



Air Resources Board



Matthew Rodriguez
Secretary for
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TO: Helge Eng
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Resource Management
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FROM: Cynthia Marvin, Chief
Transportation and Toxics Division

DATE: February 22, 2016

SUBJECT: GREENHOUSE GAS REDUCTION FUND: CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION EXPENDITURE RECORD FOR FISCAL YEAR 2014-15 – FUELS REDUCTION

Thank you for submitting the final expenditure record (attached) on behalf of California Department of Forestry and Fire Protection (CAL FIRE) on February 19, 2016 to satisfy the requirements of Senate Bill 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012) for expenditures from the Greenhouse Gas Reduction Fund (Fund). We appreciate the iterative consultation process with CAL FIRE staff on the development of this record to support expenditures from the Fund for Fuels Reduction.

This memorandum documents that Air Resources Board (ARB) staff concurred on February 22, 2016 that the attached record is consistent with the statutory requirements of Government Code Section 16428.9 and with ARB's expectations, as documented in the *Funding Guidelines for Agencies that Administer California Climate Investments*.

The CAL FIRE Expenditure Record for Fuels Reduction for Fiscal Year 2014-15, along with this memorandum, will be published on the ARB Cap-and-Trade Auction Proceeds website at: www.arb.ca.gov/auctionproceeds.

If you have any questions concerning this memorandum, please contact me at (916) 324-0062 or via email at Cynthia.Marvin@arb.ca.gov.

Attachment

cc: See next page.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Greenhouse Gas Reduction Fund: Expenditure Record

Fiscal Year: 2014-15 Funds

California Department of Forestry and Fire Protection (CAL FIRE)
Fuels Reduction

Authorizing legislation: Item 3540-001-3228 (Senate Bill 852, Chapter 25, Statutes of 2014) appropriated \$17,847,000 and item 3540-101-3228 (Senate Bill 852, Chapter 25, Statutes of 2014) appropriated \$24,153,000 to implement fire risk reductions, forest health activities, and urban forestry projects.

(1) A description of each expenditure proposed to be made by the state agency pursuant to the appropriation.

<input type="checkbox"/> Agency that will administer funding	<ul style="list-style-type: none"> ▪ California Department of Forestry and Fire Protection (CAL FIRE)
<input type="checkbox"/> Amount of proposed expenditure and appropriation reference	<ul style="list-style-type: none"> ▪ Items 3540-001-3228 and 3540-101-3228 of the Budget Act of 2014 include \$24,153,000 (\$22,353,000 in grants and \$1,800,000 in program/administrative staff) from the Greenhouse Gas Reduction Fund (GGRF) for forest management activities that will reduce greenhouse gases (GHGs). ▪ Of that amount, \$1.3 million will go towards three Fuels Reduction demonstration projects described in this Expenditure Record. ▪ Cost share agreements will be implemented under the authority of Public Resources Code section 4790 et seq., the California Forest Improvement Program, where the State and funding recipients each contribute a portion of the total project cost.
<input type="checkbox"/> Intended recipients	<p>Per the solicitation, entities eligible to receive funding included:</p> <ul style="list-style-type: none"> ▪ Landowners ▪ Agencies ▪ Non-profit organizations ▪ Native American tribes
<input type="checkbox"/> Project category	<ul style="list-style-type: none"> ▪ Natural Resources, Fuels Reduction Grants
<input type="checkbox"/> Type of projects that will be eligible for funding	<ul style="list-style-type: none"> ▪ These demonstration projects remove trees and brush (referred to as “fuel”) that pose a wildfire hazard or increased exposure to injurious insects and disease. After treatments the healthiest trees remain in order to distribute carbon stocks on fewer, larger and more resilient trees that are better able to sequester carbon and withstand wildfire and pests. While trees may be removed, thinning overstocked stands reduces competition among trees, and reduces future

	<ul style="list-style-type: none"> ▪ mortality and susceptibility to carbon loss from wildfires. ▪ Demonstration projects will use the biomass generated from the fuel treatment for wood products or biomass energy to offset the emissions associated with tree removal. Standalone biomass utilization projects that complement existing fuels reduction efforts and provide a net GHG benefit are eligible. ▪ Additional monitoring and reporting will be required for demonstration projects that fund fuels reduction treatments (i.e., not standalone biomass utilization projects) in order to enhance the existing scientific understanding of the impact of fuels treatment projects on forest carbon stocks.
<input type="checkbox"/> Process for selecting projects for funding	<ul style="list-style-type: none"> ▪ Competitive solicitation, evaluation and selection of demonstration projects according to the program Request for Proposals and Procedural Guides. ▪ CAL FIRE published solicitation materials, received project proposals from applicants, and reviewed applications. ▪ CAL FIRE consulted with ARB on the review of applicants' approach to GHG quantification and underlying assumptions. Because of the probabilistic nature of wildfire, only the three projects that the agencies agree are expected to result in a net GHG benefit based on reasonable assumptions of burn probability will be funded.

(2) A description of how a proposed expenditure will further the regulatory purposes of Division 25.5 (commencing with Section 38500) of the Health and Safety Code, including, but not limited to, the limit established under Part 3 (commencing with Section 38550) and other applicable requirements of law.

<input type="checkbox"/> How the expenditure is reflected in the three-year Investment Plan	<ul style="list-style-type: none"> ▪ AB 1532 requires that GGRF monies be appropriated in a manner that is consistent with the three-year Investment Plan. The 2013 Cap-and-Trade Auction Proceeds Investment Plan¹ recommends that funds be used for forestry practices to sequester carbon and reduce black carbon and references benefits of fuels treatments to reduce catastrophic wildfire. It also recommends that funds be used for biomass energy production. ▪ In addition, the First Update to the Scoping Plan² recognizes the key role that forests must play in meeting California's GHG emission reduction goals. It describes a series of policies, actions, and strategic investments to enhance, protect, and conserve California's natural and working lands
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¹ Cap-and-trade auction proceeds investment plan: fiscal years 2013-14 through 2015-16.

http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf

² First Update to the Climate Change Scoping Plan

http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf

in ways that will provide important climate benefits, specifically recommending better management of forests to reduce the incidence of catastrophic wildfire. It also encourages the sustainable use of biomass obtained from forest management practices to produce energy.

- CAL FIRE's proposed expenditures on fuel reduction demonstration projects are designed to capitalize on and assess these climate change mitigation opportunities, further the GHG emission reduction purposes of AB 32, and align with the priorities of the Investment Plan. This is achieved by prioritizing fuel reduction demonstration projects in areas with high fire risk and implementing fuel reduction demonstration projects that increase carbon sequestration and protect forests from the impacts of catastrophic fire. Biomass utilization will also avoid GHG emissions associated with less efficient open burning of the harvest waste material.
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(3) A description of how a proposed expenditure will contribute to achieving and maintaining greenhouse gas emission reductions pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

□ Expected time frame when reductions will be achieved and how expenditure will maintain GHG reductions

- The goal of this grant program is to fund fuel reduction demonstration projects for the purpose of achieving a net GHG benefit. In order to be deemed complete and eligible for consideration of funding, project proposals were required to include a clear and substantiated description of the estimated net GHG benefit that would be achieved through project implementation.
 - The demonstration projects improve the stability of forest carbon through silvicultural practices that promote forest resilience; distribute carbon stocks on fewer, larger trees that are better able to survive wildfire. Demonstration projects will require that the best, healthiest trees remain for greater carbon sequestration and fire and pest resilience. While trees may be removed, thinning overstocked stands reduces competition among trees, avoiding future mortality.
 - Projects selected for funding utilize biomass which avoids GHG emissions associated with open burning of the harvest waste material. By converting removed trees into wood products, the carbon is retained for longer than landfilled biomass. Biomass can also be repurposed for electricity generation or biofuel production.
 - Fuels reduction projects are an initial source of emissions as biomass is removed from the treatment area. A net GHG benefit from fuel reduction projects occurs as a result of biomass utilization, improved tree growth, and avoided
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wildfire emissions from an expected reduction in fire severity. The time required to achieve a net GHG benefit will vary depending on site characteristics and treatments employed but are expected to be achieved between 7 and 15 years.^{3,4}

- Demonstration projects that do not immediately result in a GHG benefit must be sustained at least until a net GHG benefit is realized and maintained for 10 years. If that time period extends beyond the Phase 2 reporting period described in ARB's Funding Guidelines, CAL FIRE will continue to monitor the demonstration projects for compliance with the terms of the grant until the GHG benefit is realized and maintained for 10 years. The grant recipient will provide access to CAL FIRE as needed, for periodic monitoring of these demonstration projects.
 - As demonstration projects, the net GHG benefit achieved will be quantified through monitoring activities. Monitoring 100% of demonstration projects that fund fuels reduction treatments (i.e., not standalone utilization projects) will help to advance the scientific understanding of the impact of fuels reduction treatments on forest carbon stocks.
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(4) A description of how the state agency considered the applicability and feasibility of other nongreenhouse gas reduction objectives of Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

Fuel Reduction projects will provide direct and indirect public benefits by reducing threats such as wildfire, insects and disease.

□ Expected co-benefits, particularly environmental, economic, public health and safety

- The most direct and significant co-benefits from Fuel Reduction projects are reducing wildfire severity and adverse impacts on the environment. Lower intensity wildfires result in increased tree survival, and when more trees survive wildfire, greater carbon sequestration can occur over time. Fuel reduction thinning increases the chance that a stand of trees will grow to maturity, which also increases the stand's carbon sequestration, wood production, and wildlife benefits. Co-benefits are also found in improving the safety and effectiveness of fire suppression resources deployed to control wildfires. Fuel reduction projects provide safe locations where firefighters can effectively implement suppression tactics, which reduce the spread of fire to adjacent, untreated
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³ California Fire Science Consortium (2011), Balancing the Carbon Costs and Benefits of Fuels Management, http://static1.squarespace.com/static/545a90ede4b026480c02c5c7/t/5527ebd9e4b0f620d0cb5b58/1428679641640/CFSC_Chiono_Carbon_and_Fuel_Mngmt.pdf

⁴ Hurteau, M. and North, M (2011), Carbon Costs and Benefits of Fuels Treatments. http://www.fs.fed.us/psw/publications/north/2010_north_FuelsTreatmentCarbonCostBenefitsBrief.pdf

forest stands. Other co-benefits include reduced risk to public safety, lower fire suppression costs, reduced property damage, better air and water quality, retention of wildlife habitat, and improved aesthetics and recreational opportunities when treatments are on publicly accessible lands.

- Another major co-benefit of Fuel Reduction projects is improved water quality. Fires can result in significant impairment of water quality, sedimentation of streams and reservoirs and can cause major runoff/debris flows. Healthy forests protect against large, intense wildfires, erosion and stream sedimentation; reduce property damage and losses due to wildfires, improve public health by reducing air pollutants, and contribute to strong rural economies. A significant portion of California’s urban water supply originates from forested landscapes (approximately 60 percent of the State’s water originates from Sierra Nevada forests). Severe wildfires produce increased soil erosion and stream sedimentation, increasing water treatment costs and decreasing reservoir storage capacity. Healthy, functioning forest ecosystems in upland watersheds help ensure that sustainable quantities of high quality water for both domestic and agricultural uses will continue to be produced. In addition, water to support California’s significant hydropower assets originates in these watersheds. This is particularly important given the predicted effects of climate change on future water production and the ability of forest management projects to protect and enhance both quality and quantity of water from forested landscapes
- Socio-economic benefits also result from the utilization of vegetation removed for fire hazard reduction to produce biomass energy and solid wood products. Harvesting and transporting excess vegetation provides jobs and secondary economic activity in rural communities. Utilization of biomass for energy also contributes to developing energy security.

Disadvantaged community benefits, if applicable, as defined in ARB guidelines

- These grants are not expected to directly benefit disadvantaged communities.

Percentage of total funding that will be expended for projects that

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benefit disadvantaged communities, per ARB guidelines	
<input type="checkbox"/> How the project will support other AB 32 objectives	<ul style="list-style-type: none"> ▪ The fuels reduction programs will also support other AB 32 objectives including complementing the State’s effort to improve air quality by reduction of wildfire emissions and providing opportunities for community institutions and small businesses to participate in and benefit from GHG reduction efforts via issuing grants to nonprofit organizations.

(5) A description of how the state agency will document the result achieved from the expenditure to comply with Division 25.5 (commencing with Section 35800) of the Health and Safety Code.

<input type="checkbox"/> Approach that will be used to document net GHG reductions before and after project completion Include citations for references that support methodology	<ul style="list-style-type: none"> ▪ Demonstration project proponents and CAL FIRE will calculate the net GHG benefit from the program described here using ARB-approved quantification methodologies that are under development. ▪ CAL FIRE will work closely with ARB to refine GHG reduction methodologies for all forestry projects in order to further ensure that only projects with a demonstrated ability to achieve a net GHG benefit will be funded with GGRF funds in the future. In addition, implementation of fuels reduction demonstration projects will contribute to providing data needed to enhance the scientific understanding of the impact of fuels reduction treatment projects on forest carbon stocks. ▪ The net GHG benefit for two Fuel Reduction demonstration projects is calculated by comparing the project scenario to the no-project scenario at the end of a 20 year project life. The project scenario is an estimate of the onsite carbon stocks as a result of implementing the fuels treatment and subsequent tree growth, carbon stored long-term in wood products, avoided emissions from wildfire, and avoided emissions from the production of biomass energy. The no-project scenario incorporates the probability of wildfire and is an estimate of the onsite carbon stocks and emissions when the project is not implemented. ▪ For the standalone biomass utilization project that complements an existing fuels reduction effort, the net GHG benefit is a comparison of emissions from the baseline scenario of onsite pile burning and the project scenario of biomass energy production.
<input type="checkbox"/> Type of information that	<ul style="list-style-type: none"> ▪ Grantees will collect and report demonstration project results to CAL FIRE for entry into the Department’s CAL

will be collected to document project results, as described in ARB guidelines	<p>Mapper Information System. Information such as acres treated, location of demonstration projects, funds expended, solid wood or biomass products generated, and net GHG benefit will be collected and recorded.</p> <ul style="list-style-type: none">▪ To determine the net GHG benefit, CAL FIRE will collect Phase 2 Reporting data on 100% of the demonstration projects that fund fuels reduction treatments (i.e., not standalone biomass utilization projects) pursuant to ARB's Funding Guidelines.
<input type="checkbox"/> How the agency will report on program status	<ul style="list-style-type: none">▪ CAL FIRE will regularly report on expenditures, status of grant demonstration projects, and demonstration project benefits in reports prepared and submitted according to ARB guidelines.▪ At a minimum, such reports will include expenditures, net GHG benefit, and co-benefits.

Greenhouse Gas Reduction Fund: Expenditure Record

Fiscal Year: 2014-15 Funds

California Department of Forestry and Fire Protection (CAL FIRE)
Fuels Reduction

Authorizing legislation: Item 3540-001-3228 (Senate Bill 852, Chapter 25, Statutes of 2014) appropriated \$17,847,000 and item 3540-101-3228 (Senate Bill 852, Chapter 25, Statutes of 2014) appropriated \$24,153,000 to implement fire risk reductions, forest health activities, and urban forestry projects.

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Expected time frame when reductions will be achieved and how expenditure will maintain GHG reductions

- The goal of this grant program is to fund fuel reduction demonstration projects for the purpose of achieving a net GHG benefit. In order to be deemed complete and eligible for consideration of funding, project proposals were required to include a clear and substantiated description of the estimated net GHG benefit that would be achieved through project implementation.
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(4) A description of how the state agency considered the applicability and feasibility of other nongreenhouse gas reduction objectives of Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

Fuel Reduction projects will provide direct and indirect public benefits by reducing threats such as wildfire, insects and disease.

- Expected co-benefits, particularly environmental, economic, public health and safety
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- Approach that will be used to document net GHG reductions before and after project completion. Include citations for references that support methodology
 - Demonstration project proponents and CAL FIRE will calculate the net GHG benefit from the program described here using ARB-approved quantification methodologies that are under development.
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