

Development of Tools to Evaluate Expenditures from the Carbon Emissions Reduction Account (CERA) Project – Overview



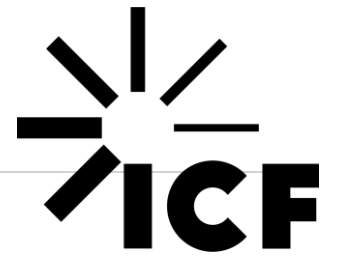
Seth Hartley
Senior Air Quality Consultant

05/12/2024

Agenda

1. Project Background and Purpose – Why are we doing this?
2. How are we doing this
 - Project structure and schedule
 - Some Relevant Current Tools and Examples to leverage
3. What is the current plan for the tool?

Introduction & Roles – ICF



Seth Hartley
Project Manager



Jeff Ang-Olson
Project Officer



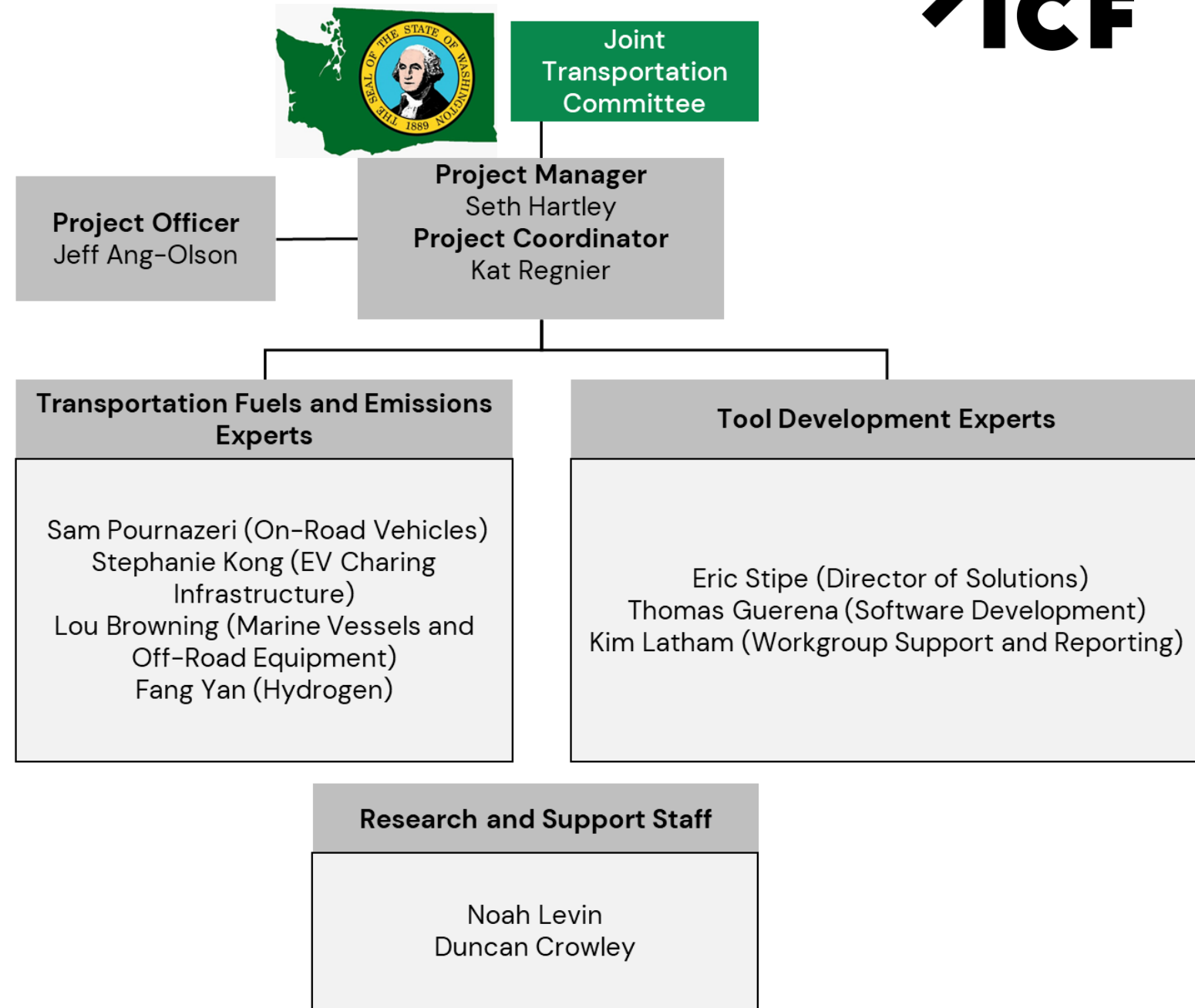
Kat Regnier
Management and Organization



Kim Latham
Workgroup Support, Tool Review, Reporting



Thomas Guerena
Tool Development



Background

Washington is committed to tackling human contributions to climate change and has set ambitious goals to reduce greenhouse gas (GHG) emissions:¹

- By 2030 – 45 percent below 1990 levels
- By 2040 – 70 percent below 1990 levels
- By 2050 – 95 percent below 1990 levels and net zero emissions

Transportation is the largest emitter in the state, at 39% of all GHG emissions.

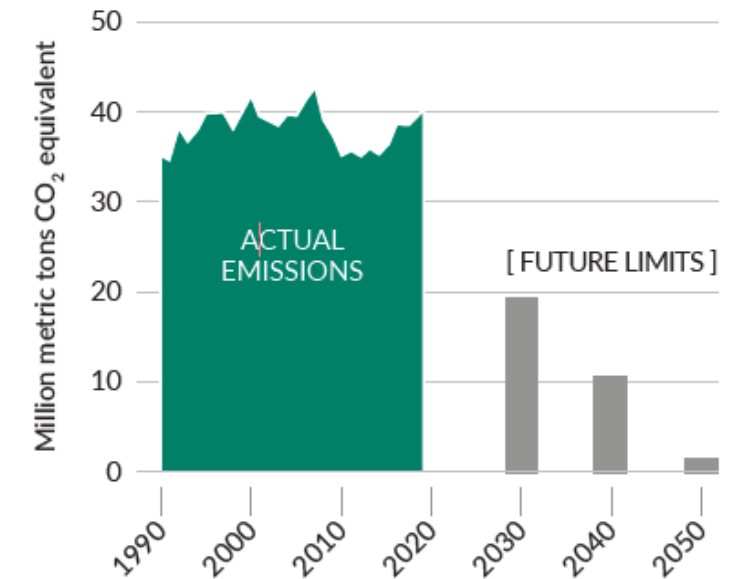
The 2021 [Climate Commitment Act \(CCA\)](#) created an allowance-based program to reduce carbon emissions statewide to support these goals. Also

- Department of Ecology is mandated to report to the Legislature on spending
- Requires minima of 35% of spending for vulnerable communities and 10% for projects with Tribal support.
- Ecology collects information from fund recipients and publishes results annually.

The [Carbon Emission Reduction Account \(CERA\)](#) is funded by cap-and-invest auctions. Funds are mostly directed to WSDOT and are for projects that reduce transportation emissions and increase access to public and alternative transportation.

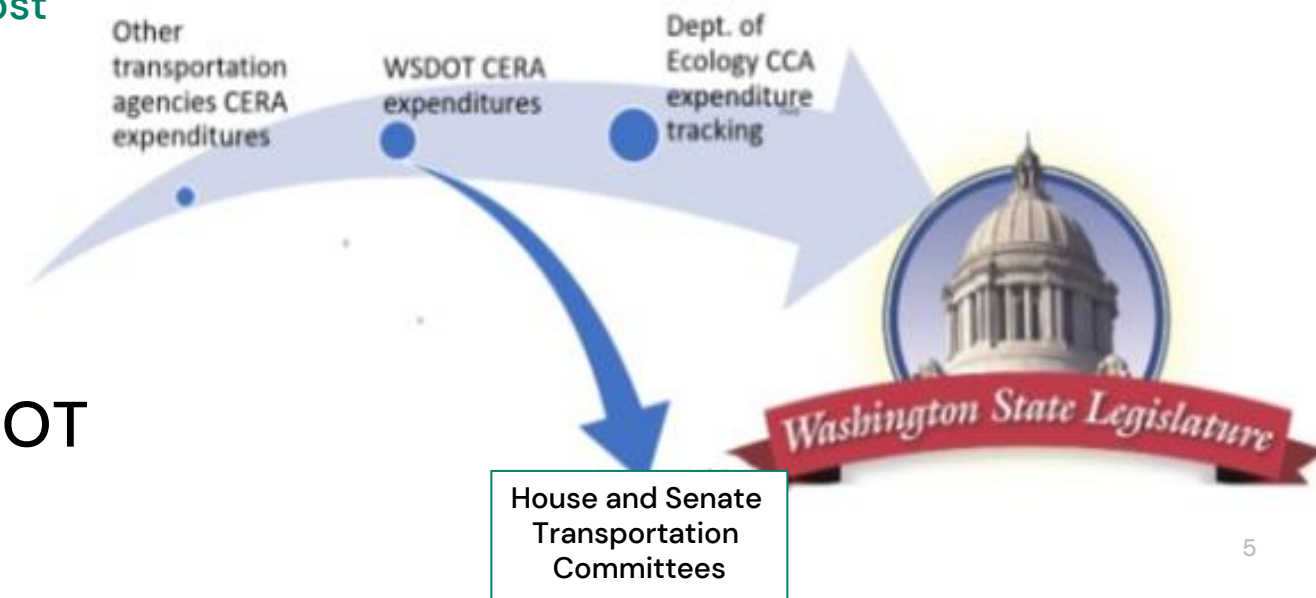
This project is focused on tracking and evaluating vehicle [fuel conversion](#) projects funded through CERA

Statewide On-Road Transportation Emissions



Project Purpose

- Develop a reporting tool to track CERA-funded fuel conversion projects' GHG emission reductions and other benefits.
 - Provide JTC with direct reporting for investments and benefits
 - Facilitate investment decisions
 - Simplify data collection and reporting for WSDOT and other funding recipients
- Support tracking and reporting for 3 categories, consistent with the CERA Proviso:
 - Costs and funding
 - Funding amount and time (year), \$/ton reduced, responsible agency, project location
 - Emission benefits
 - Tons of CO2e avoided per time
 - Environmental Justice (EJ)
 - Benefit to vulnerable populations and overburdened communities by cost
 - tribal support
- Provide recommendations for program delivery, future funding, and program improvements
- Support other reporting as needed, including for WSDOT



Workplan Overview

Project Overview:

1. Communication loops

- **Informal** with JTC Team, Technical Team, and ad-hoc with legislators
- **Formal** presentations to Legislature

2. Tool Design and Development

- Strategy, Tools, and Methodology for Fuel Conversion Emission Reductions
- Design and Develop Data Reporting Tool

3. Reporting

- In person and written project reports

Schedule


	Apr				May					Jun				Jul				Aug				Sep				Oct							
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Strategy	◆		◆		◆				◆	◆																							
JTC Meetings							◆																		◆				◆				
Tool Development							◆				◆				Apx				◆														
Staff Workgroup						◆										Apx									◆								
Presentations							◆																						◆				
Reporting																									◆	◆		◆	◆		◆		
◆	Deliverable																																

Major Deliverables:


- CERA Fuel Conversion Reporting Tool - 9/2/2024
- Three (3) Presentations to JTC Legislators
 - May Presentation to JTC - 5/14/2024
 - October Presentation to JTC - 10/17/2024
 - Presentation to the House and another to the Senate Transportation Committee – Early 2025 (not shown)
- Final Report Submitted to House and Senate Transportation Committee - 10/24/2024

How does this Compare with Existing Methods and Tools?

- WSDOT identified one tool and three documents for the calculations in their reporting tool.
 - Three are California based and one is nationwide.
- Our calculations will be consistent with WSDOT

1 California Air Resources Board
Clean Mobility Benefits Quantification Methodology
California Climate Investments

Note: The California Air Resources Board (CARB) is accepting public comments on the Draft Clean Mobility Programs Benefits Calculator and the Draft Clean Mobility Benefits Quantification Methodology until August 7th, 2023 via GGRFProgram@arb.ca.gov. Send comments to the [main GGRF Program email](#). The Draft Benefits Calculator and Draft Quantification Methodology are subject to change pending stakeholder comments. The Final Clean Mobility Benefits Calculator and Final Clean Mobility Benefits Quantification Methodology will be available on the [California Climate Investments resources webpage](#).
DRAFT

4 Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity
Designed for Local Governments, Communities, and Project Developers

3 AFLEET CFI Emissions 

2 CALIFORNIA AIR RESOURCES BOARD
Advanced Technology Demonstration and Pilot Projects

Examples of how the reporting can look

- The California Climate Investments (CCI) program achievements are tracked, compiled, and made available to the public.

<https://www.caclimateinvestments.ca.gov/>

- Example: "simple list" spreadsheet fields



Project ID	Project Name	Agency	Program	Topic	Project Type	Description	Total GGRF Funds Implemented	GHG Emission Reductions MTCO2e	Benefits Priority Populations?	Funds to Benefit Priority Populations	Description of Co-benefits	County	Census Tract	Senate District	Assembly District	Reporting Year
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Examples of how the reporting can look

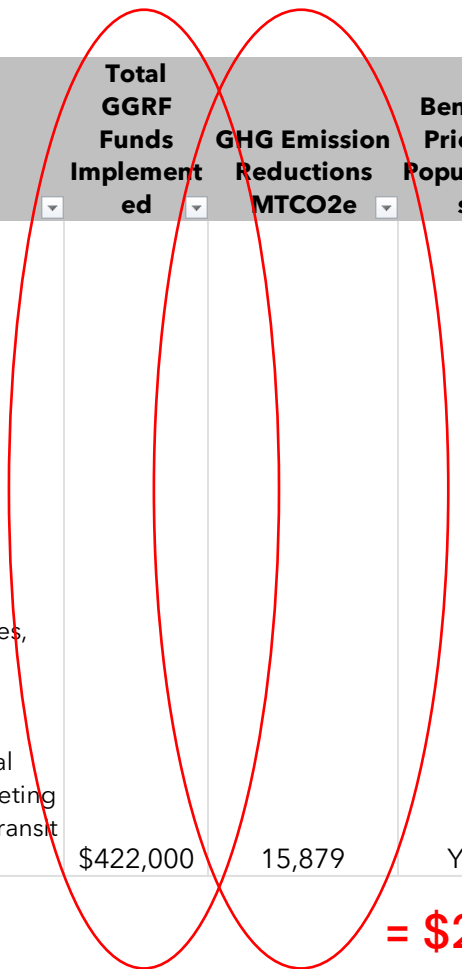
- The California Climate Investments (CCI) program achievements are tracked, compiled, and made available to the public.

<https://www.caclimateinvestments.ca.gov/>

- Example: "simple list" spreadsheet fields populated for a single project



Project Name	Administering Agency	Program	Topic	Project Type	Description	Total GGRF Funds Implemented	GHG Emission Reductions MTCO2e	Benefits Population s?	Funds to Benefit Population	Description of Co-benefits	Number of Projects/Incentives	County	Census Tract	Senate District	Assembly District	Reporting Year
Expanding Transit Services and Introducing Zero-Emission Fleets on California's North Coast	California State Transportation Agency	Transit and Intercity Rail Capital Program	Buses, Electric vehicles, Public transit, Rail service, Zero-emission vehicles	Cleaner Vehicles/Technology/Fuels	The project will procure 11 hydrogen fuel cell electric buses, install hydrogen fueling infrastructure, construct an intermodal transit and housing center, and coordinate regional scheduling and integrated ticketing among North State Regional Transit partners.	\$422,000	15,879	Yes	\$422,000	Benefits include VMT reduction, expanded transit systems, enhanced connectivity, integration coordination of transit systems, implementation of clean vehicle technology, and promotion of active transportation and improved public health. Project will increase the # of jobs needed for bus drivers in order to operate at the new service level. Project will reduce fossil fuel consumption and greenhouse gas emissions by increasing transit ridership and reducing vehicle miles traveled.	1	Humboldt, Mendocino	02	02	2023	



= \$27 / MT

California Program Cost-Benefit Examples

Funding Agricultural Replacement Measures for Emission Reductions (FARMERS)

2023 Achievements

Reporting Period:
Dec 1, 2022 – Nov 30, 2023

- \$108.6 million implemented
- 63,292 MTCO2e estimated GHG emissions reductions
- 64 full-time equivalent jobs reported
- \$76.0 million benefiting priority populations

2022 Benefits to Priority Populations



65% 7% 27%

- 65% benefiting disadvantaged communities
- 6% benefiting low income communities and households
- 28% benefiting other areas of California

Project Profiles

Read stories of projects funded by this program.

Featured



Zero-Emission Tractor Demonstration Projects In The Bay Area



FARMER, Heavy Duty, Off Road, Tractor Trade Up Projects, San Joaquin Valley

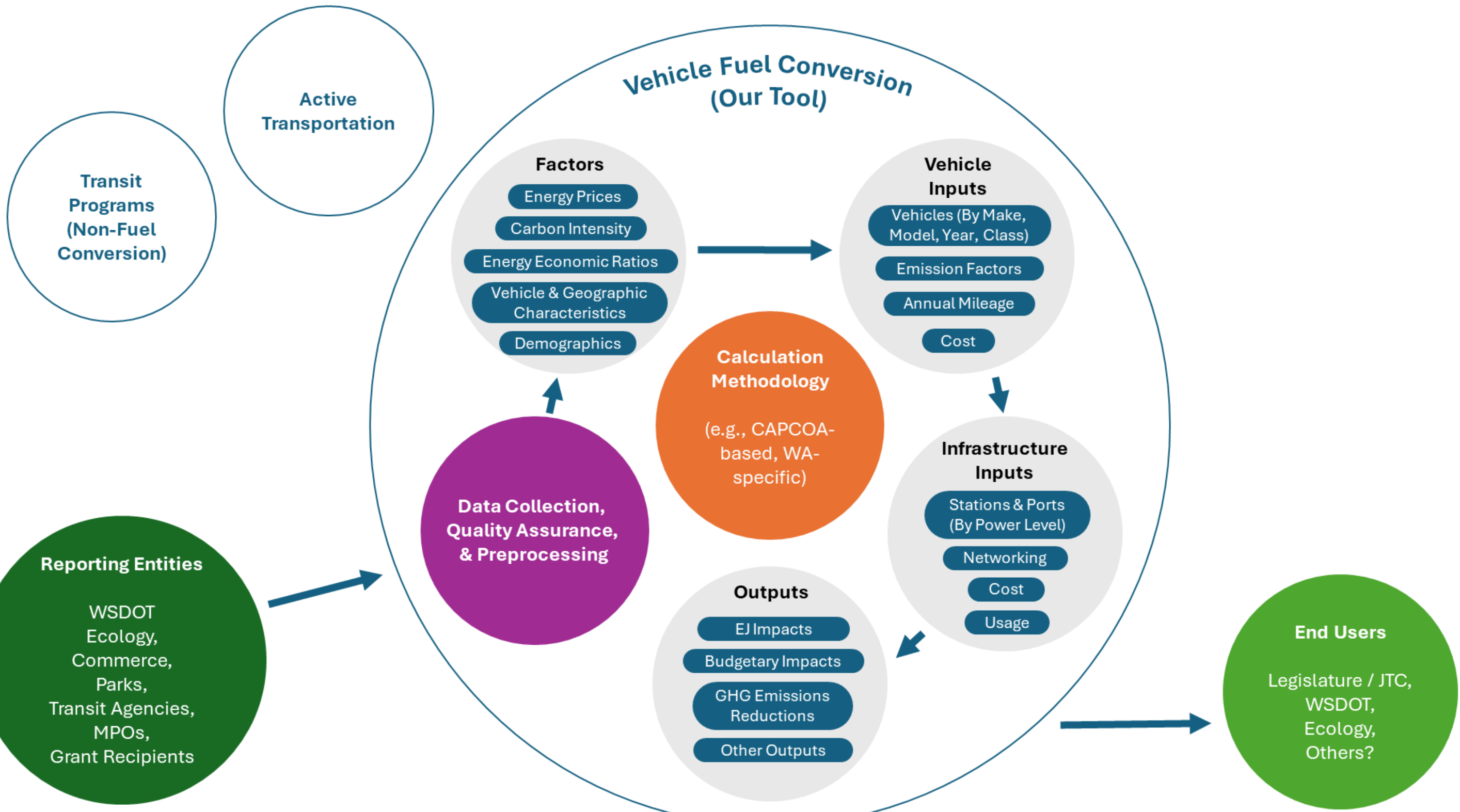


Low-Emission Tractors Reduce Air Pollutants In The San Joaquin Valley

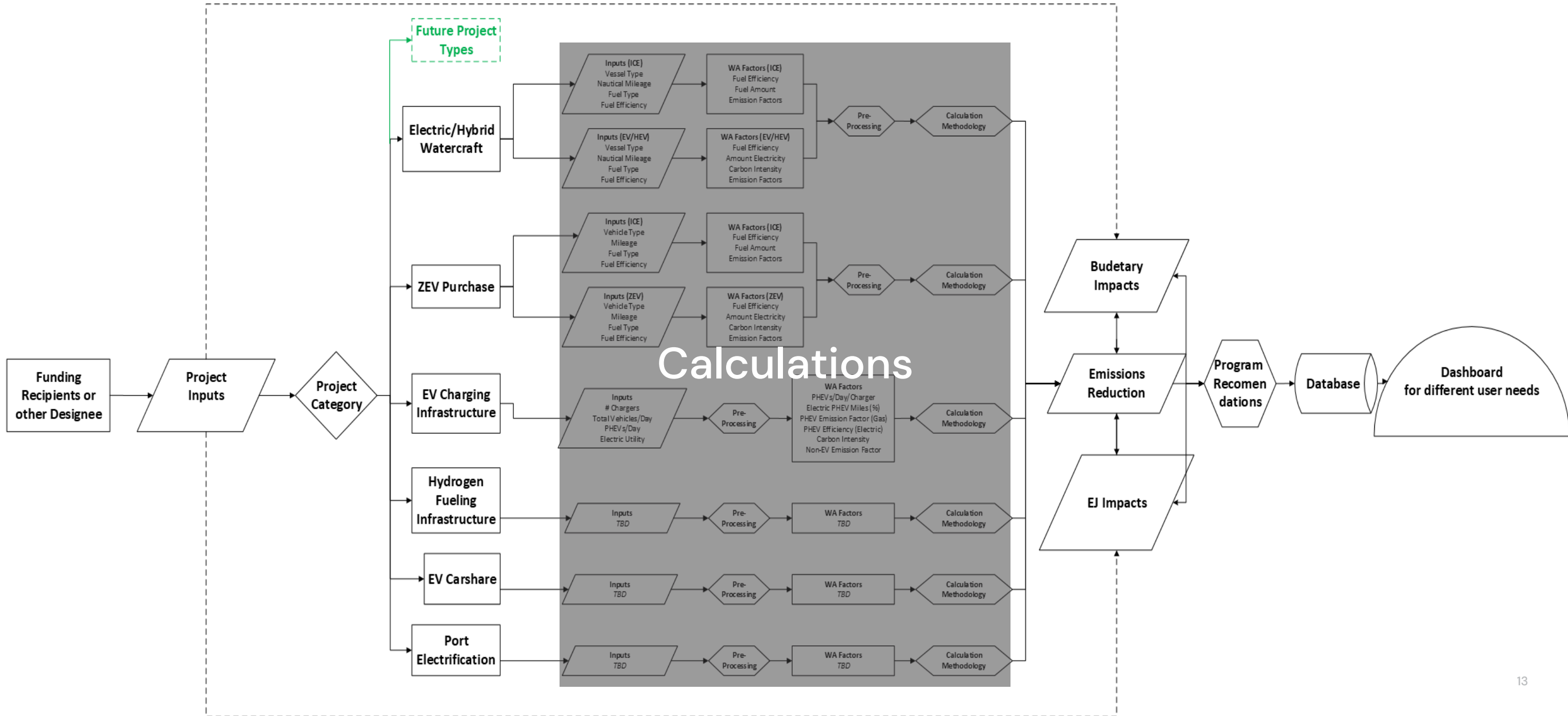
Other Expected Benefits

- 484,371 pounds particulate matter 2.5 (PM2.5) reductions
- 8,856,463 pounds NOx reductions
- 514,917 pounds diesel particulate matter reductions

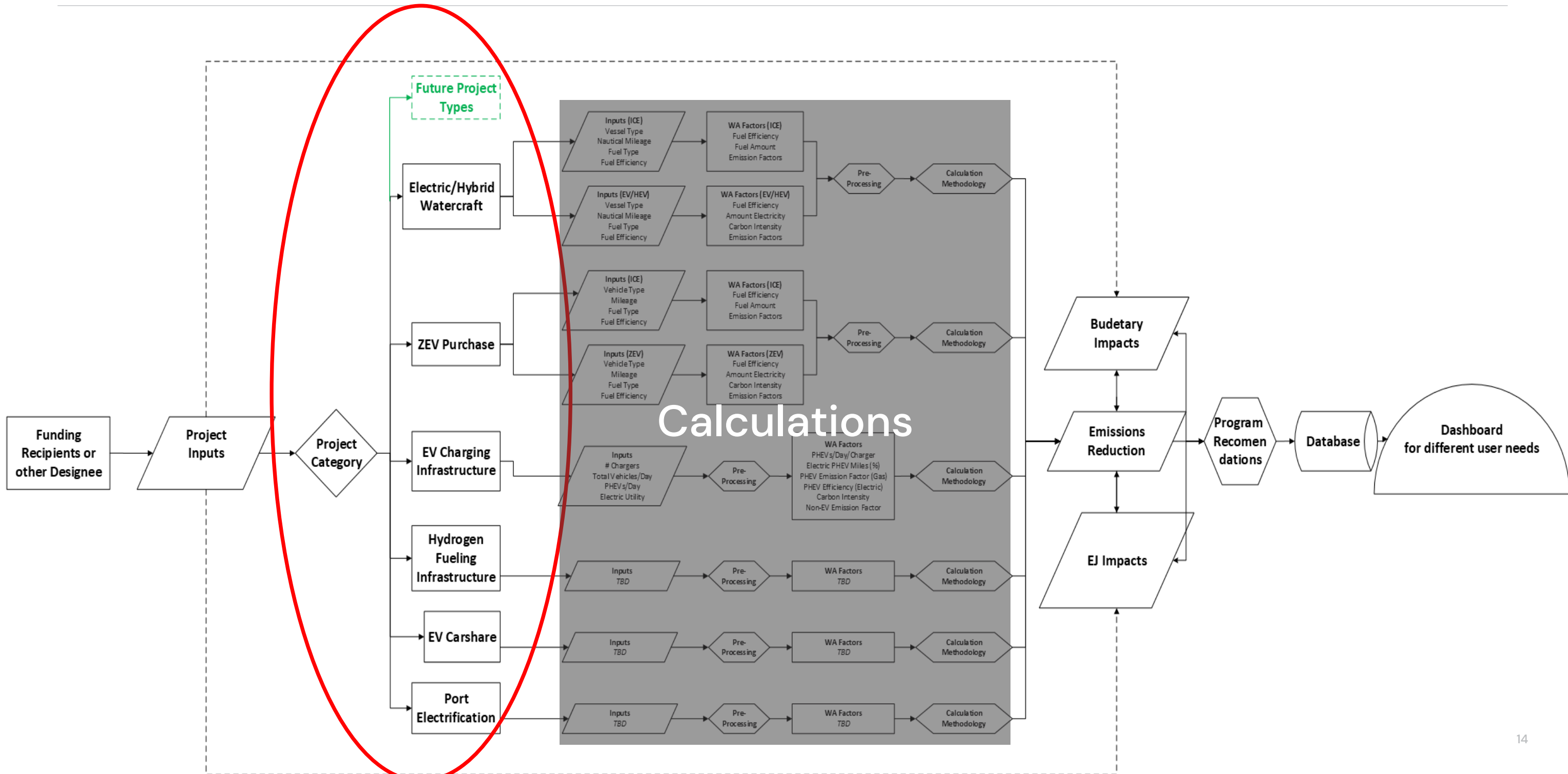
Carbon Emissions Reduction Account (CERA)



Initial Tool Design



Initial Tool Design

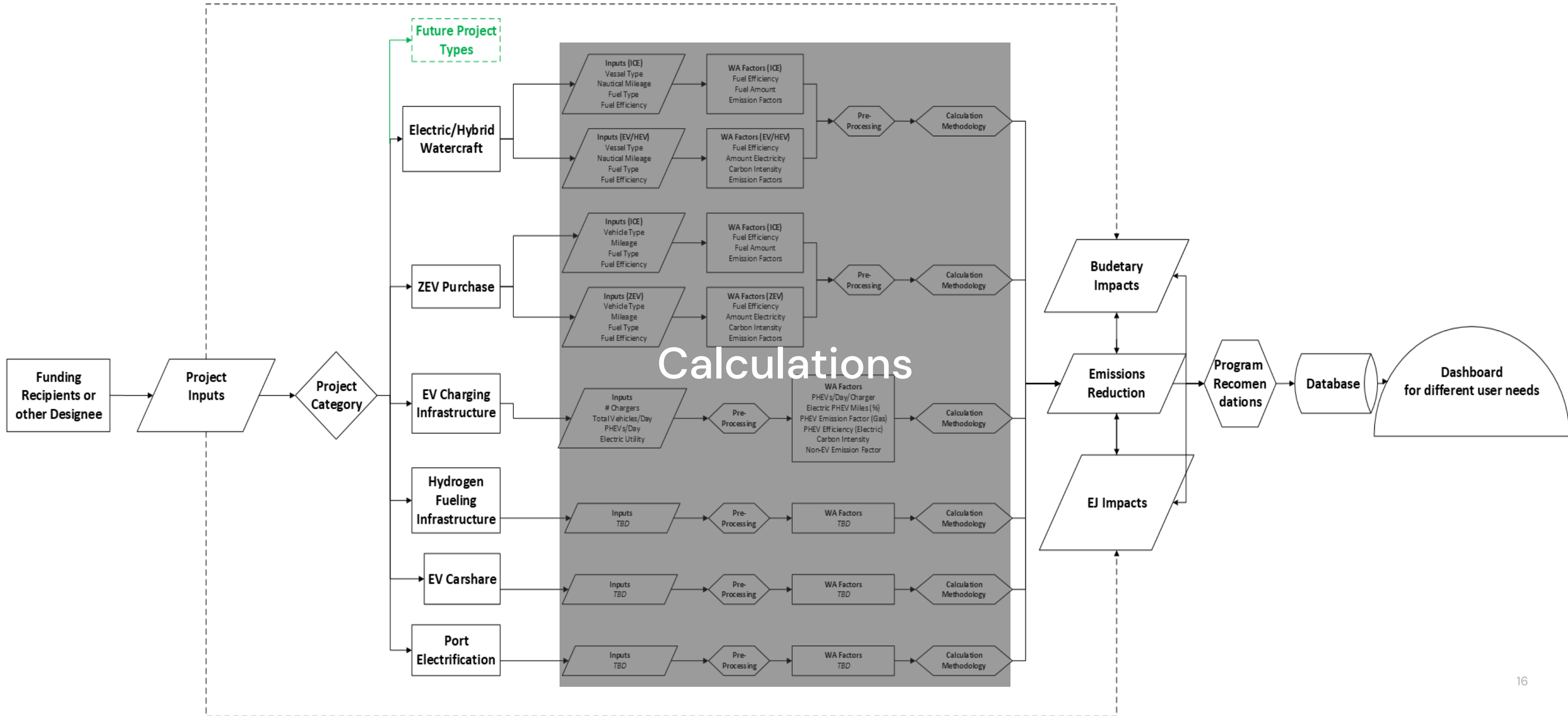


Project Types – Categorization of CERA Fuel Conversion Projects

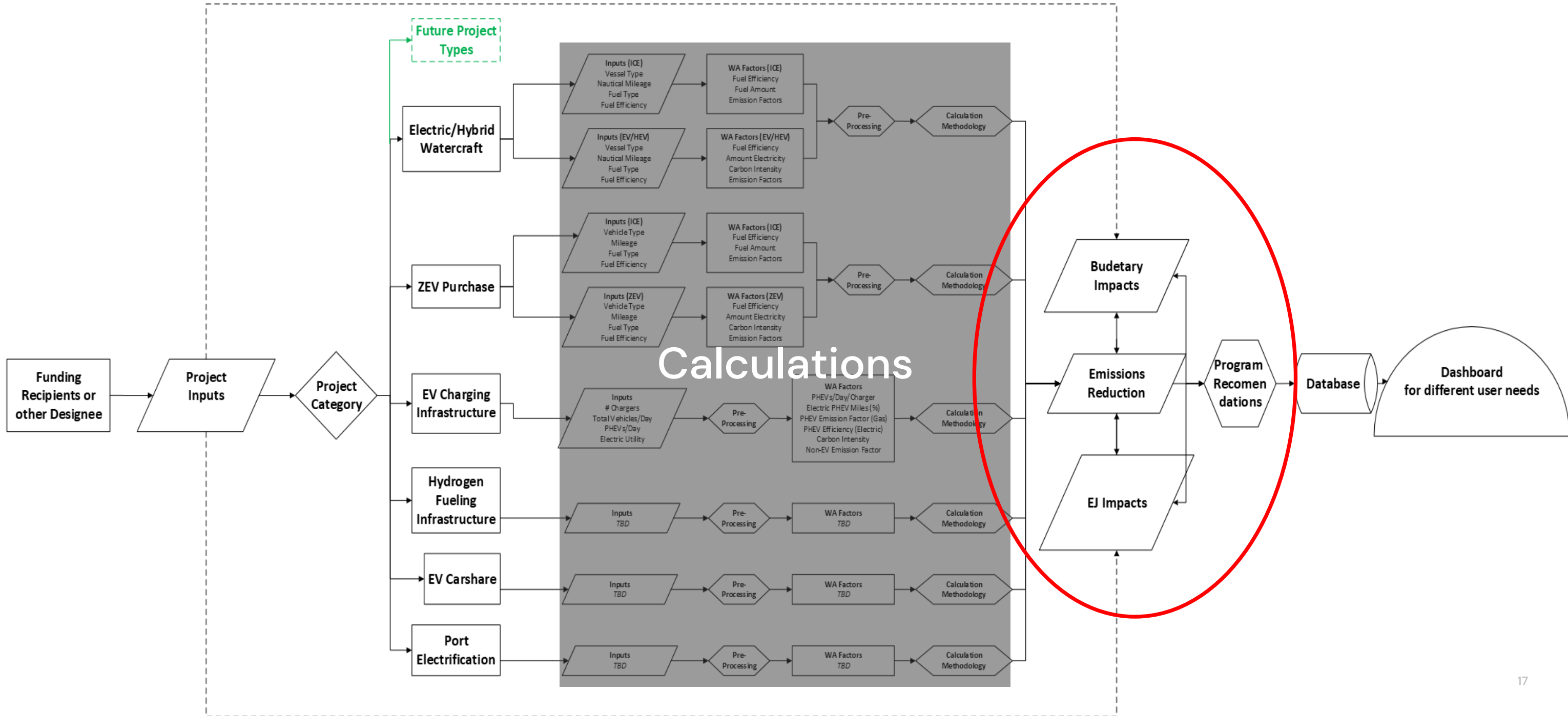
CERA Fuel Conversion Project*	Department	Amount	ESHB 2134	Project Type
Tribal electric boat grants	Commerce	\$5M	§103 (2)	Electric/Hybrid Watercraft
ZEV supply equipment infrastructure	Enterprise Services	\$12M additional	§106 (1)	EV Charging Infrastructure
Electric school bus program	Ecology	\$4M	§108 (1)	ZEV Purchase EV Charging Infrastructure
ZEV state infrastructure grants	Transportation	\$15M additional	§215 (1)	EV Charging Infrastructure
EV car share – low income communities	Transportation	3.4M	§215 (4)	EV Carshare
MHDZEV vouchers	Transportation	\$10M additional	§215 (5)	ZEV Purchase EV Charging Infrastructure Hydrogen Fueling Infrastructure
Hydrogen fueling infrastructure grants w/Fed match	Transportation	\$10M	§215 (8)	Hydrogen Fueling Infrastructure
Bellevue & Redmond fire truck	Transportation	\$800K	§215 (9)	ZEV Purchase
Tacoma utilities ZEV pilot project	Transportation	1.725M	§215 (10)	EV Charging Infrastructure
Green transportation capital project – Transit LEAP list	Transportation	\$7.442M	§221 (11)	ZEV Purchase
Hybrid ferry construction	Transportation	\$11.554M	§307 (4)	Electric/Hybrid Watercraft
Hybrid ferry predesign	Transportation	\$1.5M	§307 (5)	Electric/Hybrid Watercraft
Shore power demonstration project – Seaport alliance	Transportation	\$14M additional	§308 (11)	Port Electrification
Port of Anacortes electrification	Transportation	\$1.5M additional	§308(16)	Port Electrification
Puyallup tribe port electrification	Transportation	\$20M	§308(18)	Port Electrification
Guemes electric ferry	Transportation	\$10M additional	§309 (11)	Electric/Hybrid Watercraft

*Fuel conversion projects identified in Engrossed Substitute House Bill 2134 Transportation Budget 2023–2025 Supplemental, <https://app.leg.wa.gov/billssummary?BillNumber=2134&Initiative=false&Year=2023>

Initial Tool Design



Initial Tool Design



Initial Tool Design

Main Reporting Categories

Emissions Reductions

- C emission reductions per time

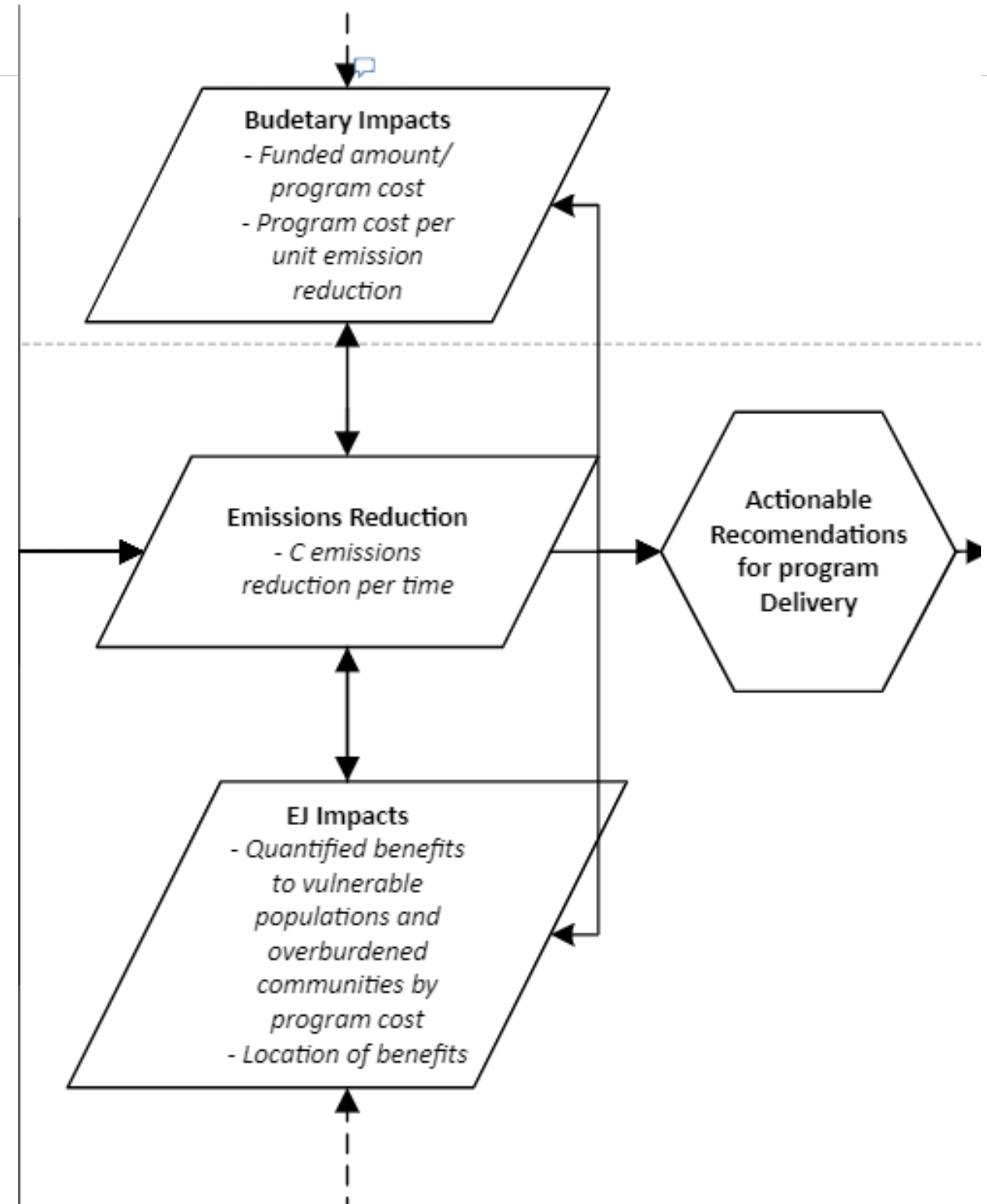
Budgetary Impacts

- Funded amount
- \$ / ton

Environmental Justice Impacts

- Location
- Benefits per \$

Actionable Recommendations





Get in touch with us:

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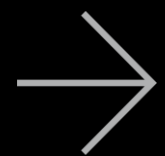
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About ICF

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Appendix Slides



05/12/2024

Workplan Overview

Task List:

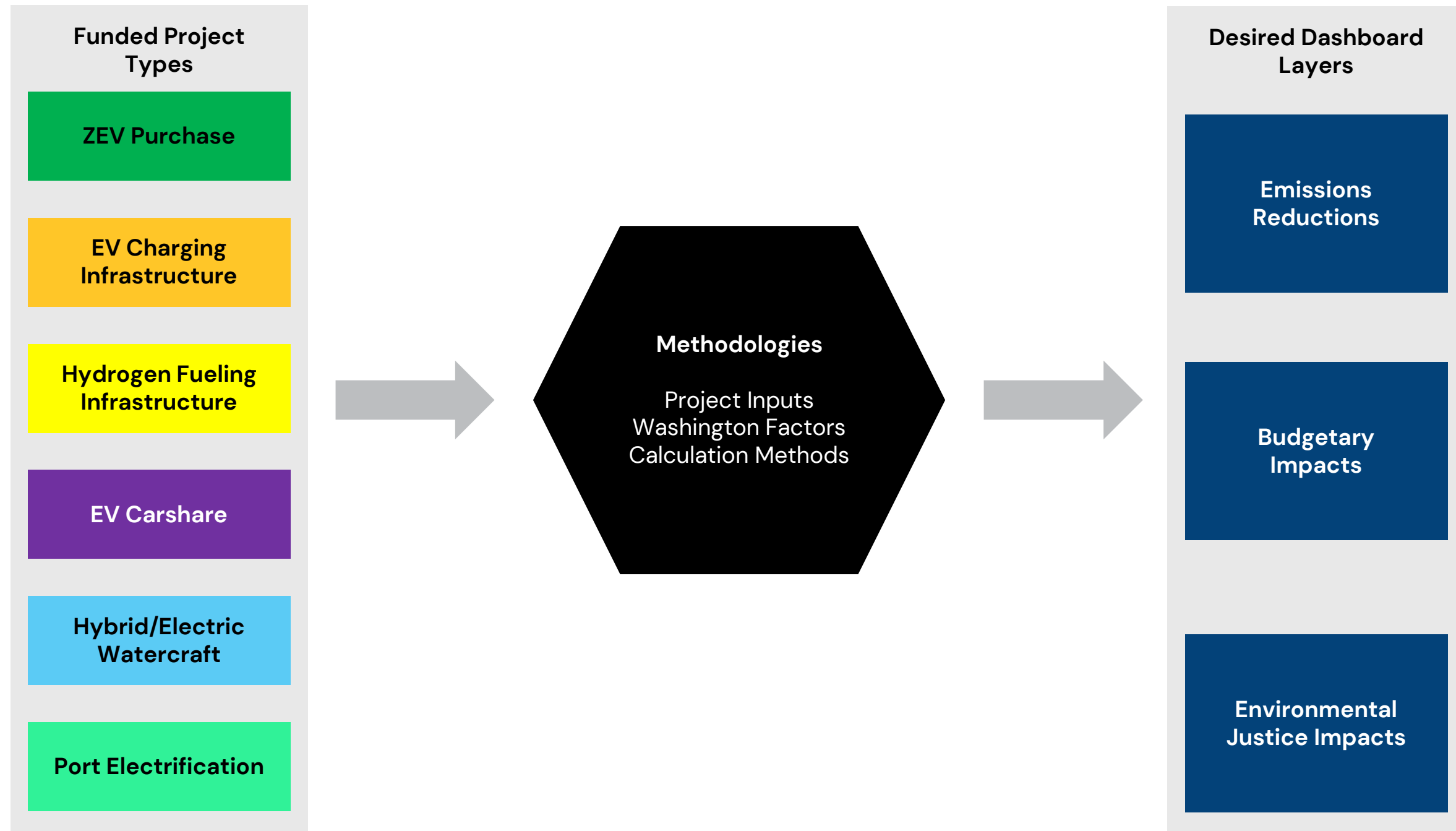
- Task 1:** Evaluate and recommend tool development strategy.
- Task 2:** Consult with JTC Legislators
- Task 3:** Design and build data reporting tool
- Task 4:** Coordinate with Technical Team
- Task 5:** JTC Presentations
- Task 6:** Draft and Final Reports



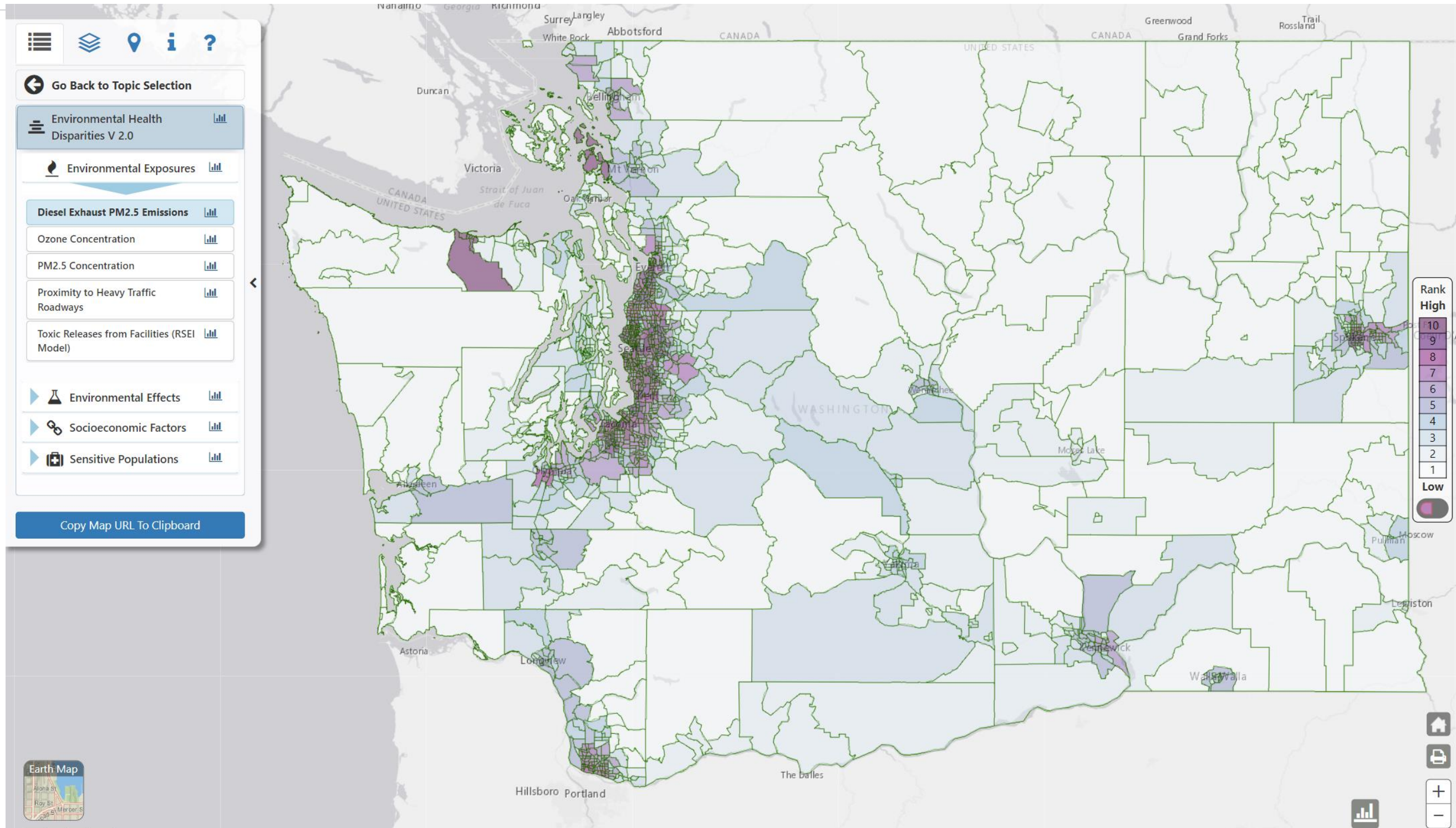
Project Overview:

- 1. Communication loops**
 - **Informal** with JTC Team, Technical Team, and ad-hoc with legislators
 - **Formal** presentations to Legislature
- 2. Tool Design and Development**
 - **Task 1:** Strategy, Tools, and Methodology for Fuel Conversion Emission Reductions
 - **Task 3:** Design and Develop Data Reporting Tool
- 3. Reporting**
 - In person and written project reports

How to build the tool:



Environmental Health Disparities / EJ Map



Source: [WDOH](http://wdoh.wa.gov)



Another option is similar to that of the WA Transportation Budget Project Map

This has similar reporting, in a PowerBI dashboard, with mapping and local reporting capabilities

<https://fiscal.wa.gov/statebudgets/TransportationMap>



Transportation Budget Project Map

Interactive Data Reports House Proposals Senate Proposals **Project Map**

For other budget views, see [Transportation Budget Main Page](#)

Transportation Projects Map By Legislative District

Select Another Map ▼

By Current Legislative Districts By Prior Legislative Districts

About new legislative districts:

New legislative districts were developed by the [Washington State Redistricting Commission](#) as required every 10 years following the national census. The 2023-25 Biennial Transportation Budget projects are mapped in the new legislative districts. Projects in prior budgets use the prior districts available in the **Prior Legislative District** option above.

Session

2023-25 Transportation Budget -- 2024 Supplemental ▼

Budget Version(s)

Enacted (03-28-2024) ▼

Leg District

All ▼

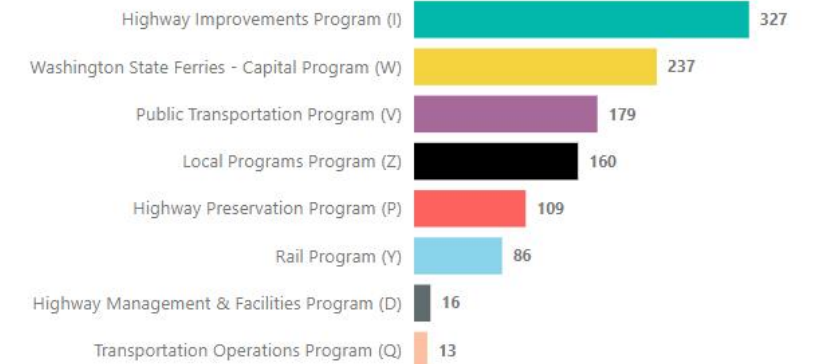
Search for Projects

Search

Project List

All ▼

Projects Per Program

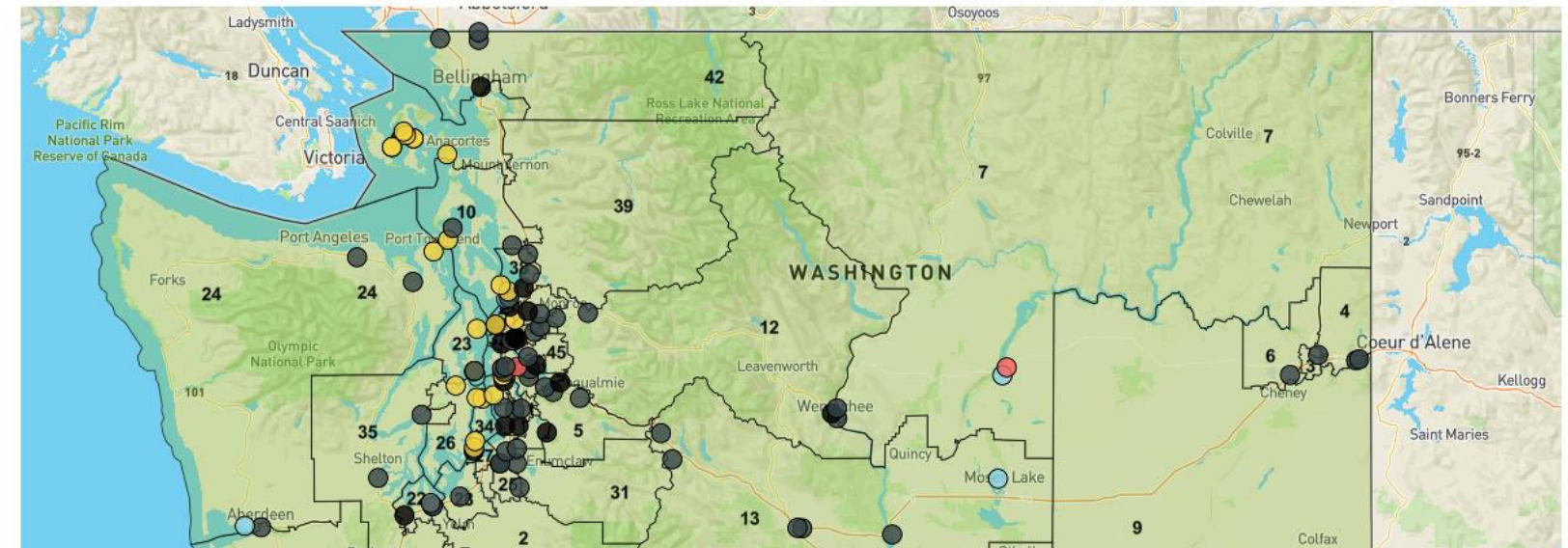


2023-25 Transportation Budget -- 2024 Supplemental

Enacted (03-28-2024)

Dollars in Thousands

Each project appears as one location on the map, but some projects cross multiple districts.



Another Example – J40 Map

- <https://screeningtool.geoplatform.gov/>
- Climate and Economic Justice Screenin

Explore the map

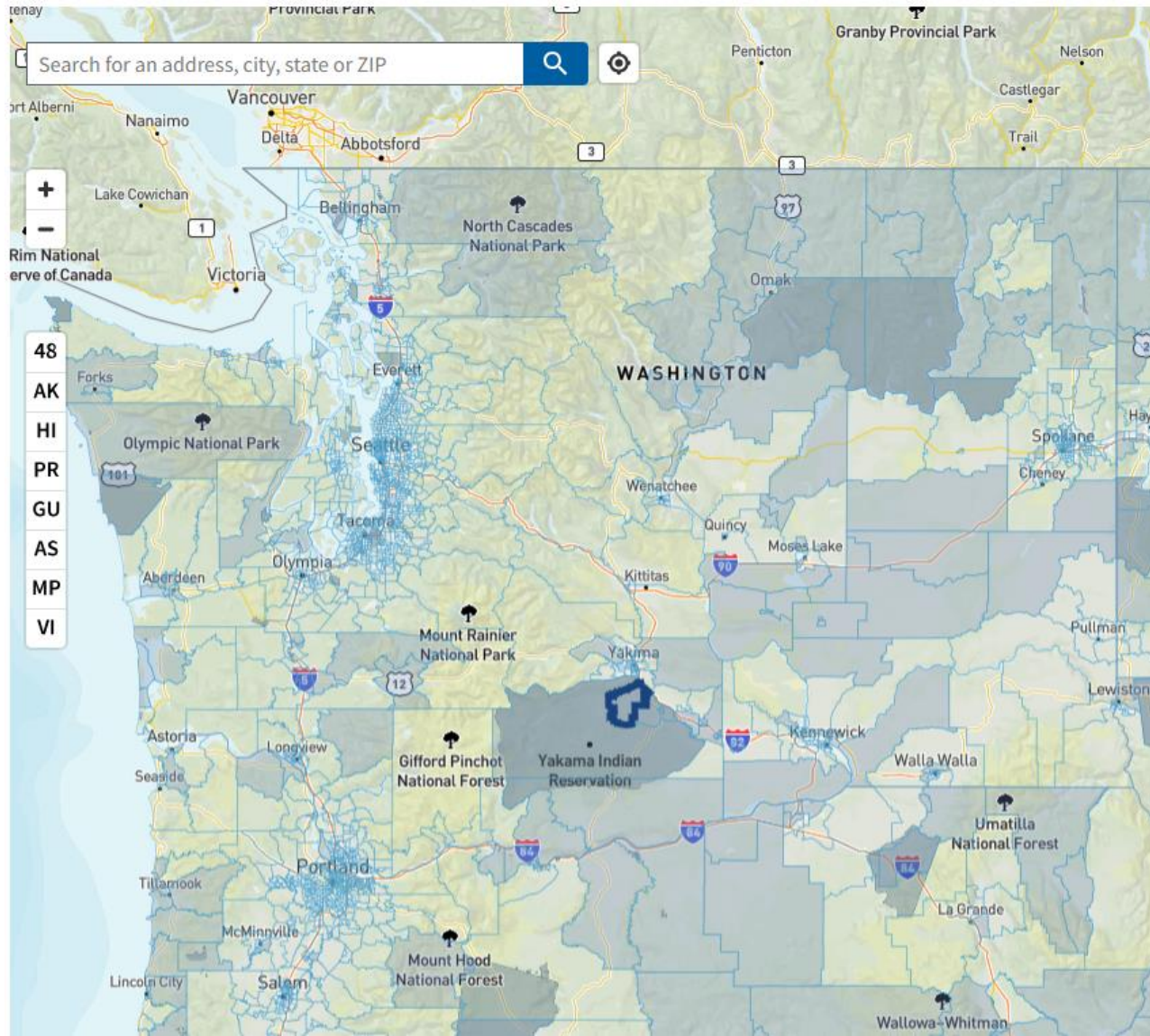
Share data sources with CEJ

Census tracts that are overburdened and underserved are highlighted as being disadvantaged on the map. Federally Recognized Tribes, including Alaska Native Villages, are also considered disadvantaged communities.

Zooming in and selecting shows information about each census tract.

Get the data

Download the data with documentation and shapefile from the [downloads](#) page.



Tract information
Number: 53077940001
County: Yakima County
State: Washington
Population: 6,248

Tract demographics
Race / Ethnicity (Show)
Age (Show)

Identified as disadvantaged?
YES

The lands of Federally Recognized Tribes that cover 100% of this tract are considered disadvantaged.

Send feedback

Climate change +

Energy +

Health +

Housing +

Legacy pollution +

Transportation +

Tool Scope Discussion



- **Project Types**
 - Consistent with the same 15 from WSDOT
 - What could be included in future versions to be included now
- **Form/platform of the Tool**
 - Ownership
 - Review and Reporting
 - Comparative benefits of different approaches
 - Ongoing costs, contract mechanisms
- **Reporting Metrics**
 - Emissions
 - Cost/Financial – Benefits as CBA
 - EJ metrics and co-benefits – qualitative or quantitative
 - Cumulative vs annual – timescale of reporting
 - Potential for forecasting
 - Potential for single indexing
 - Qualitative vs quantitative reporting
 - Need for retrospective analysis

Existing Methods and Tools

Project Name	CARB Clean Mobility Benefits					CARB Low Carbon Transportation Advanced Technology Demonstration and Pilot Projects			AFLEET CFI Tool	CAPCOA Handbook			
	B.1. New or Expanded Service	B.2. Vehicle Replacement	B.5. Bike Infrastructure	B.6. Pedestrian Infrastructure	B.4. System / Efficiency Improvements	C. Emissions Reductions from Off-Road Equipment and Vehicles	E. Emissions Reductions from Marine Commercial Harbor Craft	F. Emissions Reductions from Marine Ocean-Going Vessels	AFLEET CFI Tool	T-27. Implement Transit-Supportive Roadway Treatments	T-22-C. Implement Scootershare Program	T-22-A. Implement Pedal (Non-Electric) Bikeshare Program	T-22-B. Implement Electric Bikeshare Program
Vehicles													
1. Purchase Electric Vehicle		x											
2. Transit Electrification - purchase Transit Buses		x											
3. Medium / Heavy Duty Trucks		x											
4. Shared EVs (Zero-emissions Access Program -ZAP)	x												
5. Electric Forklifts						x							
6. Electric Transport Refrigeration Units (eTRU)						x							
7. Electric Ground Support Equipment						x							
8. Electric Cargo Handling Equipment (eCHE)						x							
9. Zero-Emission Locomotive Technologies and Operations						x							
10. Emissions Reductions from Marine Commercial Harbor Craft							x						
Charging & Fueling													
11. Install electric vehicle charging infrastructure								x					
12. Transit electrification – charging infrastructure								x					
13. Electric Power for Ocean-going Vessel (eOGV)									x				
14. Rail locomotive charging													
15. Washington State Ferries Charging							x						

1. CARB’s Clean Mobility Benefits – https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/carb_clean-mobility-qm_draft_july2023.pdf
2. Reports and methods for CARB’s Advanced Technology Demonstration and Pilot Projects – <https://ww2.arb.ca.gov/advanced-technology-demo-projects>
3. Argonne National Lab’s AFLEET Charging and Fueling Infrastructure (CFI) Emissions Tool – <https://afleet.es.anl.gov/infrastructure-emissions>
4. The SMAQMD/CAPCOA Handbook “[Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity](#)”

Project examples

- CCI data is available as a full data report, by dashboard display, region, by legislative district, and by map
 - Most projects are not fuel conversion



CALIFORNIA CLIMATE INVESTMENTS PROJECT MAP

The screenshot displays the California Climate Investments Project Map interface. On the left, a 'Filters' panel is visible with the following settings:

- Year:** All Reporting Cycles
- Agency:** All Agencies
- Program Name:** All Programs
- Senate District:** None Selected
- Assembly Districts:** None Selected
- Counties:** None Selected

The main map area shows a green map with various project locations marked by numbered circles. A popup window is open over a project, displaying the following details:

- Project Name:** Clean Vehicle Rebate Project (CVRP)
- Project Award Date:** November 4, 2018
- Project Details:**
 - Agency:** California Air Resources Board
 - Program Name:** Clean Vehicle Rebate Project
 - Type:** Clean vehicle purchase incentive program
 - Total GGRF Funding:** \$4,000
 - Estimated GHG Reductions (MTCO₂e):** 16
 - Benefits Priority Population?** No
 - Projects Benefits Description:** CVRP promotes clean vehicle adoption in California by offering rebates from \$1,000 to \$7,500 for the purchase or lease of new, eligible zero-emission vehicles, including electric, plug-in hybrid and fuel cell vehicles.

Next Item: Interim Report and Legislative Hearing



Report

1. Existing methods and tools in use by WSDOT
2. Requirements report-out for the new tool
3. Preliminary recommendations for the new tool

Schedule

ID	Deliverable Name	Due Date (Post Award)	Due Date
0	Task 0. Project Management		
0.1	Project Management Meetings	Biweekly, throughout project	1st and 3rd Tuesday of each month
0.2	Technical Calls	Monthly, or as needed (Task 2)	Ongoing
0.3	Monthly Progress Reports	Monthly	15th of each Month
1	Task 1. Strategy		
1.1	Kick-Off Meeting	Within 3 weeks of Award	4/18/2024
1.2	Draft Work Plan to Technical Team	Initial draft - 3 weeks prior to 5/14 JTC Meeting; draft to Technical Team 2 days prior to first Technical Team meeting	4/23/2024; 5/1/2024
1.3	Revised Work Plan to JTC	2 days prior to the 5/14 Meeting	5/12/2024
1.4	Interim Report	2 weeks after 5/14 Meeting	5/28/2024
2	Task 2. JTC Meetings		
2.1	JTC Meetings	At least monthly or as needed	TBD
2.2	Presentation to JTC in Olympia	May 14, 2024 JTC Meeting	5/14/2024
2.3	Presentation of Draft Report to JTC	Within 1 week of the 9/16 Delivery	9/9/2024
2.4	Present Draft Final Report to JTC in Olympia	October 17, 2024 JTC meeting	10/17/2024
3	Task 3. Tool Development		
3.1	Blueprint	Within 2 weeks of Final Work Plan	5/11/2024
3.2	Tool	2 weeks before Draft Report	9/2/2024
4	Task 4. Coordinate with Technical Team		
4.1	First meeting to Discuss Draft Work Plan	Within 1 week of Draft Work Plan	4/30/2024
4.2	Mid Tool Development for Check In/Review of Scope	TBD	TBD
4.3	Draft report	Within 1 week of 9/16 Delivery	9/9/2024
5	Task 5. Presentations		
5.1	May Presentation to JTC	May 14, 2024 JTC Meeting	5/14/2024
5.2	October Presentation to JTC	October 17, 2024 JTC Meeting	10/17/2024
5.3	Presentation to the House and another to the Senate Transportation Committee	January or February 2025	TBD
6	Task 6. Reporting		
6.1	Draft report, Presented to JTC, Technical Team	September 16, 2024	9/16/2024
6.2	JTC Comments on Draft Report	2 weeks after Draft Report	9/30/2024
6.3	Final Report Draft due to JTC	2nd week of Oct	10/10/2024
6.4	Final Report Submitted to House and Senate Transportation Committees	October 24, 2024	10/24/2024