

STATE OF CALIFORNIA  
**Budget Change Proposal - Cover Sheet**  
 DF-46 (REV 08/15)

Fiscal Year 2016-17	Business Unit 3900	Department Air Resources Board	Priority No. 3
Budget Request Name 3900-003-BCP-BR-2016-GB		Program <b>3510- CLIMATE CHANGE</b>	Subprogram N/A

Budget Request Description

Short-Lived Climate Pollutants: Investigating, implementing, and enforcing Short-Lived Climate Pollutant (SLCP) measures

Budget Request Summary

The Air Resources Board is requesting \$870,000 for 5.0 new permanent full-time positions and \$545,000 in annual contract funding to investigate, develop, implement, and enforce several key Short-Lived Climate Pollution measures, enabling the Air Resources Board to meet the emission reduction goals set in the Short-Lived Climate Pollution strategy required by SB 605 (Chapter 523, Statutes of 2014). These measures will, in turn, support California's efforts to achieve the State's near-term under the California Global Warming Solutions Act of 2006, mid-term, and long-term greenhouse gas and air quality goals; many of the Governor's "five pillars" objectives (e.g., 50 percent reduction in petroleum fuel use, 50 percent renewables in electricity, reduction of short-lived climate pollutants, cleaner home heating fuels, and management of soils and agricultural lands to improve carbon storage); State Implementation Plan strategies for achieving air quality goals; and the 40 percent greenhouse gas midterm reduction goal by 2030 in Executive Order B-30-15.

Requires Legislation <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Code Section(s) to be Added/Amended/Repealed
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Does this BCP contain information technology (IT) components? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, departmental Chief Information Officer must sign.</i>	Department CIO	Date
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For IT requests, specify the date a Special Project Report (SPR) or Feasibility Study Report (FSR) was approved by the Department of Technology, or previously by the Department of Finance.

FSR       SPR      Project No.      Date:

If proposal affects another department, does other department concur with proposal?     Yes     No  
*Attach comments of affected department, signed and dated by the department director or designee.*

Prepared By Floyd Vergara	Date 1/7/16	Reviewed By Alice Stebbins	Date 1-7-16
Department Director Richard W. Corey	Date 1/7/2016	Agency Secretary Matthew Rodriguez	Date 1-7-16

**Department of Finance Use Only**

Additional Review:  Capital Outlay     ITCU     FSCU     OSAE     CALSTARS     Dept. of Technology

BCP Type:       Policy       Workload Budget per Government Code 13308.05

PPBA	Original Signed By: Ellen Moratti	Date submitted to the Legislature 1/8/17
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## A. Budget Request Summary

The budget proposal includes \$870,000 for 5.0 new permanent full-time positions and \$545,000 in annual contract funding to 1) investigate and develop Short-Lived Climate Pollution (SLCP) measures; 2) quantify, monitor and verify SLCP emissions, as well as full enforcement, legal development; and 3) legal defense of existing and upcoming near-term SLCP measures. These positions, funded through the Cost of Implementation Account (COIA), include 1.0 Air Resources Engineer (ARE), 3.0 Air Pollution Specialists (APS), and 1.0 Attorney III.

SLCPs are powerful climate forcers that remain in the atmosphere for a much shorter period of time than longer-lived climate pollutants, such as carbon dioxide (CO<sub>2</sub>). Their relative potency, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO<sub>2</sub>. The impacts of SLCPs are especially strong over the short term, with reductions of SLCPs resulting in an immediate beneficial impact on climate change. In May 2015, in accordance with SB 605 (Chapter 523, Statutes of 2014), the Air Resources Board (ARB) released Short-Lived Climate Pollutant Reduction Strategy Concept Paper<sup>1</sup> (Concept Paper) proposing additional measures to reduce methane emissions by 40 percent, and fluorinated gases (F-gases) by 50 percent by 2030, significantly beyond existing 2020 goals. This aggressive approach must be complemented with equally aggressive enforcement of existing and future programs to ensure emission reductions are achieved. With current resources, ARB does not have the capacity to achieve the intent of SB 605 and achieve aggressive emission reductions of SLCPs.

The work to be performed includes the following:

- In-depth analysis on the minimization of uncontrolled waste biogas (primarily comprised of methane);
- Evaluation and identification of the best beneficial uses of new and existing controlled biogas;
- Research and analysis to develop and begin implementing an integrated approach, including identification of regulatory concepts or other control strategies, for managing the use of organic waste and renewable natural gas;
- Implementation of near-term F-gases emission reduction projects and identify resources necessary to implement longer-term proposals, including appropriate regulatory measures or other control strategies;
- Operation of F-gases monitoring instrumentation and provide quality control, data validation, and reporting on an ongoing basis;
- Enforcement of existing and future SLCP programs; and
- Legal development and support, including environmental review.

## B. Background/History

### California's Climate Goals

The California Global Warming Solutions Act of 2006 (AB 32) directed ARB to design measures that achieve real, quantifiable, cost-effective reductions of greenhouse gas (GHG) emissions and return California to 1990 emission levels by 2020. Since 2006, the State has continued to steadily implement a set of actions that are driving down GHG emissions, cleaning the air, diversifying the energy and fuels that power our society, and spurring innovation in a range of advanced technologies. These efforts have put California on course to achieve the near-term 2020 emissions limit, and have created a framework for ongoing climate action that can be built upon to maintain and continue reductions beyond 2020 as required by AB 32. In addition to the near-term GHG emission reduction goals established in AB 32, mid-term and longer-term GHG emission reduction targets have been established in Executive

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<sup>1</sup> The May 2015 Short Lived Climate Pollutants Concept Paper may be found at:  
[http://www.arb.ca.gov/cc/shortlived/concept\\_paper.pdf](http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf)

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Orders B-30-15 and S-3-05 that reduce greenhouse gas emissions by 40 percent below 1990 levels in 2030 and by 80 percent below 1990 levels by 2050, respectively.

## Short Lived Climate Pollutants

SLCPs are powerful climate forcers that remain in the atmosphere for a much shorter period of time than longer-lived climate pollutants, such as CO<sub>2</sub>. Their relative potency, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO<sub>2</sub>. The impacts of SLCPs are especially strong in the near term. Reducing these emissions can make an immediate beneficial impact on climate change. California must achieve deep reductions in SLCP emissions by 2030 to meet future GHG emission targets and air quality goals. In addition, recent research has shown that global action to reduce SLCP emissions is necessary to immediately slow global warming and to keep warming below 2° C through at least 2050, which is a critical threshold to manage the damaging effects of climate change. SLCPs may be responsible for about 40 percent or more of global warming experienced to date. SLCPs, which include methane, F-gases, black carbon, and tropospheric ozone, are among the most harmful GHGs to both human health and global climate.

California has taken significant steps in reducing SLCP emissions:

- **Black carbon:** California has cut anthropogenic sources of black carbon emissions by more than 90 percent since the 1960s, and will cut them in half again by 2020. These efforts prevent an estimated 5,000 premature deaths in the State each year, and deliver important climate benefits.
- **Methane:** California has the nation's strongest standards for limiting methane emissions from landfills, has existing or proposed offset protocols under our Cap-and-Trade program to reduce methane emissions from dairies, coal mines, and rice cultivation, and has rules under development and being implemented that should create a comprehensive approach to limit methane leaks from the oil and gas sectors.
- **F-gases:** California is the only subnational jurisdiction in the world with an inventory for F-gases emissions, a Cap-and-Trade offset protocol incentivizing the capture and destruction of ozone depleting substances (which are also F-gases), and regulations in place that will cut emissions of F-gases by 25 percent below projected levels in 2020.

Still, more remains to be done. California is home to some of the highest levels of air pollution in the country, and although the State has substantially reduced particulate matter (black carbon) emissions from on-road transportation, vehicles are still major polluters of the air in our communities and harm the lungs of some of our most vulnerable populations. Methane is responsible for about 25 percent of current global warming, and its emissions continue to increase in California and globally. F-gases, specifically hydrofluorocarbons (HFCs), are the fastest growing source of GHG emissions in California and globally. Among the items of particular focus are methane from waste management and dairies, and F-gases emissions from refrigeration and air conditioning systems. These are large sources where ARB needs to implement immediate regulations and develop robust long-term strategies.

The Legislature recognized the critical role that SLCPs must play in the State's climate efforts with the passage of SB 605, which requires ARB to develop a strategy by the end of 2015 to further reduce SLCP emissions. In his 2015 Inaugural Address, Governor Brown reinforced this commitment and called on California to show the world the path to limiting global warming below 2° C through 2050, while highlighting the role that action to cut SLCPs must play in this effort. Failure to adequately address SLCPs would be inconsistent with legislative and Governor directives and jeopardize our ability to meet California's climate change goals.

## Short Lived Climate Pollutants Concept Paper

In May 2015, in accordance with SB 605, ARB released a Concept Paper proposing additional measures to reduce methane emissions by 40 percent, and F-gases by 50 percent by 2030, significantly beyond our 2020 goals. This Concept Paper relies heavily on the use of renewable natural gas (RNG) in helping California reach its near-, mid-, and long-term climate and air pollution goals as waste-related emissions make up approximately 50 percent of the state's methane emissions. Reducing uncontrolled biogas emissions and increasing RNG production into commercially useful fuel

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can contribute to GHG emissions reductions under the Low Carbon Fuel Standard (LCFS), Cap and Trade, SLCP Strategy, and 2030 GHG targets identified by Governor Brown. In addition, since biomethane use in transportation and energy generation can provide significant benefits in the coming years in California, it is important to direct those RNG-generating resources to appropriate end-uses. However, there is insufficient information about how to best incentivize or regulate RNG in such a way as to maximize the potential for GHG and criteria air pollution reductions from specific sources and end-uses. Additional research and analysis is necessary to identify appropriate strategies for achieving waste-related emission reductions.

In addition to methane measures, the SLCP Concept Paper calls for a 50 percent reduction in F-gases by 2030. F-gases, specifically HFC, are the fastest growing source of GHG emissions both globally and in California. Many F-gases are hundreds, or thousands, of times more potent than CO<sub>2</sub>. F-gases are used in a variety of applications, mainly refrigeration and air-conditioning systems as well as foams, aerosols and fire suppression. For an increasing number of these applications, low- global warming potential (GWP) alternatives are entering the market and becoming more cost-effective. California's efforts to reduce emissions of F-gases are part of a broader set of national and international commitments to phase down the production and use of HFCs. New measures developed in California can grow markets for low-GWP alternatives, and can provide an important national and international signal to build the case for action.

### Additional Benefits

Many of the benefits of reducing SLCP emissions in California will accrue in the most disadvantaged parts of the State, where pollution levels and their health impacts are often highest, and where further economic development may be most needed. For example:

- Improving management and health of forests and rural landscapes to mitigate black carbon emissions from wildfires and biomass burning can help bring investment, economic, and climate resiliency benefits throughout the Sierra and other rural parts of California;
- Switching to low-GWP refrigerants in air conditioning systems can also improve their energy efficiency, which can help to cut transportation fuel consumption and electricity bills throughout the State, especially in the hottest climate zones, including the Central Valley and San Bernardino, Imperial, Inyo, and Riverside counties; and
- Greater utilization of biomethane can achieve multiple economic and public health benefits through job creation, supporting agriculture, and achieving reductions in criteria pollutant and air toxics.

### Workload Metrics<sup>2</sup>

This proposal would implement new programs; however, experience with developing, implementing and enforcing ARB's early action measures and operating and maintaining monitoring instrumentation for existing air quality programs provides a basis for determining potential work metrics for this proposal. For the methane waste strategy development, ARB requests one technical staff as well as contract funds. This position will continue ARB's close coordination with all technical experts - including those at CalRecycle, Public Utilities Commission, the Resources Agency, and the California Department of Food and Agriculture, among others – to develop a comprehensive statewide strategy for managing the use of organic waste and identifying the most beneficial uses of RNG. This position is separate from the BCP for *Implementation of Methane Measurements (AB 1496)* which is directed at performing measurements of high-emission methane "hot spots" to improve the understanding of emission sources; and at conducting life-cycle greenhouse gas emission analysis of natural gas produced and imported into the State. The life-cycle greenhouse gas emission analysis will support the methane waste strategy as a tool to inform the best use and approach for utilizing our in-state biogas resources. Development of the methane waste gas strategy, which will cover all organic waste including uncontrolled biogas from landfills, dairies, and wastewater and identify the most beneficial uses for the biogas, is complementary to funding that CalRecycle is receiving for organics waste diversion from

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<sup>2</sup> These are new programs so there is no resource history or program budget to report.

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landfills. ARB estimates the need for three additional technical staff for development and implementation of F-gases regulations; to improve our knowledge of potential sources of F-gases in California; and to monitor compliance with and enforcement of existing and near-term SLCP regulations. Lastly, ARB requests one additional legal counsel to support implementation of ARB's SLCP program. Experience with developing, implementing, and enforcing other focused technical strategies suggests this level of effort is appropriate for the scope of the analysis for this particular sector. The requested resources will begin a targeted implementation of the methane waste strategy; however, resource needs for the full implementation of the strategy will need to be evaluated once the strategy is developed.

### C. State Level Considerations

This proposal will enable ARB to meet the emission reduction goals set in the SLCP strategy required by SB 605. The measures investigated, developed, implemented, and enforced through the resources allocated in this proposal will, in turn, support California's efforts to achieve the State's near-term (under AB 32), mid-term, and long-term GHG and air quality goals; all of the Governor's "five pillars" objectives (e.g., 50 percent reduction in petroleum fuel use, 50 percent renewables in electricity, reduction of SLCPs, cleaner home heating fuels, and management of soils and agricultural lands to improve carbon storage); State Implementation Plan strategies for achieving air quality goals; and the 40 percent GHG midterm reduction goal by 2030 in Executive Order B-30-15. ARB will continue its coordination with the Public Utilities Commission, the Resources Agency, the California Department of Food and Agriculture, CalRecycle, and other agencies to develop the most comprehensive approach and ensure consistency with other state goals such as waste reduction.

### D. Justification

As mentioned above, SLCPs play a key role in both air quality and climate change goals. SLCPs (including methane and F-gases) are potent GHGs that may be responsible for 40 percent of climate change to date. SB 605 recognized the critical role that SLCPs must play in the State's climate efforts by requiring ARB to develop a comprehensive strategy to reduce emissions of SLCPs. Emission reductions from these sectors will help achieve (1) the Governor's goal of reducing GHG emissions 40 percent below 1990 levels by 2030, (2) the objectives of the Governor's "five pillars," and (3) air quality goals in the State Implementation Plans. There is a heightened priority to develop and enforce SLCP regulations.

In May 2015, in accordance with SB 605, ARB released a Concept Paper proposing additional measures to reduce methane emissions by 40 percent, and F-gases by 50 percent by 2030, significantly beyond existing 2020 goals. The resources identified in this proposal will provide the groundwork for further developing these approaches by investigating key implementation or analytical challenges, beginning initial regulatory efforts for fast growing sectors, and providing enforcement capabilities to ensure compliance with current and future SLCP measures.

In California, about half of methane emissions result from organic waste (landfills, dairies, and wastewater). The BCP for *Implementation of Methane Measurements (AB 1496)* provides the resources to better understand methane emission sources distribution and strength, as well as better estimate the overall magnitude of anthropogenic methane emissions in California. This data will allow the State to make our programs and policies more effective at reducing (or mitigating) methane. Although the state has taken steps to reduce methane, more needs to be done to develop the policies to reduce those emissions. ARB needs to undertake in-depth analysis to ensure that those reductions are achieved in the most appropriate way. One of the requested positions will focus on in-depth analysis on the minimization of uncontrolled waste biogas (primarily comprised of methane from landfills, dairies, and wastewater). This analysis, will be done in coordination with, and is complementary to, funding the funding that CalRecycle is receiving for organics waste diversion from landfills. This position will also evaluate and identify the best beneficial uses of new and existing controlled biogas, including but not limited to the production of RNG for use in transportation, energy generation, residential and commercial uses including home heating, and production of soil enrichment

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products. Since RNG touches on so many aspects of ARB's and the Governor's goals, ARB needs to understand how best to reduce non-useful releases of biogas while encouraging redirection of organic wastes into their most beneficial uses. The intricacies of the different RNG end-uses and production methods have led to uncertainty about the best use and approach for utilizing our in-state resources. The life-cycle analysis conducted by the positions identified in the BCP for *Implementation of Methane Measurements (AB 1496)* will provide the basis for the understanding the relative life-cycle greenhouse gas emissions from various in-state production and end-use combinations. This position will bring together information, including the life-cycle analysis and current State programs focused on organics waste diversion, and conduct an analysis to form the basis for an integrated and comprehensive approach for organic waste and the use of RNG. In the initial years, this position will focus on identifying and implementing research and data analysis coordinated with stakeholder outreach and technical expertise development. This work will transition into development of an integrated and comprehensive strategy for managing the use of organic waste and RNG. The strategy will provide the basis for future regulatory concepts or other control measures, which may need additional resources. Given the large contribution to total methane emissions, California cannot meet the SLCP targets without a clear and rigorous policy on waste-related emissions.

In addition to methane reductions, the SLCP Concept Paper envisions a 50 percent reduction in F-gases by 2030 from business as usual (~20 million metric tons of CO<sub>2</sub> equivalents per year), beyond meeting the AB 32 target for 2020. For these gases, ARB has the challenge of developing and implementing new regulations involving a large and diverse group of stakeholders and will impact potentially thousands of small businesses. The proposed mitigation strategies include a potential phase-down of F-gas supply in the state, sector specific bans, and incentive programs to help offset cost especially for small businesses. Timely development of these proposals is critical as a majority of the industry is currently in the process of transitioning from existing refrigeration and air conditioning systems from compounds being phased out due to ozone depletion potential. The additional resources are critical for working closely with thousands of industry stakeholders and other government agencies (including local air districts, state and federal) to develop feasible and cost-effective solutions. The resources requested in this proposal will start the process of reaching the 2030 reduction goal by adding one position to work on initial proposals to achieve the most significant or easiest reductions first and evaluate the resources to achieve the remaining reductions. As ARB is attending to the initial reductions and developing longer term plans, ambient F-gases measurements are needed to improve our knowledge of potential sources of F-gases in California and to monitor compliance with existing regulations. This information will be used to prioritize future regulatory and enforcement activities. Although ARB has funding for the necessary instrumentation (two automated gas chromatographs), one additional position is needed to operate the instruments and provide quality control, data validation, and reporting on an ongoing basis. In future years, the data collected will be used to assess the efficacy of specific control strategies.

ARB is requesting one new position focused on enforcement of existing and near-term regulations to ensure that emission reductions are actually achieved. Initially, this position will focus on increasing enforcement of ARB's existing SLCP regulations (including the Refrigerant Management Program [RMP], and Landfill Methane Capture Regulation [LMR] and working to ensure that ARB's enforcement presence is significantly more visible than current capacity allows. Longer-term, the requested position will continue to enforce existing SLCP regulations and will provide support to regulatory development staff by providing an enforcement perspective during the development process.

If the requested resources are not provided, ARB would be unable to achieve the Legislative intent of SB 605. The May 2015 SLCP Concept Paper identifies the need to investigate and develop measures that would achieve a 40 percent reduction in methane and an 50 percent reduction in F-gases in the next 15 years with a 20 percent reduction in the next five years. Without additional resources, ARB will be unable to develop a comprehensive strategy that would manage the use of organic waste, beyond funding programs for waste diversion from landfills, and RNG in the most economic and environmentally beneficial way resulting in fragmented management that will likely not achieve the most cost-effective emission reductions. Additionally, ARB currently has the capacity to dedicate only a single staff person to enforcement of existing SLCP measure resulting in cases not being able to be fully investigated. ARB anticipates that the requested level of staffing could conduct between 40 to 60 facility inspections annually and resolve approximately 7 to 10 violations annually. For comparison,

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with existing resources ARB has been unable to conduct any inspections of landfills subject to the LMR regulation and, in 2015, conducted 62 investigations, 59 inspections, identified 19 violations, and closed 4 cases. The 2015 numbers include the temporary assignment of 1 additional staff person to conduct targeted inspections to assist a California Environmental Protection Agency Environmental Justice initiative in the Los Angeles area. This inability to fully enforce existing programs would continue until additional resources are made available therefore the existing programs may not achieve the intended emission reductions. Additional enforcement resources will be necessary to implement and enforce future SLCP measures, beyond the existing and near-term measures described herein. Diverting existing staff resources to work on the tasks identified in this proposal would result in the State backsliding from meeting the legislatively mandated 2020 climate goals.

Based on past experience, ARB anticipates that four technical positions will be filled by professional staff including 1.0 ARE and 3.0 APSS. These new positions will be absorbed into existing sections within ARB. The fifth position would be a Senior Staff Counsel to advise on the regulatory, implementation and enforcement activities.

More details on the resource needs are described below:

Resource Need/Task	Requested Resources		
	FY 2016/17	FY 2017/18	FY 2018/19 & ongoing
<p>Develop the policies to reduce methane emissions including analysis to ensure reductions are achieved in the most appropriate way; evaluate strategies to minimize uncontrolled waste biogas; and evaluate and identify the best beneficial uses of new and existing controlled biogas. Ultimately this work will support development of an integrated strategy (Strategy) for managing the use of organic waste and RNG. Specific ARB tasks include:</p> <ul style="list-style-type: none"> <li>• Conduct and compile research, and write reports</li> <li>• Coordinate with stakeholders and technical experts including workshops;</li> <li>• Develop and conduct technical modeling, as needed.</li> <li>• Identify and make policy recommendations on best uses of biogas and target implementation of priority control measures.</li> </ul>	1.0 PY and \$150K contract support	1.0 PY and \$150K contract support	1.0 PY and \$150K contract support
<p>Implement near-term F-gases emission reduction projects and identify resources necessary to implement longer-term proposals. Specific ARB tasks include:</p> <ul style="list-style-type: none"> <li>• Extensive stakeholder outreach, including potentially thousands of small business, local air districts and state and federal agencies including workshops</li> <li>• Conduct and compile research and write reports</li> <li>• Develop regulations or regulatory modifications, as necessary.</li> </ul>	1.0 PY and \$300K contract support	1.0 PY and \$300K contract support	1.0 PY and \$300K contract support

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<p>F-gases monitoring instrumentation set-up and operation. Recurring costs include facility lease, contract and supply funds; see section H. Supplemental Information for costs details. Specific ARB tasks include:</p> <ul style="list-style-type: none"> <li>• Specify, procure, configure, and operate two automated Gas Chromatographs with Mass Spectrometers (GC/MS).</li> <li>• Establish leases and service contracts.</li> <li>• Analyze data for possible control strategies,</li> </ul> <p>Write internal reports and peer-reviewed publications.</p>	<p>1.0 PY and \$95K recurring costs</p>	<p>1.0 PY and \$95K recurring costs</p>	<p>1.0 PY and \$95K recurring costs</p>
<p>Enforcement of existing and near-term SLCP programs. Specific ARB tasks include:</p> <ul style="list-style-type: none"> <li>• Conduct inspections and audits, identify violations, and collect evidence and other documentation.</li> <li>• Prepare enforcement cases; support attorneys, resolve violations and ensure return to compliance.</li> <li>• Support development of SLCP regulations to ensure that regulations include enforceable requirements.</li> </ul> <p>Support and train air districts to enforce SLCP regulations under Memoranda of Understanding (MOU)</p>	<p>1.0 PY</p>	<p>1.0 PY</p>	<p>1.0 PY</p>
<p>Legal development and support, including environmental review. Specific ARB tasks include:</p> <ul style="list-style-type: none"> <li>• Legal support in development of new SLCP measures</li> <li>• Legal defense of existing and new SLCP measures.</li> <li>• Contract review and support.</li> <li>• Attorney review of all enforcement cases</li> </ul>	<p>1.0 PY</p>	<p>1.0 PY</p>	<p>1.0 PY</p>

In summary, each major task has specific resource needs. Tasks one and two will be used to develop strategies or regulations and have similar resource needs. As such, one staff is needed per each task to conduct literature reviews, compile research and technical information, hold and attend workshops, and coordinate with external stakeholders including other agencies. Staff will develop and conduct technical modeling, manage contracts, and develop interagency agreements or working groups on an as needed basis. In addition, the staff will use information gathered through those avenues to write internal reports, academic, peer-reviewed papers, Based on all the information, staff will identify and make policy recommendations, develop strategy documents and regulatory concepts, and begin targeted implementation of priority control measures. Task three is concentrated on procuring and operating monitoring equipment. One staff is needed to operate the equipment and analyze incoming data with ongoing contract funds for equipment servicing, leases, and recurring costs such as calibration gases. Task four requires one enforcement staff to enforce the various existing and near-term SLCP regulations. Staff will need to be familiar with all the technical details of the various regulations in order to identify violations through inspections and other strategies. The staff will review records audit, and conduct field investigations and collect evidence and other documentation if necessary. This information will support enforcement cases. Staff will assist to resolve disputes if feasible or support attorneys. The enforcement staff will train air districts that may be implementing SLCP measures via MOUs. Finally, one legal staff is necessary to support development of new measures, defense of existing and new measures, contract review, and review of enforcement cases. In total, the five task areas will require five positions.

## E. Outcomes and Accountability

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This proposal will lead to programmatic and policy benefits on SLCPs that are three-fold: 1) developing an integrated and comprehensive strategy on waste and biogas in order to most appropriately address the majority of methane emissions, 2) developing and implementing first-order F-gases reductions while further studying the policy, resource, and measurement components for future regulatory measures, and 3) successfully enforcing existing and near-term SLCP measures. The resulting reductions are necessary to meet the governor's climate goals and emission reduction goals set in the SLCP strategy required by SB 605. Progress and outcomes could be measured by the number of enforcement cases reviewed and completed<sup>3</sup>; the number of monitoring measurements obtained and verified; the number of publications drafted; participation in and hosting of stakeholder outreach events; initiation and completion of research contracts and corresponding technical reports; development of an integrated waste and biogas strategy; and ultimately the number of developed and adopted new SLCP measures<sup>4</sup> and air quality data that support the reduction in SLCPs and GHGs.

### F. Analysis of All Feasible Alternatives

1. Approve proposal. ARB requests \$870,000 for 5.0 full-time permanent positions and \$545,000 annually in contract funds, so that ARB can investigate, implement, and enforce SLCP measures. These resources are needed to meet the emission reduction goals set in the SLCP strategy required by SB 605. In May 2015, ARB released a Concept Paper proposing additional measures to reduce methane emissions by 40 percent, and F-gases by 50 percent by 2030, in accordance with SB 605. This proposal further develops these approaches by providing resources to investigate key implementation or analytical challenges, begin initial regulatory efforts for fast growing sectors, and develop enforcement capabilities to ensure compliance with current and future SLCP measures. The SLCP measures are looking to achieve a 40 percent reduction in methane and a 50 percent reduction in F-gases in the next 15 years with a 20 percent reduction in the next five years. Additionally, this proposal will ensure emission reductions are achieved through proper enforcement and implementation of legally defensible measures. If this proposal is not approved, ARB cannot fulfill the Legislative intent of SB 605 or achieve the 2030 and 2050 climate targets in a comprehensive and cost-effective manner.

2. Redirect existing ARB resources. This alternative would redirect existing staff resources to work on the tasks identified in this proposal. However, current staff resources are working full time on implementing and enforcing existing regulations, conducting outreach and compliance assistance, developing/updating emissions inventory, evaluating effectiveness of existing rules, and identifying gaps to ensure California meets the 2020 emission reduction goals legislatively required by AB 32. Current resources are at full capacity and cannot be diverted from the important task of implementing existing regulations that enable ARB to meet the legislatively mandated 2020 goals. Diverting existing staff resources to work on the tasks identified in this proposal would result in the State backsliding from meeting these goals.

3. Fewer staff, additional contract funds. Lower the staff resources and increase the contract fund resources. Under this alternative, ARB would not be able to achieve the Administration's objectives. For the methane portion, staff would not be able to direct and review the analysis fully and would be limited in the ability to confer with all appropriate stakeholders and integrate the input into the strategy development. The waste sector reductions play a large part in the SLCP strategy and several of ARB's programs. The inclusion of appropriate levels of program staff is necessary. In addition, regulatory development and enforcement need to be implemented by ARB staff. Lowering staff resources and including additional contract funds would result in the inability to develop robust strategies and regulations and lack of enforcement, thus not achieving the intended emission reductions.

4. No action. Do not provide ARB with additional staff or contract funds. Under this alternative, ARB would not have the adequate resources to achieve the Legislative intent of SB 605. ARB would not be able to investigate and develop measures that would achieve a 40 percent reduction in methane and an

<sup>3</sup> ARB anticipates that the development of a new section dedicated to enforcement of existing and future SLCP regulations, along with the requested legal resources, will allow for inspection of 50-85 facilities and resolve approximately 15-20 violations annually.

<sup>4</sup> Initial work completed by the requested resources will drive the number of future SLCP control strategies or regulations.

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50 percent reduction in F-gases in the next 15 years with a 20 percent reduction in the next five years, as identified in the May 2015 SLCP Concept Paper. Additionally, ARB currently has the capacity to dedicate only a single staff person to enforcement of existing SLCP measure resulting in cases not been able to be fully investigated. This inability to fully enforce existing programs would continue until additional resources are made available therefore the existing programs may not achieve the intended emission reductions.

## G. Implementation Plan

FY 2016/17	FY 2017/18	FY 2018/19 & ongoing
<ul style="list-style-type: none"> <li>• Recruit, hire, and train new technical and legal staff (6 months)</li> <li>• Increase enforcement of all existing SLCP regulations</li> <li>• Begin tracking air district enforcement of ARB regulations</li> <li>• Work through backlog of existing enforcement violations</li> <li>• Specify, procure, and configure two automated GC/MS</li> <li>• Develop and document necessary laboratory methods</li> <li>• Establish leases at two locations (one in northern California and one in southern California) for GC/MS</li> <li>• Establish service contract to repair and maintain GC/MS</li> <li>• Conduct literature review</li> <li>• Identify research needs and implement contracts</li> <li>• Initiate F-gases related stakeholder outreach</li> </ul>	<ul style="list-style-type: none"> <li>• Enforcement of all existing SLCP regulations, including inspections and violation settlements</li> <li>• Support and train air districts on enforcement activities</li> <li>• GC/MS instrument operation, calibration and quality control checks</li> <li>• Validate and report measurement data</li> <li>• Initiate data analysis (results from F-gases monitoring)</li> <li>• Conduct public workshops, where necessary</li> <li>• Develop interagency agreements or workgroups</li> <li>• Identify research needs and implement contracts</li> <li>• Manage research contracts, including technical review</li> <li>• Grow F-gases related stakeholder outreach</li> </ul>	<ul style="list-style-type: none"> <li>• Enforcement of existing and future SLCP regulations, including inspections and violation settlements</li> <li>• Support and train air districts on enforcement activities; develop new enforcement related Memorandum of Understanding as necessary</li> <li>• GC/MS instrument operation, calibration and quality control checks</li> <li>• Validate and report measurement data</li> <li>• Data analysis (results from F-gases monitoring, ongoing contracts, literature reviews, study results, etc.)</li> <li>• Prioritize possible control strategies</li> <li>• Full implementation of F-gases related stakeholder outreach</li> <li>• Develop new SLCP measures for F-gases, and initiate regulatory proceedings</li> <li>• Conduct public workshops, where necessary</li> <li>• Participate in interagency coordination (workgroups, MOUs, etc.)</li> <li>• Identify research needs and implement contracts</li> <li>• Manage research contracts, including technical review</li> <li>• Assess the efficacy of</li> </ul>

**Budget Change Proposal - Cover Sheet**

DF-46 (REV 08/15)

		control strategies <ul style="list-style-type: none"> <li>Identify and make policy recommendations for biogas</li> </ul>
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**H. Supplemental Information****Estimate of Consumable and Recurring GC/MS Costs**

Item	Cost per each	Qty per year	# of GC/MS	Sub Total
Lease	\$1,000	12	2	\$24,000
Column	\$900	2	2	\$3,600
Standards	\$10,000	1	1	\$10,000
Filaments	\$300	4	2	\$2,400
Carrier Gas	\$100	12	2	\$2,400
Cryogenic Gas	\$50	104	2	\$10,400
Service Contract	\$20,000	1	2	\$40,000
Miscellaneous Parts	\$1,000	1	2	\$2,000
TOTAL				\$94,800

**I. Recommendation**

ARB recommends approving alternative 1 requesting \$870,000 for 5.0 full-time permanent positions and \$545,000 annually in contract funds to fulfill the legislative intent of SB 605. Furthermore, this alternative supports California's efforts to achieve the State's near-term (under AB 32), mid-term, and long-term GHG and air quality goals; all of the Governor's "five pillars" objectives; State Implementation Plan strategies for achieving air quality goals; and the 40 percent GHG midterm reduction goal by 2030 in Executive Order B-30-15.

Air Resources Board			Attachment A Workload Justification			
Fund: Cost of Implementation						
Position Title: Air Pollution Specialist						
Workload Measure	FY 2016-17			FY 2017-18		
Description of task	Number of Times the task was performed	Number of hours needed to complete task	Total number of annual hours	Number of times the task was performed	Number of hours needed to complete task	Total number of annual hours
<b>F-gas Strategy and Regulatory Development and Implementation</b>						
Develop regulatory proposals	1	1000	1000	1	700	700
Conduct workgroup, stakeholder meetings, and public workshops	30	10	300	30	10	300
Coordinate with regulatory, inventory, research, and incentive staff internally at ARB.	10	3	30	10	3	30
Develop and manage research contracts.	4	30	120	2	30	60
Prepare and present correspondence and technical reports.	5	10	50	6	10	60
Data analysis for regulatory development.	1	300	300	1	300	300
Begin process for identifying long term plans for additional F-gas reductions	0	0	0	1	350	350
<b>Total Hours (1PY)</b>			<b>1,800</b>			<b>1,800</b>
<b>F-gas Instrumentation and Monitoring</b>						
Specify, procure & configure instrumentation (2 analytical systems)	2	160	320	0	0	0
Method Development (2 dozen compounds)	1	1,240	1,240	0	0	0
Survey, visit, contact, and establish leases at 2 suitable locations	2	80	160	0	0	0
Establish comprehensive maintenance contracts to ensure continuous operation	1	80	80	0	0	0
Remote instrument operation	0	0	0	260	2	520
Conduct periodic calibration and quality control checks of the instrumentation	0	0	0	24	16	384
Review, validate, and report data	0	0	0	260	2	520
Periodic maintenance and replacement of consumables	0	0	0	24	8	192
Analyze data to assess and prioritize F-gasses for control	0	0	0	12	8	96
Write internal reports and academic papers	0	0	0	11	8	88
<b>Total Hours (1PY)</b>			<b>1,800</b>			<b>1,800</b>
<b>Waste Biogas Strategy Development</b>						
Plan and organize the development of the waste biogas strategy. This includes developing a strategic plan; timeline for strategy development; organize and implement stakeholder engagement; and conduct public workshops.	4	164	656	4	126	504
Develop technical expertise in waste biogas, including capture technologies, economic impacts, and beneficial uses	3	150	450	3	75	225
Coordinate with regulatory, inventory, research, and incentive staff internally at ARB	12	3	36	12	3	36
Develop and manage research contracts.	2	30	60	4	30	120
Prepare and present correspondence and technical reports. Represent the strategy to internal and external organizations and individuals.	24	10	240	24	10	240
Lead data analysis for development of the strategy.	1	175	175	1	175	175
Lead preparation of written waste biogas strategy, track implementation, and update as necessary; including concept development and internal drafts	1	183	183	1	500	500
<b>Total Hours (1 PY)</b>			<b>1,800</b>			<b>1,800</b>

1.0 Position Equivalent = 1,800 hours  
Numbers are based on previous workload experience

Air Resources Board			Attachment A Workload Justification			
Fund: Cost of Implementation						
Position Title: Senior Staff Counsel						
Workload Measure	FY 2016-17			FY 2017-18		
	Description of task	Number of Times the task was performed	Number of hours needed to complete task	Total number of annual hours	Number of times the task was performed	Number of hours needed to complete task
Enforcement: Case development of ARB's existing SLCP regulations (RMP, LMR, and SF6-GIS), litigate cases (if necessary), and to devise strategy to enforce and enforce new SLCP regulations.	224	3	672	224	3	672
Rulemaking: Assist program staff in regulatory design to ensure effective defense and enforcement, and ensure all Administrative Procedures Act, California Environmental Quality Act, and related legal requirements are met	4	175	700	4	175	700
Serve as lead in-house counsel to defend all legal challenges to existing and planned SLCP regulations, and in that role serve as liaison to Attorney General and others.	214	2	428	214	2	428
<b>Total Hours (1 PY)</b>			<b>1,800</b>			<b>1,800</b>

1.0 Position Equivalent = 1,800 hours

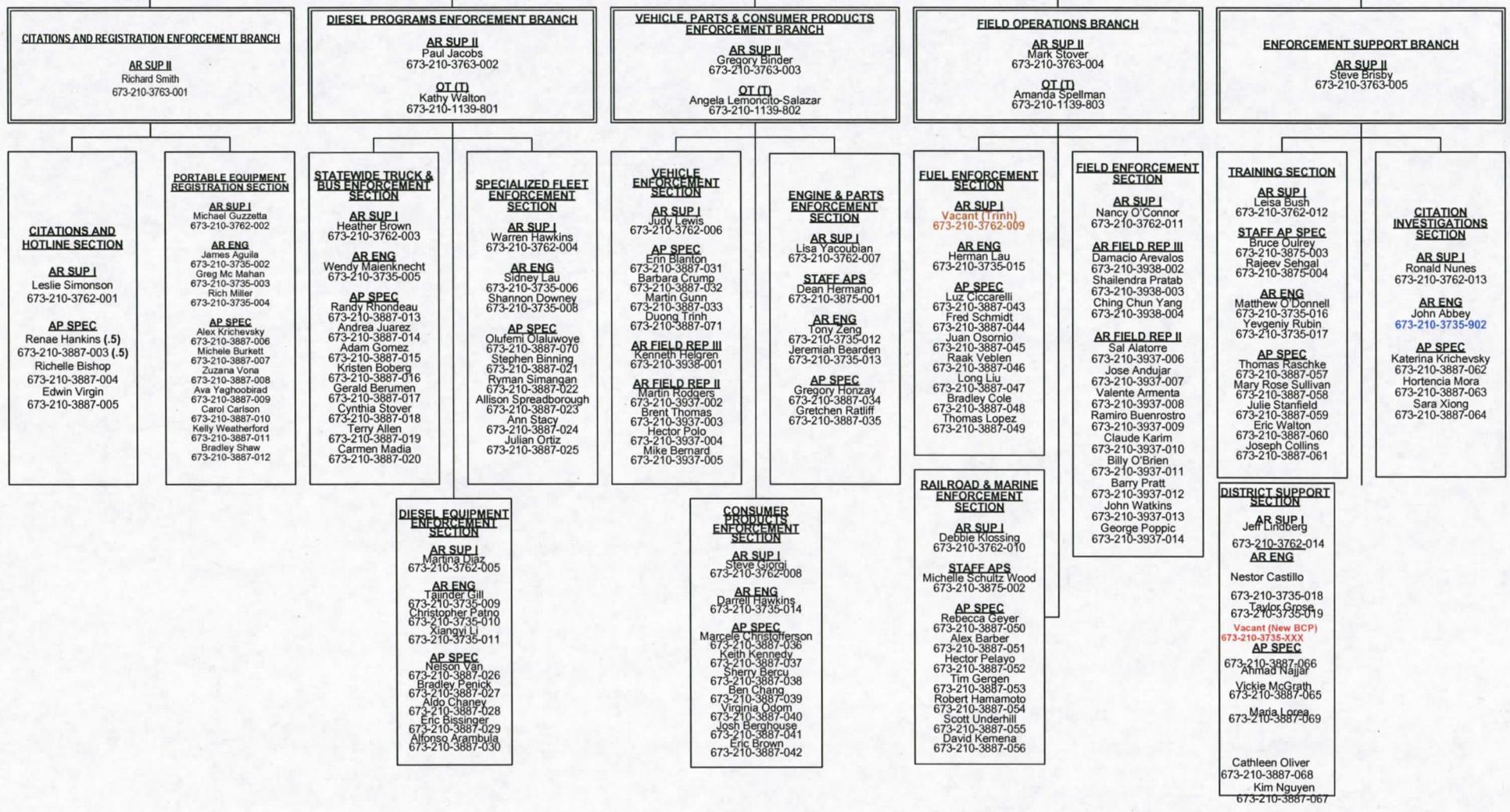
Numbers are based on previous workload experience

Air Resources Board				Attachment A Workload Justification		
Fund: Cost of Implementation						
Position Title: Air Resources Engineer						
Workload Measure	FY 2016-17			FY 2017-18		
	Description of task	Number of Times the task was performed	Number of hours needed to complete task	Total number of annual hours	Number of times the task was performed	Number of hours needed to complete task
<b>Enforcement Activities</b>						
Case development: Conduct investigations and field inspections; audit reports and records of reporting entities	30	20	600	30	20	600
Case management: Prepare enforcement cases for resolution; verify return to compliance; negotiate settlements; prepare cases for litigation	35	8	280	35	8	280
Provide oversight, support and training to air districts enforcing current and near-term SLCP regulations	8	100	800	8	100	800
Coordinate with regulatory development staff: communicate enforcement needs and suggested regulation amendments based on enforcement activities	2	60	120	2	60	120
<b>Total Hours (1PY)</b>			<b>1,800</b>			<b>1,800</b>

**AIR RESOURCES BOARD  
ENFORCEMENT DIVISION  
AUGUST 5, 2015**

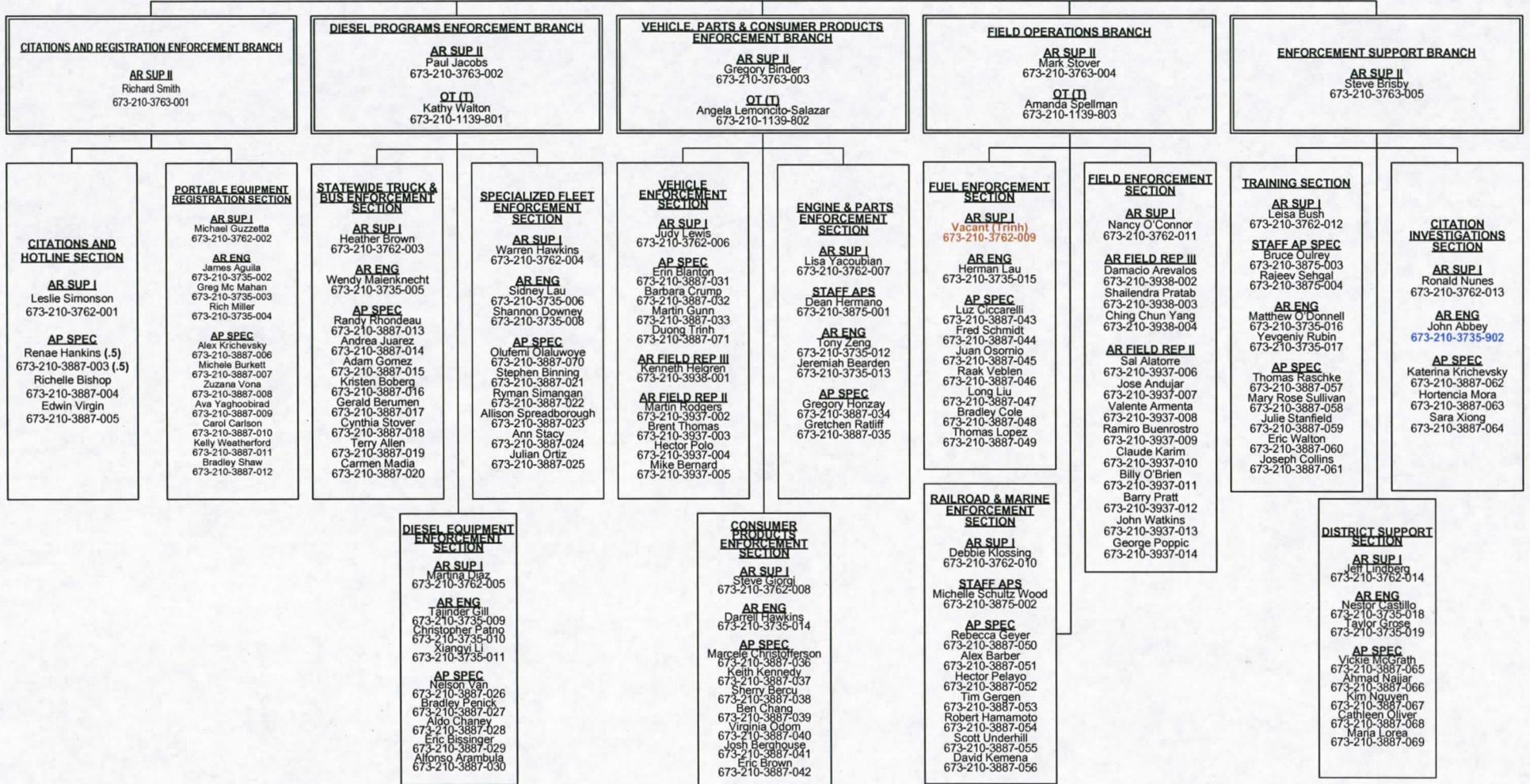
133.5 Authorized Positions  
2 Blanket Positions

Proposed



**AIR RESOURCES BOARD  
ENFORCEMENT DIVISION  
AUGUST 5, 2015**

133.5 Authorized Positions  
2 Blanket Positions



**CITATIONS AND HOTLINE SECTION**  
AR SUP I  
Leslie Simonson  
673-210-3762-001

AR SUP I  
Renae Hankins (.5)  
673-210-3887-003 (.5)  
Richelle Bishop  
673-210-3887-004  
Edwin Virgin  
673-210-3887-005

**PORTABLE EQUIPMENT REGISTRATION SECTION**  
AR SUP I  
Michael Guzzetta  
673-210-3762-002

AR ENG  
James Aguila  
673-210-3735-002  
Greg Mc Mahan  
673-210-3735-003  
Rich Miller  
673-210-3735-004

AP SPEC  
Alex Krichevsky  
673-210-3887-006  
Michele Burkett  
673-210-3887-007  
Zuzana Vona  
673-210-3887-008  
Ava Yaghoobirad  
673-210-3887-009  
Carol Carlson  
673-210-3887-010  
Kelly Weatherford  
673-210-3887-011  
Bradley Shaw  
673-210-3887-012

**STATEWIDE TRUCK & BUS ENFORCEMENT SECTION**  
AR SUP I  
Heather Brown  
673-210-3762-003

AR ENG  
Wendy Maienknecht  
673-210-3735-005

AP SPEC  
Randy Rhondeau  
673-210-3887-013  
Andrea Juarez  
673-210-3887-014  
Adam Gomez  
673-210-3887-015  
Kristen Boberg  
673-210-3887-016  
Gerald Berumen  
673-210-3887-017  
Cynthia Stover  
673-210-3887-018  
Terry Allen  
673-210-3887-019  
Carmen Madia  
673-210-3887-020

**SPECIALIZED FLEET ENFORCEMENT SECTION**  
AR SUP I  
Warren Hawkins  
673-210-3762-004

AR ENG  
Sidney Lau  
673-210-3735-006  
Shannon Downey  
673-210-3735-008

AP SPEC  
Olufemi Olaluwoye  
673-210-3887-070  
Stephen Binning  
673-210-3887-021  
Ryman Simangan  
673-210-3887-022  
Allison Spreadborough  
673-210-3887-023  
Ann Stacy  
673-210-3887-024  
Julian Ortiz  
673-210-3887-025

**VEHICLE ENFORCEMENT SECTION**  
AR SUP I  
Judv Lewis  
673-210-3762-006

AP SPEC  
Erin Blanton  
673-210-3887-031  
Barbara Crump  
673-210-3887-032  
Martin Gunn  
673-210-3887-033  
Duong Trinh  
673-210-3887-071

AR FIELD REP III  
Kenneth Helgren  
673-210-3938-001

AR FIELD REP II  
Martin Rodgers  
673-210-3937-002  
Brent Thomas  
673-210-3937-003  
Hector Foto  
673-210-3937-004  
Mike Bernard  
673-210-3937-005

**ENGINE & PARTS ENFORCEMENT SECTION**  
AR SUP I  
Lisa Yacoubian  
673-210-3762-007

STAFF APS  
Dean Hermano  
673-210-3875-001

AR ENG  
Tony Zeng  
673-210-3735-012  
Jeremiah Bearden  
673-210-3735-013

AP SPEC  
Gregory Honzay  
673-210-3887-034  
Gretchen Ratliff  
673-210-3887-035

**FUEL ENFORCEMENT SECTION**  
AR SUP I  
Vacant (Trinh)  
673-210-3762-009

AR ENG  
Herman Lau  
673-210-3735-015

AP SPEC  
Luz Ciccarelli  
673-210-3887-043  
Fred Schmidt  
673-210-3887-044  
Juan Osornio  
673-210-3887-045  
Raak Veblen  
673-210-3887-046  
Long Liu  
673-210-3887-047  
Bradley Cole  
673-210-3887-048  
Thomas Lopez  
673-210-3887-049

**FIELD ENFORCEMENT SECTION**  
AR SUP I  
Nancy O'Connor  
673-210-3762-011

AR FIELD REP III  
Damacio Arealos  
673-210-3938-002  
Shailendra Pratab  
673-210-3938-003  
Ching Chun Yang  
673-210-3938-004

AR FIELD REP II  
Sal Alatorre  
673-210-3937-006  
Jose Andujar  
673-210-3937-007  
Valente Armenta  
673-210-3937-008  
Ramiro Buenostro  
673-210-3937-009  
Claude Karim  
673-210-3937-010  
Billy O'Brien  
673-210-3937-011  
Barry Pratt  
673-210-3937-012  
John Watkins  
673-210-3937-013  
George Poppic  
673-210-3937-014

**TRAINING SECTION**  
AR SUP I  
Leisa Bush  
673-210-3762-012

STAFF AP SPEC  
Bruce Duley  
673-210-3875-003  
Rajeev Sehgal  
673-210-3875-004

AR ENG  
Matthew O'Donnell  
673-210-3735-016  
Yevgeniy Rubin  
673-210-3735-017

AP SPEC  
Thomas Raschke  
673-210-3887-057  
Mary Rose Sullivan  
673-210-3887-058  
Julie Stanfield  
673-210-3887-059  
Eric Walton  
673-210-3887-060  
Joseph Collins  
673-210-3887-061

**CITATION INVESTIGATIONS SECTION**  
AR SUP I  
Ronald Nunes  
673-210-3762-013

AR ENG  
John Abbey  
673-210-3735-902

AP SPEC  
Katerina Krichevsky  
673-210-3887-062  
Hortencia Mora  
673-210-3887-063  
Sara Xiong  
673-210-3887-064

**DIESEL EQUIPMENT ENFORCEMENT SECTION**  
AR SUP I  
Marina Diaz  
673-210-3762-005

AR ENG  
Tanner Gill  
673-210-3735-009  
Christopher Patno  
673-210-3735-010  
Xianyi Li  
673-210-3735-011

AP SPEC  
Nelson Van  
673-210-3887-026  
Bradley Penick  
673-210-3887-027  
Aldo Chaney  
673-210-3887-028  
Eric Bissinger  
673-210-3887-029  
Alfonso Arambula  
673-210-3887-030

**CONSUMER PRODUCTS ENFORCEMENT SECTION**  
AR SUP I  
Steve Giorgi  
673-210-3762-008

AR ENG  
Darrell Hawkins  
673-210-3735-014

AP SPEC  
Marcelle Christoffersen  
673-210-3887-036  
Keith Kennedy  
673-210-3887-037  
Sherry Bercu  
673-210-3887-038  
Ben Chang  
673-210-3887-039  
Virginia Odum  
673-210-3887-040  
Josh Berghouse  
673-210-3887-041  
Eric Stover  
673-210-3887-042

**RAILROAD & MARINE ENFORCEMENT SECTION**  
AR SUP I  
Debbie Klossing  
673-210-3762-010

STAFF APS  
Michelle Schultz Wood  
673-210-3875-002

AP SPEC  
Rebecca Geyer  
673-210-3887-050  
Alex Barber  
673-210-3887-051  
Hector Pelayo  
673-210-3887-052  
Tim Gergen  
673-210-3887-053  
Robert Hamamoto  
673-210-3887-054  
Scott Underhill  
673-210-3887-055  
David Kemena  
673-210-3887-056

**DISTRICT SUPPORT SECTION**  
AR SUP I  
Jeff Lindberg  
673-210-3762-014

AR ENG  
Nestor Castillo  
673-210-3735-018  
Taylor Grosse  
673-210-3735-019

AP SPEC  
Vickie McGrath  
673-210-3887-065  
Ahmad Najjar  
673-210-3887-066  
Kim Nguyen  
673-210-3887-067  
Cathleen Oliver  
673-210-3887-068  
Maria Lorea  
673-210-3887-069

**AIR RESOURCES BOARD  
INDUSTRIAL STRATEGIES DIVISION  
AUGUST 5, 2015**

127 Authorized Positions

Proposed

**ASST DIVISION CHIEF**  
Jack Kitowski  
673-450-3878-001

**CHIEF, CEA 3**  
Floyd Vergara  
673-450-7500-001

**EXEC SEC II**  
Brittany Sherwood  
673-450-1245-001

**PROGRAM PLANNING & MANAGEMENT BRANCH**

**AR SUP II**  
Jim Aquila  
673-450-3763-001

**CLIMATE CHANGE  
PLANNING SECTION**

**AR SUP I**  
Chuck Seidler  
673-450-3762-001

**AR ENG**  
Michael Ginty  
673-450-3735-001

**AP SPEC**  
Natalie Lee  
673-450-3887-001  
Ashley Dunn  
673-450-3887-002  
Vacant (Ng)  
673-450-3887-003  
Robert Lanquell  
673-450-3887-004  
Anna Mebust  
673-450-3887-005

**EMISSIONS DATA  
QUALITY  
ASSURANCE  
SECTION**

**AR SUP I**  
Renee Lawver  
673-450-3762-002

**AP SPEC**  
Sydnie Lieb  
673-450-3887-006  
Ryan Schauland  
673-450-3887-007  
Chris Halm  
673-450-3887-008  
Vacant (Swanson)  
673-450-3887-009  
Rania Heider  
673-450-3887-010

**CLIMATE CHANGE PROGRAM EVALUATION BRANCH**

**AR SUP II**  
Rajinder Sahota  
673-450-3763-002

**PROGRAM OPERATION  
SECTION**

**AR SUP I**  
Greg Mayeur  
673-450-3762-004

**AR ENG**  
Tracy Haynes  
673-450-3735-003

**AP SPEC**  
Barbara Bamberger  
673-450-3887-015  
Jeffery Coronado  
673-450-3887-016  
Arnab Pal  
673-450-3887-017  
Stephen Shelby  
673-450-3887-018  
Alex Yiu  
673-450-3887-019

**PROGRAM  
DEVELOPMENT  
SECTION**

**AR SUP I**  
Mary Jane Coombs  
673-450-3762-005

**AR ENG**  
David Allgood  
673-450-3735-004  
Vacant (McPhee)  
673-450-3735-005  
Mark Sippola  
673-450-3735-006

**AP SPEC**  
Sara Nichols  
673-450-3887-020  
Mihoyo Fuji  
673-450-3887-021  
Eileen Hlavka  
673-450-3887-022  
William Knox  
673-450-3887-023

**PROJECT ASSESSMENT BRANCH**

**AR SUP II**  
Michael Tollstrup  
673-450-3763-003

**ENERGY SECTION**

**AR SUP I**  
David Mehl  
673-450-3762-007

**STAFF APS**  
Marcelle Surovik  
673-450-3875-003  
Stephanie Kato  
673-450-3875-004

**AR ENG**  
Keith Roderick  
673-450-3735-007  
Rosalva Lopez  
673-450-3735-008  
Joshua Kim  
673-450-3735-009

**AP SPEC**  
Thomas Pomaes  
673-450-3887-030  
Gary Collord  
673-450-3887-031

**REGULATORY  
ASSISTANCE SECTION**

**AR SUP I**  
Tung Le  
673-450-3762-008

**STAFF APS**  
Chris Gallenstein  
673-450-3875-005

**AR ENG**  
Duc Tran  
673-450-3735-010

**AP SPEC**  
Stephen Weller  
673-450-3887-032  
Evan Powers  
673-450-3887-033  
Patrick Au  
673-450-3887-034  
Steve Eve  
673-450-3887-035

**TRANSPORTATION FUELS BRANCH**

**AR SUP II**  
Sam Wade  
673-450-3763-004

**FUELS SECTION**

**AR SUP I**  
Manisha Singh  
673-450-3762-010

**STAFF APS**  
Jing Yuan  
673-450-3875-006

**AR ENG**  
Vacant (Cuthrie)  
673-450-3735-011  
Adrian Cayabyab  
673-450-3735-012  
Katrina Sideco  
673-450-3735-013  
Greg O'Brien  
673-450-3735-014

**AP SPEC**  
Veronika Pesinova  
673-450-3887-042  
Reza Lorestany  
673-450-3887-043  
Hurshbir Shahi  
673-450-3887-044

**FUELS EVALUATION  
SECTION**

**AR SUP I**  
Anil Prachu  
673-450-3762-011

**AR ENG**  
Todd Dooley  
673-450-3735-015  
Ron Oingza  
673-450-3735-016  
Kamal Ahuja  
673-450-3735-017  
Chan Pham  
673-450-3735-018  
Hatizur Chowdhury  
673-450-3735-019  
Anthony Alexiades  
673-450-3735-020

**AP SPEC**  
Carmen Spranger  
673-450-3887-045  
Vacant (Surovik)  
673-450-3887-046

**OIL & GAS AND GHG MITIGATION BRANCH**

**AR SUP II**  
Elizabeth Scheehle  
673-450-3763-005

**OIL AND GAS  
SECTION**

**AR SUP I**  
Jim Nyarady  
673-450-3762-014

**AR ENG**  
Christian Hurley  
673-450-3735-026  
Joseph Fischer  
673-450-3735-027  
Tiffany Mateo  
673-450-3735-028

**AP SPEC**  
Stephanie Detwiler  
673-450-3887-053  
Joelle Howe  
673-450-3887-054

**GREENHOUSE GAS  
MEASURES SECTION**

**AR SUP I**  
Terrel Ferreira  
673-450-3762-015

**STAFF APS**  
Win Seltawan  
673-450-3875-007

**AR ENG**  
Andrew Mrowka  
673-450-3735-029  
Linda Lee  
673-450-3735-030  
Chris Newton  
673-450-3735-031

**AP SPEC**  
Lynn Yeung  
673-450-3887-055

**CLIMATE CHANGE  
REPORTING SECTION**

**AR SUP I**  
Brieanne Aquila  
673-450-3762-003

**STAFF APS**  
Patrick Gaffney  
673-450-3875-002

**AR ENG**  
Karen Lutter (95)  
673-450-3735-002(95)

**AP SPEC**  
John Swanson  
673-450-3887-011  
Wade McCartney  
673-450-3887-012  
Syd Partridge  
673-450-3887-013  
Marc Vayssières  
673-450-3887-014

**MARKET MONITORING  
SECTION**

**AR SUP I**  
Jason Gray  
673-450-3762-006

**STAFF APS**  
David Kennedy  
673-450-3875-001

**AP SPEC**  
Ray Olsson  
673-450-3887-024  
Amy Ng  
673-450-3887-025  
Brandt Stevens  
673-450-3887-026  
Jakub Zielkiewicz  
673-450-3887-027  
Brian Covi  
673-450-3887-028  
Sean Donovan  
673-450-3887-029

**CLIMATE CHANGE POLICY  
SECTION**

**AR SUP I**  
David Mallory  
673-450-3762-009

**AP SPEC**  
Lon Gilbert  
673-450-3887-036  
Trish Johnson  
673-450-3887-037  
Jennifer Kiger (8)  
673-450-3887-038 (8)  
Theresa Richardson  
673-450-3887-039  
Molly Munz (8)  
673-450-3887-040 (8)  
Johnnie Raymond  
673-450-3887-041

**ALTERNATIVE FUELS  
SECTION**

**AR SUP I**  
Vacant (Courtis)  
673-450-3762-012

**AR ENG**  
James Guthrie  
673-450-3735-021  
Jason McPhee  
673-450-3735-022

**AP SPEC**  
Alan Glabe  
673-450-3887-047  
Kamran Adili  
673-450-3887-048  
Farshid Mojaver  
673-450-3887-049

**SUBSTANCE  
EVALUATION  
SECTION**

**AR SUP I**  
Wes Ingram  
673-450-3762-013

**AR ENG**  
Arvid Peterson  
673-450-3735-023  
Aubrey Gonzalez  
673-450-3735-024  
Stephen d'Esterhazy  
673-450-3735-025

**AP SPEC**  
Jose Saldana  
673-450-3887-050  
Susie Chung  
673-450-3887-051  
Ursula E. Lai  
673-450-3887-052

**PROGRAM  
ASSESSMENT  
SECTION**

**AR SUP I**  
Carolyn Lozo  
673-450-3762-016

**AR ENG**  
James Duffy  
673-450-3735-032  
Xuping Li  
673-450-3735-033

**AP SPEC**  
Casey Scott  
673-450-3887-056  
Luis Leyva  
673-450-3887-057  
Vacant (New BCP)  
673-450-3887-XXX

**EMERGING  
TECHNOLOGY  
SECTION**

**AR SUP I**  
Alexander Mitchell  
673-450-3762-017

**STAFF APS**  
Johanna Levine  
673-450-3875-008

**AP SPEC**  
Sara King  
673-450-3887-058  
Sarah Penfield  
673-450-3887-059  
Kathleen Kozzawa  
673-450-3887-060  
Anil Baral  
673-450-3887-061

**AIR RESOURCES BOARD  
INDUSTRIAL STRATEGIES DIVISION  
AUGUST 5, 2015**

127 Authorized Positions

**ASST DIVISION CHIEF**  
Jack Kitowski  
673-450-3878-001

**CHIEF, CEA 3**  
Floyd Vergara  
673-450-7500-001

**EXEC SEC II**  
Brittany Sherwood  
673-450-1245-001

**PROGRAM PLANNING & MANAGEMENT BRANCH**

**AR SUP II**  
Jim Aquila  
673-450-3763-001

**CLIMATE CHANGE  
PLANNING SECTION**

**AR SUP I**  
Chuck Seidler  
673-450-3735-001

**AR ENG**  
Michael Ginty  
673-450-3735-001

**AP SPEC**  
Natalie Lee  
673-450-3887-001  
Ashley Dunn  
673-450-3887-002  
Vacant (Ng)  
673-450-3887-003  
Robert Lanquell  
673-450-3887-004  
Anna Mebus  
673-450-3887-005

**EMISSIONS DATA  
QUALITY  
ASSURANCE  
SECTION**

**AR SUP I**  
Renee Lawver  
673-450-3762-002

**AP SPEC**  
Sydney Lieb  
673-450-3887-006  
Ryan Schauland  
673-450-3887-007  
Chris Halm  
673-450-3887-008  
Vacant (Swanson)  
673-450-3887-009  
Rania Heider  
673-450-3887-010

**CLIMATE CHANGE PROGRAM EVALUATION BRANCH**

**AR SUP II**  
Rajinder Sahota  
673-450-3763-002

**PROGRAM OPERATION  
SECTION**

**AR SUP I**  
Greg Mayeur  
673-450-3762-004

**AR ENG**  
Tracy Haynes  
673-450-3735-003

**AP SPEC**  
Barbara Bamberger  
673-450-3887-015  
Jeffery Coronado  
673-450-3887-016  
Annab Pal  
673-450-3887-017  
Stephen Shelby  
673-450-3887-018  
Alex Yiu  
673-450-3887-019

**PROGRAM  
DEVELOPMENT  
SECTION**

**AR SUP I**  
Mary Jane Coombs  
673-450-3762-005

**AR ENG**  
David Allgood  
673-450-3735-004  
Vacant (McPhee)  
673-450-3735-005  
Mark Sipola  
673-450-3735-006

**AP SPEC**  
Sara Nichols  
673-450-3887-020  
Mihoyo Fuji  
673-450-3887-021  
Eileen Hlavka  
673-450-3887-022  
William Knox  
673-450-3887-023

**PROJECT ASSESSMENT BRANCH**

**AR SUP II**  
Michael Tollstrup  
673-450-3763-003

**ENERGY SECTION**

**AR SUP I**  
David Mehl  
673-450-3762-007

**STAFF APS**  
Marcelle Surovik  
673-450-3875-003  
Stephanie Kato  
673-450-3875-004

**AR ENG**  
Keith Roderick  
673-450-3735-007  
Rosalba Lopez  
673-450-3735-008  
Joshua Kim  
673-450-3735-009

**AP SPEC**  
Thomas Pomales  
673-450-3887-030  
Gary Colford  
673-450-3887-031

**REGULATORY  
ASSISTANCE SECTION**

**AR SUP I**  
Tung Le  
673-450-3762-008

**STAFF APS**  
Chris Callenstein  
673-450-3875-005

**AR ENG**  
Duc Tran  
673-450-3735-010

**AP SPEC**  
Stephen Weller  
673-450-3887-032  
Evan Powers  
673-450-3887-033  
Patrick Au  
673-450-3887-034  
Steve Eve  
673-450-3887-035

**TRANSPORTATION FUELS BRANCH**

**AR SUP II**  
Sam Wade  
673-450-3763-004

**FUELS SECTION**

**AR SUP I**  
Manisha Singh  
673-450-3762-010

**STAFF APS**  
Jing Yuan  
673-450-3875-006

**AR ENG**  
Vacant (Guthrie)  
673-450-3735-011  
Adrian Cayabyab  
673-450-3735-012  
Katrina Sideco  
673-450-3735-013  
Greg O'Brien  
673-450-3735-014

**AP SPEC**  
Veronika Pesinova  
673-450-3887-042  
Reza Lorestant  
673-450-3887-043  
Hushbir Shahi  
673-450-3887-044

**FUELS EVALUATION  
SECTION**

**AR SUP I**  
Anil Prabu  
673-450-3762-011

**AR ENG**  
Todd Dooley  
673-450-3735-015  
Ron Oineza  
673-450-3735-016  
Kamal Ahuja  
673-450-3735-017  
Chan Pham  
673-450-3735-018  
Hafizur Chowdhury  
673-450-3735-019  
Anthy Alexiades  
673-450-3735-020

**AP SPEC**  
Carmen Spranger  
673-450-3887-045  
Vacant (Surovik)  
673-450-3887-046

**OIL & GAS AND GHG MITIGATION BRANCH**

**AR SUP II**  
Elizabeth Scheehle  
673-450-3763-005

**OIL AND GAS  
SECTION**

**AR SUP I**  
Jim Nyarady  
673-450-3762-014

**AR ENG**  
Christian Hurley  
673-450-3735-026  
Joseph Fischer  
673-450-3735-027  
Tiffany Mateo  
673-450-3735-028

**AP SPEC**  
Stephanie Detwiler  
673-450-3887-053  
Joelle Howe  
673-450-3887-054

**GREENHOUSE GAS  
MEASURES SECTION**

**AR SUP I**  
Terrel Ferreira  
673-450-3875-015

**STAFF APS**  
Win Setiawan  
673-450-3875-007

**AR ENG**  
Andrew Mrowka  
673-450-3735-029  
Linda Lee  
673-450-3735-030  
Chris Newton  
673-450-3735-031

**AP SPEC**  
Lynn Yeung  
673-450-3887-055

**CLIMATE CHANGE  
REPORTING SECTION**

**AR SUP I**  
Brienne Aquila  
673-450-3762-003

**STAFF APS**  
Patrick Gaffney  
673-450-3875-002

**AR ENG**  
Karen Lutter (as)  
673-450-3735-002(95)

**AP SPEC**  
John Swanson  
673-450-3887-011  
Wade McCartney  
673-450-3887-012  
Syd Partridge  
673-450-3887-013  
Marc Vayssieres  
673-450-3887-014

**MARKET MONITORING  
SECTION**

**AR SUP I**  
Jason Gray  
673-450-3762-006

**STAFF APS**  
David Kennedy  
673-450-3875-001

**AP SPEC**  
Ray Olsson  
673-450-3887-024  
Amy Ng  
673-450-3887-025  
Brandt Stevens  
673-450-3887-026  
Jakub Zielkiewicz  
673-450-3887-027  
Brian Covi  
673-450-3887-028  
Sean Donovan  
673-450-3887-029

**CLIMATE CHANGE POLICY  
SECTION**

**AR SUP I**  
David Mallory  
673-450-3762-009

**AP SPEC**  
Lon Gilbert  
673-450-3887-036  
Trish Johnson  
673-450-3887-037  
Jennifer Kiger (.8)  
673-450-3887-038 (.8)  
Theresa Richardson  
673-450-3887-039  
Molly Munz (.8)  
673-450-3887-040 (.8)  
Johnnie Raymond  
673-450-3887-041

**ALTERNATIVE FUELS  
SECTION**

**AR SUP I**  
Vacant (Courtis)  
673-450-3762-012

**AR ENG**  
James Guthrie  
673-450-3735-021  
Jason McPhee  
673-450-3735-022

**AP SPEC**  
Alan Glabe  
673-450-3887-047  
Kamran Adili  
673-450-3887-048  
Farshid Mojaver  
673-450-3887-049

**SUBSTANCE  
EVALUATION  
SECTION**

**AR SUP I**  
Wes Ingram  
673-450-3762-013

**AR ENG**  
Arvid Peterson  
673-450-3735-023  
Aubrey Gonzalez  
673-450-3735-024  
Stephen d'Esterhazy  
673-450-3735-025

**AP SPEC**  
Jose Saldana  
673-450-3887-050  
Susie Chung  
673-450-3887-051  
Ursula E. Lai  
673-450-3887-052

**PROGRAM  
ASSESSMENT  
SECTION**

**AR SUP I**  
Carolyn Lozo  
673-450-3762-016

**AR ENG**  
James Duffy  
673-450-3735-032  
Xuping Li  
673-450-3735-033

**AP SPEC**  
Casey Scott  
673-450-3887-056  
Luis Leyva  
673-450-3887-057

**EMERGING  
TECHNOLOGY  
SECTION**

**AR SUP I**  
Alexander Mitchell  
673-450-3762-017

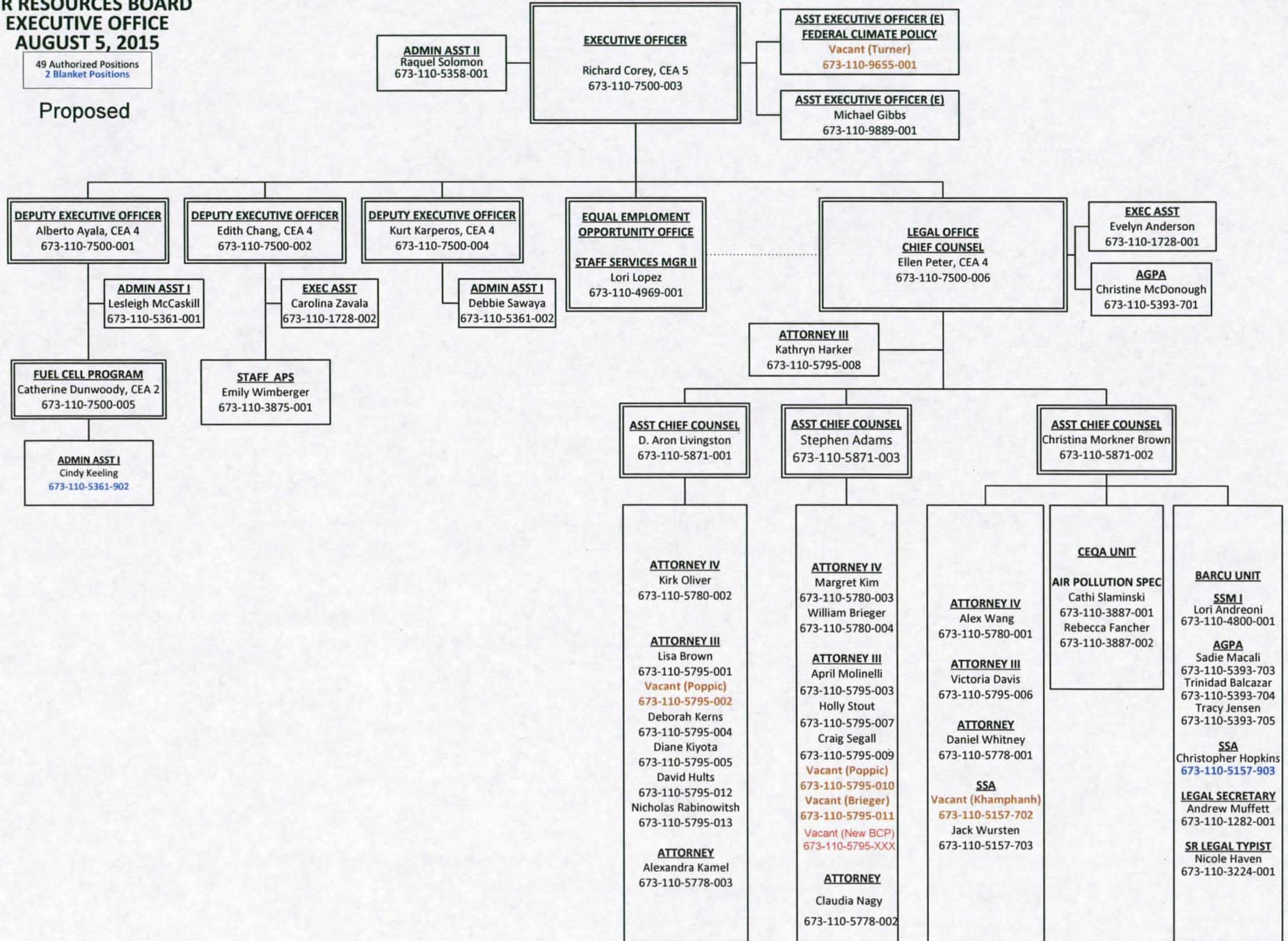
**STAFF APS**  
Johanna Levine  
673-450-3875-008

**AP SPEC**  
Sara King  
673-450-3887-058  
Sarah Penfield  
673-450-3887-059  
Kathleen Kozawa  
673-450-3887-060  
Anil Beral  
673-450-3887-061

**AIR RESOURCES BOARD  
EXECUTIVE OFFICE  
AUGUST 5, 2015**

49 Authorized Positions  
2 Blanket Positions

Proposed





**AIR RESOURCE BOARD  
MONITORING & LABORATORY DIVISION  
AUGUST 5, 2015**

172.65 Authorized Positions  
2 Blanket Positions

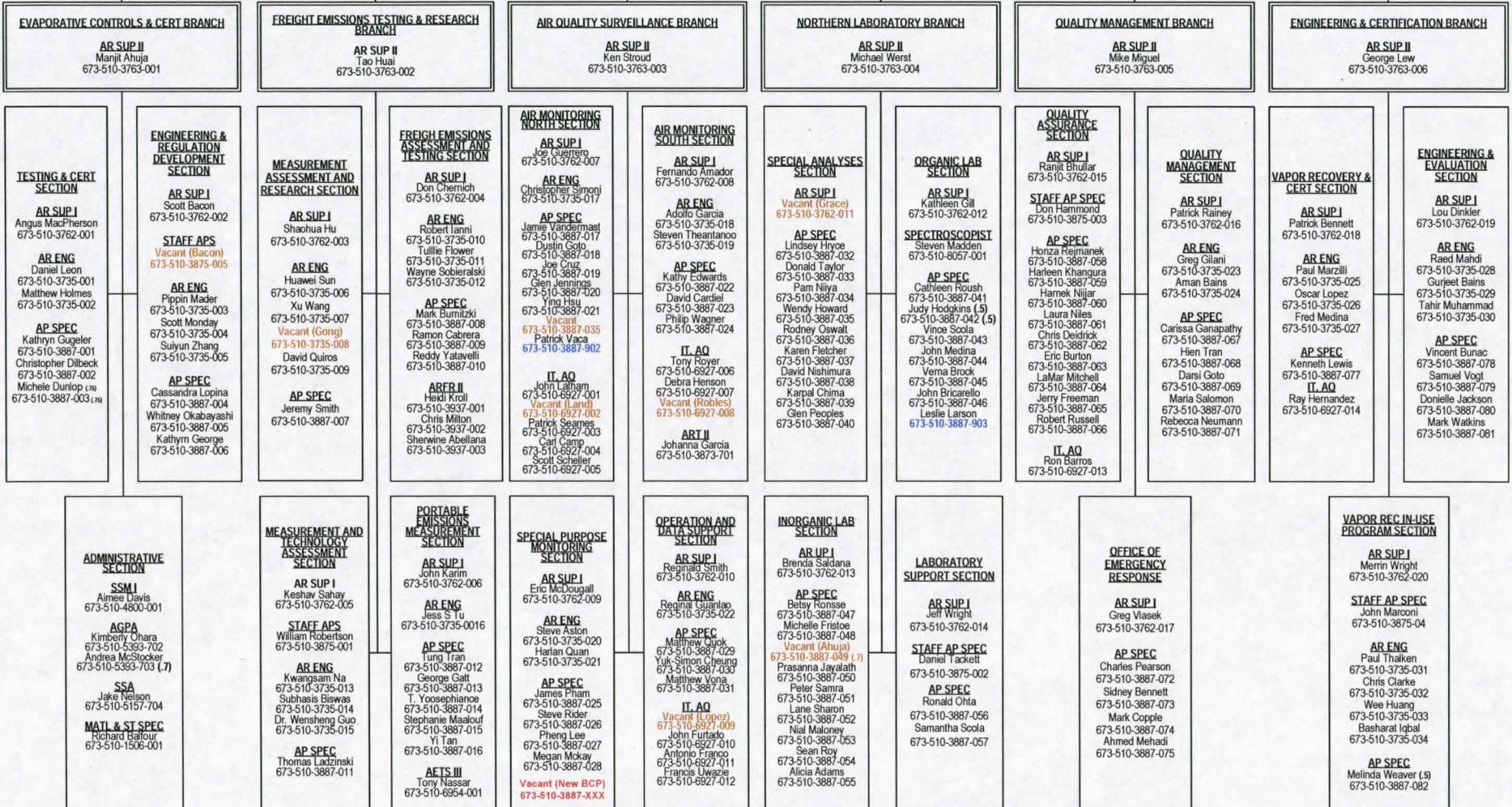
Proposed

**CHIEF, CEA 3**

Michael Benjamin  
673-510-7500-01

**EXECUTIVE ASST**

Vacant (Zavala)  
673-510-1728-002



**AIR RESOURCE BOARD  
MONITORING & LABORATORY DIVISION  
AUGUST 5, 2015**

172.65 Authorized Positions  
2 Blanket Positions

**CHIEF, CEA 3**  
Michael Benjamin  
673-510-7500-001

**EXECUTIVE ASST**  
Vacant (Zavala)  
673-510-1728-002

**EVAPORATIVE CONTROLS & CERT BRANCH**

**AR SUP II**  
Manjit Ahuja  
673-510-3763-001

**FREIGHT EMISSIONS TESTING & RESEARCH BRANCH**

**AR SUP II**  
Tao Hwai  
673-510-3763-002

**AIR QUALITY SURVEILLANCE BRANCH**

**AR SUP II**  
Ken Stroud  
673-510-3763-003

**NORTHERN LABORATORY BRANCH**

**AR SUP II**  
Michael Werst  
673-510-3763-004

**QUALITY MANAGEMENT BRANCH**

**AR SUP II**  
Mike Miguel  
673-510-3763-005

**ENGINEERING & CERTIFICATION BRANCH**

**AR SUP II**  
George Lew  
673-510-3763-006

**TESTING & CERT SECTION**  
**AR SUP I**  
Angus MacPherson  
673-510-3735-001  
**AR ENG**  
Daniel Leon  
673-510-3735-001  
Matthew Holmes  
673-510-3735-002  
**AP SPEC**  
Kathryn Gugeler  
673-510-3887-001  
Christopher Dilbeck  
673-510-3887-002  
Michele Dunlop (A)  
673-510-3887-003 (A)

**ENGINEERING & REGULATION DEVELOPMENT SECTION**  
**AR SUP I**  
Scott Bacon  
673-510-3762-002  
**STAFF APS**  
Vacant (Bacon)  
673-510-3875-005  
**AR ENG**  
Pippin Mader  
673-510-3735-003  
Scott Monday  
673-510-3735-004  
Suiyung Zhang  
673-510-3735-005  
**AP SPEC**  
Cassandra Lopina  
673-510-3887-004  
Whitney Okabayashi  
673-510-3887-005  
Kathryn George  
673-510-3887-006

**MEASUREMENT ASSESSMENT AND RESEARCH SECTION**  
**AR SUP I**  
Shaohua Hu  
673-510-3762-003  
**AR ENG**  
Huawei Sun  
673-510-3735-006  
Xu Wang  
673-510-3735-007  
Vacant (Gong)  
673-510-3735-008  
David Quiros  
673-510-3735-009  
**AP SPEC**  
Jeremy Smith  
673-510-3887-007

**FREIGHT EMISSIONS TESTING SECTION**  
**AR SUP I**  
Don Chernich  
673-510-3762-004  
**AR ENG**  
Robert Ianni  
673-510-3735-010  
Tullie Flower  
673-510-3735-011  
Wayne Sobieratski  
673-510-3735-012  
**AP SPEC**  
Mark Burnitzki  
673-510-3887-008  
Ramon Cabrera  
673-510-3887-009  
Reddy Yalavelli  
673-510-3887-010  
**AR SUP II**  
Heidi Kroll  
673-510-3937-001  
Chris Milton  
673-510-3937-002  
Sherwinne Abellana  
673-510-3937-003

**AIR MONITORING NORTH SECTION**  
**AR SUP I**  
Jose Cuervo  
673-510-3762-007  
**AR ENG**  
Christopher Simoni  
673-510-3735-017  
**AP SPEC**  
Jamie Vandermaast  
673-510-3887-017  
Dustin Goto  
673-510-3887-018  
Joe Cruz  
673-510-3887-019  
Gen Jennings  
673-510-3887-020  
Ying Hsu  
673-510-3887-021  
Vacant  
673-510-3887-035  
Patrick Vaca  
673-510-3887-902  
**IT, AQ**  
John Latham  
673-510-6927-001  
Vacant (Land)  
673-510-6927-002  
Patrick Seames  
673-510-6927-003  
Carl Camp  
673-510-6927-004  
Scott Scheller  
673-510-6927-005

**AIR MONITORING SOUTH SECTION**  
**AR SUP I**  
Fernando Amador  
673-510-3735-008  
**AR ENG**  
Adolfo Garcia  
673-510-3735-018  
Steven Theantanoo  
673-510-3735-019  
**AP SPEC**  
Kathy Edwards  
673-510-3887-022  
David Cardiel  
673-510-3887-023  
Philip Wagner  
673-510-3887-024  
**IT, AQ**  
Tony Royer  
673-510-6927-006  
Debra Henson  
673-510-6927-007  
Vacant (Robles)  
673-510-6927-008  
**ART II**  
Johanna Garcia  
673-510-3873-701

**SPECIAL ANALYSES SECTION**  
**AR SUP I**  
Vacant (Grace)  
673-510-3762-011  
**AP SPEC**  
Lindsey Hryco  
673-510-3887-032  
Donald Taylor  
673-510-3887-033  
Pam Niya  
673-510-3887-034  
Judy Hodgkins (S)  
673-510-3887-035  
Rodney Oswalt  
673-510-3887-036  
Karen Fletcher  
673-510-3887-037  
David Nishimura  
673-510-3887-038  
Karpal Chima  
673-510-3887-039  
Glen Peoples  
673-510-3887-040

**ORGANIC LAB SECTION**  
**AR SUP I**  
Kathleen Gill  
673-510-3762-012  
**SPECTROSCOPIST**  
Steven Madden  
673-510-6057-001  
**AP SPEC**  
Cathleen Roush  
673-510-3887-041  
Vince Scola  
673-510-3887-043  
John Medina  
673-510-3887-044  
Verna Brock  
673-510-3887-045  
John Braccello  
673-510-3887-046  
Leslie Larson  
673-510-3887-903

**QUALITY ASSURANCE SECTION**  
**AR SUP I**  
Ranjit Bhullar  
673-510-3762-015  
**STAFF AP SPEC**  
Don Hammond  
673-510-3875-003  
**AP SPEC**  
Honza Rejmanek  
673-510-3887-058  
Harleen Khanoura  
673-510-3887-059  
Hamek Nijjar  
673-510-3887-060  
Laura Niles  
673-510-3887-061  
Chris Deitrick  
673-510-3887-062  
Eric Burton  
673-510-3887-063  
LaMar Mitchell  
673-510-3887-064  
Jerry Freeman  
673-510-3887-065  
Robert Russell  
673-510-3887-066  
**IT, AQ**  
Ron Barros  
673-510-6927-013

**QUALITY MANAGEMENT SECTION**  
**AR SUP I**  
Patrick Rainey  
673-510-3762-016  
**AR ENG**  
Greg Gilani  
673-510-3735-023  
Aman Bains  
673-510-3735-024  
**AP SPEC**  
Carissa Ganapathy  
673-510-3887-067  
Hien Tran  
673-510-3887-068  
Dansi Goto  
673-510-3887-069  
Maria Salomon  
673-510-3887-070  
Rebecca Neumann  
673-510-3887-071

**VAPOR RECOVERY & CERT SECTION**  
**AR SUP I**  
Patrick Bennett  
673-510-3762-018  
**AR ENG**  
Paul Marzilli  
673-510-3735-025  
Oscar Lopez  
673-510-3735-026  
Fred Medina  
673-510-3735-027  
**AP SPEC**  
Kenneth Lewis  
673-510-3887-077  
**IT, AQ**  
Ray Hernandez  
673-510-6927-014

**ENGINEERING & EVALUATION SECTION**  
**AR SUP I**  
Lou Dinkler  
673-510-3762-019  
**AR ENG**  
Reed Mahdi  
673-510-3735-028  
Gurjeet Bains  
673-510-3735-029  
Tahir Muhammad  
673-510-3735-030  
**AP SPEC**  
Vincent Bunac  
673-510-3887-078  
Samuel Vogt  
673-510-3887-079  
Donielle Jackson  
673-510-3887-080  
Mark Watkins  
673-510-3887-081

**ADMINISTRATIVE SECTION**  
**SSM I**  
Aimee Davis  
673-510-4800-001  
**AGPA**  
Kimberly Ohara  
673-510-5393-702  
Andrea McStocker  
673-510-5393-703 (7)  
**SSA**  
Jake Neilson  
673-510-5157-704  
**MATL & ST SPEC**  
Richard Ballour  
673-510-1506-001

**MEASUREMENT AND TECHNOLOGY ASSESSMENT SECTION**  
**AR SUP I**  
Keshav Sahay  
673-510-3762-005  
**STAFF APS**  
William Robertson  
673-510-3875-001  
**AR ENG**  
Kwangsam Na  
673-510-3735-013  
Subhasis Biswas  
673-510-3735-014  
Dr. Wensheng Guo  
673-510-3735-015  
Yi Tan  
673-510-3887-016  
**AP SPEC**  
Thomas Ladzinski  
673-510-3887-011

**PORTABLE EMISSIONS MEASUREMENT SECTION**  
**AR SUP I**  
John Karim  
673-510-3762-006  
**AR ENG**  
Jesse S Tu  
673-510-3735-0016  
**AP SPEC**  
Lung Fran  
673-510-3887-012  
George Gatt  
673-510-3887-013  
T. Yoosephiance  
673-510-3887-014  
Stephanie Maslouf  
673-510-3887-015  
Yi Tan  
673-510-3887-016  
**ACTS III**  
Tony Nassar  
673-510-6954-001

**SPECIAL PURPOSE MONITORING SECTION**  
**AR SUP I**  
Eric McDougall  
673-510-3762-009  
**AR ENG**  
Steve Aston  
673-510-3735-020  
Harlan Quan  
673-510-3735-021  
**AP SPEC**  
James Pham  
673-510-3887-025  
Steve Rider  
673-510-3887-026  
Pheng Lee  
673-510-3887-027  
Megan McKay  
673-510-3887-028

**OPERATION AND DATA SUPPORT SECTION**  
**AR SUP I**  
Reinard Smith  
673-510-3762-010  
**AR ENG**  
Reginald Suiatiao  
673-510-3735-022  
**AP SPEC**  
Matthew Dijk  
673-510-3887-029  
Yuk-Simon Cheung  
673-510-3887-030  
Matthew Vona  
673-510-3887-031  
**IT, AQ**  
Vacant (Lopez)  
673-510-6927-009  
John Furtado  
673-510-6927-010  
Antonio Franco  
673-510-6927-011  
Francis Lawrie  
673-510-6927-012

**INORGANIC LAB SECTION**  
**AR SUP I**  
Brenda Saldana  
673-510-3762-013  
**AP SPEC**  
Betsy Ronsee  
673-510-3887-047  
Michelle Fristoe  
673-510-3887-048  
Vacant (Ahuja)  
673-510-3887-049 (7)  
Prasanna Jayalath  
673-510-3887-050  
Peter Samra  
673-510-3887-051  
Lane Sharon  
673-510-3887-052  
Nial Maloney  
673-510-3887-053  
Sean Roy  
673-510-3887-054  
Alicia Adams  
673-510-3887-055

**LABORATORY SUPPORT SECTION**  
**AR SUP I**  
Jeff Wright  
673-510-3762-014  
**STAFF AP SPEC**  
Daniel Tackett  
673-510-3875-002  
**AP SPEC**  
Ronald Ohta  
673-510-3887-056  
Samantha Scola  
673-510-3887-057

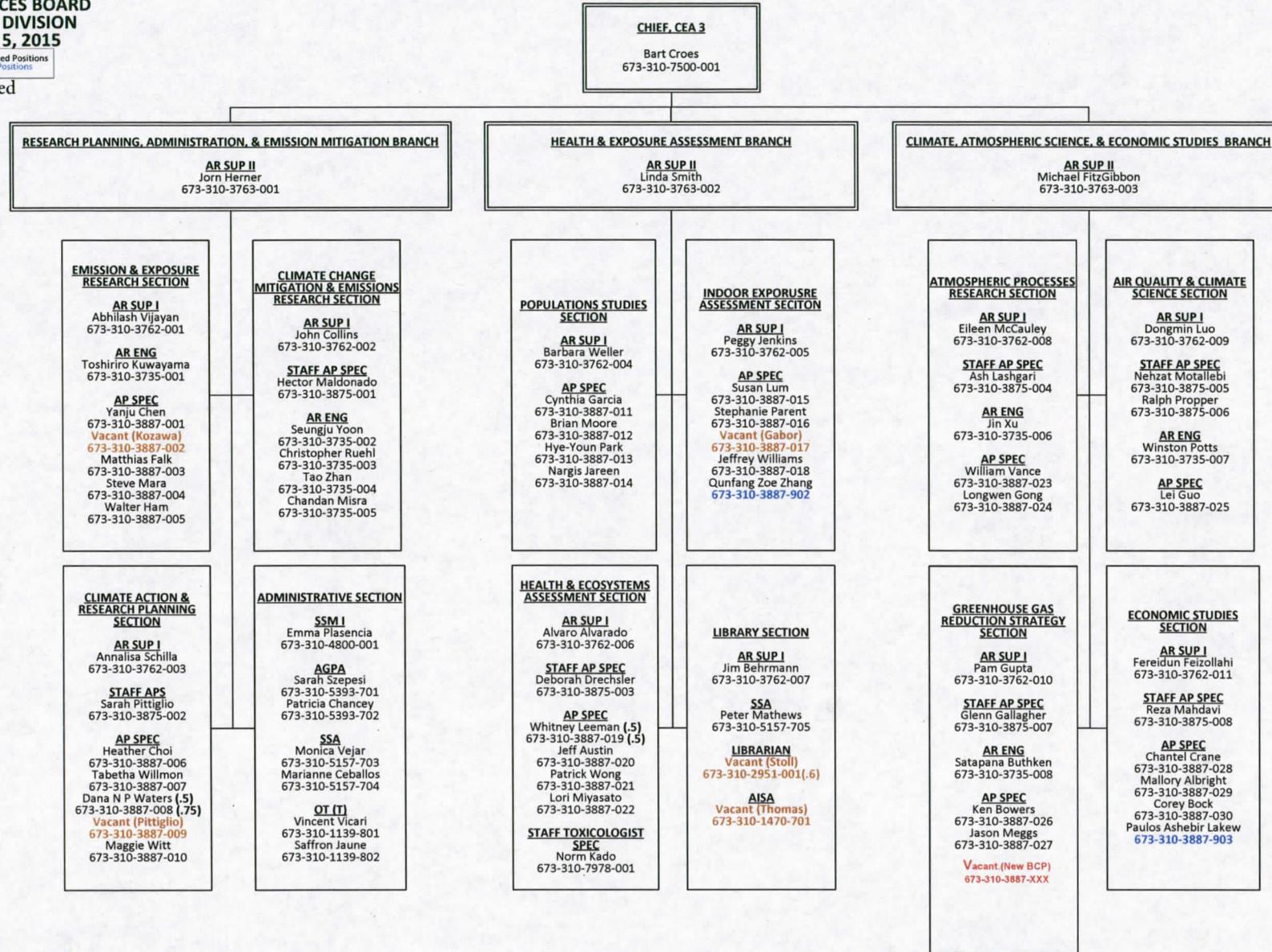
**OFFICE OF EMERGENCY RESPONSE**  
**AR SUP I**  
Greg Vlasek  
673-510-3762-017  
**AP SPEC**  
Charles Pearson  
673-510-3887-072  
Sidney Bennett  
673-510-3887-073  
Mark Copple  
673-510-3887-074  
Ahmed Mehadi  
673-510-3887-075

**VAPOR REC IN USE PROGRAM SECTION**  
**AR SUP I**  
Merrin Wright  
673-510-3762-020  
**STAFF AP SPEC**  
John Marconi  
673-510-3875-04  
**AR ENG**  
Paul Thakern  
673-510-3735-031  
Chris Clarke  
673-510-3735-032  
Wee Huang  
673-510-3735-033  
Basharat Iqbal  
673-510-3735-034  
**AP SPEC**  
Melinda Weaver (S)  
673-510-3887-082

**AIR RESOURCES BOARD  
RESEARCH DIVISION  
AUGUST 5, 2015**

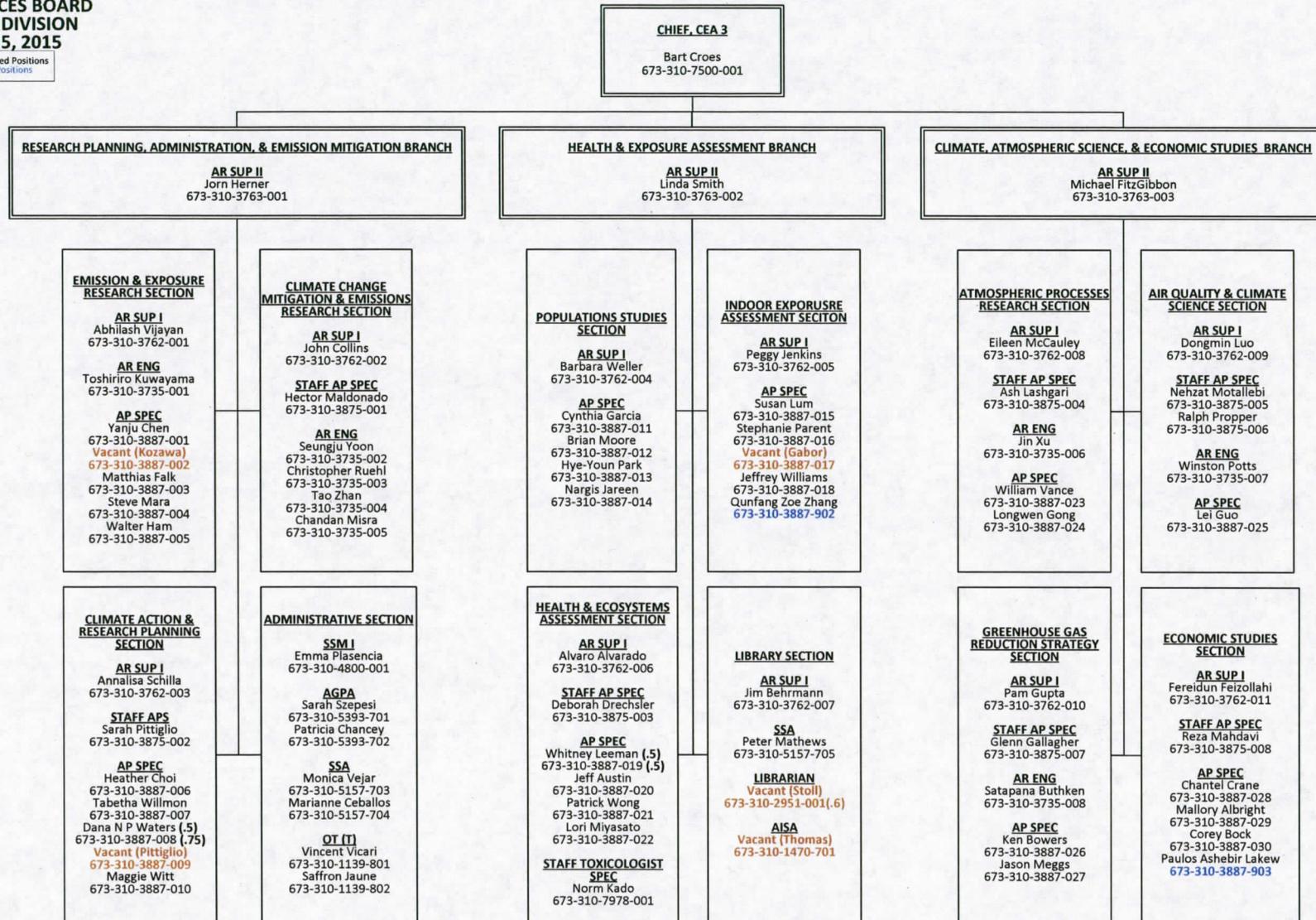
70.85 Authorized Positions  
2 Blanket Positions

Proposed



**AIR RESOURCES BOARD  
RESEARCH DIVISION  
AUGUST 5, 2015**

70.85 Authorized Positions  
2 Blanket Positions



# BCP Fiscal Detail Sheet

BCP Title: Short-Lived Climate Pollutants

DP Name: 3900-003-BCP-DP-2016-GB

## Budget Request Summary

	FY16					
	CY	BY	BY+1	BY+2	BY+3	BY+4
Positions - Permanent	0.0	5.0	0.0	0.0	0.0	0.0
<b>Total Positions</b>	<b>0.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>
Salaries and Wages						
Earnings - Permanent	0	512	512	512	512	512
<b>Total Salaries and Wages</b>	<b>\$0</b>	<b>\$512</b>	<b>\$512</b>	<b>\$512</b>	<b>\$512</b>	<b>\$512</b>
Total Staff Benefits	0	238	238	238	238	238
<b>Total Personal Services</b>	<b>\$0</b>	<b>\$750</b>	<b>\$750</b>	<b>\$750</b>	<b>\$750</b>	<b>\$750</b>
Operating Expenses and Equipment						
5301 - General Expense	0	10	10	10	10	10
5302 - Printing	0	5	5	5	5	5
5304 - Communications	0	10	10	10	10	10
5320 - Travel: In-State	0	20	20	20	20	20
5322 - Training	0	5	5	5	5	5
5324 - Facilities Operation	0	50	50	50	50	50
5340 - Consulting and Professional Services -	0	545	545	545	545	545
5346 - Information Technology	0	20	15	15	15	15
<b>Total Operating Expenses and Equipment</b>	<b>\$0</b>	<b>\$665</b>	<b>\$660</b>	<b>\$660</b>	<b>\$660</b>	<b>\$660</b>
<b>Total Budget Request</b>	<b>\$0</b>	<b>\$1,415</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>
<b>Fund Summary</b>						
Fund Source - State Operations						
3237 - Cost of Implementation Account, Air	0	1,415	1,410	1,410	1,410	1,410
<b>Total State Operations Expenditures</b>	<b>\$0</b>	<b>\$1,415</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>
<b>Total All Funds</b>	<b>\$0</b>	<b>\$1,415</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>
<b>Program Summary</b>						
Program Funding						
3510 - Climate Change	0	1,415	1,410	1,410	1,410	1,410
<b>Total All Programs</b>	<b>\$0</b>	<b>\$1,415</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>