Fiscal Year	Business Unit	Department		Priority No.
2023-24	3900/3480/3940	California Air Resources Board, Cal Department of Conservation, State Resources Control Board	Click or tap here to enter text.	
Budget Reque 3900-025-BCF A1/3480-046- A1/3940-082-	st Name P-2023- BCP-2023- BCP-2023-A1	Program 3510 -Climate Change/3560- Water Quality	Subprogram N/A	

Budget Request Description

Carbon Capture, Removal, Utilization and Storage Program (SB 905)

Budget Request Summary

The Air Resources Board (CARB or Board) requests \$5.5 million from the Cost of Implementation Account, Air Pollution Control Fund (COIA) and 18.0 permanent positions in 2023-24 and \$4.5 million ongoing to implement the requirements established by SB 905 (CITE). SB 905 requires that CARB establish a Carbon Capture, Removal, Utilization, and Storage Program (Program) to evaluate carbon capture, utilization, or storage (CCUS) technologies and carbon dioxide removal (CDR) technologies and facilitate the capture and sequestration of carbon dioxide from those technologies (as required in Health & Safety Code section 39741). Included in the request is \$1,700,000 in ongoing contract funds: \$700,000 to establish an electronic unified permit submittal system for carbon sequestration project operators pursuing permits to operate in California, and \$1 million in ongoing contract funds to perform evaluations of new and emerging CCUS and CDR technology. This work supports California's proposed 2022 Climate Scoping Plan and the California Climate Crisis Act to achieve carbon neutrality by 2045.

The Department of Conservation requests \$3,682,000 from the Cost of Implementation Account, Air Pollution Control Fund (COIA) and 4 permament postitions to create a Geologic Carbon Sequestration Group (Group) to support the statutory mandate set forth in Senate Bill 905 (SB 905). The Group will provide support to CARB in the development of the regulatory framework and prioritize locations across the state to evaluate the suitability of geologic carbon sequestration, removal, and associated induced sesimic and geologic hazard potential. The Group will also support the Secretary of the Natural Resources (Secretary) in preparing the legal framework for governing agreements regarding ownership of geologic storage reservoirs and overlying lands with multiple owners.

The State Water Resources Control Board (State Water Board) requests 1.0 permanent position and \$280,000 ongoing from the COIA to collaborate with CARB to develop and implement a unified permit application process for the construction and operation of CCUS projects and to provide technical expertise to ensure these projects are protective of groundwater resources.

Requires Legislation □ Yes ⊠ No	Code Section(s) to be Added/Amended/Repealed		
Does this BCP contain information technology (IT) components?	Department CIO	Date	
If yes, departmental Chief Information Officer must sign.			

For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), and the approval date.

Project No. Project Approval Document:

Approval Date:

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

Prepared By	Date 3/30/2023	Reviewed By	Date		
Various		Various	3/30/2023		
Department Director	Date 3/30/2023	Agency Secretary	Date		
Various		Various	3/30/2023		
Department of Finance Use Only					

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

РРВА	Date submitted to the Legislature
Christian Beltran	3/30/2023

A. Budget Request Summary

The Air Resources Board (CARB or Board) requests \$5.5 million from the Cost of Implementation Account, Air Pollution Control Fund (COIA) and 18.0 permanent positions in 2023-24 and \$4.5 million ongoing to implement the requirements established by SB 905 (CITE). SB 905 requires that CARB establish a Carbon Capture, Removal, Utilization, and Storage Program (Program) to evaluate carbon capture, utilization, or storage (CCUS) technologies and carbon dioxide removal (CDR) technologies and facilitate the capture and sequestration of carbon dioxide from those technologies (as required in Health & Safety Code section 39741). Included in the request is \$700,000 in ongoing contract funds to establish an electronic unified permit submittal system for carbon sequestration project operators pursuing permits to operate in California. Also included in the request is \$1,000,000 ongoing contract funds to perform evaluations of new and emerging CCUS and CDR technology. This work supports California's proposed 2022 Climate Scoping Plan and the California Climate Crisis Act to achieve carbon neutrality by 2045.

The Department of Conservation (DOC) requests four (4.0) permanent positions and \$3,682,000 from the COIA in 2023-24, \$3,135,000 in 2024-25, \$3,135,000 in 2025-26, \$1,135,000 ongoing to implement SB 905. This proposal includes \$500,000 for legal, economic, and other consultation expenses in 2023-24, related to the suitability analysis, seismic hazard evaluation, and legal framework for governing agreements. Additionally, a one-time request of \$6,000,000 for data acquisition over three years, which includes airborne geophysical data, 2D seismic reflection data, drilling data and sample collection, satellite data, and remote systems (InSAR, etc.) and \$200,000 per year, ongoing for modeling software. This funding will provide statewide estimates of geologic carbon storage and removal potential, and associated seismic and geologic hazards. This Group will also support various state agencies in implementation of SB 905 in support of California achieving carbon neutrality by 2045 or earlier.

The State Water Resources Control Board (State Water Board) requests 1.0 permanent position and \$280,000 ongoing from the COIA to collaborate with CARB to develop and implement a unified permit application process for the construction and operation of CCUS projects and to provide technical expertise to ensure these projects are protective of groundwater resources.

B. Background/History

California's 2022 update to the Climate Change Scoping Plan includes actions to significantly address climate change and protect communities by identifying a technologically feasible, cost-effective, and equity-focused path to achieve carbon neutrality by 2045. The 2022 update builds on previous scoping plan updates by expanding actions to store carbon, including through natural and working lands and mechanical technologies.

In his July 22nd letter to Liane Randolph, Governor Gavin Newsom established goals and actions for the final Scoping Plan to achieve both California's 2030 climate goal and statewide carbon neutrality no later than 2045. Given the need to accelerate development of natural and engineered carbon removal projects across the state, the Governor requested that CARB set a 20 MMT carbon removal target for 2030 and 100 MMT carbon removal target for 2045.

California's statewide carbon neutrality goal was codified through AB 1279 (Muratsuchi and Garcia), the California Climate Crisis Act, which declares the policy of the state to achieve net zero greenhouse gas emissions no later than 2045, and to achieve and maintain net negative greenhouse gas emissions thereafter. It also calls for an 85 percent reduction in emissions from anthropogenic sources by 2045. CCUS technologies and CDR will play a role in achieving the targets included in AB 1279.

To achieve carbon neutrality, the 2022 Scoping Plan includes the types of technologies and energy needed to drastically reduce greenhouse gas (GHG) emissions. Achieving carbon

neutrality, however, requires carbon dioxide removal approaches and carbon capture, utilization, and storage.

SB 905 requires CARB to establish a Carbon Capture, Removal, Utilization and Storage Program (Program) to evaluate the efficacy, safety, and viability of various CCUS technologies and CDR technologies and facilitate the capture, remove and sequestration of carbon dioxide from those technologies, where appropriate.

CARB currently implements a program to consider Carbon Capture and Sequestration (CCS) projects for certification prior to recognition under the Low Carbon Fuel Standard (LCFS) program. CARB adopted a CCS Protocol in 2018 as part of amendments to the LCFS Regulation. The CCS Protocol sets requirements for these projects to receive CARB permanence certification to be eligible to receive LCFS credits. CARB currently has 3.5 PY dedicated to reviewing project applications submitted under the CCS protocol. This staff are dedicated to ensuring that any LCFS CCS project applications meet the existing protocol requirements, which are focused on ensuring CCS projects provide permanent carbon dioxide sequestration for LCFS crediting. The additional requirements established by SB 905 cannot be absorbed by these existing staff.

SB 905 further mandates the establishment of a Carbon Sequestration Group (SEC. 3. 2213.a) in the California Geologic Survey (CGS) to assess the suitability of the state's geologic carbon sequestration and removal potential by identifying high-quality carbon sequestration sites. Unlike hydrocarbons that are concentrated in only a few general areas of the state, there is opportunity to utilize geologic reservoirs for CO₂ sequestration all over the state. With this transition to increased underground sequestration statewide, there is a need to manage risks of potential hazards such as induced seismicity, subsidence, and groundwater quality impacts. In accordance with SB 905 (2213.a.3) the Group is mandated to identify hazards that may require the suspension of carbon dioxide injections. Building on work that has already been completed by the United States government, academics, and research institutions, the Group will identify suitable and safe sites for early sequestration projects to support implementation of SB 905.

SB 905 also directs CARB to prioritize the approaches that minimize environmental impacts, such as impacts to water quality. Proposed CCUS or CDR projects will require the State Water Board and applicable regional water quality control boards (collectively Water Boards) be involved in evaluating the risks that these projects may pose to water quality. Currently, The U.S. Environmental Protection Agency (U.S. EPA) is the lead agency in permitting these types of projects (Class VI underground injection control projects) and the Water Boards have provided preliminary review comments on one project to date. The Water Boards already have significant experience in reviewing Class II injection projects (oilfield produced water injection projects) and will use similar approaches when reviewing projects.

C. State Level Consideration

For California to achieve its climate goal of reaching carbon neutrality by 2045, the state will need to capture, remove, transport, and store millions of tons of carbon dioxide each year. California has an extensive regulatory framework that will require operators of proposed projects to meet permitting and review requirements existing across federal, state, and local agencies. Permitting requirements are in place to protect public health and the environment but require significant effort and coordination of project operators across multiple approving authorities (e.g., local/state/federal government agencies) to receive approval for carbon dioxide injection. As such, implementation of SB 905 will require significant coordination across federal, state, and local agencies. The CARB, DOC, and SWRCB staff identified in this proposal will support the implementation of SB 905 and the coordination across these public agencies in furtherance of California's statutory goal of achieving carbon neutrality by 2045.

D. Justification

SB 905 requires CARB to establish a Carbon Capture, Removal, Utilization and Storage Program (Program) to evaluate the efficacy, safety, and viability of various CCUS technologies and CDR technologies and facilitate the capture, removal and sequestration of carbon dioxide from those technologies, where appropriate. Development of these technologies are necessary for the state to achieve its climate goals, including carbon neutrality by 2045. There are significant investments being applied to research (for example: DOE recently announced \$22M in research funding) of new carbon capture, removal, storage, and utilization approaches. In response, materials, geology, engineering, and other scientific advancements are happening to improve both the capture of carbon dioxide, as well as the storage or utilization of carbon dioxide. CCS applied on industrial facilities (e.g., fuel production) as well as electricity generating facilities have generally been well-studied and evaluated by academic institutions, and, as a result, CARB will use the contract resources in this proposal to provide a ranking of these technologies based on the available scientific and engineering literature. Contract resources will also be used to evaluate, on a recuring and ongoing basis, other CCUS and CDR technologies/approaches that are emerging and under development (e.g., direct air capture with geologic storage, bio-oil sequestration, pyrolysis/gasification with CCS, mineralization, and others). Each of these CCUS and CDR approaches requires extensive engineering, geologic, and other scientific work to develop, and as such, evaluating and ranking these technologies is a resource-intensive task. In accordance with SB 905 requirements, the staff requested by CARB in this proposal will utilize the findings from the contract evaluations of these CCUS and CDR technologies/approaches to provide information publicly via workshops and on CARB's website on the general efficacy, safety, and viability of the various technologies/approaches. The timeliness of establishing the Program and providing readily available technical information for the first round of CCUS/CDR technology evaluations is critical as project proponents are quickly moving forward with plans to enter the approval process. It is also important to avoid delay in Program implementation so that project proponents can take advantage of United States Department of Energy recently announced funding opportunities¹ to support projects to develop and test transformational carbon capture materials, equipment, and processes as well as Federal 45Q tax credits for carbon storage that were recently extended as part of the Inflation Reduction Act of 2022

In addition to the general technology evaluations, SB 905 also requires the Program to include the development of initiatives aimed at strengthening the CCUS and CDR project approval process and provide the public with ongoing project information. Under the Program, CARB will, by January 1, 2025, adopt regulations for a unified permit submittal portal for the construction and operation of carbon dioxide capture, removal, or sequestration projects to expedite the issuance of permits or other authorizations for the construction and operation of those projects by the respective approving authorities. Developing this portal for projects to submit all required permit information is a resource intensive task that requires working across over a dozen public agencies to understand and incorporate the data and information required by each jurisdiction for permit applications. In addition to working with public agencies, CARB must also conduct public meetings and develop regulatory proposals for adoption. Relevant public agencies will use information submitted by project developers into the unified permit portal when issuing permits or other authorizations for a carbon dioxide capture, removal, or sequestration project. Because no CCUS or CDR projects are currently permitted in California, CARB expects that permitting requirements will be updated/changed over time as projects become approved and are operational. CARB staffing will need to continually update the regulations and the submittal portal to reflect these ongoing changes to permit requirements.

Under the Program, CARB will by January 1, 2025, develop a centralized public database to track the deployment of CCUS and CDR technologies and the development of carbon dioxide capture, removal, and sequestration projects throughout the state. CARB will use the

¹ https://www.energy.gov/articles/department-energy-provide-22-million-research-capturing-carbon-dioxideair

resources in this proposal to maintain the public portal of CCUS and CDR projects in California and will update the portal over time as the number of CCUS and CDR projects increase in the State. Under SB 905, CARB is also required to "Develop monitoring and reporting schedules to state regulatory agencies for carbon dioxide capture, removal, or sequestration projects to ensure efficacy, safety, and viability of the projects." CARB will also collaborate with other agencies to prepare project monitoring and reporting schedules for project operators to provide ongoing information on project implementation. CARB will make this information available on the public portal and will also report to the Legislature every two years on progress of the Program as required by SB 905.

Under the Program, CARB will consider the development, adoption, and update of protocols to support additional methods of utilization or storage of captured carbon dioxide. Protocol development will also be supported by the evaluation of technologies/approaches called for by SB 905. Updating and/or developing protocols for CCUS and CDR technologies requires an in-depth understanding of the technologies in order to develop the GHG quantification methods, permanence requirements, emergency and remedial response, and reporting/verification requirements necessary. Protocol development is also a resource intensive task, taking 12-24 months to complete protocol development, public process, and ultimate Board approval. As technologies and information on project types changes over time, CARB will also have to routinely update the protocol(s) to reflect these changes.

CARB will also, no later than January 1, 2025, adopt regulations for financial responsibility for carbon dioxide capture, removal, or sequestration projects. This task will require working with project developers, the public, and other experts to develop proposals on financial responsibility requirements, solicit formal public feedback, and adopt regulatory requirements for financial responsibility. As with the other tasks identified in SB 905, this will be an ongoing task to update the regulations as implementation and information on CCUS and CDR technologies evolves in the future.

For the Department of Conservation, the Geologic Carbon Sequestration Group (Group) within CGS will assess geologic reservoirs through statutory mandates codified in SB 905, including but not limited to the assessment of:

- High quality, suitable locations for Class VI injection wells (Class VI is the USEPA designation for wells used to inject CO₂ into deep rock formations for purposes of long-term sequestration); high quality suitable locations means reservoirs that have been modeled to maintain integrity for at least 1,000 years;
- Appropriate subsurface monitoring to ensure geologic sequestration of injected carbon dioxide;
- Hazards that may require the suspension of carbon dioxide injections.

Given the potential distributed nature of geologic storage complexes throughout the state, consistent with these mandates, the state will need comprehensive (statewide) assessments of geologic storage reservoirs to identify carbon sequestration removal potential, while addressing geologic hazards, long-term reservoir monitoring requirements, and approaches to induced seismicity risk reduction. This Group will provide low and intermediate resolution geologic sequestration resource and induced risk assessments, with accessible statewide maps, models, and data products. These initial steps will provide the group with regional mapping that will allow prioritization of areas that are likely to be high quality, suitable locations for injection.

CGS has identified at least 75,000 square miles of land available in California for the development of geologic CO₂ sequestration and removal systems in porous storage reservoirs in geologic formations of different rock types (such as saline aquifers in sedimentary strata or in volcanic rocks) needing assessment of their resource potential and associated induced hazard risks. In order to evaluate the suitability of these areas, the CGS will need a substantial level of data acquisition through various techniques. This includes airborne magnetic, gravity, and 2D seismic data for the purpose of determining the geologic structure, location of faults,

volume of pore space, and the adequacy of reservoir sealing cap rock; Other remote sensing techniques include Interferometric Synthetic Aperture Radar (InSAR) and LiDAR will be necessary to detect surface deformation which could be a result of injection and critical in monitoring for induced hazards such as subsidence or uplift. Through a 3D Geologic Mapping pilot project covering 3,600 square miles in the San Joaquin Valley, the CGS acquired airborne magnetic data having a unit cost of \$200 per square mile. The pilot project also found that areas in or near oil and gas operations have a greater abundance of data versus areas outside of oil and gas operations, which will vary data acquisition costs greatly across the state. Because most projects will be distant from the state's oil and aas fields, additional data acquisition is required. Based on the San Joaquin Valley project's unit cost and the additional data needs for suitability evaluations (for example, gravity and 2D seismic), the unit costs associated with the suitability analysis will depend on the location and may exceed \$700 per square mile. There are likely many more suitable areas to be identified that will need evaluation, as well as the elimination of some regions with excessive seismic risk that are unsuitable for sequestration activities due to the likelihood of inducing seismic and other geologic hazards.

There are three important levels of assessment that other state geological surveys have already undertaken (for example, California, Utah, Illinois, Texas). These include assessments at a low-resolution, or state level, using aeologic data of limited detail and attribution to estimate the rough area of sequestration space over each reservoir and then multiply by a factor determined by reservoir quality data to define potential sequestration volumes and mass. The next step usually taken is to assess one or more areas using intermediate-resolution, or regional level, geologic data. A more detailed level occasionally taken by state surveys, is to assess reservoirs using high-resolution, or reservoir level, geology data, which will likely be useful for most, but not all, regulatory functions. Low-resolution statewide assessments of CO₂ storage potential have been undertaken in California. For example, a low-fidelity analysis of potential geologic reservoir storage was conducted by Lawrence Livermore National Laboratory (See LLNL: https://gs.llnl.gov/sites/gs/files/2021-08/getting to neutral.pdf). The LLNL report also provides reference to the only intermediate-resolution evaluations in the Sacramento and Bakersfield regions. While these evaluations provide an indication of storage potential, they are not suitability evaluations. Additional evaluation of favorable/unfavorable factors that demonstrate how efficiently and securely a site may store injected CO₂ fluid over the required time period, which may be indefinite or permanent, are needed for the implementation of regulatory programs under SB 905.

This request provides funding for the CGS to conduct an intermediate level assessment and to prioritize and assess select reservoirs that are of the highest quality and suitability for carbon injection and storage. The CGS will also partner with CARB and site developers to assess site specific conditions that have been selected by project proponents. During this prioritization, the CGS will also conduct a data gap analysis of other potential high quality suitable reservoirs so that the state can appropriately assess the need for future data acquisition and staffing needs.

The proposed Group will function as a specialized technical program within CGS. It will be guided by a partnership with other state entities (for example, CARB, SWRCB, DWR) and federal (for example, Department of Energy or Environmental Protection Agency) agencies, to provide independent expertise and regulatory guidance to support emerging geologic CO₂ sequestration and removal technology deployment by characterizing and quantifying specific underground opportunities and risks.

Public assessments of regional technology opportunities and risks (based on transparent data and methods) will inform communities near proposed projects, policymakers & regulators, and prospective developers alike. For example, many environmental justice organizations are concerned commercial projects could create or prolong unnecessary public health risks to their communities; more detailed technical analyses will inform community-based feedback, policy development and decision-making, so that these concerns may be addressed.

The scalability of several critical climate mitigation technologies in California, including geologic CO₂ sequestration and removal, heavily depends on geologic assessment informing the availability and suitability of commercial sequestration sites. The importance of these are underscored by their inclusion into the latest CARB Scoping Plan Update, the strong support from skilled labor, and financial incentives through the state and federal government. The proposed Group's enabling geologic infrastructure assessment requires some lead time to advance the work. Immediate commencement of suitability characterization work – identification of optimal geologic settings, evaluation of potential geologic hazards and risks, and assessing seismic risk (induced or tectonic) – will minimize bottlenecks in the deployment of carbon dioxide removal technologies that could impede progress toward California's midcentury decarbonization opportunities required for a clean energy future.

TASKS:

- 1. Perform an initial assessment of suitable geologic reservoirs for carbon sequestration, including:
 - Working with CARB to identify current project applications and compatible land use for development of carbon sequestration complexes that will support the prioritization and definition of high-quality suitable geologic reservoirs
 - The evaluation of existing data and previous work focused in regions of compatible land use. These include, geologic reservoir maps and models, surface geologic and fault maps, and historic seismicity and faulting data
 - The evaluation results developed above provide an initial screening assessment that will be used to prioritize the detailed suitability analysis of specific geologic reservoirs that are of the highest quality
- 2. Data acquisition and analysis of high quality suitable geologic reservoirs prioritized by screening assessment, including, airborne geophysics, 2D seismic reflection data, gravity surveys, surface geologic mapping, and sample collection, exploratory borehole drilling and borehole geophysical data, surface baseline data (i.e., lidar, InSAR, GPS), seismic baseline weak motion seismicity data.

3. Intermediate scale assessment Identifying high-quality, suitable locations for Class VI injection wells for geological carbon sequestration, including the following:

- Assess cap and basement rock distribution, thickness, and integrity
- Laboratory analyses of geologic strata properties
- Develop 3-D geological reservoir models using the most advanced software, as available

4. Induced hazard evaluation, guidance, and baseline monitoring criteria to address seismic and geologic risks from future injection activities.

• Work with stakeholders and the research community to develop induced seismicity and land surface change recognition standards, including thresholds of exceedance and measures for compliance for incorporation in potential hazard screening guidance and hazard monitoring plans

• Work with the research community, state, federal, and local agency partners to establish guidance protocols and documentation for use in regulating future geologic carbon sequestration systems

5. Support the Secretary's development of a legal framework for governing agreements regarding tracts of land with different owners overlying suitable sequestration reservoirs. The legal framework must include recommendations on governance, ownership, compensation, good faith offers, liability, financial responsibility, royalties, and other requirements necessary to comply with state and federal legal and constitutional standards (PRC 71461(a-c)).

- Consult with state agencies including, but not limited to, the Attorney General, the Department of Conservation and its Divisions, including the Geologic Energy Management Division and the California Geological Survey, the State Lands Commission, CARB, and the Energy Commission.
- Contract with legal and other experts to identify and review other states' legal standards.
- Consult with stakeholders including industry, local governments, and affected neighborhoods, to plan a meaningful public engagement process culminating in a 90-day public review period.

The Water Boards will collaborate with CARB and other agencies to develop and implement a regulatory framework and streamlined application process for approving CCUS projects. This proposal requests 1 permanent position that will:

- Ensure that the Water Boards have access to information and expertise, including an employee with appropriate knowledge and skills, needed to effectively and efficiently carry out the Water Boards' mission
- Independently serve as the statewide Water Boards' manager to work closely with CARB, CalGEM, and other agencies to develop and implement a unified permit portal for the construction and operation of CCUS and CDR projects
- Provide statewide lead responsibility for managing the technical and administrative efforts, which includes engineering and geology specific knowledge and skills to evaluate efficacy, safety, and viability of CCUS and CDR technologies to protect groundwater quality where these projects are located.

E. Outcomes and Accountability

Under the Program, CARB will fulfill its responsibilities under SB 905 to evaluate CCUS and CDR project technologies and provide publicly the results of each analysis. The evaluation will be ongoing as new methods to potentially sequester carbon are emerging at a rapid pace. CARB may develop Protocols for emerging CCUS and CDR technologies as information becomes available and projects are proposed. Future protocols will necessarily go through the rulemaking process for Board adoption.

CARB will coordinate with state and local permitting agencies to prepare and adopt a regulation for an electronic permit submittal system to be used by project proponents to submit applications for required approvals in the state. The unified application will be transmitted to agencies for their permit approval consideration. To accommodate unified permit submittals, CARB will hire a contractor to develop an electronic permit submittal system. As projects and technologies are evolving quickly, the submittal system will require updating and maintenance. Selected information from the applications will be provided publicly.

Furthermore, CARB will adopt a regulation to ensure project operators maintain financial responsibility for any carbon dioxide leakage that might occur during the life of the project.

To inform the public of CCUS and CDR projects operating in the state and provide up-to-date and ongoing information about the status and progress of CCUS and CDR projects, CARB will

establish a project-tracking centralized public database in a user-friendly and easily accessible format.

CARB will also collaborate with state agencies to prepare project monitoring and reporting schedules for project operators to provide ongoing information necessary for agencies to evaluate project impacts. The monitoring and reporting schedules will be made available publicly.

CARB will also prepare a report and report to the Legislature every two years on the status and progress of the Program.

Workload	CY	BY	BY+1	BY+2	BY+3	BY+4
Measure	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Establish Carbon Capture, Removal,						
Storage Program to evaluate CCUS and CDR technology		x	Х	x	х	x
Consider adoption of CCUS and CDR protocols		х	х	х	х	х
Adopt a unified permit application regulation		x	x			
Develop electronic permit application submittal system			x	x		
Post publicly unified permit applications				х	Х	Х
Adopt regulation for project financial responsibility		x	Х			
Develop and maintain a project-tracking centralized public database		x	Х	х	x	х
Work with state agencies to develop project monitoring and reporting schedules		x	Х	х		
Prepare a report and report Program progress to Legislature every two years			х		х	

CARB Workload Tasks

The DOC proposed activities support statutory mandates of SB 905 and provide the state and public with the decision-support tools California needs to meet its 2030 greenhouse gas

reduction target and carbon neutrality management goals of 2045. The activities will include a fit-for-purpose framework methodology for understanding how to balance geologic carbon removal strategies with potential induced geologic risks. The decision-support tools will directly support deployment of carbon dioxide removal technologies.

- Develop suitability analysis framework to guide programmatic procedures and priorities, in collaboration with CARB and other related state agencies.
- Evaluation of previous work and data.
- Perform prioritization study incorporating proposed project applications, compatible land use, and evaluation of compiled previous work and data.
- Develop guidance on induced seismic and geologic risk monitoring and mitigation best practices. Re-evaluate and update as needed, based on changes in technology and regulatory processes.
- Complete low- (statewide scale) and intermediate-level (regional scale) assessments of induced geologic hazard potential with geologic carbon sequestration and removal reservoir activities.
- Utilize prioritization results to perform intermediate-level (regional scale) assessments of carbon sequestration potential in saline aquifers to support the site suitability analysis and regulatory process for the entire state.
- Identify the highest quality reservoirs based on the regional scale assessments and determine the suitability of storage for the highest quality reservoirs.

•	Publish scientific and programmatic maps, open data (transparent) datasets, and
	reports on statewide sequestration resources and risk potential and suitability.

Workload	СҮ	BY	BY+1	BY+2	BY+3	BY+4
Measure	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Establish a Geologic						
Carbon Sequestration						
Group to Support		х	х	Х	х	х
Statewide CCUS						
Implementation						
Develop suitability						
analysis framework						
consistent with the						
regulatory and		v				
project proponents		^				
needs to guide						
programmatic						
functions						
Perform assessment						
and prioritization of						
geologic reservoirs;		x	x	Y	×	Y
acquire data for		~	~	Х	~	X
Intermediate						
Evaluations						
Perform Intermediate						
Scale Evaluations			×	x	×	x
Identifying high-			~	~	~	~
quality, suitable						

DOC Workload Tasks

geologic reservoirs for CCUS						
Support the unified permitting portal with detailed review and independent analysis of geologic reservoir and induced hazards	х	х	x	х	х	х
Perform and develop induced hazard evaluation, guidance, and baseline monitoring criteria to address geologic risks from future injection activities			x	Х	х	Х

Duties and tasks for each of the positions requested by CGS are as follows;

Senior Engineering Geologist (Supervisor) (1) Technical Lead – Reservoir Suitability Assessment

Tasks:

- Develops suitability evaluation framework and implementation criteria for geologic reservoir mapping and modeling projects to determine statewide sequestration suitability.
- Staff recruitment, supervision, technical capacity development, and technical oversight for geologic reservoir suitability evaluation and modeling staff
- Interagency coordination and communication of suitability evaluation with DOC/CARB management to support SB 905 implementation
- Technical oversight of data acquisition contracts and contractor work products

Senior Engineering Geologist (Specialist) (1) Seismologist/Geophysicist Tasks:

- Develops suitability evaluation framework and implementation criteria with respect to evaluation of injection induced geologic hazards
- Contract management lead for acquisition, processing, evaluation, and dissemination
 of geophysical and seismic data for geologic reservoir mapping and modeling projects
 to support statewide sequestration suitability assessment
- Works with stakeholders and the research community to develop induced seismicity and land surface change recognition standards, including thresholds of exceedance and measures for compliance for incorporation in potential hazard screening guidance and hazard monitoring plans
- Works with the research community, state, federal, and local agency partners to establish guidance protocols and documentation for use in regulating induced hazards to future geologic carbon sequestration systems; supports

Engineering Geologist (2)

Tasks:

 Performs suitability evaluation at the intermediate scale of prioritized basins and geologic reservoirs, including interpretation of complex geophysical data, development of reservoir models including calculations of reservoir storage capacity and potential for faults and other geologic structures that may subject to induced hazards upon injection activities

- Supports the acquisition, processing, evaluation, and dissemination of geophysical and seismic data for geologic reservoir mapping and modeling projects in support of the geological reservoir suitability evaluation process
- Prepares technical reports and advice regarding reservoir induced hazards; develops induced hazards monitoring criteria

The Water Boards activities will support statutory mandates of SB 905 and provide the state and public with the protection of California's groundwater resources related to CCUS and CDR projects. This outcome is consistent with the State Water Board's Strategic Plan goals.

Water Boards involvement will lead to groundwater protection by:

- Collaborating with CARB and other agencies to develop a unified permit portal for projects that is protective of groundwater quality
- Evaluating potential threats to public health or water quality when reviewing projects
- Increasing the availability of data and information to the public associated with CCUS and CDR related activities.

Workload	CY	BY	BY+1	BY+2	BY+3	BY+4
Measure	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Support the unified permitting portal that is protective of groundwater quality	х	x	x	x	x	x
Evaluate potential threats to public health or water quality when reviewing projects		x	x	x	х	x
Coordinate with CARB on making data and information to the public associated with CCUS and CDR related activities available		x	x	x	x	x

Water Board Workload Tasks

F. Analysis of All Feasible Alternatives

<u>Alternative 1 (CARB)</u>: Provide \$5.5 million ongoing from COIA for 18.0 permanent positions and annual contract resources.

Pro(s): This alternative provides the needed resources to develop the Program as required by SB 905 to facilitate the capture and sequestration of carbon dioxide from CCUS and CDR technologies. This alternative provides the resources needed for CARB to consider adoption of CCUS and CDR protocols, to adopt a unified permit submittal process, to adopt a regulation for financial responsibility, to develop a project-tracking centralized public database, to develop monitoring and reporting schedules to state agencies, and to report Program progress to the Legislature every two years.

Con(s): Funding for 18.0 Permanent full-time positions, and \$1,700,000 annually in contracts to the state.

<u>Alternative 1 (DOC)</u>: Provide four (4.0) permanent positions and \$3,682,000 COIA in 2023-24, \$3,135,000 in 2024-25, \$3,135,000 in 2025-26, \$1,135,000 ongoing for this group to implement SB 905.

Pros:

- The State will be able to prioritize reservoirs across the state that may be determined to be high quality, suitable locations for Class VI injection wells.
- The state will be able to evaluate statewide geologic carbon sequestration and removal potential to remain on track to achieve our 2030 greenhouse gas reduction target and carbon neutrality by 2045 or earlier.
- The state will be able to evaluate seismic and geologic hazard risk of geologic carbon sequestration and removal capabilities across the state, and avoid potential risks to public safety, infrastructure, and the environment
- The state will obtain regulatory guidance and permit review informed by systematic, wholistic, and transparent geoscientific data and analyses

Cons:

• This will result in an increased cost to the COIA Fund.

<u>Alternative 1 (State Water Board)</u>: Provide 1.0 permanent position and \$280,000 ongoing from the COIA to support implementation of SB 905.

Pros:

• Meets the expected outcomes by (1) providing support to CARB in the development of a unified application process that allows for future projects to be approved and implemented more rapidly and (2) provided technical expertise related to groundwater protection for these projects.

Cons:

• This will result in an increased cost to COIA.

<u>Alternative 2 (CARB)</u>: Provide 23 permanent positions and \$700,000 in annual contract resources.

Pro(s): This alternative would provide an increased allocation of requested staff and a decrease in annual contract support funding. This alternative would provide the Staff needed for CARB to review CCUS and CDR technologies and develop additional protocols for CCUS and CDR technologies.

Con(s): This alternative results in potential higher future cost outlays as staffing expenses increase over time, as opposed to the fixed contract budget in Alternative 1.

<u>Alternative 2 (DOC)</u>: Provide \$13.5 million over four years and \$1.5 million ongoing and five (5) positions to partially implement the new Group.

Pros:

- The State will be able to prioritize more reservoirs across the state that may be determined to be high quality, suitable locations for Class VI injection wells.
- The state will be able to evaluate statewide geologic carbon sequestration and removal potential to remain on track to achieve our 2030 greenhouse gas reduction target and carbon neutrality by 2045 or earlier.
- The state will be able to evaluate seismic and geologic hazard risk of geologic carbon sequestration and removal capabilities across the state, and avoid potential risks to public safety, infrastructure, and the environment
- The state will obtain regulatory guidance and permit review informed by systematic, wholistic, and transparent geoscientific data and analyses

Cons:

• This will result in an increased cost to the COIA Fund

<u>Alternative 2 (State Water Board)</u>: Authorize overtime to current oil and gas monitoring unit staff to address the provisions of SB 905:

Pros:

• This alternative may result in annual savings over the annual costs of the recommended alternative.

Cons:

• Authorizing staff to work overtime will potentially result in delays of developing the permitting process or review of projects. The state may not be able to evaluate and assess all potential impacts to groundwater resources.

Alternative 3 (CARB): (No Action) Provide no additional resources

Pro(s): This alternative would provide no additional staff or contract resources.

Con(s): Under this alternative, CARB would lack the resources to meet the requirements under SB 905. The Governor and Legislature have clearly directed CARB staff to prioritize the facilitation of capture and sequestration of carbon dioxide from CCUS and CDR technologies. This work will not be possible under this alternative.

Alternative 3 (DOC): (No Action) Provide no state support.

Pros:

• There will be no increase in the COIA Fund.

Cons:

- The state will NOT be able to evaluate statewide geologic carbon sequestration and removal potential to remain on track to achieve carbon neutrality by 2045 or earlier.
- The state will NOT be able to develop hazard assessments of geologic carbon sequestration and removal capabilities across the state, and the induced risk potential for prioritized reservoirs
- The state will NOT be able to assess the efficacy and long-term viability of geologic carbon sequestration and removal systems
- The state will NOT be able to identify the suitability of regional geologic carbon sequestration and removal systems and prioritize reservoir development
- The state will NOT be able to establish monitoring protocols and collect regional baseline monitoring data for potential risk of induced seismicity of prioritized geologic carbon sequestration and removal areas
- The state will NOT be able to monitor and assess land surface elevation changes, such as subsidence and uplift associated with underground operations

Alternative 3 (State Water Board): (No Action) Provide no state support.

Pros:

• There will be no increase in COIA.

Cons:

• The Water Boards would not have resources to assist in the state's efforts to provide oversight of the protection of groundwater resources. Additionally, the state may not be able to evaluate and assess potential negative impacts and take corrective action to prevent any future impacts to groundwater resources. The state could fail to meet

the objectives to adopt regulations for a unified permit application which is required by January 1, 2025.

G. Implementation Plan

••••••••••••••••••••••••••••••••••••••	
FY 2023/24	FY 2024/25 and ongoing
 Recruit, hire, and train new supervisory and technical staff 	 Evaluate emerging technologies
 Identify and prioritize technologies for 	 Provide public with results of technology evaluation
 Evaluate emerging technologies 	 Consider protocol development for most promising
 Consider protocol development for most promising technologies 	 Complete rulemaking to develop unified permit application
 Begin rulemaking to develop an electronic unified permit submittal regulation 	 regulation Complete rulemaking for project financial responsibility
 Begin rulemaking for project financial responsibility 	 Maintain a project- tracking centralized public database
 Develop a project- tracking centralized public database 	Continue collaboration with state agencies to
 Collaborate with state agencies to develop monitoring and 	develop monitoring and reporting schedules
reporting schedules	 Prepare report and report to Legislature on Program status and progress

CARB Implementation Plan

DOC Implementation Plan

Upon approval of this request, CGS will immediately start the hiring and programmatic planning process to recruit key personnel and develop this critical program. The data collection process will begin to analyze the size and suitability of reservoirs across the state. CGS will begin meeting with key stakeholders to assess and prioritize sequestration reservoirs and to conduct detailed geologic framework and risk assessments.

State Water Board Implementation Plan

Upon approval of this request, the State Water Board will initiate a hiring process for new staff to meet the provisions outlined in SB 905. The Water Board will provide technical expertise with respect to water quality and supply. As for Class II Underground Injection Control (UIC) projects, the focus would be to ensure these projects do not negatively impact water quality.

This proposal anticipates that the Water Boards will be involved in both the initial support and development of a regulatory framework to create a unified permit process for CCUS and CDR projects, and regular project reviews once these regulations have been created.

H. Supplemental Information

CARB's proposal includes a request for \$1,000,000 ongoing to support evaluation of new technologies as they are developed. This is an ongoing/iterative process of technology review and protocol updates. The ongoing contract resources will provide CARB with supplemental expert input on which technologies are viable and should be the focus of the CCUS program established by SB 905.

CARB's proposal also includes a request for \$700,000 in annual contract funding to develop an electronic unified permit submittal program for proposed CCUS and CDR projects to apply for permit approvals in the state. The contract funds would be used in earlier years to acquire needed permit application information from state and local agencies and consolidate into one application form usable by stakeholders to apply for project approval. In subsequent years, the annual funding would be used to maintain and improve the application submittal program as technologies develop and application requirements evolve.

The new Group under DOC will require specialized, professional geoscience software installed on new staff computers. The requested \$6 million over three years will be used to acquire needed data to perform the required suitability analysis. The data acquisition will be focused on proposed and potential future sequestration project areas throughout the state, and will be used to model reservoir suitability with respect to CO_2 storage permanency, including volume, cap rock thickness, seismic and other induced hazards. The data requirements and acquisition costs will vary greatly across the state depending on a CO_2 storage reservoir's proximity to oil and gas operations that have a greater abundance of data versus areas outside of oil and gas operations having limited data. The funding will support contracts for magnetic, gravity, 2D seismic data and contracts with university and laboratory research programs. DOC will conduct quarterly reviews of proposed and active projects to ensure data and staffing needs are adequate. As project development progresses and the number of projects proposed across the state increases, additional funding for staffing and data will likely be necessary. Public Resources Code section 71461(b) requires CNRA to consult with "legal experts" in drafting the Framework that will require some landowners to participate in joint reservoir management agreements even if they have declined to do so. The Department of Conservation will perform this workload for the CNRA. To prevent uncompensated takings that could tie up projects in litigation for decades, it's important to consider legal scholarship as well as existing black-letter law on property ownership, fair offers, and procedures for determining fair compensation. Some of the \$500K will be paid to staff from the Attorney General's Office and possibly DOC, for reviewing the black-letter law of other jurisdictions that are also trying to streamline CCS project approvals. Most would be paid to legal scholars specializing in eminent domain, pore-space rights, and correlative rights in jointly-held resources, who can review proposals and suggest refinements that would allow for efficient, market-rate compensation to unwilling landowners, ideally without requiring the exercise of eminent domain. In the chart below I estimate \$300 per hour for DOJ, and \$500 per hours for outside scholars. DOC will develop a feasible process for determining fair compensation that will not involve the state in receiving trade-secret protected information.

I. Recommendation

CARB recommends approval of Alternative 1, which would provide an ongoing 18.0 positions and \$1,700,000 in annual contract funding to fulfill CARB's responsibilities under SB 905 to facilitate CCUS and CDR projects in the state.

DOC recommends approval of Alternative 1, to provide the state with the best chance to stay on track to reach its 2045 carbon neutrality goal.

SWRCB recommends approval of Alternative 1.

CARB BCP Fiscal Detail Sheet

BCP Title: Carbon Capture, Removal, Utilization, and Storage Program (SB 905)

BR Name: 3900-025-BCP-2023-A1

Budget Request Summary

Personal Services

Total Budget Request

Personal Services	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
Positions - Permanent	0.0	18.0	18.0	18.0	18.0	18.0
Total Positions	0.0	18.0	18.0	18.0	18.0	18.0
Earnings - Permanent	0	2,169	2,169	2,169	2,169	2,169
Total Salaries and Wages	\$0	\$2,169	\$2,169	\$2,169	\$2,169	\$2,169
Total Staff Benefits	0	1,228	1,228	1,228	1,228	1,228
Total Personal Services	\$0	\$3,397	\$3,397	\$3,397	\$3 <i>,</i> 397	\$3,397

Operating Expenses and Equipment

Operating Expenses and Equipment	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
5301 - General Expense	0	36	36	36	36	36
5302 - Printing	0	18	18	18	18	18
5304 - Communications	0	36	36	36	36	36
5320 - Travel: In-State	0	72	72	72	72	72
5322 - Training	0	18	18	18	18	18
5324 - Facilities Operation	0	180	180	180	180	180
5340 - Consulting and Professional Services -	0	1 700	1 700	700	700	700
External	0	1,700	1,700	700	700	700
5346 - Information Technology	0	72	54	54	54	54
Total Operating Expenses and Equipment	\$0	\$2,132	\$2,114	\$1,114	\$1,114	\$1,114
Total Budget Request						
Total Budaet Request	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				

\$0

\$5,529

\$5,511

\$4,511

\$4,511

\$4,511

CARB Fund Summary

Fund Source

Fund Source	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
State Operations - 3237 - Cost of Implementation Account, Air Pollution Control Fund	0	5,529	5,511	4,511	4,511	4,511
Total State Operations Expenditures	\$0	\$5,529	\$5,511	\$4,511	\$4,511	\$4,511
Total All Funds	\$0	\$5,529	\$5,511	\$4,511	\$4,511	\$4,511

Program Summary

Program Funding

Program Funding	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
3510 - Climate Change	0	5,529	5,511	4,511	4,511	4,511
Total All Programs	\$0	\$5,529	\$5,511	\$4,511	\$4,511	\$4,511

CARB Personal Services Details

Positions

Positions	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Yeār				
3735 - Air Resources Engr (Eff. 07-01-2023)	0.0	4.0	4.0	4.0	4.0	4.0
3756 - Engring Geologist (Eff. 07-01-2023)	0.0	4.0	4.0	4.0	4.0	4.0
3762 - Air Resources Supvr I (Eff. 07-01-2023)	0.0	2.0	2.0	2.0	2.0	2.0
3763 - Air Resources Supyr II (Eff. 07-01-2023)	0.0	1.0	1.0	1.0	1.0	1.0
3887 - Air Pollution Spec (Eff. 07-01-2023)	0.0	5.0	5.0	5.0	5.0	5.0
5393 - Assoc Govtl Program Analyst (Eff. 07-01-	0.0	1.0	1.0	1.0	1.0	1.0
2023)	0.0	1.0	1.0	1.0	1.0	1.0
5778 - Atty (Eff. 07-01-2023)	0.0	1.0	1.0	1.0	1.0	1.0
Total Positions	0.0	18.0	18.0	18.0	18.0	18.0
Salaries and Wages						
Salaries and Wages	FY23	FY23	FY23	FY23	FY23	FY23
5	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
3735 - Air Resources Engr (Eff. 07-01-2023)	0	485	485	485	485	485
3756 - Engring Geologist (Eff. 07-01-2023)	0	487	487	487	487	487
3762 - Air Resources Supvr I (Eff. 07-01-2023)	0	286	286	286	286	286
3763 - Air Resources Supvr II (Eff. 07-01-2023)	0	157	157	157	157	157
3887 - Air Pollution Spec (Eff. 07-01-2023)	0	571	571	571	571	571
5393 - Assoc Govtl Program Analyst (Eff. 07-01-2023)	0	75	75	75	75	75
5778 - Atty (Eff. 07-01-2023)	0	108	108	108	108	108
Total Salaries and Wages	\$0	\$2,169	\$2,169	\$2,169	\$2,169	\$2,169

Staff Benefits

Staff Benefits	FY23 Current	FY23 Budget	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
	Year	Year	2		2. 0	
5150350 - Health Insurance	0	541	541	541	541	541
5150450 - Medicare Taxation	0	31	31	31	31	31
5150500 - OASDI	0	135	135	135	135	135
5150600 - Retirement - General	0	521	521	521	521	521
Total Staff Benefits	\$0	\$1,228	\$1,228	\$1,228	\$1,228	\$1,228

CARB Total Personal Services

Total Personal Services	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
Total Personal Services	\$0	\$3,397	\$3,397	\$3,397	\$3,397	\$3,397

DOC BCP Fiscal Detail Sheet

BCP Title: Carbon Capture, Removal, Utilization, and Storage Program (SB 905)

BR Name: 3480-046-BCP-2023-A1

Budget Request Summary

Personal Services

Personal Services	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
Positions - Permanent	0.0	4.0	4.0	4.0	4.0	4.0
Total Positions	0.0	4.0	4.0	4.0	4.0	4.0
Salaries and Wages	0	530	530	530	530	530
Earnings - Permanent						
Total Salaries and Wages	\$0	\$530	\$530	\$530	\$530	\$530
Total Staff Benefits	0	265	265	265	265	265
Total Personal Services	\$0	\$795	\$795	\$795	\$795	\$795

Operating Expenses and Equipment

Operating Expenses and Equipment	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
5301 - General Expense	0	51	12	12	12	12
5304 - Communications	0	16	16	16	16	16
5320 - Travel: In-State	0	8	8	8	8	8
5322 - Training	0	12	12	12	12	12
5324 - Facilities Operation	0	72	72	72	72	72
5340 - Consulting and Professional Services -	0	2 500	2 000	2 000	0	0
External	0	2,500	2,000	2,000	0	0
5344 - Consolidated Data Centers	0	8	8	8	8	8
5346 - Information Technology	0	216	208	208	208	208
539X - Other	0	4	4	4	4	4
Total Operating Expenses and Equipment	\$0	\$2,887	\$2,340	\$2,340	\$340	\$340
Total Budget Request						
Total Budget Request	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
Total Budget Request	\$0	\$3,682	\$3,135	\$3,135	\$1,135	\$1,135

Fund Summary

Fund Source

Fund Source	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
State Operations - 3237 - Cost of Implementation Account, Air Pollution Control Fund	0	3,682	3,135	3,135	1,135	1,135
Total State Operations Expenditures	\$0	\$3,682	\$3,135	\$3,135	\$1,135	\$1,135
Total All Funds	\$0	\$3,682	\$3,135	\$3,135	\$1,135	\$1,135

Program Summary

Program Funding

Program Funding	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
2420046 - Geologic Information/Support	0	3,682	3,135	3,135	1,135	1,135
Total All Programs	\$0	\$3,682	\$3,135	\$3,135	\$1,135	\$1,135

Personal Services Details

Positions

Positions	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
3751 - Sr Engring Geologist (Eff. 07-01-2023)	0.0	2.0	2.0	2.0	2.0	2.0
3756 - Engring Geologist (Eff. 07-01-2023)	0.0	2.0	2.0	2.0	2.0	2.0
Total Positions	0.0	4.0	4.0	4.0	4.0	4.0
Salaries and Wages						
Salaries and Wages	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
3751 - Sr Engring Geologist (Eff. 07-01-2023)	0	286	286	286	286	286
3756 - Engring Geologist (Eff. 07-01-2023)	0	244	244	244	244	244
Total Salaries and Wages	\$0	\$530	\$530	\$530	\$530	\$530
Staff Benefits						
Staff Benefits	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Yeār				
5150900 - Staff Benefits - Other	0	265	265	265	265	265

Staff Benefits	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
Total Staff Benefits	\$0	\$265	\$265	\$265	\$265	\$265
Total Personal Services						
Total Personal Services	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
Total Personal Services	\$0	\$795	\$795	\$795	\$795	\$795

SWRCB BCP Fiscal Detail Sheet

BCP Title: Carbon Capture, Removal, Utilization, and Storage Program (SB 905)

BR Name: 3940-082-BCP-2023-A1

Budget Request Summary

Personal Services

Personal Services	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
Positions - Permanent	0.0	1.0	1.0	1.0	1.0	1.0
Total Positions	0.0	1.0	1.0	1.0	1.0	1.0
Earnings - Permanent	0	139	139	139	139	139
Total Salaries and Wages	Ş0	Ş139	Ş139	Ş139	Ş139	Ş139
Total Staff Benefits	0	67	67	67	67	67
Total Personal Services	\$0	\$206	\$206	\$206	\$206	\$206
Operating Expenses and Equipment		·	·		i	
Operating Expenses and Equipment	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year				
5301 - General Expense	0	2	2	2	2	2
5302 - Printing	0	4	4	4	4	4
5304 - Communications	0	10	10	10	10	10
5306 - Postage	0	2	2	2	2	2
5320 - Travel: In-State	0	19	19	19	19	19
5322 - Training	0	16	16	16	16	16
5324 - Facilities Operation	0	21	21	21	21	21
Total Operating Expenses and Equipment	\$0	\$74	\$74	\$74	\$74	\$74
Total Budget Request						
Total Budget Request	FY23	FY23	FY23	FY23	FY23	FY23
	Current	Budget	BY+1	BY+2	BY+3	BY+4
	Year	Year			-	
Total Budget Request	\$0	\$280	\$280	\$280	\$280	\$280

Analysis of Problem

Fund Summary

Fund Source

Fund Source	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
State Operations - 3237 - Cost of Implementation Account, Air Pollution Control Fund	0	280	280	280	280	280
Total State Operations Expenditures	ŞO	\$280	\$280	\$280	\$280	\$280
Total All Funds	\$0	\$280	\$280	\$280	\$280	\$280

Program Summary

Program Funding

Program Funding	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
3560 - Water Quality	0	280	280	280	280	280
Total All Programs	\$0	\$280	\$280	\$280	\$280	\$280

Personal Services Details

Positions						
Positions	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
3751 - Sr Engring Geologist	0.0	1.0	1.0	1.0	1.0	1.0
Total Positions	0.0	1.0	1.0	1.0	1.0	1.0
Salaries and Wages		·	·			
Salaries and Wages	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
3751 - Sr Engring Geologist	0	139	139	139	139	139
Total Salaries and Wages	\$0	\$139	\$139	\$139	\$139	\$139
		·			·	

Staff Benefits

Staff Benefits	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
5150350 - Health Insurance	0	34	34	34	34	34
5150600 - Retirement - General	0	33	33	33	33	33
Total Staff Benefits	\$0	\$67	\$67	\$67	\$67	\$67
Total Personal Services						
Total Personal Services	FY23 Current Year	FY23 Budget Year	FY23 BY+1	FY23 BY+2	FY23 BY+3	FY23 BY+4
Total Personal Services	\$0	\$206	\$206	\$206	\$206	\$206