires by Vehicles Type**

Vehicle Type	Number of Tires Generated	Percent
Passenger Car	3,719,441	80%
Other Vehicles	99,092	2%
Gas Trucks	504,469	11%
Other Trucks	53,453	1%
Trailers	205,009	4%
Miscellaneous Vehicles	93,268	2%
<b>Total</b>	<b>4,674,733</b>	<b>100%</b>

The estimation model based on population is used as a check for the vehicle registration model. The population model assumes that tires are generated at the rate of 0.8 tires per person per year, a rate used by the Scrap Tire Management Council. The results of this model indicated that there were 4,779,920 tires generated in 2001, approximately 105,000 more tires than were estimated by the vehicle registration model. These two estimation models, therefore, indicate that the generation of used tires in Washington State in 2001 was about 4.7 million tires. This number is the same magnitude as the estimated scrap tires generated in the Linville report, 4.8 to 6.0 million used tires per year generated (see page 15 of this report).

### **Recapping (Reuse) of Used Tires**

According to the Tire Retread Information Bureau, there are 25 tire retreaders in Washington State. In addition, one of the country’s largest retreaders, Les Schwab in Oregon, accepts used tires for recapping from Washington State. Although retreaders in Washington generally rely on material from inside the state, Les Schwab, in Prineville, Oregon, accepts truck and passenger tires from the entire West Coast. For reasons of confidentiality, the number of tires recapped by individual firms is not reported. There were approximately 641,159 tires reported as recapped by all retreaders in Washington State in 2001.

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<sup>6</sup> National data from R.L. Polk & Co. and Automotive Aftermarket Industrial Association, Automotive News Data Center. National data and Washington data excluding trailers for this comparison.

### **Recycling of Used Tires**

Tire recycling, for purposes of this report, includes production of granules or sheet rubber from tires for use in bumpers, mats, playground equipment, or other laminated rubber products.

Tires reported to Ecology on the annual recycling survey are not necessarily being recycled in this manner. Rather, the tires reported are what the reporting entity *collects*, and are actually destined for all of the different tire markets, including recapping, recycling, tire-derived fuel, and disposal. The inaccuracies may be the result of three factors. First, the estimates from the annual recycling survey are based on self-reporting. Despite the directions for the survey which clearly explain the difference between recycling and energy recovery, some respondents may have confused the two and assumed that energy recovery was recycling. Second, primary collectors may not know the eventual use of the collected tires. Third, not all handlers responded which could bias the annual recycling survey results.

A separate telephone survey of the firms reporting “recycling” to Ecology reveals that about 35 percent of their total collection is eventually recycled. There were approximately 1,046,291 used tires reported as recycled in Washington State for 2001.

### **Energy Recovery/Tire-Derived Fuel**

Chipped tires that have been processed to reduce the steel wire content and converted to useable size for a substitute fuel (referred to as “tire-derived fuel”) can be marketed as a supplementary fuel to power plants, cement kilns, and industrial boilers. There were approximately 233,049 of Washington tires reported to have been burned for fuel in 2001.

### **Disposal of Used Tires**

Most landfills in Washington State do not accept significant quantities of whole tires for disposal. Even so, a certain amount of tires continue to enter the mix of municipal solid waste. The number of tires inadvertently disposed at municipal landfills and incinerators is uncertain. Some landfills do, however, accept scrap tires for disposal. The number of tires generated in Washington and reported to Ecology as disposed of at Washington or Oregon landfills totaled 18,524 tons in 2001. This is to say that an estimated 1,089,671 of Washington’s tires were disposed of at landfills in 2001.

Ecology, in conjunction with the local health departments, also reports that there are 64 known tire piles in the state with approximately 2.5 million used tires (see Table 4). Three of these sites are permitted, including Tire Shredders in Goldendale, with approximately 1.8 million used tires.

**Table 3.4**  
**Known Tire Piles by County**  
**2002**

Adams	8 known
Asotin	2 known
Benton	Unknown
Chelan	2 known
Clallam	Unknown
Clark	Unknown
Columbia	Unknown
Cowlitz	1 known
Douglas	Unknown
Ferry	Unknown
Franklin	5 known
Garfield	Unknown
Grant	2 known
Grays Harbor	Unknown
Island	4 known
Jefferson	1 known
King	2 known
Kitsap	1 known
Kittitas	2 known
Klickitat	4 known
Lewis	3 known
Lincoln	3 known
Mason	3 known
Okanogan	Unknown
Pacific	Unknown
Pend Oreille	Unknown
Pierce	1 known
San Juan	Unknown
Skagit	4 known
Skamania	Unknown
Snohomish	Unknown
Spokane	2 known
Stevens	Unknown
Thurston	3 known
Wahkiakum	Unknown
Walla Walla	1 known
Whatcom	3 known
Whitman	3 known
Yakima	4 known
<b>Washington Total</b>	<b>64 known</b> <b>??? Unknown</b>

### **Recommendations for Measuring Used Tire Recycling Rates**

An important part of a comprehensive tire management system is the tracking from generation to final disposition of the scrap tires. Ecology's annual recycling survey is a useful tool in developing a general recycling rate for tires. However, for the survey to be adequate in determining the amount of tires entering the different reuse, recycling and disposal streams, major adjustments would be needed which might compromise the general purpose of the recycling survey.

It is recommended for Ecology to develop a new tracking and reporting system specific to tire recycling and disposal. The new tracking system would measure scrap tires accepted, transported, recycled, used as fuel, reused and disposed.

There are some requirements for waste tire transportation and tire pile permitting in the solid waste rule, however these programs are not currently funded and are not comprehensive.

The waste tire management system from Missouri was brought up by Senator Honeyford's office in 1999 as a possible model for Washington to examine. The Missouri waste tire laws are much more comprehensive than the existing Washington law, but are not as strong as they might be on the market development or stimulation issues. Missouri staff estimates that they track approximately 85% of the waste tires generated. This law and an overview are provided in Attachment A.

Washington's solid waste system operates differently than the Missouri system. The Missouri system is regulated by the state environmental agency. The primary responsibility for solid waste regulation and enforcement in Washington is from local environmental health departments. The former tire cleanup fee and program was an exception because it was administered by Ecology.

There are many options for changing the way in which tires are regulated, managed, transported, and marketed. There are also many stakeholders that have interests in the various parts of the existing waste tire system.

Many states have developed regulations to manage tire stockpiles and processing operations. A number of states have also addressed tire haulers in their regulations. These regulations are described below as well as a potential private regulatory system for managing scrap tires.

### **Stockpile Regulations**

Twenty-four states have regulated tire stockpiles. Generally, state, or in a few cases local, regulations limit the size of stockpiles; limit the length of tire storage; require fire lanes; require the stockpiles to be fenced in; and may also require permits for stockpiles over a given size. The new solid waste rule (173.350 WAC) to be adopted in January of 2003 will require owners of stockpiles to establish financial responsibility. They must prove they have the funds to completely remove and dispose of the tires, should the need arise. There is little oversight for this requirement because there is no existing statewide tire management program.

### **Processor Regulations and Incentives**

Seventeen states have some type of regulations for processors. States may require processors to obtain permits or merely to register. Generally, these regulations limit stockpile size, and establish tire management practices. Processors may also be required to keep records on the source of tires they receive and the final end-user. The state of Oregon requires tire processors, haulers and storage site operators to report quantities handled. In addition, if a waste tire handler or processor located outside the state of Oregon is handling tires which were generated inside the state, they are subject to a reporting requirement under Oregon laws, which may include an enforcement penalty.

Advantages of these regulations are better control of processing operations, and disadvantages are the administrative costs to government and industry of these programs (from Markets for Scrap Tires, US EPA, October 1991). More recently some states have provided economic incentives for tons of tires reaching end-market users. This incentive system pulls scrap tires to the end-market, focusing on rewards for the proper use of tires as opposed to clean up or disposal cost reimbursement programs.

### **Hauler Regulations**

Eleven States have passed regulations on tire haulers. These may include provisions such as a state-supplied identification number, and a requirement that only haulers with these ID numbers may take tires. Some states require that tire dealers, processors, and haulers all keep records of their shipments of scrap tires. Generally these records include a contact person, the name and address of the company receiving the tires, and the quantity of tires. This aids in both preventing illegal activity, and aids investigations once any laws have been disobeyed. Again, the balance is between the administrative effort and cost by government and industry to maintain permitting and recordkeeping programs, weighed against the benefits they provide in encouraging and enforcing good tire management (Markets for Scrap Tires, US EPA, October 1991).

### **Manufacturer Responsibility Programs**

Various manufacturer groups or governments have decided to implement industry sponsored take back programs. Products using this model include batteries, paints, pesticides, and solvents. Conceptually, this model could be used for the management of used tires in Washington.

#### **Industry Initiative Manufacturers Responsibility Program**

In North America used Nickel-Cadmium (NiCd) and other rechargeable consumer and commercial batteries are collected and recycled through the Rechargeable Battery Recycling Corporation (RBRC). This non-profit corporation was established by a coalition of battery manufacturers and is funded through an internal license fee established by the coalition. Any consumer NiCd battery will be accepted by the RBRC through a national network of retail, corporate and community sponsored collection points. Many national and local retail stores as well as local waste collection programs have signed up. The industry administered license fee covers the cost of transportation and recycling into new battery feedstock material. The battery manufacturers have established their own specifications for the recycled materials to be used in making new NiCd batteries. This effectively closes the recycling loop for NiCd batteries.

#### **Government Initiative Manufacturers Responsibility Program**

In British Columbia consumer paints, pesticides, solvents, and certain other hazardous or problem wastes are collected and processed by the Product Care Association. This system was required by the provincial government to be designed and operated by the private sector brand owners who established a private non-profit corporation. There is an "Eco-Fee" charged at the point of sale for certain products. This fee covers the cost of program oversight by the provincial government and the implementation of the collection and processing system for selected left-over and unusable consumer products by the industry sponsored Product Care Association.

## **Landfill Disposal Prohibition**

Some states have chosen to eliminate the option of landfilling any waste tires. The concept behind this action is that scrap tires are a valuable resource that should be used productively. By eliminating the alternative of direct disposal, markets are stimulated to absorb this material stream. Whole tires are a difficult material to manage in landfill because they tend to work their way to the surface of the waste. An alternative to an outright prohibition would be to require the cutting of the tires into at least ¼ size before disposal, so that they are less problematic for landfill operations. In order to provide the market start up time and fair market conditions, such a landfill prohibition or restriction should have a delayed implementation and be coupled with an associated scrap tire enforcement and tracking mechanism.

## **Attachment A**

### **Overview of Missouri chapter 260 -- Sections pertaining to waste tires.**

Missouri's waste tire law is contained in Missouri revised statutes chapter 260, sections 260.270, 260.273, 260.274, 260.275, 260.276, and 260.278. These laws were passed in 1990 and in 1995.

### **Chapter 260**

#### **Section 260.270**

This section prohibits the unrestricted collection, processing, storage, or use of waste tires. Waste storage sites, waste tire processing facilities, and waste tire transporters are required to be permitted by the state environmental agency. Violators are subject to misdemeanor crime prosecution with increasing levels of penalties associated with subsequent violations.

Any person selling tires “at retail” must accept an equal number of used tires from the customer. A fee of up to two dollars is allowed to be charged by the retailer to deliver the waste tires to a permitted, waste tire collection center, tire site, processing facility, or a registered waste tire end-user facility. If the tires are delivered to an authorized transporter or permitted tire facility the retailer avoids future liability for illegal disposal.

The state in environmental agency, must create rules and regulations regarding the collection, storage, processing, in transportation of waste tires, including performance bonds or other forms of financial assurance. The agency establishes recordkeeping requirements for tracking the quantities or weights of waste tires in the permitted system and establishes a permit fee structure to recover administrative costs of the waste tire program in a dedicated account.

Other provisions account for special exemptions, auto dismantlers or salvage yards, landfilling waste tires, property owners using tires for soil erosion, and as drainage material, as well as the use of tires to cover agricultural products such as silage piles. In addition, the Department of Transportation is required to undertake demonstration pilot projects using waste tire material in asphalt mixtures, as a structural material, and sub-base and fill material aggregate substitutes. The department of transportation is to evaluate the demonstration projects and revised road construction specifications wherever possible to use recovered waste tire materials.

#### **Section 260.273**

This section establishes a 50 cent new tire fee as of January 1, 1991 to sunset on January 1, 2001. A small part of the fee is used to cover administrative handling costs for fee collection by the retailer and similar costs for the department of revenue. Most of the fee revenues fund the environmental agency programs that include tire cleanups, public school education, and grant

programs for waste tires. The waste tire grants are for initiation of tire derived products markets or for waste tire as a fuel or fueled supplement program.

## **Section 260.274**

This section establishes a program to provide incentive grants for capital expenditures to convert existing facilities for the purpose of using waste tires as a fuel for fuel supplement. This section also direct the environmental agency to establish grant eligibility requirements and restricts the grants to projects that will receive at least 40 percent of its waste tires from in-state sources.

## **Section 260.275**

This section establishes waste tire site closure plans and financial assurance instruments. The state environment agency may require a closure plan. The closure plan would including how and when the site will be closed, method of final disposition of any remaining waste tires. The tire sites must be permitted as well as provide a financial assurance instrument in an amount to ensure that at the close of operations, or interruption of operation, that the closure plan can be completed.

## **Section 260.276**

This section establishes a resource recovery and nuisance abatement program to reduce the volume waste tires and cleanup abandon tire piles or sites were the owner or operator fails to comply with the agencies rules and regulations under statute 260.270. First priority for cleanup sites are for sites owned by persons who present satisfactory evidence that they were not responsible for the creation of the nuisance condition or any violations of the waste tire loss at that site. This section also directs the Attorney General to recover from any responsible person reasonable and necessary costs incurred by the environmental agency for nuisance abatement activities and legal expenses related to the cleanup. The environmental agency must allow any person, firm, Corp., state agency, or nonprofit organization to bid on tire cleanup activities. Other contracting requirements are also included.

## **Section 260.273**

This section establishes performance bond or letter of credit requirements for transporter of waste tires for any persons found guilty, or pleading guilty, in violation of the waste tire laws within the preceding 24 months.

# Missouri Revised Statutes on Waste Tires

## Chapter 260 Environmental Control

### Section 260.270

**Waste tires, prohibited activities--penalties--site owners, no new waste tire sites permitted, when, exception--registration required, duty to inform department, contents--rules and regulations--permit fees--duties of department--inventory of processed waste tires not to exceed limitation--auto dismantler, limited storage of tires allowed--recovered rubber, use by transportation department, how.**

260.270. 1. (1) It shall be unlawful for any person to haul for commercial profit, collect, process, or dispose of waste tires in the state except as provided in this section. This section shall not be construed to prohibit used or waste tires from being hauled to a lawfully operated facility in another state. Waste tires shall be collected at a waste tire site, waste tire processing facility, waste tire end-user facility, or a waste tire collection center. A violation of this subdivision shall be a class C misdemeanor for the first violation. A second and each subsequent violation shall be a class A misdemeanor. A third and each subsequent violation, in addition to other penalties authorized by law, may be punishable by a fine not to exceed five thousand dollars and restitution may be ordered by the court.

(2) A person shall not maintain a waste tire site unless the site is permitted by the department of natural resources for the proper and temporary storage of waste tires or the site is an integral part of the person's permitted waste tire processing facility or registered waste tire end-user facility. No new waste tire sites shall be permitted by the department after August 28, 1997, unless they are located at permitted waste tire processing facilities or registered waste tire end-user facilities. A person who maintained a waste tire site on or before August 28, 1997, shall not accept any quantity of additional waste tires at such site after August 28, 1997, unless the site is an integral part of the person's waste tire processing or end-user facility, or unless the person who maintains such site can verify that a quantity of waste tires at least equal to the number of additional waste tires received was shipped to a waste tire processing or end-user facility within thirty days after receipt of such additional waste tires.

(3) A person shall not operate a waste tire processing facility unless the facility is permitted by the department. A person shall not maintain a waste tire end-user facility unless the facility is registered by the department. The inventory of unprocessed waste tires on the premises of a waste tire processing or end-user facility shall not exceed the estimated inventory that can be processed or used in six months of normal and continuous operation. This estimate shall be based on the volume of tires processed or used by the facility in the last year or the manufacturer's estimated capacity of the processing or end-user equipment. This estimate may be increased from time to time when new equipment is obtained by the owner of the facility, and shall be reduced if equipment used previously is removed from active use. The inventory of processed waste tires on the premises of a waste tire processing or end-user facility shall not exceed two times the permitted inventory of an equivalent volume of unprocessed waste tires.

(4) Any person selling new, used, or remanufactured tires at retail shall accept, at the point of transfer, in a quantity equal to the number of tires sold, used or waste tires from customers, if offered by such customers. Any person accepting used or waste tires may charge a reasonable fee reflecting the cost of proper management of any waste tires accepted; except that the fee shall not exceed two dollars per waste tire for any tire designed for a wheel of a diameter of sixteen inches or less and which tire is required to be accepted on a one-for-one basis at the time of a retail sale pursuant to this subdivision. All tire retailers or other businesses that generate waste tires shall use a waste tire hauler permitted by the department, except that businesses that generate or accept waste tires in the normal course of business may haul such waste tires without a permit, if such hauling is performed without any consideration and such business maintains records on the waste tires hauled as required by sections 260.270 to 260.276. Retailers shall not be liable for illegal disposal of waste tires after such waste tires are delivered to a waste tire hauler, waste tire collection center, waste tire site, waste tire processing facility or waste tire end-user facility if such entity is permitted by the department of natural resources.

(5) It shall be unlawful for any person to transport waste tires for consideration within the state without a permit.

(6) Waste tires may not be deposited in a landfill unless the tires have been cut, chipped or shredded.

2. Within six months after August 28, 1990, owners and operators of any waste tire site shall provide the department of natural resources with information concerning the site's location, size, and approximate number of waste tires that have been accumulated at the site and shall initiate steps to comply with sections 260.270 to 260.276.

3. The department of natural resources shall promulgate rules and regulations pertaining to collection, storage and processing and transportation of waste tires and such rules and regulations shall include:

(1) Methods of collection, storage and processing of waste tires. Such methods shall consider the general location of waste tires being stored with regard to property boundaries and buildings, pest control, accessibility by fire-fighting equipment, and other considerations as they relate to public health and safety;

(2) Procedures for permit application and permit fees for waste tire sites and commercial waste tire haulers, and by January 1, 1996, procedures for permitting of waste tire processing facilities and registration of waste tire end-user facilities. The only purpose of such registration shall be to provide information for the documentation of waste tire handling as described in subdivision (5) of this subsection, and registration shall not impose any additional requirements on the owner of a waste tire end-user facility;

(3) Requirements for performance bonds or other forms of financial assurance for waste tire sites;

(4) Exemptions from the requirements of sections 260.270 to 260.276; and

(5) By January 1, 1996, requirements for record-keeping procedures for retailers and other businesses that generate waste tires, waste tire haulers, waste tire collection centers, waste tire sites, waste tire processing facilities, and waste tire end-user facilities. Required record keeping shall include the source and number or weight of tires received and the destination and number of tires or weight of tires or tire pieces shipped or otherwise disposed of and such records shall be maintained for at least three years following the end of the calendar year of such activity.

Detailed record keeping shall not be required where any charitable, fraternal, or other nonprofit organization conducts a program which results in the voluntary cleanup of land or water resources or the turning in of waste tires.

4. Permit fees for waste tire sites and commercial waste tire haulers shall be established by rule and shall not exceed the cost of administering sections 260.270 to 260.275. Permit fees shall be deposited into an appropriate subaccount of the solid waste management fund.

5. The department shall:

(1) Encourage the voluntary establishment of waste tire collection centers at retail tire selling businesses and waste tire processing facilities; and

(2) Investigate, locate and document existing sites where tires have been or currently are being accumulated, and initiate efforts to bring these sites into compliance with rules and regulations promulgated pursuant to the provisions of sections 260.270 to 260.276.

6. Any person licensed as an auto dismantler and salvage dealer under chapter 301, RSMo, may without further license, permit or payment of fee, store but shall not bury on his property, up to five hundred waste tires that have been chipped, cut or shredded, if such tires are only from vehicles acquired by him, and such tires are stored in accordance with the rules and regulations adopted by the department pursuant to this section. Any tire retailer or wholesaler may hold more than five hundred waste tires for a period not to exceed thirty days without being permitted as a waste tire site, if such tires are stored in a manner which protects human health and the environment pursuant to regulations adopted by the department.

7. Notwithstanding any other provisions of sections 260.270 to 260.276, a person who leases or owns real property may use waste tires for soil erosion abatement and drainage purposes in accordance with procedures approved by the department, or to secure covers over silage, hay, straw or agricultural products.

8. The department of transportation shall, beginning July 1, 1991, undertake, as part of its currently scheduled highway improvement projects, demonstration projects using recovered rubber from waste tires as surfacing material, structural material, subbase material and fill, consistent with standard engineering practices. The department shall evaluate the efficacy of using recovered rubber in highway improvements, and shall encourage the modification of road construction specifications, when possible, for the use of recovered rubber in highway improvement projects.

9. The director may request a prosecuting attorney to institute a prosecution for any violation of this section. In addition, the prosecutor of any county or circuit attorney of any city not within a county may, by information or indictment, institute a prosecution for any violation of this section.

(L. 1990 S.B. 530, A.L. 1995 S.B. 60 & 112)

## Section 260.273

### **Fee, sale of new tires, amount--collection, use of moneys-- termination.**

260.273. 1. Any person purchasing a new tire may present to the seller the used tire or remains of such used tire for which the new tire purchased is to replace.

2. A fee for each new tire sold at retail shall be imposed on any person engaging in the business of making retail sales of new tires within this state. The fee shall be charged by the retailer to the person who purchases a tire for use and not for resale. Beginning January 1, 1991, such fee shall be imposed at the rate of fifty cents for each new tire sold. Such fee shall be added to the total cost to the purchaser at retail after all applicable sales taxes on the tires have been computed. The fee imposed, less six percent of fees collected, which shall be retained by the tire retailer as collection costs, shall be paid to the department of revenue in the form and manner required by the department of revenue and shall include the total number of new tires sold during the preceding month. The department of revenue shall promulgate rules and regulations necessary to administer the fee collection and enforcement. The terms "sold at retail" and "retail sales" do not include the sale of new tires to a person solely for the purpose of resale, if the subsequent retail sale in this state is to the ultimate consumer and is subject to the fee.

3. The department of revenue shall administer, collect and enforce the fee authorized under this section pursuant to the same procedures used in the administration, collection and enforcement of the general state sales and use tax imposed under chapter 144, RSMo, except as provided in this section. The proceeds of the new tire fee, less four percent of the proceeds, which shall be retained by the department of revenue as collection costs, shall be transferred by the department of revenue into an appropriate subaccount of the solid waste management fund, created under section 260.330.

4. Up to five percent of the revenue available may be allocated, upon appropriation, to the department of natural resources to be used cooperatively with the department of elementary and secondary education for the purposes of developing educational programs and curriculum pursuant to section 260.342.

5. Up to twenty-five percent of the moneys received under this section may, upon appropriation, be used to administer the programs imposed by this section. Up to five percent of the moneys received under this section may, upon appropriation, be used for the grants authorized in subdivision (2) of subsection 6 of this section and authorized in section 260.274. All remaining moneys shall be allocated, upon appropriation, for the projects authorized in section 260.276.

6. The department shall promulgate, by rule, a statewide plan for the use of moneys received under this section to accomplish the following:

- (1) Removal of waste tires from illegal tire dumps;
- (2) Providing grants to persons that will use products derived from waste tires, or used waste tires as a fuel or fuel supplement; and
- (3) Resource recovery activities conducted by the department under section 260.276.

\*7. The fee imposed in subsection 2 of this section shall terminate January 1, 2001.

(L. 1990 S.B. 530, A.L. 1995 S.B. 60 & 112)

\*The imposed fee terminates 1-1-2001.

### **Section 260.274**

#### **Grants, use of waste tires as fuel, who may apply--limitations--advisory council, duties.**

260.274. 1. The department and the environmental improvement and energy resources authority shall administer a program to provide incentive grants for capital expenditures to convert existing facilities for the purpose of using waste tires as a fuel or fuel supplement or products from waste tires. Any person, other than a state agency, who meets eligibility requirements established by the department by rule may apply for such grants. No grant may be awarded for an activity which receives less than forty percent of its tires from Missouri waste tire sites, retailers or residents. The burden of proof shall be on the applicant to show that eligibility requirements have been met.

2. For the purpose of establishing eligibility requirements and application priorities, the director shall create an advisory council consisting of members of the tire industry, the general public, the department, and the department of economic development.

(L. 1990 S.B. 530, A.L. 1995 S.B. 60 & 112)

### **Section 260.275**

#### **Waste tire site, closure plan, contents--financial assurance instrument, purpose, how calculated.**

260.275. 1. Each operator of a waste tire site shall ensure that the area is properly closed upon cessation of operations. The department of natural resources may require that a closure plan be submitted with the application for a permit. The closure plan, as approved by the department, shall include at least the following:

- (1) A description of how and when the area will be closed;
- (2) The method of final disposition of any waste tires remaining on the site at the time notice of closure is given to the department.

2. The operator shall notify the department at least ninety days prior to the date he expects closure to begin. No waste tires may be received by the waste tire site after the date closure is to begin.

3. The permittee shall provide a financial assurance instrument in such an amount and form as prescribed by the department to ensure that, upon abandonment, cessation or interruption of the operation of the site, an approved closure plan is completed. The amount of the financial

assurance instrument shall be based upon the current costs of similar cleanups using data from actual waste tire cleanup project bids received by the department to remediate waste tire sites of similar size. If waste tires are accumulated at a solid waste management area, the existing financial assurance instrument filed for the solid waste disposal area may be applied to the requirements of this section. Any interest that accrues to any financial assurance instrument established pursuant to this section shall remain with that instrument and shall be applied against the operator's obligation under this section until the instrument is released by the department. The director shall authorize the release of the financial assurance instrument after the department has been notified by the operator that the site has been closed, and after inspection, the department approves closure of the waste tire site.

4. If the operator of a waste tire site fails to properly implement the closure plan, the director shall order the operator to implement such plan, and take other steps necessary to assure the proper closure of the site pursuant to section 260.228 and this section.

(L. 1990 S.B. 530, A.L. 1995 S.B. 60 & 112)

## **Section 260.276**

### **Nuisance abatement activities, department may conduct--costs, civil action authorized, exception--resource recovery or nuisance abatement bids on contract, who may bid--content.**

260.276. 1. The department of natural resources shall, subject to appropriation, conduct resource recovery or nuisance abatement activities designed to reduce the volume of waste tires or alleviate any nuisance condition at any site if the owner or operator of such a site fails to comply with the rules and regulations authorized under section 260.270, or if the site is in continued violation of such rules and regulations. The department shall give first priority to cleanup of sites owned by persons who present satisfactory evidence that such persons were not responsible for the creation of the nuisance conditions or any violations of section 260.270 at the site.

2. The department may ask the attorney general to initiate a civil action to recover from any persons responsible the reasonable and necessary costs incurred by the department for its nuisance abatement activities and its legal expenses related to the abatement; except that in no case shall the attorney general seek to recover cleanup costs from the owner of the property if such person presents satisfactory evidence that such person was not responsible for the creation of the nuisance condition or any violation of section 260.270 at the site.

3. The department shall allow any person, firm, corporation, state agency, charitable, fraternal, or other nonprofit organization to bid on a contract for each resource recovery or nuisance abatement activity authorized under this section. The contract shall specify the cost per tire for delivery to a registered waste tire processing or end-user facility, and the cost per tire for processing. The recipient or recipients of any contract shall not be compensated by the department for the cost of delivery and the cost of processing for each tire until such tire is delivered to a registered waste tire processing or end-user facility and the contract recipient has

provided proof of delivery to the department. Any charitable, fraternal, or other nonprofit organization which voluntarily cleans up land or water resources may turn in waste tires collected in the course of such cleanup under the rules and regulations of the department.

(L. 1990 S.B. 530, A.L. 1995 S.B. 60 & 112)

## **Section 260.278**

### **Performance bond or letter of credit required for transporter of waste tires, when--provisions required--forfeiture of bond, when, procedure--bond requirement ceases, when.**

260.278. 1. A person who has, within the preceding twenty-four months, been found guilty or pleaded guilty to a violation of section 260.270 which involves the transport of waste tires may not be granted a permit to transport waste tires unless the person seeking the permit has provided to the department a performance bond or letter of credit as provided under this section.

2. The bond or letter shall be conditioned upon faithful compliance with the terms and conditions of the permit and section 260.270 and shall be in the amount of ten thousand dollars.

3. Such performance bond, placed on file with the department, shall be in one of the following forms:

(1) A performance bond, payable to the department and issued by an institution authorized to issue such bonds in this state; or

(2) An irrevocable letter of credit issued in favor of and payable to the department from a commercial bank or savings and loan having an office in the state of Missouri.

4. Upon a determination by the department that a person has violated the terms and conditions of the permit or section 260.270, the department shall notify the person that the bond or letter of credit shall be forfeited and the moneys placed in an appropriate subaccount of the solid waste management fund, created under section 260.330, for remedial action.

5. The department shall expend whatever portion of the bond or letter of credit necessary to conduct resource recovery or nuisance abatement activities to alleviate any condition resulting from a violation of section 260.270 or the terms and conditions of a permit.

6. The requirement for a person to provide a performance bond or a letter of credit under this section shall cease for that person after two consecutive years in which the person has not been found guilty or pleaded guilty to a violation of section 260.270.

(L. 1995 S.B. 60 & 112)

## **Selected Solid Waste Definitions from Missouri Statute Section 260.200**

(37) "Solid waste management area", a solid waste disposal area which also includes one or more of the functions contained in the definitions of recycling, resource recovery facility, waste tire collection center, waste tire processing facility, waste tire site or solid waste processing facility, excluding incineration;

(38) "Solid waste management system", the entire process of managing solid waste in a manner which minimizes the generation and subsequent disposal of solid waste, including waste reduction, source separation, collection, storage, transportation, recycling, resource recovery, volume minimization, processing, market development, and disposal of solid wastes;

(39) "Solid waste processing facility", any facility where solid wastes are salvaged and processed, including:

(a) A transfer station; or

(b) An incinerator which operates with or without energy recovery but excluding waste tire end-user facilities; or

(c) A material recovery facility which operates with or without composting;

(41) "Tire", a continuous solid or pneumatic rubber covering encircling the wheel of any self-propelled vehicle not operated exclusively upon tracks, or a trailer as defined in chapter 301, RSMo, except farm tractors and farm implements owned and operated by a family farm or family farm corporation as defined in section 350.010, RSMo;

(44) "Waste tire", a tire that is no longer suitable for its original intended purpose because of wear, damage, or defect;

(45) "Waste tire collection center", a site where waste tires are collected prior to being offered for recycling or processing and where fewer than five hundred tires are kept on site on any given day;

(46) "Waste tire end-user facility", a site where waste tires are used as a fuel or fuel supplement or converted into a useable product. Baled or compressed tires used in structures, or used at recreational facilities, or used for flood or erosion control shall be considered an end use;

(47) "Waste tire generator", a person who sells tires at retail or any other person, firm, corporation, or government entity that generates waste tires;

(48) "Waste tire processing facility", a site where tires are reduced in volume by shredding, cutting, chipping or otherwise altered to facilitate recycling, resource recovery or disposal;

(49) "Waste tire site", a site at which five hundred or more waste tires are accumulated, but not including a site owned or operated by a waste tire end-user that burns waste tires for the generation of energy or converts waste tires to a useful product;

# Appendices

**Appendix A**  
**Media Reports of Recent Tire Pile Problems**

## State probe could close Kent wrecking yard

06/24/2002

By Meg Coyle, KING 5 News

KENT, Wash. - A wrecking yard in Kent is in a heap of trouble. Washington state investigators threaten to shut it down if the company can't clean up its act - and there is a lot to clean up. Just about every state agency you can think of has a problem with the wrecking yard in Kent, starting with the state patrol.

"We're not going to go away. And we're not going to go away until this place is organized," said Willie Hernandez of the Washington State Patrol.



Investigators have accused Japanese Auto Wrecking of illegally crushing cars and selling them for scrap. In addition, they've raised environmental concerns. The company is on a list of contaminated sites for excess oils and contaminants.

But perhaps the biggest hazard sits within the mountains of tires that - if ignited - could produce a huge fire and clouds of toxic smoke.

Wrecking yard co-owner Jeff Kato admits he has a problem. "Oh, definitely, they need to go," he said. "It's a sore eye."

**Investigators have accused Japanese Auto Wrecking of illegally crushing cars.**

State regulations allow for only 800 tires on a property like this at a time without a special permit. Jeff Kato estimates there could be 300,000 at this site.

But Kato says they're not just his problem. Many of the tires were left here long before Japanese Auto moved in. "We don't mind bearing some of the cost but not 100 percent," he said. "It wouldn't be fair."

Kato has an explanation for the other code violations. He blames bad tenants occupying the southeast corner of the property. Kato calls them "squatters" who haven't paid rent in months. He says they are the ones mixing their cars with Japanese Auto's inventory. Kato says they're the ones leaving behind hazardous waste.

"Hopefully, we can get rid of these unwanted squatters and tenants on property and that would probably solve a good majority of our problems there," Kato said.

The state patrol has heard the explanations but has seen little change. Now warns it may be too little too late.

Asked if they were trying to shut down the site, Hernandez of the Washington State Patrol said "Absolutely - until they come into compliance with all the rules and regulations." Kato says he is trying to comply is hoping these code violations don't crush his business.

Japanese Auto Wrecking has been in business since 1998. Kato says he and his business partner are in the process of evicting the tenants he blames for a lot of the company's problems.



**State regulations allow for 800 tires without a special permit, but there could be 300,000 at this site.**

KING

## 4/4/02 -- South County Journal Kent junkyard turns into health hazard -

By Nora Doyle  
Journal Reporter

KENT -- A squatter on "junkyard row" illegally wrecked hundreds of cars for scrap metal over the weekend and vacated the site, leaving open puddles of oil and other automotive fluids free to flow into the Green River and seep into the ground.

The illegal operation in the 25000 block of 78th Avenue Southeast by an unidentified squatter led the Washington State Patrol, which regulates automobile wrecking yards, to the site yesterday. Activities on the property have been under investigation by state and local agencies for the past year. Due to a failure to clean it up, the property owners are now facing fines, according to Sue Clarke, an engineer with King County Water and Land Resources.

Clarke said it's easily one of the worst wrecking sites she's seen in her dozen years of investigative work. The oil puddles, containers of unidentified compressed material, and **tires that number in the thousands** littering the property are a potential danger to humans and wildlife.

The property, up for sale for the last several years, is managed by Brad Corner of Corner Properties of Bellevue and is owned by an investors group. Corner said he recently filed a criminal trespassing complaint against a man who did not have permission to be on the property.

The 10-acre junkyard row site has a complicated history, with four of its renters facing eviction in October. After renter Astro Auto Wrecking left, the eviction was put on hold while a possible sale was negotiated. Within a month of Astro leaving the property, a squatter moved in, said Washington State Patrol trooper Renee Bates.

An aerial photograph taken in January showed that the questionable portion of the lot was nearly empty, but by March, there were at least 400 cars piled in. Those cars were wrecked and taken off the lot before the State Patrol could come in, Bates said, and what was left behind is an environmental mess.

When cars are dismantled, there are things that must be done to prevent pollutants from being released into the environment. Otherwise, oil, transmission fluid, Freon and antifreeze can flow into nearby rivers and contaminate fish and plant life, underground water sources and air, Clarke said.

Because the property owners have not complied with orders from Water and Land Resources to begin a clean-up of the site, Clarke said she will now issue an order which imposes at least a \$25,000 fine on the owners and requires them to set a date on which they'll have to start the cleanup.

``It's possible to clean it up," Clarke said. ``It's going to take a lot of work." The property owner has hired an environmental consultant to help with the project, Clarke added.

**County suing over old tire pile**

By Amy McFall Prince



Photo by Bill Wagner

An old truck sits buried under a tire pile at 7002 Ocean Beach Highway in this photo taken in 2001. The county wants the new property owner, Ostrander Rock, to remove the tires, which are estimated at 20,000.

Cowlitz County will go to court again to rid 7002 Ocean Beach Highway of its pile of 20,000 tires.

This time, though, the county's target will be Ostrander Rock & Construction Co., which was told Aug. 20 to clean up the cascading mound of rubber.

Thirty-eight days have passed, and Ostrander has taken no action. County attorney Ron Marshall had recommended that Ostrander be given 30 days.

Marshall said Wednesday that he spoke with Ostrander's attorney, Alan Engstrom, last week. "Our discussions ... lead me to believe the situation will not be resolved," Marshall said.

Marshall said he will petition Cowlitz County Superior Court to order Ostrander to clean up the site, much like it did with the former owner, Bill Cox. He is not sure how soon he will file the request.

Engstrom contends when Ostrander did not buy the tires when it bought the property at a county auction last year for \$28,600. The county sold the property after seizing it from Cox, who continued to violate a 1988 court order meant to keep him from storing thousands of tires. Cox also refused to pay the county for an earlier cleanup.

"We don't think we have the legal ability to remove the tires because Bill Cox has made it abundantly clear the he still has ownership of the tires," Engstrom said during a phone interview Wednesday from Phoenix. "We can't simply go in and take his personal property and dispose of it."

Although Cox still claims ownership of the tires and personal property at the site, the county views Ostrander as the owner of all the property there, including the tires. "If Ostrander says they're not responsible (for cleaning up the tires), I guess the taxpayer is," said Commissioner George Raiter. "That's what the court will have to decide."

Cox said he offered to remove the tires, but said Ostrander wouldn't let him. However, Engstrom said Cox offered to remove the tires if Ostrander would pay him to do so. Cox said he only asked for payment for the junk tires, not the usable ones. Engstrom said giving the tires up to Cox would simply move the problem elsewhere.

Cox said someone from outside the county wants the tires and would move them out of state. He would not say the person's name.



## **Appendix B**

### **State Scrap Tire Fees and Collection Methods**



**Tire pile clean up in Washington**

**Summary: 35 States have tire fee programs, 5 have sunset programs**

Most programs use a tire dealer fee collection program.

29 states have some form of per-tire fee from \$0.25 to \$2.00 per passenger tire with most at \$1.00 per tire.

States with active programs or fees:                    35

- Tire dealer collects fee                    25
- State collects fee:                            7
- Wholesale level collects fee:            1
- Tire dealer license fee:                    1
- Importer pays fee:                            1

States with programs that have sunset:                    5

- Tire dealer collected fee:                    4
- State collected fee:                            1

States with no fees (past or present):                    10

The table on the following page lists the current and sunset state tire fee programs in every state as compiled by the Rubber Manufacturers Association (RMA).

([http://www.rma.org/scrap\\_tires/pdf/state\\_scrap\\_tire\\_fees.pdf](http://www.rma.org/scrap_tires/pdf/state_scrap_tire_fees.pdf))

<b>State</b>	<b>Tire Fee Type</b>	<b>Fee Collection Method</b>
Alabama	No Fee	TD pays county license fee
Alaska	No Fee	
Arizona	2% sales tax (Max \$2)	TD Collects
Arkansas	\$1.75 per tire	TD Collects
California	\$0.25 per tire	TD Collects
Colorado	\$1.00 per tire	TD Collects
Connecticut	No fee	
Delaware	No fee	
Florida	\$1.00 per tire	TD Collects
Georgia	\$1.00 per tire	TD Collects
Hawaii	\$ 1.00 per tire	Importer pays: New in 2000
Idaho	\$1.00 per tire	TD Collected: Sunset 6-30-96
Illinois	\$1.00 per tire	TD Collects
Indiana	\$0.25 per tire	TD Collects
Iowa part of	\$5 vehicle title fee	Collected by state
Kansas	\$0.50 per tire	TD Collects
Kentucky	\$1.00 per tire	TD Collects
Louisiana	\$2.00 per tire	TD Collects
Maine	\$1.00 per tire	TD Collects
Maryland	\$0.40 per tire	TD Collects: Amt. reduced in 2000
Massachusetts	No fee	
Michigan	\$0.50 per tire on vehicle title	State collects
Minnesota	\$4.00 on vehicle title transfers	State collects
Mississippi	\$1.00 per tire	TD Collects
Missouri	\$0.50 per tire	TD Collects
Montana	No fee	
Nebraska	\$1.00 per tire	TD Collects
Nevada	\$1.00 per tire	TD Collects
New Hampshire	No state fee; towns may levy fee	
New Jersey	No fee	
New Mexico	Add on to vehicle registration	State collects
New York	No fee	
North Carolina	2% sales tax	TD Collects
North Dakota	New vehicle sales fee	State collects
Ohio	\$0.50 per tire	Collected at wholesale level
Oklahoma	\$1.00 per pass tire/\$3.50 per truck	TD Collects
Oregon	1.00 per tire	TD Collected: Sunset 10-1-92
Pennsylvania	\$1.00 per tire	TD Collects: Spent on mass transit
Rhode Island	\$0.50 per tire	TD Collects
South Carolina	\$2.00 per tire	TD Collects
South Dakota	\$0.25 /tire/vehicle(\$1 max) reg. fee	State collects
Tennessee	\$1.00 per tire	TD Collects
Texas	\$2.00 per tire	TD Collected: Sunset 12-31-97
Utah	\$0.50 per tire	TD Collects
Vermont	No fee	
Virginia	0.50 per tire	TD Collects
Washington	\$1.00 per tire	TD Collected: Sunset 1996
West Virginia	\$5.00 per title	State collects: New in 2000
Wisconsin	\$2.00 fee on vehicle titles	State collected: Sunset 6-30-96
Wyoming	No fee	

Key: **TD pays county license fee:** Tire dealer buys license from county to accept scrap tires  
**Importer pays:** Whoever imports tires into Hawaii pays the fee.  
**TD Collects:** Tire Dealer collects the fee at the tire retail sale  
**State collects:** State collects the tire fee.  
**Wholesale level collects:** Fee is collected from wholesaler on first sale in state.

Sources: State Scrap Tire Programs A Quick Reference Guide: 1999 Update, US EPA, Solid Waste and Emergency Response, EPA-530-B-99-002, August 1999  
Additional information on post-1999 activity from published sources.

**Appendix C**  
**Executive Summary of Oregon's Tire Recycling Task Force, October, 2002**

**EXECUTIVE SUMMARY**

**Background**

In 1987, the Oregon legislature recognized the growing problem of illegal scrap tire stockpiles, and demonstrated national environmental leadership by passing HB 2022, the Oregon Waste Tire Program. This comprehensive law was intended to clean up the illegal stockpiles and develop end-use markets for scrap tires. The legislation established a \$1 fee on each new tire sold at retail, and dedicated those funds to a Waste Tire Recycling Account. When the tire fee ended in 1992, tire stockpiles were fast disappearing from the landscape.

By 1995 and 1996, recovery rates for Oregon scrap tires reached 98 percent, and Oregon's scrap tire problem appeared to be solved.

In 1997, however, a steep decline in scrap tire recovery was precipitated by the loss of a major fuel market in Lewiston, Idaho. Although remaining market outlets continued to utilize Oregon scrap tires in the manufacture of rubber products or for fuel, the majority of scrap tires suddenly lacked markets. Several landfills in Oregon emerged during this time as low-cost, high-volume management options for scrap tires. Landfill disposal soon became the predominant outlet for scrap tires, and by 2000 the recovery rate fell to 32 percent.

Scrap tires from neighboring states began to flow into Oregon landfills during this same time. By 2000, more than half the scrap tires disposed in Oregon landfills were imported from other states (primarily Washington and Idaho.) The lack of markets for scrap tires emerged as a regional issue.

**Legislative Response**

In 2001, the 71st Legislative Assembly recognized Oregon's national leadership on scrap tire recovery had faltered. House Bill 3909<sup>7</sup> was enacted, which created the Tire Recycling Task Force. HB 3909 directed the task force to:

- Study and make recommendations on the development of methods to increase the current waste tire<sup>8</sup> reuse, recovery, and recycling rates in Oregon;
- Evaluate and analyze the public and private sector roles in increasing waste tire reuse, recovery, and recycling rates in Oregon;
- Evaluate and analyze the waste tire markets and market development programs in other states and Canada, including program administration, costs, and the short-term and long-term results of such programs;
- Evaluate and analyze present reuse, recycling and energy recovery rates, and market outlets for waste tires generated in Oregon;

<sup>7</sup> HB 3909 (Appendix A) became effective June 27, 2001.

- Conduct an economic analysis using, whenever possible, existing data on tire recycling uses and markets; and
- Develop recommendations for removing or mitigating current or potential barriers to tire recycling.

**Task Force  
Recommendations**

The thirteen member task force met from November 2001 through October 2002, receiving information from experts who are task force members as well as sources outside the task force from Oregon, California, and British Columbia.

In its deliberations, the task force reached consensus on the following points, which serve as the foundation for the recommendations:

1. Oregon must expand end-use markets to increase scrap tire recovery.
2. The Waste Tire Recycling Account (\$700,000 remaining from the previous \$1 per tire fee) uses should be expanded to include market development, in addition to tire pile clean-up.
3. Advocates are needed within two key state agencies, the Department of Environmental Quality (DEQ) and the Oregon Department of Transportation (ODOT), to facilitate the reduction of institutional barriers and expand end-use markets for scrap tires.
4. The management of scrap tires is a regional issue. Sixty percent of tires disposed in Oregon landfills and monofills are from other states (primarily Washington and Idaho) and forty percent of tires recovered in Oregon are from out-of-state.
5. Landfill disposal of scrap tires is an integral part of the scrap tire management system today, but should be viewed as a last resort.

The task force specifically recommends the following to improve scrap tire recycling and recovery in Oregon:<sup>9</sup>

**Recommendation A: START WITH EXISTING RESOURCES**

Utilize existing funds in the Waste Tire Recycling Account for market development by creating two positions, one in DEQ and one in ODOT, for "championing" scrap tire rubber applications and develop a broad-based approach for education, outreach, and increased market opportunities for public and private sector audiences.

*This recommendation requires statutory action for implementation.*

**Recommendation B: ESTABLISH A RECOVERY TARGET AND FUNDING TRIGGER**

Establish a scrap tire recovery goal for Oregon generated tires of 60 percent by 2006 and 80 percent by 2009. If market forces fail to achieve the initial 60 percent goal, a new dedicated funding source for a scrap tire market development program should be triggered. The task force recommends that failure to reach the 2006 goal trigger a \$0.25 per ton increase in the solid waste

<sup>8</sup> Apart from this use of statutory terminology, the task force has chosen to use the term "scrap tire" throughout the report, rather than "waste tire". Discarded tires have resource values (the equivalent of 7 gallons of oil and 2.5 pounds of steel) as well as useful properties inherent in the rubber material (e.g., light weight, cushioning) that qualify it as a scrap material with many potential uses, rather than a waste material requiring disposal.

<sup>9</sup> Full text of recommendations begins on page 19.

disposal fee, which would raise approximately \$1 million annually for market development grants that would target end-users of tires as well as purchasers of products made from tire rubber. The funding stream and market development funds should continue until Oregon has achieved an 80 percent tire recovery rate for two consecutive years.

*This recommendation requires statutory action for implementation.*

**Recommendation C: IMPLEMENT PROGRAM OVERSIGHT**

Appoint a voluntary Tire Recycling Board with the primary objective to increase tire recycling. Members should have expertise in tire management and markets. The task force envisions the Tire Recycling Board would provide program development assistance and oversight on the tire recovery progress through 2006. If the 2006 recovery goal is not achieved, and the funding source for scrap tire market development is triggered, the Board would be responsible for developing and implementing the Market Development Plan, managing the dedicated fund, and approving all grants and awards.

*This recommendation requires statutory action for implementation.*

**Recommendation D: DEVELOP REGIONAL COORDINATION**

Encourage Oregon's Governor to initiate a Northwest region tire recovery group with executive counterparts in Washington and Idaho. This group would coordinate scrap tire regulations and expand recovery markets consistent with Oregon's goals.

**Recommendation E: ENCOURAGE TIRE INDUSTRY COMMITMENT TO MARKET DEVELOPMENT**

Increase involvement of tire manufacturers and retailers in expanding end-use markets in the northwest. For example, tire manufacturers can provide venues for presenting technical information to potential end-users of tire rubber in civil engineering, tire-derived fuel, and paving applications.

**Recommendation F: ENCOURAGE APPLIED RESEARCH**

Cultivate higher education expertise and applied research to help demonstrate viable end-uses for tire rubber.

**Recommendation G: IMPROVE INFORMATION GATHERING AND ANALYSIS**

Ensure reliable data is gathered on the amount and flow of tires sold or used in Oregon.

The Tire Recycling Task Force urges the Legislative Assembly to help return Oregon to a leadership role in scrap tire recovery by supporting legislation in 2003 that will implement recommendations A, B, and C.

The Tire Recycling Task Force also urges the Governor to establish a regional work group with executive counterparts in other Northwest states in order to expand recovery opportunities for the material and energy resources in scrap tires.

## Appendix D

### Regional Tire Recycling Firms and Products

#### Northwest Tire Recycling Products :

880 Curie St.  
Richland, WA  
866-866-8588  
Baling tires for stream banks, roads, cattle yards.

L&S Tire  
Mike Lavelle  
9215 39<sup>th</sup> Ave SW  
Lakewood, WA 98499  
(253) 582-5565

#### Tire Recycling Technologies Inc.

3906 Steilacoom Blvd SW  
Tacoma, WA 98499  
253-588-0717

Al Bolser Tire Stores, Inc  
Jerry Bolser  
5530 Evergreen Way  
Everett, WA 98203-3630  
(425) 745-4696  
Retreading, light processing (cutting, debanding).  
Products: Retreads  
60-70,000 tires/year

Conrad Industries  
121 Melhart Rd  
Chehalis, WA 98532-8739  
(360) 748-4924  
Pyrolysis. Accepts only shredded tires.  
Products: Oil, gas, carbon black  
600,000 tires/year

Dorian Metals  
3950 6<sup>th</sup> Ave NW  
Seattle, WA 98107  
(206) 547-8585  
Accepts inner tubes. Wrapping steel.  
Products: Crab Pots.  
12,000 inner tubes

L&S Tire  
Mike Lavelle  
8119 N. Regal  
Spokane, WA 99217  
(509) 464-0976  
Baling tires for road base, fence, cattle yards.

Tire Depot – Montana  
Vern (406) 883-6111  
[vrr@centurytel.net](mailto:vrr@centurytel.net)  
Shreds tires for use as road base and fuel for  
cement kiln.

Land Recovery Inc.  
17925 Meridian Ave S  
Puyallup, WA 98373  
(206) 847-7555  
Stockpile

Les Schwab Tires  
PO Box 667  
Prineville, OR 97754  
(541)447-4136 or 416-5143  
Retreads tires.  
120,000 tires/year

Marine Floats  
1208 East D St  
Tacoma WA 98421  
(206)383-2740  
Flotation devices for docks from tires.  
12,000 tires/year

Schuyler Manufacturing  
16901 Woodinville Redmond Rd  
Woodinville, WA 98072  
(425) 488-2255  
Uses shredded rubber for bumpers, tugboat  
fenders, mooring dolphins, loading dock bumpers,  
blasting mats, wheel chocks, truck trailer pads, etc.  
80,000 tires/year

Tire Disposal and Recycling, Inc  
9625 SE Clackamas Rd  
Clackamas, OR  
(503) 557-7800

Tire Shredders, Inc.  
925 N Fairgrounds Rd  
Goldendale, WA 98620-9575  
(509) 773-3255  
Shreds tires for use as road fill or ballast, are  
landfilled in WA, or are stockpiled.

Utah Tire Recyclers  
2163 S Constitution Blvd  
West Valley City, UT 84119-1219  
(801) 972-8800  
TDF for a cement kiln.

Waste Recovery Inc.  
8501 N Borthwick  
Portland, OR 97217-1002  
(503) 283-2261  
TDF to produce pulp and paper products.

Larry's Auto and Truck Parts  
199 Pease Road  
Burlington, WA 98233  
(360) 757-7444

Washington Used Tire & Wheel  
13922 Canyon Road E  
Puyallup, WA 98373  
(253) 536-1196

Conrad Industries, Inc.  
121 Melhart Road  
Chehalis, WA 98532  
(206) 748-4924  
Produces an oil-like liquid product, vapor gas, and carbon.

Western Rubber  
721-Aldford Ave  
Delta, BC, Canada V3M 5P5  
(604) 524-5263

GNR Technologies Inc.  
990 Upton  
Lasalle Quebec  
Canada H8R 2T9  
(514) 366-6116 227

Rubber Granulators  
PO Box 692  
Snohomish, WA 98271  
(360) 658-7754  
Sells rubberized asphalt, athletic tracks.  
Does not take whole tires, but may in future.

Earthbound Systems Inc  
1398 Road 3 NE  
Moses Lake, WA 98837-9585  
(509) 764-5505  
Sells shredded tire topdressing and soil amendment.  
Does not accept whole tires.

## **Appendix E**

### **Illinois Scrap Tire Market Development Program**

#### **Used Tire Recovery Program**

Illinois Department of Commerce and Community Affairs (DCCA) Recycling Division provides financial assistance to businesses, local governments and not-for-profit organizations to identify innovative and cost-effective alternatives to stockpiling and/or disposing of scrap tires in landfills. This program encourages development of a self-sustaining tire recycling industry. The Used Tire Recovery Program is funded by a portion of a \$1 per tire surcharge to customers who purchase new tires in Illinois.

Innovative projects funded through this program include athletic fields made with synthetic turf manufactured from scrap tire crumb rubber, and all weather running tracks made from tire-derived materials. DCCAs Recycling Division has funded nearly 500 projects totaling more than \$17 million through this program.

#### **SECTION 1. GENERAL INFORMATION**

**1.1 Authority.** Title XIV of the Illinois Environmental Protection Act, 415 ILCS 5/53, et seq., (the "Act") authorizes the Department of Commerce and Community Affairs (DCCA or Department) to provide grants for the purpose of establishing facilities and programs to collect, process and utilize used and waste tires and tire-derived materials, and for the purpose of demonstrating the feasibility and applications of innovative technologies as a means of collecting, storing, processing and utilizing used and waste tires, and tire-derived materials. The Act establishes the Used Tire Management Fund and authorizes DCCA to utilize moneys from the Fund to accomplish the purposes set forth in the Act.

**1.2 Used Tire Recovery Program.** DCCA administers the Used Tire Recovery Program under the authority granted by the Act. The Department provides financial and technical assistance in order to accomplish the Act's objectives of establishing used and waste tire processing facilities in Illinois and encouraging the development of processing technologies, as well as markets for the products resulting from processing/manufacturing of used and waste tires. By establishing facilities capable of processing used and waste tires, the Department facilitates significant economic opportunity associated with recycling used and waste tires in Illinois and minimizes the potential for health and environmental problems associated with the disposal of used tires.

**1.3 Definitions.** For purposes of these guidelines, the following terms have the meanings set forth below:

**Applicant Investment - Cash** committed to the project by the applicant, whether from its own sources or from sources (**other than DCCA**) such as financing, investors, etc.

**Disposal** - The placement of used tires into or on any land or water except as an integral part of systematic reuse or conversion in the regular course of business.

**Energy Recovery** - Energy in the form of steam, hot water or electricity that is recovered from whole and processed scrap tires and is either used or sold.

**Financial Statements** - For private businesses, a balance sheet and related statements of income, retained earnings, and changes in financial position for the past three years including the most current year available. For government entities and not-for-profit organizations, a balance sheet and related statements of revenues and expenditures, other sources and uses of financial resources and changes in fund balances for the most current year(s) available.

**In-Kind Investment** - Includes costs incurred by the applicant for resources that are essential for and committed to the proposed project, such as equipment, material, real estate, personnel and professional service fees (legal, engineering, consulting, etc.).

**New Finished Product** - Products resulting from manufacturing/processing of used or waste tires or tire-derived materials that are sold in their final form. Examples of new finished products include rubberized railroad crossing mats, playground material and floor mats. Feedstock produced from used and waste tires, such as ground rubber, is not a New Finished Product.

**Passenger Tire Equivalent (PTE)** - One PTE equals the weight of one passenger tire (approximately 20 pounds). There are five PTEs to one semi-truck tire and 10 PTEs to one off-road/rear agricultural tire.

**Processor** - An entity that alters, converts, or reprocesses used or waste tires.

**Project** - All components of the project described in the proposal letter or application.

**Project Commencement Date** - For Manufacturing/Processing projects, the date that all equipment is installed and operational and all project tasks have begun; for Procurement, Marketing or Research projects, the date that all project tasks have begun.

**Pro Forma Statement of Income** - A financial statement for three years from project start up. The pro forma should reflect the anticipated result of the project including sales revenues, costs of production, operating expenses and net income. All assumptions made for the pro forma must be stated.

**Proposal Letter** - The letter described in Section 4.1 of these Guidelines.

**Pyrolysis** - The chemical decomposition of a substance by heat in the absence of oxygen.

**Retreading** - The process of recapping used tire casings with new tread to produce recapped/retreaded tires for sale to the public.

**Rubber-Modified Asphalt** - Asphalt containing a measurable amount of ground rubber, which is used for paving.

**Total Capital Project Cost** - Only those costs **directly** related to the purchase, installation or conversion of capital equipment and machinery to be utilized in the project.

**Total Project Cost** - The aggregate of all costs that must be incurred in order to perform the project, including in-kind costs for personnel, equipment, real estate, and professional service fees.

**Tire-Derived Fuel (TDF)** - Whole, shredded or cut scrap tires that are burned for energy recovery. TDF is not considered a Value-Added or New Finished Product for purposes of these guidelines.

**Used Tire** - A worn, damaged or defective tire that is not mounted on a vehicle wheel rim.

**Value-Added Product** - Used or waste tire-derived product that is not a fuel. This may be a feedstock such as ground rubber.

**Waste Tire** - A tire that has been disposed of.

**1.4 Other Solid Waste Management Programs.** Other solid waste management programs administered by DCCA include:

- The **Illinois Recycling Grants Program**, which provides support for communities and businesses to start or expand recycling collection and processing programs
- The **Technologies and Practices Demonstration Program**, which supports the demonstration of innovative technologies and practices, which recover, reuse or remanufacture post-consumer recyclable commodities into marketable products
- The **Recycling Market Development Program**, which supports the development of end-use recycling markets
- The **Recycling Industry Modernization (RIM) Program**, which provides support to improve the competitiveness of Illinois manufacturing firms that currently utilize recycled content feedstock, plan to convert their operations to use recycled content feedstock or implement operations that facilitate source reduction

- The **Illinois School Recycling and Waste Reduction Grant Program**, which provides support for teacher training and implementation of in-school waste reduction programs
- The **Recycling and Waste Reduction Public Education Program**, which promotes awareness of recycling and encourages purchases of recycled-content products
- The **Illinois College Assistance Program for Recycling**, which supports the development and implementation of mandated waste reduction plans at state-supported institutions of higher education
- The **Keep Illinois Beautiful Program**, which provides grants to certified Keep America Beautiful organizations for recycling, litter control and waste reduction projects.

If you have any questions as to which program you should apply for, please contact the Department. Information on other solid waste related programs is available through DCCA's Information and Distribution Center by calling 800-252-8955. For TDD customers, dial 800-785-6055.

## **SECTION 2. ELIGIBILITY CRITERIA**

**2.1 Eligible Applicants.** Governmental organizations, for-profit and not-for-profit businesses and organizations.

**2.2 Illinois Project.** The project must fall within the Eligible Project Categories specified in Section 2.3 below and occur in Illinois. Manufacturing/Processing projects **must utilize a specified number of used or waste tires, which are either disposed of in Illinois or are utilized in the systematic alteration, reuse, reprocessing or conversion of used or waste tires in the regular course of business in Illinois.**

**2.3 Eligible Project Categories.** Grants are available for the following categories of used tire recovery projects, which advance the recovery, reuse or remanufacture of used and waste tires into economic use as a product:

- Manufacturing/Processing Projects (Refer to Appendix A)
- Procurement/Demonstration Projects (Refer to Appendix B)
- Research/Development Projects (Refer to Appendix C)
- Marketing Projects (Refer to Appendix D)

**NOTE: Applicants may request funds for a project that has both a Manufacturing and Marketing Component. This is the only exception to the funding limitation set forth in Section 3.1.1 below.** Each project must meet all requirements identified in these guidelines for the applicable project category.

**2.4 Ineligible Projects.** Ineligible projects involving used or waste tires or tire-derived materials include, but are not limited to, the following:

- Used or waste tires that are processed for landfill disposal
- Burning, incineration or pyrolysis where energy or products are not recovered
- Whole or split tires used for tire fences, barriers, bumpers, raised beds, playground apparatuses or similar uses of like economic value
- Other uses that, in DCCA's opinion, would cause environmental, safety or health hazards.

**2.5 Applicant Investment.** Applicants **must** provide the applicant investment (as specified by project category) in order to be eligible for funding.

**2.6 Authority/Approvals.** The applicant's signature on its application is certification that all authorizations required to perform the project have either been obtained or will be obtained no later than 60 days following the project start date set forth in the Notice of Grant Award issued by DCCA.

**2.7 Legal Compliance.** The applicant's signature on its application is certification that the project complies with all applicable state, federal and local environmental and zoning laws, ordinances and regulations and that all permits, licenses, etc., required to perform the project have either been obtained or will be obtained no later than 60 days following the project start date set forth in the Notice of Grant Award issued by DCCA.

## **SECTION 3. GENERAL PROGRAM INFORMATION**

### **3.1 Funding Limitations.**

**3.1.1 Limited to One Project Category.** Each application should request funds for only one of the eligible project categories. The only exception to this provision is set forth in Section 2.3 of these Guidelines.

**3.1.2 Previously Funded Applicants.** A proposal from an applicant who has previously received Used Tire Recovery Funds must demonstrate that the project for which funding is requested is either a new project (unrelated to the previously funded project) or an expansion of a previously funded project. Proposals requesting Used Tire Recovery Funds to expand a previously funded project must contain documentation evidencing that the project will utilize additional volumes of used/waste tires or tire-derived materials not currently being utilized by the applicant.

**Applicants who have not completed all obligations or satisfactorily performed under previous grant agreements with DCCA will not be considered for funding.**

**3.2 Eligible Expenditures/Prior Incurred Costs.** Eligible expenditures of grant funds are discussed separately for each of the eligible project categories. As a general policy, grant funds may **not** be expended to reimburse a grantee for project-related expenditures incurred prior to the project start date set forth in the Notice of Grant Award issued by DCCA. Exceptions to this policy will be granted only if the Department, in its sole discretion, determines that such an exception is justifiable and necessary to further the objectives of the Used Tire Recovery Program. In no event will the Department be liable for any project-related expenditures incurred by the applicant if (i) the Department rejects the application in accordance with these guidelines or (ii) the Department and the applicant are unable to successfully negotiate and execute a grant agreement.

**3.3 Ineligible Expenditures.** Used Tire Recovery funds may not be requested for the following types of expenditures:

- Purchase/rental of real property (land or buildings)
- Grantee's normal operating/administrative expenses including:
  - equipment/machinery lease payment
  - collection service fees
  - purchase of consumable/disposable items (except for eligible Procurement/Demonstration projects)
  - personnel expenses, including travel (except for eligible Research/Development projects)
- Feasibility studies, planning efforts and pilot project (except for eligible Research/Development projects).

**The Department reserves the right to determine the actual amount of a grant based upon the amount of funding available and the specific proposal.**

**3.4 Grant Provisions/Requirements.** Provisions regarding disbursement of grant funds, performance period/grant term, ownership of equipment, etc., are discussed separately for each project category. Please refer to the appropriate appendix.

**3.5 Reporting Requirements/Project Monitoring.** Grantees will be required to submit progress and expenditure reports in accordance with the requirements of the grant agreement. The Department reserves the right to structure reporting requirements on a project-specific basis. The Department project manager will monitor the grantee's compliance with the terms of the agreement.

**3.6 Freedom of Information Act/Confidential Information.** Materials submitted in conjunction with applications for Used Tire Recovery Program funds are subject to disclosure, in response to requests received under provisions of the Freedom of Information Act (5 ILCS 140/1 et seq.). Information that could **reasonably** be

considered to be proprietary, privileged or confidential commercial or financial information should be identified as such in the application. The Department will maintain the confidentiality of that information **only** to the extent permitted by law.

#### **SECTION 4. APPLICATION PROCESS**

**4.1 Application Process/Proposal Letter.** A proposal letter is required for all projects prior to an application being accepted. The proposal letter provides a mechanism for initial screening of projects and increases the likelihood that the proposed project will be consistent with the goals of the Used Tire Recovery Program. The following information must be provided in the proposal letter:

- Purpose and description of the project
- Estimated amount of Used Tire Recovery grant requested, applicant investment and other sources of funding, and itemized statement of Total Project Costs (including Total Capital Project Cost)
- Pertinent experience of applicant
- Proposed project timetable
- Current financial statements and a pro forma statement of income for the project
- Quantities and sources of used or waste tires or tire-derived materials to be utilized in the project
- Projected markets for end products.

**4.2 Application Process.** An applicant should begin preparation for submittal of an application only after receiving a letter from the Department, in which the applicant is notified that its proposal letter has been approved and it is invited to submit an application. The appropriate application forms will be provided at that time. Applicants should refer to the Application Process section in the appropriate appendix. Proposal letters and applications should be mailed or delivered (telefax submissions will not be accepted) to:

**Illinois Department of Commerce and Community Affairs  
Bureau of Energy and Recycling  
Used Tire Recovery Program  
620 East Adams Street  
Springfield, Illinois 62701-1615  
217-785-3984**

**4.3 Application Evaluation.** The evaluation criteria set forth for each project category have been developed to allow the Department to identify those applications that most completely demonstrate the applicant's ability to **implement successful manufacturing/processing, procurement, research or marketing projects, which are consistent with the goals of the Used Tire Recovery Program.** All eligible applications will be independently evaluated based on the applicable evaluation criteria.

**4.4 Rejection of Applications.** The Department of Commerce and Community Affairs reserves the right to reject any application that does not comply with the requirements of these guidelines. Unsuccessful applicants who wish to discuss the evaluation of their application should submit a written request to this effect to DCCA.

**The submission of a proposal letter or application under these guidelines confers no rights upon any applicant. DCCA is not obligated to award a grant or to pay any costs incurred by the applicant in the preparation and submission of a proposal letter or application.**

**4.5 Application Format.** Applicants must use the application provided in Appendix E of these guidelines. One original and three copies of the completed application must be submitted to the Department.

## **APPENDIX LIST**

- Appendix A      Manufacturing/Processing Projects**
- Appendix B      Procurement/Demonstration Projects**
- Appendix C      Research/Development Projects**
- Appendix D      Marketing Projects**
- Appendix E      Rolling Stock Guidelines**

## APPENDIX A MANUFACTURING/PROCESSING PROJECTS

**A.1 Eligible Manufacturing/Processing Projects.** Manufacturing/Processing projects involve the installation of specialized manufacturing equipment and machinery or the conversion of existing production facilities for the manufacturing, processing or end use of used/waste tires and tire-derived material. Eligible Manufacturing/Processing projects fall into the following two categories: **Non-TDF Projects**, which involve the processing or end use of used/waste tires and tire-derived material into a value added product; and **TDF Processing and End Use Projects**, which involve the production of TDF or end use of TDF made from used/waste tires. DCCA reserves the right to give a preference to Non-TDF Projects due to their position in the hierarchy established by the Act (see Section A.9.1 below). Examples of eligible Manufacturing/Processing projects include:

- TDF processing and end-use projects
- Crumb rubber production facilities
- Facilities that use crumb rubber for manufacture of value-added products.

**A.2 Maximum Grant Award.** Grant funds may be requested in accordance with the following guidelines:

**1. Non-TDF Projects**

For Non-TDF projects where the applicant is capable of and commits to processing or using **up to and including 100,000 PTEs per year**, the maximum Manufacturing/Processing grant award that may be requested is **\$250,000**; for Non-TDF projects where the applicant is capable of and commits to using or processing **over 100,000 PTEs per year**, grants of up to **\$500,000** may be requested. The actual amount of the grant will be determined by DCCA based upon availability of Used Tire Recovery Funds and DCCA's evaluation of the proposed project in accordance with the Evaluation Criteria set forth herein.

**2. TDF Processing and End Use Projects**

For TDF projects where the applicant is capable of and commits to processing or using **up to and including 1.5 million PTEs per year**, the maximum manufacturing grant award that may be requested is **\$250,000**; for TDF projects where the applicant is capable of and commits to using or processing **over 1.5 million PTEs per year**, grants up to **\$500,000** may be requested. The actual amount of the grant will be determined by DCCA based upon availability of Used Tire Recovery Funds and DCCA's

evaluation of the proposed project in accordance with the Evaluation Criteria set forth herein.

**A.3 Proven Technology.** Manufacturing/Processing projects must involve the utilization of equipment/process(es) that have advanced to the commercialization stage or proven to be effective under pilot project conditions for the recovery, reuse or remanufacture of used and waste tires and tire-derived material in order to be eligible for funding. **Projects utilizing equipment/processes that are not advanced to commercialization or have not been demonstrated to operate effectively under pilot project conditions will not be considered.**

**A.4 Eligible Expenditures.** Used Tire Recovery Funds may be requested and expended for the purchase, installation and conversion of capital equipment necessary to perform the project, such as tire shredders, grinders, granulators, molds, presses, cracker mills, etc. **Used Tire Recovery Funds may not be requested for the types of project expenditures set forth in Section 3.3 of these Guidelines.**

**NOTE: Applicants requesting funds for the purchase of "Rolling Stock" (any type of generic vehicle or equipment that can be used for purposes other than recycling and waste reduction) are subject to the provisions of DCCA's "Rolling Stock Guidelines," which are appended to these Guidelines as Appendix F. Used Tire Recovery Funds will not be awarded solely to fund the acquisition of Rolling Stock.**

**A.5 Required Applicant Investment.** An applicant requesting a Manufacturing/Processing grant must provide a minimum applicant investment of:

- 10 percent of the Total Project Cost for projects with Total Project Costs of up to \$250,000
- 25 percent of the Total Project Cost for projects with Total Project Costs greater than \$250,000.

**A.6 Application Procedure.** To apply for a Manufacturing/Processing grant, the applicant must submit the proposal letter described in Section 4.1 of these Guidelines. Upon approval by the Department of the proposal letter, the applicant will be invited to complete the application appended to these Guidelines as Appendix E.

**A.7 Payment Schedule.** The grant agreement will specify conditions of payment and the payment schedule. For Manufacturing/Processing grants, disbursement of 80 percent of the grant award is typically authorized upon execution of the grant agreement by the Department and submittal of documentation evidencing that the equipment/material to be purchased with Used Tire Recovery Funds has been ordered (purchase orders for equipment, executed third-party agreements, etc.). Disbursement of the remaining 20 percent will be authorized upon verification that the Project Commencement Date has occurred.

**The Department reserves the right to determine the appropriate payment structure on a project-specific basis.**

**A.8 Grant Duration/Performance Period.** The grant term is typically 18 months. The Project Commencement Date should occur **no later than six months following the Project Start Date set forth in the Notice of Grant Award issued by DCCA.** This timeframe has been structured to allow sufficient lead time for acquisition and installation of equipment and materials necessary to perform the project and a 12-month performance period. Recipients of Used Tire Recovery Funds will be required to certify the Project Commencement Date to DCCA. DCCA reserves the right to require a longer performance period based upon the nature of the proposed project.

**A.9 Ownership/Use of Equipment.** Notwithstanding the agreement term described above, recipients of Used Tire Recovery Funds will be required to contractually agree to use all equipment and material purchased with Used Tire Recovery Funds for the purposes specified in the grant agreement for a period of **three years from the Project Commencement Date.** The grant agreement will specifically prohibit the sale, lease, transfer, assignment, or encumbrance of any equipment or material purchased with Used Tire Recovery Funds, without the express written approval of DCCA during this three-year period. DCCA will monitor for compliance with these requirements. The grant agreement will provide, that in the event of failure to comply with these requirements, DCCA may, at its discretion, require the return **of all funds provided by DCCA, the transfer of ownership to the state of equipment and material purchased with Used Tire Recovery Funds and bar the recipient from consideration for future funding.** The Department reserves the right to require a provision in the grant agreement giving it a Purchase Money Security Interest in equipment purchased with Used Tire Recovery Funds for the three-year period referenced above.

**A.10 Evaluation Criteria for Manufacturing/Processing Projects.**

**A.10.1 Project's Position in the Hierarchy Established by the Act.**

The Act establishes the following hierarchy for the reuse and recycling of used and waste tires.

1. Reuse of tire casings for remanufacture or retreading.
2. Processing of tires into marketable products, such as stamped parts from portions of tire casings.
3. Total destruction of tires into a uniform product that is marketable as a fuel or recycled material feedstock, including such products as tire-derived fuel (TDF), recovered rubber for recycling into rubber or other products or as an asphalt additive.

4. Total destruction of tires through primary shredding to produce a non-uniform product for use in road beds or other construction applications, or at a landfill or similar site for erosion control or cover.
5. Total destruction of tires into a non-uniform product consistency for direct landfill disposal.

Projects will be rated according to their position in this hierarchy, i.e., projects that fall into the higher tiers of the hierarchy will receive higher ratings than those projects that fall into the lower tiers of the hierarchy. **Note: Projects that fall under Category 5 above are not eligible for funding through the Used Tire Recovery Program.**

#### **A.10.2 Diversion Potential.**

- Quantities and sources of used and waste tires and tire-derived material used as feedstock in the project annually
- Geographic location of the project
- Impact of the product (percentage of used /waste tires or tire-derived material and life cycle of product)

Grant recipients will be required to contractually commit to exercising good faith efforts to obtain used/waste tires to be used in the project from sources in Illinois to the extent used/waste tires are available from Illinois sources.

#### **A.10.3 Project Description and Strategic Plan.**

- Project profile summary
  - Opportunity/problem statement - identify company motivation to implement project
  - Project goals, measurable objectives, tasks and activities
- Strategic plan for project
- Staff assignments, role definition and experience relevant to the project
- Project evaluation methods -- timelines and checkpoints
- Planning, research and design that provides the foundation for the project

#### **A.10.4 Company Profile.**

Company background (significant historical information on the company's ownership, maturity, products, sales and profitability) and SIC code.

- Experience with recyclable commodities (provide narrative description)
- Location of business (any advantages or weaknesses)
- Human resources profile
- Facility profile -- physical space and current equipment
- Current management structure (key management names, titles, responsibilities, experience -- with organizational chart)
- Business functions contracted by outside firm -- legal, accounting, banking and other organizations that advise the company
- Operations profile -- current manufacturing/production processes; assess level of technology of machinery and equipment; identify key manufacturing related functions

#### **A.10.5 Marketing Strategy for Product.**

- Project description
  - Distinguishing features (studies, photographs, sales brochures)
  - Market needs the product will meet
- Market definition -- identify target markets
  - Market size
  - Market trends
  - Assessment of principal competitors
- Estimated sales and market share
  - Pricing of product
  - Sales and distribution activities
  - Strategies/activities for promoting product

#### **A.10.6 Competitive Environment Faced by the Company.**

- Explanation of the industry within which the company competes
- The company's current status in the industry
- Identify trends or events that may impact company performance (economic, social, technological or regulatory)

## APPENDIX B PROCUREMENT/DEMONSTRATION PROJECTS

**B.1 Eligible Procurement/Demonstration Projects.** Procurement/Demonstration projects involve the purchase and demonstration of new or innovative products containing used/waste tires or tire-derived materials, or new or innovative applications of products containing used/waste tires and tire-derived material. **Applicants for Procurement/Demonstration grants may be required to provide information to the Department regarding the performance of the tire-derived product, for which funding is requested. The Department reserves the right to fund only those Demonstration projects that will demonstrate new or innovative tire-derived products that have not, in the Department's opinion, been effectively demonstrated.** Procurement projects for specific applications may be solicited periodically through the Department's Request for Proposal process. Examples of past Procurement/Demonstration projects include:

- Outdoor running tracks made from tire-derived material
- Used tire rubber in horse arenas
- Rubber-modified asphalt projects
- Surface grade railroad crossing mats.

**B.2 Maximum Grant Award.** The maximum grant award for an eligible Procurement/Demonstration project is **\$200,000**. The amount of the grant award will be determined by the Department based on the availability of Used Tire Recovery Funds and the Department's evaluation of the project in accordance with the Evaluation Criteria set forth below for Procurement/Demonstration projects.

**B.3 Required Applicant Investment.** A minimum applicant investment of 10 percent of the Total Project Cost is required for Procurement/Demonstration grants.

**B.4 Eligible Expenditures.** Grant funds may be requested and expended for costs incurred in purchasing and demonstrating products containing used/waste tires and tire-derived material. The eligibility of project expenditures will be determined on a project-specific basis. The applicant should provide sufficient detail in the proposal letter to allow the Department to understand exactly what the funds are being requested for in the proposed Procurement/Demonstration project. Grant funds will not be awarded for project expenditures described in Section 3.3 of these Guidelines. **The purchase of TDF is not eligible for funding under the Procurement/Demonstration grant category.**

**B.5 Application Procedure.** To apply for a Procurement/Demonstration grant, the applicant must submit the proposal letter described in Section 4.1 of these Guidelines. Upon approval by the Department of the proposal letter, the applicant will be invited to complete the application appended to these Guidelines as Appendix E.

**B.6 Payment Schedule.** The grant agreement will specify conditions of payment and the payment schedule. For Procurement/Demonstration grants, disbursement of 90 percent of the grant award is typically authorized upon execution of the grant agreement by the Department. Disbursement of the remaining 10 percent will be authorized upon verification that the Project Commencement Date has occurred.

**The Department reserves the right to determine the appropriate payment structure on a project-specific basis.**

**B.7 Grant Duration/Performance Period.** The grant term will typically be 15 months. The Project Commencement Date should occur **no later than three months following the Project Start Date set forth in the Notice of Grant Award issued by DCCA.** Grantees will be required to certify the Project Commencement Date to the Department. The Department reserves the right to require a longer performance period based upon the nature of the proposal.

**B.8 Evaluation Criteria for Procurement/Demonstration Projects.**

**B.8.1 Project Description and Strategic Plan.**

- Project profile -- one paragraph explanation, include project category
- Opportunity statement -- identify company/organization motivation to implement project
- Project strategic plan -- goals, measurable objectives, tasks and activities
- Staff assignments -- role definition and experience relevant to the project
- Project evaluation methods -- timelines and checkpoints
- Planning, research and design that provides the foundation for the project

**B.8.2 Company/Organization Profile.**

- Company/organization background (SIC code; significant historical information on the company's ownership, maturity, products, sales and profitability)
- Experience with recyclables and/or recycled products
- Location of business

### **B.8.3 Innovative Nature of Product.**

- Product description -- distinguishing, non-traditional or innovative features; include studies, photographs or brochures

### **B.8.4 Transferability.**

- Market potential of product -- number of potential customers; potential volume of sales -- (extensive or limited applications?)

### **B.8.5 Exposure to Potential Customers.**

- Level of contact with potential customers through various information-sharing/promotional activities (press releases, news articles, journal articles, press events, site visits by potential customers, etc.)

## APPENDIX C RESEARCH/DEVELOPMENT PROJECTS

**C.1 Eligible Research/Development Projects.** Projects that further the objectives of the Act, relative to the development and demonstration of innovative technologies for collecting, storing, processing and utilizing used and waste tires and tire-derived materials, are eligible for Research/Development grants. Research/Development projects should be focused on minimizing the disposal of used tires in Illinois; maximizing recycling, reuse or other alternative technologies to increase markets for products made from used/waste tires and tire-derived materials; and reducing the economic costs and environmental consequences of disposing of used tires. Examples of Research/Development projects include:

- Test burns of tire-derived fuel or laboratory tests of products made from tire-derived materials
- Innovative devices to test tire casings prior to retreading.

**C.2 Maximum Grant Award.** The maximum grant award for an eligible Research/Development project is **\$200,000**. The amount of the grant award will be determined by the Department based on the availability of Used Tire Recovery Funds and the Department's evaluation of the project in accordance with the Evaluation Criteria set forth below for Research/Development Projects.

**C.3 Required Applicant Investment.** A minimum applicant investment of 10 percent of the Total Project Cost is required for Research/Development grants.

**C.4 Eligible Expenditures.** Grant funds may be requested and expended for project related expenditures such as the purchase of equipment and materials and the performance of testing or monitoring necessary to complete the approved Research project. Grant funds may not be requested or expended for ineligible expenditures described in Section 3.3 of these guidelines. **NOTE: Applicants requesting funds for the purchase of "Rolling Stock" are subject to the provisions of the Rolling Stock Guidelines, which are appended to these Guidelines as Appendix F.**

**C.5 Application Procedure.** To apply for a Research/Development Grant, the applicant must submit a research proposal in the format described in Section C.9 below. Upon approval of the research proposal by the Department, the applicant will be invited to complete the application appended to these Guidelines as Appendix E.

**C.6 Payment Schedule.** The grant agreement will specify conditions of payment and the payment schedule. For Research/Development grants, disbursement of 90 percent of the grant award is typically authorized upon execution of the grant agreement by the Department. Ten percent of the grant award will be retained until DCCA verifies that the Project Commencement Date has occurred.

**The Department reserves the right to determine the appropriate payment structure on a project-specific basis.**

**C.7 Grant Duration/Performance Period.** The grant term will typically be 15 months. The Project Commencement Date **should occur no later than three months following the Project Start Date set forth in the Notice of Grant Award issued by DCCA.** Grantees will be required to certify the Project Commencement Date to the Department. The Department reserves the right to require a longer performance period based upon the nature of the proposal.

**C.8 Ownership/Use of Equipment.** Depending upon the nature of the equipment/material purchased with Used Tire Recovery funds, grantees will be required to contractually agree to use such equipment and material for the purposes described in the grant agreement for a specified period. The grant agreement will specifically prohibit the sale, lease, transfer, assignment, or encumbrance of any equipment or material purchased with grant funds, without the express written approval of the Department during this period. The Department will monitor the grantee's compliance with these requirements. In the event of a grantee's failure to comply with this requirement, the agreement will provide that the Department may, at its discretion, require the grantee to return **all grant funds provided by the Department, require the grantee to transfer ownership to the state of equipment and material purchased with grant funds and bar the grantee from consideration for future funding.** The Department reserves the right to require a provision in the grant agreement giving it a Purchase Money Security Interest in equipment purchased with grant funds for the period specified in the grant agreement.

**C.9 Research Proposal Format.** A formal research proposal is required for all projects. The research proposal must demonstrate the need for the proposed research and the potential benefits of the research to communities and businesses in Illinois. Research proposals should directly address resolving problems encountered by Illinois communities and businesses in managing used/waste tires. Research in any of these categories may involve any discipline, from basic sciences, through engineering, to economic, social and political studies.

The following information must be provided in the research proposal.

- 1. An executive summary:** Provide a short explanation of the purpose and a description of the project.
- 2. A problem statement:** Provide a succinct description of the problem to be addressed by the research and a statement of the work proposed.
- 3. A literature search:** Discuss the results of previous research in the area proposed.

4. **A research plan:** Provide explicit detail of the proposed research. Explain and defend the methods, procedures and equipment to be used. Outline the data to be developed or collected. Include a research flow plan and a timetable.
5. **Potential applications of research results:** Discuss the importance of the proposed research to Illinois. Identify users and potential transferability of projected results. If applicable, discuss the economics of implementing the research results and identify possible follow-up research.
6. **Research credentials:** Provide evidence of pertinent experience of the applicant in the field of research proposed. Attach resumes of all principals in the project. Discuss why the applicant is particularly qualified to successfully achieve the proposed objectives.
7. **A budget:** Provide a detailed breakdown of the total expenditures required for the proposed research. Indicate which expenditures and the amount of support to be provided by the applicant or other outside sources. Show which expenditures and the amount of support that is being requested from DCCA. Equipment purchases over \$1,000 must be individually justified.
8. **Letters of commitment/support:** If applicable, provide evidence of support from other participants in the proposed project. Provide letters of support from other potential users of the research results.

## **C.10 Evaluation Criteria for Research/Development Projects.**

### **C.10.1 Technical Merits of the Project.**

- Current knowledge
- Prior research
- Likely contribution towards advancing science and technology in area of concern
- Potential to provide valuable, useful, and applicable information

### **C.10.2 Adequacy of Research Plan.**

- Soundness of the methodology to gather accurate, consistent and complete data
- Potential to effectively accomplish the stated objectives

**C.10.3 Relevancy of Proposed Research.** Project's position in the hierarchy established by the Act (refer to Appendix A, Section A.9.1)

- The need for the proposed work and its potential impact on used/waste tire management practices in Illinois
- Potential for the development of new markets for products made from used/waste tires and tire-derived materials
- The transferability of the research results to potential users in Illinois

**C.10.4 Researcher Credentials.**

- Qualifications and experience of all persons involved in the proposed research.
- Relevancy of qualifications and experience to the proposed project

**C.10.5 Budget.**

- Adequacy and reasonableness of the budget to complete the proposed objectives

## **APPENDIX D MARKETING PROJECTS**

**D.1 Eligible Marketing Projects.** Eligible Marketing projects involve promoting, advertising and marketing of products made from used/waste tires and tire-derived material for the purpose of identifying/reaching new markets for such products. Examples of eligible Marketing projects include:

- Providing samples of products manufactured from used/waste tires and tire-derived material to potential customers
- Printing and distributing marketing information describing products made from used/waste tires and tire-derived material

**D.2 Maximum Grant Award.** The maximum grant award for an eligible Marketing project is \$75,000. The amount of the grant award will be determined by the Department based on the availability of Used Tire Recovery Funds and the Department's evaluation of the project in accordance with the Evaluation Criteria set forth below for Marketing projects.

**D.3 Required Applicant Investment.** A minimum applicant investment of 10 percent of the Total Project Cost is required for Marketing grants.

**D.4 Eligible Expenditures.** Grant funds may be requested and expended for costs incurred in printing and distributing promotional materials, direct advertising expenses incurred in targeting potential customers of products made from used/waste tires and tire-derived materials and other costs associated with strategic activities related to the promotion of tire-derived products. **Used Tire Recovery funds may not be requested for:**

- Costs incurred in design or conceptual development of promotional materials
- Costs incurred for the acquisition of computers, copiers or other office equipment
- Costs incurred for the acquisition of "Rolling Stock" as defined in Appendix F hereto
- Other ineligible expenditures described in Section 3.3 of these Guidelines.

**D.5 Application Procedure.** To apply for a Marketing grant, the applicant must submit the proposal letter described in Section 4.1 of these Guidelines. Upon approval by the Department of the proposal letter, the applicant will be invited to complete the application appended to these Guidelines as Appendix E.

**D.6 Payment Schedule.** The grant agreement will specify conditions of payment and the payment schedule. For Marketing grants, disbursement of 90 percent of the grant award is typically authorized upon execution of the grant agreement by the Department. Ten percent of the grant award will be retained until DCCA verifies that the Project Commencement Date has occurred.

**The Department reserves the right to determine the appropriate payment structure on a project-specific basis.**

**D.7 Grant Duration/Performance Period.** The grant term is typically 15 months. The Project Commencement Date should occur **no later than three months following the Project Start Date set forth in the Notice of Grant Award issued by DCCA.** Grantees will be required to certify the Project Commencement Date to the Department. The Department reserves the right to require a longer performance period based upon the nature of the proposal.

**D.8 Evaluation Criteria for Marketing Projects.**

**D.8.1 Project Description and Strategic Plan.**

- Project profile -- one paragraph explanation, include project category
- Opportunity statement -- identify company/organization motivation to implement project
- Project strategic plan -- goals, measurable objectives, tasks and activities
- Staff assignments -- role definition and experience relevant to the project
- Project evaluation methods -- timelines and checkpoints
- Planning, research and design that provides the foundation for the project

**D.8.2 Company/Organization Profile**

- Company/organization background (SIC code; significant historical information on the company's ownership, maturity, products, sales and profitability)
- Experience with recyclables and/or recycled products -- narrative and Checklist A

### **D.8.3 Marketing Strategy for Product.**

- Product description
  - Distinguishing features (studies, photographs, sales brochures)
  - Market needs the product will meet
- Market definition--identify target markets
  - Market size
  - Market trends
  - Assessment of principal competitors
- Estimated sales and market share
  - Pricing of product
  - Sales and distribution activities
  - Strategies/activities for promoting product

### **D.8.4 Competitive Environment Faced by the Company.**

- Explanation of the industry within which the company competes
- The company's current status in the industry
- Identify trends or events that may impact company performance (economic, social, technological or regulatory)

## APPENDIX E ROLLING STOCK GUIDELINES

"Rolling stock" is defined as any type of generic vehicle or equipment **that can be used for purposes other than recycling and waste reduction**. Examples include, but are not limited to, general purpose trucks, packer trucks, trailers, fork lifts, and skid loaders. **Vehicles specifically designed for recycling and waste reduction activities or operations are exempt from this definition**. Examples of exempt vehicles include compartmentalized recycling trucks, compartmentalized trailers, modifications to vehicles such as walking floors, racks or cages, lift gates, etc.

**The Department reserves the right to make the final determination as to whether the vehicle/equipment for which funding is requested falls within the definition of rolling stock.**

### **GUIDELINES/REQUIREMENTS:**

Applicants seeking funds to purchase rolling stock must submit an application under the appropriate solid waste management program. Requests for funding for rolling stock that do not qualify for funding under one of the programs administered by the Department will be denied. The Rolling Stock Guidelines apply to all requests for grants. Applicants seeking funds to purchase rolling stock are subject to the following provisions, which will be reflected in the grant agreement executed by the state and the grantee:

#### 1. Funding Limitations

The maximum grant award available to fund the purchase of rolling stock is \$100,000, subject to the following provisions:

- The amount awarded for rolling stock may not exceed 50 percent of the cost of the rolling stock; for example, if an applicant requests a \$100,000 grant solely for the purchase of rolling stock, and the cost of the rolling stock is \$100,000, the maximum amount that may be awarded to fund the purchase of the rolling stock is \$50,000.
- Grant requests for rolling stock must fall within the dollar limit established for the program under which the request is made. For example, if \$150,000 is the maximum grant under the applicable program, and one of the items for which funding is requested is a vehicle (rolling stock) priced at \$200,000, the maximum grant awarded would be \$150,000, of which only \$100,000 would be awarded toward the purchase of the vehicle. **In other words, rolling stock grants are not in addition to other financial assistance, but fall under an already existing program.**

- Applicant investment requirements specified in the guidelines for the applicable program must be complied with.

## 2. Project Requirements

Applicants requesting funds for the purchase of rolling stock must demonstrate that the request is necessary to support a "new" project, i.e., that the proposed project results in an expansion or increase of the volume of materials being collected/recycled/processed as a result of the purchase of the rolling stock.

**Funds will not be awarded merely to replace or add to the inventory of the applicant's existing rolling stock.** It is permissible to tie the request for the rolling stock to a proposed or existing recycling project or operation that is being performed by a different entity. For example, a trailer is needed by applicant "A" in order to haul materials to entity "B" where they are processed or made into recycled products. However, replacing rolling stock that is worn out in order to continue moving materials to market would not be considered an expansion or a new project.

**The Department reserves the right to require that a specified percentage of the materials collected/recycled/processed in the project be generated in Illinois.**

## 3. Certification Requirement

The grantee will be required to submit a certification annually for the five-year period following execution of the grant agreement, which states that the rolling stock is being used in accordance with the provisions of the grant agreement.

## 4. Security Interest Requirement

The grantee will be required to execute a security agreement, which gives the Department a Purchase Money Security Interest in the rolling stock purchased with grant funds provided by the Department. The Purchase Money Security Interest is required to secure the performance of the grantee's obligations under the grant agreement, including the requirement that the rolling stock be used for approved project purposes for the five-year period subsequent to grant execution. During said period, the grantee may not sell, lease, assign, mortgage or otherwise transfer or encumber its interest in the rolling stock without prior written approval of the Department. The grantee's failure to comply with these terms will subject it to any and all remedies available to the Department under state law, including recovery of the grant proceeds.

**Appendix E (continued)**  
**Illinois Scrap Tire Regulation and Enforcement Program**

**Illinois Environmental Protection Agency**  
**Used Tire Program Activities**

**1989 - 1998**

*This report has been prepared for Gov. George H. Ryan and the 91st General Assembly in accordance with Section 55 of the Environmental Protection Act*

January 1999

Illinois Environmental Protection Agency  
Bureau of Land  
Division of Land Pollution Control  
Field Operations Section  
1021 North Grand Ave. East  
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## **Executive Summary**

Illinois is recognized nationally as a leader in the management of used and waste tires. Prior to passage of the Used Tire Management Act in 1992, little reuse or recycling of waste tires occurred in Illinois. Through the efforts of the Illinois EPA and the Illinois Department of Commerce and Community Affairs (DCCA), there currently are markets in Illinois for the 12.5 million waste tires generated annually by the state. In order for the market to exist, an established network of transporters, processors, and end users must be in place so that all waste tires generated are beneficially used and/or recycled. The actions of the Illinois EPA and DCCA, both funded through the Used Tire Management Fund, have been instrumental in the formation of this network.

Illinois EPA's role in the management of used and waste tires in Illinois is two phased. First, the Agency acts as a regulatory/enforcement agency. Illinois EPA regulates the generators, transporters, processors, and end users of waste tires to ensure all are operating in compliance with applicable statutes and regulations. Second, the Illinois EPA operates a cleanup program to remediate tire dump sites. Both programs have been effective due in part to the dedicated funding the legislature has provided through the one dollar per tire user fee collected from retail customers.

Each year, the Illinois EPA remediates approximately 100 tire dump sites and removes and recycles approximately one million tires. The Agency's tire cleanup contractors, including Illinois Correctional Industries (operating under an Intergovernmental Agreement), process and deliver the tires to power plants that blend the tires with coal to produce electricity. The Agency co-sponsors 20 to 30 county-wide tire collections annually in which thousands of citizens bring waste tires from their property to a central location for proper disposal. These collections have been very popular with Illinois residents. The Agency also forces the removal of waste tires from dumps that pose an immediate threat to human health and the environment. If the property owner is unwilling or unable to remove the tires, the Agency conducts the cleanup and pursues cost recovery from the responsible party.

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## **I. Introduction**

At the time of adoption of the Used Tire Management Act by the Illinois legislature in 1992, an estimated 7 million used and waste tires were on the ground in Illinois. The State of Illinois recognized that used and waste tires represented a growing solid waste problem throughout the state, and that used and waste tires possessed certain physical and chemical characteristics that made them desirable for recycling, reuse, and energy recovery purposes. As a result of the used tire

legislation and the activities of various programs funded under the legislation, the State of Illinois has become one of the most progressive states in the country for used and waste tire cleanup and recovery.

Used and waste tires pose a potential threat to human health and the environment through the risk of fire, presence of disease carrying mosquitoes, and the encouragement of open dumping of other solid wastes at unmanaged used and waste tire sites. With the State of Illinois generating approximately 12.5 million used and waste tires annually, the presence of a strong cleanup and regulatory program addressing the hazards posed by this reusable waste was and is important to the health and safety of its residents and environment.

The Illinois EPA has been responsible for implementing and maintaining the cleanup and regulatory programs addressing used and waste tires in Illinois. The Agency's program is funded through the Used Tire Management Fund, which is supported primarily by a \$1.00 per tire user fee applied to customers on the price of new and used tires sold for retail in Illinois. This report, required under Section 55.6.d. of the Environmental Protection Act, describes the Illinois EPA's activities relating to funding through the Used Tire Management Fund.

Under Section 53.b., the purpose of **TITLE XIV: Used Tires** of the Environmental Protection Act is as follows:

1. to ensure that used and waste tires are collected and are put to beneficial use or properly disposed of;
2. to provide for the abatement of used and waste tire dumps and associated threats to the public health and welfare;
3. to encourage the development of used and waste tire processing facilities and technologies, including energy recovery; and
4. to provide for research on disease vectors associated with used and waste tires, and the diseases they spread.

This report describes Illinois EPA's efforts under items 1. and 2. above. The Agency, in cooperation with DCCA, contributes resources that address item 3. The Agency also works with the Illinois Department of Public Health and the Illinois Natural History Survey in furtherance of item 4. This is accomplished through mosquito and other disease vector abatement and research studies at tire dumps.

## **II. Illinois EPA Responsibilities - Environmental Protection Act**

Title XIV (Section 55.6.c.1.) of the Environmental Protection Act sets forth the purposes for funding the Illinois EPA under the Used Tire Management Fund. The purposes and corresponding activities/accomplishments are as follows, with priority given to item one (1):

1. To undertake preventive, corrective or removal action as authorized by and in accordance with Section 55.3, and to recover costs in accordance with Section 55.3.
2. For the performance of inspection and enforcement activities for used and waste tire sites.
3. To assist with marketing of used tires by augmenting the operations of an industrial materials exchange service.
4. To provide financial assistance to units of local government for the performance of inspecting, investigating and enforcement activities pursuant to subsection (r) of Section 4 at used and waste tire sites.
5. To provide financial assistance for used and waste tire collection projects sponsored by local government or not-for-profit corporations.
6. For the costs of fee collection and administration relating to used and waste tires, and to accomplish such other purposes as are authorized by this Act and regulations thereunder.

## **III. Illinois EPA's Used Tire Program Accomplishments**

Illinois EPA's activities and accomplishments under the Used Tire Program described below directly correspond to the responsibilities identified in Section II of this report.

1. The Illinois EPA has conducted over 1000 tire removal actions under Section 55.3. of the Environmental Protection Act. These actions come in one of two forms: 1) a consensual removal of up to 1000 used/waste tires at no cost to the property owner; or 2) a forced tire removal action under Section 55.3.d. of the Act. These activities, including the numbers of tires collected and the associated costs, are summarized in the figures located in the Appendix of this report. Well over 90 percent of the used and waste tires collected by the Agency are

shredded for use as tire-derived fuel (TDF) in the public and private utility sector. The two types of actions undertaken by the Agency under Section 55.3. of the Act are further explained below:

### **Consensual Removal**

Under Section 55.3.c. of the Environmental Protection Act, the Agency conducts used and waste tire removals at individuals' properties throughout Illinois. The Agency uses established contractors to collect and transport used and waste tires to processors for proper disposal. Under a Consensual Removal Agreement (CRA), the Agency will remove up to 1000 used/waste tires from an individual's property at no cost to the property owner. If greater than 1000 used/waste tires are present at the site, the Agency will remove the last 1000 tires after the property owner removes those used/waste tires in excess of 1000. This effort by the Agency provides a significant community service.

### **Forced Tire Removal**

If conditions exist at a used/waste tire storage or disposal site that pose an immediate threat to human health or the environment, the Agency will issue a **Notice Pursuant to Section 55.3(d) of the Act** to the owner and operator of the site. The *Notice* instructs the property owner/operator to remove the tires or face a removal action and cost recovery action by the Agency. The Agency considers these forced removal actions a top priority in the used/waste tire cleanup program. The Agency pursues cost and penalty recovery pursuant to Sections 55.3.g. and 55.3.h. of the Act for appropriate sites under *Notice*.

2. The Illinois EPA's Used Tire Unit conducts a used/waste tire inspection program that focuses on tire processors, storage facilities, disposal sites, generators, transporters, and non-notifiers. Illinois contains the following approximate types and numbers of used tire facilities:
  - more than 2000 generators
  - more than 450 transporters
  - more than 225 storage facilities
  - more than 35 processors

The Agency conducts annual inspections at storage and processing facilities. In addition, tire disposal sites are inspected and targeted for appropriate cleanup action. Used tire transporters are addressed through the Agency's Tire Hauler Audit Strategy. The largest commercial haulers are audited annually and smaller commercial haulers and new registration applicants are audited on a lower priority basis. Used and waste tire generators and potential non-notifiers are inspected on a regular basis to ensure compliance with the user fee collection requirement under Section 55.9. of the Act and the retailer tax return requirement under Section 55.10. of the Act. The Agency conducts more than 680 inspections annually at regulated used tire facilities.

3. The Illinois EPA has operated an Industrial Materials Exchange Service (IMES) since 1981. Pursuant to Section 55.b-1. of the Environmental Protection Act, the Agency works with permitted landfills and used/waste tire processors to ensure that the requirements related to the IMES are met. The Agency has found that the IMES requirement has nearly eliminated the disposal of used and waste tires in Illinois landfills. Used and waste tire chips may be used for road building projects within the landfill provided the activity is conducted under a supplemental permit issued by the Agency. Civil engineering applications for waste tires are emerging as an important and effective use for waste tires.
4. The Illinois EPA has not delegated any inspection or enforcement activities to units of local government relative to the tire program.
5. The Agency works with units of local government and other local sponsors to conduct city/county-wide used tire collections throughout the State of Illinois. Approximately 20-30 collections are conducted annually. The Illinois EPA provides all necessary funding for the collection and transportation of the used tires to a processing facility utilizing one of the established contractors obtained through the state's procurement process. Co-sponsors, usually units of local government, county farm bureaus, or other public interest groups, provide the necessary advertising and facility for the collections. Since the first collection in 1990, more than 41,000 people have participated in the more than 250 collections conducted by the Agency.
6. The Illinois EPA collects and processes the \$100 annual tire storage fee from all tire storage facilities in Illinois. There are an estimated 225 used tire storage facilities in Illinois. Facilities that are known to store tires and do not submit the fee are the subject of priority inspection and enforcement action initiated by the Agency. The Illinois EPA also evaluates tire retailers' compliance with Section 55.9. of the Environmental Protection Act relating to collection of the \$1 user fee from retail customers and submittal of the fee to the Illinois Department of Revenue.

Tables 1 and 2 and Figures 1 and 2 ([see Appendix](#)) illustrate the numbers and types of used and waste tire cleanups conducted by state fiscal year (SFY). Table 1 and Figure 1 illustrate total tire cleanup data and Table 2 and Figure 2 illustrate tire cleanup data by specific type of cleanup.

## **IV. Other Illinois EPA Used Tire Program Achievements**

Pursuant to Section 55.7a. of the Environmental Protection Act, the Agency developed and implemented a Large Scrap Tire Disposal Pilot Program. The site selected was the Nelson White dump in Kankakee County. This site contained approximately 650,000 waste tires and was located in an area where historically, tire dumping had been prevalent. The Agency procured a contractor for the project and the cleanup began in the Spring of 1993. A fire occurred at the site in April of 1994. The Illinois EPA completed the cleanup on October 30, 1995 at a cost of approximately \$650,000. This was the largest waste tire dump in the State of Illinois.

In 1995, the Illinois EPA, in conjunction with the Illinois Association of Aggregate Producers (IAAP), conducted a collection of used/waste off-the-road (OTR) tires located in quarries in the Chicago area. These OTR tires are difficult to manage (transport, cut, shred, etc.) and the Agency initiated this project as a service to the quarry industry and as a means of studying the handling process involved in processing these tires. Over 7000 used/waste OTR tires were collected by the Agency contractor, resolving a difficult waste tire problem.

## **V. Future Priorities**

The majority of the used and waste tire dumps in Illinois in 1990 have been remediated over the last 8 years. However, as the figures in the [Appendix](#) indicate, a significant amount of cleanups are still being conducted. City and county-wide collections continue on a regular basis. The Agency believes this program is a valuable public service and the amount of used and waste tires collected warrants the continuation of the program. In addition, the individual CRA program and the forced tire removals under Section 55.3.d. of the Act still occur at a significant rate.

The Illinois EPA predicts that a gradual shift from a mostly cleanup-oriented program toward a more regulatory-oriented program will occur over the next five years. Future priorities under the cleanup and regulatory program include:

- Participate in pilot projects to study the use of tire shreds in engineered applications;
  - Address the used and waste tire problems present at junk yards, scrap yards, and auto recycling facilities;
  - Ensure that the required user fee is collected from retail customers and is submitted by the tire retailers to the State of Illinois;
  - Ensure that waste tire processors operating in Illinois are in compliance with applicable regulations.
-

# Appendix

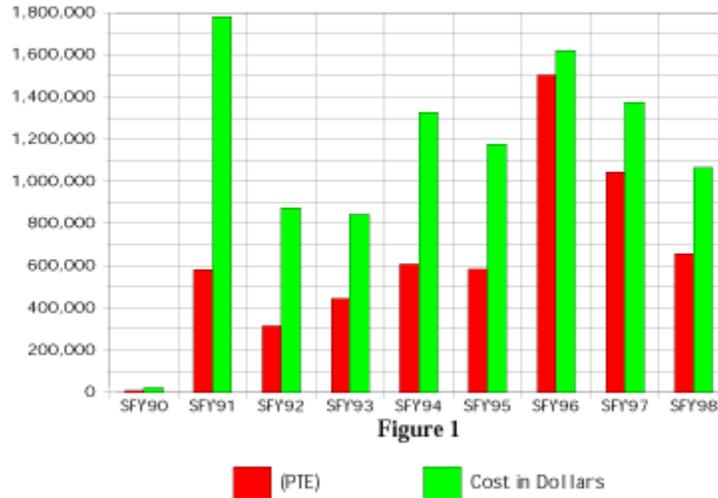
## Table 1

IEPA Used Tire Cleanups			
	PTE*	Cost in Dollars	Avg. Cost Per PTE*
SFY '90	7,224	21,315	2.95
SFY '91	581,313	1,780,914	3.06
SFY '92	316,978	875,573	2.76
SFY '93	444,576	843,060	1.9
SFY '94	607,564	1,326,734	2.18
SFY '95	582,648	1,176,954	2.02
SFY '96	1,504,950	1,620,677	1.08
SFY '97	1,043,569	1,372,844	1.32
SFY '98	657,102	1,066,513	1.62

\* PTE = Passenger Tire Equivalent

For example, during state fiscal year 1998 (SFY '98), the equivalent of 657,102 passenger tires were cleaned up by the Illinois EPA. The average cost per PTE during SFY '98 was \$1.62.

Illinois EPA Annual Tire Cleanup Data  
SFY'90 through SFY'98



**Table 2**

<b>IEPA Used Tire Cleanups</b>									
<b>Cleanup Type</b>	<b>SFY'90</b>	<b>SFY'91</b>	<b>SFY'92</b>	<b>SFY'93</b>	<b>SFY'94</b>	<b>SFY'95</b>	<b>SFY'96</b>	<b>SFY'97</b>	<b>SFY'98</b>
City/County-Wide Collections	1	69	30	29	19	23	25	25	36
Individual CRAs	3	192	116	78	97	76	56	52	58
Forced Removals (55.3d)	0	0	0	0	2	11	16	10	21
<b>TOTALS</b>	<b>4</b>	<b>261</b>	<b>146</b>	<b>107</b>	<b>118</b>	<b>110</b>	<b>97</b>	<b>87</b>	<b>115</b>

**Illinois EPA Used Tire Cleanups  
SFY90 through SFY98**

