



COLORADO

Department of Public
Health & Environment

JOINT TECHNOLOGY COMMITTEE RESPONSES MAY 30, 2023

Air Pollution Control Division Stationary Sources Data Modernization

1. Which elements of the project are currently underway? Which elements have been completed since the department last updated the JTC? Is the project on schedule with initial plans?

Response: The Stationary Sources database is the primary technology tool used by the Air Pollution Control Division to manage permitting, inspections, enforcement, compliance, billing, emissions, and data reporting associated with stationary sources. This system supports regulatory actions associated with 2,500 companies with 14,000 emission facilities and 43,000 emission sources (like oil and gas, power utilities, manufacturing, construction, landfills, agriculture, and mining) while informing communities and individual constituents interested in industry performance.

There are multiple aspects of the Stationary Sources Project currently underway. For example, efforts to better understand the legacy system environment and processes, while researching and building the initial application processing component and infrastructure of Salesforce has recently been completed. This includes complex process flows, rules and automation logic, as well as some integration between tools to support the Land Development application process. This is the first of multiple processes to be completed for development. Regarding the new data warehouse, the team completed building five of 14 new views for the future state, completed the foundational setup of Amazon Web Service's database hub where data is stored, and successfully consumed a snapshot of data to prove it could be queried and visualized using tools such as Tableau.

We are pleased the project is on schedule with initial plans. Various technical updates include:

- Salesforce Proof of Concept is complete and successful (based on the success of the project, Salesforce was selected as the platform for the project);
- Preparation of Salesforce Land Development work for production;
- Contractor began planning build of Title V permitting components in Salesforce;
- Amazon Web Services proof of concept is moving toward production;
- Initial data visualization to be released to public to create a feedback loop;
- Statement Of Work finalized for eight more processes in Salesforce and initial design starting with OIT.
 - Relocation Notices
 - Notice of Start Up
 - Gasoline Service Station Application and Permitting
 - Surface Coating Application and Permitting



- Crushers/Screens Application and Permitting
- Crematory Incinerators Application and Permitting
- Oil and Gas Well Completion Application and Permitting
- New Source Performance Standards, Subpart OOOO (Federal EPA Rule) Reporting

2. How much money has been obligated and spent at this point? Please break down amounts and spent separately.

Response: The following funds were spent through March 2023.

Project Area	Cost
Smart Comment Software	\$ 12,000
Resource Focused on Integration/Mulesoft	\$ 40,000
Salesforce Licenses, annual commitment	\$ 165,000
External Contract to Build Initial Title V process in Salesforce	\$ 300,000
Land Development Proof of Concept Build by OIT	\$ 120,000
Amazon Warehouse Services (AWS) setup/build architectural services	\$ 154,000
OIT - Development of 8 additional work processes	\$ 278,000
Total	\$1,069,000
Remaining Encumbered Funds	\$ 960,239
Total	\$2,029,239

3. What is anticipated to be completed by the next quarterly update?

Response: By the next quarterly update, the program expects to complete:

- Initial build of the permitting process for Title V;
- Additional ingestion of data into the Data Lake from the primary legacy system;
- Launch of Land Development tech into production;
- Onboarding of Mulesoft integration specialist for Air Pollution Control Division; and
- Further development of Salesforce to begin to build eight additional processes (see #1).

4. When does the department/institution anticipate that the project will be complete?

Response: The department anticipates it will take approximately three years to complete most components and business processes of the project with additional elements and functionality to be phased in over a five-year period.

5. Are there any important concerns or updates you wish to share with the committee?

Response: The project is progressing as planned for the initial year of implementation, which focused on overall project planning and scoping, platform and tool selection processes, proof of concepts, finalizing licensing, and distribution of future work between OIT and contractors.

6. For multi-phase projects, has there been any insight gained through this phase of the project that will cause changes in the next requested phase of the project?

Response: Through this phase of the project, we learned more about the approval processes with all the different teams. But, there are no changes to the project at this time.

Colorado Electronic Birth System Replacement (VESCO)

1. Which elements of the project are currently underway? Which elements have been completed since the department last updated the JTC? Is the project on schedule with initial plans?

Response: Work is ending on the Colorado Electronic Birth System Replacement (VESCO) project. Due to several challenges, including inconsistent revenue and development staffing shortages that resulted in the project taking significantly longer than anticipated, VESCO will not be able to replace the current birth system. Reasons include the following:

- The capital appropriation for the project expires on June 30, 2023. The project is not complete and the program loses the ability to do additional work at that time.
- COVIS (Current Birth system) continues to show signs of fragility and it is uncertain if it will continue to function through the new anticipated go-live date for VESCO (2025).
- OIT's 2008 Server Technology Debt project requires that all 2008 servers be decommissioned by December 2023. COVIS is housed on a physical 2008 server at eFort and therefore will need to be moved in 2023 to the Lakewood data center as part of this project. Moving this server poses significant risk to the viability of the system. Since VESCO was set for a 2025 go-live date, it will not be ready at that time.

The Vital Records program, in conjunction with OIT, looked into the alternative of attempting to migrate the 2008 COVIS server environment to an Amazon Web Services environment. However, it is uncertain whether this solution would be successful, because it would require assistance from a foreign non-US consulting firm (which is strongly discouraged), not to mention the risk of the system not functioning in this new environment.

- As the Vital Records program explored alternate solutions, the program discovered that the current vendor of our birth (COVIS) and death (EDR) systems could provide an upgraded birth system that would satisfy the program's OIT technology debt requirements, while replacing the system by January 1, 2024, solving the OIT 2008 Server Technology Debt project problem listed above. Also, the upgrade would include the integration of the birth and death systems into one single sign-on system, the latest codebase, and a private cloud hosted center on SQL 2019 Servers.

2. How much money has been obligated and spent at this point? Please break down amounts and spent separately.

Response: The original capital award was made up of \$745,000 in General Fund dollars and \$1,695,000 in spending authority in the Vital Records cash fund.

- General Fund \$745,000. To date, approximately \$725,500 has been spent. There is a plan to spend the balance of this funding as program and OIT developers complete necessary work to ease the transition to the use of the vendor's birth and death system.
- Cash Spending Authority \$1,695,000. The cash award was for spending authority only. While the program did raise some funds to maintain work on VESCO, issues arose that impeded the ability to move according to project timeline. These issues included a COVID-19 service interruption, office closures, reduction of demand for Vital Records products, and issues experienced by partners that all resulted in a collection of funds insufficient to fund the project completely as revenues came in below projections.

As a result of repeated interruptions of work and the funding to pay for it, a total of approximately \$1.025 million has been spent to date. Current projections show an additional \$110,000 will be expended through the end of FY 2022-23.

3. What is anticipated to be completed by the next quarterly update?

Response: This project ends on June 30, 2023, but the Vital Records Program expects that archiving and documenting developed code will be completed.

4. When does the department/institution anticipate that the project will be complete?

Response: The department will not complete the project as it was proposed. The current vendor will provide a solution in FY 2023-24.

5. Are there any important concerns or updates you wish to share with the committee?

Response: There are no additional updates to share with the committee at this time.

6. For multi-phase projects, has there been any insight gained through this phase of the project that will cause changes in the next requested phase of the project?

Response: Yes. Phase I of the VESCO project ultimately resulted in pursuing a system upgrade through the current vendor due to exigent circumstances described above. This upgrade will include a death system upgrade as well, resolving all technology debt that the program currently has related to the birth and death systems.

With a shift in focus from replacement of the birth and death registration systems, available funding and effort for Phase II of the VESCO project will be redirected towards the upgrade and consolidation of other vital events systems and data sources. As proposed in the recent capital request, the program will expand its efforts to replace existing Microsoft Access databases and Excel/Google sheets used for collection of fetal death and induced termination of pregnancy data with new SQL Server-based solutions as well as upgrading the current marriage and dissolution system.

In addition, the program may now create multiple communication options between the Vital Records systems and external systems such as those used by coroners, funeral homes and hospital electronic health record systems. Creation of these connection points can reduce duplicative data entry and potential human error while improving data integrity and processing times.

Because these systems and databases are less complex than the birth and death system, the program expects that these projects will be completed within the appropriation funding and timeline.