12/15/21 WORKING DRAFT: Monitoring and Evaluation Database Development

Summary

With the adoption of the Climate Action Plan (CAP) by the Vermont Climate Council, the Agency of Natural Resources seeks to develop a database for monitoring and evaluating progress on key strategies intended to drive emissions reductions in line with the Global Warming Solutions Act requirements. This draft scope of work proposes new tasks Cadmus and Energy Futures Group (EFG) can perform to support this effort.

Cadmus/EFG recommends that the planning and the development of the database occur over two sequential phases, with Task 0: Project Management spanning both. Many of the decisions that must be made during database development will depend on currently unknown aspects such as use cases, data availability, data format, and data ownership. While it may be possible to initiate aspects of the database development before database planning is completed, doing so may result in iterations and rework that can be avoided if the work is performed sequentially.

Draft Scope of Work

Task 0: Project Management

Successful execution of this scope of work will require clear project management and communications guidelines set from the start. At the outset of the project, Cadmus/EFG will host a project kickoff meeting with the appropriate points of contact and establish the project workplan. To keep tasks running smoothly, Cadmus/EFG will meet with the designated staff lead(s) for database development (Database Project Manager) biweekly over the course of the project to review interim deliverables, discuss the tasks underway, identify key decision-points, and adjust the timeline as necessary. Cadmus/EFG will also maintain active communication channels across all team members and invoice the State for completed deliverables.

Deliverables: Biweekly one-hour meetings with Database Project Manager over the duration of the project.

Timeline: Throughout the duration of each phase

Phase 1: Database Planning

Cadmus/EFG recommends dedicating up to six months to plan and design the Database, including the development of logic models and use cases and identification of data sources and type. This phase would also include the establishment of a Data Governance Team and Plan to guide development and implementation of the Database. Phase 1 tasks are described in more detail below.

Task 1: Data Governance:

Tracking metrics against which to assess CAP progress will be a decades-long endeavor for the State of Vermont as it seeks to achieve the GHG reduction targets in the Global Warming Solutions Act. To ensure long-term success, and per Science and Data (S&D) Subcommittee recommendation, a Data

Governance Plan should be drafted, and a Data Governance Team identified, to guide the development and on-going maintenance of the database.

At the outset of the project, Cadmus/EFG will review work completed to date by the Department of Public Service (DPS) and Energy Action Network (EAN) to determine the best way to align their efforts with CAP Database development and management and make recommendations to the Database Project Manager. Cadmus/EFG will also meet with the S&D Subcommittee Co-Chairs and key Administration staff to identify key members of a Data Governance Team and key content of a Data Governance Plan (Plan). Cadmus/EFG anticipates there will be Vermont staff support for management of the Governance Team and anticipates working closely with the said staff over the course of Phase 1 to draft and finalize the Plan. The Plan will help direct ownership, collection, storage, security, access, and usability questions before the Database is developed in Phase 2. The data architecture, database design, storage, and security will all be informed by the data governance plan.

Deliverables: Review of existing database engagement from DPS, EAN and recommendations, meetings with S&D Co-Chairs, Data Governance Team leads and Data Governance Team, Data Governance Plan draft and final

Timeframe: Ongoing through Phase 1

Task 2: Logic Model Development and Metric Creation
At the outset of this scope of work, Cadmus/EFG will review Vermont's Climate Action Plan and meet with the S&D Subcommittee to confirm goals and objectives for monitoring and assessing progress. This will include finalizing the use cases anticipated for Vermont's CAP Database and identifying the key categories for inclusion.

Cadmus/EFG, in coordination with the S&D Subcommittee and/or Data Governance Team, will begin database planning by developing logic models that depict how Vermont anticipates achieving greenhouse gas reductions, as well as increases in sequestration, resiliency, and equity. As part of the development of these models, Cadmus/EFG will identify the key metrics through which Vermont anticipates driving changes, articulate the performance measures that the State and its partners have control over, and confirm reduction totals anticipated for each metric. Cadmus/EFG will meet with the S&D Subcommittee and/or Data Governance Team over the course of this work to receive input on the logic models, metrics, and reduction targets, and to begin inventorying data needs.

Deliverables: Summary of Framework use cases and categories, CAP logic models, with identified metrics and data needs, meetings with S&D Subcommittee and/or Data Governance Team

Timeframe: 2 months

Task 3: Data Mapping
Once the logic models have been developed and approved by the Governance Team and S&D Subcommittee, the next step will be to map the data sources and flows that are currently available and identify gaps in data that will need to be filled. To advance this work, Cadmus/EFG will align with the work done to date by DPS and EAN (as needed) and host a working session with the S&D Subcommittee Co-Chairs and key Governance Team members to begin identifying the data that needs to be sourced to populate the database, based on the logic model. Cadmus/EFG anticipates interviewing data managers internal and external to state government recommended by the Subcommittee and Governance Team

and approved by the Database Project Manager to identify data processes that will inform database development, including data source, frequency of update, data accessibility, data type, and data characteristics. The objectives of these calls will be to:

- Identify what data we have and where it comes from; and
- Evaluate the applicability of existing data against the needs identified by the logic model; and
- Identify what data gaps we have and how we might fill them; and
- Define and outline how the data gets from its source to the database.

Based on this research, Cadmus/EFG will develop a data map that will be shared with the Governance Team and the S&D Subcommittee for review and approval. The data map can be created in Microsoft Excel, Microsoft Visio, or another software application as recommended by the S&D Subcommittee.

Deliverables: Working session with Governance Team and/or S&D Subcommittee, up to bi-weekly meetings with Governance Team (as needed), Data map indicating logic model, metric, data source, and data characteristics for the VT 2021 CAP.

Timeframe: 3-6 months

Task 4: Infrastructure Recommendation

Cadmus/EFG will deliver a memo summarizing work conducted in Phase 1 and making recommendations for Phase 2 based on the objectives and goals identified through tasks 1-3, with both near-term and long-term priorities in mind.

Deliverables: Draft and final Phase 1 memo, presentations to Data Governance Team and to S&D Subcommittee

Timeframe: 1-2 months

Phase 2: Database Development

As noted above, Cadmus/EFG recommends a scoping exercise be completed at the end of Phase 1 to further refine Phase 2 and determine appropriate technology, timeline, and support.

It is anticipated that Phase 2 will consist of two tasks, to be further refined at the conclusion of Phase 1:

- **Infrastructure Development**: The creation of a Database that will create sustainable long-term engagement across state agencies managing data to track GWSA and CAP progress. The goal will be to efficiently aggregate data that already exists, rather than developing new reporting or input requirements for staff or reporting entities and be built with readily available tools, so that it is accessible to a wide variety of users.
- **Testing and iteration**: Once developed, it will be important to continue iterating on the database to ensure stakeholder feedback improves its usability over time.

Timeline for development depends on the complexity of the database infrastructure selected.