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TRB TRANSPORTATION RESEARCH BOARD

TRB Webinar: How Are We Doing? Effective Performance Evaluation Practices

September 9, 2024

12:00 – 1:30 PM

PDH Certification Information

1.5 Professional Development Hours (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at TRBwebinar@nas.edu

The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.

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AICP Credit Information

1.5 American Institute of Certified Planners Certification Maintenance Credits

You must attend the entire webinar

Log into the American Planning Association website to claim your credits

Contact AICP, not TRB, with questions

Purpose Statement

This webinar will share effective practices by transportation agencies to assess the effectiveness of investments and performance-based planning practices. Presenters will reflect on their progress in measuring the range of outcomes of their programs, highlight innovative methods, and discuss lessons learned.

Learning Objectives

At the end of this webinar, you will be able to:

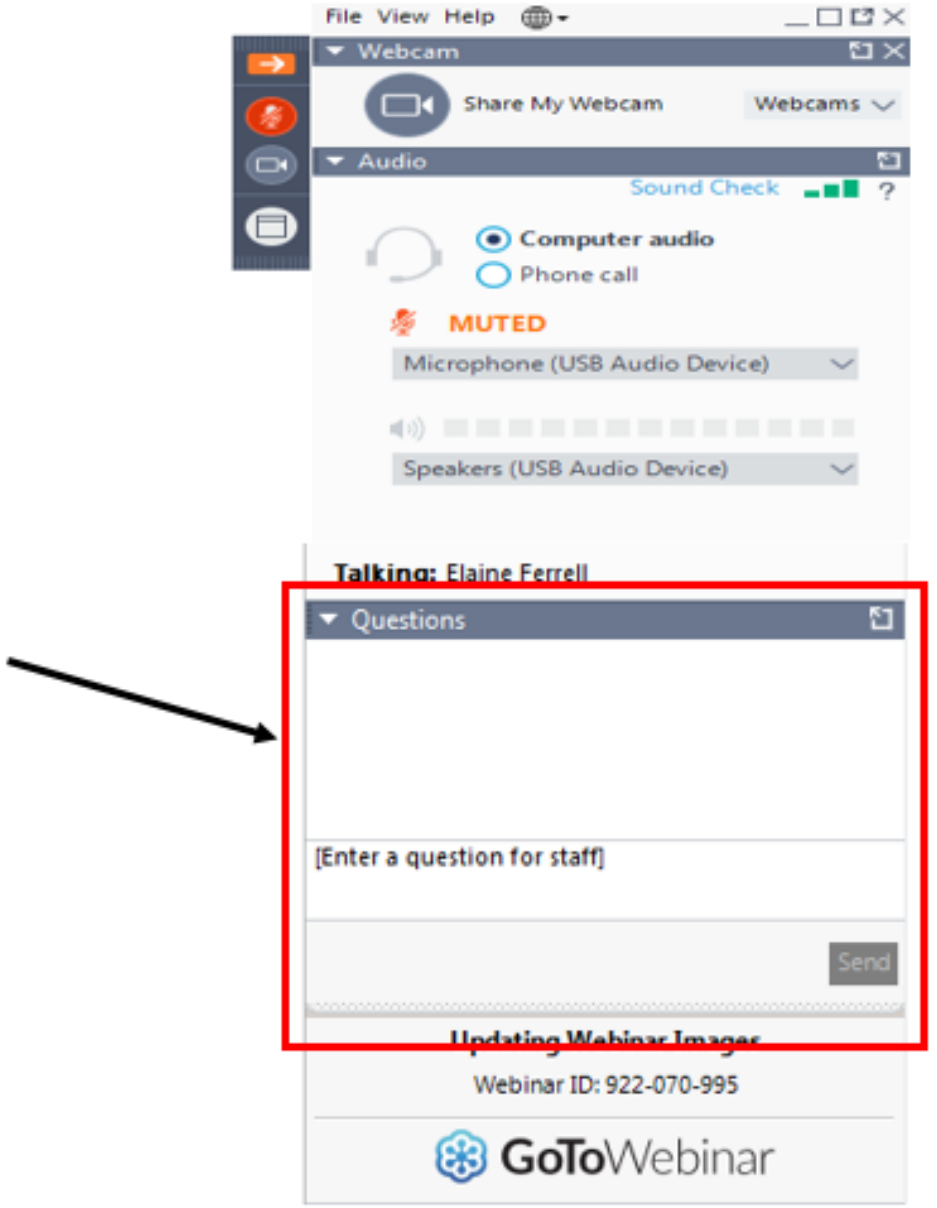
(1) Establish processes to measure the effectiveness of programs and investments at achieving goals

(2) Incorporate a range of outcome areas into assessment frameworks

(3) Address challenges associated with assessing program outcomes

Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



Today's presenters

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Seattle Department of Transportation

NATIONAL ACADEMIES Sciences Engineering Medicine

Preliminary Outcomes of FTA's AIM and IMI Demonstration Programs

Justin John, Transportation Program Specialist

How Are We Doing? Effective Performance Evaluation Practices

September 9, 2024

U.S. Department of Transportation
Federal Transit Administration

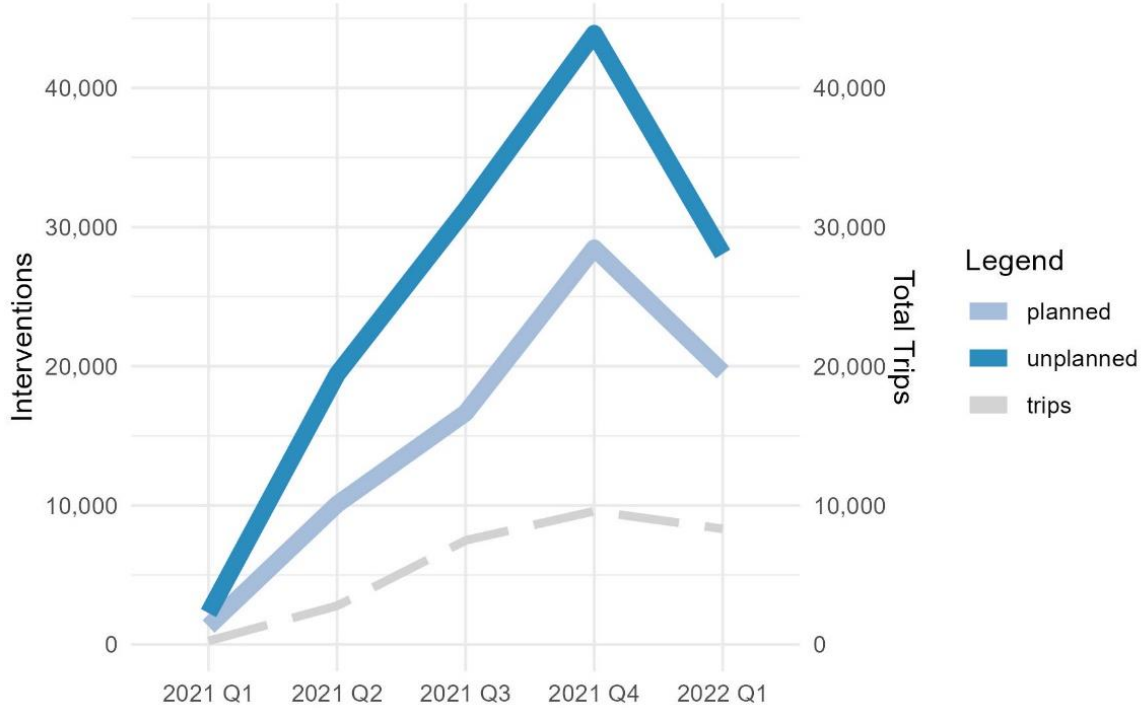
Contents

AIM and IMI Demonstration Programs

Background
Evaluation Framework
Lessons Learned (Preliminary)

Performance Metrics Overview

Mobility on Demand (MOD) / Microtransit
Automation
Payment Integration



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AIM and IMI Overview

U.S. Department of Transportation
Federal Transit Administration

Evaluating What's Next in Innovation

FTA's **Integrated Mobility Innovation (IMI) and Accelerating Innovative Mobility (AIM) demonstration programs** use forward-thinking approaches and innovative technologies and processes to:

- Improve access to public transportation
- Increase public transportation efficiency
- Enhance the overall rider experience

IMI Demonstration Program

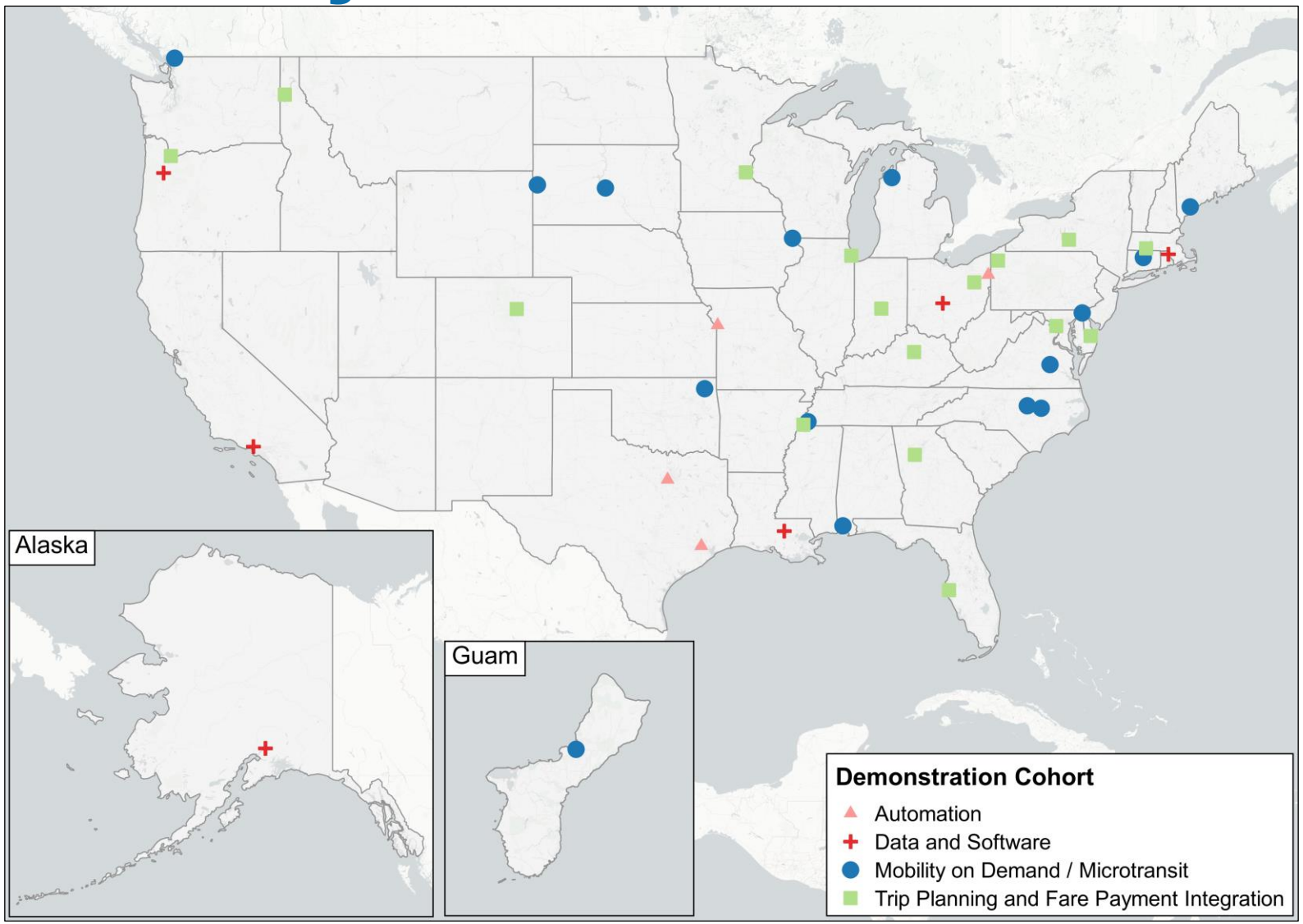
- March 2020
- $20 million for 25 projects

AIM Demonstration Program

- August 2020
- $14 million for 24 projects

Vision: Carefree Mobility for All

AIM and IMI Project Cohorts and Locations



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Evaluation Tiers

Tier 1 - Projects that have significant potential to advance mobility innovation research

- Detailed data collection and analysis plan with performance metrics
- Data types, elements, and sources
- Purpose and desired outcome of data collection organized by hypothesis

Tier 2 - Projects that are strong and consistent with mobility innovation research objectives and U.S. DOT's Innovation Strategic Goal

- Simplified overview of the demonstration
- Simplified data collection plan

Special Studies - Projects that may be grouped thematically or otherwise based on common technical focus areas

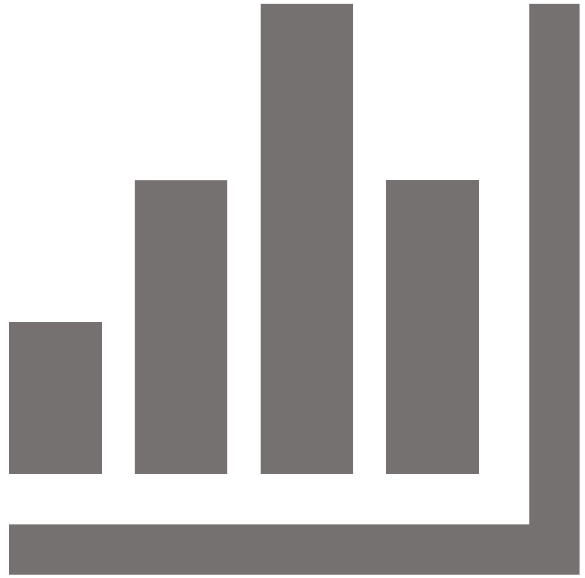
- Synthesis Reports that group projects thematically or by common technical focus
- Approximately 1/3 the level of detail relative to Tier 1 projects

Evaluation Methods

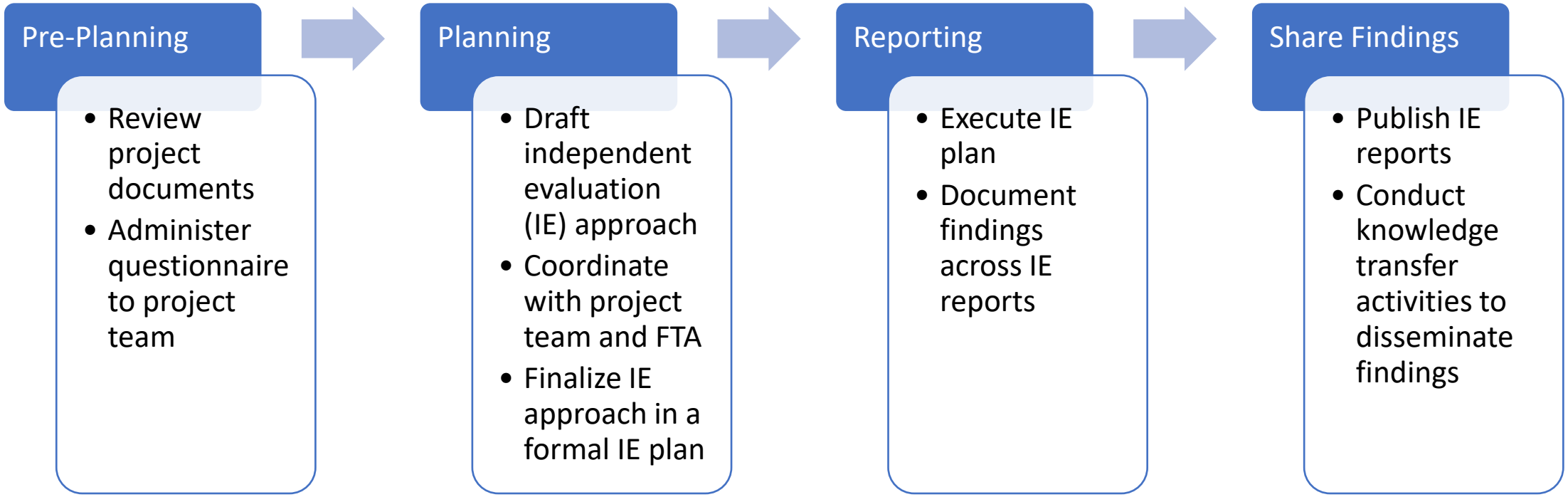
Qualitative Analysis
- Expert interviews
- Institutional group discussions
- User group discussions
- Ethnographic interviews

Quantitative Analysis
- Detailed hypotheses for Tier 1
- Fewer hypotheses for Tier 2
- No quantitative analysis for Special Studies

Summary Descriptive Statistics
- Collected from the project teams



Evaluation Framework



Measure what matters

Independent Evaluations Measure	Status as of Summer 2024
Ability of the demonstration project to meet its stated goals	42 projects under evaluation
Potential for replicability and scalability	36/42 evaluation plans complete
Lessons learned to apply to future discretionary and formula programs	30/42 site visits complete
Recommendations for FTA to support project teams	3/42 evaluation reports complete
	Majority of remaining site visits to be conducted in 2025

Lessons Learned (Preliminary)

Mobility on demand (MOD) / Microtransit projects are popular, meeting the needs of both public transportation providers and users. MOD projects are “graduating” from demonstrations to deployments

Automation is evolving. However, more research is needed to support the goals and objectives of public transportation providers and meet the needs of users. Preliminary findings highlighting:

- Frequency of Disengagements
- Rider Comfort
- Unprotected Turns

Payment integration merits additional considerations, particularly around:

- Accommodations for unbanked and underbanked populations
- Long-term operating costs
- Technology to support true integration

Performance Metrics Overview

U.S. Department of Transportation
Federal Transit Administration

Mobility on Demand / Microtransit Performance Metrics

Performance Metrics

Access to Destinations

Accessibility for disadvantaged populations

Accessibility for persons with disabilities

Ridership

Transit system operating and capital cost

Travel time flexibility

Travel times

Travel wait times

User satisfaction

User costs

Vehicle occupancy

Mobility on Demand / Microtransit Preliminary Findings

Increased ridership compared to fixed route or fixed deviated route service

Improved mobility and access to destinations especially for underserved populations

Improved travel times

Supported first mile/last mile connectivity to other modes

Supported unbanked and underbanked populations with cash payment options

Implemented multiple ways to book rides (website or app, call center)

Reported satisfaction with service amongst users

Image Credits: ICF

Automation Performance Metrics

Performance Metrics

ADAS contribution (ADA docking actions, Reduction in maintenance costs)

Automation disengagements (Per Trip, VMT; Spatial cluster analysis)

Average power use from automation stack

Comfort analysis (Longitudinal and Latitudinal Analysis)

Cost (Per Trip, VMT, PMT)

Emissions (Per Trip, VMT, PMT)

Operating cost and energy analysis (relative to non-automated alternatives)

Planned and unplanned interventions

Safety critical events (review of vehicle response)

Spatial accessibility analysis

Speed limit adherence

Successful demonstration of platooning

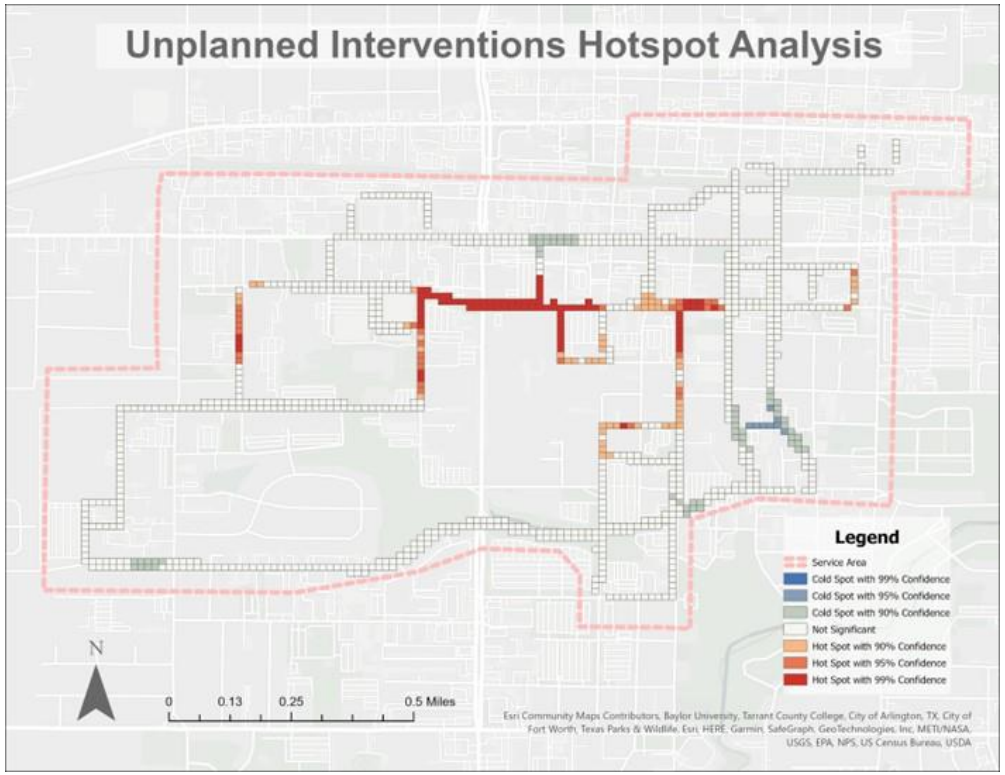
City of Arlington, TX (Arlington RAPID) Overview

Vehicles operates Monday through Friday from 8:00 am to 8:00 pm regardless of weather

Autonomy percentage is approximately 80% system wide

Overall, data showed statistically significantly clustering

Red areas show statistically intervention hot spots



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Payment Integration Performance Metrics

Performance Metrics

Breakdown of fare products / volume and value of those products purchased through platforms participating in the system

Number of transactions and dollar value of those transactions broken out by platform through which the payment was made

Percentage of boardings related to the integration platform

Percentage of fares purchased through the integration platform

Total boardings

Total fare purchases

Unique fare activations by agency

Crawford Area Transit Agency (PA) (Rural Integrated Payments Program) Overview

Integration app included accommodations for visual and hearing impairment

Smart cards used to support unbanked and underbanked riders

Result was a “store front” app rather than a one-stop shop

- Deep links with buttons to transfer between apps
- Required users to have all apps

Cost prohibitive to continue beyond demonstration

- Multiple technology vendors = multiple vendor fees
- Fees increase based on ridership / use of the app

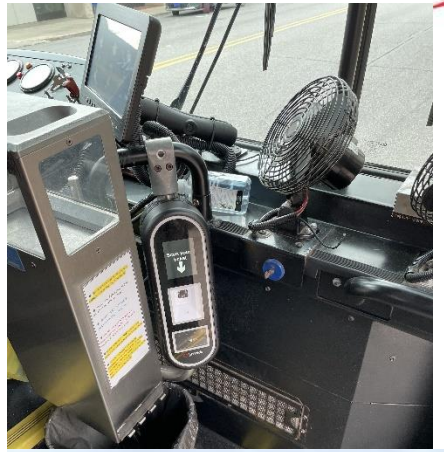

Image Credits: UC Berkeley

Are We Moving the Needle?

Strategic Priorities

Accessibility for persons with disabilities

Mobility payment integration design

- Unbanked or underbanked populations
- Populations without smartphones

Technology-enhanced data collection improvements

Policy Priorities

Addressing contracting, procurement, and supply chain challenges/processes

Data sharing agreements

Understanding available data

Vendors' ability to deliver on commitments

Thank you!

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U.S. Department of Transportation
Federal Transit Administration

COMMONWEALTH of VIRGINIA

Office of the

SECRETARY of TRANSPORTATION

ASSESSING PERFORMANCE OF COMPLETED SMART SCALE PROJECTS

September 9, 2024

Presentation Overview

Background

- SMART SCALE Overview
- Purpose and Objectives
- Performance Measures
- Process Development

Analysis Considerations

- General
- COVID Travel Impacts
- Safety Trends
- Analysis Focus

Observations and Conclusions

- Observations
- Key Points/Conclusions

Next Steps

SMART SCALE Overview

- SMART SCALE is Virginia's project prioritization process for its most critical multimodal transportation needs.
- Anticipated benefits are calculated, and projects are scored and ranked.
- Commonwealth Transportation Board (CTB) uses to guide and inform project selection decisions.
- Evaluates projects on key factors to:
  - Improve safety,
  - Reduce congestion,
  - Increase accessibility,
  - Contribute to economic development,
  - Promote efficient land use, and
  - Affect the environment

https://smartscale.virginia.gov/

SMART SCALE Overview

- 2045 applications submitted since 2016 with 1915 scored and prioritized
- 776 projects selected for funding for total value of $14.5 billion
- More than 150 projects completed through 2022

PROJECT APPLICATIONS	FY 2017 ROUND 1	FY 2018 ROUND 2	FY 2020 ROUND 3	FY 2022 ROUND 4	FY 2024 ROUND 5	GRAND TOTAL
SCORED	287	404	433	397	394	1915
FUNDED	163	147	134	167	165	776
VALUE OF PROJECTS SUPPORTED	$2.7B	$2.4B	$5.1B	$1.9B	$2.4B	$14.5B
COMPLETED PROJECTS	101	42	7	0	0	150
ANALYZED PROJECTS 2023 (Cohort 1*)	61	12	---	---	---	73
ANALYZED PROJECTS 2024 (Cohort 2*)	40	30	4	---	---	74

*Cohort represents the group of completed projects from each round of SMART SCALE. Cohort 2 includes all Cohort 1 projects.

Purpose and Objectives

Purpose: develop and implement ongoing systems for evaluating and monitoring benefits of SMART SCALE investments to understand if projects are providing the anticipated benefits. This effort:

- Addresses a CTB strategic action adopted in December 2021 to advance the Board's long-range Goals and Objectives.
- Supports CTB Guiding Principle: Optimize return on investment.

Objectives: assess if projects performed as expected and provide feedback into project evaluation criteria and methods.

Note:

- Project performance analysis is based on actual/observed performance.
- SMART SCALE is a decision support tool that makes predictions of benefits.

Performance Measures

Identified measures within SMART SCALE factor areas where direct observation data is available to assess change that may be attributed to the project.

SMART SCALE Factors	Project Performance Measures
Improve Safety	Changes in fatality and all injury crashes
Reduce Congestion	Changes in travel speed and changes in travel delay
Increase Accessibility	Changes in auto accessibility to jobs and jobs by disadvantaged populations: measured by changes in travel speed
Promote Efficient Land Use	Direct observation data sources have not been identified.
Affect the Environment	Direct observation data sources have not been identified.
Contribute to Economic Development	Direct observation data sources have not been identified for 2 out of 3 indicators for economic development factor. Changes in travel time index and planning time index

Process Development

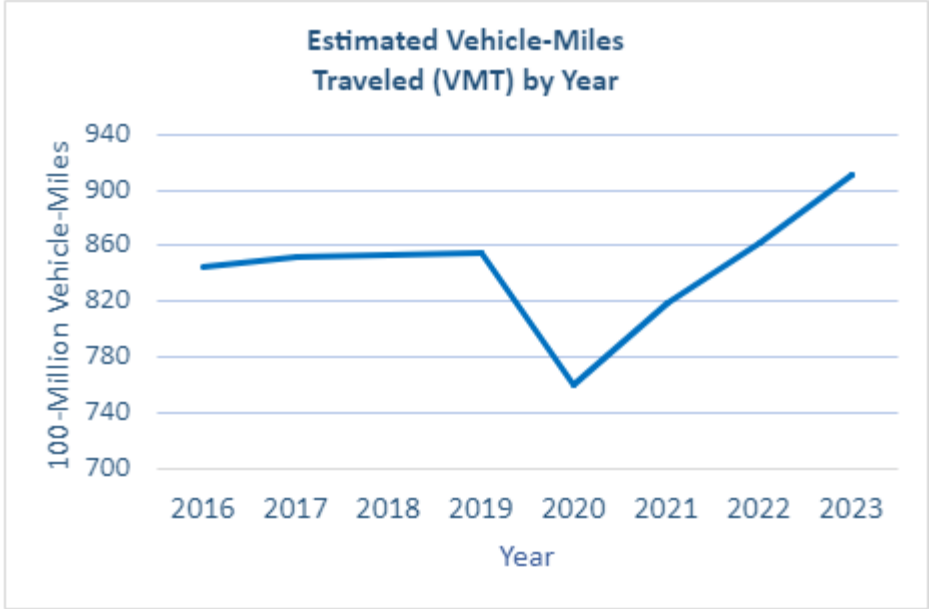
- Completed a pilot study in 2021 - Presentation
- Recent Activities (2023/2024):
  - Finalized measures for analysis
  - Developed/refined analysis methodologies
  - Developed automation tools to streamline evaluation for a replicable process, manual interaction required for certain steps
  - Completed analysis of each measure for identified projects (147 projects), where data was available
    - Not all projects could be analyzed for all measures
    - Analysis of output underway

General

- **Performance Period = Covers Calendar Years 2016-2023**
  - Projects had to be completed by September 2022 to ensure at least one year of post-construction data. Actual performance period varies by project.
- **Data Gaps**
  - Certain data sets did not include data for all roadway segments or all time periods, so some projects were not analyzed for all measures.
- **Signal to Noise Ratio**
  - Project performance impact we hope to observe (Signal) is potentially masked by other factors that influence the performance such as changes in overall VMT, changes in land use, work zones, etc. (Noise).
- **Project Purpose and Potential Tradeoffs**
  - Understanding the project purpose helps us to weigh tradeoffs. A project designed to improve travel time may involve increasing travel speeds, which can shift severity of crashes.

COVID Travel Impacts

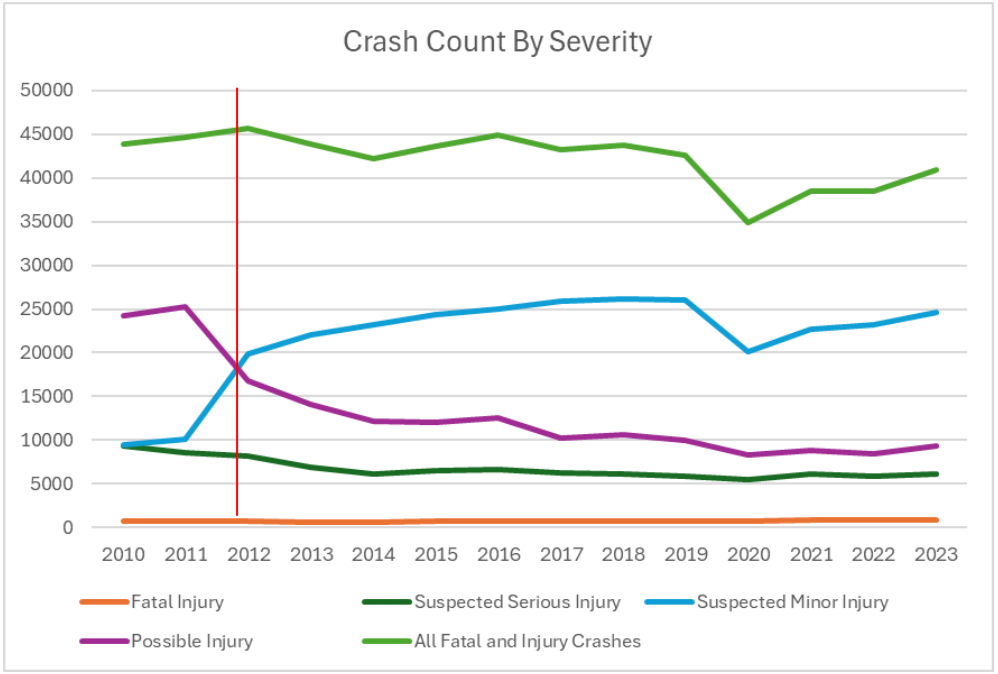
- Post-construction data includes the COVID period.
- A limited number of projects have multiple years of post-construction data.
  - Travel trends and recovery are consistent with COVID impacts.
- To limit COVID impacts, utilized first post-construction year after COVID (2022 and 2023) and compared to one calendar year prior to construction for congestion, reliability and accessibility measures.



Note: Recovery of traffic volumes has varied between VDOT Construction Districts

Safety Trends

- Post-construction data covers the COVID period.
  - Safety performance data is averaged across the performance period and reported as an annualized value.
    - Pre-construction data includes 5 years.
    - Post-construction data varies between 1 and 6 years, including CY2023 data.
- Statewide increases in certain crash types occurred during this period.
- Changes in safety performance may be difficult to separate if the noise is stronger than the signal.



Note: The red vertical line indicates a change in the definition of "Suspected Minor Injury" beginning in 2012. This change resulted in more crashes being classified as "Suspected Minor Injury" crashes and fewer being classified as "Possible Injury" crashes.

Analysis Focus

- **Analysis has been focused on several aspects:**
  - Consistency between measured benefits and predicted benefits;
  - Achievement of project intent;
  - Identification of trends by project categories (major scope item, e.g. new turn lanes); and
  - Observations that support improvements to the SMART SCALE prioritization process.

Observations

- Analysis included 147 projects that were completed by September 2022
  - Most are Highway projects, along with some Bus Transit, Bicycle/Pedestrian, and TDM projects.
  - Not all projects could be analyzed for all measures.
  - Many projects may also include other improvements, e.g. bicycle/pedestrian accommodations, bus shelters, etc.
- Difficult to draw conclusions with small sample size.
- Additional insights may be gained through analysis of similar types of projects (i.e., innovative intersections, new turn lanes, etc.) funded through other sources than SMART SCALE.
- Communicating results at measure and project level is challenging.

Key Points/Conclusions

- Developed process that can be applied across many programs regardless of funding source(s).
  - Some project types are more difficult to assess through automated processes.
- Many projects may include other improvements, e.g. bicycle/pedestrian accommodations, bus shelters, etc. adding to complexity of performance analysis.
- Analysis of measures is complete, analysis and understanding of output is underway. Sample size is still limited making it difficult to draw conclusions.
- Identified improvements for SMART SCALE impacting the scoring process and assumptions used for some project types.

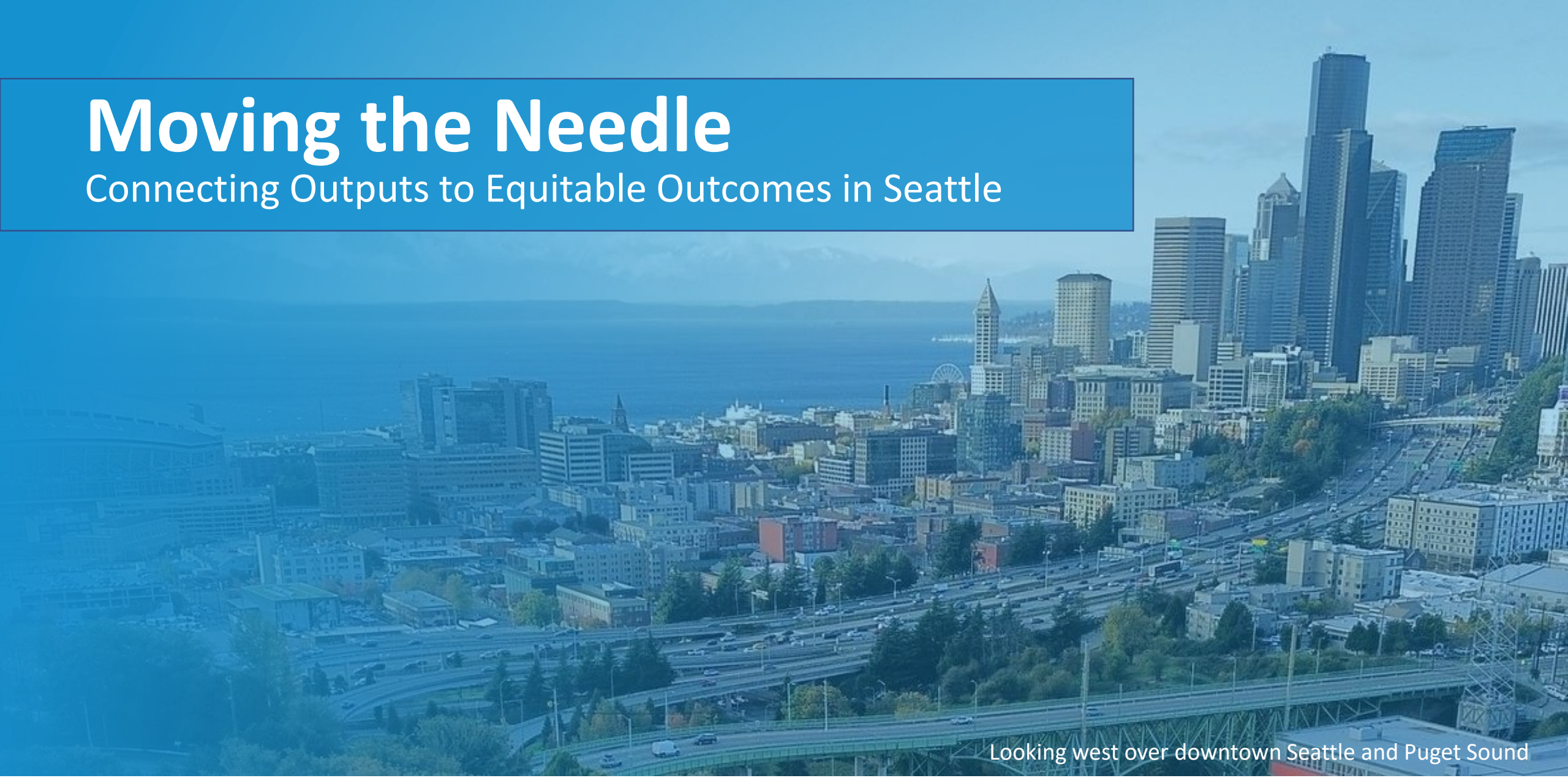
Next Steps

- Complete analysis and observations for Cohort 2 projects.
- Cohort 3 deferred until Spring 2026 providing opportunities to:
  - Conduct lessons learned sessions with key stakeholders
  - Identify, prioritize and test various process improvements
- Research and test additional measures for Accessibility, Land Use, Environment and Economic Development
  - Measures for Accessibility, Land Use and Economic Development identified for testing at “project level”
  - Final measures to be selected by end of year and to be applied to Cohort 2 projects to enhance project performance understanding

Questions

Moving the Needle

Connecting Outputs to Equitable Outcomes in Seattle



Looking west over downtown Seattle and Puget Sound

Sam Marshall, Data & Performance Management Advisor, Seattle Department of Transportation

September 9, 2024

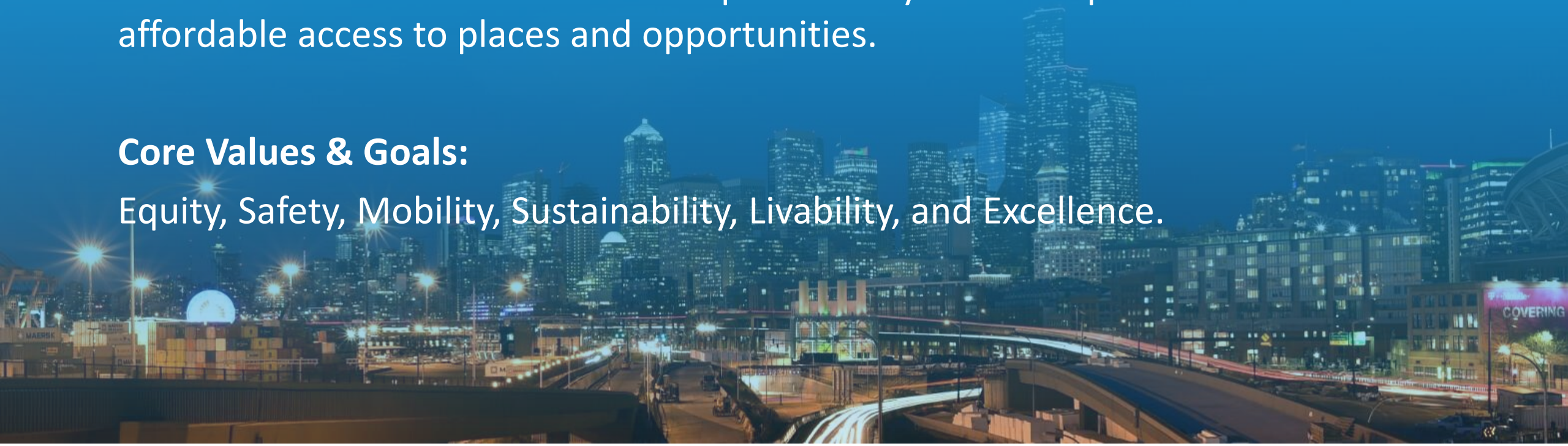
Seattle Department of Transportation

Our Vision, Mission, Values, & Goals

Seattle is a thriving equitable community powered by dependable transportation. We're on a mission to deliver a transportation system that provides safe and affordable access to places and opportunities.

Core Values & Goals:

Equity, Safety, Mobility, Sustainability, Livability, and Excellence.

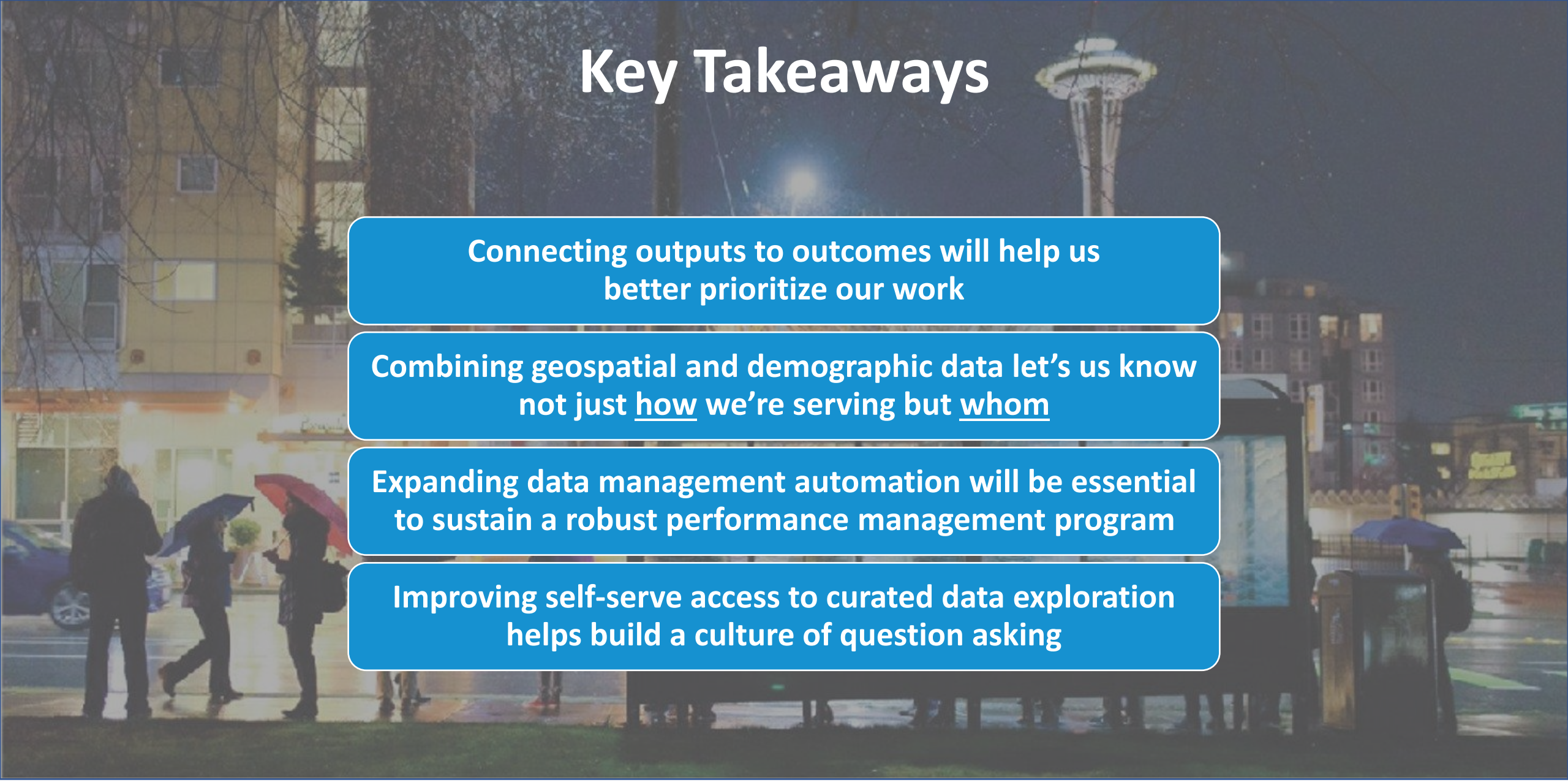


Overview

- Overview of current performance reporting at SDOT
- Impact Analysis Framework and guiding initiatives
- Automating data management and enabling data exploration
- Where we're headed

Neighborhood pedestrian improvements

Key Takeaways



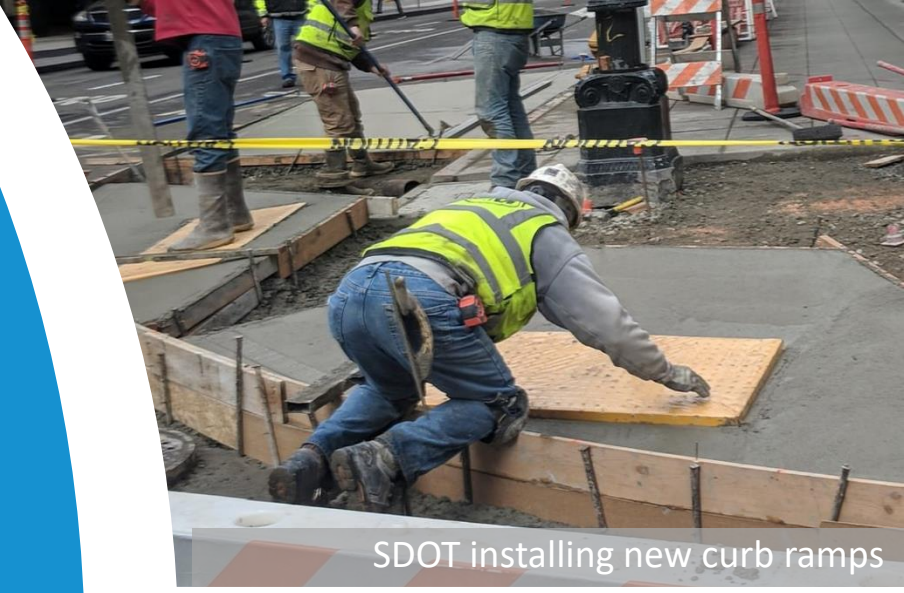
- Connecting outputs to outcomes will help us better prioritize our work
- Combining geospatial and demographic data let's us know not just how we're serving but whom
- Expanding data management automation will be essential to sustain a robust performance management program
- Improving self-serve access to curated data exploration helps build a culture of question asking

Overview of Current Performance Reporting at SDOT

Safety improvements in South Seattle

Outputs vs. Outcomes

- ✓ Measuring our **outputs** may tell us what we've done, how much we've done, and within (or by) what time period.
- ✓ Measuring **outcomes** tells us *whether people are better off* because of our work.
- ✓ We currently measure both, but we know less about the connections between the two



SDOT installing new curb ramps

Family with a stroller using a curb ramp

Measuring our outcomes

To get a complete picture of the outcomes of our work we need to know:

- What work (outputs) are we doing and where?
- **What** are the outcomes of our work?
- **Where** are the outcomes of our work?
- **Who** is experiencing the outcomes of our work?

So how much of this do we currently know?


Green light on a bike lane signal

Survey of SDOT's Current Measures and Metrics

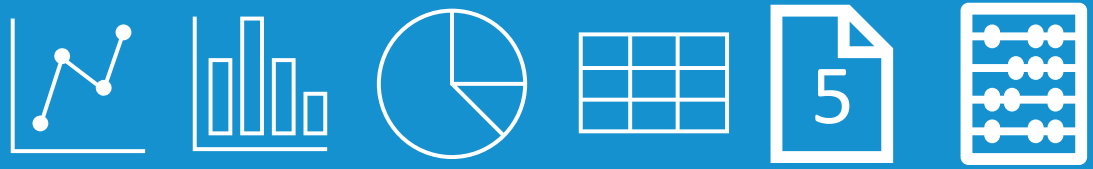
Including…

- Bike, Freight, Pedestrian, and Transit Master Plans
- Moving the Needle Report
- Climate Action Plan
- Commute Trip Reduction Plan
- Vision Zero Action Plan

18 strategic plans and reports

1 year of Director's Weekly Reports

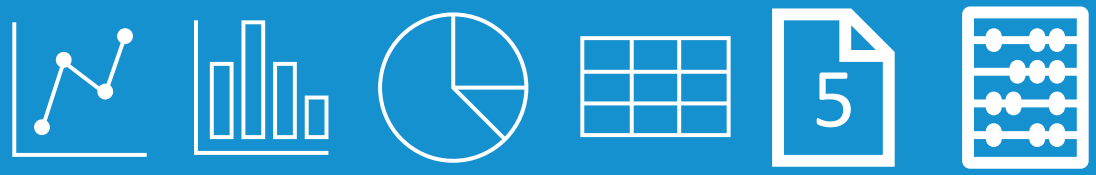
356 measures and metrics



Seattle Department of Transportation

Survey of SDOT's Current Measures and Metrics

356 measures and metrics



146 <u>Outcome</u>-based metrics

41%

210 <u>Output</u>-based metrics

59%

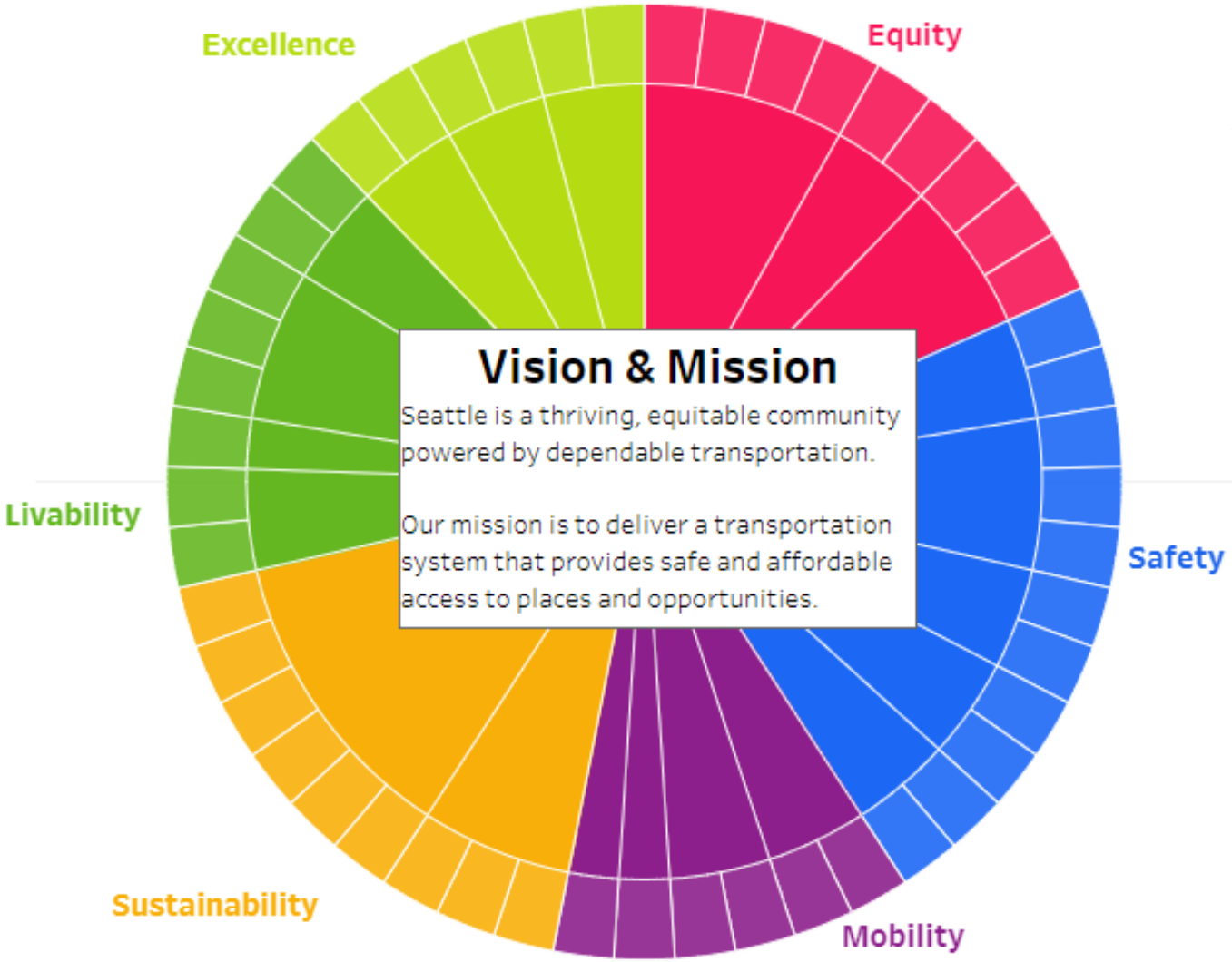
Seattle Department of Transportation

SDOT's Moving the Needle Report

- Introduced in 2017
- Updated Annually
- Tableau-based interactive dashboard
- Excel-based data source
- Brought our organization to a new level of data maturity and program tracking

https://public.tableau.com/app/profile/city.of.seattle.transportation/viz/SDOTMovingtheNeedle-2021/Introduction

SDOT's Moving the Needle Report



Values & Goals

What we intend to accomplish in broad terms, designed to prioritize and organize our programs and tell a unified story.

Objectives

Measurable acheivements towards meeting our goals.

Metrics

Measures and key indicators based on specific, observable characteristics or changes, that allow us guage our progress, course correct, and share our story.

Moving the Needle Report

Values: Equity Excellence Livability Mobility Safety Sustainability

Mobility

We believe transportation choices are critical to access opportunity. Our goal is to build, operate, and maintain an accessible transportation system that reliably connects people, places, and goods.

Increase Access to Travel Options

Improve Multi-Modal Travel Options

Enhance Travel Reliability

Leverage Emerging Transportation Innovation ("New Mobility")

ID	LEVY ID	METRIC	GOAL		STATUS
A-1	18 21	Percentage of Seattle households that have access to at least one very frequent (10-minute or better) transit route by 2025	72	percent	51 percent Below Target
A-2	21	Construct 20 transit spot improvements every year	20	locations	45 locations Achieved
B-2	+	Volume of pedestrians in Seattle at the locations we track, change since 2011	n/a	percent	41 percent Tracked
B-3	5 +	Volume of bicycle trips at Seattle bike counters, change since 2017	n/a	percent	-24 percent Tracked
C-1	4	Optimize traffic signal corridor timing on 5 corridors per year	5	corridors	5 corridors Achieved
D-1		Support and actively manage the bike share system to serve the entire city	n/a	trips	369,731 trips Tracked

Analysis of Outputs vs. Outcomes

We know a lot about the work we are doing and a fair amount about what the outcomes of our work are…. but do we know ***where*** the impacts are being experienced and by ***whom***?

		Reported/Analyzed Geospatially?	
		YES	NO
Measure Type	OUTCOME	3	143
	OUTPUT	8	202

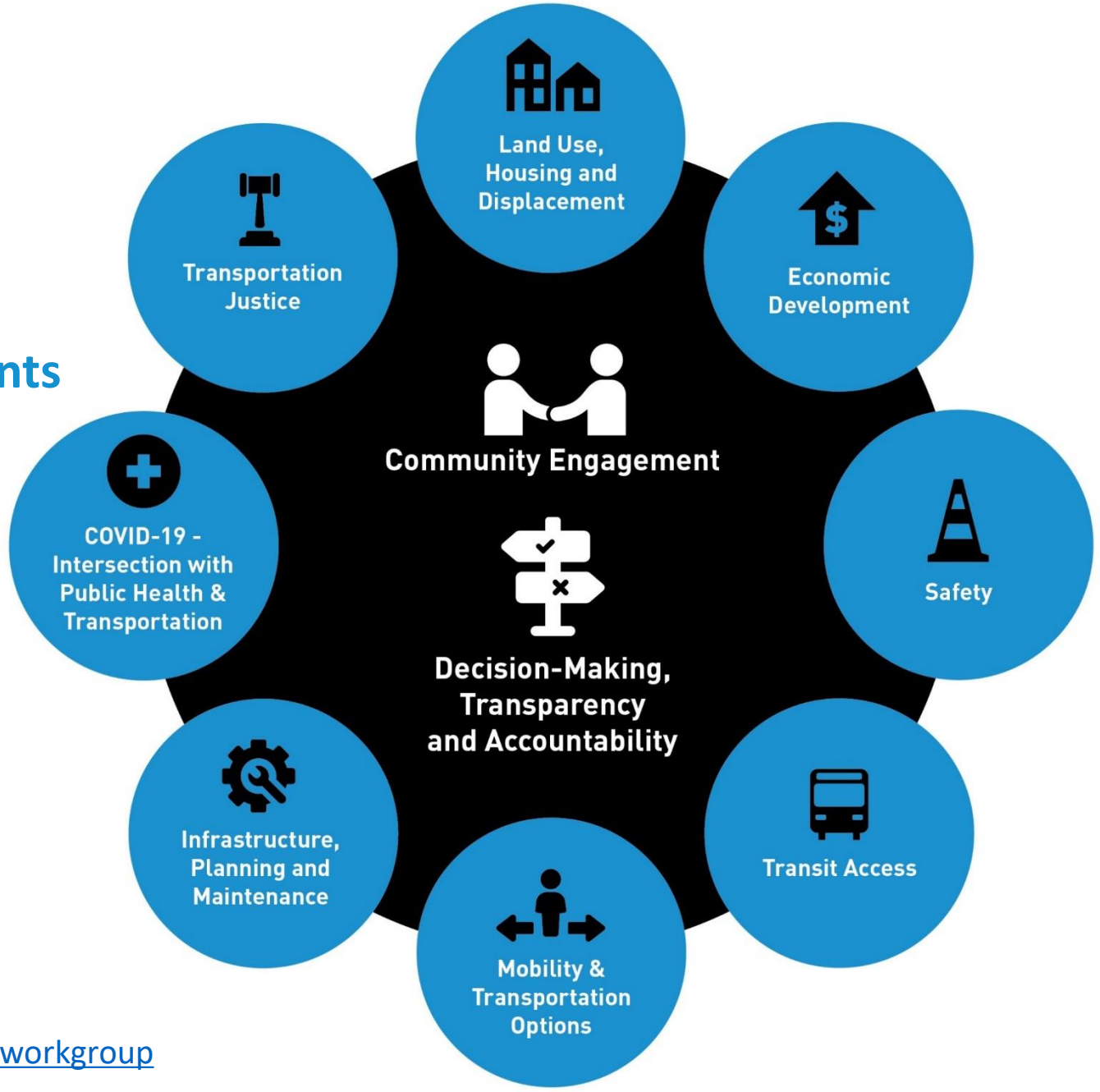
Impact Analysis Framework and Guiding Initiatives

Crosswalk, bike lane, and tactile curb improvements

Transportation Equity Framework (TEF)

- 2 Fundamental Equity Strategy Elements
- 8 Equity Strategy Drivers

"A roadmap for SDOT decision-makers, employees, stakeholders, partners, and the greater community to collaboratively create an equitable transportation system."



https://www.seattle.gov/transportation/projects-and-programs/programs/transportation-equity-program/equity-workgroup

Opportunity – Leverage the Composite Equity Index

The Racial and Social Equity Index is a tool developed by the Seattle Office of Planning & Community Development to aid in the prioritization of City of Seattle programs, projects, and investments.

Index factors:

- **Race, ELL, and Origins**

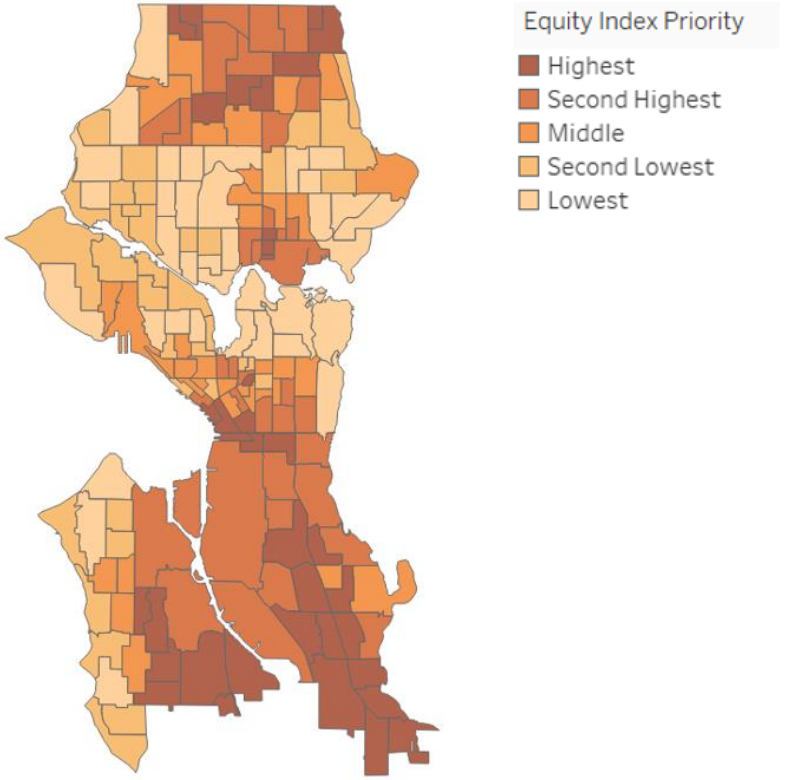
  Percent of population who are:
  - Persons of color
  - English language learners
  - Foreign born

- **Socioeconomic Disadvantage**

  Percent of population who have:
  - Income below 200 percent of poverty level
  - Educational attainment less than a bachelor's degree

- **Health Disadvantage**

  Percent of population with:
  - No leisure-time / physical activity
  - Diagnosed diabetes
  - Obesity
  - Poor mental health
  - Asthma
  - Low life expectancy at birth
  - Disability

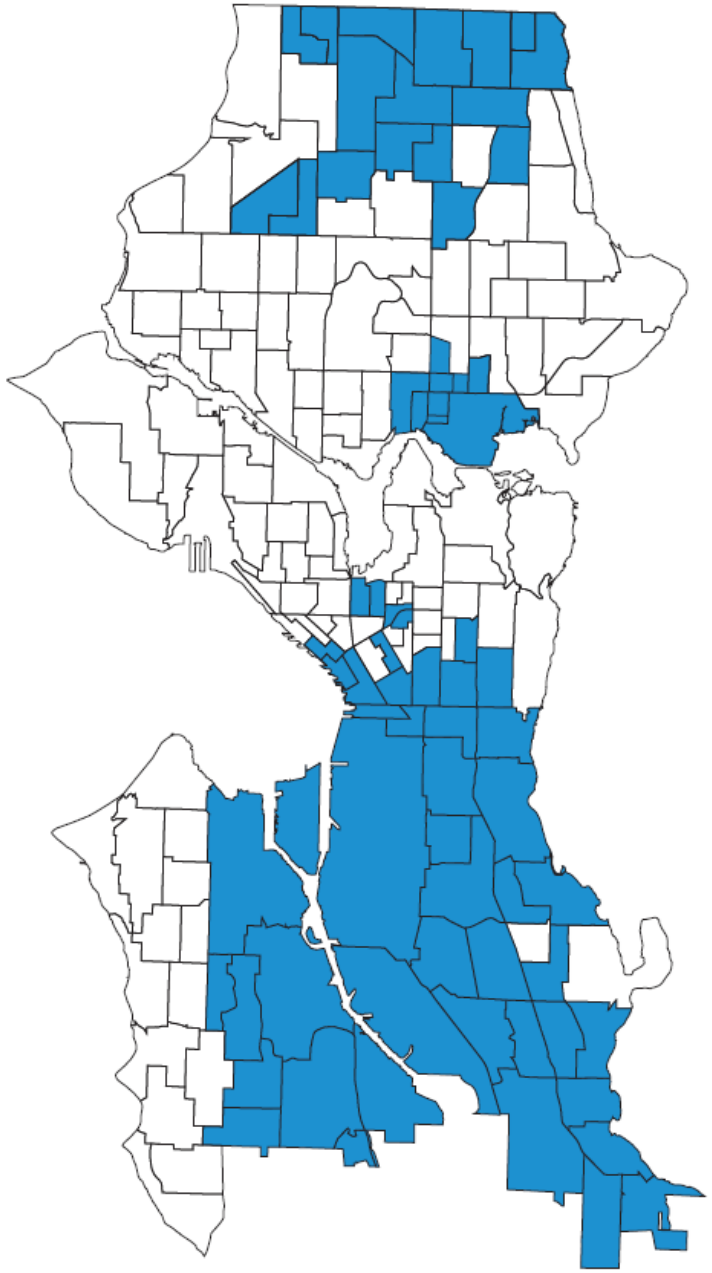


Applying the RSE Index

Departments often consider the **highest** and **second highest** equity priority quintiles to be their equity priority areas for investments.

While highest and second-highest equity priority areas (top two quintiles of the Racial and Social Equity Index) account for just 40% of Seattle's population, these same areas account for:

- **50%** of the citywide population of adults with one or more disability
- **55%** of the citywide population of people of color
- **58%** of the citywide total households under 200% of the Federal Poverty Level
- **62%** of the citywide foreign-born population
- **77%** of the citywide population of English language learners



Impact Analysis Framework (IAF)

What is it?

The Impact Analysis Framework (IAF) is an **equity-focused geospatial approach** to managing our data and aligning SDOT's work with desired system and community outcomes.

An SDOT crewmember striping a new crosswalk

Impact Analysis Framework (IAF)

Why is this better?

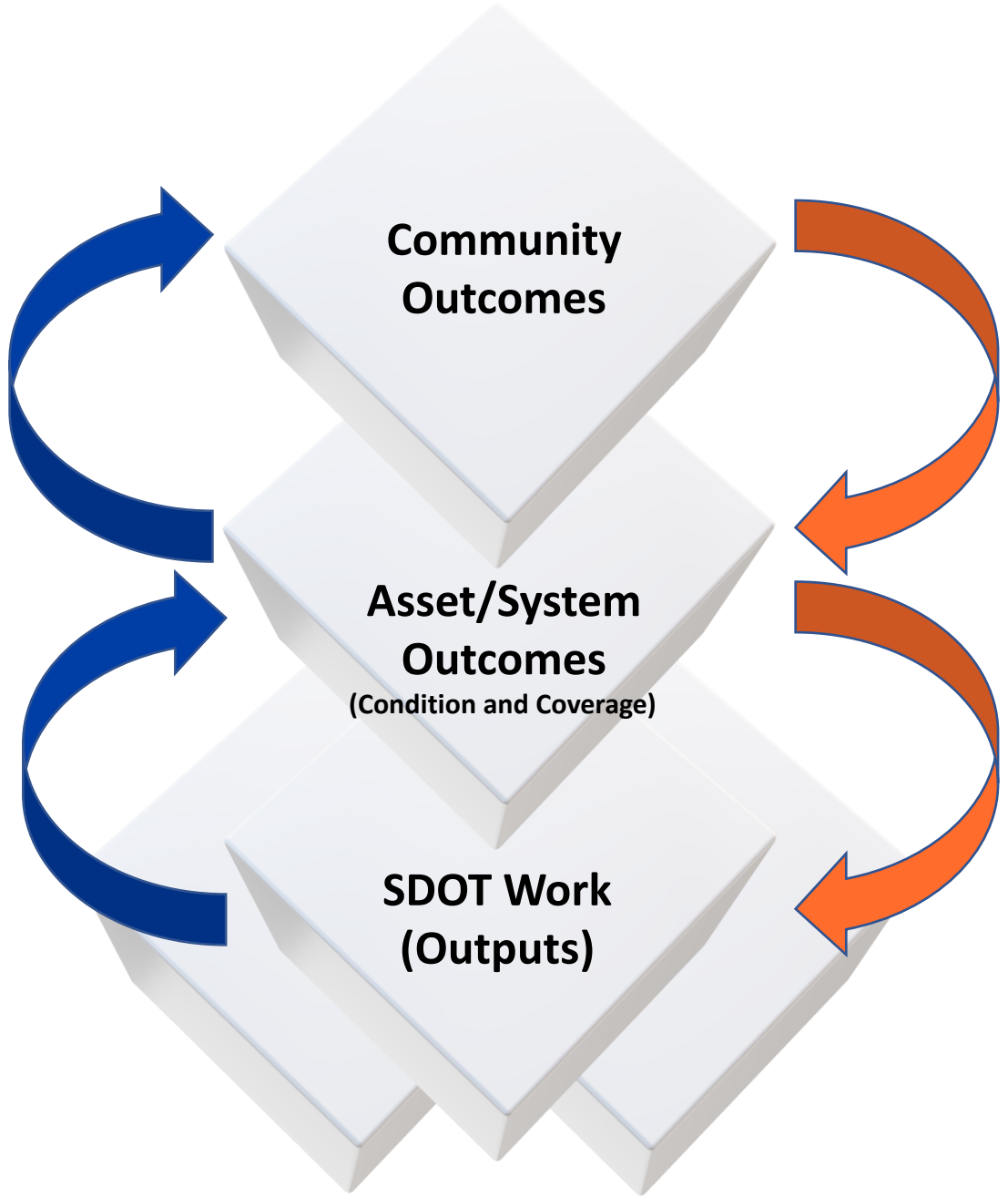
The IAF allows us to:

- **Set outcome-centric equity-focused goals**, both at citywide and census-tract levels
- **Identify trends in our impacts**
- **Adjust our outputs** (work) both in terms of volume and location to better achieve our outcome goals

Passengers boarding a King County Metro bus

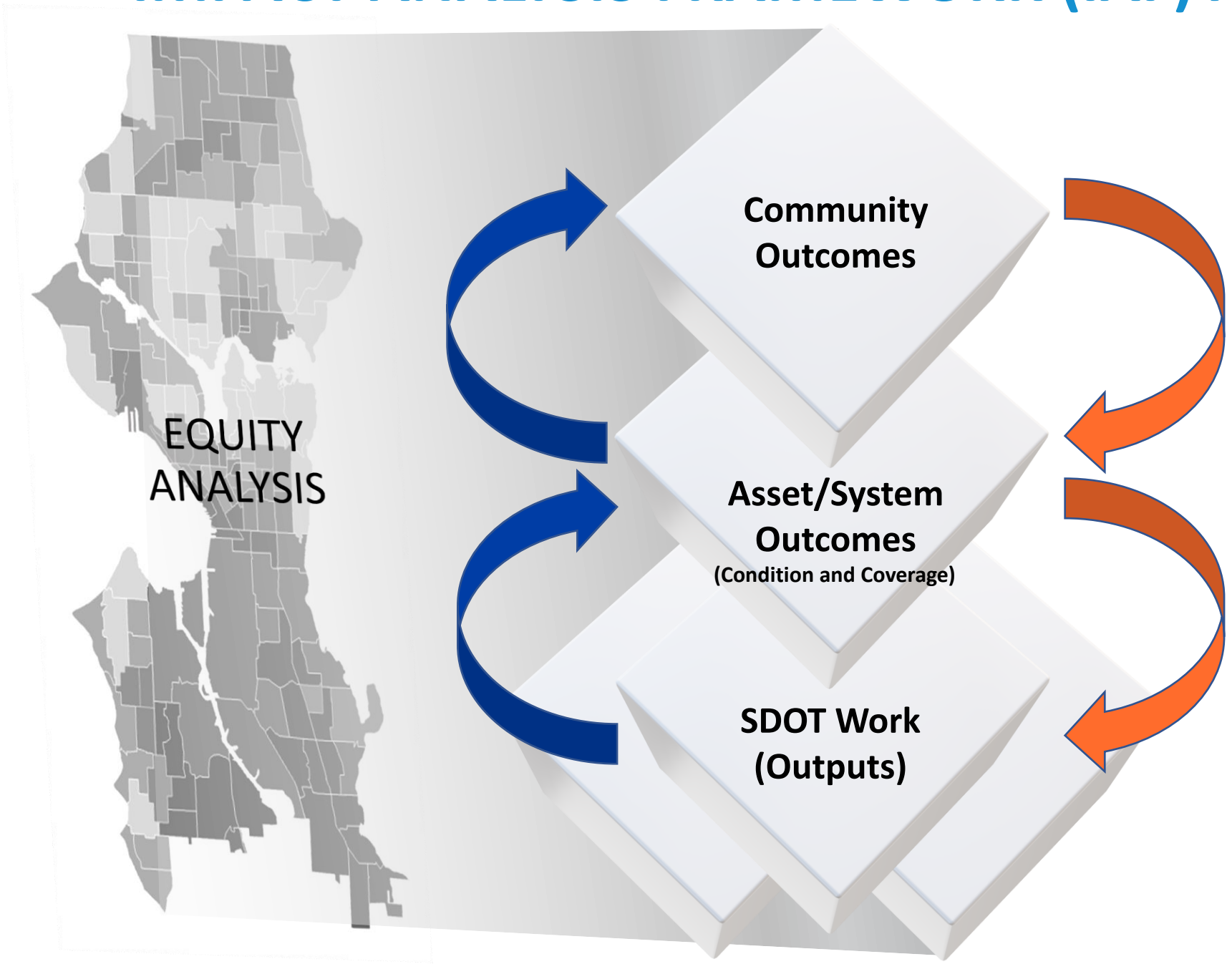
IMPACT ANALYSIS FRAMEWORK (IAF) APPROACH

OUTCOMES OF OUR WORK



GOAL SETTING

IMPACT ANALYSIS FRAMEWORK (IAF) APPROACH



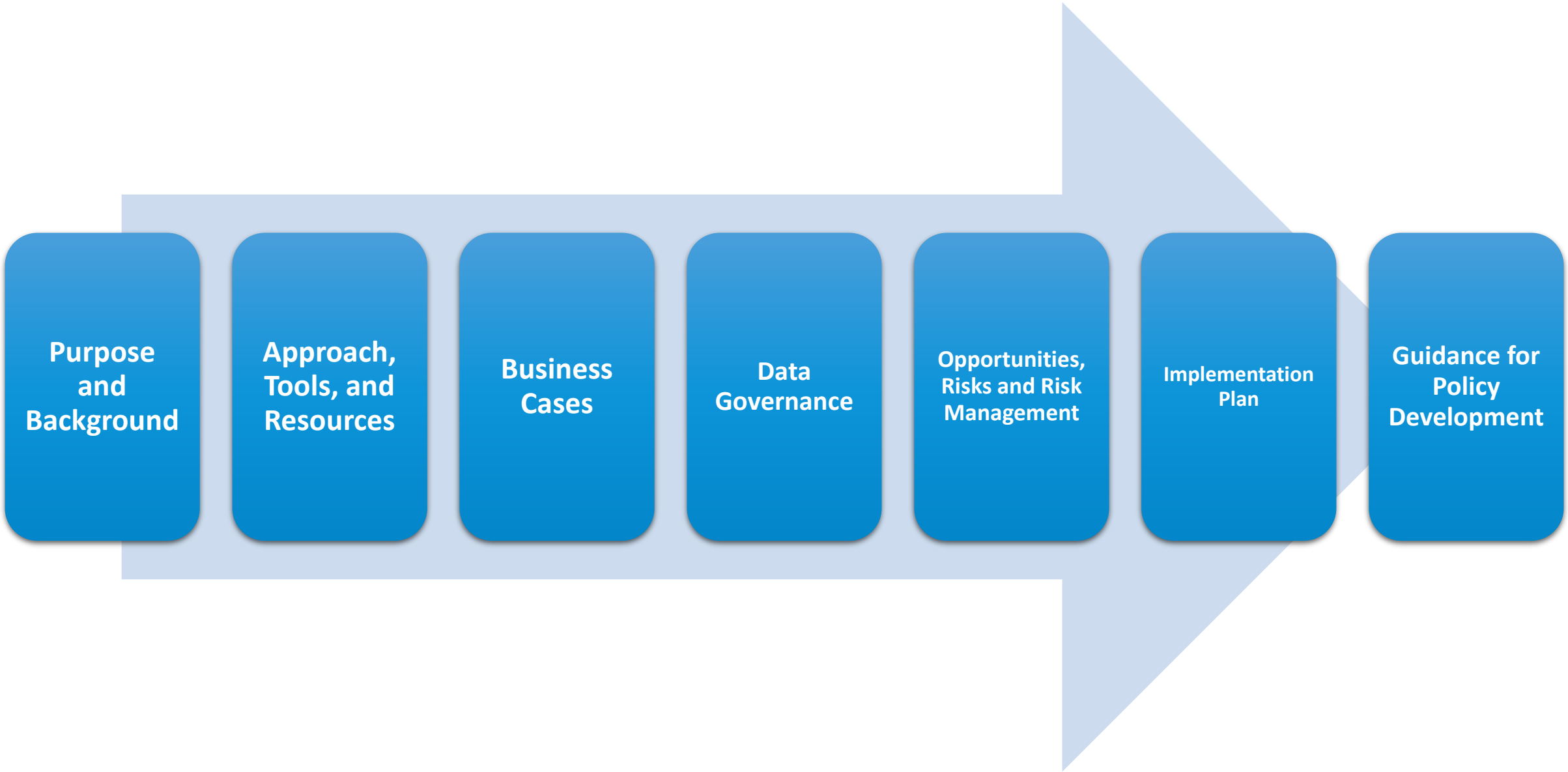
GOAL SETTING

IMPACT ANALYSIS TOOL – INITIAL LAYERS

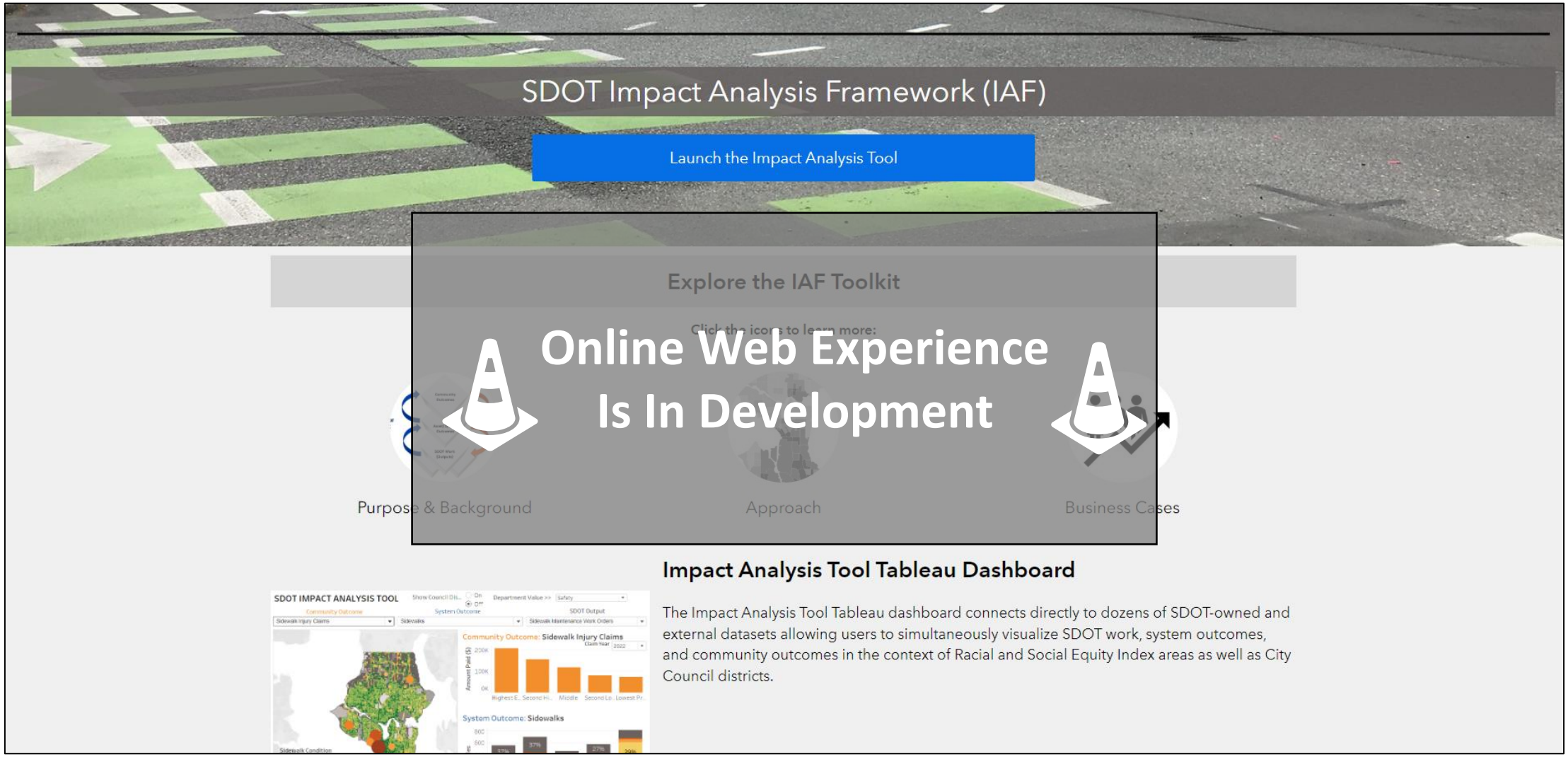
		Community Outcome	System Outcome	SDOT Work
EQUITY	Excellence	*Placeholder: Customer Satisfaction*	Non-Arterial Pavement	Potholes Repaired Within 72 Hours of Request
			Arterial Pavement	Potholes Repaired Within 72 Hours of Request
			Signal Condition	Signal Work Orders
	Livability	Transportation Cost Burden	Access to Frequent Transit	Transit Spot Improvements
		Placeholder: Housing Displacement		
	Mobility	Transit Commuting Rates	Access to Frequent Transit	Transit Spot Improvements
		Biking Commuting Rates	Bike Lane System Coverage	Planned Bike Lane Installation
	Safety	Collisions (incl. ped-involved)	Leading Pedestrian Interval Coverage	Planned Leading Pedestrian Intervals
		Sidewalk Injury Claims	Sidewalk Condition	Sidewalk Maintenance WOs
	Sustainability	Temperature Anomaly	Tree Canopy Coverage in the ROW	Tree Removal Permits (SU)
		Temperature Anomaly	Tree Canopy Coverage in the ROW	Tree Planting Permits (SU)
		Zero Emissions Commute Rate	Bike Lane System Coverage	Planned Bike Lane Installation
		-	Tree Inventory	-

- Initial list of outcomes selected based on readily available data and expressed interest from program owners
- Tool is meant to be flexible and expandable to bring in new data as work evolved and new goals are introduced

COMPONENTS OF THE IAF TOOLKIT



IMPACT ANALYSIS FRAMEWORK - RESOURCES

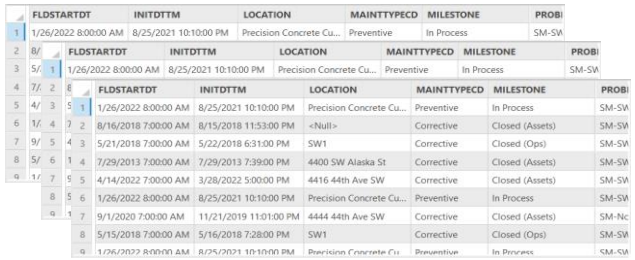


Automating Data Management and Enabling Data Exploration

Seattle's Ballard Bridge – a key north-south crossing

Automated Data Management and Impact Analysis Tool

SOURCE DATA



	FLDSTARTDT	INITDTTM	LOCATION	MAINTTYPECD	MILESTONE	PROBI
1	1/26/2022 8:00:00 AM	8/25/2021 10:10:00 PM	Precision Concrete Cu...	Preventive	In Process	SM-SW
2	8/					
3	5/	1	1/26/2022 8:00:00 AM	8/25/2021 10:10:00 PM	Precision Concrete Cu...	Preventive	In Process	SM-SW
4	7/	2						
5	4/	3	5	1/26/2022 8:00:00 AM	8/25/2021 10:10:00 PM	Precision Concrete Cu...	Preventive	In Process	SM-SW
6	1/	4	7	2	8/16/2018 7:00:00 AM	8/15/2018 11:53:00 PM	<Null>	Corrective	Closed (Assets)	SM-SW
7	9/	5	4	3	5/21/2018 7:00:00 AM	5/22/2018 6:31:00 PM	SW1	Corrective	Closed (Ops)	SM-SW
8	5/	6	1	4	7/29/2013 7:00:00 AM	7/29/2013 7:39:00 PM	4400 SW Alaska St	Corrective	Closed (Assets)	SM-SW
9	1/	7	9	5	4/14/2022 7:00:00 AM	3/28/2022 5:00:00 PM	4416 44th Ave SW	Corrective	Closed (Assets)	SM-SW
		8	5	6	1/26/2022 8:00:00 AM	8/25/2021 10:10:00 PM	Precision Concrete Cu...	Preventive	In Process	SM-SW
		9	1	7	9/1/2020 7:00:00 AM	11/21/2019 11:01:00 PM	4444 44th Ave SW	Corrective	Closed (Assets)	SM-Nc
				8	5/15/2018 7:00:00 AM	5/16/2018 7:28:00 PM	SW1	Corrective	Closed (Ops)	SM-SW
				9	1/26/2022 8:00:00 AM	8/25/2021 10:10:00 PM	Precision Concrete Cu	Preventive	In Process	SM-SW

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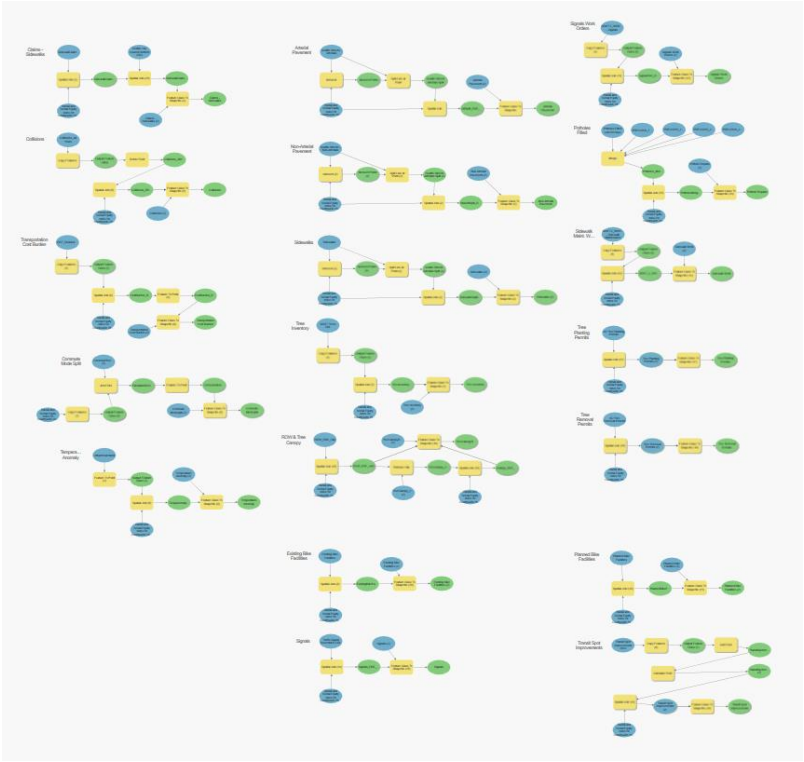
AUTOMATED DATA PROCESSING



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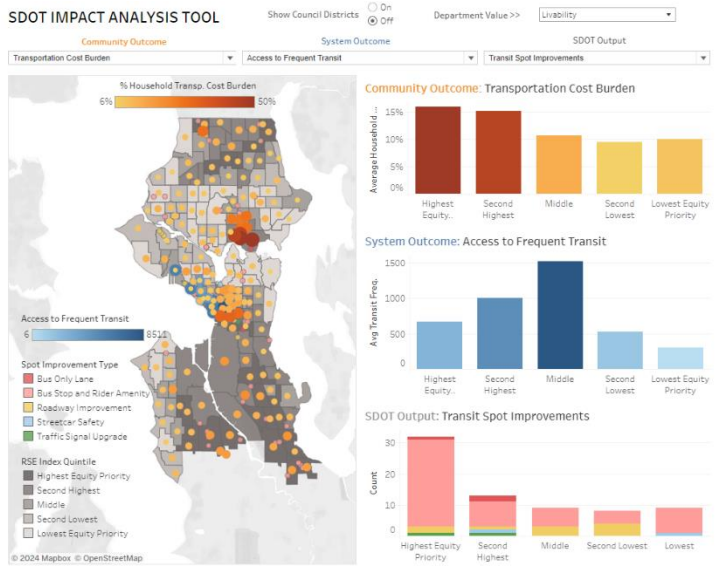
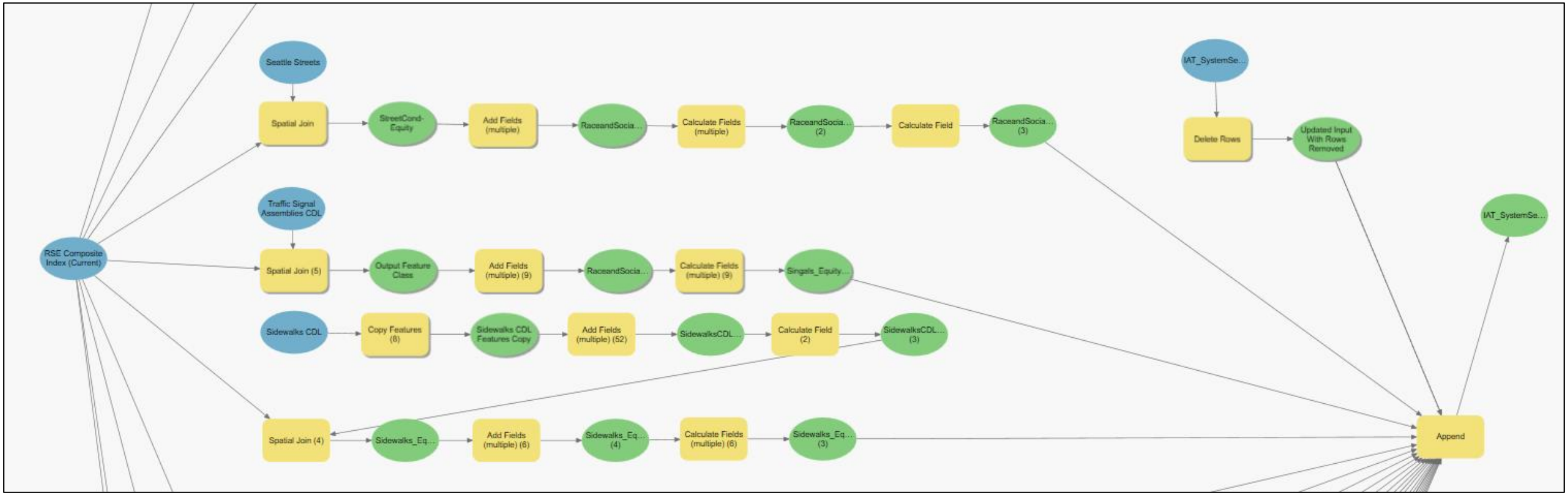
DATA EXPLORATION AND STORYTELLING

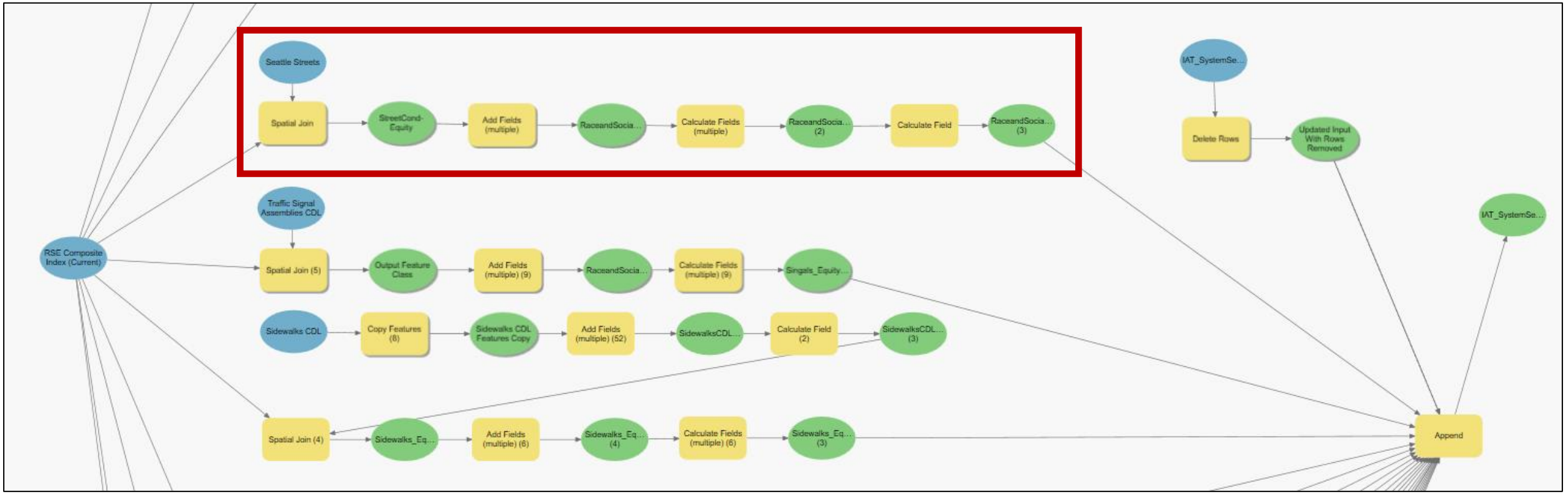


Automated Data Management and Impact Analysis Tool



ESRI ArcGIS Pro Model Builder

Automated Data Management and Impact Analysis Tool



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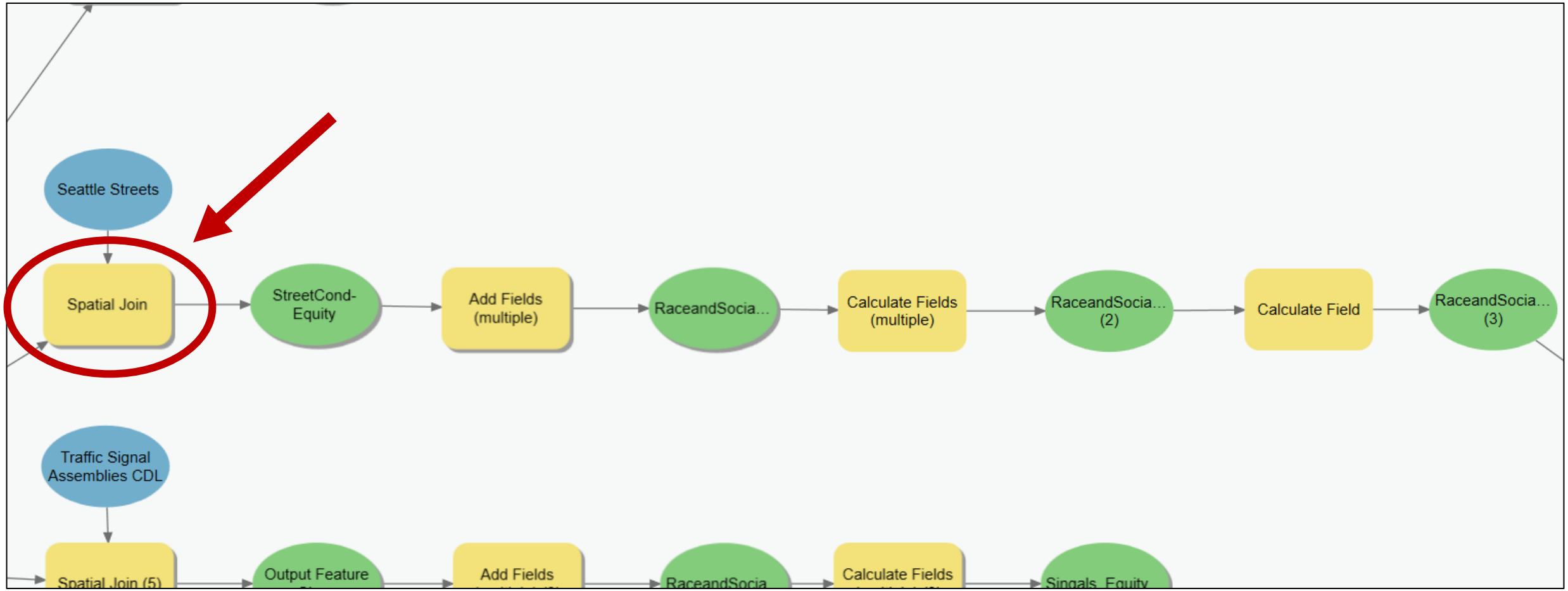
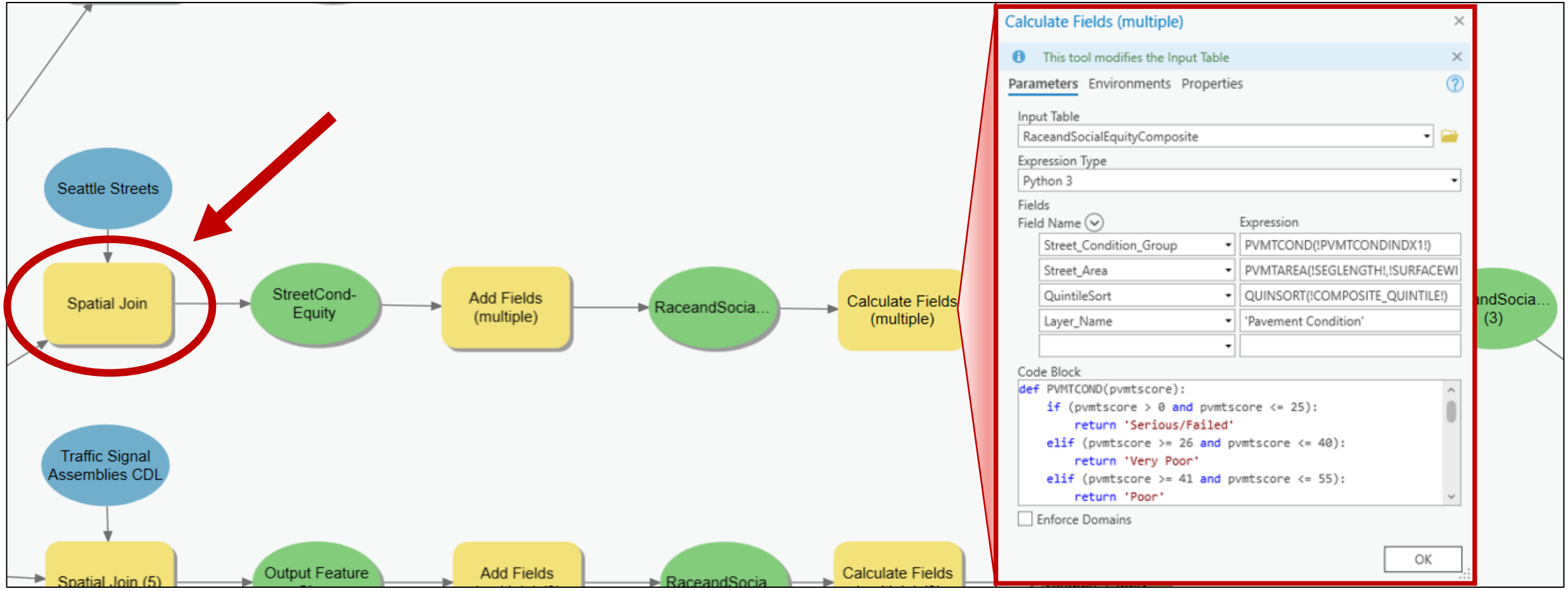
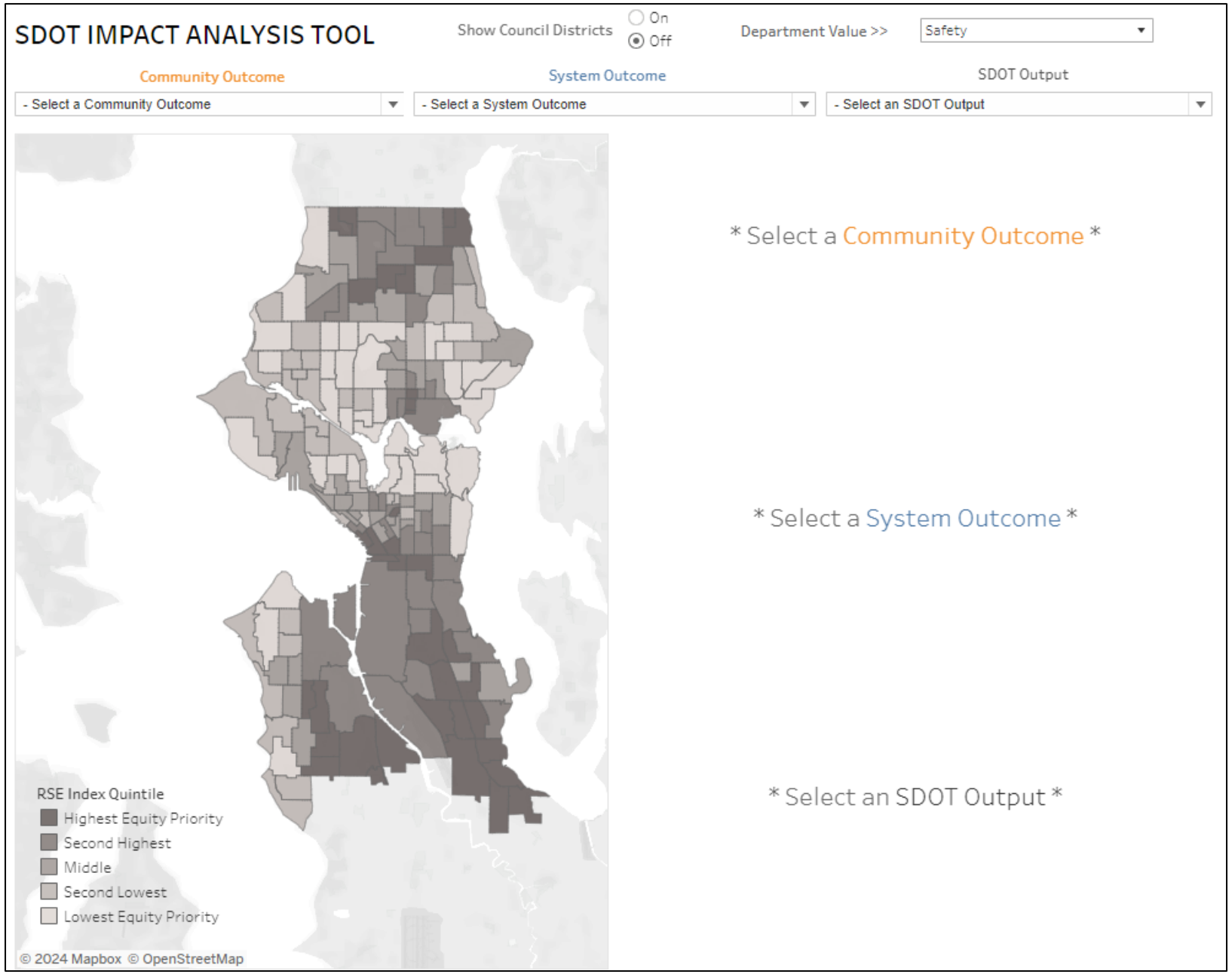


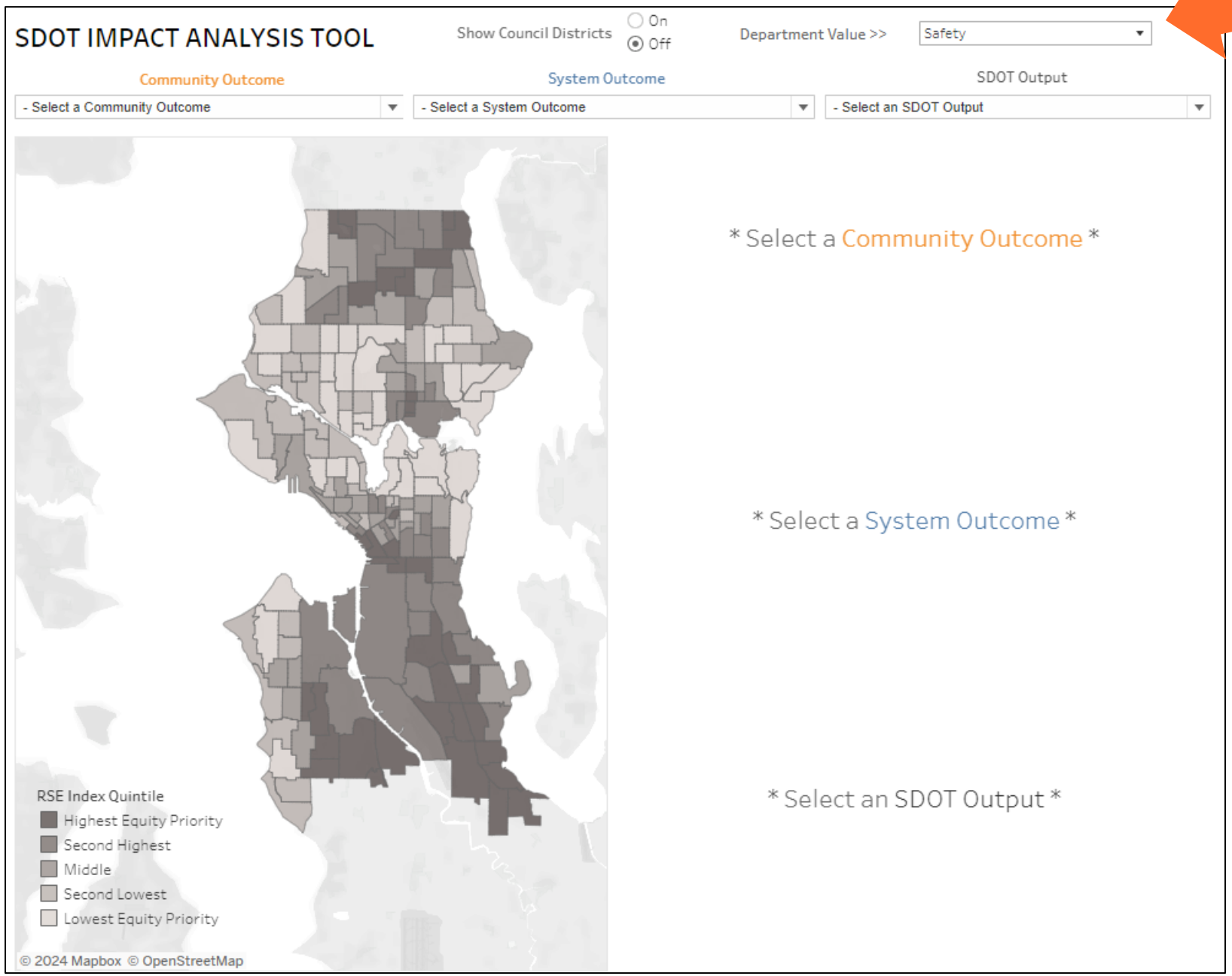
Automated Data Management and Impact Analysis Tool



IMPACT ANALYSIS TOOL



IMPACT ANALYSIS TOOL



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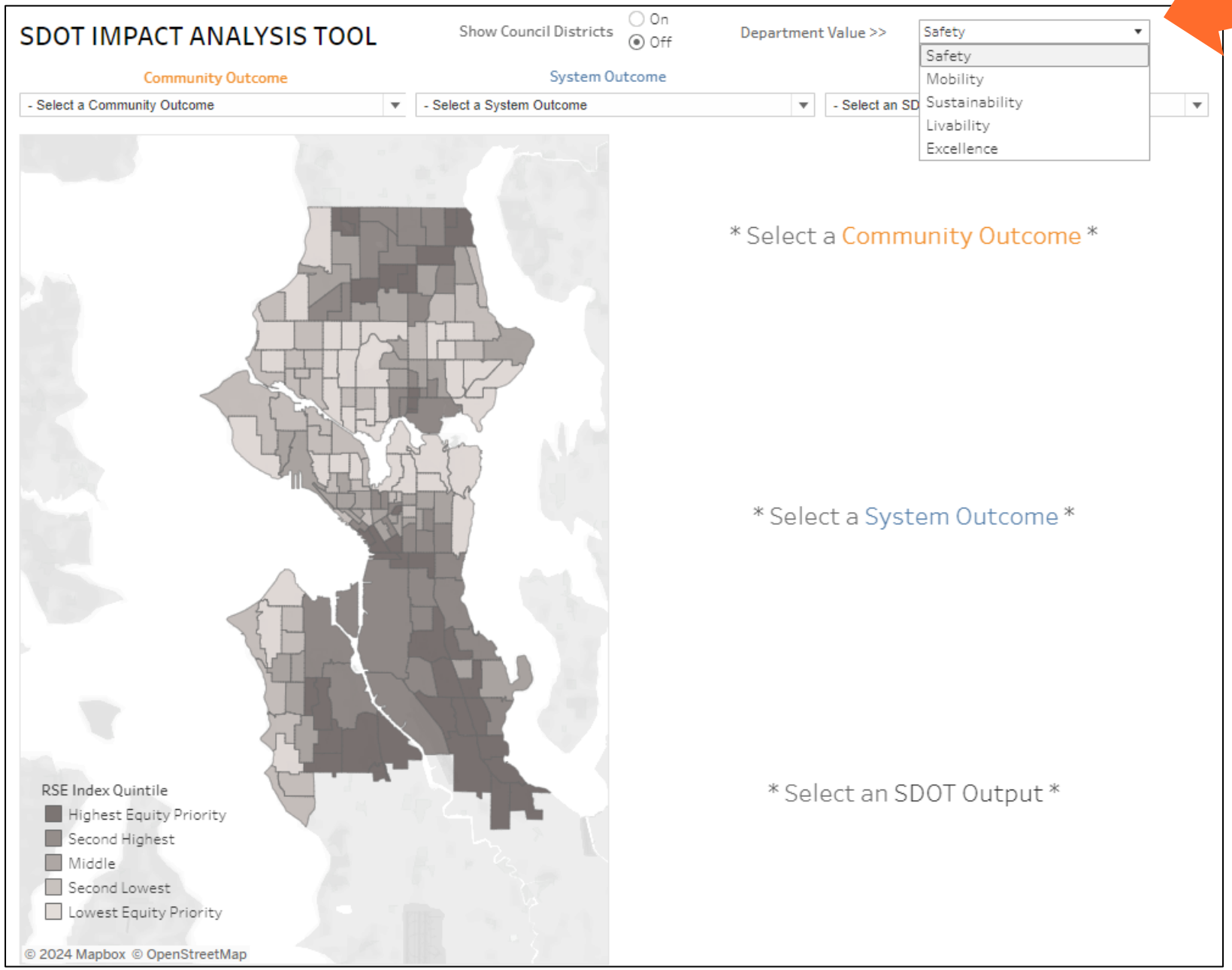

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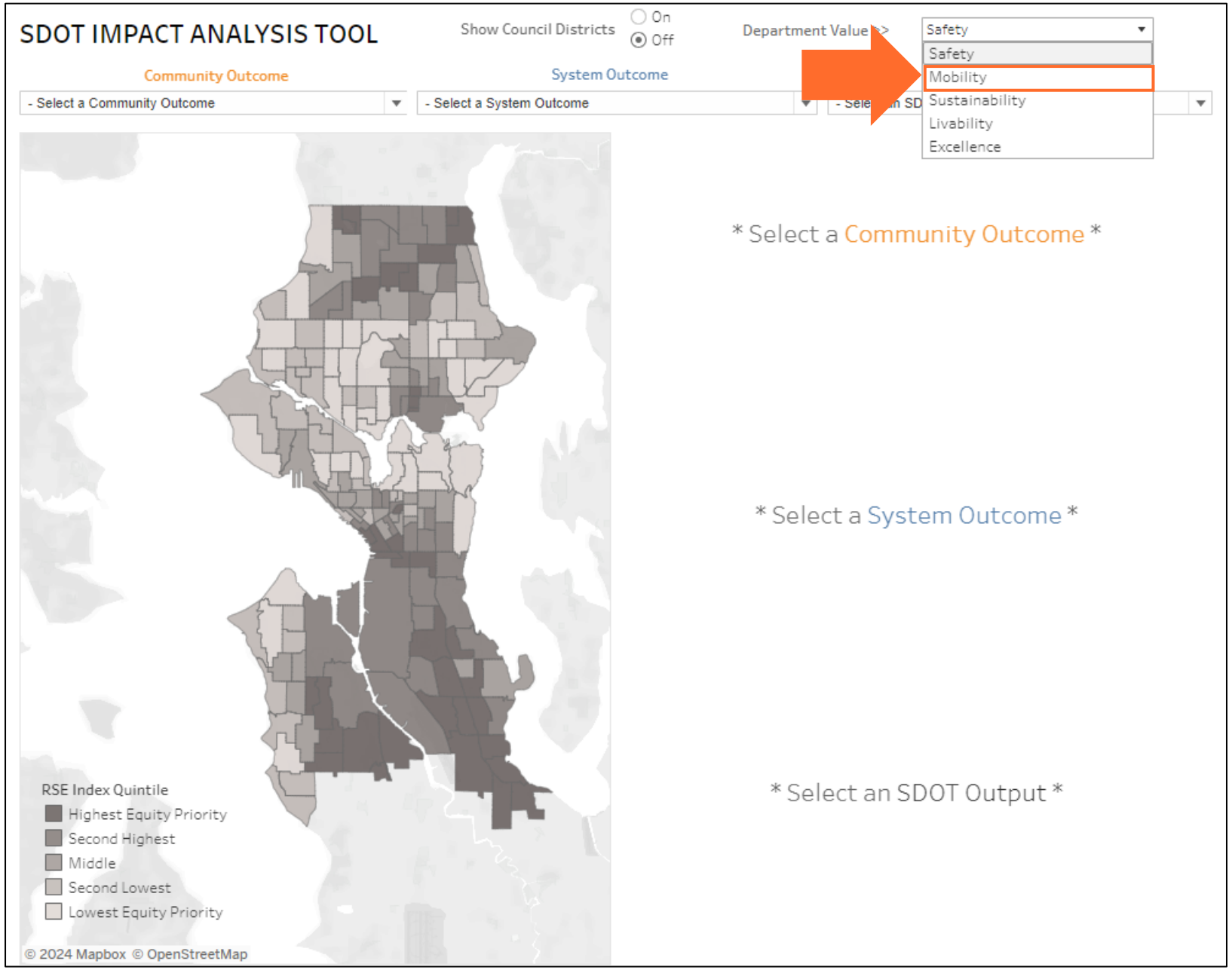
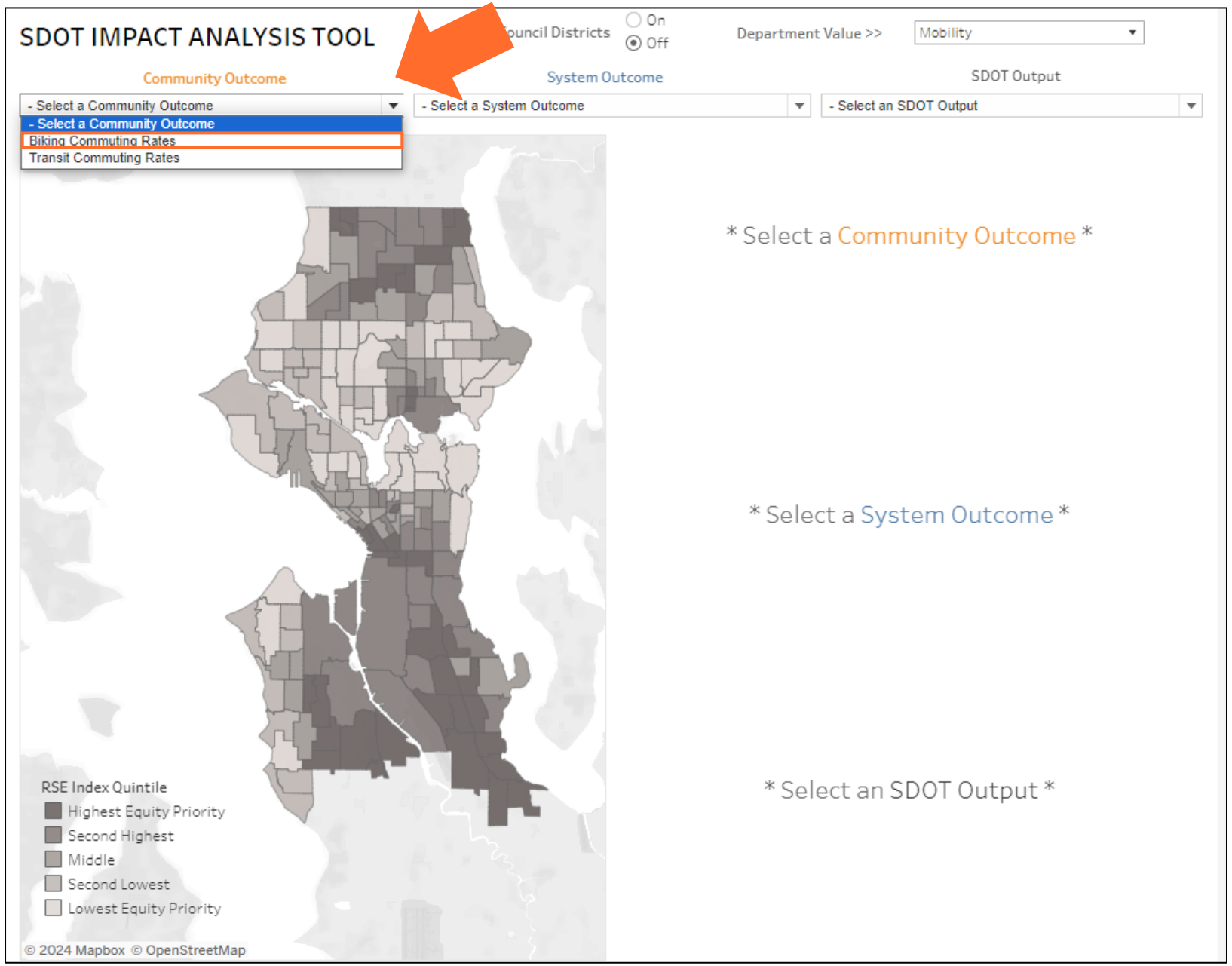


IMPACT ANALYSIS TOOL

Community Outcome: Biking Commuting Rates



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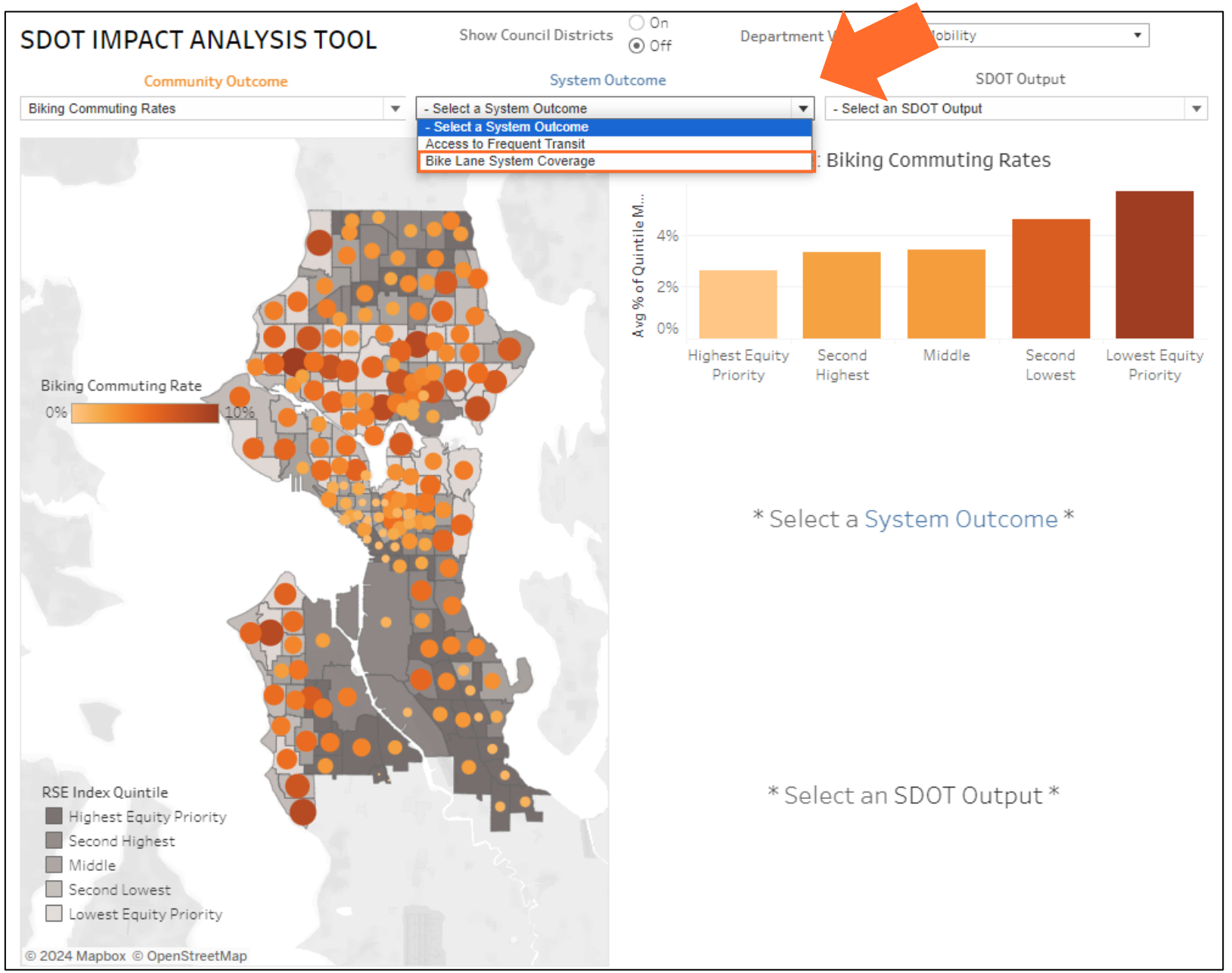
Community Outcome: Biking Commuting Rates



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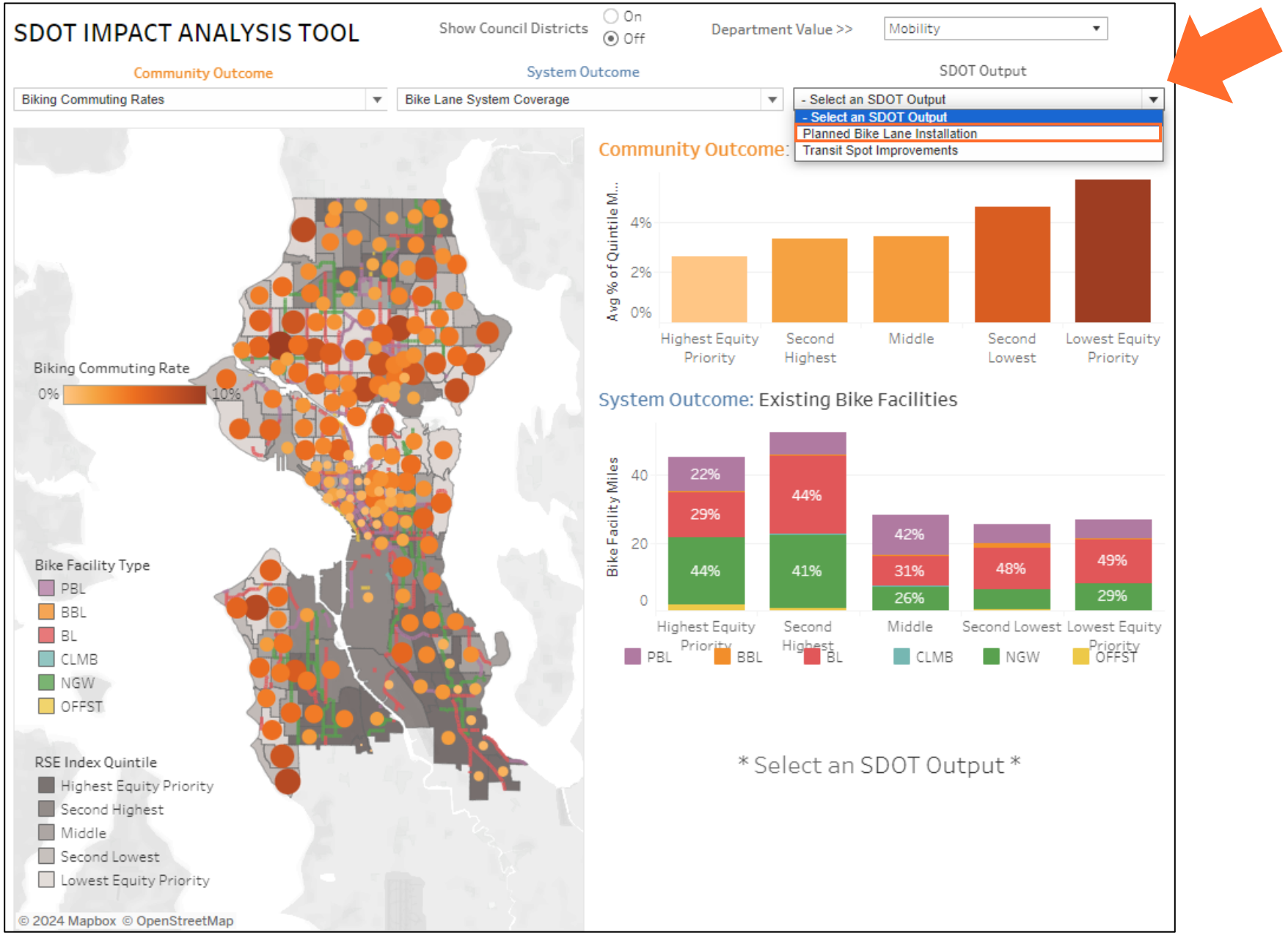
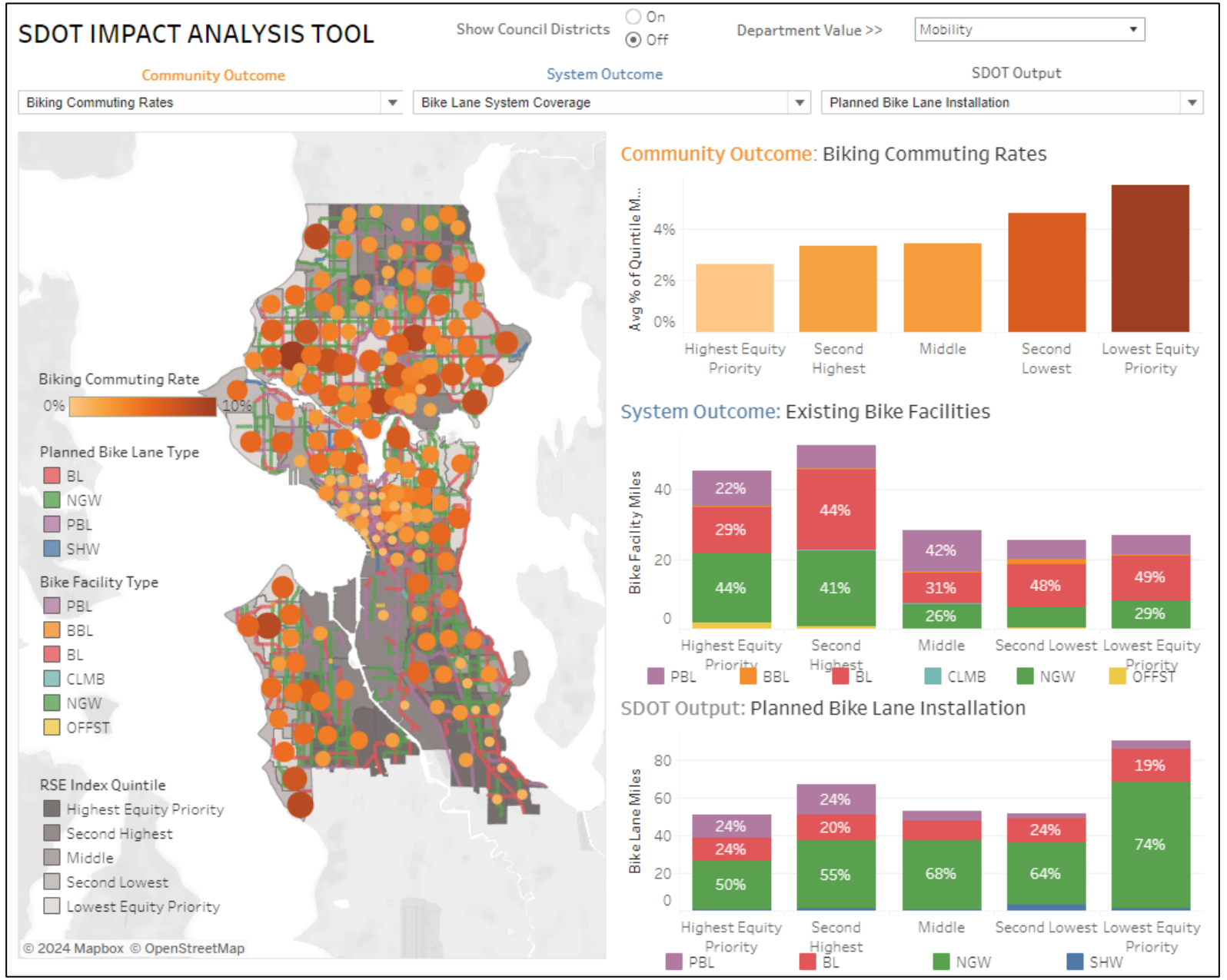
Community Outcome: Biking Commuting Rates



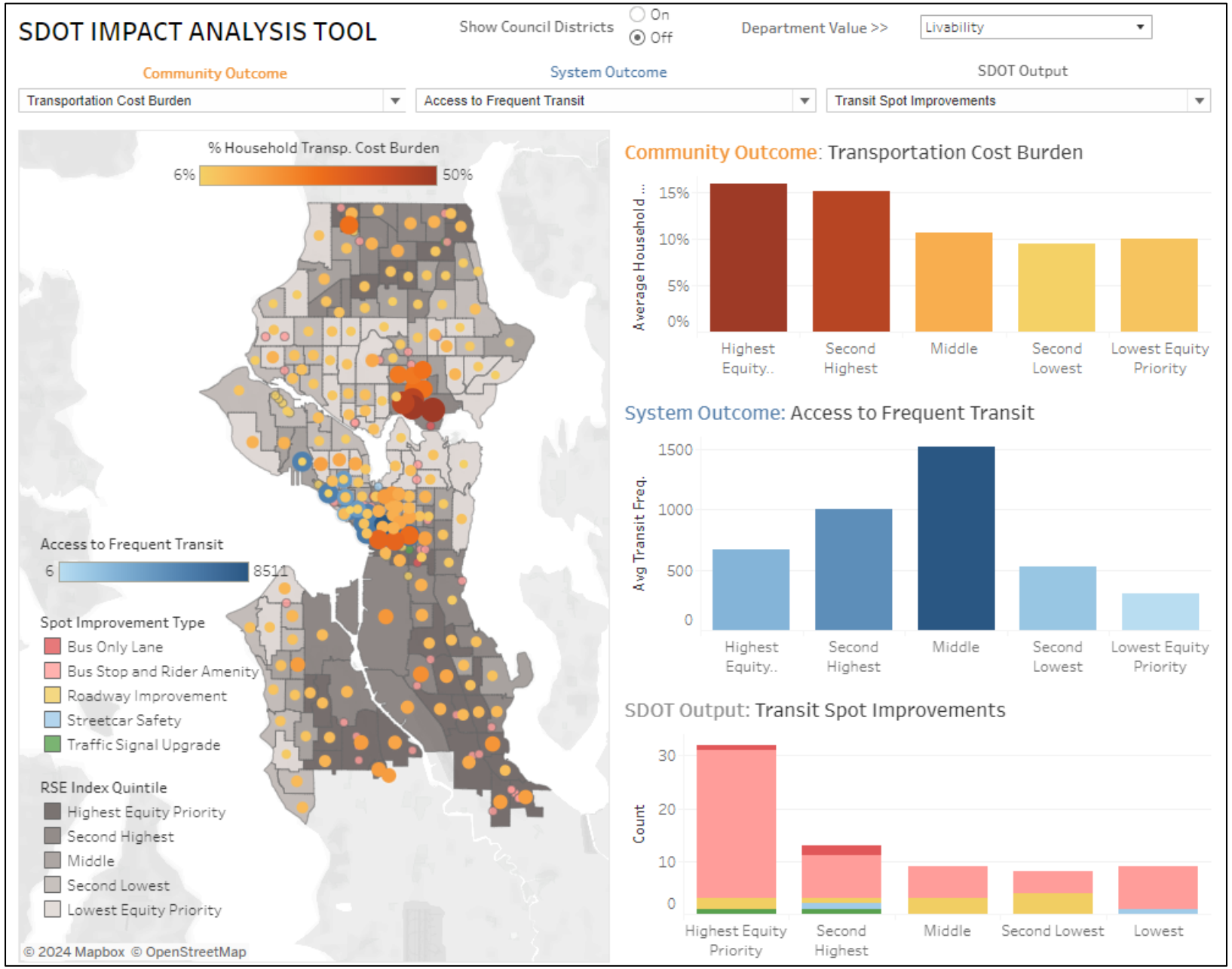
IMPACT ANALYSIS TOOL

Community Outcome: Biking Commuting Rates



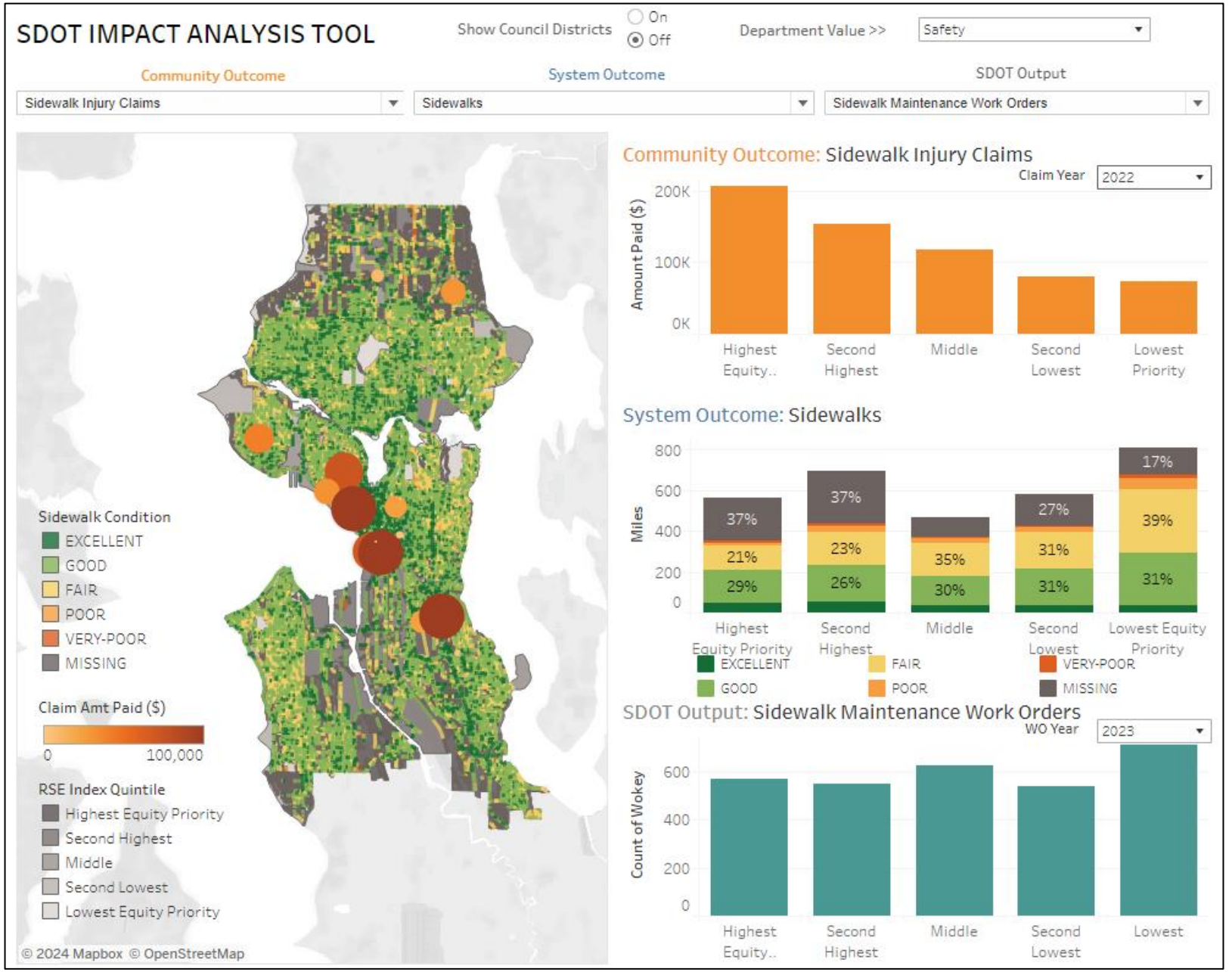
IMPACT ANALYSIS TOOL

Community Outcome: Transportation Cost Burden



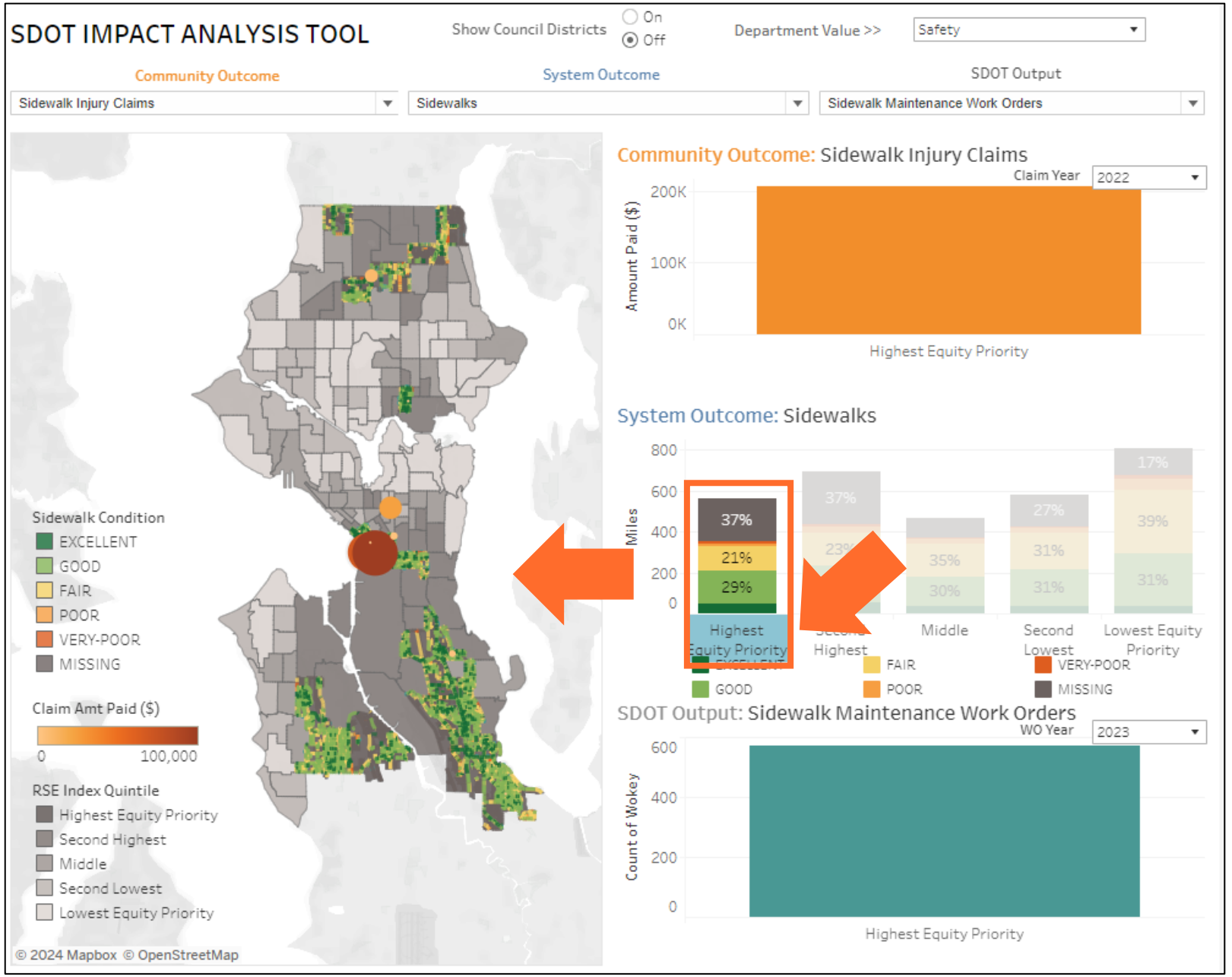
IMPACT ANALYSIS TOOL

Community Outcome: Sidewalk Injury Claims



IMPACT ANALYSIS TOOL

Asset Management



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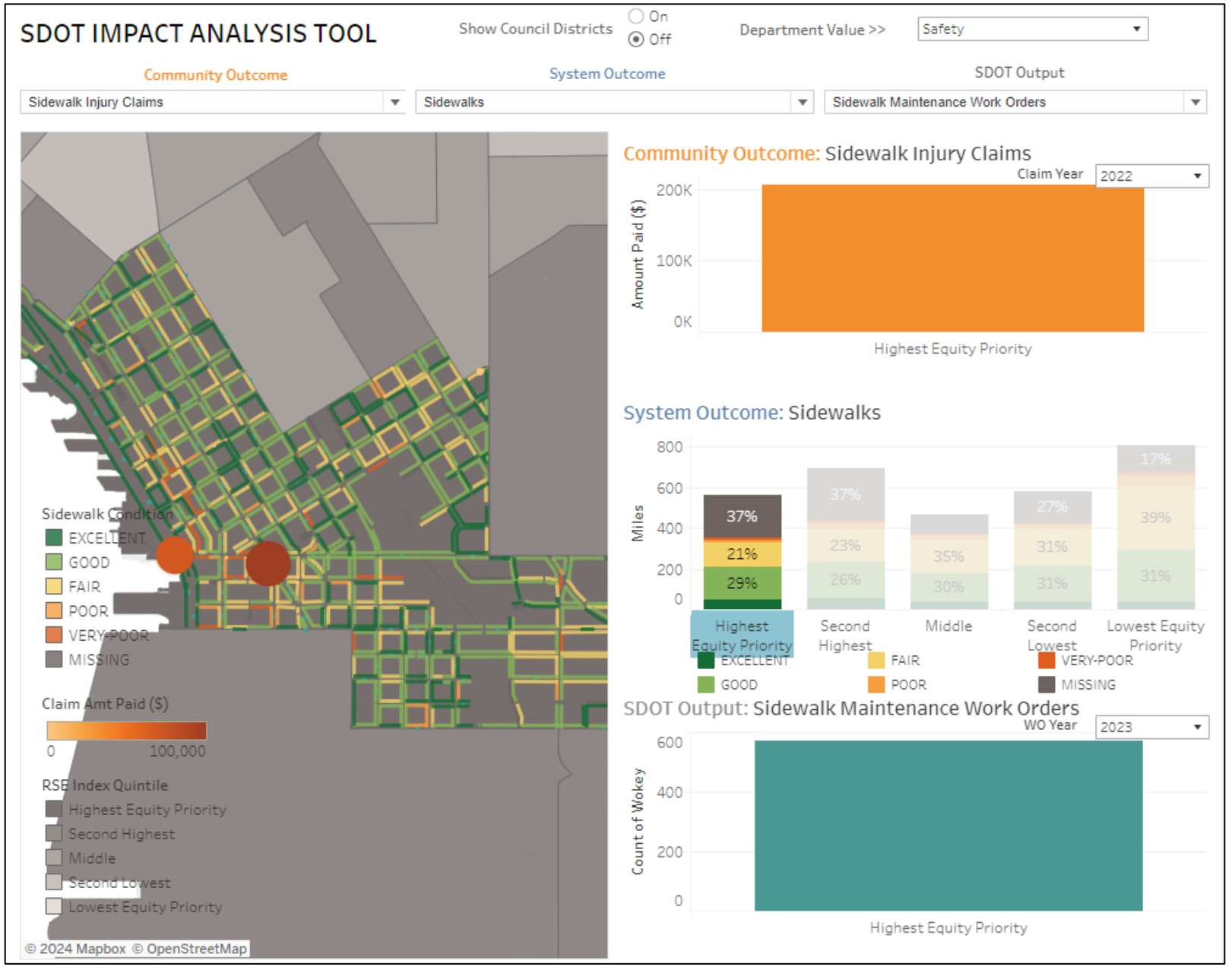
Asset Management



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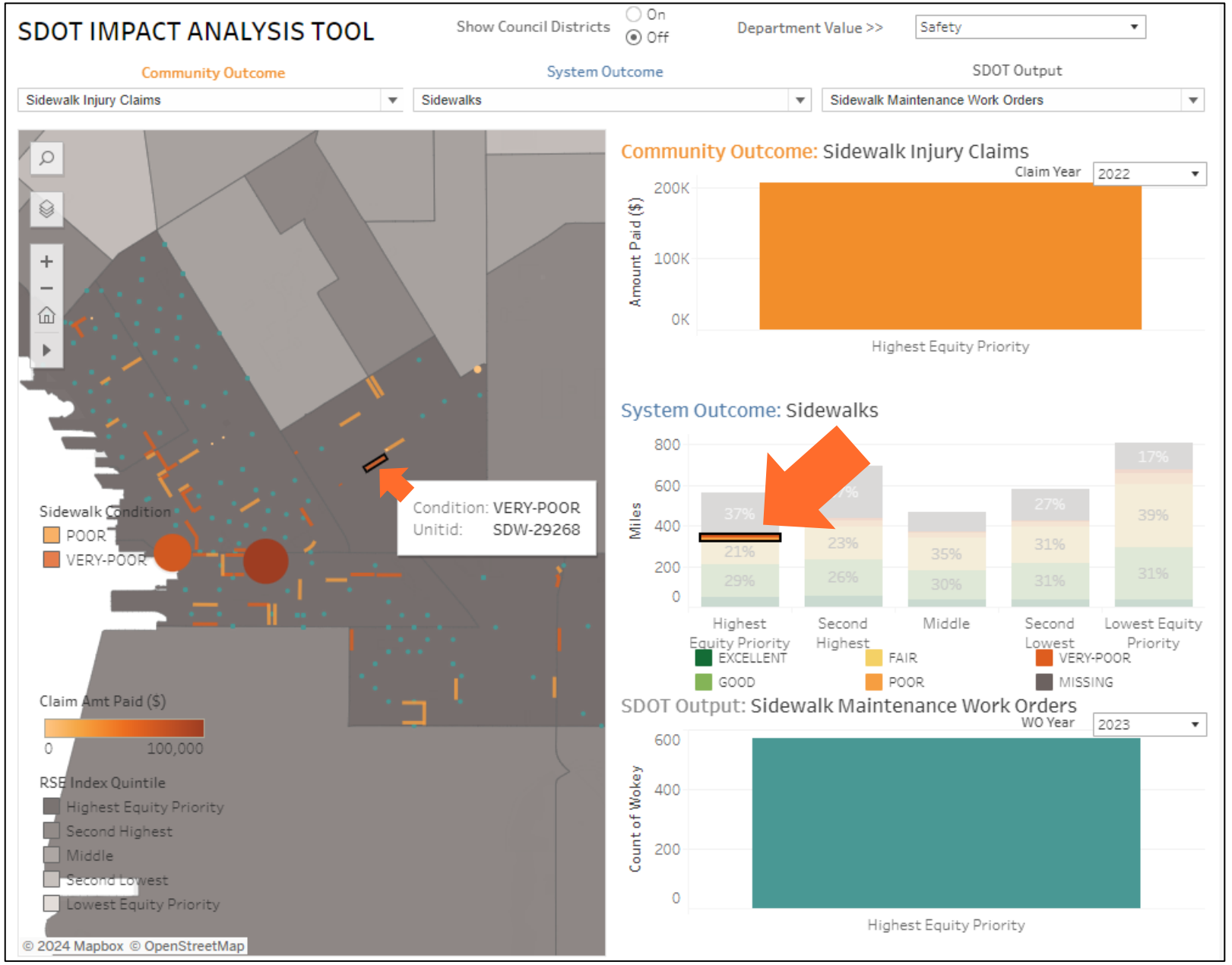
Asset Management



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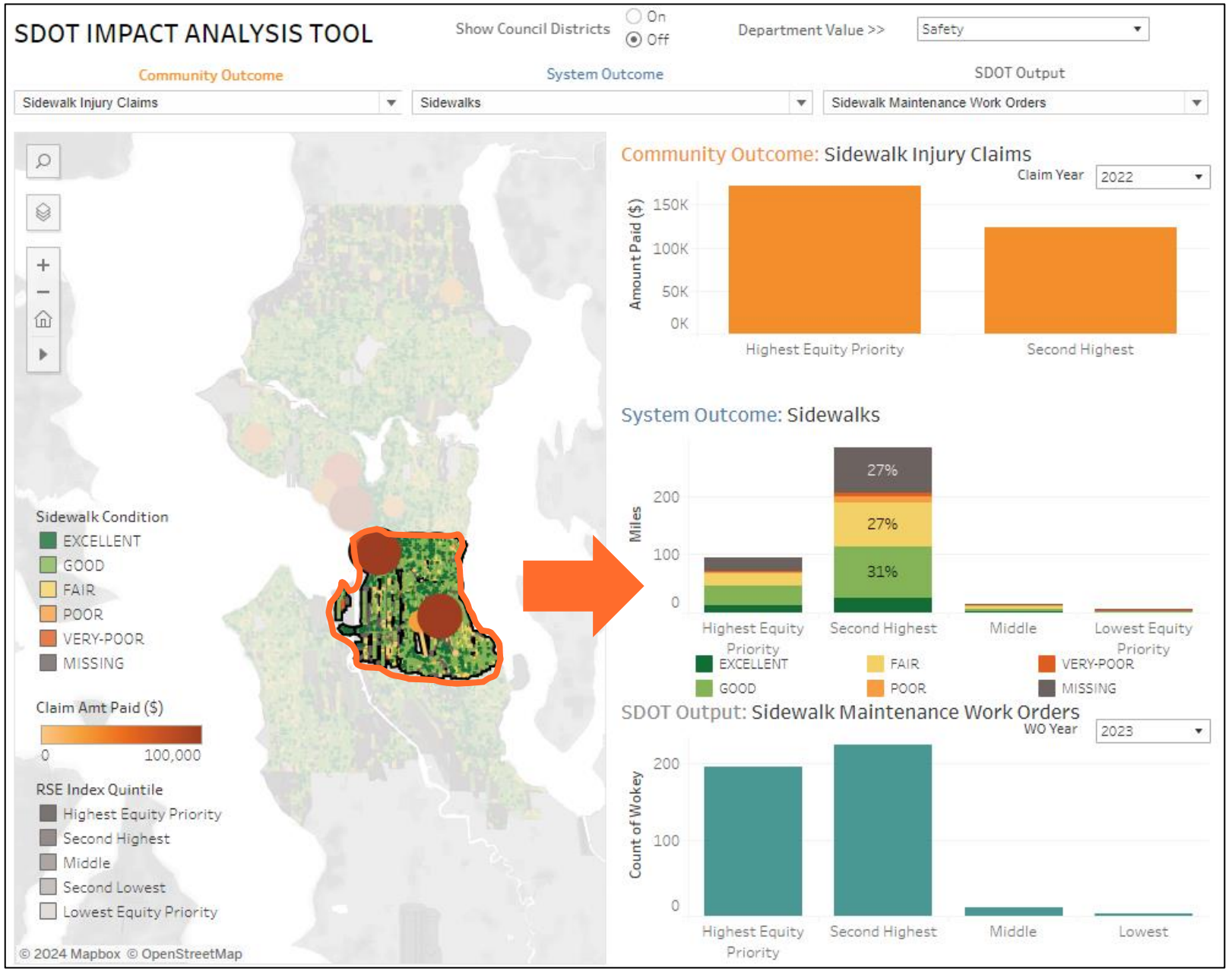
Asset Management



Where are we headed?

- Incorporation of existing performance measures, including those in our new Seattle Transportation Plan, to allow for ongoing geospatial analysis
- Development of new goals based on observed citywide and localized trends
- In addition to equity geographies, allow for analysis by City Council district
- Integration of displacement risk data to inform development of policy in response to potential displacement

Questions?

Stay in touch: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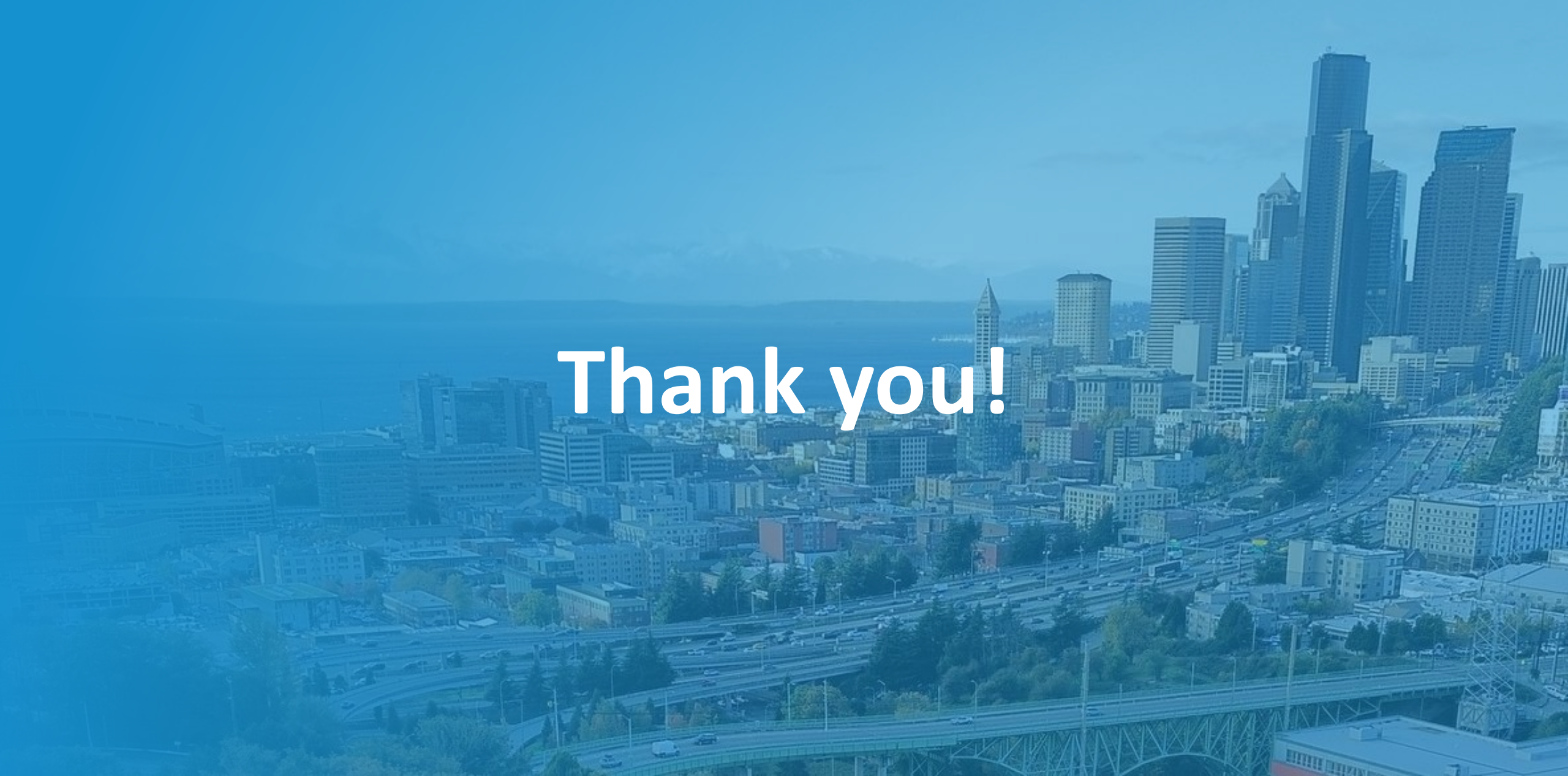
206.684.8009


https://www.seattle.gov/transportation/about-us/asset-and-performance-management



Seattle Department of Transportation

Appendix

Supplemental Materials:

SDOT Moving the Needle Report

Levy to Move Seattle Performance Dashboard

Seattle Transportation Plan (Includes performance measures)

Seattle Racial and Social Equity Index

Seattle Displacement Risk Index

Today's presenters

Peter Rafferty
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CAMBRIDGE SYSTEMATICS
Think Forward

Justin John
Justin.john@dot.gov

U.S. Department of Transportation
Federal Transit Administration

Margit Ray
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Office of INTERMODAL Planning and Investment

Samuel Marshall
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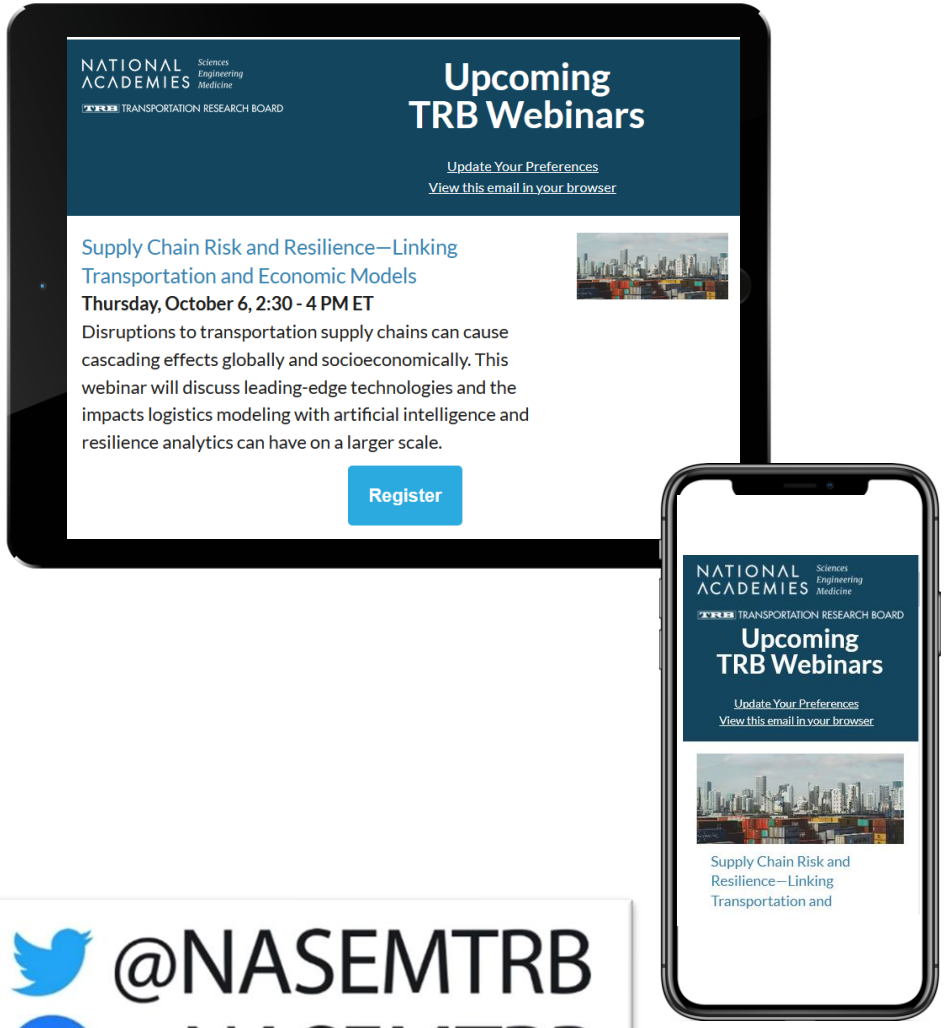

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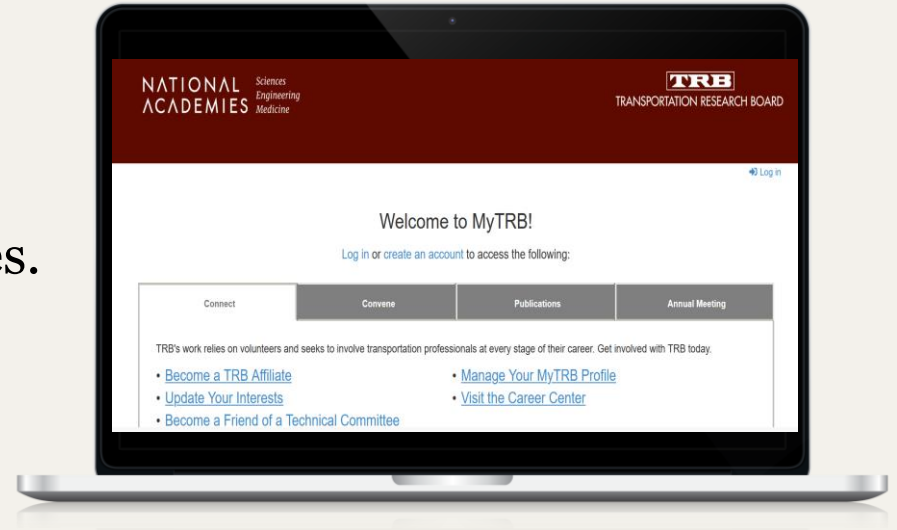

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