Assessing Scrap Tire Legislation in the U.S.-Mexico Border States

Phase I Report to the Council of State Governments-WEST/ Border Legislative Conference, November 2009

Prepared by:

ASU North American Center for Transborder Studies
ARIZONA STATE UNIVERSITY

In partnership with:

CSG WEST
"Serving Western Legislatures"

Border Legislative Conference
Conferencia Legislativa Fronteriza

SLC

USAID FROM THE AMERICAN PEOPLE | MEXICO

Revised February 2010

Assessing Scrap Tire Legislation in the U.S.-Mexico Border States
Phase I Report to the Council of State Governments-WEST/ Border Legislative Conference, November 2009

Border Legislative Conference

Chair

Senator Denise Moreno Ducheny

California State Senate

Vice Chair

Diputado Ramiro Flores Morales

Coahuila State Congress

USAID Mexico, U.S. Embassy Mexico

Roger Garner, Mission Director

Elizabeth Bauch, Competitiveness Advisor

Council of State Governments-WEST / Border Legislative Conference

Edgar Ruiz, Deputy Director

Council of State Governments-WEST

Martha Castañeda, Program Director

Border Legislative Conference

Paul Somerhausen, Coordinator

Border Legislative Conference

ASU research team

North American Center for Transborder Studies

Erik Lee, Associate Director

Erin Elizabeth Maupin, Legislative Issues Intern

Israel Díaz Arcos, Geostatistics and Informatics Coordinator, Municipal Institute of Planning and Research, Nogales, Sonora

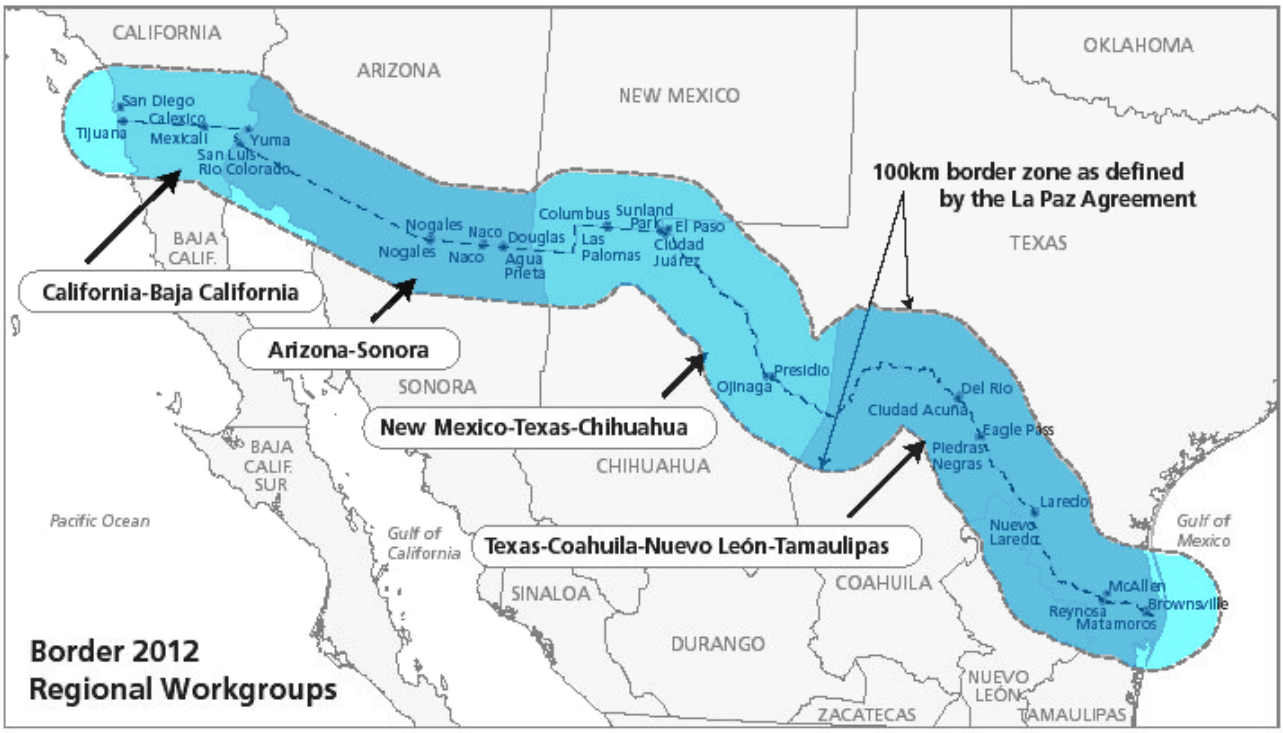
This initiative is made possible by support from the Border Legislative Conference (a program of the Council of State Governments-WEST's U.S.-Mexico State Alliance Partnership). The U.S.-Mexico Alliance Partnership is supported by the United States Agency for International Development, Mexico.

Table of Contents and List of Figures

Contents

List of Figures

Figure 1: The U.S.-Mexico Border Region



Source: Border 2012 Program

Foreword and Acknowledgements

Background

During early 2009, the Council of State Governments West approached the North American Center for Transborder Studies (NACTS) at Arizona State University and expressed the wish of CSG-WEST and its program, the Border Legislative Conference (BLC) to move into the next phase of its work on scrap tire legislation. The BLC has addressed this topic formally since it issued its first recommendations in 2003 while working closely with partners in the U.S.-Mexico border region, including the Border 2012 program guided by EPA and SEMARNAT; the Border Governors Conference; and the Ten States organization, among others.

NACTS is based at Arizona State University, one of the largest public universities in the United States—located in a key border state—with over 68,000 students currently enrolled. NACTS is a key part of ASU's vision of the research university as an interdisciplinary, highly applied institution focused on making a positive impact upon society and its institutions. As an example, on February 10, 2009 NACTS released a report, "North America Next: A Report to President Obama on Building Sustainable Security and Competitiveness" in Washington, D.C. The report detailed eight top-level recommendations with additional recommendations on how the U.S. should rearticulate and take full advantage of improved relations with Mexico and Canada.

More specifically in terms of capacity, NACTS has a high-level, trinational Board of Advisors and six partner universities in Canada and Mexico, including the University of Alberta, York University in Toronto, El Colegio de la Frontera Norte, Tec de Monterrey, ITAM and UNAM. NACTS coordinates ASU's interaction with the 10-university Southwest Consortium for Environmental Research and Policy (SCERP, scerp.org) as well as ASU's participation with the U.S. Department of Homeland Security's University Center of Excellence. In addition, long-term partnerships with the U.S. Environmental Protection Agency, SEMARNAT, the Arizona Department of Environmental Quality, the State of Sonora's environmental ministry and various members of the BLC itself provide particularly robust feedback for NACTS' border-related work, particularly in the area of sustainability.

A Living and Practical Document

For a variety of reasons, this report is intended to be a living document, with the BLC members as its primary audience. Developments in states' scrap tire management legislation are part of a dynamic political process that is constantly playing itself out in the ten states and therefore must be monitored over time. Also, since state legislators in the U.S. states run for reelection regularly and elected officials in Mexico are prohibited from serving consecutive terms, the BLC's membership is evolving according to the electoral calendar in the two countries. This living document can bring new members of the BLC up to speed quickly on the issue of scrap tires and attempts to manage them through state-level legislation. And finally, because key actors within both the state agencies and the Border 2012 program (including federal and municipal actors) are also actively working toward implementing solutions on this issue, the BLC's membership will need regular updates on these important activities.

Because state legislators face a number of complex issues on a daily basis, we have consciously kept this document as brief and as practical as possible. The accompanying appendices act as a comprehensive set of technical references for legislators and their staff on the subject. For those readers wanting more detail on the scrap tire issue itself, the Border 2012 web site contains an enormous amount of information on various efforts to manage scrap tires. In addition, we highly recommend works such as the excellent August 2009

report by Paul Ganster, Director of the Institute for the Regional Studies of the Californias to the California Integrated Waste Management Board, "The Flow of Used and Waste Tires in the California-Baja California Region." Dr. Ganster's report is a comprehensive treatment of a complex topic in an important part of the border region, whereas this report is intended first and foremost to give the BLC membership an update on current legislation and a practical set of options and ideas for updating and improving complimentary and collaborative legislation on scrap tires. The report's executive summary will also be made available as a NACTS Policy Analysis Review.

The Importance of Regional Organizations

While the federal governments take the lead on a large number of key binational issues, regional organizations such as the BLC and others implement specific, local and customized solutions to a number of challenges that the two nations face. Local solutions to local problems can be particularly robust and long-lasting. Whether the problem is security, trade, the environment, water, energy, emergency response, or other binational issues, the more place-specific the solution, policy, design, or meeting, the better the outcome usually is.

As the Obama and Calderón Administrations look at rearticulating binational policies, we strongly believe that regional organizations are critical assets in building a relationship with our neighbors that is more secure and prosperous. Furthermore, we believe that when policy relating to the U.S. and Mexico are viewed from a multi-functional framework that looks at the highly interconnected issues of security, competitiveness, and sustainability in North America, citizens of all three countries will clearly be better off.

A Dynamic Research and Action Process

NACTS shaped the analysis, synthesis, and recommendations in this report from an ongoing series of engagements (events, meetings, etc.) with a large number of U.S. and Mexican experts and organizations. This process of engagement was enlightening and helped to shape this document's scope and detail. We thank the members of the BLC and the state environmental secretaries and staff of the Environmental Worktable of the Border Governors Conference for their input. In particular, we want to thank Norma Rangel from the Secretariat of Sustainable Development of Nuevo León; Ellie Kanipe, International Policy Analyst in the Office of Resource Conservation and Recovery of the U.S. Environmental Protection Agency; Edna Mendoza, Director, Office of Border Environmental Protection of the Arizona Department of Environmental Quality; Placido dos Santos, former Director of the Office of Border Environmental Protection of the Arizona Department of Environmental Quality; and Paul Ganster, Director of the Institute for the Regional Studies of the Californias at San Diego State University. Erin Elizabeth Maupin, a law student at ASU's Sandra Day O'Connor School of Law, and Israel Díaz Arcos at the Municipal Planning and Research Institute of Nogales, Sonora provided excellent research assistance and strategic advice on the creation of this document. We also appreciate the strategic technical and policy advice and support of Rick Van Schoik, Director of NACTS; Raul Rodriguez, Chairman of NACTS' Board of Advisors; and Francisco Lara Valencia, Chair of NACTS Faculty Advisory Council. Many thanks to Sara Sonnenberg, NACTS Operations and Research Administrator and Stacy Danler, NACTS intern, who both contributed significantly to this effort.

We also thank Arizona State University President Michael Crow and former ASU College of Liberal Arts and Sciences Executive Dean Alan Artibise for their vision and perseverance in creating and supporting NACTS as well as our new ASU management committee, which includes ASU Vice President for Research and Economic Affairs, R.F. "Rick" Shangraw; College of Liberal Arts and Sciences, Dean of Social Sciences, Linda Lederman; and Science Policy Advisor to the President, James Buizer.

The input of these groups and individuals on this and all of NACTS' projects has been invaluable and the debates highly instructive; ultimate responsibility for the content of the report rests with NACTS.

Executive Summary

Scrap Tires: A Continuing Challenge for Border States

Discarded tires along the U.S.-Mexico border threaten the environment and have an adverse impact on human health. Scrap tire piles become breeding grounds for mosquitoes and other disease vectors. Scrap tires piles also pose a severe fire hazard, which in turn can cause serious air quality problems and generate large amounts of liquid waste that contaminate the soil as well as ground and surface waters. There are a total of 46 known tire piles in the U.S.-Mexico border region, though precise quantification remains a challenge.

The Border States' Response

United States. U.S. border states have addressed the scrap tire issue through both the binational Border 2012 program, regional and state-level efforts. Each state approaches the problem in a unique manner through both specific legislation and agency rules. California and New Mexico focus on providing market incentives for alternative scrap tire uses. Arizona uses scrap tires in rubberized-asphalt paving. Texas uses many of the states' scrap tires to produce tire-derived fuel, primarily for cement plants and paper mills. However, challenges remain for the U.S. border states with respect to abatement and the southbound flow to Mexico of scrap tires.

Mexico. Federal law permits the importation of *used* tires under an annual quota granted to the states of Baja California/Sonora and Chihuahua (defined as tires with more than 15/32" tread), though the law prohibits the importation of *scrap* tires into Mexico. The 2004 federal General Law for the Prevention and Integral Management of Waste specified tires as a special management waste rather than municipal solid waste. Under the law, every major generator of waste (including municipalities) had to specify scrap tires as special management waste under new, integrated waste management plans.

Special challenges for Mexican states. Though Mexican states have also participated actively with the binational Border 2012 and other programs on scrap tire abatement, the scrap tire problem is much more severe in Mexico. The border states in particular face both significant domestic scrap tire generation as well as large southbound flows of used tires, which arrive in a number of ways from the United States.

The short term length of legislators, mayors, and city councilmen (3 years) presents a daunting challenge for tire program implementation. While there are legal instruments available to state governments to deal with scrap tires, further definition of state governments' roles and responsibilities is needed. *Most* state-level statutes in Mexico's border states address general pollution matters and delegate the specific issue of scrap tire management (including fee collection and program management) to individual municipalities.

While municipalities work to manage the problem through local programs and fees, overly local attention to the scrap tire issue fragments attention to the problem; inhibits broader, state-level control and enforcement; and reduces public awareness of even basic information about the problem and regulations addressing it. State legislatures are thus faced with the task of creating a legal framework that more clearly defines scrap tires as a special management waste and crafting more homogeneous and complimentary laws that regulate municipalities' responsibilities in this area. Such a legal framework should in many cases include state laws of environment, fiscal reform, public works, and state-municipal interaction.

Key Elements of Legislation

The ten U.S.-Mexico border states can more effectively address the scrap tire problem with more robust and even complementary legislation. Recommendations on scrap tires developed by the BLC in 2003 encourage member states to "initiate or assertively promote the development of harmonized set of management or regulatory frameworks on the quantification, collection, proper hauling, importation/exportation, disposal, and possible end uses of used and waste tires in all ten border states between the U.S. and Mexico." The recommendations emphasize that "The frameworks do not have to be identical in every state, but the systems should be compatible."

In terms of developing a set of more harmonized regulatory frameworks, states should consider **six** general objectives:

Approach 1. Increase recycling and market development. State programs can be vital to incentivize abatement efforts, particularly in the form of grants or loans to support scrap tire reuse markets. U.S. border states have had considerable success with recycling and market development programs operated by the state environmental agencies.

Approach 2. Increase revenue. State-mandated tire management and recycling fees have proven to be a viable method to establish scrap tire management funds. These funds can be used to abate noncompliant scrap tire piles and increase recycling and market incentives. Fees can be collected in numerous ways and overseen by an independent board.

Approach 3. Enhance enforcement. A percentage of tire fees can be used to fund enforcement efforts. State law enforcement can be mandated to enforce state prohibitions on illegal dumping and stockpiling. Civil and criminal penalties imposed could deter illegal acts and when collected can create a source of funds for the state's scrap tire management fund.

Approach 4. Prevent land contamination. By prohibiting scrap tires from being landfilled in the first place, border states can help reduce the need for scrap tire abatement and can incentivize users to undertake more sustainable scrap tire end-uses.

Approach 5. Create abatement programs or enhance existing programs. Legislation can seek abatement of waste tire piles, first through voluntary efforts, where feasible, and second by direct action where voluntary efforts are not feasible or are unsuccessful.

Approach 6. Clarify and define the shared responsibility for managing tires as special management waste in the Mexican legal framework.

Toward Common and Complementary Approaches
U.S.-Mexico border states are urged to incorporate these key approaches into more specific legislation as part of their scrap tire management programs. Legislation that is more robust, enhances state-municipal partnerships and specifically enhances cross-border collaboration is a challenge to craft and to implement, but can ultimately create better outcomes for human health and the environment. Legislative efforts in this direction include:

- Tamaulipas Decree No. LX-675. The bill, passed in February 2009, includes amendments specifying scrap tires as special management waste.
- California Senate Bill 167, sponsored by Sen. Denise Moreno Ducheny, requires a 5-year plan for waste tire programs to specifically address the border region with education, research, infrastructure, mitigation, cleanup, prevention, enforcement, and market developments for reuse and recycling projects
- Texas Senate Bill 617, introduced by Senator Eliot Shapleigh, which would render tires not meeting inspection criteria unusable (passed by the Texas Senate; did not pass the Texas House).
- Arizona House Bill 2290, introduced by Rep. Russell Jones, would allow scrap tires to be used as fill material in abandoned mines (reintroduced in January 2010).

Recommendations
To enhance its work on scrap tire legislation, the BLC should consider the following steps:

1. Continue and expand its partnerships and exchange of ideas with Border 2012, EPA, SEMARNAT, the Border Governors Conference, and private sector entities, perhaps through the creation of a permanent legislative review committee within the BLC.

2. Conduct strategic outreach to border legislatures and specific committees to promote and develop customized strategies to meet needs for individual states pursuant to the findings of this report.

3. Continue to track legislative developments and post "best legislative practices" in both English and Spanish on scrap tire management legislation on the BLC web site.

4. **For U.S. border states, legislators should consider the following steps:**
a. Direct state environmental agencies to allocate resources toward border-related scrap tire projects in a number of key areas, specifically directing funding toward projects in Mexico when warranted and to the benefit of the U.S. state.
b. Require tire sellers to render waste tires unusable and therefore not marketable in Mexico.

5. Mexican state legislators should consider the following steps:
a. Clarify the classification of scrap tires as special management waste and work with municipalities to update regulations on local integrated waste management program implementation.
b. Legislate the special handling and final deposition of waste tires in suitable sites.
c. Legislate locally customized approaches to stimulate the development of markets for waste tire recycling and reuse.

Background

Scope of the Border Region Waste Tire Challenge. Discarded tires along the U.S.-Mexico border threaten the environment and have an adverse impact on human health. There are a total of 46 known tire piles in the U.S.-Mexico border region. Mexico has an estimated 1 to 2 billion discarded scrap tires, while the U.S. has between 250 to 300 million.

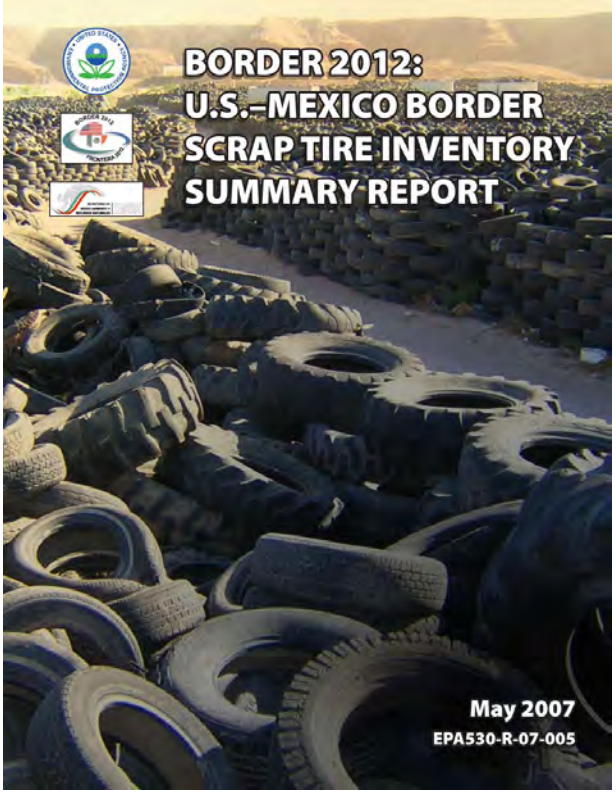
The 2007 Border 2012 Scrap Tire Inventory[1] resulted in a report issued in May 2007 and an inventory map. Figure 2 is a table taken from a summary of the report and gives an idea of the extent of the challenge. While there were a number of challenges in gathering such data (to begin with, scrap tire piles are dynamic in nature and therefore challenging to quantify), we can generally see that a) Mexico faces the majority of the problem and b) the tire piles generally follow the large population centers, with Baja California and Chihuahua dealing with particularly large piles. The inventory map is available at http://www.epa.gov/usmexicoborder/docs/ScrapTirePileSiteInventoryMap_05-16-07.pdf.

Figure 2: U.S.-Mexico State Border Scrap Tire Numbers Overview

State	Number of Piles	Estimated No. of Tires
Baja California	6 total sites; 5 sites cleaned up; 1 active site remains	400,000
Sonora	13 total sites; 1 site cleaned up; 2 active sites remain; information for 10 sites not available, including estimated number of tires	340,000
Chihuahua	One active site	4,500,000
Coahuila	Two active sites	245,000-275,000
Tamaulipas	Eight total sites; one site cleaned up; seven active sites remain	800,000-900,000
California	2	10,000
Arizona	6	68,000 (Tire quantity estimate exists for only one site in Arizona)
New Mexico	1 site has been cleaned up	0
Texas	1 site has been cleaned up; 2 active sites	1,100,000

Source: U.S.-Mexico Border Tire Inventory Summary Report (May 2007)

Figure 3: 2007 Scrap Tire Inventory



The principal drivers for the large number of scrap tires include the following:

1. A robust market for used tires on both sides of the U.S.-Mexico border. Cheaper used tires are quite attractive in these markets, particularly due to generally smaller disposable income both in U.S. border communities as well as in Mexico.

2. A lack of scrap tire disposal infrastructure in Mexico.

3. Undeveloped markets in Mexico for scrap tires.

4. Fee avoidance.

5. Illegal importation of tires.

6. Lack of consumer education on tire safety and proper disposal.

Dr. Paul Ganster's August 2009 report on the issue for the California Integrated Waste Management Board, "The Flow of Used and Waste Tires in the California- Mexico Border Region," emphasizes the robust market for used tires in both California and Baja California. Perhaps most notably, Dr. Ganster concludes that the presence of waste tires in Baja California is mainly constituted by domestic generation, tires arriving on junked cars, and *tráfico hormiga* (individuals transporting small numbers of used/scrap tires to Mexico after having their tires changed in California). Dr. Ganster does not find evidence for scrap tires being allowed to pass illegally through the commercial entry lanes at Mexico's ports of entry. The lack of a developed regulatory framework for Baja California is emphasized throughout the report.[2] The phenomenon of used and scrap tire flow and market dynamics is most likely representative of other, if not all, regions along the U.S.-Mexico border.

Border 2012 Work on Scrap Tires

Government interventions in the area of scrap tire management are not new. The U.S.-Mexico Environmental Program (Border 2012) is a collaboration between the United States and Mexico to improve the environment and human health and focuses on "cleaning the air, providing safe drinking water, reducing the risk of exposure to hazardous waste, and ensuring emergency preparedness along the U.S.-Mexico border." The program is the latest iteration of a series of binational programs that were begun and enabled by the La Paz Agreement, signed by Presidents Reagan and de la Madrid in 1983.

Border 2012 is conceived of as a "bottom-up" initiative that involves not only the federal government lead agencies (the U.S. Environmental Protection Agency and Mexico's Secretariat for the Environment and Natural Resources, SEMARNAT) but also state and local government agencies as well as a variety of additional community stakeholders. It is organized into fora and regional workgroups (see Figure 1 on page 4). Issues and projects are identified and implemented at the local level.

Border 2012 specifically addresses the issue of scrap tires through strategic program objectives. Goal #3 addresses land contamination. According to *U.S.-Mexico Environmental Program: Border 2012: A Midcourse Refinement*, "the Waste Policy Forum (WPF), in collaboration with the Regional Workgroups, continues to assess and address the border's hazardous and solid waste problems and has made strides in reaching the objectives of Goal #3: To Reduce Land Contamination. Sub-objectives have been created to more clearly define the tasks the WPF and Regional Workgroups plan to implement before 2012."[3]

Figure 4: Border 2012 New/Revised Scrap Tire Objectives

ORIGINAL OBJECTIVES (2003)	NEW/REVISED OBJECTIVES OR SUB-OBJECTIVES	Notes
Objective 3 By 2010, clean up three of the largest sites that contain abandoned waste tires in the U.S. Mexico border region, based on policies and programs developed in partnership with local governments.	NEW Sub-Objective 3A: By 2012, develop capacity building materials for scrap tire pile prevention and scrap tire management. **Sub-Objective 3B:** By 2012, address recommendations from the 2006 U.S.-Mexico Border Scrap Tire Integrated Management Initiative which defines the principles and actions necessary for sustainable scrap tire management, one of which is market development. **Sub-Objective 3C:** When practicable, clean up small tire piles, at least once in each of the four regional workgroup geographic areas.	Two of the largest tire piles in the border region, Centinela and Innor, have been cleaned up. Clean-up is under way at a third large site in the eastern half of the border. The new objectives will focus on scrap tire pile prevention and management.

Source: U.S.-Mexico Environmental Program: Border 2012: A Mid-Course Refinement (2008-2012). Goal #3: Reduce Land Contamination

Figure 5: U.S.-Mexico Border Scrap Tire Management Initiative, Border 2012

IV. Basic Principles
The U.S. and Mexico agree that implementation of the following four basic principles is necessary for proper management of scrap tires in the U.S.-Mexico border region:
• Better understand the problems contributing to scrap tire generation
• Prevent new tire piles
• Clean-up "legacy" (existing) tire piles using environmentally sound and cost effective solutions
• Involve stakeholders and communities in creating solutions.

V. Implementation
Action 1: Gather information to better understand scrap tire generation (including sources of substandard tires and illegal tire entry into Mexico), illegal scrap tire dumping, and methods for effective management of scrap tires.

Action 2: Consider federal, state, and local-level regulatory options to administer scrap tire management programs.

Action 3: Encourage development and implementation of a variety of environmentally acceptable and economically promising end-use markets for scrap tires to increase recycling and reuse. (Our plan is that this will be done through economic, regulatory, and technology development incentives.)

Action 4: Abate tire piles by seeking funding to eliminate legacy scrap tire piles, and invest in and adequately manage temporary storage and transfer stations to facilitate recycling and/or reuse of scrap tires.

Action 5: Involve the U.S. and Mexican governments, the private-sector, academics, and non-governmental organizations in the implementation of the Scrap Tire Integrated Management Initiative.

Action 6: Establish and implement educational outreach programs on scrap tire recycling and reuse opportunities geared towards a diverse audience of stakeholders.

Source: U.S.-Mexico Border Scrap Tire Integrated Management Initiative, October 26, 2006

Figure 4 (see page 11) indicates the original (2003) objectives and subobjectives of what Border 2012 set out to accomplish with respect to waste tires, the actual accomplishments in this area, and updated objectives. **Of particular interest to the BLC membership is subobjective 3B: "By 2012, address recommendations from the 2006 U.S.-Mexico Border Scrap Tire Integrated Management Initiative which defines the principles and actions necessary for sustainable scrap tire management, one of which is market development."** It is also important to note the progress made toward cleaning up two of the three the largest legacy piles, Centinela and Innor, both located in Baja California.

The U.S.-Mexico Border Scrap Tire Integrated Management Initiative. In 2006 the EPA and SEMARNAT signed the U.S.-Mexico Border Scrap Tire Integrated Management Initiative, whose purpose was to operationalize the objectives relating to scrap tires articulated by the Border 2012 program. The document operationalizes the binational management through principles and actions (see Figure 5 on page 11). Here it is important to note that the BLC's work falls squarely beneath Action 2: Consider federal, state, and local-level regulatory options to administer scrap tire management programs. The Environmental Protection Agency has indicated its willingness to continue to work with the BLC within this framework.

Border Governors Conference Environmental Work Table Waste Tires Efforts

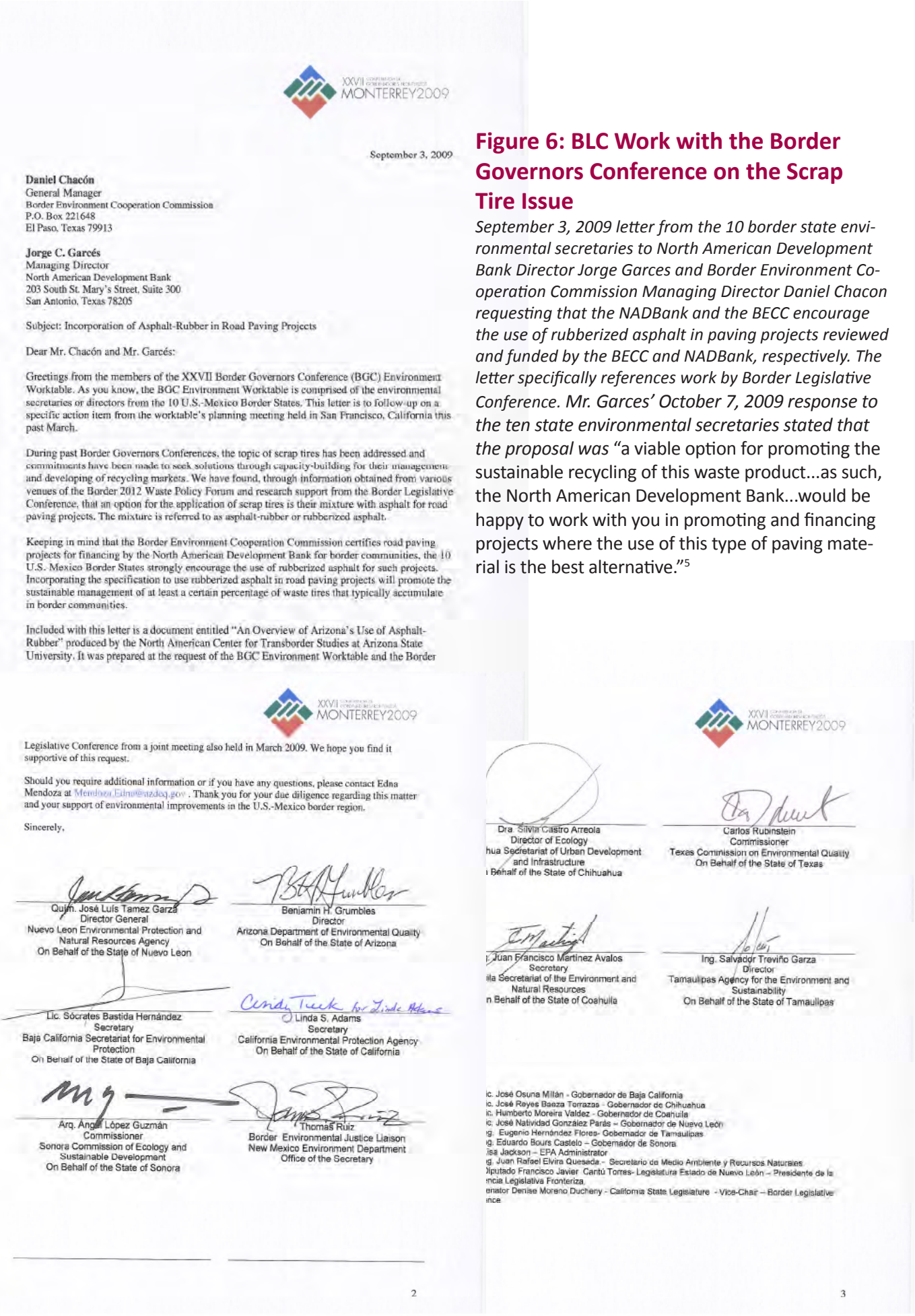
The Border Governors Conference Environmental Work Table has also accomplished a significant amount of work on the scrap tire issue. Each year, the work table produces declarations which are part of the Conference's Joint Declarations; produces letters to federal officials requesting specific actions to aid in the states' work on the problem; and follows up with specific action items within its annual plan. The recent declarations produced by the work table in the area of tires included a letter signed by the six Mexican border state environmental agency heads requesting that Mexico's Treasury Department (*Hacienda*) allocate a two-dollar fee for used tires imported into the border states to the states themselves. Another key action by the environmental work table in 2009 included a letter to North American Development Bank Managing Director Jorge C. Garcés and Border Environmental-Cooperation Commission General Manager Daniel Chacón encouraging the use of rubberized asphalt in border community paving projects which are often approved and financed by the two entities (see Figure 6 on page 13). The letter references collaborative research by NACTS on Arizona's experience with rubberized asphalt that was specifically requested by the joint environmental worktables of the Border Governors Conference and the BLC in March 2009 and presented at the work table meeting in Monterrey in September 2009.[4] Mr. Garces' October 7, 2009 response to the ten state environmental secretaries stated that the proposal was "a viable option for promoting the sustainable recycling of this waste product...as such, the North American Development Bank...would be happy to work with you in promoting and financing projects where the use of this type of paving material is the best alternative."[5]

Other Organizations

The ten U.S.-Mexico border states also enjoy extra capacity in their environmental interaction via the Ten States organization, an alliance between the ten border states' environmental agencies. The organization has worked on the scrap tire issue for many years and have made specific requests of the federal governments in this area. These recommendations include specifying particular ports of entry for the importation of used tires into Mexico and the consideration of tires' economic value so as to implement specific programs and actions for their reuse and recycling. There is also opportunity for the states to interact within state-to-state mechanisms such as the Arizona-Mexico Commission/Comisión Sonora-Arizona environmental committee and similar groups.

Conclusion

The continuing presence of very large number of scrap tire piles in the U.S.-Mexico border states tells a compelling story of powerful market forces that continue to exist, which in turn present powerful challenges for abatement programs in the region. At the same time, we find both ongoing and new efforts by the two federal governments, as well as a continuing interest by the state environmental agencies represented in the Border Governors Conference and the Ten States organization. These groups have indicated a willingness to partner with the BLC in its efforts to address this issue, a fact that bodes well for the BLC as its members assess the current state of legislation in the border states and attempt to bolster state legislation.



September 3, 2009

Daniel Chacón
General Manager
Border Environment Cooperation Commission
P.O. Box 221648
El Paso, Texas 79913

Jorge C. Garcés
Managing Director
North American Development Bank
203 South St. Mary's Street, Suite 300
San Antonio, Texas 78205

Subject: Incorporation of Asphalt-Rubber in Road Paving Projects

Dear Mr. Chacón and Mr. Garcés:

Greetings from the members of the XXVII Border Governors Conference (BGC) Environment Worktable. As you know, the BGC Environment Worktable is comprised of the environmental secretaries or directors from the 10 U.S.-Mexico Border States. This letter is to follow-up on a specific action item from the worktable's planning meeting held in San Francisco, California this past March.

During past Border Governors Conferences, the topic of scrap tires has been addressed and commitments have been made to seek solutions through capacity-building for their management and developing of recycling markets. We have found, through information obtained from various venues of the Border 2012 Waste Policy Forum and research support from the Border Legislative Conference, that an option for the application of scrap tires is their mixture with asphalt for road paving projects. The mixture is referred to as asphalt-rubber or rubberized asphalt.

Keeping in mind that the Border Environment Cooperation Commission certifies road paving projects for financing by the North American Development Bank for border communities, the 10 U.S.-Mexico Border States strongly encourage the use of rubberized asphalt for such projects. Incorporating the specification to use rubberized asphalt in road paving projects will promote the sustainable management of at least a certain percentage of waste tires that typically accumulate in border communities.

Included with this letter is a document entitled "An Overview of Arizona's Use of Asphalt-Rubber" produced by the North American Center for Transborder Studies at Arizona State University. It was prepared at the request of the BGC Environment Worktable and the Border

Legislative Conference from a joint meeting also held in March 2009. We hope you find it supportive of this request.

Should you require additional information or if you have any questions, please contact Edna Mendoza at Mendoza.Edna@azdeq.gov . Thank you for your due diligence regarding this matter and your support of environmental improvements in the U.S.-Mexico border region.

Sincerely,

Quím. José Luis Tamez Garza
Director General
Nuevo Leon Environmental Protection and Natural Resources Agency
On Behalf of the State of Nuevo Leon

Beniamin H. Grumbles
Director
Arizona Department of Environmental Quality
On Behalf of the State of Arizona

Lic. Sócrates Bastida Hernández
Secretary
Baja California Secretariat for Environmental Protection
On Behalf of the State of Baja California

Linda S. Adams
Secretary
California Environmental Protection Agency
On Behalf of the State of California

Arq. Angel López Guzmán
Commissioner
Sonora Commission of Ecology and Sustainable Development
On Behalf of the State of Sonora

Thomas Ruiz
Border Environmental Justice Liaison
New Mexico Environment Department
Office of the Secretary

2

Dra. Silvia Castro Arreola
Director of Ecology
hua Secretariat of Urban Development and Infrastructure
Behalf of the State of Chihuahua

Carlos Rubinstein
Commissioner
Texas Commission on Environmental Quality
On Behalf of the State of Texas

Juan Francisco Martínez Avalos
Secretary
ila Secretariat of the Environment and Natural Resources
n Behalf of the State of Coahuila

Ing. Salvador Treviño Garza
Director
Tamaulipas Agency for the Environment and Sustainability
On Behalf of the State of Tamaulipas

ic. José Osuna Millán - Gobernador de Baja California
ic. José Reyes Baeza Torrazas - Gobernador de Chihuahua
ic. Humberto Moreira Valdez - Gobernador de Coahuila
ic. José Natividad González Parás – Gobernador de Nuevo León
g. Eugenio Hernández Flores- Gobernador de Tamaulipas
g. Eduardo Bours Castelo – Gobernador de Sonora
isa Jackson – EPA Administrator
g. Juan Rafael Elvira Quesada - Secretario de Medio Ambiente y Recursos Naturales
Diputado Francisco Javier Cantú Torres- Legislatura Estado de Nuevo León – Presidente de la ncia Legislativa Fronteriza
enator Denise Moreno Ducheny - California State Legislature - Vice-Chair – Border Legislative nce

3

Figure 6: BLC Work with the Border Governors Conference on the Scrap Tire Issue

September 3, 2009 letter from the 10 border state environmental secretaries to North American Development Bank Director Jorge Garces and Border Environment Cooperation Commission Managing Director Daniel Chacon requesting that the NADBank and the BECC encourage the use of rubberized asphalt in paving projects reviewed and funded by the BECC and NADBank, respectively. The letter specifically references work by Border Legislative Conference. Mr. Garces' October 7, 2009 response to the ten state environmental secretaries stated that the proposal was "a viable option for promoting the sustainable recycling of this waste product...as such, the North American Development Bank...would be happy to work with you in promoting and financing projects where the use of this type of paving material is the best alternative."[5]

Figure 7: 2003 Border Legislative Conference Recommendations on Waste Tires

1. Initiate or assertively promote the development of harmonized set of management or regulatory frameworks on the quantification, collection, proper hauling, importation/exportation, disposal, and possible end uses of used and waste tires in all ten border states between the U.S. and Mexico. The frameworks do not have to be identical in every state, but the systems should be compatible. Frameworks can be established through Memorandum of Understandings (MOU) between border states. MOU's can include the development of a pilot programs on waste tire tracking and tire pile cleanup initiatives.

a) Any cross-border framework will require support from U.S. and Mexico customs agencies.

2. Increase the costs of inappropriate disposal of tires such as illegal dumping, illegal stockpiling, or land filling through greater enforcement and stiffer fines. This may require educating the public of the negative environmental and health risks of improper disposition of tires, as well as require the adequate allocation of resources to appropriate local and state law enforcement, environmental or health agencies.

3. Encourage the proper disposal of used or waste tires through incentives and/or value of the tires (i.e. setting the price to include an exchange; if buyer does not turn in tires at time of purchase of new/ used tires, he/she will pay more, similar to batteries). Also, decrease the cost of appropriate dispositions.

4. Encourage legislators to have a better understanding of the current magnitude of the problem and of the unique economic dynamics of transboundary used / waste tire issues along the border, i.e. used tires are profitable merchandise. Moreover, legislators need to know their state's regulations regarding the collection and disposal of used / waste tires, including permits, clean up requirements, and any fees associated with this process (and how they are being utilized).

5. Promote the recycling of used / waste tires and expansion of markets for effective end uses that may be beneficial and cost-effective to the general public such as asphalt concrete for roads and highways. Such promotions can be in the form of government-based incentives or credits. Moreover, encourage states and local governments along the border to invest in the development of tire recycling capabilities and technologies, as well as their multiple end uses. Lastly, encourage binational financial institutions such as the NADBank and BECC to approve and provide states and local governments the financial support to establish tire recycling facilities through matching loans and grants as part of their expanded reform mandate.

6. Develop short-term and long-term strategies to address the problems associated with the abandonment and stockpiling of tires along the U.S.- Mexico border region. Such strategies should include bilateral cooperation among the U.S. and Mexico federal and state environmental agencies working on the Border 2012 Environmental Plan, the 10 U.S.-Mexico Border Governors, the North American Development Bank (NADBank), the Border Environment Cooperation Commission (BECC), and federal and state health agencies and organizations, including the U.S.-Mexico Border Health Commission.

Overview of State Legislation

The Border States' Challenge

The BLC has been aware of the challenges facing its member states' legal frameworks on scrap tires. Discussions within the BLC led to the adoption of a set of recommendations in 2003. Specifically, these recommendations encourage member states to "[i]nitiate or assertively promote the development of a harmonized set of management or regulatory frameworks on the quantification, collection, proper hauling, importation/exportation, disposal, and possible end uses of [scrap] tires in all ten [U.S./Mexico] border states." These recommendations emphasize that "[t]he frameworks do not have to be identical in every state, but the systems should be compatible." (see Figure 7 on page 14 for complete text of the 2003 recommendations).

State legislatures in both U.S. and Mexican border states routinely consider legislation on a variety of important environmental issues. Both U.S. and Mexican border states implement legislation and programs within federal systems that distribute responsibility among the various levels of government. The U.S. states have, over the years, assembled an extensive, though varied, legal framework that deals with scrap tires; this legislation is aided by a number of markets, some developed by the legislation itself. Within Mexico's federal system's division of labor with respect to waste management, Mexican states have historically addressed the issue through more general environmental statutes and delegation of authority on municipal solid waste to municipalities (*municipios*).

In general terms, the challenge for the U.S. states lies in developing legislation that solves continuing domestic issues resulting from robust market forces, while at the same time complementing waste tire challenges facing the Mexican states. As key findings in California's Senate Bill 167 (which was signed into law in October 2009) point out, it is often in the U.S. states' direct interest to do so. Specifically, in the Tijuana River Estuary and adjacent areas, scrap tires from Mexico often actually move downstream to the U.S. side of the border during storms. In addition, tire fires, which often occur in border regions, release a number of toxic substances into the air and can negatively affect human health. For the Mexican states, the challenge is in clarifying existing state and municipal roles and creating new and creative legislative solutions to what is a shared responsibility among all levels of government and sectors of society.

We will now turn to a summary of legislation in the U.S./Mexico border states. This analysis draws out the U.S. and Mexican border states' major approaches and emphasizes model legislation to stimulate discussion and initiate action among BLC members. In figures 11 and 12 on pages 20-23, we present two tables which summarize the existing state legislation for the U.S. and Mexican border states, respectively.

U.S. Border State Legislation: Key Elements

U.S. border states' scrap tire legislation varies from state to state in its emphasis. Each state approaches the problem in a unique manner through both specific legislation and agency rules that have developed over decades. For example, California and New Mexico focus on providing market incentives for alternative scrap tire uses. Arizona focuses on resolving its internal scrap tire generation by the use of rubberized-asphalt paving through specifications

Figure 8: Crumb Rubber and Rubberized Asphalt

I. 

II. 

Photos of crumb rubber (I) and Arizona's I-10 freeway II). The right side of the freeway had been recently paved over with crumb rubber asphalt, while the left side was awaiting repaving.

adopted by the Arizona Department of Transportation. Texas uses many of the states' scrap tires to produce tire-derived fuel, primarily for cement plants and paper mills. In the summary below, we articulate key approaches adopted by the U.S. states in their scrap tire management legislation. These key approaches are the following:

1. **Increase recycling and market development.**
2. **Increase revenue.**
3. **Prevent land contamination.**
4. **Create abatement programs or enhance existing programs.**
5. **Enhance enforcement.**

Approach 1. Increase recycling and market development

State programs can be vital to incentivize abatement efforts, particularly in the form of grants or loans to support scrap tire reuse markets. Such programs have multiple benefits, including improved use of resources and better infrastructure. For example, rubberized asphalt pavement, made from recycled scrap tires, has created longer lasting road surfaces, reduced road maintenance, and has proven to be cost-effective.[6] Additionally, tire-derived fuels can provide a fuel alternative for specific end users. U.S. border states have had considerable success with recycling and market development programs by state environmental agency promulgated rule-making.

Markets can be developed by permanently or temporarily mandating a prescribed percentage of goods to be made from reused or recycled scrap tires. More specifically, all four U.S. border states provide market incentives for scrap tire reuse industries. California and New Mexico provide 5% purchase price preferences for state purchased products containing recycled content made with tire-derived materials. Additionally, Arizona, California, and New Mexico provide subsidies, grants, and/or loans derived from each state's created scrap tire fee account. Texas has established one market incentive through a state statute providing a preference towards rubberized asphalt paving made from scrap tire material.[7] Some U.S. federal research funds are also available for new scrap tire management or recycling businesses. We provide a description of Arizona's successful experience with asphalt-rubber in paving projects on the next page (see Figure 8, above and Figure 9 on page 17).

The U.S. federal legislation known as the Intermodal Surface Transportation Efficiency Act of 1991 mandated the use of rubber-asphalt in a prescribed percentage of federally funded highways. The Act is no longer in force; however, during the five years in which it was in force it created a market demand for scrap tires. A number of companies began manufacturing the product and many states continue recycling scrap tires for rubber-asphalt.

Approach 2. Increase revenue.

State-mandated tire management and recycling fees have proven viable for establishing scrap tire management funds. These funds can be used to abate noncompliant scrap tire piles and increase recycling and market incentives. Fees can be collected in a variety ways and overseen by an independent board. For example, New Mexico collects tire fees with state vehicle tag fees.[8] Alternatively, Arizona and California have retail tire dealers collect nominal fees from consumers for each used tire they replace.[9]

For example, Arizona tire retailers "collect a fee of two per cent of the purchase price for each tire sold

Figure 9: An Overview of Arizona's Use of Asphalt-Rubber

Asphalt-Rubber (A-R) is a mixture of approximately 20% percent ground tire rubber and 80% paving-grade asphalt. A-R, made from recycled tires, is the largest single market for ground rubber in the United States, consuming an estimated 220 million pounds annually (the equivalent of approximately 12 million tires). In addition to significantly reducing the number of waste tires, Arizona's experience with the material has positive results. In particular, studies by the Arizona Department of Transportation (ADOT) demonstrate that A-R produces longer-lasting road surfaces, lowers road noise, reduces road maintenance, creates shorter braking distances, and is significantly cost effective over the long-term.

ADOT has used over fourteen million scrap tires on paved A-R roadways. Currently, three-fourths of Arizona's five million annually produced scrap tires are recycled in A-R pavement construction. The process consists of grinding waste tires to create crumb rubber particles which are then mixed and heated with paving-grade asphalt. In Arizona, the number of A-R projects increased from one in 1988 to fifty-four in 2000. Many states, including California, New Mexico, Florida, South Carolina, Texas, New York, and Nebraska, are replicating Arizona's successful use of asphalt-rubber (A-R).

Cost Effectiveness

Although the initial cost of A-R per ton is greater than the initial cost of cement asphalt material per ton, the cost of A-R material tends to decline as the market for this material grows and competition rises. Moreover, earlier patents of the material have been exhausted and the material is now part of the public domain, further reducing its cost.

Costs of roadway projects are reduced with the use of A-R material because less of the material is required to produce the same results as typical asphalt. Furthermore, roadways composed of A-R last longer, reducing road maintenance costs. For example, on the Arizona highway I-19 pavement rehabilitation project in 1989, only one inch of A-R was placed on the roadway surface at a cost of $2.45 per square yard. Typical asphalt for the same project would have cost $5.00 dollars per square yard. The results of this repair project using A-R continued to "provide a smooth riding, virtually crack free, good skid resistant, quiet and virtually maintenance free surface for ten years," according to ADOT.

Individual users who drive on A-R road ways can have substantially reduced vehicle operating costs. Studies have found that fuel costs when driving on typical asphalt pavements are approximately 4.5% higher in comparison to driving on smoother A-R pavements, under identical conditions (i.e. same vehicle geometry, air temperature, and wind speed). Additionally, rougher pavement increases the frequency of failures in vehicle components, leading to higher costs in vehicle repair and maintenance.

Improved Roadways

For over 30 years, ADOT has routinely monitored A-R road performance. The agency's findings reveal a general trend of reduced cracking, improved rutting performance, smoother rideability, reduced traffic noise (by as much as 85%), reduced maintenance cost, and elevated skid resistance. Additionally, A-R roads demonstrate long-lasting deep color contrast of road striping and marking.

A Sustainable Way to Deal with Scrap Tires

Each year more than a quarter billion scrap tires are disposed of in the U.S.; most frequently end up in hazardous scrap tire piles. Mass scrap tire piles pose substantial health and safety problems including tire fire, pollution, vector, and disease threats.

Finding markets for reusing scrap tires is a key factor in eliminating waste tire disposal. The largest user of crumb rubber is the A-R industry. Scrap tire piles have been significantly reduced in the state of Arizona due to A-R projects. The over fourteen million scrap tires that have been used in Arizona A-R projects might have otherwise ended up as dumped scrap tires.

Asphalt-Rubber has proven to be an exceptional material, particularly for the southwest environment. Utilizing A-R can provide a durable driving surface while creating a sustainable scrap tire solution.

The Arizona Department of Transportation and the Arizona Department of Environmental Quality contributed to this overview.

Figure 10: Some Additional Tire Reuse Markets

1. **Tire-derived fuel**
2. **Highway sound barriers**
3. **Athletic and recreational applications**
4. **Railroad ties**

Animal mats

*Sources: EPA Border 2012 website; "*Scrap Tire Markets in the United States," Rubber Manufacturers Association, 2009.

but not more than two dollars for each tire sold."[10] California tire retailers collect a standard fee of $1.75 per tire.[11] California retail tire dealers are also reimbursed 1.5% of the fees "for any costs associated with the collection of the fee."[12] New Mexico collects an additional $1.50 tire fee with all passenger vehicle tag fees.[13] Texas is the only U.S. border state that does not charge a tire fee.

Approach 3. Enhance enforcement.
A percentage of tire fees can be used to fund enforcement efforts. State law enforcement can deter illegal dumping and stockpiling through civil or criminal penalties. Civil penalties also create a source of funds for the state's scrap tire management fund.

All the U.S. border states can revoke permits and registrations from non-compliant scrap tire users and sites. California legislation stands out for its significant penalties for failing to comply with waste tire site registration. Anyone "who accepts waste tires at a major waste tire facility that has not been issued a permit or an authorization to operate from the board, or who knowingly directs, transports, or abandons waste tires to or at a major waste tire facility that has not been issued a permit or an authorization to operate . . . shall be punished by a fine of not less than one thousand dollars ($1,000) or more than ten thousand dollars ($10,000) for each day of violation, by imprisonment in the county jail for not more than one year, or by both that fine and imprisonment."[14]

Approach 4. Prevent land contamination.
Border states can help reduce the need for scrap tire abatement by prohibiting scrap tires from landfills. Prohibiting the dumping of scrap tires also incentivizes users to be more cautious and creative with their scrap tire end-uses.
All four states mandate how scrap tires must be disposed of and work to limit the amount of scrap tires that can accumulate in a given site. Arizona and California prohibit whole tires from being placed in landfills, without exceptions.[15] New Mexico and Texas allow whole tires to go to permitted landfills. None of the U.S. border states prohibit shredded tires from landfills.[16] All four states allow tire monofills, which under Texas law is defined as "a below-ground depository, landfill or landfill trench consisting of greater than 50% by volume of tires or tire pieces."[17] Tire monofills must follow strict guidelines to be registered in the state in which they reside.

All four states have registration requirements aimed at preventing land contamination. All the states have a manifest system which apply to all persons that generate, transport, or receive scrap tires. Manifest systems work to track all scrap tires. All the states also have registration and permit requirements for collecting, transporting, storing, and/or disposing scrap tires. Some of the requirements, however, are waived under certain circumstances and these exceptions vary among the states.

New Mexico prohibits storing "more than one hundred scrap tires anywhere in [the] state, unless the person has a valid permit or registration."[18]

In California "[w]aste tires may not be landfilled in a solid waste disposal facility . . . unless they are permanently reduced in volume prior to disposal."[19] Texas prohibits used tires from being "stored, deposited, or disposed of in a manner that may cause the pollution of the surrounding land, the contamination of groundwater or surface water, or the breeding of insects or rodents."[20] Texas also does not allow anyone to "store more than 500 used or scrap tires or dispose of any quantity of used or scrap tires unless the tires are shredded, split, or quartered."[21] Arizona prohibits "[t]he disposal of waste tires in landfills and the incineration of those tires" unless the tire disposal is for: retreading, recapping, constructing collision barriers, controlling soil erosion or flood control, shredding for use as waste tire daily cover at a solid waste landfill, grinding for use in asphalt or

other products, sludge composting, using as playground equipment, incinerating or using as a fuel or pyrolysis, or hauling to out-of-state collection or processing sites.[22]

Approach 5. Create abatement programs or enhance existing programs.
Legislation can also seek abatement of waste tire piles, first through voluntary efforts, where feasible, and second by direct action where voluntary efforts are not feasible.

California has an active, ongoing scrap tire abatement program. The California Integrated Waste Management Board "may expend available moneys to perform any cleanup, abatement, or remedial work required . . . which in its judgment is required by the magnitude of endeavor or the need for prompt action to prevent substantial pollution, nuisance, or injury to the public health or safety."[23] "If the owner of property upon which waste tires are unlawfully stored, stockpiled, or accumulated refuses to allow the board or its contractors access to enter onto the property and perform all necessary cleanup, abatement, or remedial work . . . the board or its contractors shall be permitted reasonable access to the property to perform that activity."[24]

Arizona and New Mexico currently use funds generated through tire fees for clean-up efforts. Arizona requires "each county [to] establish a waste tire program . . . [which] may include contracts with private enterprise . . . [to] [r]emove . . . waste tires from the county."[25] New Mexico's tire grant program funds abatement projects.

Texas does not have a scrap tire fund account but is required to abate at-risk scrap tire piles, and hold the person responsible to pay for the abatement costs. In Texas if "there exists a release or threat of release of a hazardous substance at a scrap tire site and immediate action is appropriate to protect human health and the environment, the commission may, with money available from money appropriated to the commission, undertake immediate remedial or removal action at the scrap tire site to achieve the necessary protection."[26] Texas may bring an action against the person responsible to recover "the commission's reasonable expenses."[27]

Key Proposed and Recently Enacted Legislation
One recently enacted and one recently proposed law are listed on pages 24-25 for purposes of discussion for the BLC members as examples of a broad legislative approach and a more focused approach. These include:

- California Senate Bill 167, introduced by Sen. Denise Moreno Ducheny, requires the 5-year plan for waste tire programs, to specifically address the border region with education, research, infrastructure, mitigation, cleanup, prevention, enforcement, market developments for recycling projects, and funding scrap tire management projects in Mexico (see Figure 13).
- Texas Senate Bill 617, introduced by Sen. Eliot Shapleigh, would have rendered tires not meeting inspection criteria unusable (passed by the Texas Senate; did not pass the Texas House; see Figure 14).
- Arizona House Bill 2290, introduced by Rep. Russell Jones, would allow scrap tires to be used as fill material in abandoned mines (reintroduced in January 2010).

Mexico

Overview

Mexican states have also implemented their own scrap tire abatement programs and have taken part in binational programs (most notably Border 2012) to address the scrap tire issue, as indicated above in Figure 3. The scrap tire problem, however, is much more severe in Mexico. Despite ten successful cleanup programs, the border states in particular face the continuing presence of dangerous tire piles, significant ongoing domestic scrap tire generation as well as steady southbound flows of used tires from the U.S. Tire piles in the border states can be quite large, including one in Ciudad Juarez with 4.5 million tires. In addition, the short term of legislators, mayors, and city councilmen (3 years) presents a challenge for tire program implementation. The broader challenge for Mexican border state legislators is in clarifying existing state and municipal roles and definitions on the issue, and in creating new and creative legislative solutions to scrap tires.

General Considerations on the Regulatory Framework
While the focus of this report is on state legislation, it is fundamental to consider the federal framework

Figure 11: Key Aspects of U.S. Border States Scrap Tire Legislation

State	Tire Fee	Tire Fee Management	Manifest Required?	Collection/ Transport. Reg. Or Permit Required?
Arizona	Yes, 2% of cost or no more than $2 per tire (§ 44-1302)	Tire dealer collects. Fees go to the Dept. of Revenue account for deposit in the Waste Tire Fund. (§ 44-1302)	Yes, required for disposal (§ 44-1302 & § 44-1306)	Yes, for collection but not for transport (§ 44-1303, 44-1304)
California	Yes, $1.75 per tire (§ 42885)	Tire dealer collects until January 1, 2015," goes to Cal. Tire Recycling Fee Management Fund. CIWMB administers the fund. (§ 42885)	Yes (§ 42961.5)	Yes, for registration (§ 42951, but exceptions under § 42954)
New Mexico	Yes, $1.50 per vehicle registration tag (§ 66-6-2)	State collects by each division (§ 66-6-2). The fund alliance creates a recycling plan and updates the plan every three years to measure progress and modify strategies (§ 74-13-7). For the Recycling and Illegal Dumping Fund, only 2/3 of $.50 actually goes to the fund. Fees & penalties collected pursuant to the Act are also deposited into the fund. (§ 74-13-19)	Yes (§ 74-13-9)	Yes, (§ 74-13-4(B))
Texas	No, but, fees are collected in other ways, including by the amount of solid waste deposited from solid waste transporters per their registration. Fees are not collected on scrap tires that are deposited in a designated area for recycling uses. (§ 361.013-4)	TX Commission on Environmental Quality collects fees for two funds. Solid Waste Superfund: fees collected from solid waste disposed in state funds cleanup of unauthorized tire dumps. Waste tire recycling account: funded by solid waste transporters registration fees. (§ 361.013-4)	Yes (§ 361.112(g))	Yes, but for collection, a permit is not required if scrap tires designated for recycling are in "a designated recycling collection area at a landfill permitted by the commission" and except for generators transporting tires between businesses (30 TAC § 328.56, 328.57, 361.112(f))

Storage/ Disposal Reg. Or Permit Required?	Landfill Prohibition	Programs for Scrap Tire Abatement	Subsidies/Grants/Loans and/or Market Incentives?	Markets established?
Yes, register with ADEQ, which prohibits certain methods of storing (§ 44-1303, 44-1304.01)	Whole tires banned, but cut/shredded tires allowed for use as waste tire daily cover at a permitted landfill (§ 44-1304) Monofills allowed (§ 44-1304)	No, but tire fees available for tire site clean-up (§ 44-1305)	The waste tire fund provides funds to counties for use in contracting with private enterprises for waste tire processing and/or collection facilities.	A crumb rubber facility has been in operation to process 3.5 million scrap tires annually for use in rubberized asphalt (90%), rubber hose, and other products (10%). A cement kiln has an air quality permit to burn waste tires.
Yes, permit needed if more than 500 tires on location (§42820 - 42834)	Whole tires banned, but cut/shredded tires allowed (§ 17355) Monofills allowed, but tires are to be reduced in size (§ 17346.2-3)	Yes (§ 42845-6)	Yes, Tire Recycling, Cleanup, Research, and Enforcement Grants encourage activities that promote reducing discarded scrap tires. There is a 5% purchase price preference for state purchased products made with tire-derived materials. Also, the use of tire treads on state vehicles is required.	Markets for tire baling, crumb rubber, shredded tires (for civil engineering & tire-derived fuel), for stamped products, for whole tires (particularly for cement kilns).
Yes, permit needed if more than 100 tires in use (§ 74-13-4(D))	Whole tires permitted, but only to permitted landfills (NM ST § 74-13) Monofills allowed (20.9.4.13 NMAC - Rp, 20 NMAC 9.1.III.306)	Yes, funding available through grants for abatement projects	Yes, the budgeted grant money is allocated to tire abatement & recycling programs (using a reimbursement system). A 5% price preference is provided for products containing recycled content procured by State agencies. (§ 74-13-17)	Markets encourage baling and storing scrap tires for potential civil engineering uses.
Yes, must register w/ TCEQ if more than 500 tires on location (§ 361.112)	Cut/shredded tires allowed, and any permitted landfill may store or process whole tires or tire pieces. Or if exception warranted (§ 361.112(f)) (some exempt: 30 TX ADC § 328.54) Monofills allowed with prior permit approval (30 TAC § 328.65)	Yes, if tires are posing a risk, the state will abate and the person responsible will pay, but no fees collected to go towards abatement. If the TNRCC has funds remaining, they will be used for pile clean up (§ 361.1125)	No, but there is a preference for rubberized asphalt paving made from scrap tires. (§ 223.047)	Most tires used for tire-derived fuel (specifically in cement kilns). Markets also for land reclamation, crumb rubber, civil engineering, stamped products.

Figure 12: Key Aspects of Mexican Border States Scrap Tire Legislation

State	Tire Fee?	Fee management	Manifest required?	Collection/ Transportation. Registration or permit required?
Baja California	Municipal authorities establish the system for rates and collection. (Art. 6, Fracc. III)	Municipal authorities organize and implement strategies to obtain payment for collection, transportation, treatment, final disposal of municipal solid waste. The Secretariat of Planning & Finances also participates in the administration. (Art. 6, Fracc. IV)	Yes. The Secretariat of Planning & Finances requires the manifest for the integrated management of waste requiring special handling. (Art. 5, Fracc. VII)	Yes. It is the responsibility of the Executive of the Secretariat to propose the establishment for integrated disposal of special management waste, based on Official Mexican Policies (NOMs). (Art. 5, Fracc. VII)
Sonora	The law does not describe specifically the relationship between the method of charging according to types of tire, but addresses regulations on the prevention and control of the integral management of municipal solid waste. (Art. 8, Fracc. IV)	The Municipal Treasury is responsible for managing the service fee. The cities provide the comprehensive municipal solid waste services and special waste handling upon request. (Art. 145, Fracc. VII)	Yes, by the state environmental agency. (Art. 144)	Yes. It is the responsibility of the state government to regulate the integral management of special management waste. (Art. 144, Fracc. II)
Chihuahua	Municipal governments charge for the payment of services relating to the integrated management of solid waste. (Art. 9. Fracc. XXIII, Inciso J)	The municipal government administers the charges. (Art. 9. Fracc. XXIII, Inciso J)	Yes. Tire dealers are one group that require manifests. The municipal governments give authorizations and concessions for services. (Art. 9. Fracc. XXIII, Inciso E)	Yes. It is the executive branch's responsibility by means of the Secretariat to authorize the integral management of waste. Also the municipal government oversees authorizations and concessions. (Art. 8, Fracc. XIV, Art. 9. Fracc. XXIII)
Coahuila	Municipal governments handle the charges. (LEEPA, Art. 145)	The municipal governments are responsible for administering the charges. (Art. 8, Fracc. XIII)	Yes. It is the state environmental agency's responsibility to authorize the integral managementt of special management waste. (Art. 6, Fracc. V)	Yes. It is the state environmental agency's responsibility to authorize the integral management of special management waste. (Art. 6, Fracc. V)
Nuevo Leon	Yes. Municipal governments handle the charges. (Art. 9, Fracc. VI)	Municipal governments oversee the administration of the charges. (Art. 9, Fracc. VI)	Yes. The Agency for the Protection of the Environment and Natural Resources shall give the authorization for services relating to the integral management of special management waste. (Art. 177, Fracc. I)	Yes. The Agency for the Protection of the Environment and Natural Resources regulates the waste collection, transport, storage, management and treatment of waste. (Art. 8. Fracc. V, Art. 172, Art. 172-Bis y Art. 177, Fracc. VII)
Tamaulipas	Yes. Municipal governments handle the charges. (Art 121, Fracc. II)	The Municipality, through the state congress oversees the administration of the rates. (Art. 120, Fracc. XIII y XIX)	Yes. The Executive branch, through the Environment Agency, grants, denys, suspends, extends or revokes licenses for the integrated management of waste, in coordination with the municipalities where they have jurisdiction to do so. (Art. 120, Fracc. XIII y XIX)	Yes. Art. 120, Fracc. XIII y XIX.

Storage/ Disposal. Registration or Permit Required?	Landfill Prohibition?	Programs for Scrap Tire Abatement?	Subsidies/ Grants/ Loans and Market Incentives	Markets established?
Yes. It is the responsibility of the Executive through the Secretariat to create or authorize the operation centers for the transfer and recycling of waste tires. (Art. 5, Fracc. XII)	Yes. Deposit of municipal solid waste or special waste handling in unauthorized or approved places by the competent authorities is prohibited. (Art. 15, Fracc. I)	Yes. It is the obligation of all municipal solid waste handlers or generators to participate in programs to reduce and avoid generating solid waste. The largest generators of special waste management are required to manage the collection, storage, pickup, transportation, recycling, treatment or final disposal of their waste and cover all costs. (Art. 9. Fracc. XXIII, Inciso B, Art. 12, Fracc. V)	No. The state environmental agency proposes, designs and promotes the establishment and application of economic, financial and fiscal and market instruments to prevent or reduce the effects of scrap tires. (Art. 120, Fracc. X)	No. There is no mention in the law that refers to the establishment of markets for scrap tire reuse.
Yes. It is the responsibility of the state to regulate the integral management of special management waste. (Art 144, Fracc. II)	The law does not specify if it is illegal to dispose of whole tires in landfills, and only references the general disposal management jurisdictions applicable to the prevention and control of the integrated muncipal waste management. (Art. 8, Fracc. IV)	Yes. It's the state government's responsibility to promote municipal programs for the prevention and integral management of waste. (Art. 144, Fracc. VI)	Yes. International, federal, state and municipal government resources exist. It is the state government's responsibility to design and promote application of economic, fiscal, financial and market-based instruments that aid in the prevention of the waste generation. (Art 144. Fracc. XIII)	No. By law you can apply or introduce market-based instruments for managing the generation of tires, but no current practice exists. (Art 144. Fracc. XIII)
Yes. It is the responsibility of the Executive through the Secretariat to regulate the integral management of waste. Also, it is the responsibility of the municipal governments to award authorizations and concessions. (Art. 8, Fracc. XIV y Art. 9. Fracc. XXIII)	Yes. It is the municipal government's responsibility prevent whole tires from being disposed of in landfills according to the regulations and other legal and administrative mechanisms. (Art. 9. Fracc. XXIII, Inciso B)	Yes. At the municipal level through programs and events planned at the neighborhood level. (Art. 9. Fracc. XXIII, Inciso C).	No. It is the executive branch's responsibility to design and promote the implementation of economic, fiscal, financial and market-based instruments for the treatment of scrap tires. (Art. 8. Fracc. XXVI)	No, it is the state's responsibility to promote the participation of the private and social sectors in the management of the annual generation of scrap tires, through the creation of formal markets. (Art. 8. Fracc. XXII)
Yes. The state government authorizes the collection, storage and final disposal of waste. (Art. 6, Fracc. V,)	Yes. It is the responsibility of the municipal governments to prevent whole tires from being disposed of in landfills. (LEEPA, Art. 145).	Yes. Campaigns are carried out at the municipal level. (Art. 8, Fracc. XIII.)	No. It is the executive branch's responsibility to design and promote the implementation of economic, fiscal, financial and market-based instruments for the treatment of scrap tires. (Art. 22)	No. There are provisions in the law that enable the creation of market incentives to manage discarded solid waste, but no concrete practice exists. (Art. 19)
Yes. The state environmental agency regulates the systems for collection, transport, storage, management, treatment and final waste disposal. (Art. 8. Fracc. V, Art. 172, Art. 172-Bis y Art. 177, Fracc.VII)	Yes. New or previously used tires should be confined in authorized sites. (Art.181-Bis)	Yes. At the municipal level. (Art. 172 y Art. 172-Bis).	No. This is not covered in the law.	No. It is the executive branch's responsibility to convene the private and social sectors in order to to realize actions in the corresponding areas. (Art. 7, Fracc. VIII)
Yes. Art. 120, Fracc. XIII y XIX.	Yes. Scrap tires are to be deposited in sites established for their final disposal, although their whole or partial reuse is encouraged. Disposal of scrap tires in empty lots, public thoroughfares, or in sites not authorized by the Environmental Agency is prohibited. (Art. 136, Inciso 3)	No.	No. It is the executive branch's responsibility to design and promote the implementation of economic, fiscal, financial and market-based instruments for the treatment of scrap tires. (Art. 120, Fracc. X)	No.

Figure 13: Excerpt of California Senate Bill 167 by Senator Denise Moreno Ducheny

FILED WITH SECRETARY OF STATE OCTOBER 11, 2009
APPROVED BY GOVERNOR OCTOBER 11, 2009
PASSED THE SENATE MAY 14, 2009
PASSED THE ASSEMBLY SEPTEMBER 9, 2009
AMENDED IN SENATE APRIL 22, 2009

INTRODUCED BY Senator Ducheny
FEBRUARY 14, 2009

An act to amend Sections 42885.5 and 42889 of the Public Resources Code, relating to solid waste.

SB 167, Ducheny. Solid waste: waste tires.

The California Tire Recycling Act imposes a California tire fee on a new tire purchased in the state. The revenue generated from the fee is used, upon appropriation by the Legislature, for the purposes of programs related to waste tires. The act requires the California Integrated Waste Management Board to adopt a 5-year plan, which is to be updated biennially, to establish goals and priorities for waste tire programs that include, among other things, specified border region activities, conducted in coordination with the California Environmental Protection Agency, related to waste tires in the California-Mexico border region.

This bill would, additionally, require the 5-year plan to include, as a border activity, the development of projects in Mexico in the California-Mexico border region, including education, infrastructure, mitigation, cleanup, prevention, reuse, and recycling projects, that address the movement of used tires from California to Mexico that are eventually disposed of in California.

The bill would authorize the board, upon appropriation by the Legislature, to use the revenues generated from the California tire fee to fund border activities.

and how authority on the issue is distributed among the three levels of government in Mexico. Federal law prohibits the importation of scrap tires into Mexico, though the states of Baja California and Chihuahua are given an annual import quota of 1,000,000 used tires (defined as tires with more than 15/32" tread). In general, the Federal Government handles hazardous waste, the states handle special management waste, and municipalities are charged with handling municipal solid waste. Specifically at issue in Mexico is the legal classification of scrap tires as either municipal solid waste (which, as the name suggests, would fall under the municipalities' jurisdiction) or special management waste (which would be the state government's responsibility). According to Dr. Ganster, the General Law for the Prevention and Management of Wastes (LGPGIR) originally published in 2003 is unclear on classifying waste tires as special management waste or municipal solid waste, though a clause designating 10 tons and above of municipal solid waste would be classified as a special management waste. Waste tires are essentially a shared responsibility between state governments and municipal governments. Indeed, the principal of shared responsibility as developed in the 2003 LGPGIR is innovative in its insistence on a sharing of costs for waste management among all producers. The law also gives state legislatures the responsibility to enact their own "local integrated waste management and prevention laws and regulations and creating the institutional framework necessary for their enforcement."[25]

State Laws

Most state-level statutes in Mexico's border states address general pollution matters and leave the specific issue of scrap tire management for individual municipalities to address as a solid municipal waste issue. There are few practical legal instruments available to state governments to deal with scrap tires. One reason for this tradition of delegation is that for many years municipalities in Mexico were mandated by the federal constitution to provide basic cleaning services and handle municipal solid waste. While collecting and controlling the use of fees related to scrap tires is important for municipalities, overly local attention to the scrap tire issue can fragment attention to the problem; inhibit broader, state-level control and enforcement; and reduce public awareness of even basic information about the problem and regulations addressing it.

The Mexican border states are now in the process of putting together these laws and regulations and creating these frameworks (see table 2 on pages 22-23). As mentioned above, state laws and regulations which regulate all matters relating to waste are derived from the federal General Law for Prevention and Integrated Waste Management. While there is work to do on the state laws, currently all border states have the foundation for the comprehensive management of used tires. One of the main areas of coincidence of the states' legislation is that they require shared responsibility between the state government, departments, environmental agencies or commissions, decentralized governmental or quasi-governmental organizations, municipalities, and the private sector; the latter two being more focused on integrated waste management. In addition, the academic and social sectors participate mainly by providing technical input, and through public participation in designing plans and programs.

The legal frameworks of the six border states are general guides which cover the topic of waste. However, many of these statutes, with respect to the topic of waste, would be helped by more explicit reference to issues that are not covered. One mechanism at the disposal of the state legislatures is the issuance of regulations. As examples we have the Regulations for the Prevention, Management and Integrated Waste Management in the state of Sonora and the Regulation of the Environmental Law for Nuevo León. Another mechanism is the establishment of committees or agencies responsible for dealing with such matters as the Commission on Ecology and Sustainable Development of the state of Sonora. Perhaps one of the most specific examples of an agency that was formed to focus specifically on the problem of waste is the decentralized Comprehensive System for Ecological Waste Management and Processing in Nuevo León.

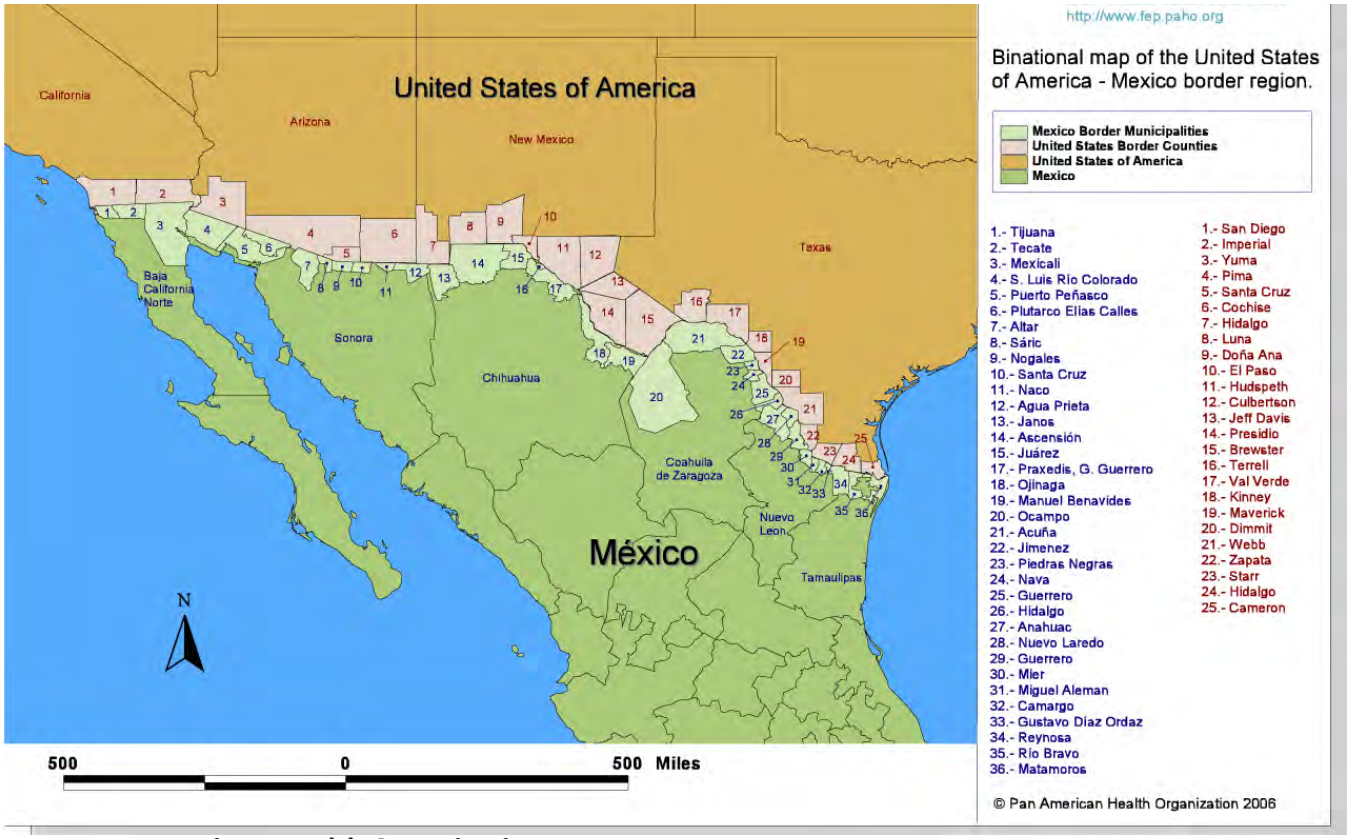
With respect to laws and regulations in this area, it is necessary to amend, supplement and update them to effectively and efficiently fulfill their role as the state legal foundation by which the efforts in this area of the municipalities are governed. In this regard, state laws give certain powers to municipalities to take charge of integrated management of scrap tires in coordination with the state and the entities that are specified in the law.

Figure 14: Text of Texas Senate Bill No. 617 Introduced by Senator Elliot Shapleigh. Bill was passed by Texas Senate but voted down by the Texas House.

By: Shapleigh S.B. No. 617
A BILL TO BE ENTITLED
AN ACT
relating to requiring a retail seller of motor vehicle tires to render certain tires unusable; providing a civil penalty.
BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:
SECTION 1. Subtitle C, Title 5, Business & Commerce Code, as effective April 1, 2009, is amended by adding Chapter 108 to read as follows:
CHAPTER 108. REQUIREMENTS FOR RETAIL SELLERS OF MOTOR VEHICLE TIRES

Sec. 108.001. RENDERING CERTAIN MOTOR VEHICLE TIRES UNUSABLE. (a) A business that sells new or used tires at retail for use on a motor vehicle shall render a tire held as inventory or purchased or received in exchange from a customer unusable if the tire does not meet the inspection criteria adopted by rule of the Department of Public Safety under Section 548.002, Transportation Code.
(b) A business shall render a tire unusable for purposes of Subsection (a) by:
(1) puncturing a hole two inches across from the surface through the entire body of the tire so that the tire cannot be temporarily repaired by the use of blowout patches or boots; or (2) taking any other action necessary to prevent the tire from being used on a motor vehicle.
Sec. 108.002. RULEMAKING AUTHORITY. The Department of Public Safety may adopt rules to implement this chapter.
Sec.A108.003.AA CIVIL PENALTY. (a) A business that violates this chapter is liable to the state for a civil penalty in an amount not to exceed $500 for each violation.
(b)AA The attorney general or the appropriate district or county attorney may bring an action under this chapter in the name of the state in a district court in:
(1)AATravis County; or
(2)AAthe county in which the violation occurs.
SECTIONA2.AA This Act takes effect September 1, 2009.

Figure 15: Map of U.S.-Mexico Border Counties and *Municipios*



Source: Pan American Health Organization

Recent Legislation

Tamaulipas' recent amendment to its sustainable development code (Legislative Decree No. LX-675) gives it what is perhaps the most advanced legislation on scrap tires in the Mexican border region (see Figure 16). The article addresses the need for market development and mandates the environmental agency to create a market via programs that give value to tires. It does not specify which incentives should be mandated. The articles also give Tamaulipas' environmental agency authority to enact programs and also states that, "[t]he shared responsibility of the aforementioned waste shall be defined by the mechanisms and instruments established by the Environmental Agency." And finally, the law mandates the state environmental agency to coordinate with the *municipios*, private industry, and the public.

A recent law passed by the Baja California state legislature (the Law for the Prevention and Integral Management of Waste of Baja California, LPGIRBC) "implicitly categorizes waste tires as special management waste." Ganster notes that the law establishes the primacy of outdated municipal regulations until state and municipal authorities establish new laws.

Again, it is important to note that we are not arguing that Mexican states do not conceive of and implement various kinds of scrap tire abatement programs (which are often driven and implemented by the individual municipios and funded by and/or done in concert with Border 2012 programs). The point is that the Mexican state statutes are general and need to be clarified to enhance their overall impact and effectiveness. It is important to note and as experts have indicated, reform at the state level in Mexico in this area may also touch state tax law, laws dealing with public works, state laws governing *municipios*, among others.

Some Options

In general terms, the state legal framework is derived from the General Law on the Prevention and Integrated Waste Management. As there are points of overlap in their content, it would be highly desirable to homogenize the border states' current laws and regulations so that all border municipalities could work from a common framework and take advantage of greater coordination and mutual support.

In addition, one aspect that is not clearly defined by the laws is how scrap tires are classified; many of the laws in their current form require an extremely close reading to interpret and implement the law. It is recommended to clearly classify scrap tires and other types of waste that are handled by states and municipalities.

To monitor compliance on laws and regulations on scrap tire management, it may be advisable to create an independent and permanent committee or board for monitoring compliance within each state. The committee would consist of representatives from academia, the private sector, government, society in general, and more specifically members of the government agencies that focus on integrated waste management.

Figure 16: February 2009 Amendments to the Sustainable Development Code of the State of Tamaulipas

The following six paragraphs were added to Article 136 of the Sustainable Development Code of the State of Tamaulipas by Decree LX-675 on February 25, 2009.

ARTICLE 136

XIII. Municipal solid waste produced by large generators;

XIV: Tires that are in disuse, that are scrap tires or whose useful life has ended;

XV. All other [tires] generated in productive processes that do not have characteristics that would make them considered hazardous or municipal solid waste.
...

3. Scrap tires are to be deposited in sites established for their final deposition, encouraging their whole or partial use, being prohibited their deposition in empty lots, public thoroughfares or in sites not authorized by the Environmental Agency.

4. The Environmental Agency, in coordination with the Department of Economic Development and Employment, will take actions to stimulate markets for scrap tires, creating market-based programs that permit individuals or firms involved in commerce or consumption in the State to receive the benefits of the market.

5. Individuals and firms that are related to the productive end of the tire industry such as producers, importers, exporters, distributors and consumers should participate in the programs established by the Environmental Agency for special management waste requiring special handling such as in integral management programs.

The shared responsibility for the aforementioned waste shall be defined by the mechanisms and instruments established by the Environmental Agency.

6. The Environmental Agency will create, in coordination with the municipal governmental and the participation of the private sector and the public, the generation of infrastructure that is adequate for the gathering, confinement, management and final disposition of waste tires.

Conclusions and Recommendations

Conclusion

While the federal governments take the lead on a large number of key binational issues, regional organizations such as the BLC and others implement specific, local and customized solutions to a number of challenges that the two nations face. Local and regional solutions to local problems can be particularly robust and long-lasting.

This report--conducted under contract with the BLC as a way of assessing where the organization's member states are on the scrap tire issue and as a mechanism to think about next actions--has demonstrated the resources available to the BLC on the issue and has shown the unique developments within U.S. and Mexican states and legislative approaches to the issue. While challenges remain, there is a large amount of willingness in federal and state agencies as well as regional organizations to move forward on the issue, which bodes particularly well for the BLC.

For the BLC, there is a considerable amount of "low-hanging fruit" in terms of key partnerships that can help develop consensus for actions by the BLC's members as well as other members of the states' legislatures. In addition, while there is a fairly well-developed legal framework for dealing with scrap tires in the U.S. as well as the foundations for a robust legal framework in Mexico, there is a need for:
a) expanded cooperation between the different organizations working on the issue,
b) the need for new, creative and collaborative approaches by municipalities, state legislators and federal agencies in Mexico, and
c) the need for even greater consideration on the part of U.S. legislators on creative ways to curb the numerous methods of southbound flows of scrap tires to Mexico. There are a number of approaches, from the general to the more specific, that the BLC can take toward achieving these general objectives.

Recommendations for the BLC Membership, Management and Staff

Process-oriented Recommendations

1. Create a permanent legislative review committee to discuss legislative developments, with specific emphasis on the BLC's interaction with Border 2012, EPA, SEMARNAT, Border Governors Conference, local entities and the private sector on the scrap tire issue.

2. Maintain permanent BLC membership *on* and participation *with* the Border 2012 Tire Initiative Workgroup.

3. Continue to coordinate on a regular basis with the Border Governors Conference Environmental Work Table on developments in the 10 state legislatures on issues dealing with waste tires.

4. Set up regular consultations with legislators and environmental agency directors and key staff.

5. Develop partnerships with border universities to create residential or non-resident visiting fellowships for outgoing legislators to study scrap tire management legislation and global market and technological developments in this area.

6. Conduct regular visits with key committees of Mexican state legislatures to discuss the scrap tire issue and possible legislative approaches.

Recommendations on Best Legislative Practices

7. Partner with key groups to post "best legislative practices" in both English and Spanish on scrap tire management legislation on the Council of State Governments website. CSG's Suggested State Legislation site (http://www.csg.org/programs/ssl/default.aspx) serves as a model for the U.S.-Mexico border states to share experiences and provide mutually beneficial feedback. The criteria for consideration includes issue timeliness; national or regional significance; innovative nature of the legislative approach; and level of complexity of the legislation.

These best practices fall into the major U.S. and Mexican legislative approaches mentioned above, including:

- Increase recycling and market development.
- Increase revenue.
- Prevent land contamination.
- Create abatement programs or enhance existing programs.
- Enhance enforcement.
- Create new approaches toward achieving shared responsibility among the different levels of government in Mexico.

8. Focus the work of the BLC in key areas in scrap tire legislation

As we have mentioned above, several border state legislatures have recently considered and/or passed legislation on waste tires. It is advisable for state legislators and their staffs to consult the full range of legislation that has been passed and proposed on the issue in order to build an effective legislative solution that is customized to local economic and social realities. It is hoped that the binder of appendices to this report will serve as a resource to the legislatures as they work on this issue. Having said that, we believe that the components that stand out as *most* important for legislatures to consider are the following:

U.S. border states

A. Direct state environmental agencies to allocate resources toward border-related scrap tire projects in a number of key areas, specifically directing funding toward projects in Mexico when warranted and to the benefit of the U.S. state.
B. Require tire sellers to render waste tires unusable and therefore not marketable in Mexico.

Mexico border states

A. Clarify the classification of scrap tires as special management waste and work with municipalities to update regulations on local integrated waste management program implementation.
B. Legislate the special handling and final deposition of waste tires in suitable sites.
C. Legislate locally customized approaches to stimulate the development of markets for waste tire recycling and reuse.

Notes

1. Ganster, *The Flow of Used and Waste Tires in the California/Mexico Border Region,* Report for the California Integrated Waste Management Board, (August 2009).
2. "Background on U.S.-Mexico Border Scrap Tire Issue." U.S. Environmental Protection Agency Office of Solid Waste report (April 29, 2008).
3. *U.S.-Mexico Environmental Program: Border 2012: A Midcourse Refinement*, 8, (2008).
4. Letter from U.S.-Mexico border state environmental secretaries to North American Development Bank Managing Director Jorge C. Garcés and Border Environmental Cooperation Commission General Manager Daniel Chacón, September 3, 2009.
5. Letter from North American Development Bank Managing Director Jorge C. Garcés to U.S.-Mexico border state environmental secretaries, October 7, 2009.
6. (http://www.epa.gov/osw/conserve/materials/tires/ground.htm (Accessed July 8, 2009); G.Way, OGFC Meets CRM: Where the Rubber Meets the Rubber 15 Years of Durable Success, AR2003, Brasilia, Brazil, Dec. 2003; Carlson D. D., et al., Asphalt-Rubber An Anchor to Crumb Rubber Markets, 14 (1999).
7. State Scrap Tire Programs A Quick Reference Guide (1999), http://www.epa.gov/osw/conserve/materials/tires/scrapti.pdf.
8. *See* V.T.C.A., Health & Safety Code § 223.047
9. *See* NM § 66-6-2(D).
10. *See* Ca. Pub. Res. § 42885(b)(1),(3); A.R.S. § 44-1302(A).
11. A.R.S. § 44-1302(A).
12. Ca. Pub. Res. § 42885(b)(1).
13. Ca. Pub. Res. § 42885(b)(3).
14. NM § 66-6-2(D).
15. Ca. Pub. Res. § 42825(a).
16. *See* Cal. Admin. Code tit. 14, § 17355(a); A.R.S. § 44-1304(A),(D).
17. *See* NM § 74-13-4(A); TX § 341.013(c).
18. TX § 328.53.
19. NM § 74-13-4(A).
20. Cal. Admin. Code tit. 14, § 17355(a).
21. TX § 341.013(c).
22. TX § 361.112(f).
23. A.R.S. § 44-1304(A),(D).
24. CA PUB RES § 42846(a).
25. *Id.* at § 42846.5
26. A.R.S. 44-1503(C).
27. V.T.C.A., Health & Safety Code § 361.1125(a).

References

ADOT Standard Specification § 413-9 (2008).

ADOT's Standards and Specifications (2008).

Arizona Revised Statutes, Tit. 44, Ch. 9, Art. 8, §§ 1301-1307, 1503.

Arizona Revised Statutes, Tit. 49, Ch. 4, Art. 4, §§ 762-1307.

Arizona Department of Transportation, <http://www.azdot.gov/highways/materials/pavement_design/ what_is_rubber_asphalt.asp> (July 7, 2009).

Ariz. Admin. Code, R18-13-1202 – 1210.

Baja California Law on Prevention and Integrated Waste Management.

"Border 2012: U.S.-Mexico Border Scrap Tire Inventory Summary Report," United States.

"Border 2012: U.S.-Mexico Environmental Program," United States Environmental Protection Agency, Washington, D.C., May 5, 2003.

"California Business and Professions Code," Division 8, Ch.9, Art.6.

"California Business and Professions Code," Division 8, Ch.9, Art.3-4.

"California Code of Regulations (CCR)," Title 14, Division 7, Ch.3, §§ 17225-17356.

"California Code of Regulations (CCR)," Title 14, Division 7, Ch.6, §§ 18420-18461.

"California Public Resources Code (CPRC)," Division 30, Part 3, Ch.16, §§ 42801-42808.

"California Public Resources Code (CPRC)," Division 30, Part 3, Ch.19, §§ 42951-42958.

"California Vehicle Code," Division 12, Chapter 5, Article 4, § 27465.

"California Waste Tire Generation, Markets, and Disposal: 2004 Staff Report," California Integrated Waste Management Board, Sacramento, CA, March 2007.

"California Waste Tire Generation, Markets, and Disposal: 2005 Staff Report," California Integrated Waste Management Board, Sacramento, CA, February 2007

Carlson, D., et al., Asphalt-Rubber An Anchor to Crumb Rubber Markets, 14 (1999).

Environmental Protection Agency <http://www.epa.gov/osw/conserve/materials/tires/ground.htm> (July 8, 2009).

G.Way, OGFC Meets CRM: Where the Rubber Meets the Rubber 15 Years of Durable Success, AR2003, Brasilia, Brazil, Dec. 2003.

Law for the Prevention and Waste Management for the State of Coahuila; Law of Ecological Equilibrium and Environmental Protection (LEEPA).

Law of Environmental Equilibrium and Environmental Protection of the State of Chihuahua.

Law of Environmental Equilibrium and Environmental Protection of the State of Sonora.

New Mexico Statutes Annotated, Ch. 66, Art. 6, § 2.

New Mexico Statutes Annotated, Ch. 74, Art. 13, §§ 3-20.

Nuevo Leon Environmental Law and Regulations; Law of the Integral System for the Ecological Management and Processing of Waste.

Riggle D., Find Markets for Scrap Tires, Biocycle, March, 41, 1994.

Rubber Pavements Association <http://www.rubberpavements.org/faq.html> (July 9, 2009).

Rubber Pavements Association <http://www.rubberpavements.org/Library_Information/AR_Benefit_ Analysis_sheets/ ARUserCostBenefits.pdf> (July 9, 2009).

"Scrap Tire Markets 2007," Ruber Manufacturers Association (May 2009).

State of Tamaulipas Sustainable Development Code. Decree No. LX-675.

Texas Commission on Envrionmental Quality, Scrap Tire Program, http://www.tceq.state.tx.us/compliance/ tires/index.html (October 15, 2009).

"The Prevention and Management of Scrap Tire Piles," Scrap Tire Management Council, Washington, D.C., March 2000.

Vernon's Texas Statutes and Codes Annotated, Tit. 5B, Ch. 361B § 013-112.

Vernon's Texas Statutes and Codes Annotated, Tit. 5A, Ch. 341B, § 013

Tex. Admin. Code, Tit. 30, Ch. 328F, § 52-65.

"Waste Tire Report," Arizona Department of Environmental Quality, Phoenix, AZ, 2002.

Zhu, H., Carlson, D., A Spray Based Crumb Rubber Technology in Highway Noise Reduction Application, Article submitted to Journal of Solid Waste Management, October 1999.

Table of Appendices

(Note: Full text of appendices are included in a separate binder and updated periodically. This binder is available upon request to NACTS and CSG-WEST/BLC.)

Appendix A: Current U.S. Border State Scrap Tire Laws:

- Arizona
- California
- New Mexico
- Texas

Appendix B: Newly Enacted and Proposed U.S. Border State Scrap Tire Laws

Includes:

- California Senate Bill 167
- California Senate Bill 772
- Arizona House Bill 2046
- Texas Senate Bill 617
- California Assembly Bill 496
- Arizona House Bill 2278
- Arizona House Bill 2290

Appendix C: Current Mexican Border State Laws Relating to Scrap Tires

Includes:

- Ley de Prevención y Gestión Integral de Residuos para el Estado de Baja California
- Ley de Equilibrio Ecológico y Protección al Ambiente del Estado de Sonora
- Ley de Equilibrio Ecológico y Protección al Ambiente del Estado de Chihuahua
- Ley de Prevención y Gestión Integral de Residuos para el Estado de Coahuila
- Ley Ambiental del Estado de Nuevo León
- Código para el Desarrollo Sustentable del Estado de Tamaulipas

Appendix D: Key Scrap-Tire Related Reports and Report Excerpts

Includes:

- U.S.-Mexico Border Scrap Tire Integrated Management Initiative, Border 2012 Waste Program.
- U.S.-Mexico Environmental Program: Border 2012: A Mid-Course Refinement (2008-2012)
- Recommendations from "The Flow of Used and Waste Tires in the California-Mexico Border Region. Contractors Report to the Board." Institute for the Regional Studies of the Californias, San Diego State University, August 2009.

Appendix E: Selected Correspondence

Includes:

- October 7, 2009 letter to Mr. Benjamin Grumbles, Director ADEQ, from Jorge C. Garces, Managing Director, North American Development Bank regarding incorporating asphalt-rubber in road paving projects.

NACTS Board of Advisors

Mr. Raúl Rodríguez, Chair, Chairman, RMI

Mr. Jack Agrios, Officer in the Order of Canada, Kennedy Agrios LLP

Mr. Alfonso Aguilar, Former Chief, Office of Citizenship, U.S. Citizenship and Immigration Services

Ambassador Hattie Babbitt, Attorney at Law, Jennings Strouss & Salmon, P.L.C.

Dr. Stephen Blank, Co-Director, North American Transportation Research Competitiveness Council

Mr. Malin Burnham, Chairman, Cushman and Wake

Mr. Rudy Bustamante, Community Relations Officer, U.S. Citizenship and Immigration Services

Dr. Malcolm Cairns, Director of Business Research, Canadian Pacific Railway

Dr. María de Lourdes Dieck-Assad, Dean, School of Government, Social Sciences and Humanities, Instituto Tecnológico y de Estudios Superiores de Monterrey

Dr. Rodolfo Cruz Piñeiro, Professor and Researcher, Population Studies Program, El Colegio de la Frontera Norte

Professor Daniel Drache, Associate Director, Robarts Centre for Canadian Studies; Professor of Political Sciences, York University, Toronto

Dr. Rafael Fernández de Castro, Advisor for International Affairs and Competitiveness, Office of the President of Mexico

Ms. Christine Frechette, Executive Director, North American Forum on Integration

Mr. Bonsal Glascock, President, iMallsGlobal

Mr. C.A. Howlett, Senior Vice President, Public Affairs, US Airways

Ms. Roberta S. Jacobson, Deputy Assistant Secretary of State for Canada, Mexico & NAFTA

Ms. Tamar Jacoby. President and CEO, ImmigrationWorks USA

Ambassador John Maisto, Director, U.S. Education Finance Group, former U.S. Ambassador to Nicaragua, Venezuela and the OAS

Hon. A. Anne McLellan, Academic Director, Alberta Institute for American Studies, University of Alberta and former Deputy Prime Minister

Dr. Robert A. Pastor, Co-Director, Center for North American Studies, American University

Ambassador Andrés Rozental, Nonresident Senior Fellow, Brookings Institution and Former Deputy Foreign Minister of Mexico

Mr. Thomas Skancke, President, The Skancke Company

Mr. Javier Treviño, Senior Vice President of Corporate Communications and Public Affairs, CEMEX

Dr. Carlos Vélez-Ibañez, Chair, Department of Transborder Chicano/a and Latino/a Studies, Arizona State University

Dr. José Luis Valdés-Ugalde, Former Director, Centro de Estudios Sobre América del Norte, Universidad Nacional Autónoma de México

Professor Raul Yzaguirre, Presidential Professor of Practice in Community Development and Civil Rights, Arizona State University

North American Center for Transborder Studies
Arizona State University
P.O. Box 878105
Tempe, AZ 85287-8105
nacts@asu.edu
nacts.asu.edu
Main line (480) 965-1846
Fax (480) 965-6149

Partner Universities

El Colegio de la Frontera Norte
Instituto Tecnológico Autónomo de México
Instituto Tecnológico y de Estudios Superiores de Monterrey
Universidad Nacional Autónoma de México
University of Alberta
York University

For additional copies and/or feedback on this report:
Erik Lee, Associate Director
North American Center for Transborder Studies
Arizona State University
P.O. Box 878105
Tempe, AZ 85287-8105
Tel. (480) 727-8926, erik.w.lee@asu.edu
nacts.asu.edu

Revised February 2010