

Executive Summary

Findings

- A part of the California Integrated Waste Management Board's (CIWMB) responsibilities are to address the waste tire disposal problem in California. There are about 35 million waste tires yearly, of which nearly 75 percent are diverted for various uses, including reuse, recycling, and combustion. The remaining waste tires wind up in landfills or are illegally disposed of around the State.
- Illegally dumped or stockpiled tires pose a threat to public health, safety, and the environment, especially when they catch fire or breed disease bearing insects and rodents. In the past, waste tire fires have contaminated our air, soil, and water.
- Legislators, environmentalists, and waste tire industry stakeholders continue to have concerns that CIWMB is not meeting its mandate of developing a waste tire management program that focuses on source reduction and resource recovery, and diverting tires from landfill disposal and stockpiling.
- CIWMB and its staff lack a long-term strategic plan with associated goals and objectives that results in:
 - A piecemeal programmatic allocation of \$27.5 million per year from the waste tire fund. (From CIWMB's \$34 million-a-year tire fund, \$6.5 million is earmarked through legislation for clean-up, abatement and remedial actions related to stockpiles.)
 - An inconsistency in program implementation, content and evaluation – making it difficult to evaluate what type of program (or alternative markets) works best.

- An inability to comprehensively evaluate CIWMB's efforts, thereby hindering an assessment of what they are to be held accountable for.
- If all of California's waste tires were used as road paving material, they would be completely removed from the waste stream. Despite the appeal of this solution, neither Caltrans nor local governments are using rubberized asphalt concrete (RAC) at anywhere near its potential. If CIWMB focused on only this use, it would not need to pursue alternative disposal approaches.
- State and local air resources boards have determined that the burning of tires for "energy recovery" fuel purposes does not significantly pose a health risk as long as the facilities meet emission standards and adhere to environmental safety regulations.

RECOMMENDATIONS

- **Require CIWMB to submit a long-term strategic plan with associated goals and objectives stemming from an impartial state-of-the-art analysis in waste tire disposal programs and technology.**
- **Make certain that all long-term strategic plans for the waste tire program focus on promoting and supporting end uses that consume the largest volume of waste tires in the most cost efficient and environmentally friendly way.**
- **Ensure that all innovative approaches to waste tire management are thoroughly investigated.**
- **Provide incentives to manufacturers to encourage the production of retreaded and longer-lasting tires, as well as the development of recycled-content rubber tires.**
- **Help create legislation and/or regulations requiring that California (e.g., Caltrans and the Department of General Services) procure and use recycled-content**

tire products, such as RAC for roadways and other civil engineering applications.

- **Make grants to Caltrans requiring the use of RAC on streets and highways and the increased use of shredded waste tires in civil engineering projects.**
- **Consider the burning of tires, in conjunction with the burning of coal, for “energy recovery” fuel purposes an acceptable waste tire solution until viable alternatives are fully utilized or new technologies emerge.**
- **Increase public awareness of the benefits of using waste tires for beneficial purposes, such as “energy recovery,” as a legitimate way of diverting large numbers of waste tires away from landfills and stockpiles.**
- **Help establish a multi-state consortium made up of states with the largest waste tire problems in order to pool resources, findings, expertise, and proven methods towards solving the waste tire challenge.**

If these recommendations are not, or cannot be, put into practice, the state should:

- **Give serious consideration to replacing CIWMB with an alternative management system such as a department within Cal/EPA.**

Introduction

Over 300 million new tires are manufactured each year in the United States. And each year over 280 million waste tires are discarded. About 218 million, or 77.6 percent of the waste tires, are consumed by various markets. Another 25 million are being legally managed, but undesirably, by being placed in landfills. Estimates also point to over 300 million tires that are still in illegal stockpiles¹ that continue to blight our landscape and pose threats to the environment and public health. The U.S. has no federal program for waste tire disposal (although it has attempted to change industry practices and mandate product use) leaving the difficult problem to state and local governments.

In California more than 33 million reusable and waste tires are generated each year, plus two to three million that are imported. Over 25 percent of those tires are buried after being cut up – millions more are used for daily landfill cover purposes.²

According to CIWMB, “management of waste tires is a growing problem throughout the world. Different approaches to the problem have emerged. In Europe, land disposal (land is scarce) of tires is being completely phased out and severe new restrictions on the use of tires as fuel are being implemented. Eleven states in the U.S. have also banned land disposal, while the remaining states allow land disposal in some form. Many states place a priority on using tires for fuel to resolve waste tire problems while others, such as Arizona, place very heavy emphasis on recycling tires through use as rubberized asphalt concrete (RAC) on streets and highways.”³

While states have made great progress in regulating waste tire disposal, implementing clean-up programs, and diverting tires to new end uses, millions of waste tires still wind up in stockpiles and landfills. The challenge remains to find acceptable, sustainable end-use markets that will use the greatest number of

¹ “U.S. Scrap Tire Markets 2001,” Rubber Manufacturers Association, December 2002.

² CIWMB data.

³ “Five-Year Plan for the Waste Tire Recycling Management Program,” CIWMB, Draft, July 1, 2003.

tires on an on-going basis. As it is today, the supply of waste tires continues to exceed the demand for their *recycled* end use products.

History of Tires

During World War II natural rubber became scarce requiring the development of synthetic rubber. Synthetic rubber provided long-range price stability compared to the wild price swings that occurred with natural rubber, but it, along with the adoption of radial tires, led to the demise of reclaim markets. The decline of the rubber reclaiming industry is the major cause of today's scrap tire problem. And an important secondary cause of the problem is the decline in the passenger tire retreading industry. Years ago, one of every four worn-out tires was retreaded. As late as 1970, 35 million passenger tires were retreaded annually, compared to new passenger tire sales of 169 million in that year, including tires supplied on new automobiles sold that year. In recent years, that number has continued to drop significantly.”⁴

Today's synthetic tires are made from a complicated manufacturing process using as many as two hundred different raw materials – making it very difficult to return them to their original compounds. However, waste tires are used in a number of productive and environmentally safe applications. One of the most common markets for scrap tires is crumb rubber, which is used to make playground surfaces, running tracks, and molded rubber goods. The largest use for crumb rubber continues to be rubberized asphalt concrete (RAC), which is used in road construction. The fastest growing market for waste tires is civil engineering (whereby shredded rubber is used as a backfill material). Both applications require a strong and sustained commitment by state Departments of Transportation to make its use routine.

But by far the largest end use for waste tires in the U.S. continues to be for energy recovery. Approximately 40 percent of all waste tires are used as a supplement fuel in the cement, paper, and electric industries.⁵ In California, 15 percent are consumed at three cement plants and one cogeneration facility.

⁴ Ibid.

⁵ Rubber Manufacturers Association website: <https://www.rma.org>.

Yet, landfills – although an undesirable method of disposal – continue to be an easy, cheap alternative and many tires still wind up in them. “Landfilling tires has a large impact on the end-use markets for scrap tires. The low cost to landfill a tire restricts the amount a processor, i.e., a crumb rubber processor, can charge for processing tires as well as the supply of scrap tires available to them. Also, landfilling scrap tires is not a *market*; it is a disposal option.”⁶

California’s waste tire experience mirrors that of the nation. More than 35 million waste tires must be managed and diverted to viable end uses in this state each year. Even as the number of tires that have been recycled into productive uses has grown, there are only so many playgrounds to cover, recreational surfaces to pave, and products to mold. In order to get a real handle on the problem, more sustainable, long-term markets must be found as alternatives to landfills, stockpiles, and less desirable end uses. Responsibility for reaching this goal falls to the members of the California Integrated Waste Management Board.

⁶ “U.S. Scrap Tire Markets 2001,” Rubber Manufacturers Association, December 2002.

Section 1: Legislative History

California Integrated Waste Management Board

California's first significant overall regulation of solid waste disposal began with enactment of the Solid Waste Management and Resource Recovery Act of 1972. This statute created the part-time, 10-member *Solid Waste Management Board*, giving it broad authority related to solid waste handling, disposal, and reclamation. Legislation passed in 1989 renamed it the *California Integrated Waste Management Board* – making it a full-time board with six members and expanding its mandate.⁷

The California Environmental Protection Agency (Cal/EPA) was created in 1991 by a Governor's Executive Order. It was created to bring together, under one "umbrella" agency, the six interrelated boards (including the California Integrated Waste Management Board) as well as departments, and offices⁸ that were responsible for managing the state's resources and giving cabinet-level voice for the protection of the environment.

AB 1843 (Chapter 974/1989) created the California Tire Recycling Act, separating out waste tires from the rest of the solid waste management program for special treatment. The bill required CIWMB to promote and develop markets for recycled tire products as an alternative to landfill disposal and stockpiling of whole tires. It also imposed a 25-cent tire fee to finance the program (California Tire Recycling Management Fund), which generated approximately \$5 million annually.

Subsequent attempts were made to increase the tire fee as the need became more apparent to support increased enforcement and market development activity. These attempts were defeated by anti-tax forces and elected officials reluctant to raise the fee.

⁷ Four of the members of the board are appointed by the Governor: two are public members, one represents the solid waste industry, and the other represents the environment. The Legislature appoints the other two public members: one from the Senate and one from the Assembly.

⁸ Cal/EPA: Air Resources Board, Integrated Waste Management Board, Department of Pesticide Regulation, State Water Resources Control Board, Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment.

Then in 1998 AB 117 (Chapter 1020) required CIWMB, assisted by a working group of affected parties, to report by June 1999 on the status of waste tires and an examination of programs needed to provide appropriate end uses for those tires. The report was to include recommendations for legislation that would help meet program goals:

- 1) Eliminating stockpiles of waste tires,
- 2) Protecting public health and the environment, and
- 3) Increasing sustainable economic markets for waste tires in California.

This study found that an increase in the funding for the tire program (an optimum \$40 million per year) was warranted to ensure adequate enforcement at the local level and increased market development. Without an increase in the tire fee, the state's management program would only fall further behind. It had been almost a decade since the tire fee was increased, and California, the state with the highest volume of waste tires, lagged far behind program efforts of other states, having one of the lowest funded waste tire programs in the nation.

The report was also critical of board procedures, policies, and programs and made numerous recommendations to improve the overall tire program. As a result, SB 876 introduced in 1999 was amended to address these concerns. The bill called for significant changes in the overall tire program, and it also initially posed a \$2 increase in the tire fee to fund the changes. But the Legislature did not act on it and the bill stalled.

Then in 1999 came the momentous Westley tire fire on the heels of the previous tire fire in nearby Tracy. Both fires were dramatic and devastating. The fires burned for months, consuming more than 12 million waste tires in such spectacular fashion that they generated local and national headlines and stunning pictures for weeks. As a result, the Legislature was spurred into action. The Governor also expressed support for expanding the program, and SB 876 began to move again. While the importance of the revitalized waste tire program was not in dispute, the proposed \$2 tire fee was. Eventually, a compromise was reached, and the fee was increased four-fold from 25 cents to \$1 on each new tire purchased in California, and SB 876 was enacted as Chapter 838 of 2000.

Other key provisions of this omnibus law:

- Required the board to adopt a five-year plan, and update that plan every two years, to establish goals and priorities for the waste tire program and each program element.
- Required that funding for the waste tire program be appropriated consistent with the five-year plan, as adopted and updated by the board.
- Required that not less than \$6.5 million be spent annually, for six years, for cleanup, abatement, removal, and other remedial action related to tire stockpiles throughout the state.
- Required the State Air Resources Board to submit by January 1 an annual report to the Governor, the Legislature, and the board on the air emissions from tire burning facilities.
- Required the Department of Transportation to submit by January 1 an annual report to the Legislature and the board on the use of waste tires in transportation and civil engineering projects.

Later, recognizing the positive potential of rubberized asphalt concrete (RAC), the Legislature passed SB 1346 (Chapter 671) in 2002 to promote its use by local government agencies in public works projects. CIWMB is required to award grants to these agencies to cover the additional up-front cost difference over traditional asphalt to aid and encourage localities to use RAC.

Today's board is not only expected to play a major role in promoting the solid waste diversion mandates that must be met by the state and local jurisdictions, but it also must promote and advance markets for recovered recyclables – used oil, plastics and packaging, compost, electronic products, construction and demolition debris – as well as waste tires. This is a tall order and one the board continues to struggle with. Perhaps it is an impossible mission – especially without a long-term plan to put key solutions into practice.

Section 2: Problems with the Board

Findings

CIWMB is unable to establish long-term public policy goals and the corresponding spending plan that is necessary to protect the environment and public health of the state's residents.

The board's effectiveness and commitment to the job have been questioned – leading critics to suggest the board should be dismantled. Moreover, by abolishing the board and turning it into a state department under Cal/EPA, the influence of lobbyists and stakeholders would be diminished.

The Legislature created the full-time CIWMB in 1989 hoping that six political appointees could work together to solve, among other things, the waste tire problems in the state through the California Tire Recycling Act. Subsequently, the boards have been considerably handicapped by member turnover, a lack of strong leadership, and a lack of consensus on how to meet the challenges before them. In addition, there has been no overall long-term vision to address the waste tire problem and there is minimal oversight of board activities – making it difficult to assess the worthiness of maintaining the board structure.

Funding for the total board was proposed at \$2,139,665 for 2003-04. This included member salaries and personal staff for each board member office – one advisor, one committee analyst, and one executive assistant. It also included \$21,667 for travel, \$6,000 for out-of-state travel, and \$5,833 for expenses for each member office. The 2003-04 Budget Conference Committee members thought this amount was excessive and reduced their operating expenses by \$685,000. The reduced amount eliminated each executive assistant position and one pooled administrative assistant. The remaining funding of \$1,454,665 passed the Legislature as part of the 2003-04 State Budget.

Appointment to the board is much sought after, and it is considered a “plum” state position. It pays \$117,818 annually, with added benefits, and includes personal staff. The term is for four years and the member may be reappointed.

Board Power

The six board appointees wield substantial power. They direct a staff of over 500 employees and control an overall annual budget of approximately \$86 million, including the \$34 million earmarked for the tire program. Of the present members, one-third has served less than one year. Most of the control is given over to the few members who have the longest tenure and who have some previous background in the subject, upsetting the balance of power.

Considerable civil service staff time is spent on educating board members, only to have them leave in a very short time. Although the board staff is qualified to do its job, differences in interpreting legislative intent and, the board mandate, plus competing member and personal staff agendas – have made the job frustrating and more difficult. Staff must also contend with representatives from special interest groups working to enforce the mandate from their own perspective. This chaos is representative of the board structure and performance – and the result is an inability to implement long-term goals or appropriate the tire fund efficiently. Waste tire issues are complex and involve tradeoffs between the dollar cost, the cost to the environment, and many other costs as well. Staff should keep focused on identifying all of these costs and the available benefits, presenting them to the board, and allowing the board to make a determination of how best to craft a long-term public policy plan.

Stakeholder Power

The power of lobbyists is often cited as a major problem with a board with little experience on the job and limited knowledge of the issues. As we are finding with legislative term limits, complex issues take some time to grasp, and without institutional memory, the deliberative body suffers. The outside stakeholders having experience, expertise, and staying power

become very influential. This is an issue with this board and its relationship with lobbyists and industry stakeholders.

Outside interests and lobbying forces pose a significant political constraint to finding a simple solution to the excess supply of scrap tires in the state. Given the nature of the problem, any action taken by the board is unlikely to be looked upon favorably by everyone involved. Even though such a policy may be in the best social and environmental interest of all Californians, those made worse off will naturally lobby against change.

Abolish the Board?

In addition to the reduction in operating expenses, there continues to be ongoing discussions within the Legislature on whether or not to abolish the board altogether. Like many of the State's boards and commissions, CIWMB finds itself under increased scrutiny and fighting criticism. This year alone CIWMB members have been criticized in the press and the Legislature as being overpaid, inexperienced, and unproductive. Their work ethic, effectiveness, and commitment to the job have been questioned – leading some to suggest the board should be either part-time, with commensurate salaries, or dismantled. Moreover, by abolishing the board and turning it into a state department under Cal/EPA, the influence of lobbyists and stakeholders would be diminished.

But there are those who maintain that the board structure is still the best way to administer solid waste issues. Proponents of the board point out that it conducts meetings in public and adheres to strict disclosure requirements for communications on issues before it. Supporters also applaud the diversity of opinion and public input before decisions are finalized. But others maintain that open meetings are “for show” and that all decisions are made behind the scenes. But, the determination should be made on their actions. If the board is unable to establish long-term public policy goals and the corresponding spending plan that is necessary to protect the environment and public health of the state's residents, it is not functioning effectively.

As long as the current structure is in place and there is no reorganization, an effort must be made to level the playing field. Board members must be able to hold their own with

knowledgeable stakeholders, especially now that the tire fund budget has reached \$34 million a year and growing – money that stakeholders aggressively pursue and the board has the responsibility to spend.

There should be a formal orientation or training program for new members to educate them on the complexities of solid waste management. New members and their personal staff get what information they can from regular civil service board staff on an informal basis. Every effort should be made to prepare members for their important job. If board members more fully understood the issues and the financial implications, they would be in a better position to influence the markets and to persuade state and local government officials to pay more attention to the use of important recycled tire products.

RECOMMENDATIONS

Unless CIWMB is able to establish long-term public policy goals and the corresponding spending plan that is necessary to manage the waste tire program, the following action should be taken:

- **Abolish the CIWMB and replace it with an alternative management system such as a department within Cal/EPA.**

Short of abolishing the board, and in an effort to strengthen the performance and credibility of those managing the waste tire program, the following actions should take place:

- **Initiate a formal orientation or training program to educate new members about the complexities of solid waste management and local government recycling issues. Additionally, members should have rigorous fiscal and program management training as well.**

Section 3: Board Performance

Findings

CIWMB has done a reasonable job of reducing waste tire stockpiles, of cleaning up contaminated sites, and of supporting local government enforcement efforts. However, the board's performance outside of these efforts is considerably handicapped by its inability to move beyond supporting short-term goals and maintaining the status quo.

There is also a lack of comprehensive program oversight. Programs are funded in a short-term, piecemeal fashion and do little to significantly promote applications that would divert waste tires in large volume. As currently carried out by the board, efficiency and appropriateness of allocating tire fund dollars is questionable.

Furthermore, the board has not advanced legislation and/or regulations requiring that California procure and use recycled-content tire products, such as RAC for highways, long-lived tires, and civil engineering applications.

CIWMB currently manages waste tire disposal in California through technical standards and permit requirements for waste tire facilities, registration of waste tire haulers, and enforcement against illegal tire facilities. According to the CIWMB's website, the board solicits research, promotes development of markets for tire-derived products, and provides technical and financial assistance to local governments and other state agencies.⁹ These waste tire programs are funded by a \$1-per-tire fee collected on the retail sale of new tires.

The original board members appointed in 1989 divided the waste tire problem into two categories: 1) tires already in the stockpiles, the remedial legacy, and 2) tires that henceforth would be annually accumulated.

⁹ CIWMB website: <http://www.ciwmb.ca.gov>.

Old tire problems were unique. Some tires had been buried for 20 years or more and were made of different composition and size than their more contemporary counterparts. Without any uniformity it became almost impossible to sort them out for a recycled end use. So the board decided under those specific circumstances, for those one-time legacy tires, that landfilling would be the best option. Burying old tires was acceptable – but it was not to become the standard public policy.

Newly generated tires were of similar compounds; the sizes could be controlled and, therefore, could be put to a beneficial use. For those tires, and future waste tires, the board's goal, and adopted state policy would be to find sustainable new markets for the waste tires – “recycling” the material into viable end uses. To this day, this goal has proven both illusive and frustrating.

Four-Fold Increase in the Fee

As a result of SB 876 (Chapter 838/2000) CIWMB has approximately \$34 million a year to spend on disposing of waste tires in California – up from about \$5 million in 1999. Aside from the \$6.5 million earmarked for cleanup, abatement, removal, and other remedial actions related to tire stockpiles, there was no spending plan included in the legislation. Instead, the board had to come up with a five-year plan delineating the fiscal and programmatic goals for the program, including but not limited to:

- Enforcement and regulations relating to the storage of waste and used tires.
- Cleanup, abatement, or other remedial action related to tire stockpiles throughout the state.
- Research directed at promoting and developing alternatives to the landfill disposal of tires.
- Market development and new technology activities for used tires and waste tires.
- Waste and used tire hauler program and manifest system.

The plan would provide the basis for the tire fund budget. The board would be under pressure to come up with a viable plan for spending this substantial new fiscal windfall.

Today, the plan remains the only source of board goals and potential expenditures. It is the board's "wish list" and does not give a true measure of the board's performance, spending, and long-term goals. This Commission is concerned that the board has no oversight from the Administration, Cal/EPA, or the Department of Finance, which only *authorizes* CIWMB to spend. Specifically, for the tire management program, the board members have had complete independence to make important policy choices – and now with a four-fold increase in the new tire fee, they have greater economic power as well.

So how are they handling the responsibility that goes with all this new wealth?

Arbitrary Spending

Current law requires the board to adopt a five-year plan that must be updated every two years in which program priorities and goals are laid out. This only provides a short-term solution to a long-term problem. The board lacks a 10-year, 15-year, or 20-year vision into the future. As a result, the board has lost sight of opportunities that could shape the future – settling instead for the status quo – programming that is piecemeal, lacking fiscal responsibility, imagination, and farsightedness.

Furthermore, the key objective for the board appears to be how to get the money out fast enough. Generally, a budget for a program is created in order to fund that program. The waste tire fund has more money now than it needs because the board struggles to spend the money it takes in. It appears that legislation to raise the "used tire" fee has simply created a lucrative fund that gives the board members money to spend, but they must be more but more accountable for ultimately solving the problem for which the fund was created.

Budget categories and dollar amounts "assigned" to them seem arbitrarily determined. For example, under the "market development and new technology" category, the board continues to fund conferences, public service announcements,

and tire care brochures that do little to significantly divert tires. It arbitrarily assigns dollar figures to categories with no clear idea how and if the money will eventually be spent. And no clear answer can be given for how the numbers are generated and decisions made.

A more progressive approach would have the board supporting and funding programs and products that use the largest volume of waste tires in the most cost-effective and environmentally friendly way. These large-scale efforts should begin with promoting RAC, civil engineering applications, long-lived tires, and tires with recycled content.

We are at a critical juncture. Waste tires are still being discarded at a rate that exceeds the viable end uses currently on the market. The supply continues to exceed the demand. Stockpiling and landfilling waste tires remains highly undesirable. The waste tire industry is a small world – there are few players. And these few companies are the recipients of many thousands of dollars – and they often determine where the waste tires go.

Tire hauling in California is virtually controlled by Lakin Tire West and Total Tire Recycling. Lakin handles 90 percent of the retail tire market hauling discarded tires for companies such as Costco and Goodyear. It handles passenger and small truck tires only and is responsible for diverting 11 million tires a year, or one-third of California's total number of waste tires. Both companies are also crumb rubber producers. But they will process only as many tires as the market will bear then the rest of the tires go to landfills. Only as long as there are viable end-use markets for crumb rubber that are long-term and sustainable, and only as long as it is economically profitable, will these companies divert tires in that direction and away from landfills. It is the role of CIWMB to make this economically viable.

A Tire-Only Hierarchy

Currently the board follows the solid waste management hierarchy set forth in Public Resources Code Section 40051(a)¹⁰ that stresses source reduction, recycling, and reuse. But in order to speak with a unanimous voice on tire issues, CIWMB should develop a separate hierarchy devoted solely to waste tires and used as a guide for the tire management program. RAC should be placed at the top of this hierarchy, followed by civil engineering applications.

It has been estimated that if every waste tire in the state could be used in surfacing our streets and highways, the problem would be solved. RAC, experts agree, is the key to waste tire management. It has the most promise and should be heavily promoted – even subsidized as is done in Arizona. Civil engineering projects, also under the auspices of Caltrans, should be on the tire hierarchy – under RAC. The board, to its credit, has successfully completed one major project that consumed a large number of tires – 600,000 – for lightweight fill for the Dixon Landing Interchange in 2001.

Cooperation with Other States

There does not appear to be much cooperation between California and other states in finding alternative-to-landfill uses for waste tires. There are very few references to reports done by other states, so it appears that California is in this position by itself.

The growing number of waste tires disposed of each year is a world-wide problem. Different approaches to controlling the problem should be evaluated. Eleven states have banned waste tires from landfill disposal altogether. Others only allow it in some form. Arizona disposes of its waste tires through the use of RAC, Florida through energy recovery.

¹⁰ Public Resources Code 40051(a): In implementing this division, the board and local agencies shall do the following: (a) Promote the following waste management practices in order of priority: (1) source reduction, (2) recycling and composting, and (3) environmentally safe transformation and environmentally safe land disposal, at the discretion of the city or county.

Both the federal government and several other states have attempted to force change in the industry, but special interest groups have been successful in lobbying against the changes. Other states have done research in areas this board continues to fund – research that already exists elsewhere. Now is the time for California to reach out to other states and form a multi-state consortium made up of states that have the greatest volume of waste tires. This would enable the states to pool resources, findings, and expertise and to learn more about tried and proven methods and programs that can be expanded and implemented on a broader scale in California to help solve this problem now and in the future.

Review Priorities

And finally, CIWMB could become a leader in the waste tire management field. But current board actions amount to a revolving door approach – money going to the same companies, for the same products. This is especially evident in market development where the board continues to provide support for playground covers, tracks, and other programs that are small in scope instead of opting for programs that would subsidize end uses that consume the highest volume of waste tires. This continued practice prevents the board from accomplishing what it is expected to do.

The board must move from simply managing the current problem to establishing a public policy plan that implements a successful program into the future. It should “step up to the plate” and encourage meaningful tire recycling by adopting significant standards and regulations subsidizing recyclers (more politically palatable, but still difficult) and/or pushing to make it more difficult to landfill tires.

RECOMMENDATIONS

In order to maximize its influence and credibility, the board must:

- **Adopt an overall long-term strategic plan that focuses on promoting and subsidizing end uses that consume**

the largest volume of waste tires in the most cost-efficient and environmentally friendly way.

- **Establish the standards, rules, and regulations that are necessary to encourage state agencies – such as Caltrans and DGS – to use recycled waste tire products to the fullest potential.**
- **Develop a separate hierarchy for the tire management program – with RAC being at the top, followed by civil engineering applications.**
- **Help establish a multi-state consortium made up of states with the largest waste tire problems to pool resources, findings, expertise, and proven methods towards solving the waste tire challenge.**

Section 4: Rubberized Asphalt Concrete (RAC)

Findings

California's waste tire problem could be drastically reduced if Caltrans and local governments made RAC a top priority, using it to the fullest extent possible in construction and maintenance of the state's roads and highways.

Caltrans could be a leader in solving California's waste tire problem by using more recycled waste tires. Unfortunately, this is not happening.

One of the most interesting and promising large-volume uses for end-of-cycle waste tires for road-paving material. According to some experts, if five percent of the nation's roads were surfaced with RAC¹¹ annually, nearly all the country's discarded tires could be completely removed from the waste stream. The well-established benefits of using asphalt rubber include longer-lasting road surfaces, reduced road maintenance, lower road noise, and shorter braking distances.¹² One of the most notable side benefits is that it has the potential of consuming the largest volume of waste tires in the most environmentally friendly and cost-effective way.

Yet, despite the appeal, neither Caltrans nor California local governments are using RAC at anywhere near its potential. Nationally, RAC is the largest single market for ground scrap tires – consuming an estimated 220 million pounds, or approximately 12 million tires in the U.S. annually¹³ – even in its limited current use.

The federal government, in recognizing the potential of RAC, included a provision mandating its use in the major federal transportation legislation that passed into law in 1991 – the Intermodal Surface Transportation Efficiency Act (ISTEA).

¹¹ RAC is produced when waste tires are broken down to crumb rubber that then can be blended with asphalt to modify the properties of the asphalt in highway construction.

¹² "U.S. Scrap Tire Markets 2001," Rubber Manufacturers Association, December 2002.

¹³ Ibid.

Any state that did not meet the specified goals in the Act would lose a corresponding amount of federal funds for any given year.¹⁴

This program was never implemented.

Political opposition from the paving industry, state highway departments, and other stakeholders forced Congress to repeal the mandate in 1995. “Though this would have solved the tire recycling/diversion problem throughout the entire United States, this proposal was ultimately rejected, in part, because of the opposition it generated from state and local highway departments and private contractors that pave highways using traditional techniques, as well as those that provide the materials used in conventional asphalt.”¹⁵

Reasons for opposition varied: it was more difficult to apply than conventional asphalt, the fear that the surface would not hold up, few firms were qualified to use it, and initially it was more costly. But supporters are convinced that the real reason was more basic: “To a large extent, any large-scale increase in the use of asphalt rubber depends on the level of interest and commitment by the state Departments of Transportation. There simply must be a willingness to accept this technology and make its use routine.”¹⁶ Of course, simple economics also played a role in the repeal. The asphalt and concrete industries would be disadvantaged.

Now with the continued specter of having to divert millions of waste tires into viable end uses – coupled with a lack of new technology and new markets on the horizon – it is time to revisit the mandate. A concerted legislative effort must be made to force a change of policy within the Administration and Caltrans and focus on RAC’s potential to solve the waste tire problem. The Administration and the Legislature must make tough decisions in order to successfully manage the growing waste tire problem. And, logically, the spotlight should turn toward California’s Department of Transportation.

¹⁴ “U.S. Scrap Tire Markets 2001,” Rubber Manufacturers Association, December 2002.

¹⁵ Scrap Tires: Disposal and Reuse, Robert H. Snyder, Society of Automotive Engineers, Inc., 1998.

¹⁶ “U.S. Scrap Tire Markets 2001,” Rubber Manufacturers Association, December 2002.

Benefits of Using RAC

Widespread use of RAC is one of the best alternatives to excessive landfilling, stockpiling, and the controversial energy recovery. There are many diverse benefits associated with asphalt rubber. It could cost a little more initially, but it is more cost-effective in the long run. It can be applied in reduced thickness, saving on the amount of aggregate required to resurface a road. It produces a quieter surface. International studies have shown that RAC pavements can reduce traffic noise up to 85 percent in some cases. But generally it provides a 50 percent reduction in noise, resulting in reduced cost of sound wall construction. It provides a smoother, longer-lasting surface, contributing to the longer life of tires and lessens the need for road maintenance.¹⁷ And notably, it uses more than 2,000 waste tires per lane mile of road surface, consuming large volumes of tires.¹⁸

In the old days there were only two companies that knew how to use RAC appropriately, and they charged very high prices. Now there are six to eight companies in Southern California alone that are experienced enough to use the material. Competition is much stiffer and prices have come down. This is good news for the recyclers and makers of crumb rubber because that market has expanded.

In spite of the positive evidence in support of RAC, Caltrans' project design engineers continue to resist this technology. The main obstacle to furthering the use of RAC is that it requires interest and commitment from Caltrans' administrators – and this has not happened.

Board's Position

RAC technology is of special interest, according to CIWMB, because it has the potential of diverting a large volume of tires to a very beneficial end use. But even with this information, the board has not forcefully moved the issue to the debate forefront. It has not actively sought legislative or administrative action to advance a clear solution to the waste tire problem.

¹⁷ Rubber Pavement Association website: <http://www.rubberpavements.org>.

¹⁸ "California Waste Tire Program Evaluation and Recommendations," CIWMB, June 30, 1999.

Both Caltrans and the Rubber Pavements Association object to RAC use mandates. The mandate idea has been summarily dismissed in past efforts because of opposition from stakeholders based on the belief that RAC is a good product and should be accepted on its own merits. But its widespread use has not happened, nor will it, on merit alone. Stakeholders invest heavily to see that RAC does not receive “preferential” treatment under the guise that the board would be toying with the free marketplace. However, the board did make the following recommendations in the 1999 AB 117 report to the Legislature:

- “Caltrans should be directed to develop guidelines for the use of RAC within one year . . . the recommended goal for the use of RAC by Caltrans is a minimum of 20 percent of asphalt projects in FY 2000-01, a minimum of 30 percent in 2001-02, and a minimum of 40 percent in years beyond.
- The goal for RAC use by local jurisdictions is to reach four million tons per year by the end of 2002.”¹⁹

The board had made bold and important recommendations, but by 2003 the board, in its new five-year plan draft, once again diminished the RAC use solution. The board not only dropped the Caltrans’ recommendations, it gave Caltrans an escape clause by including the following language in the report:

- “One potential barrier to using Rubberized Asphalt Concrete (RAC) is whether the RAC could be recycled and reused again in a future project. Therefore, board staff is proposing to conduct a study to determine if recycled RAC performs as well as new RAC. The board could partner with the University of California and Caltrans to identify potential recycled RAC formulations and then to test these formulations using laboratory and field simulations. The second phase would be to test the recycled RAC formulations in an actual highway construction project. This could be accomplished through a grant or contract with a local government public works department or Caltrans.”²⁰

¹⁹ “California Waste Tire Program Evaluation and Recommendations,” CIWMB, June 30, 1999.

²⁰ “Five-Year Plan for the Waste Tire Recycling Management Program,” CIWMB; Draft July 1, 2003.

This Commission, however, sees this as a position of retreat: another study, more delay. In addition, there are many projects in Arizona where RAC was used that have been in service for as long as 20 years. Additionally, according to the Rubber Pavement Association, many agencies already engage in recycling paving material and RAC has been successfully recycled on many occasions. Caltrans should check with those jurisdictions that have used it.

One of the most recent studies is by the City of Los Angeles. “Los Angeles recycled a 12-year-old RAC pavement on Olympic Boulevard. It also analyzed the air quality impact of grinding, transporting and processing the asphalt rubber. The results of the testing showed that the recycled rubberized asphalt reclaimed from Olympic Boulevard. met specifications and passed all tests and is recyclable using either microwave technology or conventional mix design technology. The air quality testing reports found employee exposure to air contaminants well below the CAL/OSHA permissible exposure limits and, in most cases, below the detection limit.”²¹

The argument that a “recycled” product cannot be used unless *that* recycled product can be recycled again becomes self-defeating. The board now wants another study on a *potential* problem that, in any event, if true, would be a future issue.

Caltrans’ Position

Caltrans maintains it is doing its part to help. Its mission, it points out, is to move Californians, not to take care of the waste tire problem. It must carry out its mission at the lowest cost possible. Caltrans claims it includes RAC in appropriate projects, but it is up to the district design engineers to make that determination.

Department of Transportation Director Jeff Morales has been working towards making a change. He sent a directive to Caltrans’ districts at the beginning of 2003 urging district designers to be more creative in their efforts to incorporate RAC into future projects where appropriate. He further states that it

²¹ Rubber Pavement Association website: <http://www.rubberpavements.org>.

is the goal of the department to use RAC in 15 percent of its projects by the end of the 2002-03 fiscal year.²²

In stark contrast, RAC supporters, including environmentalists, recyclers, and paving contractors, have expressed frustration over Caltrans' lack of commitment – arguing “the proof is in the pudding.” A look at Caltrans' website, “Invitation to Bid” section, shows that very few projects include RAC. Detractors further point to the fact that there are about one-third less RFPs using RAC in 2002-03 than in 1999-2000. While Director Morales' vision is applauded, supporters lament that the 15 percent goal will not even bring the department back again to its optimum RAC use level of 1999-2000 – which is not a move forward. It is already late-2003 and the industry has not been made aware of any movement in response to the Morales' memo.

The reason for Caltrans' reluctance to take the lead in RAC use is cited over and over – Caltrans is intransigent and reluctant to change – especially at the department's regional levels. Too much power is given to the district project designers who currently make the decision whether or not to incorporate the use of RAC in the RFPs that go out to bid. State policy should not be set by Caltrans' regional engineers.

In the meantime, RAC-producing businesses and paving contractors are ready to go, but the costly equipment purchased during the promising RAC use heyday at Caltrans in 1998-99 remains idle.

The Canadian Problem

California crumb rubber processors are also worried that subsidized crumb rubber is making its way into the state from Canada, creating “unfair” competition for California companies. This has led California crumb rubber processors to lobby the federal government to adopt countervailing tariffs to counteract the market distortions caused in California by the influx of subsidized Canadian-produced crumb rubber.

²² Memorandum to Caltrans District Directors from Director of the Department of Transportation, Jeff Morales, “Regarding Recycled Tire Products,” January 31, 2003.

While legislative efforts have been made recently to require Caltrans to use crumb rubber from United States sources, these efforts, too, have failed under the pressures of very heavy lobbying. A Caltrans letter to CIWMB last year declared that the department “cannot place provisions in our contracts requiring only used tires originating in California.” This conclusion was based on an Attorney General’s Opinion dated 1969, “which finds that California cannot exclude materials from outside of California, nor provide a preference for materials produced in California.” However, since then RAC supporters point to the more recent opinion from the Legislative Counsel dated 2002. It concluded that, on the basis of case law and relevant judicial decisions in more recent years, a statute requiring the department to use crumb rubber from California-generated recycled scrap tires “would be constitutional.” This appears to be another stakeholder issue – with the industry stakeholders once again victorious.

Because the 2002 opinion is a fairly new opinion on the issue, it is now time to give this idea further examination.

The Arizona Model

In Arizona, 85 percent of all highway projects contain RAC. Arizona’s Department of Transportation (DOT) requires that only U.S.-derived rubber asphalt be used on their roads. Crumb rubber dealers must certify that their product is derived from U.S. tires. This is an Arizona DOT regulation – not Arizona law. No one has challenged it.

In addition to the U.S.-only crumb rubber requirement, Arizona subsidizes RAC use on its streets and highways by about 40 cents a tire. The money comes from a fee on new tires like the one charged in California. But the widespread use of RAC in Arizona is not only to use waste tires in a constructive way, the state’s DOT swears by the superior end product that results in quieter, smoother, longer-lasting road surfaces.

Leveling the Playing Field

Even with all its benefits, the problem remains that RAC may still cost more up front. To counter this concern, a large percentage of the \$34-million-a-year CIWMB tire fund budget should be devoted to promoting and subsidizing RAC to level the economic playing field and make its use more acceptable to Caltrans. A per-tire subsidy grant program, modeled after the Arizona program, could remove the cost obstacle.

The board has previously tried to shy away from subsidies, but that is what it may very well take to make these applications more familiar and more acceptable. And subsidies are authorized in law.²³ The Legislature further endorsed the subsidy concept in 2002 when it passed legislation requiring CIWMB to provide grants to local agencies to subsidize funding of public works projects that use RAC. The local government subsidy program makes up the difference in cost between traditional paving materials and RAC. This same concept should be promoted and extended to subsidies for Caltrans' use of RAC at the state level.

Caltrans used 500,000 waste tires last year – only one and one-half percent of the approximate 35 million waste tires that need to be diverted. Short of passing an outright mandate, which is opposed by Caltrans and other stakeholders, incentives must be put in place, priorities reevaluated, and mission statements rethought in order to promote this permanent solution to the waste tire problem. Caltrans could assume the dominant role in the usage and design and instruction of RAC. This leadership could have a tremendous ripple effect. If Caltrans used RAC on a regular basis, so too, would cities and counties.

RECOMMENDATIONS

In an effort to further the use of RAC on California's streets and highways:

- **Designate RAC as the top board priority in a new CIWMB waste tire hierarchy.**

²³ PRC 42872 (a).

- **Extend to Caltrans the subsidies provided in existing legislation which apply to local agencies. Require Caltrans to phase in the use of California generated RAC on the following timetable: a minimum of 20 percent of asphalt projects in FY 2003-04; a minimum of 30 percent in 2004-05; and a minimum of 40 percent in years beyond. The board should sponsor a change in the statute to ensure this goal is met.**
- **Establish a subsidy program funded from the tire fund, like the one passed last year for local governments, to encourage the use of RAC at the state level.**
- **Require Caltrans to specify that the crumb rubber used in its projects must come from California-generated scrap tires.**

Section 5: Energy Recovery from Tires

Findings

Energy recovery from tires is the most controversial, and environmentally sensitive, waste tire program that has been supported by CIWMB. The board provided funds for studies and equipment for energy recovery – a practice that was questioned by environmentalists and some legislators as not being consistent with the waste management hierarchy that is in law – but a practice, nonetheless, that is considered safe by state and local air resource boards.

Energy recovery from tires continues to be a divisive issue for the board – and an issue that is not clearly understood by the public. Yet, tire combustion significantly reduces the number of tires requiring landfill disposal or stockpiling.

Energy recovery currently represents the single largest market for scrap tires in the U.S. and in California – accounting for approximately 40 percent of the total waste tire utilization in the nation in 2001.²⁴ In California approximately 5.2 million tires, or 15 percent of the total number of waste tires that need to be diverted in 2001, were combusted as fuel in California. About 4.2 million were consumed by the cement manufacturing industry and another million were consumed by a cogeneration plant in Stockton.²⁵ Tire combustion continues to significantly reduce the number of tires requiring landfill disposal or stockpiling.

Tires are used in place of coal because they have higher heat energy by weight, and the steel belts in the tires offer a source of iron ore needed in the cement-making process. The tires are burned whole. Those that burn tires for energy recovery like to say “that they burn everything but the squeal.” Waste tires provide a cheap fuel for cement plant and cogeneration facility owners and reduce the need for purchasing coal that must be transported to the site (usually from Utah). And because the

²⁴ “U.S. Scrap Tire Markets 2001,” Rubber Manufacturers Association, December 2002.

²⁵ CIWMB data.

tires are burned whole, the cost of first “recycling” tires into crumb or shredded rubber is eliminated.

Energy recovery from tires is legal in California. The state and local air resources districts consider the practice safe. Yet public perception surrounding this practice, promoted by environmental groups, remains negative. Perhaps this conviction is tied to the recent devastating and uncontrolled tire fires in Westley and in Tracy. As previously mentioned, those dramatic fires burned more than 12 million waste tires resulting in considerable environmental damage to the region.

Uncontrolled vs. Controlled Tire Burning

Tires, as synthetic compounds, are “highly flammable and behave as though they are a mixture of jellied petroleum and carbon. Once they catch fire, they burn vigorously emitting a whole spectrum of undesirable chemicals, including some carcinogens. Unchecked, the substantial quantities of petroleum oil that are produced can create a runoff problem – sending this oil runoff into neighboring streams or to seep into the soil, thereby contaminating the groundwater.”²⁶ Indisputably, the health and environmental consequences of *uncontrolled* burning, as occurred in the major tire fires, are significant.

But there is a big difference between the *uncontrolled* burning of tires that should not be confused with the dynamics of *controlled* tire burning for energy recovery. The burning of scrap tires for fuel by industry has been approved in more than 30 states. “Because of environmental concerns, tire-burning facilities have come under especially close scrutiny during the environmental permitting process.”²⁷ “The undesirable consequences of open burning of tires arise primarily from incomplete combustion. Carbon black particles and many chemical products escape the combustion zone without being combusted. Thus, the remedy is a larger combustion zone, which a proper furnace can provide.”²⁸

²⁶ Scrap Tires: Disposal and Reuse, Robert H. Snyder, Society of Automotive Engineers, Inc., Warrendale, PA., 1998

²⁷ “California Waste Tire Program Evaluation and Recommendations,” CIWMB, June 30, 1999.

²⁸ Scrap Tires: Disposal and Reuse, Robert H. Snyder, Society of Automotive Engineers, Inc., 1998.

Air Resources Board

Current law requires the Air Resources Board (ARB), in cooperation with the local air districts, to report annually the statewide emissions from tire burning. In the latest report, the ARB noted that eleven facilities are permitted to burn tires in California. Only four of these facilities burned tires in 2001. The tires were burned as a supplemental fuel, usually in ten percent to ninety percent coal mixture. About 5.4 million tires were burned in this manner by these facilities in 2001, which amounts to approximately 15 percent of the total number of waste tires being discarded in California every year. The local air districts determined that the levels of toxics emitted from these units when burned as a 10-percent tire and 90-percent coal fuel ratio do not constitute a significant increase in the health risk of the exposed public.²⁹

The South Coast Air Quality Management District submitted testimony at a legislative hearing on this subject in April 1997: “We have concluded that using waste tires as a supplemental fuel in cement kilns has a beneficial effect on emissions. Cement kilns in San Bernardino County have documented a 30 percent reduction in NO_x emissions after waste tires were added to the fuel stream.” Kern County obtained similar results.

And in a memorandum to CIWMB from ARB in 1997, the board asks ARB to review reports related to the use of waste tires as a fuel supplement and provide comments. ARB replied, “Overall, we agree with the conclusion of the report that there does not appear to be a significant difference in emissions with or without the use of tires as a fuel supplement. In general, we support your proposed policy to promote the use of tires as a fuel supplement as long as site-specific assessments are conducted.”³⁰ But even this scientific assurance has not been enough to quiet opponents.

²⁹ “2002 Report to the California Legislature on Emissions From Tire Burning in the State,” California Air Resources Board, April 2002.

³⁰ *Review Regarding Tire-Derived Fuel*, Memorandum, John D. Dunlap, Chair, ARB, to Daniel G. Pennington, Chair, CIWMB, December 1997.

Environmentalists' Position

The *Sierra Club* and *Californians Against Waste* are two key environmental organizations adamantly opposed to the board's focus on tire-burning technologies as part of the waste tire management strategy. These organizations point to support for energy recovery from tires as a flagrant violation of the waste management hierarchy as specified in law that stresses source reduction, recycling, and reuse. Environmentalists do not look upon energy recovery as "recycling" because they do not believe "energy" is a recycled, tangible, end-use product.

During CIWMB budget deliberations earlier this year the environmental representative on CIWMB unsuccessfully tried to divert allocated energy recovery funds to other market development projects and into research for other technologies. The environmental community opposed the board's proposed use of \$1.7 million in public funds to subsidize tire burning projects in any way – believing that the financial resources would be better directed at efforts to facilitate the processing and recycling of waste tires.³¹

And to bolster their argument, they pointed to the SB 876 deliberations in 2002, where it was consistently stated that tire-derived fuel should not be considered "recycling." Both organizations joined together in sending a letter to the board arguing that the board's continued "policy violates the spirit, if not the letter, of the waste management hierarchy as articulated in SB 876."³² This position was reinforced by a letter from the author of the bill, Senator Martha Escutia, and bill supporter, Senator Debra Bowen, in which they reiterated their strong opposition to tire burning being considered "recycling."

Why Such Diverse Views?

There is a continual struggle to define the hierarchy priorities stated in law – "reduce, reuse, recycle" – in terms of what is environmentally acceptable. But the recycling definition has become an exercise in "semantics." The board's position has been to support the use of tires as a fuel in facilities that receive

³¹ Letter to CIWMB from Californians Against Waste and Sierra Club, May 12, 2003.

³² Ibid.

approval from the local air districts. Critics take the opposite position – that the waste tire is “lost,” it does not “come back” as a usable end product, thus it is not “recycled.”

It takes an enormous amount of energy to convert limestone into a cement product. At a time when we are trying to find ways to curb energy costs, it is the Commission’s view that converting waste tires into energy makes sense, and it *is* definitely a form of recycling that has a viable end product. Granted, there was a time when this practice was not as environmentally safe as it is today. But with better equipment and stringently monitored air regulations, the NOx emissions are down. There was a major problem years ago in the Santa Clara area that justifiably tarnished the cement kiln reputation. Today’s cement kilns have been upgraded and meet local air control standards.

Until this year the Legislature had not taken a position on energy recovery from tires. But key, highly respected, environmentally committed legislators opposed to the practice joined environmental groups in a successful attempt to ban the use of any public funds to support energy recovery from tires. But they stopped short of calling for an outright ban of the practice – allowing cement plant and cogeneration facility owners to continue using tires for fuel, but precluding CIWMB from providing any funds for studies or grants for facility equipment upgrades. In reality, the board has little jurisdiction over transformation facilities. They are under local government authority and local air districts, as well as the State Air Resources Board.

Need for Resolution

In California, where over 33 million waste tires need to be diverted yearly, energy recovery still must be considered one of the more practical ways to dispose of waste tires. It should be reiterated: energy recovery diverts 5.2 million waste tires a year from landfills and stockpiles. Until markets change, it is not productive to continue the debate over whether or not energy recovery is “recycling.” Moreover, it detracts from the larger problem. Until such time as viable alternatives such as the use of RAC are fully utilized, or until new technologies emerge – or until the Legislature bans the burning of tires altogether – this practice must be considered an acceptable solution. Its positive

benefits should be acknowledged, and CIWMB should be able to support the practice as part of its program.

RECOMMENDATIONS

In an effort to bring the controversy surrounding energy recovery from tires to an end, the board should:

- **Acknowledge that until such time as viable alternatives such as RAC are fully utilized, or new technologies emerge – or until the Legislature bans tire burning altogether – this practice must be considered an acceptable tire diversion solution.**
- **Increase public awareness on the benefits of using waste tires for energy recovery as a way of diverting large numbers of waste tires away from landfills and stockpiles.**

Conclusion

The California Integrated Waste Management Board is responsible for managing or safely diverting over 33 million waste tires that are discarded in California each year. The board is charged with cleanup, abatement, and remediation of stockpiles and is required to promote and develop markets as an alternative to landfill disposal and stockpiling. A \$1 fee added on every new tire purchased in the state funds these programs. This fund has reached \$34 million a year.

The board has done an adequate job of cleaning up old stockpiles. However, the number of waste tires generated each year still far exceeds the number of tires diverted from landfill disposal and stockpiling. Until significant expansion of existing markets for waste tires occurs, or until new technologies emerge, the board will continue to fall short of its goal.

The board must endorse an overall strategic plan that focuses on promoting and subsidizing end uses that consume the largest volume of waste tires in the most cost-efficient and environmentally friendly way. It must abandon its short-term, piecemeal programming and concentrate on a substantial recycling effort. This Commission believes that the board's primary focus should be advocating for, and educating stakeholders on the merits of using RAC as the best hope for meeting the waste tire challenge. Other state departments and local governments must be required to participate in this effort.

And finally, until such time as viable alternatives, such as RAC, are fully utilized, or new technologies emerge, the benefits of using waste tires for energy recovery must be acknowledged. Tire combustion consumes 5.2 million tires a year. The practice is legal. State and local air resource boards have found no discernible health risks as long as facility owners adhere to the stringent air pollution standards and regulations currently imposed by law. And, energy recovery is a way of diverting large numbers of waste tires away from landfills and stockpiles.

Managing solid waste disposal and diversion programs continues to be a very complicated business and a very important one. The Commission hopes CIWMB will adopt a

forward position and not one that merely goes along with mediocrity. It must begin to move in the right direction by demonstrating its ability to move beyond the status quo, and by efficiently administering the newly rich tire recycling fund. Until this happens, serious consideration must be given to replacing it with an alternative management system, such as a department in Cal/EPA.

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