

Advancing Denver's Transportation and Infrastructure through Climate-Focused Target Setting and Tracking

The MENV team was tasked with developing strategies and tools to help the Denver Department of Transportation and Infrastructure (DOTI) gain insight into sustainability practices to mitigate emissions from the use of concrete, asphalt, and steel.

BACKGROUND CONTEXT

Denver's Emissions Targets

Denver has a goal of **net zero greenhouse gas emissions** by 2040. As a department with an emissions footprint (especially from its use of **concrete, asphalt, and steel**), DOTI is a key player in moving the community towards its larger sustainability goals.

Important DOTI Sustainability Goals



Zero transportation emissions by 2050



Divert 80% of construction waste by 2030

Challenges



Budget constraints make it difficult for DOTI to prioritize sustainability considerations



The *Envision* Sustainability Framework is new to DOTI, and staff's experience with the tool is limited



Higher costs and different maintenance schedules for novel materials make implementation challenging

CAPSTONE PROJECT DELIVERABLES

Take **inventory** of DOTI's capital projects and **align** them with sustainability initiatives using the **Envision framework**.

Develop a **tracking and reporting** process for DOTI to efficiently measure emissions.

Engage with **stakeholders** to ensure recommendations are actionable.

Create an **Action Plan** to summarize all prior work and provide a roadmap for DOTI moving forward.

PROJECT METHODS AND OUTCOMES

Inventory and Alignment

Built an excel-based tool that allows staff to evaluate the sustainability pathway for their project through the *Envision Sustainability Framework*.

Categorization of all 99 of DOTI's planned capital and wastewater projects

Analysis of potential *Envision* sustainability practices



The **Envision Project Evaluation Tool** will enable DOTI staff to **efficiently** identify **practical sustainability measures** that may be considered for capital projects at the **planning phase** of project development.

Tracking and Reporting

Identified and recommended software solutions which enable DOTI to accurately capture and report its emissions and track progress against overarching greenhouse gas reduction goals.

FINAL TOOL RECOMMENDATIONS

	Infrastructure Carbon Estimator	QFlow
Cost	✓	
Ease of Use	✓	✓
Flexibility	✓	✓
Data Access	✓	✓



The **carbon tracking tools** will give DOTI insight into its actual emissions from its use of **concrete, asphalt, and steel**. This data will support DOTI's implementation of sustainability policies that are **effective** and **efficient**.

Action Plan

The Action Plan formalizes findings and recommendations to assist DOTI leadership with sustainability-based decision making moving forward. It includes recommendations on how to:

- Evaluate opportunities and limitations under the *Envision* framework
- Use tracking tools to measure emissions
- Engage with contracting community to implement sustainability practices