



➔ **Carbon Emissions Reduction Account (CERA) Fuel Conversion Reporting Tool**
Washington State Joint Transportation Committee



Seth Hartley, Kim Latham, Kat Regnier
ICF

10/17/2024

Agenda



- Team Introduction
- Project Overview
- Tool and Report Overview
- Tool Demonstration
- Next Steps
- Q&A

Introduction & Roles – ICF



Seth Hartley
Project Manager



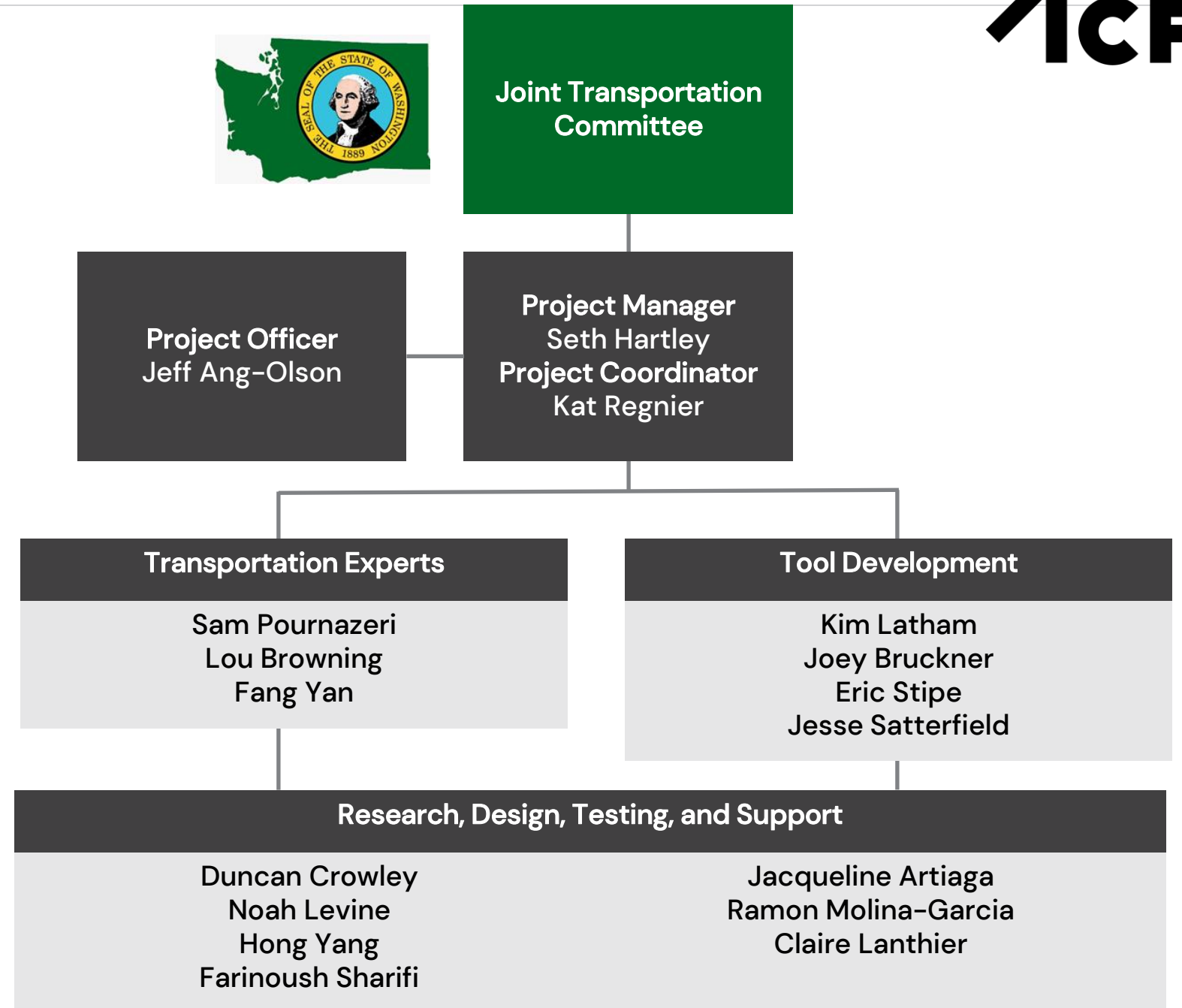
Kat Regnier
Management and Organization



Kim Latham
User Experience

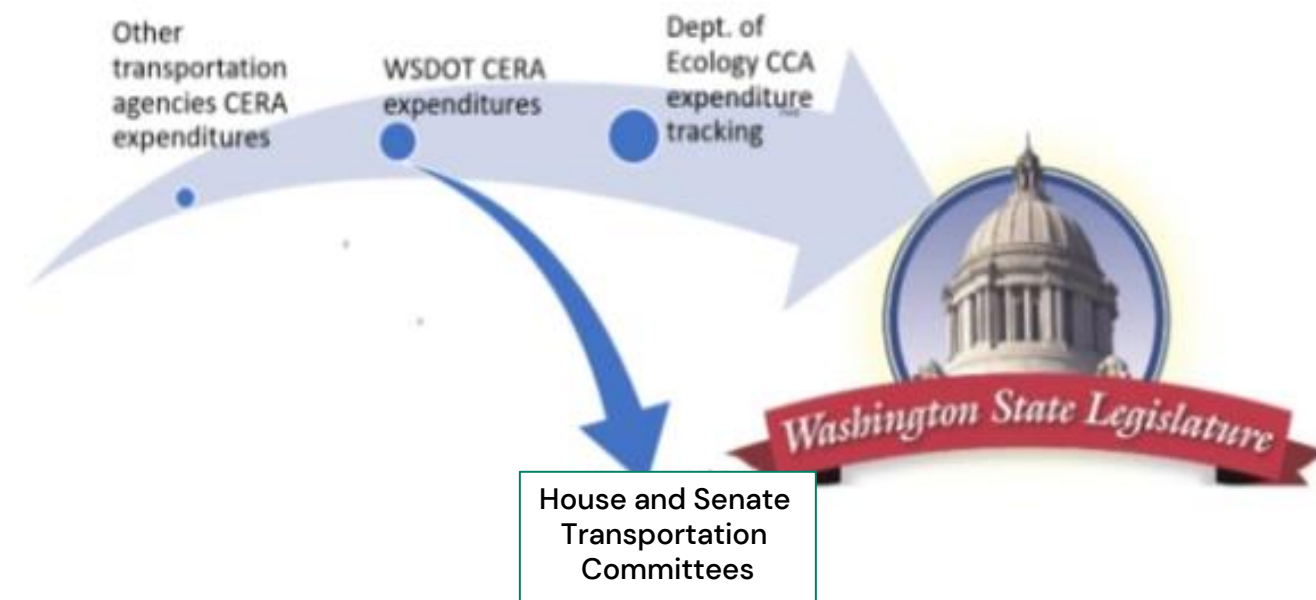


Joey Bruckner
Tool Development



Project Purpose

- Develop a reporting tool to track CERA-funded fuel conversion projects' projected GHG emission reductions and other benefits.
 - Provide JTC with tracking of anticipated benefits of investments
- Support tracking and reporting for 3 categories, consistent with the CERA Proviso:
 1. Costs and funding
 - Funding amount and time (year), tons of GHG reduced per dollar spent, responsible agency, project location
 2. Emission benefits
 - Tons of CO2e avoided per time
 3. Environmental Justice (EJ)
 - Benefit to vulnerable populations and overburdened communities
 - Tribal support
- Support recommendations for program delivery, future funding, and program improvements



Project Overview

Phase I of this project designed and built a Reporting Tool to predict the benefits of CERA-funded fuel conversion projects.

- Homepage
- Project Reporting
- Emissions Reporting
- Reporting by Geography
- EJ Reporting
- Data Export
- References

JTC CERA Reporting Tool: [Homepage](#) JTC CERA SharePoint Site Full Page

43

Total Projects

21

Projects with Tribal Support

21

Projects in EJ Areas

76

Total Project Elements

\$1.15bn

Total Project Cost

\$1.09bn

Total Funding

81.74M

CO2e (MT) Reduced

Search Q X

Project Name JTC Project Number

Total Project Cost and Funding

● Project Cost ● Funding Amount

Total CO2e by Project Type (MT)

CO2e (MT) Reduced per Project Element \$

● CO2e reduced per \$ cost ● CO2e reduced per \$ funded

Project Element Start Year

2023 2029

Project Element Type

All

EJ Yes or No

All

Legislative District

All

Tribal Support

All

JTC Project#	Project Name	Project Element	Project Type	Start Year	County	Legislative District	CO2e Emissions Reduced
JTC-CERA-67	WSDOT ...	EV	Electric Vehicle Purchase	2025	King	8 9 10	1,377.94
JTC-CERA-68	Transit Star Wars	Light Transit Saber	Electric Vehicle Charging Infrastructure	2025	King	34	2,813.44
JTC-CERA-65	Kitsap Transit: Design & Shore Power	Connecting WA Tier Project	Port Shore Power	2025	Kitsap	23	137.67
JTC-CERA-64	MAWA Earmark (CER) Ferry	Guemes Ferry Boat Replacement	BE/HE/FCE Watercraft Purchase (Ferry)	2024	Skagit	40	454,992.28
JTC-CERA-63	Pierce Transit EV Chargers	DCFC charger	Electric Vehicle Charging Infrastructure	2025	Pierce	26	39.07
JTC-CERA-62	Port of Bremerton	Bremerton and Beyond	BE/HE/FCE Watercraft Purchase (Ferry)	2026	Kitsap	26	1,262,793.36
JTC-CERA-61	Island Transit - ZEV Fleet Transition Plan	Green Transportation	Fuel Cell Electric Vehicle Fueling Infrastructure	2024	Island	10	3,143.17
Total							81,744,059.27

Project Reporting

Emissions Reporting

Reporting by Geography

EJ Reporting

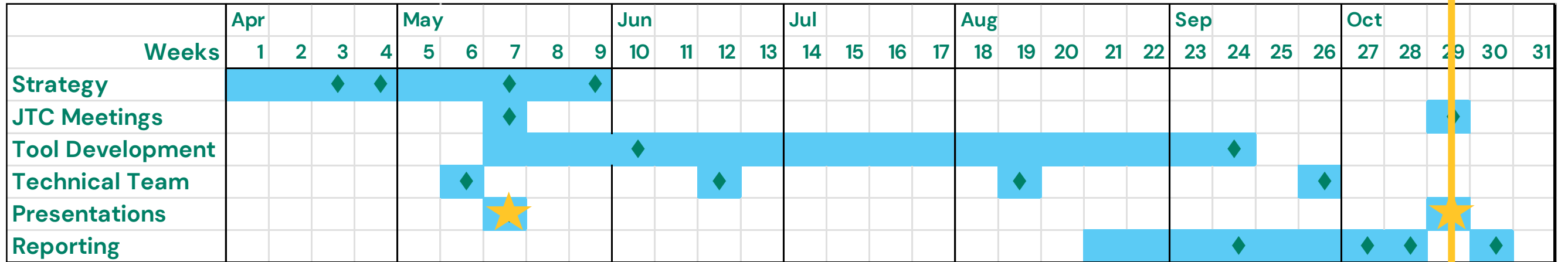
Data Export

References

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Project Status – Phase 1



• Strategy

- Work plan ✓
- Interim Report ✓

• JTC Meetings

- Hearing 1 ✓
- Hearing 2

• Tool Dev

- Blueprint ✓
- Tool ✓

• Tech Team

- Draft Workplan ✓
- Dev Check 1 ✓
- Dev Check 2 ✓
- Draft Report & Tool ✓

• Presentations

- Hearing 1 ✓
- Hearing 2
- STC/HTC (Optional)

• Reporting

- Report Outline ✓
- Draft Report & User Guide ✓
- Final Report ✓

Report Overview

Executive Summary

1. Introduction

1. Background and Project Summary
2. Summary of the Tool's Purpose
3. Overview of Phase 1 Project Activities
4. Tool Summary

2. Tool Overview and User's Guide

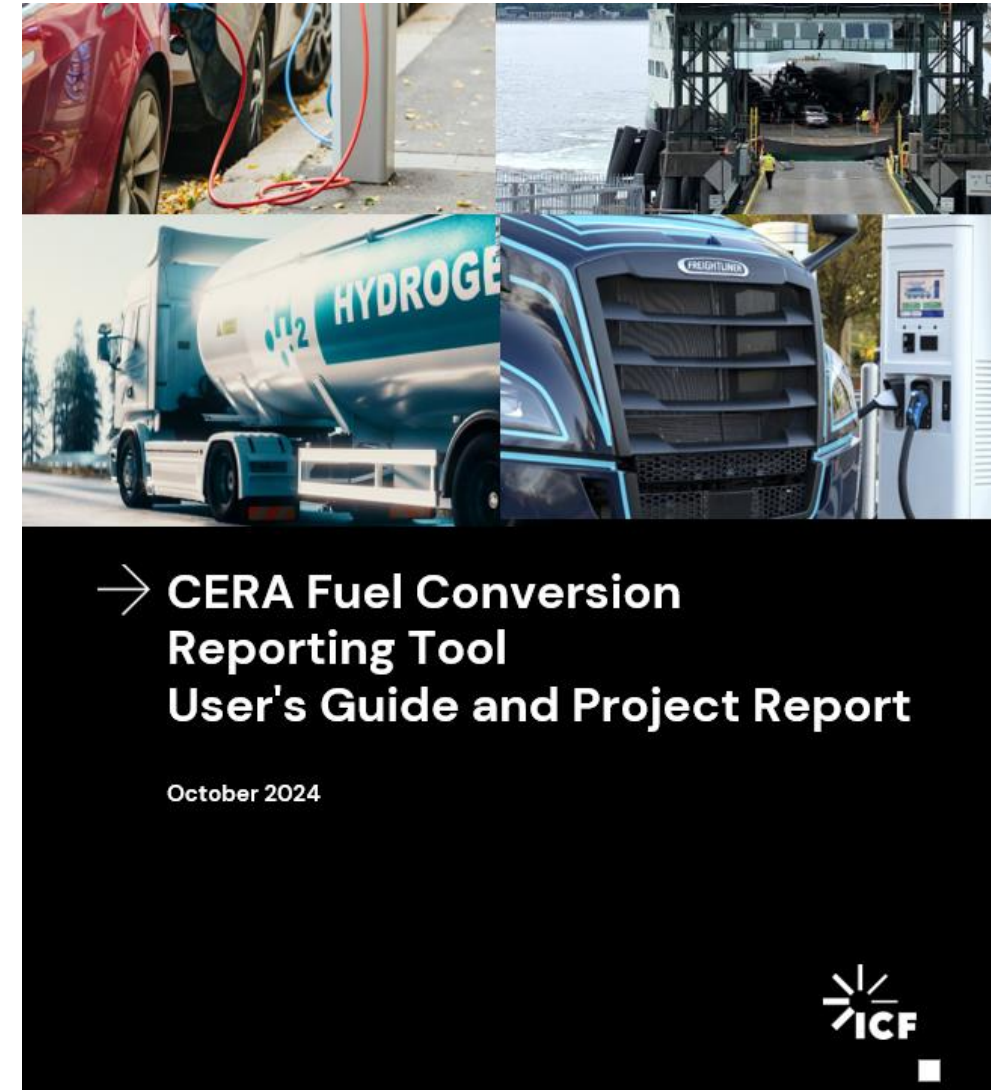
1. Status / Overview
2. Quick Start Guide
3. Additional Details on User Interface and Components

3. Methodology Details and Specifications

1. Calculation Methodology and Data for the Different Project Element Categories
2. Notes on Specifications, Assumptions, and Issues
3. Some Potential Improvements to Consider
4. Summary of the Tool's Architecture

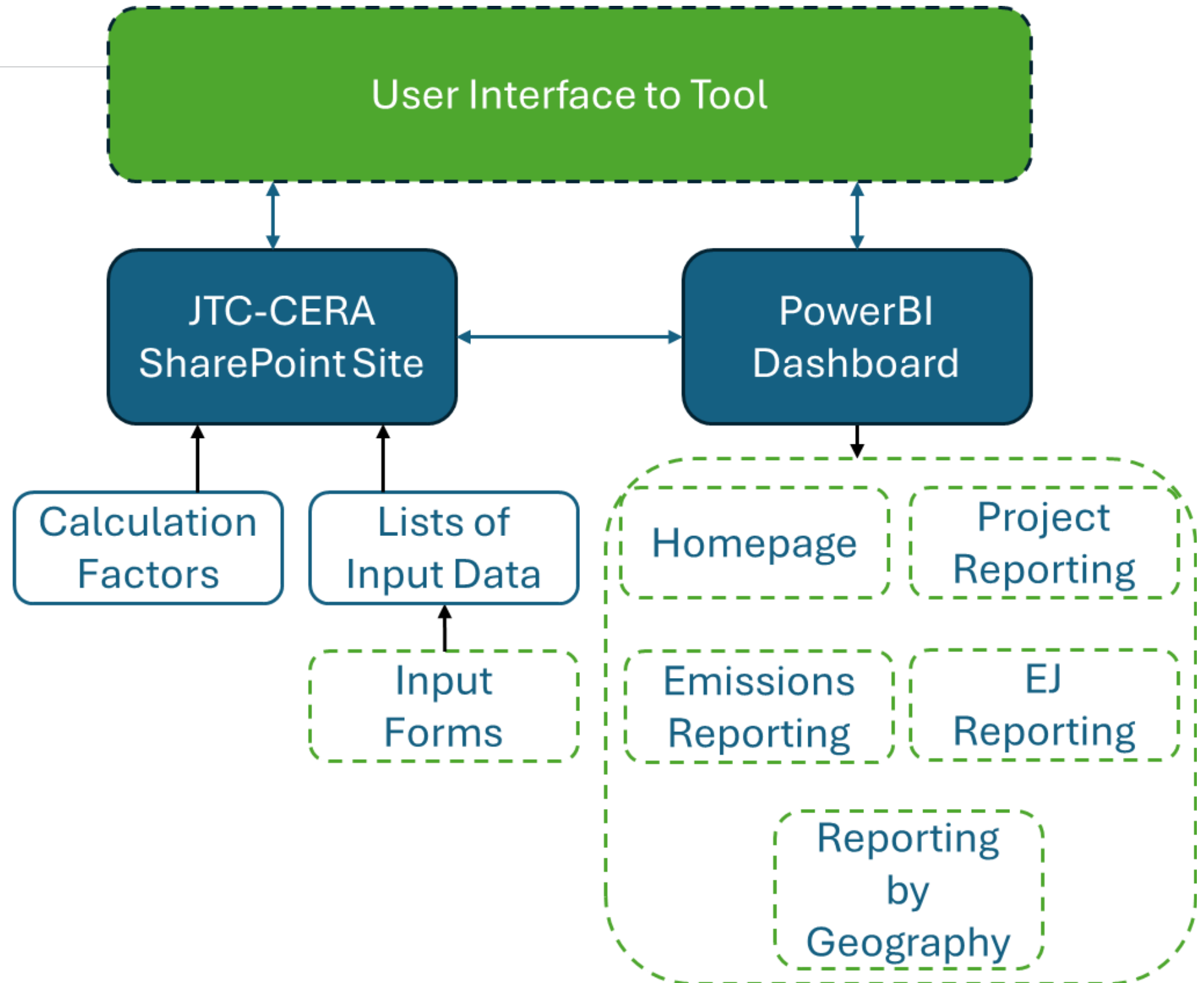
4. Glossary of Terms

5. Appendices



Tool Overview

- The Tool is a cloud-based, dashboard application, currently considered a beta release.
- It is a dashboard application, built in Microsoft's SharePoint and PowerBI platforms.
- Users enter data using Microsoft forms.
- The dashboard has a series of "pages" to tailor reporting.



Reporting Categories and Measures in the Tool

Reporting Category	Measure	How Implemented in the Tool
Budgetary Impacts	Emission Reduction per Total Project Cost	Total emissions per year and cumulative emissions ¹ divided by total project cost
	Emission Reduction per Funded Amount	Total emissions per year and cumulative emissions divided by CERA funded amount
Emissions Reduction	Annual Emissions Reduced	GHG and CAP emissions reduced per year
	Total Emissions Reduced	Total GHG emissions reduced over the defined project lifetime
EJ Impacts	Location of Reductions for Criteria Pollutants	Optional display of location of emission reductions (dependent on user inputs)
	Project in DAC ² (Yes/No)	Is the project located in a DAC (dependent on user inputs of impacted Census tracts)
	Tribal support (Yes/No)	Does the project receive tribal support (dependent on user inputs)

Analysis Categories and Methodologies

EV Purchase

Projects that purchase **electric vehicles** to replace ICE vehicles

Based on CAPCOA Handbook

FCEV Purchase

Projects that purchase **hydrogen fuel cell vehicles** to replace ICE vehicles

Based on CAPCOA Handbook

Off-Road ZE Purchase

Projects that purchase **zero emissions** versions of **off-road equipment** (electric or hydrogen fuel cell) to replace ICE equipment (gasoline, diesel, CNG, or LPG fueled.)

Based on CAPCOA Handbook

EV Charging Infrastructure

projects that promote vehicle electrification by installing **electric vehicle charging infrastructure**

Based on CA LCFS program

FCEV Purchase

Projects that promote the use of zero emission hydrogen as a fuel by installing **hydrogen fueling infrastructure**

Based on CA LCFS program

EV Carshare

Projects that expand the use of **electric vehicles in carshare programs**

Based on CAPCOA Handbook

Watercraft Purchase (WSF Ferry)

Specific to **Washington State Ferry electrification** projects

Based on the WSF Ferry System Electrification Plan

ZE Watercraft Purchase (Non-WSF Ferry)

Non-WSF projects that purchase electric watercraft to replace fossil fueled vessels

Based on CAPCOA Handbook

Port Shore Power

Projects that install **shore power for non-WSF vessels** to access instead of using their own auxiliary engines

Based on the EPA Shore Power Calculator

Tool Overview: JTC CERA Reporting Tool – Homepage

Homepage

Project Reporting

Emissions Reporting

Reporting by Geography

EJ Reporting

Data Export

References

[JTC CERA SharePoint Site](#)
[Full Page](#)

43

Total Projects

21

Projects with Tribal Support

21

Projects in EJ Areas

76

Total Project Elements

\$1.15bn

Total Project Cost

\$1.09bn

Total Funding

81.74M

CO2e (MT) Reduced

Reset Page

Search 🔍 ✕

Project Name JTC Project Number

Project Element Start Year

2023 2029

Project Element Type

All ▼

EJ Yes or No

All ▼

Legislative District

All ▼

Tribal Support

All ▼

Total Project Cost and Funding

● Project Cost ● Funding Amount

Total CO2e by Project Type (MT)

CO2e (MT) Reduced per Project Element \$

● CO2e reduced per \$ cost ● CO2e reduced per \$ funded

JTC Project#	Project Name	Project Element Name	Project Element Type	Start Year	County	Legislative District	CO2e Emissions Reduced
JTC-CERA-67	WSDOT test	Test1 EV	Electric Vehicle Purchase	2025	King	8 9 10	1,377.94
JTC-CERA-66	Sound Transit Star Wars	Light Transit Saber	Electric Vehicle Charging Infrastructure	2025	King	34	2,813.44
JTC-CERA-65	Kitsap Transit: Design & Shore Power	Connecting WA Tier Project	Port Shore Power	2025	Kitsap		137.67
JTC-CERA-64	MAWA Earmark (CER) Ferry	Guemes Ferry Boat Replacement	BE/HE/FCE Watercraft Purchase (Ferry)	2024	Skagit	40	454,992.28
JTC-CERA-63	Pierce Transit EV	Charging Infrastructure	Electric Vehicle Charging Infrastructure	2025	Pierce	26	39.07
JTC-CERA-62	CE 4-f for Bremerton	Bremerton and Beyond	BE/HE/FCE Watercraft Purchase (Ferry)	2026	Kitsap	26	1,262,793.36
JTC-CERA-61	Island Transit - ZEV Fleet Transition Plan	Green Transportation	Fuel Cell Electric Vehicle Fueling Infrastructure	2024	Island	10	3,143.17
Total							81,744,059.27

Project Reporting

Emissions Reporting

Reporting by Geography

EJ Reporting

Data Export

References

Sample data for demonstration only

“I want a quick overview of CERA-funded projects in the state, or to quickly compare performance for the different types of projects.”

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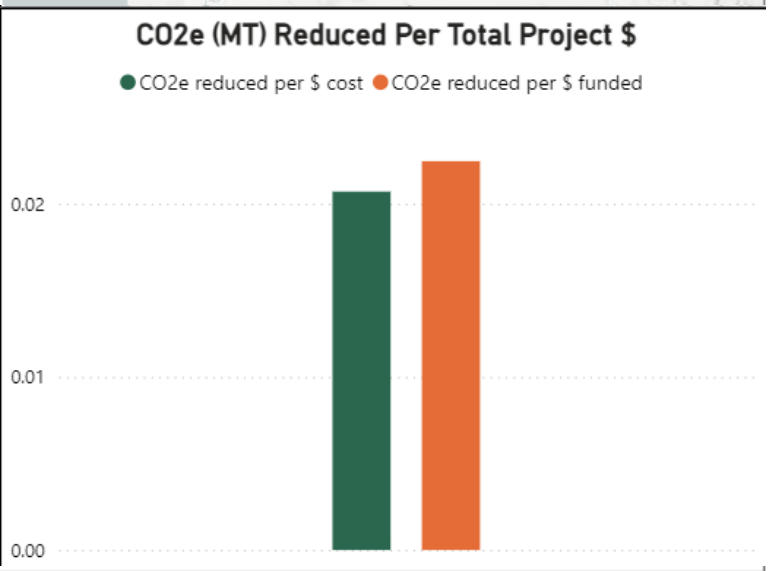
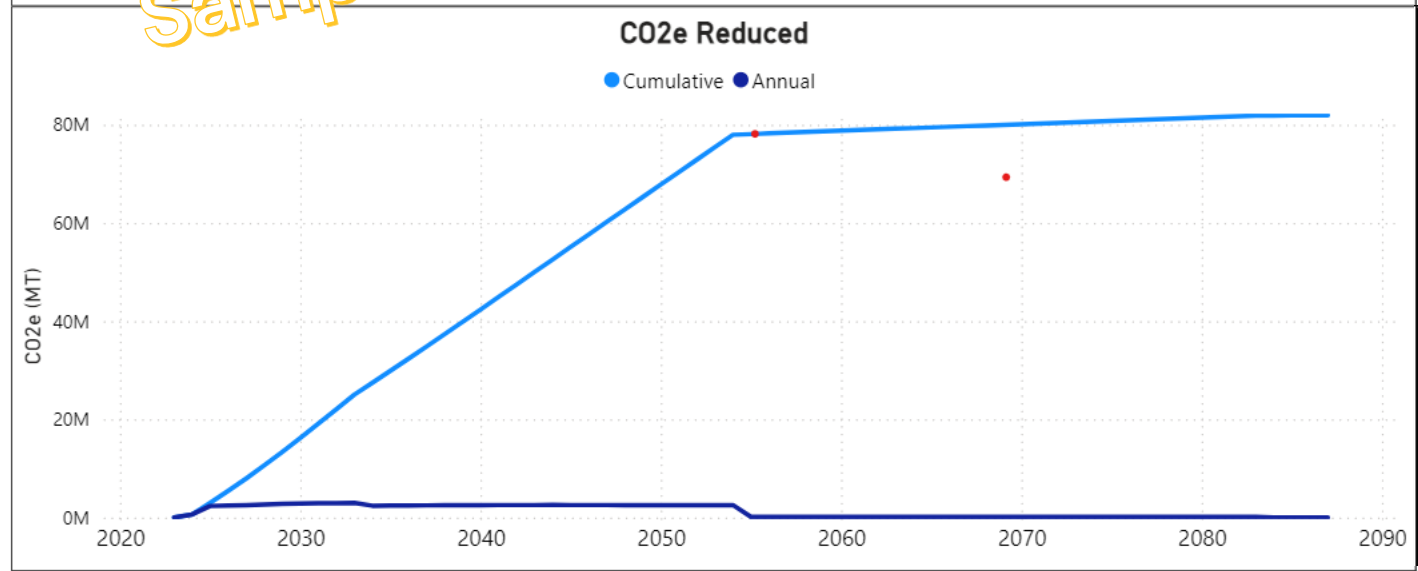
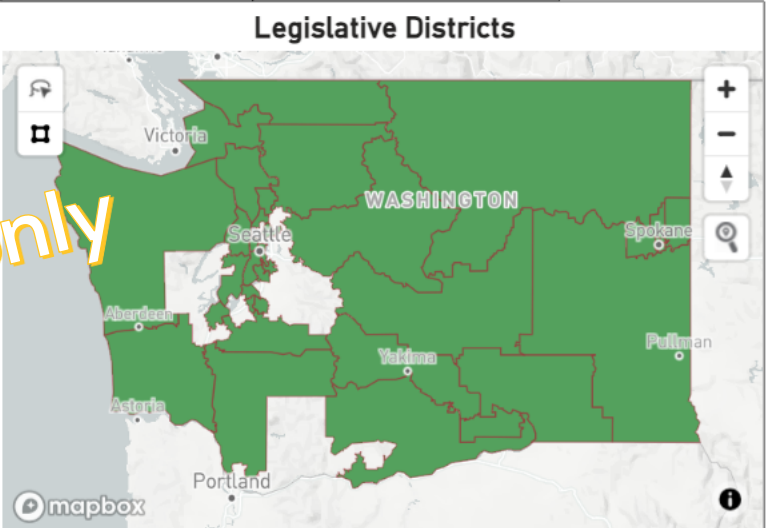


Tool Overview: Project Reporting Page

JTC Project # |
 Project Name |
 Project Element Type |
 Reporting Agency |
 Start Year |
 EJ Y/N

Reset Page

JTC Project#	Project Name	Start Year	County	Legislative District	Total Project Cost	Total Project Funding Amount	CO2e Emissions Reduced (MT)
JTC-CERA-64	MAWA Earmark (CER) Ferry	2024	Skagit	40	\$24,000,000	\$24,000,000	454,992.28
JTC-CERA-63	Pierce Transit EV Chargers	2025	Pierce	26	\$240,000	\$240,000	39.07
JTC-CERA-62	Port of Bremerton	2026	Kitsap	26	\$38,000,000	\$28,000,000	1,262,793.36
JTC-CERA-61	Island Transit - ZEV Fleet Transition Plan	2024	Island	10	\$60,000	\$60,000	14.7
JTC-CERA-60	Port Equipment Electrification	2024	King Kitsap	37	\$1,000,000	\$6,300,000	2,924.52
JTC-CERA-59	Zero-emissions Access Program (ZAP)	2023	Renton Pierce	14	\$800,000	\$600,000	269.85
JTC-CERA-58	Vessel	2025	King	34	\$94,586,000	\$64,586,000	47,340.14



"I want an overview of the different projects happening across Washington."

Tool Overview: Emissions Reporting Page

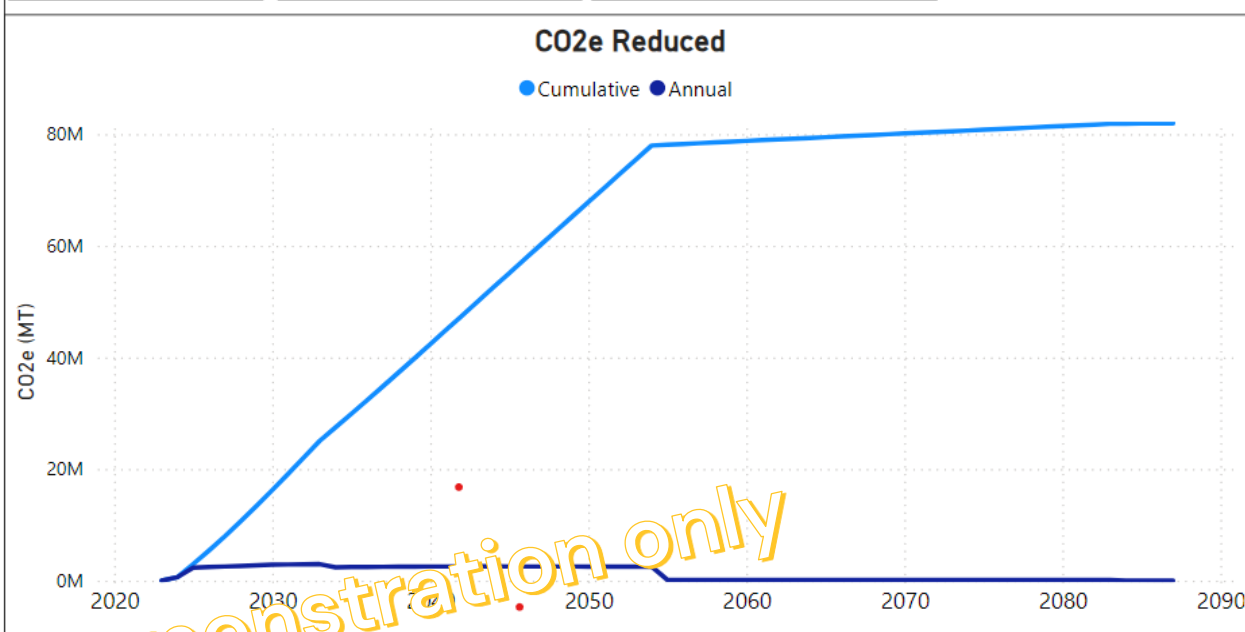
JTC CERA Reporting Tool: **Emissions Reporting** ⓘ [JTC CERA SharePoint Site](#) [Full Page](#)

JTC Project # |
 Project Name |
 Project Element Type |
 Reporting Agency |
 Start Year |
 EJ Y/N

[Reset Page](#)

JTC Project#	Project Name	Project Element Name	Project Element Type	Start Year
JTC-CERA-64	MAWA Earmark (CER) Ferry	Guemes Ferry Boat Replacement	BE/HE/FCE Watercraft Purchase (Ferry)	2024
JTC-CERA-63	Pierce Transit EV Chargers	DCFC charger	Electric Vehicle Charging Infrastructure	2025
JTC-CERA-62	Port of Bremerton	Bremerton and Beyond	BE/HE/FCE Watercraft Purchase (Ferry)	2026
JTC-CERA-61	Island Transit - ZEV Fleet Transition Plan	Green Transportation	Fuel Cell Electric Vehicle Fueling Infrastructure	2024
JTC-CERA-60	Port Equipment Electrification	Zero-emission drayage truck demonstration project	Off-Road Zero Emission Vehicle Purchase	2024
JTC-CERA-59	Zero-emissions Access Program (ZAP)	WoW carshare, Pasco	EV Car Share	2023
JTC-CERA-58	Vessel Conversions MAW (L1000339)	Non-Ferry Vessel Construction (W2)	BE/HE/FCE Watercraft Purchase (Non-Ferry)	2025
JTC-CERA-57	Electrification of Transportation Systems (ETS) grants	L2 charger	Electric Vehicle Charging Infrastructure	2024
JTC-CERA-56	Fuel Cell EVs in Snohomish	Clarity in Everett	Fuel Cell Electric Vehicle Purchase	2024
JTC-CERA-53	Port of Columbia	Huron Rede 2	Off-Road Zero	2024

78 Total Project Elements	28.9541 CO2e (MT) reduced per \$ cost	6.2677 CO2e (MT) reduced per \$ funded	81.94M CO2e Reduced (MT)
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	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034		
CO (kg)	54,211.0	157,327,664.2	162,042,151.0	162,145,151.0	162,145,151.0	162,145,151.0	162,320,728.4	162,347,220.0	162,360,856.6	162,352,589.4	162,348,642.3	162,310,696.6	5,214.3	
CO2 (MT)	4,659.6	622,676.4	2,157,356.6	2,157,356.6	2,157,356.6	2,157,356.6	2,567,462.6	2,694,664.9	2,807,426.2	2,915,326.7	2,937,366.6	2,960,004.9	2,978,723.3	2,395.7
CO2e (MT)	4,735.4	627,710.0	2,157,356.6	2,441,531.2	2,537,469.5	2,655,835.3	2,759,667.9	2,860,027.8	2,899,378.8	2,939,351.3	2,975,364.8	2,975,364.8	2,404.6	
NOx (kg)	6,675.4	20,617.0	43,163,299.0	43,168,688.2	43,246,418.5	43,359,794.7	43,493,402.6	43,510,624.8	43,509,429.9	43,509,228.1	43,506,551.7	43,506,551.7	42,280.3	
PM2.5 (kg)	216.0	80,639.0	1,232,779.3	1,233,309.3	1,234,428.8	1,240,060.9	1,242,101.5	1,242,505.8	1,242,490.5	1,242,483.7	1,242,303.7	1,242,303.7	1,175.7	
VOC Total (kg)	1,705.9	3,244,728.5	4,885,774.9	4,885,766.4	4,886,491.1	4,890,279.6	4,891,746.9	4,891,618.5	4,891,340.8	4,891,262.7	4,890,237.1	4,890,237.1	1,657.4	

"I want to understand how my project elements are forecast to perform in terms of emissions."

Sample data for demonstration only

Tool Overview: Reporting by Geography

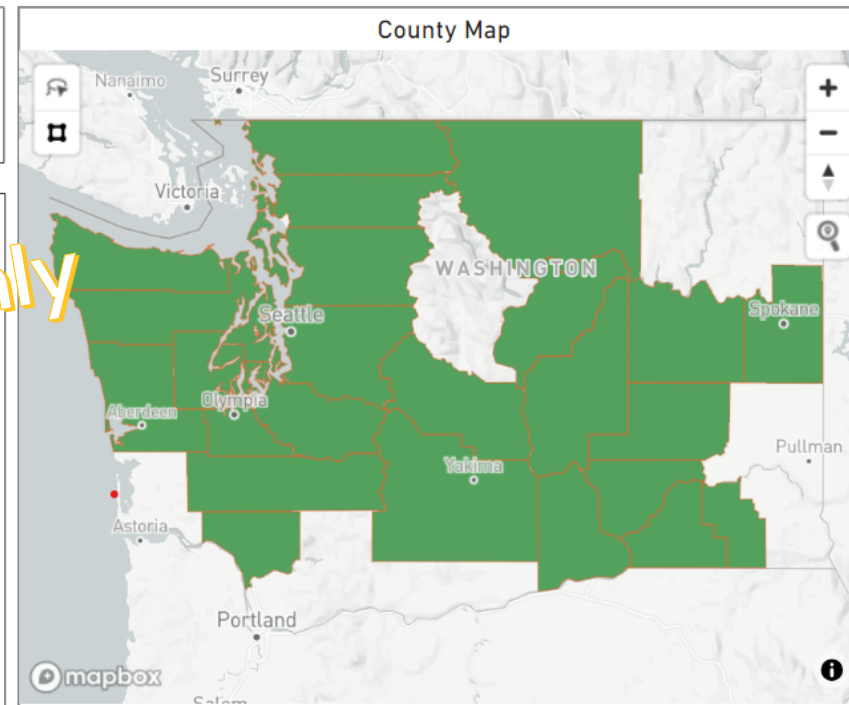
JTC CERA Reporting Tool: **Reporting by Geography** ^① [JTC CERA SharePoint Site](#) [Full Page](#)

JTC Project # All	Project Name All	Project Element Type All	Reporting Agency All	Start Year All	EJ Y/N All
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78 Total Project Elements	28 Project Elements in EJ Areas	\$1.03bn Total Project Element Cost	\$776.64M Total Project Element Funding	81.94M CO2e Reduced (MT)
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County **Legislative District** **Census Tract**

Sample data for demonstration only

JTC Project#	Project Name	Project Element Name	Project Element Type	Legislative District	County
JTC-CERA-60	Plan	Fueling Infrastructure	Off-Road Zero Emission Vehicle Purchase	3	King Kitsap
JTC-CERA-59	Port Equipment Electrification	Zero-emission drayage truck demonstration project	Off-Road Zero Emission Vehicle Purchase	15 14	Benton Franklin
JTC-CERA-58	Zero-emissions Access Program (ZAP)	WoW carshare, Pass	BE/HE/FCE Watercraft Purchase (Non-Ferry)	34	King
JTC-CERA-57	Vessel Conversions (AW/UC)	BE/HE/FCE Watercraft Construction (W2)	Electric Vehicle Charging Infrastructure	40	Skagit
JTC-CERA-56	Electrification of transportation systems (ETS) grants	L2 charger	Fuel Cell Electric Vehicle Purchase	38	Snohomish
JTC-CERA-55	Fuel Cell EVs in Snohomish	Clarity in Everett	Off-Road Zero Emission Vehicle Purchase	9	Columbia
JTC-CERA-53	Port of Columbia	Hyzon Redo 2	Port Shore Power	34	King
JTC-CERA-52	Port of Seattle P66 Shore Power Extension	P66 Shore Power	Electric Vehicle Charging Infrastructure	12	Kittitas
JTC-CERA-51	Kittitas Capital Vehicle Shuttle Replacement	Hybrid Vehicle Conversion	Electric Vehicle Charging Infrastructure	42	Island
JTC-CERA-50	Island Transit Fleet Transition	Bus Electrification	Electric Vehicle Charging Infrastructure		

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CO (kg)	54,211.0	157,327,664.2	162,042,151.0	162,045,055.1	162,224,373.5	162,320,728.4	162,347,220.0	162,360,856.6	162,352,589.4	162,348,642.3	162,310,696.6	5,214,32
CO2 (MT)	4,659.6	622,676.4	2,357,356.0	2,462,570.3	2,567,462.6	2,694,664.9	2,807,426.2	2,915,326.7	2,937,366.6	2,960,004.9	2,978,723.3	2,395,70
CO2e (MT)	4,735.4	627,710.6	2,345,180.9	2,441,531.2	2,537,469.5	2,655,835.3	2,759,667.9	2,860,027.8	2,899,378.8	2,939,351.3	2,975,364.8	2,404,65
NOx (kg)	6,675.4	2,080,947.0	43,163,299.0	43,168,688.2	43,246,418.5	43,359,794.7	43,493,402.6	43,510,624.8	43,509,429.9	43,509,228.1	43,506,551.7	42,280,38
PM2.5 (kg)	216.0	80,639.0	1,232,779.3	1,233,309.3	1,234,428.8	1,240,060.9	1,242,101.5	1,242,505.8	1,242,490.5	1,242,483.7	1,242,303.7	1,175,75
VOC Total (kg)	1,705.9	3,244,728.5	4,885,774.9	4,885,766.4	4,886,491.1	4,890,279.6	4,891,746.9	4,891,618.5	4,891,340.8	4,891,262.7	4,890,237.1	1,657,49

"I want to see the different project elements and spending by location (county, census tract, or Legislative district)."

Tool Overview: EJ Reporting Page

JTC Project#
 Project Name
 Project Element Type
 Reporting Agency
 Start Year
 Tribal Support
Reset Page

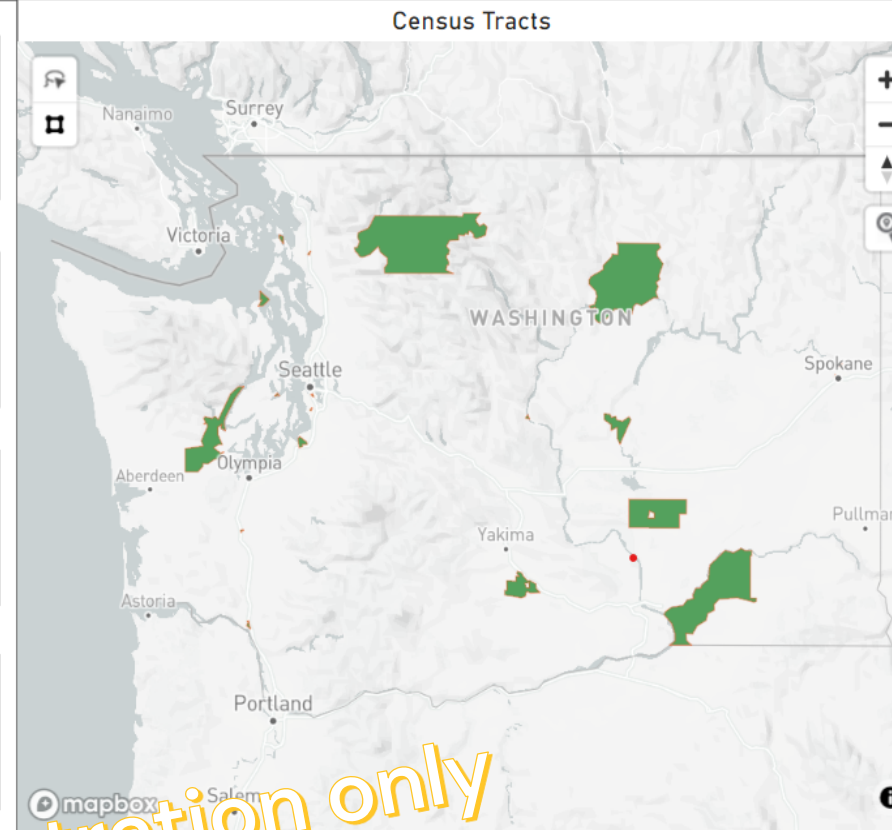
JTC Project#	Project Name	Project Element	Project Element Type
JTC-CERA-62	Port of Bremerton	Bremerton and Beyond	BE/HE/FCE Watercraft Purchase (Ferry)
JTC-CERA-57	Electrification of Transportation Systems (ETS) grants	L2 charger	Electric Vehicle Charging Infrastructure
JTC-CERA-52	Port of Seattle P66 Shore Power Extension	P66 Shore Power	Port Shore Power
JTC-CERA-49	Washington MHD Incentive Program	Washington MHD Incentive Program	Electric Vehicle Purchase
JTC-CERA-44	Spokane Transit Fueling	True Zero Hydrogen Refueling Station 1	Fuel Cell Electric Vehicle Fueling Infrastructure
JTC-CERA-43	Skagit Transit EV Charging	L2 charger	Electric Vehicle Charging Infrastructure
JTC-CERA-42	CFS Reporting IP WJ	DCFC Chargers 2025	Electric Vehicle Charging Infrastructure
JTC-CERA-42	CFS Reporting IP WJ	DCFC Chargers 2026 Douglas County	Electric Vehicle Charging Infrastructure
JTC-CERA-42	CFS Reporting IP WJ	L2 Chargers 2025	Electric Vehicle Charging Infrastructure
JTC-CERA-41	Skagit County EV Purchase	Tesla Model 3	Electric Vehicle Purchase
JTC-CERA-39	Port of Edmonds	Port of Edmonds - Phase 1	Port Shore Power
JTC-CERA-39	Port of Edmonds	Port of Edmonds - Phase 2	Port Shore Power
JTC-CERA-38	Marine CHC	New Pumpout Vessel	BE/HE/FCE Watercraft

28
Elements in EJ Areas

10
Elements with Tribal Support

1.1M
PM2.5 Reduced (kg)

7.10M
CO2e Reduced (MT)



	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CO (kg)	773.7	77,606.9	506,048.2	511,605.1	580,313.6	649,026.2	717,738.8	786,451.4	855,164.0	923,876.6	992,589.2	1,061,301.8	1,130,014.4
CO2 (MT)	214.2	18,690.2	88,631.1	89,187.0	161,355.8	120,120.8	128,703.8	137,948.6	138,972.9	140,077.3	141,029.0	142,076.6	134,123.3
CO2e (MT)	206.3	19,149.8	90,119.1	90,675.0	119,949.1	139,094.4	147,367.0	157,670.6	159,590.3	161,593.1	163,450.6	165,393.9	158,436.6
NOx (kg)	876.0	87,009.9	612,385.6	618,309.9	627,702.0	665,548.3	666,350.1	683,902.7	683,328.3	683,159.4	683,518.1	683,377.2	684,236.9
PM2.5 (kg)	14.7	5,845.5	16,364.9	16,901.9	16,981.7	20,115.7	20,127.2	20,536.3	20,531.1	20,527.7	20,522.8	20,518.1	20,513.5
VOC Total (kg)	40.2	4,726.2	11,653.2	11,795.4	11,890.3	13,961.6	13,989.5	13,922.5	13,804.6	13,759.9	13,696.8	13,643.9	12,591.0

Sample data for demonstration only

“I want to understand how much pollution may be reduced in Environmental Justice areas.”



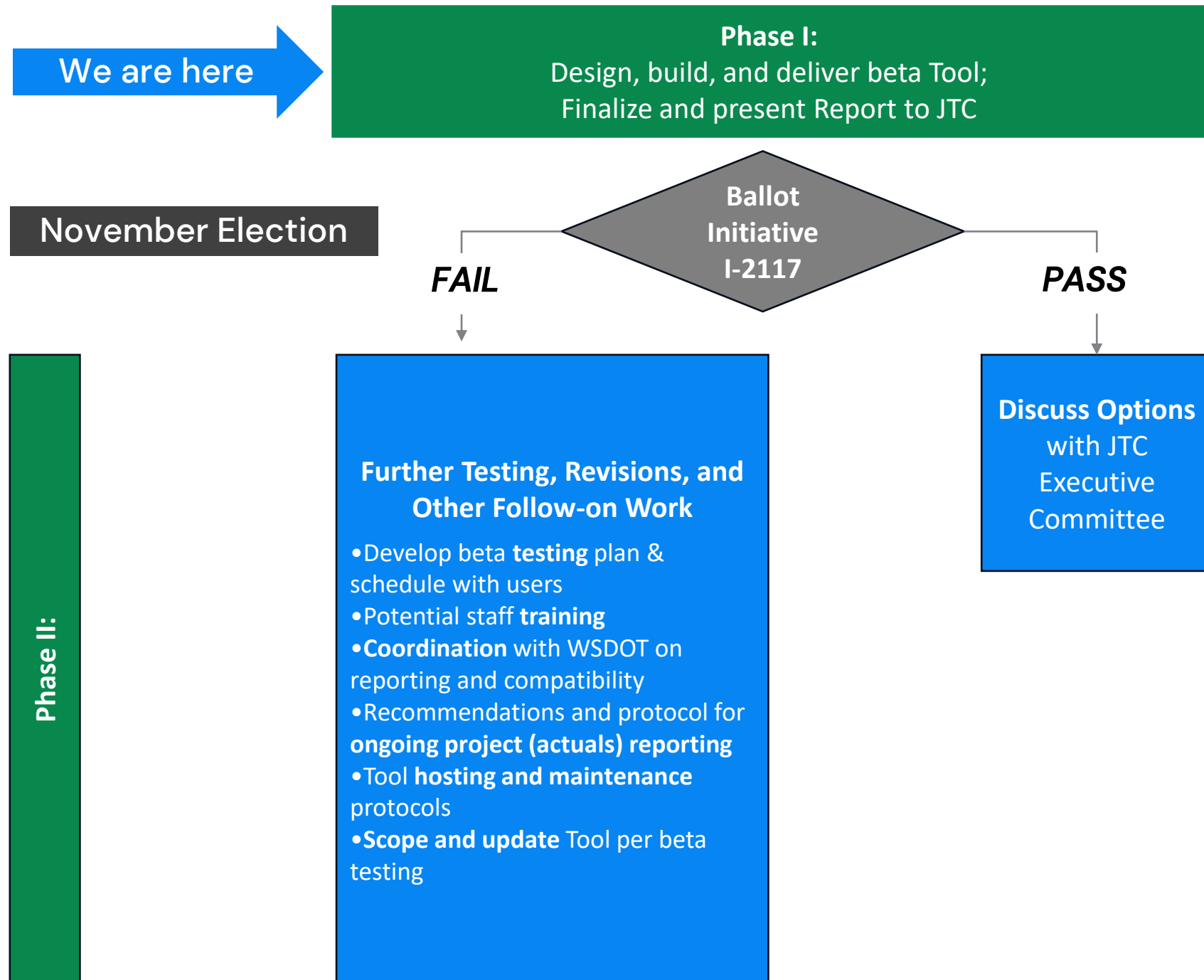
JTC CERA Reporting Tool

The Tool can be accessed* at the following link:
<https://icfonline.sharepoint.com/sites/JTC-CERA>

* by registered users only. Please contact ICF to be registered and given access.

Next Steps (Phase 2)

What happens next depends on the results of Ballot Initiative 2117





Get in touch with us:

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