

**State of California
The California Natural Resources Agency
DEPARTMENT OF WATER RESOURCES**



2010 Annual Sustainability Report

August 2011

Edmund G. Brown Jr.
Governor
State of California

John Laird
Secretary for Natural Resources
Natural Resources Agency

Mark W. Cowin
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Foreword

The Department of Water Resources (DWR) recognizes the importance of sustainability concepts in its own daily operations and in fulfilling its mission to the people of the state of California. In recognition of the importance of sustainability, the Director issued the department's first sustainability policy on April 22, 2009, in conjunction with DWR's recognition of Earth Day. The two-page policy memo (Appendix A) declared DWR's resolve to become a sustainability leader, stating that "*sustainability must be integrated into every aspect of DWR's work.*" In response to this directive, DWR has begun instituting a series of key steps to implement sustainable practices and will continue to contribute to a more sustainable future for California. DWR invites all employees to become engaged in learning about sustainability concepts and how to apply these concepts in the workplace and in daily life. This report is one of the first steps toward helping DWR employees understand sustainability and to see how sustainability is already being practiced at DWR.

For a number of years, DWR has taken steps to become more sustainable in both its business practices and its daily operations. Further, DWR must adhere to legal requirements regarding waste reduction, recycling, and purchasing. Historically, divisions have reported their compliance with these requirements separately, making it difficult to get an overall view of DWR's accomplishments. Similarly, many of DWR's sustainability efforts have gone unnoticed because they are not required to be quantified or reported. One of the more important aspects of DWR's new sustainability policy is the ability to draw together and align the numerous sustainability efforts of various divisions and work processes. By doing so, the achievements and accomplishments of DWR staff can be more fully appreciated. Additionally, it becomes easier to see what remains to be accomplished and where further efforts need to be directed. To that end, the following seven business areas are being integrated and coordinated as part of the current sustainability efforts for DWR:

1. Climate protection practices,
2. Ecosystem stewardship,
3. Sustainable business operations,
4. Greening facilities,
5. Greening fleets,
6. Recycling and waste management and
7. Environmentally preferable procurement.

These areas will help guide DWR efforts toward sustainability. The areas will continue to change and grow over time as DWR continually refines its operations and recognizes new opportunities to promote sustainability.

This report captures the statutory and policy aspects of DWR sustainability activities as well as DWR's significant efforts toward sustainability in 2010.



Dale K. Hoffman-Floerke

Deputy Director

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Executive Summary

In 2010, the Department of Water Resources (DWR) accomplished much toward the sustainability framework envisioned by the Director. One of DWR’s first efforts was to establish a sustainability workgroup to help guide DWR’s efforts in seven basic areas: climate protection practices, ecosystem stewardship, sustainable business operations, greening facilities, greening fleets, recycling and waste management, and environmentally preferable procurement. Building on this initial focus, the sustainability workgroup proposed an implementation plan to the DWR Governance Board on April 19, 2010. The plan was accepted and includes the following action items.

Sustainability workgroup proposed implementation plan for department sustainability

Item No.	Proposed Due Date	Action
1	July 2010	Adopt initial sustainability targets in key business areas.
2	July 2010	Begin three sustainability pilot projects based on identified targets.
3	July 2010	Expand staff resources for sustainability efforts.
4		
5	October 2010	Establish an external Sustainability Advisory Group.
6	January 2011	Develop phase 1 of the Climate Action Plan.
7	April 2011	Hold a Sustainability Forum.
8	by 2013	Develop and establish at least one aspect of sustainability as a foundation in DWR policies per year through 2013. Chosen sustainability aspects are environmental stewardship, resources management, and climate resilience.
9	April 2013	Develop several activity-specific sustainability guidelines annually (13 by 2013).

Much has been accomplished toward the above stated activities, although an initial lack of staff resources hampered a portion of implementation. The following provides progress and status of each action item.

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Item No. 1: Adopt Initial Sustainability Targets. Sustainability targets in key business areas were established and detailed in the Director's Sustainability Policy memo of September 2010. These five key sustainability targets are as follows:

- Water – Reduce per employee water use 20 percent by 2020.
- Wastewater – Incorporate recycled wastewater into facilities wherever possible.
- Energy – Ensure progressive acquisition of 360 GWh of renewable energy sources by 2020. Reduce grid based retail energy demand 20 percent by 2015 and ensure Energy Star purchasing.
- Greenhouse gas emissions – Reduce GHG emissions 50 percent below 1990 levels by 2020 and 80 percent below 1990 levels by 2050.
- Waste – Divert 50 percent from waste stream by 2020.

Item No. 2: Begin Pilot Projects. The three pilot projects targeted in the implementation plan were initiated in 2011 and are proceeding. These three projects focus on:

- Tire pressure of DWR's fleet,
- The amount of water used by DWR employees, and
- A transportation initiative that allows employees to use payroll deduction to purchase a reduced transit pass.

Item No. 3: Expand Staff Resources. In response to the need for more employees in coordinating DWR's Sustainability Initiative, staff resources were expanded with the addition of four full-time employees located in the regional offices. Further, DWR hired a full-time sustainability coordinator in January 2011 to lead and manage DWR's sustainability efforts.

Item No. 4: Establish Foundational Policies. With the adoption of an environmental stewardship policy, DWR achieved the goal of establishing at least one foundational policy per year.

Item No. 5: Develop Activity-Specific Guidelines. The goal to develop activity-specific guidelines by April 2013 is on track with five activity-specific guidelines already under way.

Item No. 6: Establish Sustainability Advisory Group. The establishment of an external Sustainability Advisory Group is anticipated to begin in 2011, with the expectation of group formation by the end of 2011.

Item No. 7: Develop Climate Action Plan Phase I. Phase I of the Climate Action Plan is nearly complete.

Item No. 8: Hold Sustainability Forum. It is anticipated that a Sustainability Forum will be held after the appointment of the Sustainability Advisory Group.

DWR Grant Programs for Sustainability

It is important to recognize other DWR efforts toward sustainability. DWR's grant program provides millions of dollars to local communities to help them become more sustainable. Some DWR programs that directly promote sustainability include the Integrated Regional Water Management (IRWM) Program and DWR's Local Groundwater Assistance Program. The Local Groundwater Assistance Program, which supports agricultural and urban water use efficiency implementation projects as well as related research and study programs, provides grants of up to \$250,000 for groundwater data, groundwater modeling, and other groundwater related studies. Another grant program is the Urban Streams Restoration Program (USRP), which funds grants to local communities for projects to reduce flooding and erosion and associated property damages as well as to restore, enhance, or protect the natural ecological values of streams. Additionally, the DWR Agricultural Water Conservation Program makes loans to local public agencies and incorporated mutual water companies to finance feasible, cost-effective agricultural water conservation projects or agricultural programs to improve water use efficiency. A total of \$28 million is available for the Agricultural Water Conservation Program with up to \$5 million for each project.

DWR's Outreach Efforts for Sustainability

In further efforts, DWR is reaching out to its sister agencies in instituting sustainability. One such effort is working with other agencies on recycling and waste reduction issues. DWR works with a recycling group composed of recycling coordinators from more than 50 California State agencies to offer suggestions on environmental issues, develop recycling workshops for employees, and raise awareness of waste and recycling issues. To help accomplish this, DWR has taken the lead in establishing a web-based tool known as a collaboration portal and making the portal available to other State agency sustainability coordinators. The portal will help facilitate interagency communications, establish sustainability forums, and allow access to on-line libraries of sustainability-related information. Over the next year, the sustainability collaboration portal is expected to greatly increase the ease with which sustainability information can be disseminated.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Our Common Future
The Brundtland Commission report
United Nations conference, 1983

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Following are the Department of Water Resources (DWR) sustainability activities during 2010. This report captures both the statutory and policy aspects of DWR's activities as well as DWR's significant efforts toward sustainability. The report begins with an overview of activities that have statutory and policy requirements and closes with DWR's pilot projects and outreach efforts.

Statutory and Policy Requirement Activities

DWR's Waste Reduction and Recycling Efforts

DWR's waste and recycling efforts are the result of both DWR's own recycling policy and the State of California's statutes (Appendix B). California requires the diversion of solid waste from landfills and mandates the recycling of certain materials. DWR is subject to Public Resources Code sections 42920–42982, which require that State agencies comply with a 50 percent diversion rate from landfills by 2004 and submit an annual report. The first report was due September 1, 2009, with an annual report due on or before September 1 each year thereafter.

In 2008, the Per Capita Disposal Measurement System Act (SB 1016, Wiggins, Public Resources Code Section 42920–42927, 2008) was passed. This changed the way State agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. Under this Act, State agencies are still required to maintain the 50 percent waste diversion requirement as mandated by California's Integrated Waste Management Act of 1989. However, with the passage of the Per Capita Disposal Measurement System Act, State agencies and large State facilities also must use per capita disposal as an indicator of their progress toward meeting the mandate.

Waste Reduction and Recycling Coordinators

DWR has a waste reduction and recycling coordinator who collects waste disposal and recycling information from 33 offices/facilities around the state. This information is then compiled into the Waste Management Annual Report.

2009 Waste Reduction and Recycling Report

Table 1 details DWR's 2009 waste reduction.

Table 1. Waste Reduction by Diversion Programs/Activities

Category	Amount Reported (in tons)
Total Business Source Reduction	10.60
Material Exchange	6.70
Salvage Yards	0.00
<i>Recycling Activities</i>	
Batteries Reclaimed	1.70
Beverage containers	192.10
Cardboard	81.00
Construction and Demolition	57.40
Glass	0.10
Mixed office paper	1,443.50
Newspaper	1.20
Other Materials	2,035.20
Other Plastic	0.60
Phone Books	0.29
Plastic Pallets	2.29
Sandblast Media recycled	2,061.20
Scrap Metal	291.70
Special Collection Events	51.00
Textiles, Rags	0.00
White office paper	34.50
<i>Composting</i>	
On-site composting	128.00
Self-Haul Green-waste	0.00
Xeriscaping, grass cycling	1.70
<i>Special Waste</i>	
Concrete/Asphalt/Rubber	876.20
Rendering	12,255.30
Scrap Metal	98.20
Sludge	16.20
Tire Recycling	19.80
Wood Waste Recycling	0.00
Total Tons Diverted	19,666.48 (or 89%)
<i>Hazardous Waste-Must be Reported but by California law is not considered waste reduction or recycling</i>	
Batteries	5.10
Electronic Waste (Computers, TVs, Cell Phones, etc.)	41.10
Other (Stripping Products, Oil Filters, Paint Thinner, etc.)	11.70
Paint	0.30
Universal Waste	3.80
Used Oil/Antifreeze	165.51

Environmentally Preferred Purchasing (EPP)

DWR’s efforts in waste reduction and recycling begin with its purchasing policy. DWR is also subject to the Environmentally Preferred Purchasing statutes (Appendix C). By buying environmentally friendly items that also contain post-consumer recycled content, DWR helps reduce waste and encourages recycling throughout its business processes.

State Agency Buy Recycled Campaign

DWR is part of the State Agency Buy Recycled Campaign (SABRC). This campaign focuses on buying products that contain some percentage of previously used material or, as it is called, post-consumer content. The SABRC campaign requires all State agencies to follow the Public Contracts Code, which mandates that all agencies purchase recycled materials, sets the amount of the post-consumer content recycle percentage in these materials, and mandates the percentage of purchasing dollars spent on each category (Appendix D). Further, each State agency is required to report its progress annually in meeting recycled-content product purchasing requirements (Public Contracts Code section 12211(a)) to the California Department of Resources Recycling and Recovery (CalRecycle). The following section discusses DWR’s latest information on SABRC from 2009 with a detailed explanation of DWR’s efforts.

2009 State Agency Buy Recycled Campaign (SABRC) Report

DWR follows State requirements and its own environmentally preferred purchasing policy. Table 2 details DWR’s purchasing percentages in all 11 categories for year 2009, the most recent year for which data are available.

Table 2. DWR’s 2009 Achievements in all 11 SABRC Categories

Required Category	% of SABRC Dollars Required	DWR 2009 % SABRC Dollars Spent	% of Goals + = Over Goal - = Under Goal
Paper Products:	At least 50 %	54.0%	+4%
Printing and Writing Paper	At least 50 %	56.3%	+ 6.3%
Mulch, Compost and Co-Compost	At least 50 %	N/A	No \$ spent in this category
Glass Products	At least 50 %	14.9%	- 35.1% (see discussion)
Lubricating Oil Products	At least 50 %	17.9%	- 32.1% (see discussion)
Plastic Products	At least 50 %	14.3%	- 35.7% (see discussion)
Paint	At least 50 %	13.7%	- 36.3% (see discussion)
Antifreeze	At least 50 %	10.0%	- 40% (see discussion)
Tires	At least 50 %	14.1%	- 35.9% (see discussion)
Tire-derived Products	At least 50 %	0%	0% (see discussion)
Metal Products	At least 50 %	37.4%	- 12.6% (see discussion)

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In 2009, DWR exceeded the mandated purchasing percentages in the first two categories shown in Table 2: paper products and printing and writing materials. The third category does not apply because DWR spends no purchasing dollars on mulch, compost, and co-compost. However, in the remaining eight categories DWR falls short of its goals by 12 to 40 percent.

Glass Products. DWR falls short of its Glass Products goal by 35 percent, and no change is foreseen in this category because DWR's glass purchasing consists mainly of windshields. Windshield glass is not made from recycled products. It may be useful to place windshields in a subcategory of glass. This would better clarify DWR's actual SABRC purchasing in all other glass categories.

Lubricating Oil Products, Antifreeze, and Tires. DWR is having difficulty meeting the mandate to use 50 percent recycled products in these three categories. The Department of General Services contract for lubricating oil stipulates that all re-refined lubricating oil be at least 70 percent recycled oil. SABRC requires that least 50 percent of oil-purchasing dollars must be used to buy recycled oil. However, most of the oil servicing is now outsourced, and tracking the type of oil used is difficult. Most vendors that provide oil changing services are reluctant to suggest re-refined oil to the customer in order to avoid the appearance of "steering the customer" to a specific brand (Foundation, 2005).

A similar situation exists for recycled antifreeze, where the actual servicing is done by third-party vendors. Although recycling the antifreeze that is drained from its vehicles, DWR finds it difficult to track whether vendors are putting re-refined antifreeze into the vehicle.

Currently, DWR recycles all of its used tires. However, DWR is required to spend at least 50 percent of its tire-purchasing dollars on SABRC retreaded tires. No retreaded tires were purchased in 2009. There appears to be a widespread perception throughout DWR that retreaded tires are not safe because they are prone to blow outs. However, numerous studies conclude this is a false perception.

When Virginia State agencies were reluctant to purchase retreaded tires, the Virginia Legislature in 1999 requested its Department of State Police to study the need for state standards for recapped vehicle tires. The final report from the Virginia State Police to the Virginia Legislature concluded that:

The comparison of the two surveys revealed there is a problem with tire debris on the highway, but the causes of tire failures are not usually due to recap failure, which is the perception. They concluded that both new and retreaded tires would overheat and shred into sections of debris if

proper air pressure is not maintained. In one of the laboratory experiments, a plunger strength test was performed on a new, randomly selected recapped tire and it was determined that the tire exceeded standards by almost twice the minimum strength requirement. In the other laboratory experiment, a burst strength test was conducted that compared new radial truck tires with worn radial truck tires. The results of the burst test concluded the strength of the worn and new samples to be very similar. The worn tires, which were typical of those selected for retreading, did not show any loss of strength as a result of previous use. In this study, tread wear did not diminish the strength of low-profile radial truck tire casings compared to new tires. (Police, 2000, p. ix)

Also, the Arizona Department of Transportation performed a study in 1999, but looked at the potential hazards of roadway debris. The final report concluded, "For all types of tires, under-inflation and damage due to roadway hazards and debris were the most common causes of tire failure." (Transportation, 1999, p. 1)

Based on these studies' conclusions, retreaded tires do not pose a safety hazard per se; rather it is poor tire maintenance that is the problem. To overcome the negative perception that retreaded tires are unsafe, it is likely that extensive education will be required. Involving the employees in a pilot project to review and test drive retreaded tires may also help. DWR needs to improve its performance in this area.

Tire-derived Products. Currently, there is little information on products that contain tire-derived products. Reviewing a list of DWR's major purchase categories does not reveal any major items that would fall into this category. However, there is the potential to purchase needed smaller items such as floor mats, pencils, and other items that utilize waste tires. This is an area of needed improvement for DWR.

Metal Products. Metal products percentages of SABRA dollar are most likely under-represented. Much of DWR's purchasing is of items for which new metal is seldom used (such as paper clips, staples, scissors, shelving, file cabinets, etc.) and for which used metal certification is nearly impossible to obtain. DWR is certain that the post-consumer recycled content of items purchased is much higher than reported, but it is unable to certify this under current purchasing practices.

Plastic Products. DWR has little information on the recycled content of its plastic products. The plastic pallets that are recycled are likely made of recycled material but this cannot be confirmed as the

pallets themselves are not part of the purchasing process, but part of the packaging process. Other plastic products lack sufficient documentation to determine their post consumer content.

Recycled Paint Products. Use of recycled paint suffers from the same misperception as recycled tires. DWR staff is reluctant to use recycled paint due to fear that the paint will peel sooner, will not cover as well, will not spread easily, or will not be available in the correct color. Further research on recycled paint is necessary to determine whether or not staff perceptions are correct.

Climate Change

Climate change is already affecting California's water resources. Warmer temperatures, different patterns of precipitation and runoff, and rising sea levels will increasingly affect DWR's ability to manage water supplies and other natural resources. Adapting California's water management systems in response to climate change is one of DWR's most significant challenges. California has begun to respond to this challenge through executive orders and significant legislation to reduce greenhouse gas (GHG). For a list of State laws and executive orders, see Appendix E. For further information on DWR's climate change efforts, go to the Web site <http://www.water.ca.gov/climatechange>.

Historical Backdrop of DWR's Climate Change Activities

Over the past five years, DWR has responded to the climate change challenge by taking a leading role in both the mitigation of greenhouse gas (GHG) emissions and in positioning California to adapt to new water management. Beginning with *California Water Plan Update 2005*, DWR substantively assessed the threats of climate change, at the time a landmark in a major State planning process. In 2006, DWR issued *Progress in Incorporating Climate Change into Management of California's Water Resources*, an extensive technical report that described in detail the potential impacts of climate change to the operations of the State and federal water projects, the Delta, and flood management.

Since 2007, DWR has measured, verified, and publicly reported its annual "carbon footprint" to the California Climate Action Registry (CCAR). DWR has been named a "Climate Action Leader" each year for reporting verified GHG emissions. In 2010, DWR began reporting at the national level to the Climate Registry to report its annual GHG emissions.

In October 2008, DWR released *Managing an Uncertain Future*, the first-of-its-kind climate change adaptation white paper that proposed 10 strategies in 4 categories to adapt to a changing climate. A product of diverse technical and stakeholder input, the white paper was reviewed by the California

Water Plan's Climate Change Technical Advisory Group, composed of many of the nation's leading climate change experts. Expanding upon those efforts, DWR further advanced water resource planning in *California Water Plan Update 2009*, by including anticipated climate change impacts to agricultural and outdoor urban water demand for the first time.

During 2010, the CEQA Climate Change Committee began developing a programmatic approach—in the form of a Climate Action Plan and GHG Emissions Reduction Plan—to address climate change across all DWR programs and projects to comply with the new CEQA Guideline Amendments recently adopted by the California Natural Resources Agency. The Climate Action Plan will also help document DWR's compliance with AB32; set GHG reduction targets and reduction strategies; streamline environmental review; and demonstrate DWR's commitment to environmental stewardship, sustainability, and climate change mitigation and adaptation.

DWR's Climate Protection Practices

DWR has begun a series of efforts that both adapt to climate change as well as mitigate certain climate changing activities. Following are the key steps that form DWR's climate protection practices.

Regional Climate Planning and Management. California lies within multiple climate zones, and each region of the state will experience climate change differently. Some climate impacts will be unique to a region as will be the economic and environmental effects. This means that adaptation strategies must also be regionally appropriate. Here is where IRWM provides a critical framework for actions to address the uncertainties presented by climate change, as well as other risks to California's water future. Further, for every IRWM plan, water use efficiency must be a foundational action and a key part of every water agency's portfolio. In many instances, water conservation achieves not only water demand reduction but energy demand reduction as well. By reducing energy demand, reductions in GHG emissions are achieved as well.

Flood Protection. DWR is preparing a Central Valley Flood Protection Plan (CVFPP) that will explicitly consider climate change impacts to flood management, due by 2012. Even at an early stage of developing the CVFPP, DWR has already convened a special workgroup composed of some of the top climate scientists and planners in the country, to provide input about the scope of climate change considerations to be addressed in the CVFPP. The charge of the workgroup was to (1) identify key aspects of climate change that may affect flood management, (2) ascertain existing problems and expected future challenges related to climate change, (3) develop a checklist of climate change

considerations, (4) inventory related climate change projects and programs, and (5) compile a list of climate change references. The above mentioned draft report *State Plan of Flood Control Descriptive Document* (Jan 2010) is available on DWR website at:

http://www.water.ca.gov/cvfm/docs/DRAFT_SPFC_Descriptive_Doc_20100115.pdf

Improving Management and Decision-Making Capacity. Determining the impacts of climate change on the varying regions of the state requires that data about our environment be collected and analyzed in a consistent and comprehensive way. Improved data collection and a robust monitoring network will help identify trends, provide for better real-time system management, and evaluate and, if necessary, correct adaptation strategies. In addition, sea level rise presents a particular dilemma for water planners because of the great uncertainty around ice sheet dynamics, as well as the potentially large impacts. Developing more focused research on sea level rise and other topics can help narrow the range of uncertainty in climate changes.

Climate Change Analyses. All climate change analyses in DWR environmental documents are now reviewed by DWR's CEQA Climate Change Committee, which was formalized in June 2009. Through these reviews the committee has developed environmental analysis methodologies and reference materials for use by DWR staff and consultants. These guidance documents provide a consistent approach to conducting project-specific environmental analyses for CEQA compliance documents, biological assessments, permit applications, and other environmental needs. Because of the evolutionary nature of climate change analysis, these documents will be updated periodically to include the most current legal rulings and state-of-the-science on the subject.

Greenhouse Gas Offsets. On Earth Day in 2010, DWR and Sacramento Municipal Utility District (SMUD) jointly announced a new partnership in which SMUD will provide 33 percent renewable energy and 33 percent carbon offsets for DWR's retail electrical and natural gas use, respectively, based on its 2008 retail consumption data. Specifically, DWR will participate in SMUD's Commercial "Greenergy" Program whereby SMUD matches 33 percent of DWR's estimated retail electricity needs with Greenergy purchases from renewable resources such as landfill gas, wind, solar, and small hydroelectric plants. In addition, SMUD will match an additional 40 percent to the amount DWR pays under the agreement to build new, cleaner energy resources, reducing the need to build future polluting power plants. Through SMUD's Carbon Offset program, DWR will also reduce the effects of its GHG emissions related to its natural gas use. SMUD uses revenues from participating customers to build carbon reduction projects

locally, promoting “green” jobs in Sacramento. DWR is the first State agency to participate in SMUD’s Carbon Offset program.

Green Building Initiative (Executive Order S-20-04)

Governor Arnold Schwarzenegger signed [Executive Order S-20-04](#) regarding Green Buildings on December 14, 2004. It established the State of California's priority for energy and resource-efficient high performance buildings.

The Executive Order sets a goal of reducing energy use in state-owned buildings by 20 percent by 2015 (from a 2003 baseline) and encourages the private commercial sector to set the same goal. The order also directs State agencies to follow the instructions that accompany the Executive Order, which are called the Green Building Action Plan.

DWR’s Actions under the Green Building Initiative

DWR has responded to the initiative through its benchmarking efforts, new construction practices, and energy conservation projects. DWR has worked with the Department of General Services to benchmark facilities in the Energy Star Data Base utilized by the State of California for collecting energy use for State buildings as outlined in Executive Order S-20-04 and further defined in the Green Building Action Plan. DWR’s newest building was designed and is presently under construction to exceed the minimum State Standard for Leadership in Energy and Environmental Design (LEED). In addition, DWR is taking the lead with several other State departments on energy conservation projects funded through American Recovery and Reinvestment Act (ARRA).

Pearblossom Operations and Maintenance Center, Southern Field Division

DWR is currently designing its first LEED-NC (Leadership in Energy and Environmental Design- New Construction) project at the Pearblossom Operations and Maintenance Center, Southern Field Division. DWR is pursuing a LEED-NC Gold Level Certification for this new administrative office building. In order to achieve LEED certification, the Operations and Maintenance Center will be built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, improved indoor environmental quality, stewardship of resources, and sensitivity to impacts.

The proposed facility is a joint use facility for DWR between the Division of Operations and Maintenance (O&M), and the Division of Engineering (DOE). The objective is to design and construct a

building that will address the shortage of available space for O&M's Southern Field Division staff and provide a more centralized and permanent location for DOE's Lancaster Project Headquarter (LPH) staff. Space will also be included in the building for staff participating in the FERC relicensing effort.

The building will accommodate approximately 30 staff from Southern Field Division, 10 staff that will participate in the FERC relicensing, and 15 staff from DOE's LPH: a total of 55 persons. Part of the building design and construction will include site facilities and improvements, including parking, landscaping, and new or upgraded utilities for power, telecommunications, water, septic, and uninterrupted emergency power supply systems.

Features included in the design to meet the planned LEED Gold certification include a ground source heat pump system for heating and cooling, photovoltaic panels, and mechanical wastewater system that will allow wastewater to be recycled and used for planting irrigation. In addition, many recycled products have been included in the design along with waste reduction measures during and after construction.

Energy Efficient State Property Revolving Fund

DWR is participating in the Energy Efficient State Property Revolving Fund (Loan Fund) administered by the Department of General Services, through ARRA funds received by the Energy Commission. The program looked at State facilities that were candidates for utilizing these funds to provide energy conservation projects to reduce energy use. Three DWR visitor facilities and the Sacramento Maintenance Yard and Bryte Laboratory facilities will have upgrades and improvements to lighting, heating and air conditioning, and water conservation. The loan of approximately \$900,000 will be paid back through the energy savings from the projects.

DWR Green Priorities Pilot Projects

As previously discussed, the sustainability workgroup proposed an implementation plan to the DWR Governance Board on April 19, 2010. Part of that plan included three pilot projects for sustainability. These pilot projects are detailed below.

Tire Pressure Monitoring Program

To perform its mission, DWR requires an array of mobile equipment, heavy machinery, trucks, trailers, fleet vehicles, and other wheeled vehicles. DWR's fleet averages approximately 899 vehicles such as light trucks, vans, and SUVs; and 240 pieces of heavy machinery such as backhoes, crawlers, and dozers. Of the 899 light duty vehicles, almost 89 percent are pickups and vans. These vehicles are the workhorse of DWR's fleet, transporting both people and equipment to the far reaches of the state to maintain the complex number of levees, dams, flood control structures, and irrigation structures that supports California's water delivery systems. In addition, DWR personnel reconstruct wetlands, restore wildlife habitat, perform ongoing assessment of California's water supply infrastructure, and conduct original field research to support DWR's mission. In support of this ongoing effort, DWR personnel travel approximately 23.5 million miles per year, consuming approximately 1.1 million gallons of gasoline, diesel, and bio-fuels.

Currently, DWR is undertaking extraordinary efforts to evaluate and upgrade aging and deteriorating levees along the Sacramento and San Joaquin River Valleys and Delta. As its highest priority, DWR is fully evaluating more than 300 miles of urban project levees in these areas and plans to later survey the entire 1,600 miles of project levees in the Central Valley. DWR is conducting geotechnical exploration, testing, and analysis of State and federal levees that protect the highly populated urban areas of greater Sacramento, Stockton/Lathrop, and Marysville/Yuba City. This program is being implemented simultaneously along with the various urgent levee repairs.

To expedite efforts to protect these communities, levee evaluations are being rapidly conducted in a two- to three-year period. During this time, technical specialists are reviewing existing levee historical data; mapping near-surface geology; conducting field explorations; performing engineering, stability and seepage analyses; and preparing preliminary design and construction estimates for repairing and upgrading the levees where needed. To achieve this, DWR will require that its vehicles and heavy equipment be readily available and in top repair.

Transportation needs account for the second largest amount of GHGs produced by DWR operations. The largest is the electrical power used to store, control, and transport water throughout the state. Transportation fuel reduction is an important focus for DWR's initiative to reduce GHGs in its daily operations. One of the quickest, most cost-effective ways to obtain better fuel efficiency is to maintain proper tire pressure in fleet vehicles.

The Tire Pressure Monitoring Program is a six-month pilot project whose purpose is to perform a self-assessment of the routine tire pressure found in DWR's fleet. The impetus for the project came from DWR's climate change initiative and the concern of minimizing GHG production through increased fuel efficiency. Although increased fuel efficiency was the initial catalyst, it quickly became evident that the most important reason for monitoring tire pressure is increased employee safety. Several transportation studies, whose initial focus was a very different problem, bear this out.

Findings from Other States' Tire Pressure Monitoring Studies

As previously discussed, both the Virginia Legislature and the Arizona Department of Transportation performed studies in 1999 on tire failure and concluded, "For all types of tires, under-inflation and damage due to roadway hazards and debris were the most common causes of tire failure." (Transportation, 1999, p. 1)

In a third report, The University of Michigan Transportation Research Institute performed a study that was designed to determine if there were tires that were more blowout resistant than other tires for commercial highway vehicles. That study ended in 2000, and reached the conclusion that "Maintenance issues (e.g., under-inflation, overloading, tire mismatching, excessive wear, inadequate inspections, and associated matters leading to increased heat and tire operating temperatures) are the major causes of tire blowout." (Bareket, 2000, p. 40)

Safety Benefits of Proper Tire Pressure

Overall, proper tire pressure helps reduce all of the following potential driving hazards, which in turn promote employee safety:

- Reduces skidding
- Improves vehicle handling
- Allows for shorter stopping distances
- Reduces flat tires and blowouts

Liability and Financial Savings

DWR also derives reduced liability and additional financial benefits. A proper tire pressure and maintenance program helps reduce the number of accidents that would result from improperly inflated tires. Because proper tire pressure reduces wear on tires, tires last longer so maintenance costs for tire replacement are reduced. Finally, proper tire pressure helps increase fuel efficiency, thus reducing GHG emissions.

California Law on Tire Pressure Maintenance

In recognition of the benefits of proper tire pressure for GHG emissions, California law now requires that tire pressure be checked on private vehicles when the vehicle is routinely maintained (Appendix F).

With all of the potential benefits of proper tire pressure, as well as the requirement on private vehicles, the rationale for a tire pressure maintenance program is stronger than ever. The tire pressure pilot program will help strengthen DWR's commitment to both employee safety and climate change by highlighting problem areas and contributing to employee education on the benefits of proper tire pressure.

Description of DWR's Tire Pressure Pilot Program Study

The pilot program randomly chose study locations with the intent of investigating as many variables as possible, including altitude, temperature, and frequency of vehicle use. Based on these criteria, tire pressure monitoring is taking place at the following locations:

- DWR Headquarters
- Northern Region Office
- North Central Region Office
- South Central Region Office
- Southern Region Office

The final results will be released in the 2011 annual sustainability report. Additionally, the results will be used to help develop and implement an appropriate tire pressure check and maintenance program in conjunction with recommendations by DWR maintenance personnel.

Water Use at DWR Pilot Project

The Director's Sustainability Policy targeted water use at DWR to be reduced by 20 percent per employee by 2020. Key to fulfilling that directive is to determine what the current water use at DWR is per employee. DWR has 67 facilities throughout the state, ranging in size from approximately 1,200 employees at its main office to facilities that have only 1 to 5 employees. Some facilities are used only for emergencies. To accurately determine water use per employee, all facilities must report their water use, which means gathering all of the utility water meters' readings for the year. Due to the nature of some of the facilities, frequently these readings are combined with electricity meter readings and lumped under one billing code as utility expenses. These readings must be separated prior to determining water usage.

The current inability to break out the necessary information led to the creation of a pilot project that would track and isolate this critical information. Staff began working with the purchasing and billing departments to determine water providers throughout DWR's 33 field offices and 34 related facilities. Because of the large amount of data that need to be reviewed, staff has not yet been able to determine the number of water meters, the number of providers, and the total amount of water used.

Payroll Deduction—Monthly Transit Pass Pilot Program

State employees may participate in a program aimed at reducing the number of single occupant vehicles on urban freeways at peak commute hours. As an incentive, the program provides a 75 percent reduction up to \$65 toward the cost of monthly transit passes and tickets. Currently, the pass must be purchased from an outside vendor or at the counter in the main lobby of the Resources Building on certain days of the month. Recognizing the opportunity to potentially to increase public transit ridership through a payroll deduction plan for transit passes, a pilot project was initiated to determine how this could be achieved.

Currently, the mass transit reduction pass program has approximately from 250 to 500 employees a month who buy passes. At an estimated commute of 20 miles per employee per day, total employee travel is potentially reduced from 1.25 million to 2.50 million miles per year with a commensurate reduction in GHG emissions and air pollution. By easing purchase of the transit pass, it is anticipated that ridership will increase and a corresponding reduction in GHG and air pollution will result.

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At this time, the final stage of this pilot project is awaiting a final decision on staffing before the new transit pass purchasing program can begin. The current projected date for the end of the pilot program is August 2011. At that time, the new payroll deduction program can begin.

DWR Grant Programs for Sustainability

Following is a detailed summary of the various grant programs funded by DWR. The funding provided by DWR promotes more water conservation and water use efficiency programs and helps local and regional entities become more sustainable.

Local Groundwater Assistance Program

The Local Groundwater Assistance Program supports agricultural and urban water use efficiency implementation projects or studies that carry out the goals of the California Bay Delta Program's Water Use Efficiency Program. This program provides grants of up to \$250,000 for groundwater data collection, modeling, monitoring, and management studies; monitoring programs and installation of equipment; basin management; development of information systems; and other groundwater related work.

Integrated Regional Water Management (IRWM) Program

The IRWM Program is intended to promote and practice integrated regional water management to ensure sustainable water uses, reliable water supplies, better water quality, environmental stewardship, efficient urban development, protection of agriculture, and a strong economy.

Urban Streams Restoration Program (USRP)

The USRP funds grants to local communities for projects to reduce flooding and erosion and associated property damages; restore, enhance, or protect the natural ecological values of streams; and promote community involvement, education, and stewardship.

Agricultural Water Conservation Program

The Agricultural Water Conservation Program makes loans to local public agencies and incorporated mutual water companies to finance feasible, cost-effective agricultural water conservation projects or agricultural programs to improve water use efficiency. A total of \$28 million is available for the Agricultural Water Conservation Program with up to \$5 million for each project.

DWR Outreach Efforts for Sustainability

DWR recognizes the value of sharing information and forming partnerships in developing and achieving sustainability throughout the department. These outreach efforts are discussed below.

Collaboration Portal

Currently, DWR is engaged in several activities to engage other California state agencies in sustainability efforts. One such effort is the establishment of a “collaboration portal” a Web-based tool that allows individuals to pool their knowledge and to share their experiences regarding sustainability implementation and practices. The collaboration portal serves as a library for sustainability documents that portal members can share with one another. The portal’s functions include the ability to calendar events, host other Web linked resources and handle e-mail servers, host forums, etc. The flexibility of this Web-based tool allows significant savings of travel time and facilitates communication between agencies.

Recycling and Environmentally Preferred Purchasing

Other activities include meeting with other California agencies regarding recycling and environmentally preferred purchasing via monthly meetings, participating in sustainability conferences and workshops, and meeting with other outside agencies’ sustainability coordinators to discuss implementation of sustainability activities. Over the next year, DWR plans to increase its outreach efforts to include an outside advisory group.

Climate Change

DWR has several efforts under way that reach out to local communities and nongovernmental organizations. One such effort is the “Climate Change Handbook for Regional Water Management,” which will be available in the summer of 2011. Jointly developed by DWR, U.S. Environmental Protection Agency Region 9, U.S. Army Corps of Engineers, and Resources Legacy Fund, this handbook will provide a framework for integrating climate change analysis into regional water management planning. The handbook provides several case studies highlighting successful analyses performed by large and small water management agencies throughout the western United States.

Climate Change Video

Released on Earth Day (April 22, 2009), this 22-minute mini-documentary was co-produced and hosted by Elissa Lynn and co-produced by the Water Education Foundation. Public and media showings

and Web-release occurred in conjunction with DWR Green Week activities. This mini-documentary has been utilized by numerous local and State partners as climate change adaptation outreach, including:

March 12, 2009: Water Education Foundation Executive Briefing Preview.

June 9, 2009: Climate Action Team public meeting.

June 22, 2009: League of Women Voters' Climate Change Forum.

It also appeared on a "Focus Earth: episode on California climate change on the Planet Earth network (a subsidiary of Discovery Network), hosted by ABC News' Bob Woodruff. This show aired the second week of January 2010.

The video is posted at: <http://www.water.ca.gov/climatechange/>

Presentations

DWR made approximately 50 presentations on climate change, including several keynote addresses, including at interstate and international venues (a list is provided as Appendix G).

Exhibits

DWR displayed a climate change exhibit at both the fall conference of the Association of California Water Agencies (ACWA) and the annual conference of the Colorado River Water Users Association.

Workshops

The second annual Winter Outlook Workshop was held in November 2009 in San Diego, bringing together western U.S. climate experts to provide the first long-range outlooks for California's upcoming rain season.

November 2009 climate adaptation symposium was held in San Diego in partnership with the Western States Water Council.

Reports

In December 2009, the California Natural Resources Agency released the *California Climate Adaptation Strategy* (CAS), a first-of-its-kind multi-sector strategy to help guide California's efforts in adapting to climate change impacts. Modeled on DWR's climate change water adaptation white paper, the CAS summarizes the best known science on climate change impacts in seven sectors and provides recommendations on how to manage against those threats.

In May 2009, DWR released *Using Future Climate Projections to Support Water Resources Decision Making in California*, which evaluates how climate change could affect the reliability of California's water projects. DWR produced the report as part of the biennial Climate Action Team report for 2009.

Water Conservation

DWR has an urban planning assistance program to assist urban water suppliers with preparing comprehensive plans, implementing water conservation programs, and understanding the requirements of the Water Conservation Act. DWR is also conducting workshops and has prepared a draft Urban Water Management Plans (UWMP) Guidebook to support water suppliers in UWMP preparation. The guidebook includes, for the first time, guidance on conducting a climate change vulnerability assessment for urban water providers.

Additionally, for the first time DWR is also developing a guidebook for agricultural water suppliers to assist them in preparing their Agricultural Water Management Plans.

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Appendix A DWR's Sustainability Policy Memos

State of California

California Natural Resources Agency

Memorandum

Date: April 22, 2009

To: All DWR Employees

From: Department of Water Resources

Subject: Sustainability Workgroup

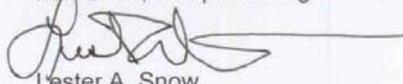
As we celebrate Earth Day this year, the Department of Water Resources (DWR) must resolve to carry out its mission in a more sustainable manner, by minimizing its impact on the environment and reducing its greenhouse gas (GHG) emissions. DWR is already responding to the Governor's Climate Change Initiative (Executive Order S-03-05), Green Building Initiative (Executive Order S-20-04), the Global Warming Solutions Act (AB 32), and State Agency Recycling and Waste Diversion (AB 75) requirements by making changes to the Department's business operations and the State Water Project.

We must now build upon these existing efforts to become a sustainability leader within State government and the California water community. These changes will not only make us better stewards of the environment, but should also yield long-term cost savings to State taxpayers through reduced operations and maintenance costs, as well as provide healthier and more productive work environments for staff and visitors. Overall, sustainability must be integrated into every aspect of DWR's work.

DWR's goals and measures for ecosystem stewardship and sustainability will be achieved through implementation of DWR's new Sustainability Policy (attached). Implementation of the policy will explicitly consider technical feasibility and cost-effectiveness of changes, utilize environmental management systems, and focus on the following business areas:

- Climate Protection Practices;
- Ecosystem Stewardship;
- Sustainable Business Operations;
- Greening Facilities;
- Greening Fleet;
- Recycling and Waste Management; and
- Environmentally Preferable Procurement.

With this memo, I am creating a Sustainability Workgroup, under the leadership of John Engstrom and Dale Hoffman-Floerke, to collaboratively develop the guidelines for implementing the new Sustainability Policy, informed by industry best practices, by no later than April 2010. Please join me in supporting John and Dale in this exciting new effort, and promoting a more sustainable future for DWR.



Lester A. Snow
Director

DWR 9045 (Rev. 1/09)

M e m o r a n d u m

Date: **SEP 20 2010**

To: All DWR Employees

From: Department of Water Resources

Subject: Sustainability Targets

Over the past two years, the Department of Water Resources (DWR) has made notable progress in carrying out its mission in a more sustainable manner, by minimizing its impacts on the environment and reducing its greenhouse gas (GHG) emissions. DWR's goals and measures for ecosystem stewardship and sustainability will be achieved through implementation of DWR's Sustainability Policy signed in April, 2009.

As we build on this effort to be a sustainable leader within State government and the California water community, we must now establish clear and measurable targets to accomplish these goals. As part of that implementation, I am establishing the following initial sustainability targets for DWR, specifically for the environmental aspects of water, wastewater, energy, carbon, and waste:

- *Water* - 20 percent reduction in per employee water use by 2020;
- *Wastewater* - Incorporate recycled wastewater into facilities when technically feasible and cost-effective;
- *Energy* - Progressive acquisition of 360 GWh of renewable energy resources by 2020; reduce grid-based retail energy demand 20 percent by 2015; ensure Energy Star purchasing;
- *Carbon* - 50 percent reduction below 1990 levels by 2020; 80 percent reduction below 1990 levels by 2050; and
- *Waste* - 50 percent diversion from waste stream by 2020.

The Department's Sustainability Workgroup will work with individual DWR organizations to assist in meeting these targets. The Workgroup will also annually review these targets and issue a report card on our progress towards meeting these targets every April.



Mark W. Cowin
Director

Appendix B

Statutory Requirements for Waste Reduction and Recycling

DWR is subject to Public Resources Code sections 42920–42982 requiring State agencies to comply with a 50 percent diversion rate from landfills by 2004 and the submission of an annual report. The first report was due September 1, 2009, with an annual report due on or before September 1 each year thereafter. The annual report to the board must, at a minimum, include all of the following:

1. Calculations of annual disposal reduction.
2. Information on the changes in waste generation or disposal due to increases or decreases in employees, economics, or other factors.
3. A summary of progress made in implementing the integrated waste management plan.
4. The extent to which the state agency intends to utilize programs or facilities established by the local agency for the handling, diversion, and disposal of solid waste. If the State agency does not intend to utilize those established programs or facilities, the State agency shall identify sufficient disposal capacity for solid waste that is not source reduced, recycled, or composted.
5. Other information relevant to compliance with Section 42921.

In 2008, the Per Capita Disposal Measurement System Act (SB 1016, Wiggins, Public Resources Code Section 42920–42927, 2008) was passed. This changed the way State agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. Under this Act, State agencies are still required to maintain the 50 percent waste diversion requirement as mandated by California’s Integrated Waste Management Act of 1989. However, with the passage of the Per Capita Disposal Measurement System Act, State agencies and large State facilities use per capita disposal as an indicator of their progress toward meeting the mandate. As a result of this statutory change, DWR now calculates waste reduction both as a percentage of total waste generated and as a per capita total.

DWR Waste Reduction and Recycling Policy. In addition to the statutory requirements, DWR has its own policy on waste reduction and recycling. This policy requires employees to engage in waste

reduction as they carry out their daily duties. Although many of these efforts are not quantified, the daily efforts of DWR's employee are instrumental in reducing waste.

Policy on Waste Reduction and Recycling (Rev. Apr 2010). DWR is committed to good stewardship of the environment by managing and conserving California's resources through recycling and the reuse of materials to the extent possible. A key element of that stewardship is the reduction of the amount of solid waste going from our work locations into landfills.

In accordance with Public Resources Code Sections 42920–42928, to effectively implement DWR's Waste Reduction and Recycling program, employees will engage in waste reduction practices as they apply to their duties and responsibilities. Specifically, employees shall participate in recycling programs and be mindful of opportunities to reduce waste in their own job, office, Division, Region, or Field Division.

Recyclable materials include but are not limited to paper, glass, cardboard, plastic, used motor oil, ferrous metal, or aluminum, as well as wood or pallets. (SAM 1920, SAM 1960) DAM section 8005

Waste Reduction and Recycling Coordinator Responsibilities (New Oct 2008). DWR's Waste Reduction and Recycling Coordinator within the Division of Management Services' Departmental Services Office is responsible for coordinating the Waste Reduction Program and Recycling Program efforts department-wide. The coordinator collects DWR organization's waste diversion rates from Recycling Coordinators for inclusion in the annual Waste Reduction Report. DAM section 8005.11

Recycling Coordinator (New Oct 2008, Rev. Apr 2010). Recycling Coordinators shall be designated at each Division, Region, Office, and/or Field Division to assist in the development and implementation of the Waste Reduction and Recycling program. Recycling Coordinators are also responsible for tracking and reporting their organization's waste diversion rates to DWR's Waste Reduction and Recycling Coordinator. DAM section 8005.12

Disposition of Recycle Materials (Current Dec 2010). Any materials created, purchased, or obtained by DWR during the course of business operations is the property of the State. No person, other than the authorized recycling agent shall remove paper, glass, cardboard, plastic, used motor oil, ferrous metal, aluminum, or other recyclable materials which have been segregated from other waste materials and placed in a designated collection location for the purposes of collection and recycling.

Appendix C

Statutory Requirements for Environmentally Preferable Purchasing

Environmentally Preferable Purchasing Law: Public Contract Code sections 12400-12404 [AB 498 (Chan), Statutes of 2002, Chapter 575]

The EPP law, enacted in September 2002, directs the Department of General Services (DGS), in consultation with the California Environmental Protection Agency (Cal/EPA), members of the public, industry, and public health and environmental organizations, to provide State agencies with information and assistance regarding EPP including, but not limited to, the following:

- The promotion of EPP.
- The development and implementation of a strategy to increase EPP. This may include the development of statewide policies, guidelines, programs, and regulations.
- The coordination with other State and federal agencies, task forces, workgroups, regulatory efforts, research and data collection efforts, and other programs and services relating to EPP.
- The development and implementation, to the extent fiscally feasible, of training programs designed to instill the importance and value of EPP.
- The development, to the extent fiscally feasible, of an EPP best practices manual for state purchasing employees.

Environmentally Preferred Purchasing Best Practices Manual. Following Public Contract Code sections 12400–12404, a best practices manual has been developed as a template for state agencies to follow. The manual defines environmentally preferable products as “those products that have a lesser or reduced effect on human health and the environment when compared with other products that serve the same purpose.” The guiding principles are listed below. Not all questions are pertinent to each buyer, but the principles help guide and educate the buyer to become proficient in choosing more environmentally safe products.

Guiding Principles. Questions to ask before purchasing a product include:

- Is the product less hazardous?
- Is it reusable or more durable?
- Is it made from recycled materials? Do we really need to buy a virgin product when the recycled version is just as good?
- What happens to the product at the end of its life? Can it be recycled? Will the manufacturer take the product back? Will it need special disposal?
- Does it conserve energy or water?
- What is needed to properly maintain and/or operate this product?
- Have its environmental attributes been certified by a non-biased, widely accepted source?

The manual encompasses a large variety of issues from batteries and building supplies to medical equipment and vehicles. The manual describes issues associated with various supply categories, lists statutory requirements, and provides guidance on how to purchase environmentally preferred products.

DWR'S Policy for Environmentally Preferred Purchasing. DWR is committed to buying recycled-content products rather than non-recycled-content products, whenever price, quality, and availability are comparable. In addition, DWR's purchasing agents will consider other environmental factors such as manufacturing and production practices, maintenance, and end-of-life disposal methods during the purchasing process. The purchase of products that cannot be reused and/or recycled is discouraged.

DWR will also encourage contractors/subcontractors, service providers, building maintenance, and project partners, where appropriate and feasible, to use recycled content, recyclable or reusable products, and practice other waste reduction measures.

Appendix D Statutory Requirements for the State Agency Buy Recycled Campaign

State agencies shall ensure each of the following to accomplish the mandate:

1. At least 50 percent of reportable purchases are recycled products (Public Contract Code section 12201(c)).
2. The requirements apply to all 11 reportable purchases for product categories. (Public Contract Code section 12209).
3. The reportable purchases shall meet each requirement and be applied to the total dollar amount of each specified product category. The purchase of a recycled product from one category may not be applied toward the requirements or the total dollar amount of any other category. (Public Contract Code section 12203(d)).

Note: Reused or refurbished products should be considered 100 percent recycled, and no minimum content is required.

Table D-1. Reportable Product Categories, Descriptions, Minimum Content Requirement, and Percentage of Mandated Purchasing Dollars

Required Category	Description	Minimum content requirement	% of Mandated Purchasing Dollars (SABRC)
Paper Products	Paper janitorial supplies, cartons, wrapping, packaging, file folders and hanging files, building insulation and panels, corrugated boxes, tissue, and toweling	30% postconsumer (PCC section 12209(a)).	At least 50% of the total dollars spent within this category must be used to procure product(s) meeting the 30% postconsumer requirement.
Printing and Writing Paper	Including, but not limited to, copy, xerographic watermark, cotton fiber, offset, forms, computer printout paper, white wove envelopes, manila envelopes, book paper, note pads, writing tablets, newsprint, and other uncoated writing papers, posters, index cards, calendars, brochures, reports, magazines, and publications	30% postconsumer (PCC section 12209(a)).	At least 50% of the total dollars spent within this category must be used to procure product(s) meeting the 30% postconsumer requirement.
Mulch, Compost and Co-Compost	Including soil amendments, erosion controls, soil toppings, ground covers, weed suppressants, and organic materials used for water conservation.	80% postconsumer (PCC section 12209(c)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 80% postconsumer requirement.
Glass Products	Including, but not limited to, windows, test tubes, beakers, laboratory or hospital supplies, fiberglass (insulation), reflective beads, tiles, construction blocks, desktop	10% postconsumer (PCC section 12209(d)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 10% postconsumer

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Required Category	Description	Minimum content requirement	% of Mandated Purchasing Dollars (SABRC)
	accessories, flat glass sheets, loose-grain abrasives, deburring media, liquid filter media, and containers.		requirement.
Lubricating Oil Products	Including, but not limited to, any oil intended for use in a crankcase, transmission, engine, power steering, gearbox, differential chainsaw, transformer dielectric fluid, cutting, hydraulic, industrial, or automobile, bus, truck, vessel, plane, train, heavy equipment, or machinery powered by an internal combustion engine.	70% re-refined oil (PCC section 12209(e)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 70% postconsumer requirement.
Plastic Products	Including, but not limited to, printer or duplication cartridges, diskette, carpet, office products, plastic lumber, buckets, waste baskets, containers, benches, tables, fencing, clothing, mats, packaging, signs, posts, binders, sheet, building products, garden hose, and trays.	10% postconsumer (PCC section 12209(f)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 10% postconsumer requirement.
Paint	Including, but not limited to, water-based paint, graffiti abatement, interior and exterior, and maintenance.	50% postconsumer (PCC section 12209(g)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 50% postconsumer requirement.
Antifreeze	Including recycled antifreeze, and antifreeze containing a bittering agent or made from polypropylene or other similar nontoxic substance.	70% postconsumer (PCC section 12209(h)).	At least 50% of the total dollars spent within this category must be used to procure products(s) meeting the 70% postconsumer requirement.
Tires	Including, but not limited to, truck and bus tires, and those used on fleet vehicles and passenger cars.	Retreaded tires must use an existing casing that has undergone an approved or accepted recapping or retreading process (PCC section 12209(i)).	At least 50% of the total dollars spent within this category must be used to procure tire(s) meeting the approved or accepted recapping or retreading process.
Tire-Derived Products	Including, but not limited to, flooring, mats, wheelchair ramps, playground cover, parking bumpers, bullet traps, hoses, bumpers, truck bed liners, pads, walkways, tree ties, road surfacing, wheel chocks, rollers, traffic control products, mud flaps, and posts.	50% recycled used tires (PCC section 12209(j)).	At least 50% of the total dollars spent within this category must be used to procure tire(s) meeting the 50% recycled used tires.
Metal Products	Including, but not limited to, staplers, paper clips, steel furniture, desks, pedestals, scissors, jacks, rebar, pipe, plumbing fixtures, chairs, ladders, file cabinets, shelving, containers, lockers, sheet metal, girders, building and construction products, bridges, braces, nails, and screws.	10% postconsumer (PCC section 12209(k)).	At least 50% of the total dollars spent within this category must be used to procure product(s) meeting the 10% postconsumer requirement.

PCC = Public Contract Code

Appendix E

California Statutory Requirements on Climate Change

Table E-3. Summary of State Laws and Executive Orders on Climate Change

Legislation Name	Signed into Law/ Ordered	Description
SB 1771	September 2000	Establishes the California Climate Registry to develop protocols for voluntary accounting and tracking of GHG emissions.
AB 1473	July 2002	Directs ARB to establish fuel standards for noncommercial vehicles that would provide the maximum feasible reduction of GHGs.
SB 1078, 107, EO S-14-08	September 2002, September 2006, November 2008	Establishes renewable energy goals as a percentage of total energy supplied in the state.
EO S-3-05, AB 32	June 2005, September 2006	Establishes statewide GHG reduction targets and biennial science assessment reporting on climate change impacts and adaptation and progress toward meeting GHG reduction goals.
SB 1368	September 2006	Establishes GHG emission performance standards for base load electrical power generation.
EO S-1-07	January 2007	Establishes of Low Carbon Fuel Standard.
SB 97	August 2007	Directs OPR to develop guideline amendments for the analysis of climate change in CEQA documents.
SB 375	September 2008	Requires metropolitan planning organizations to include sustainable communities' strategies in their regional transportation plans.
EO S-13-08	November 2008	Directs the Natural Resources Agency to work with the National Academy of Sciences to produce a California Sea Level Rise Assessment Report. And directs CAT to develop a California Climate Adaptation Strategy.

GHG = greenhouse gas

Appendix F

California Law on Tire Pressure Maintenance

On September 1, 2010, the California Air Resources Board's (ARB's) Tire Pressure Regulation took effect. The purpose of this regulation is to reduce greenhouse gas emissions from vehicles operating with under inflated tires by inflating them to the recommended tire pressure rating. The regulation applies to vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds or less. Automotive service providers must meet the regulation's following requirements:

- Check and inflate each vehicle's tires to the recommended tire pressure rating, with air or nitrogen, as appropriate, at the time of performing any automotive maintenance or repair service.
- Indicate on the vehicle service invoice that a tire inflation service was completed and the tire pressure measurements after the service were performed.
- Perform the tire pressure service using a tire pressure gauge with a total permissible error no greater than + two (2) pounds per square inch (psi).
- Have access to a tire inflation reference that is current within three years of publication.
- Keep a copy of the service invoice for a minimum of three years, and make the vehicle service invoice available to the ARB or its authorized representative upon request. (Tire Inflation Regulation, 2010)

Appendix G

Climate Change Outreach Efforts

Presentations and Posters

Jamie Anderson

- CWEMF annual meeting, February, Asilomar

Michael Anderson

- California Water and Environment Modeling Forum, February
- Keynote speech at the CalGIS conference, September
- Two keynote talks at Department of Commerce workshops on climate, water, and energy, September
- California Cooperative Snow Surveys Annual Meeting, November

John Andrew

- Butte Water Commission, January 6, Paradise
- American Water Works Association, January 26, Portland, OR
- Interfaith Earth Stewardship Conference, January 29, Auburn
- American Groundwater Trust, February 6, Ontario
- California Environmental Dialogue, March 5, Sacramento
- Utah Water Users Association, March 10, St. George, UT (keynote)
- GEOSYM, April 28, on-line
- "Ice, Snow, and Water," May 5, UC San Diego
- EnVisionengineering Symposium, June 13, San Diego
- League of Women Voters, June 22, Sacramento
- Western Association of Fish and Wildlife Agencies, July 14, Newport Beach
- ASCE/EWRI/FMA Sustainability Summer Symposium, July 23, Sacramento
- California Climate Adaptation Strategy Public Meeting, August 13, Sacramento
- California Water Plan Update Advisory Committee, August 13, Sacramento
- California Climate Change Conference, September 9, Sacramento (moderator)
- Public Health Working Group, September 14, Sacramento

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- Fifth Annual CEQA Conference, September 22, San Francisco
- Public Meeting on California Water Challenges, September 30, Washington, DC
- Center for Collaborative Policy Professional Development Seminar, October 5, Sacramento
- Parish Forum on Global Climate Change, October 11, Sacramento
- San Diego IRWMP Regional Advisory Committee, October 14, San Diego
- American Water Works Association, November 16, Seattle, WA
- Western States Water Council, November 17, San Diego
- California Urban Water Conservation Council, December 10, San Jose

Francis Chung

- American Geophysical Union, December, San Francisco

Messele Z. Ejeta, et al.

- CWEMF Annual Meeting, February, Asilomar (presentation)

Jeanine Jones

- American Meteorological Society, January, Phoenix
- Border Governors' Conference Water Worktable Binational Drought Conference, March, San Diego
- NOAA/NWS pilot climate training class for DWR staff, June, Sacramento
- NASA/Water Education Foundation Workshop, September, Pasadena
- NOAA/WSWC NIDIS workshop, October, Lincoln, Nebraska
- NOAA Climate Diagnostics and Prediction Workshop, October, Monterey
- WSWC Water Info Mgmt/Climate Change Adaptation Workshop, November, San Diego
- DWR Winter Outlook Workshop, November, San Diego
- ACWA, December, San Diego
- NOAA Sea Level Rise & Inundation Workshop, December, Virginia

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Elissa Lynn

- Society of American Military Engineers, 2009 California Water Conference, October, Sacramento

Roy Peterson

- Linking Climate Change Impacts on Evapotranspiration (ET) and Agricultural Production to Water Resources Decision Making, January
- Climate Change Influences on Biological Components of ET, DWR

Maury Roos

- Climate Change and Water, February, Butte Basin Water Users, Richvale
- Scripps Conference on “Ice, Snow, and Water: Impacts on California and Himalayan Asia.”
- “Reduced Snowpack: Four Impacts on California’s Water Supply.” May
- Lecture for DWR Hydrology Basics Training Class, May, DWR
- Climate Change, Sea Level and the Delta, Presentation to Water Education Foundation Bay Delta Tour, June, Sacramento
- Climate Change, Sea Level and the Delta, Presentation to Dutch Delegation, June, Sacramento
- California Water Resources and Climate Change, December, New Delhi, India

Andrew Schwarz

- DWR Three Day CEQA training class, February, West Sacramento