



1.1 General Information

Agency or State Entity Name:

Air Resources Board

Organization Code:

3900

Proposal Name:

Integrated Inventory Database System

Proposal Description:

The Air Quality Planning and Science Division must design an inventory database that includes greenhouse gases, criteria pollutants and toxic air contaminants to support its program goals and fulfill the mandates outlined in Assembly Bill 197 and 617.

Proposed Start Date:

June, 2018

Delegated Cost Threshold (Optional):

☒ Over ☐ Under

Department of Technology Project Number:

3900-069

1.2 Submittal Information

Contact Information:

Contact First Name:

David

Contact Last Name:

Edwards

Contact Email:

david.edwards@arb.ca.gov

Contact Phone Number:

(916) 323-4887

Submission Date:

9/29/2017

Submission Type:

☒ New Submission

☐ Updated Submission (Pre-Approval)

☐ Updated Submission (Post-Approval)

☐ Withdraw Submission

Project Approval Executive Transmittal:



File Attachment

1.3 Preliminary Assessment

1.3.1 Reportability Assessment

Yes No

1. Does the Agency/state entity anticipate requesting a budget action to support this proposal? ☐ Yes ☒ No
2. Does the Agency/state entity anticipate the estimated total development and acquisition cost to exceed the Department of Technology's established Agency/state entity delegated cost threshold **and** the proposal does not meet the criteria of a desktop and mobile computing commodity expenditure? ☒ Yes ☐ No
3. Does this proposal involve a new system development or acquisition specifically required by legislative mandate **or** is subject to special legislative reporting or review as specified in budget control language or other legislation? ☐ Yes ☒ No

Anticipated Reportability

Is this proposal anticipated to be reportable? ☒ Yes ☐ No

Planned Reporting Exemption

Does the Agency/state entity anticipate seeking an exemption from project reporting? (Answer only if Anticipated Reportability above is "Yes.") ☐ Yes ☒ No

1.3.2 Impact Assessment

Yes No

1. Has the funding source(s) been identified for this proposal? ☒ Yes ☐ No

If "Yes," select applicable funding source(s) and enter the fund availability date. If funding source is "Other Funds," specify below:

AB 109 (Ting, 2017)/ AB 617 included \$500k for FY 17-18 and \$500k for FY 18-19 with \$100k ongoing costs.

FUND SOURCE
Mark all that apply

☐ General Fund

☐ Special Fund

☐ Federal Fund

☐ Reimbursements

☐ Bond Fund

☒ Other Funds

FUND AVAILABILITY DATE

FY 2017-18, 2018-19

2. Will the State possibly incur a financial sanction or penalty if this proposal is not implemented? If "Yes," provide details in Section 1.9 Business Problem or Opportunity Summary. ☐ Yes ☒ No
3. Is this proposal anticipated to have high public visibility? If "Yes," provide details in Section 1.9 Business Problem or Opportunity Summary. ☒ Yes ☐ No
4. On a scale of 1 to 3 (1 = None, 2 = Partially, 3 = Fully), indicate how well the current business processes are documented, communicated and available for review.

1.4 Business Sponsor and Key Stakeholders

Executive Sponsors

| Title | First Name | Last Name | Business Program Area |
|----------------|------------|-----------|---------------------------------------|
| Division Chief | Jon | Taylor | Air Quality Planning Science Division |

| Business Owners | | | |
|--------------------------------|------------|------------|-----------------------|
| Title | First Name | Last Name | Business Program Area |
| Air Resources Supervisor II | David | Edwards | AQPSD |
| Air Resources Supervisor II | Sylvia | Vanderspek | AQPSD |
| Staff Air Pollution Specialist | Stephen | Zelinka | AQPSD |

| Key Stakeholders | | | | |
|----------------------------|------------|-----------|-----------------------------|--------------------------|
| Title | First Name | Last Name | Business Program Area/Group | External |
| Air Resources Supervisor I | Gabe | Ruiz | AQPSD | <input type="checkbox"/> |
| Air Resources Supervisor I | Stephanie | Detwiler | AQPSD | <input type="checkbox"/> |
| Air Resources Supervisor I | Anny | Huang | AQPSD | <input type="checkbox"/> |

| 1.5 Business Driver(s) | | Mark all that apply |
|---------------------------|--|---------------------|
| Financial Benefit: | <input type="checkbox"/> Increased Revenues <input type="checkbox"/> Cost Savings <input type="checkbox"/> Cost Avoidance <input type="checkbox"/> Cost Recovery | |
| Mandate(s): | <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> Federal | |
| Improvement: | <input checked="" type="checkbox"/> Better Services to Citizens <input checked="" type="checkbox"/> Efficiencies to Program Operations <input checked="" type="checkbox"/> Improved Health and/or Human Safety <input checked="" type="checkbox"/> Technology Refresh | |
| Security: | <input checked="" type="checkbox"/> Improved Information Security <input checked="" type="checkbox"/> Improved Business Continuity <input checked="" type="checkbox"/> Improved Technology Recovery | |

| 1.6 Statutes or Legislation | |
|---------------------------------|--|
| Statutes or Legislation: | <input type="radio"/> New Statutes <input type="radio"/> Potential Legislation <input type="radio"/> Changes to Existing Legislation |

● Not Applicable

Bill Number:

Assembly Bill 197 and 617

Legal Reference:

Additional Information:

AB 197 and AB 617 do not explicitly direct ARB to develop a database, but they implicitly do. AB 197 states that ARB needs to display emissions of criteria pollutants, toxic air contaminants and GHGs. In order to collate and organize the data in an integrated fashion, a common database is needed to support the visualization tool. AB 617 requires CARB to collect and store criteria pollutant and toxic air contaminants (TACs) from stationary source emissions. A new database is needed to effectively perform this new task.

1.7 Program Background and Context

The emission inventory is the foundation for all programs at the Air Resources Board (ARB). ARB maintains emissions inventories for criteria pollutants, air toxics and greenhouse gases (GHGs). Each of the inventories is uniquely designed to meet the needs of the programs that it supports. The criteria pollutant emissions inventory supports regional air quality planning, the air toxics emissions inventory informs the AB 2588 Hot Spots program and the GHG inventory tracks the progress toward meeting ARB's AB 32 goals.

Historically, the criteria pollutant inventory was developed in 1960s at ARB to support regional air planning initiatives by the air districts and implement the standards set by the Federal Clean Air Act. In the late 1980s, the passing of AB 2588 led to the development of the toxic air contaminant emission inventory. In 2006, the passing of AB 32 required the development of a statewide GHG inventory as well as establishment of a mandatory reporting program for the largest GHG emitters in the state. Because the inventories were developed for different mandates and over the course of time at ARB there are many differences between the reporting requirements.

Criteria pollutant and air toxic contaminant reporting are facilitated by the air districts, whom then transmit data to ARB. At ARB, the California Emission Inventory Development and Reporting System (CEIDARS) was designed to collect and store the emissions data. CEIDARS currently houses criteria pollutant and toxic air contaminant data submitted by the air districts. This database contains emissions information for over 20,000 facilities within the state. CEIDARS emissions data submitted by the air districts is augmented by ARB staff who calculate the mobile and area source emissions.

The GHG databases designed to support mandatory reporting and the statewide AB 32 GHG inventory are separate from CEIDARS and fundamentally different in their design features. This is due to the programs they support, Cap and Trade and tracking AB 32 progress, respectively.

In recent years, ARB has made an effort to evaluate the potential criteria pollutant and toxic air contaminant emission reductions associated with GHG regulatory measures. However, the database structures, information collected for each program and disparity between each of the programs has made this task difficult to complete. In 2016, AB 197 codified ARB's cobenefit analysis by requiring an integration of criteria pollutant, toxic air contaminant and GHG emissions across all programs and inventories. Further, AB 617 advances CARB's role in storing and collecting criteria pollutant and toxic air contaminant emissions data, a task traditionally performed by air districts.

1.8 Strategic Business Alignment

| Strategic Business Goals | Alignment |
|---|--|
| Comply with the legislatively mandated inventory integration goals of AB 197. | The integrated inventory database will provide increased data transparency and improve the public right to know access to emissions data. |
| Comply with the legislatively mandated criteria pollutant and toxic air contaminants reporting requirement. | The integrated emissions inventory will provide a seamless storage location for the collected emissions data and allow for the development of an interactive web portal. |
| Strategic Plan Last Updated | 6/1/2001 |

1.9 Business Problem or Opportunity Summary

ARB's efforts to meet air quality standards, achieve greenhouse gas (GHG) emission reduction targets, and reduce exposure to toxic air contaminants requires an increasing emphasis on integrated, multipollutant approaches. In addition, AB 197 and AB 617 sets out specific requirements for enhanced emissions inventory reporting and transparency, as well as interpretation of emission trends and the impact of control programs across all pollutants. An integrated emissions inventory framework must therefore be developed to support an assessment of GHG, criteria pollutant and toxic air contaminants across ARB programs.

The integrated inventory database must contain:

- Criteria pollutant, toxics and GHG emissions data;
- Stationary, area and mobile source emissions are included for each pollutant group;
- An automated quality assurance/quality control mechanisms;
- Userfriendly interfaces to access data;

Have the ability to:

- Support multiple programs across ARB and Federal reporting requirements;
- Securely upload data from air districts;
- Support trend analysis of historical and forecasted emissions data;
- Streamline data queries;
- Update data (by ARB or air districts);
- Add fields over time as data requirements change;
- Support multiple reporting formats and trend analysis tools;

Because of the integral nature of this database to all ARB programs, a knowledge transfer must occur during and after the development of the database to ensure ARB staff can maintain and update the database, as needed.

1.10 Business Problem or Opportunity and Objectives Table

ID

- | | |
|---|---|
| 1 | The speed at which data queries are developed with the current database system take days to weeks |
|---|---|

Obj

- | | |
|---|---|
| 1 | Improve the efficiency of the database system to improve data query speed |
|---|---|

| Metric | Baseline | Target | Measurement Method |
|------------------------------------|---------------|---------------|---|
| Length of time to complete a query | days to weeks | hours to days | Develop data request module within database |

ID

- 2 The data update process is impeded by having air districts take the lead on updating the emissions data.

Obj

- 1 Develop tools in the database to allow ARB and air districts to update emissions data and include proper feedback mechanisms

| Metric | Baseline | Target | Measurement Method |
|--------------------------|----------|--------|--------------------------------|
| Length of time to update | Weeks | Hours | Develop a data stamp procedure |

ID

- 3 Ensure the emissions data and database structure meets the needs of users

Obj

- 1 When discussing the data needs with internal and external stakeholders, database staff must ensure their needs are met within the new database

| Metric | Baseline | Target | Measurement Method |
|---|-----------------------|-------------|--|
| Identify and track unique uses for the database | not currently tracked | 75 programs | Track data requests using the database and conduct periodic surveys on user satisfaction |

1.11 Business and Stakeholder Capacity

1.11.1 Business Program Priorities

Yes No

Does this proposal share resources (state staff, vendors, consultants or financial) with other business program priorities within the Agency/state entity?

☐ ☒

1.11.2 External Stakeholder Involvement

1.11.3 New or Changes to Business Processes

Yes No

Does the Agency/state anticipate this proposal will result in the creation of new business processes?

☒ ☐

Does the Agency/state entity anticipate changes to existing business process?

☒ ☐

Emissions data currently resides in disparate databases under different CARB programs. The development of an integrated single compliance database will require the creation and/or change of business processes to manage

the data. Tools will be developed to streamline reporting and analysis by ARB and air districts to provide feedback and improve data accessibility and quality.

1.12 Organizational Readiness

1.12.1 Governance Structure

Yes

Does the Agency/state entity have an established governance structure for combined business and IT decision making, including information security and privacy?

☒ ☐

ARB has established a collaborative governance model for technology that requires decision-making at the Executive Office level. Divisions submit requests for new projects and initiatives and ARB's Office of Information Services (OIS) provides IT development oversight and manages IT project resources including contractor and State developer staff. OIS leads concept refinement, requirements analysis, planning and execution of new IT projects, ensuring compliance with ARB enterprise architecture and security standards, and State IT project, procurement, and security policies. The Division Business Owners define system requirements, and direct changes, enhancements, and priorities. This governance model helps OIS effectively manage ARB's technology portfolio, while ensuring Divisions define what functionality is needed in the IT products.

1.12.2 Leadership Participation

Identify the levels of leadership that are aware of and engaged in addressing the business problem(s)/ opportunity(ies) identified in this proposal (check all that apply):

- ☒ Executive
- ☒ Senior Management Business/Program
- ☒ Mid-level Management Business/Program
- ☒ Senior Management IT
- ☒ Mid-level Management IT
- ☒ Enterprise Architect

1.12.3 Resource Capability/Skills/Knowledge for Stage 2 Alternatives Analysis

Yes

No

Does the Agency/state entity anticipate requesting additional resources, through a budget request, to further study this proposal and/or perform procurement analysis?

☐ ☒

Of the Agency/state entity resources identified to perform Stage 2 Alternatives Analysis for this proposal, enter the number of staff who have had experience with planning projects of a similar nature.

3

The ARB Executive Team supports this project. They are aware of the changes in the business process that the development of this database will entail and are committed to supporting this change. Throughout the process, management will be briefed on the progress and also on the finished product.

1.12.4 Training and Organizational Change Management

Yes

No

With respect to the magnitude of this proposal, does the Agency/state entity have resources, processes, and methodologies in place to provide training and organizational change management services?

☒ ☐

Does this proposal affect business program staff located in multiple geographical locations?
If "Yes," specify the city, state, number of locations and approximate staff in each location:

☐☒

City

State

Number of
Locations

Approximate Number of
Staff

AQPSD staff are generally very comfortable working within digital environments. As this effort is consolidating systems currently available it likely will not require significant changes to the way the data is gathered and entered. It is not anticipated that significant training or organizational change management (OCM) will be required. It is anticipated that training and OCM will be conducted through various methods, including: user guides; on the job training; training videos; staff interaction and briefings; etc.

1.12.5 Enterprise Architecture

Yes No

Does the Agency/state entity have a documented target (or future state) enterprise architecture that provides the overall business and IT context for this proposal?

☒☐

1.12.6 Project Management

Project Management Risk Score:

.8

1.12.7 Data Management

Yes No

1. Does the Agency/state entity have an established data governance body with well-defined roles and responsibilities to support data governance activities?

☒☐

2. Does the Agency/state entity have data governance policies (e.g., data policies, data standards, etc.) formally defined, documented and implemented?

☒☐

3. Does the Agency/state entity have data security policies, standards, controls, and procedures formally defined, documented and implemented?

☒☐

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