


Value Impact Analysis Grant

Transportation Research Board

January 13, 2020

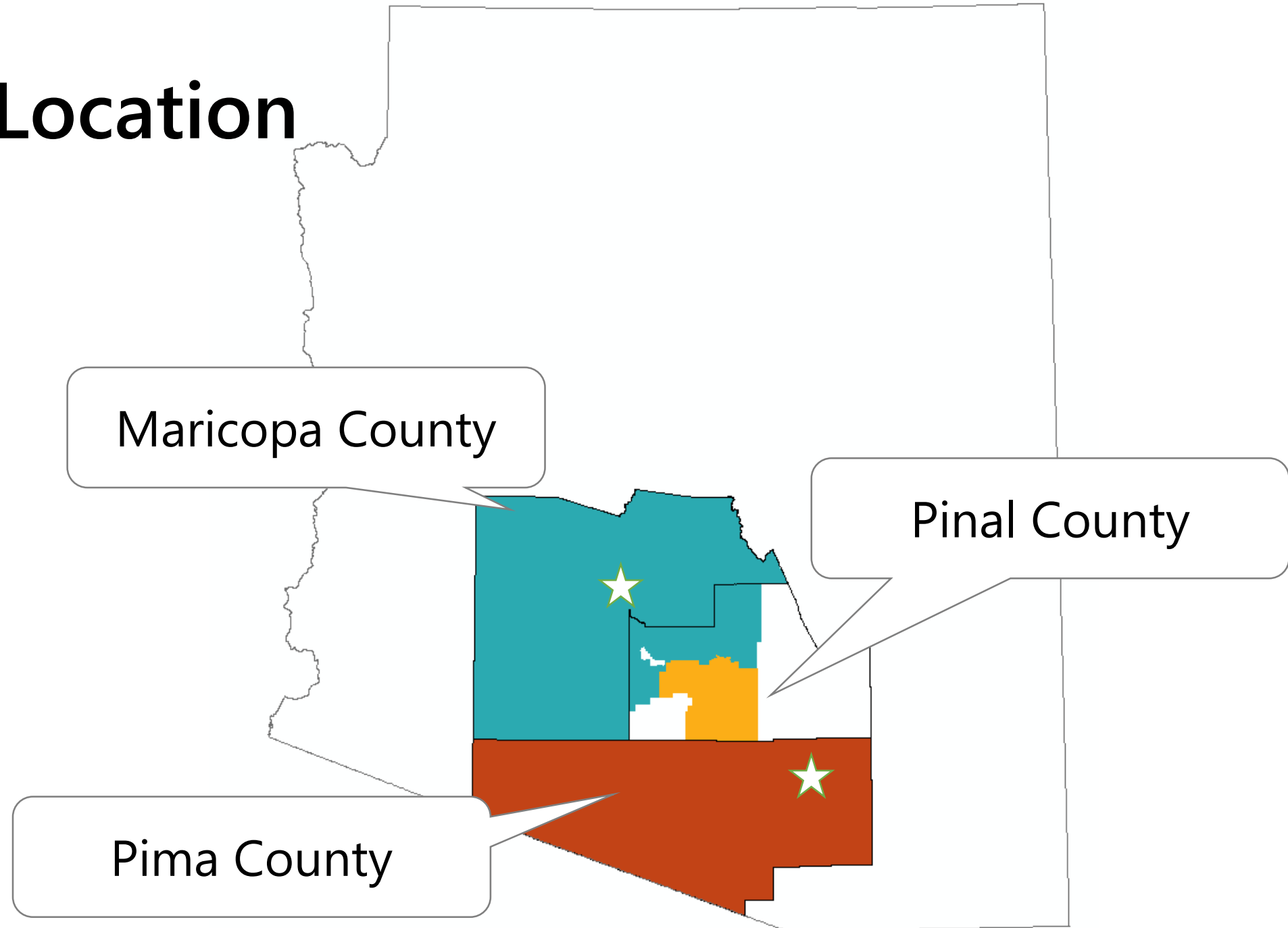




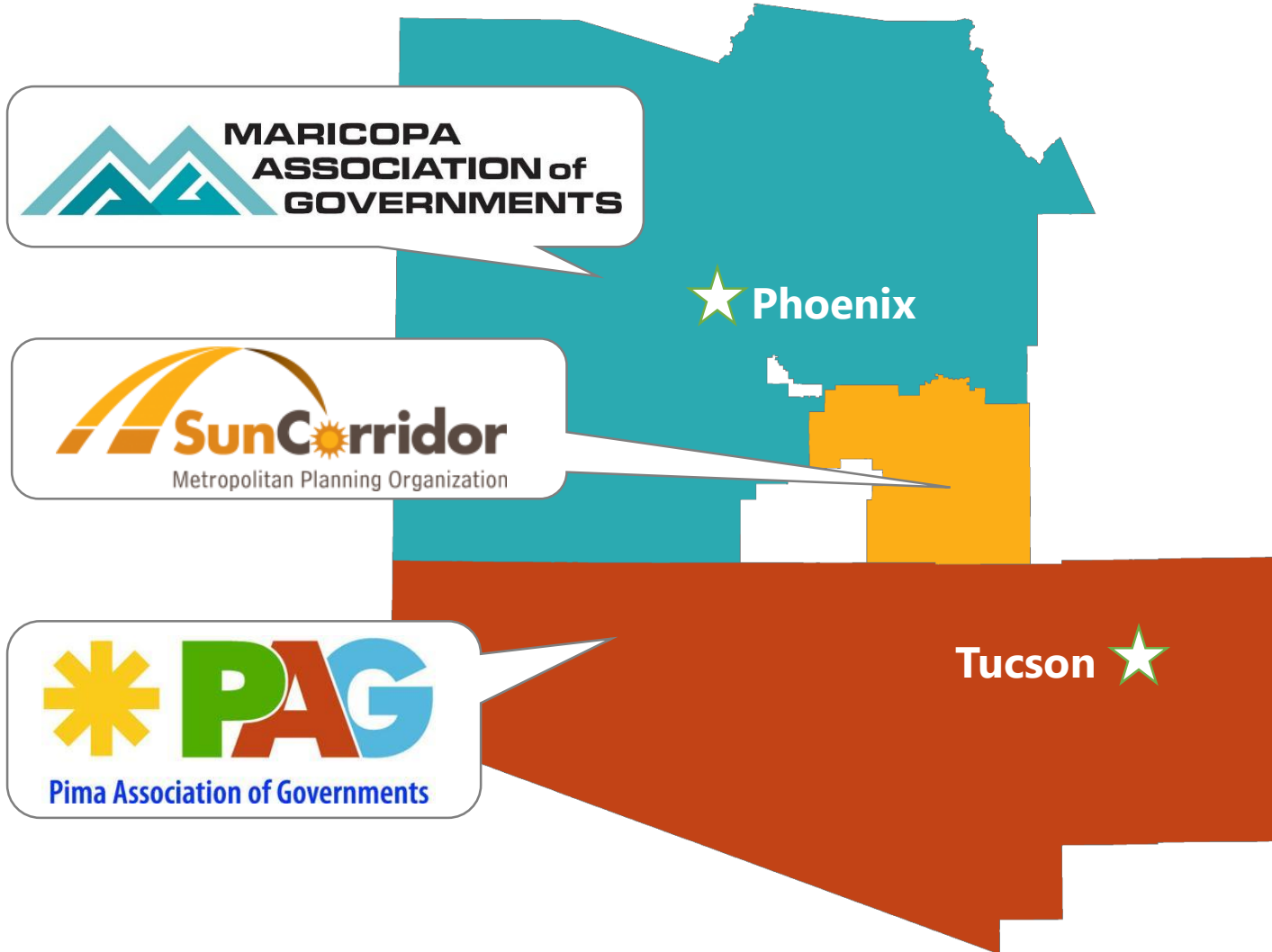
“...develop a methodology to better understand the value and economic benefits of large and high capacity transportation investments in the Sun Corridor.”

-SUN CORRIDOR VALUE IMPACT ANALYSIS RFP

Project Location



Project Boundaries



- 5 Native Nations
- 38 Municipalities
- 5.760 Million People
- 23,787 Square Miles
(61,808 Square Km)

Advisory Group



Project Challenges

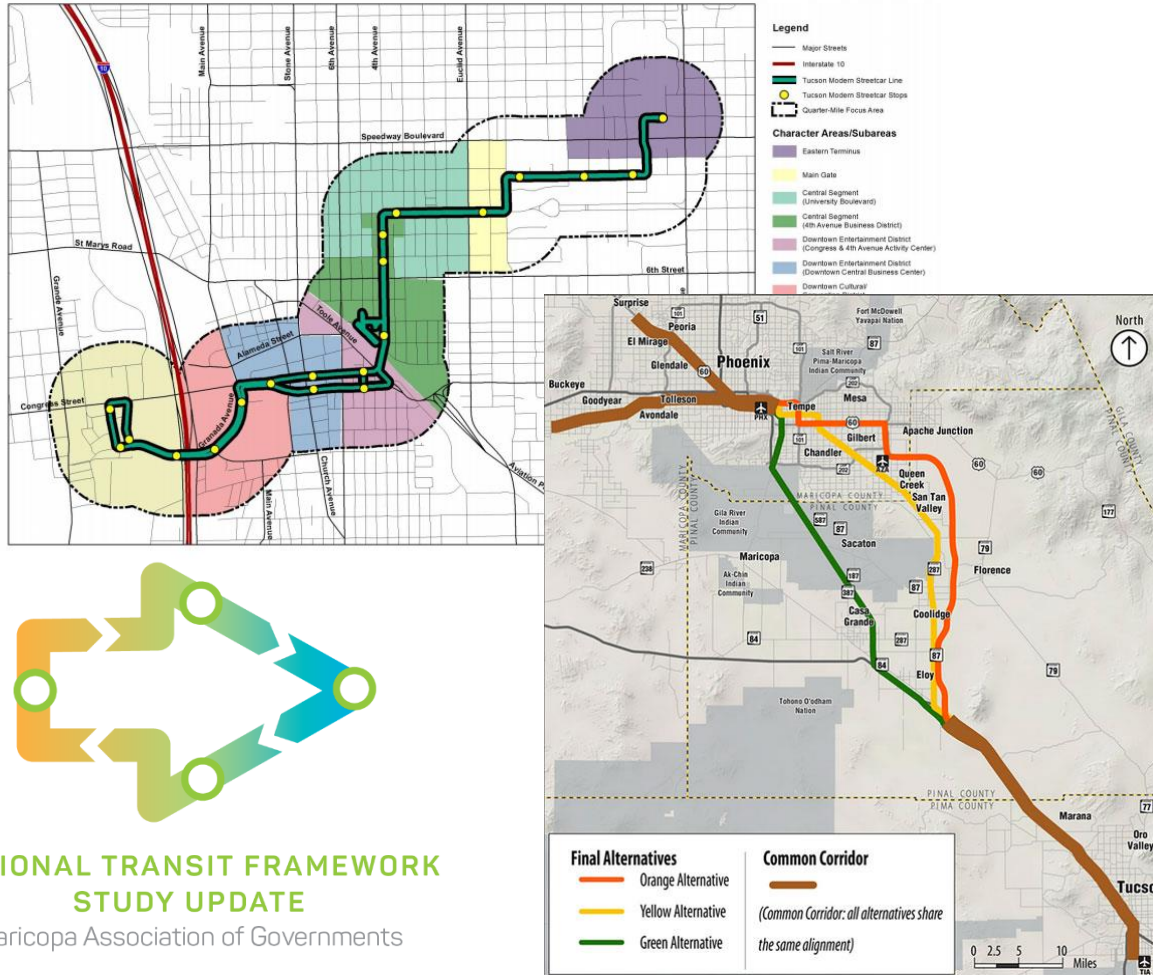
- What is a quality job?
 - For your community and for your region.
- How do we incorporate equality measures?
 - Including existing inequalities.
 - Identifying future areas of concerns.
- What is the appropriate project scale for this tool?
 - Should we measure in dollars or people? Both? Something else?
- How do we responsibly package project outputs with traditional analyses?
 - One tool in the toolbox for regional planning.

Anticipated Impact

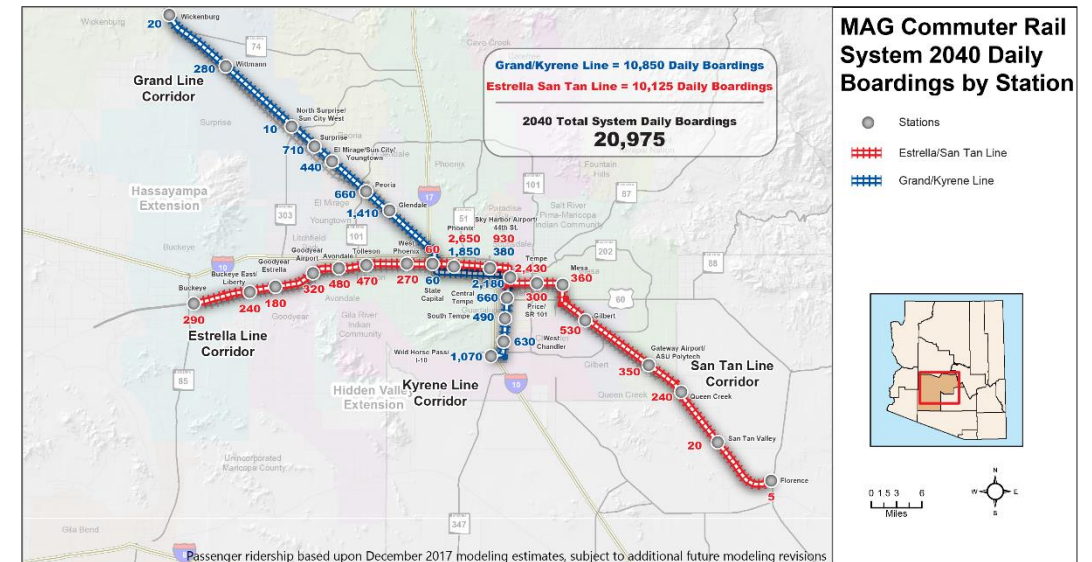
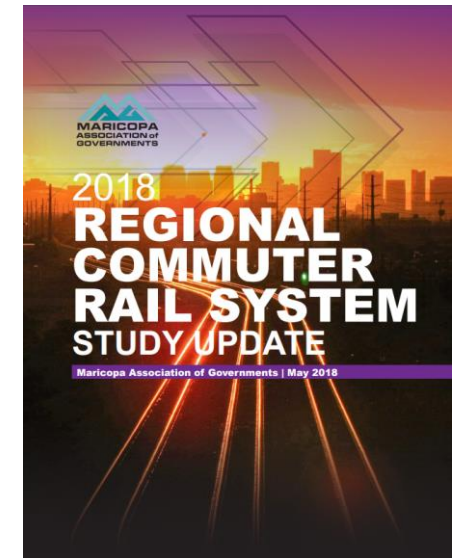
- Improved decision-making data for policymakers.
- Equity analysis for future high-capacity projects.
- Alternatives analysis and packages of projects.
- Convey the value of transportation.
- Regional economic development tool.

Project Examples

Tucson Modern Streetcar Character Areas/Subareas Map



REGIONAL TRANSIT FRAMEWORK STUDY UPDATE
Maricopa Association of Governments



Project Tasks

Task - 1

Project Management

- Kick-off meeting 9/12/19
- Advisory Group Meetings - Quarterly

Complete

Task - 2

Analysis of Literature Review

- ICF/FHWA Literature review of existing tools.
- Consultant recommendations.
- Data needs and availability.

Complete

Task - 3

Consensus Building on Parameters

- Proposal and refinement of tool parameters.

Underway

Task - 4

Tools Development and Testing

- Finalize data inputs.
- Develop analytic procedures.
- Develop reporting tools.
- Refine platform with sample projects.

Underway

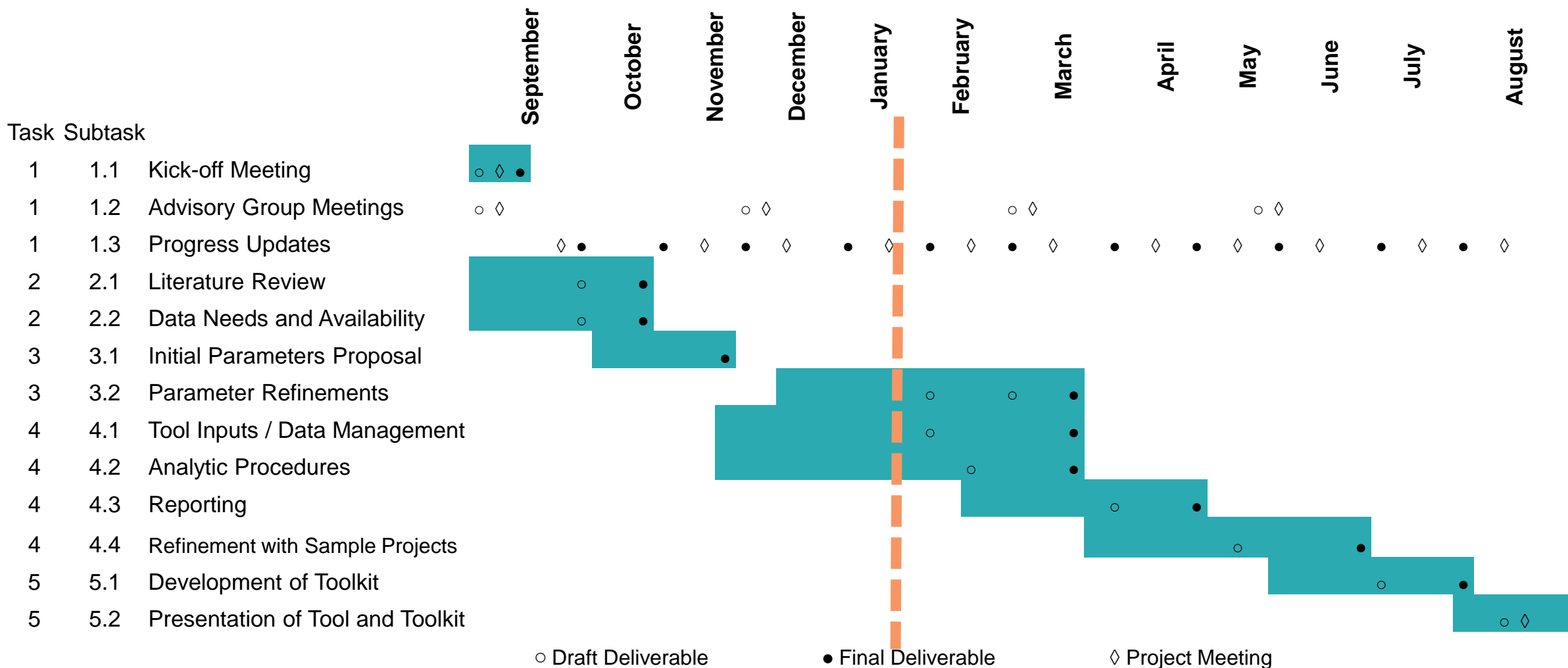
Task - 5

Development of Toolkit

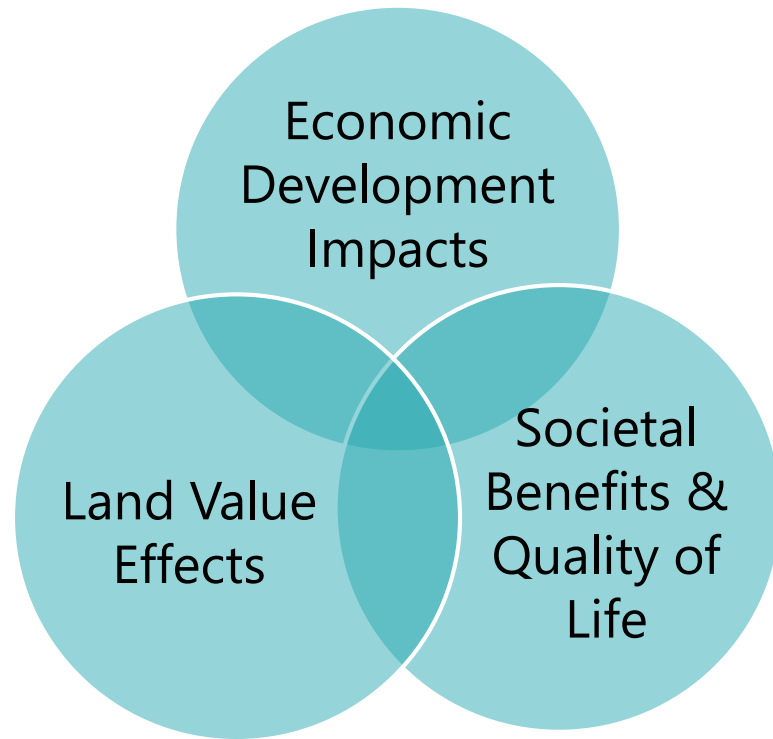
- Development of the toolkit materials.
- Presentation of tool and toolkit.

Upcoming

The Schedule



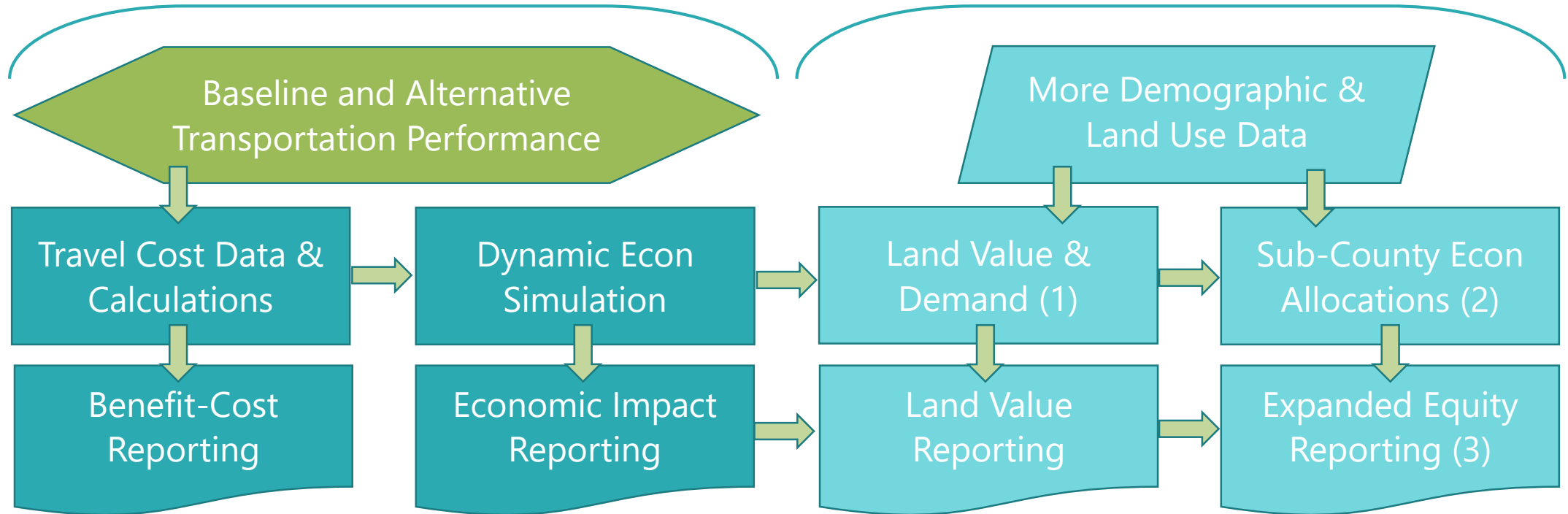
Objectives & Delivery Strategy



Major Project Features to Develop

TREDIS

VIA Improvements



Model Parameters

Regional Data

Travel Cost Constants

Scenario Parameters

Inputs

Outputs

Physical

- Vehicle Crew
- **Passenger Occupancy**
- Average Freight Tons

Value of Time

- *Crew Time*
- *Passenger Time*
- On-Vehicle Freight Time
- Buffer Time

Transactional Costs

- Operations & Maintenance per Mile
- Fuel Consumption *
Fuel Price w/ taxes
- Congestion Penalties

Social Benefits

- *Crash Values*
- *Crash Rates*
- *Emission Values*
- *Emission Rates*
- *Other Benefits and Costs*

Model Parameters

Regional Data

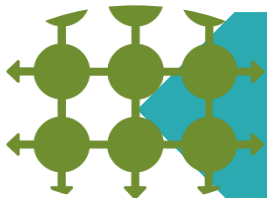
Travel Cost Constants



Program or Project Spending



Aggregate Travel Details



Times Between Zones

Scenario Parameters

Inputs

Outputs

Dimensions



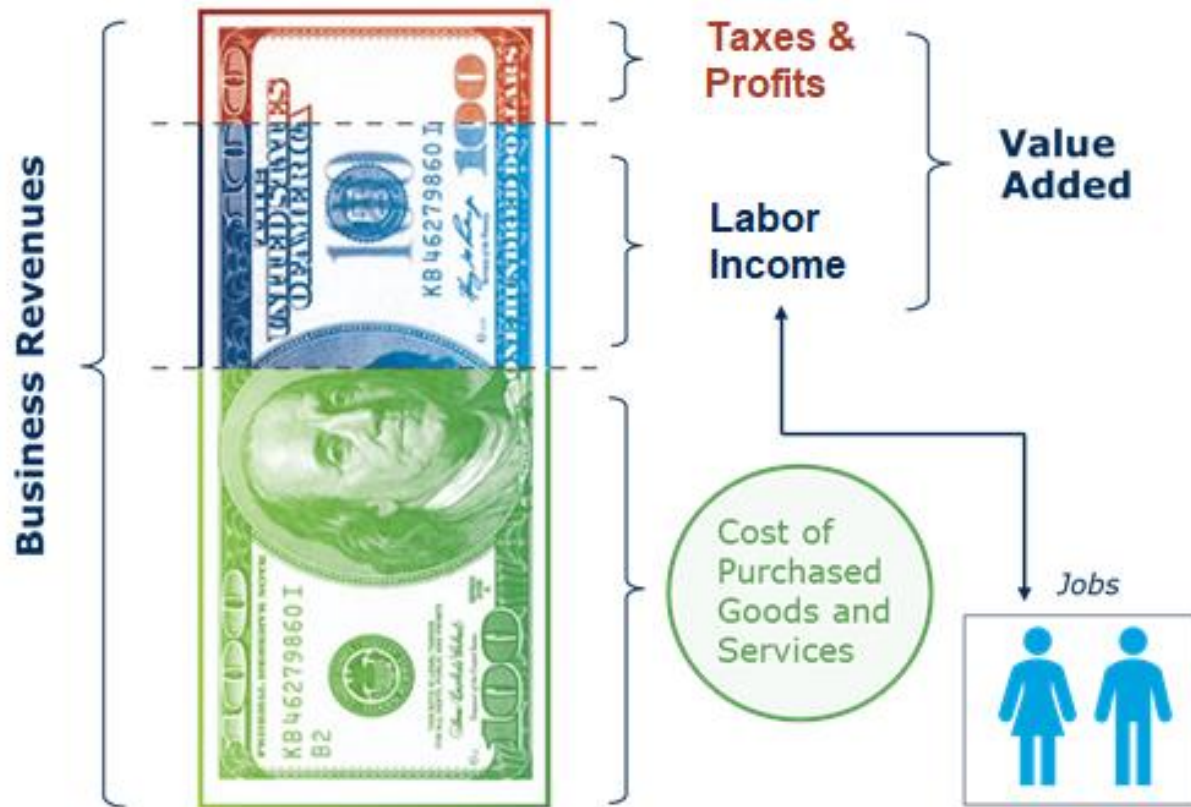
- 2 Alternatives (Baseline & Project)
- 2 TDM Regions (MAG/SCMPO & PAG)
- 2+ Years (Project Open & Horizon)
- Modes (SOV, HOV, SU Truck, Combo Truck, Transit modes, etc.)
- Purposes (Business, Commute, Personal)

Attributes



- Vehicle Trips, Miles, and Hours (all modes, interacts with occupancy)
- Passenger Trips, Miles, and Hours (transit and shared modes only)
- Congestion and Reliability
- Trip flows relative to the regions
- Charges (fares, fees, tolls)
- Safety

Outputs



Benefits	7% discount rate (\$M)
Vehicle Operating Costs	\$1,032
Business Time and Reliability Costs	\$1,871
Value of Personal Time and Reliability	\$4,221
Safety	\$2,208
Logistics/Freight Costs	\$257
Productivity from Access/Connectivity	\$0
Enviro. & Other Societal Benefits	\$581
Consumer Surplus	\$0
Transfers	\$0
Costs	7% discount rate (\$M)
Capital Investment Costs	\$4,237
Operation and Maintenance Costs	\$1,412
Summary Metrics	7% discount rate
Benefit/Cost Ratio	1.8

Questions? Comments?

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**MARICOPA
ASSOCIATION of
GOVERNMENTS**