State Smart Transportation Initiative

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Mosaic overview

Director’s perspective

ODOT's project goals

- Strive to meet the legislative intent with Mosaic:

"Least cost planning means a process of comparing direct and indirect costs of demand and supply options to meet transportation goals, policies or both, where the intent of the process is to identify the most cost-effective mix of options"

- Enable fair comparison of different kinds of transportation solutions against common goals to determine impacts and find cost-effective options to make progress toward goals

Mosaic: what it is, what it does

- A web-based resource for use in *transportation planning* to assist decision-making
- An effective way to evaluate the social, environmental and financial costs and benefits of transportation plans
- A method that is scalable based on a jurisdiction's transportation staff, available data and particular needs
- Establishes a common set of measures to evaluate options and assist selection of the best actions and investments
- Allows communities to weight non-monetized indicators, reflecting their values in Mosaic analysis

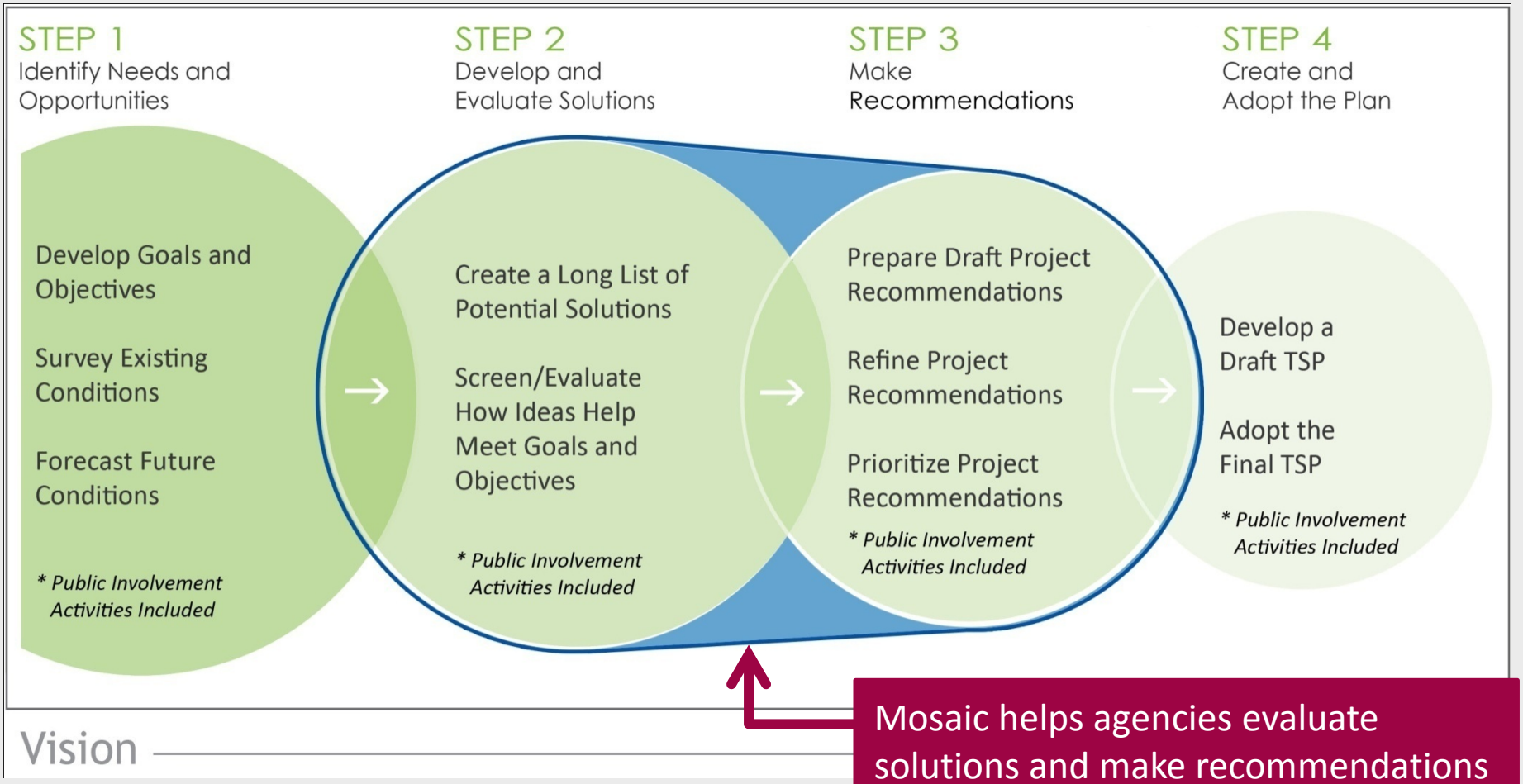
How does using Mosaic help us improve?

- Mosaic lets us compare transportation impacts we can measure in dollars to impacts that we measure in other ways
- Decision-makers can see the components of value in different bundles of actions and investments
- The results allow decision-makers to discuss the tradeoffs between bundles of actions more explicitly
- Mosaic provides a clear, traceable and transparent record of the evaluation process, analysis and decision making
- *Mosaic helps decision makers make more informed decisions*

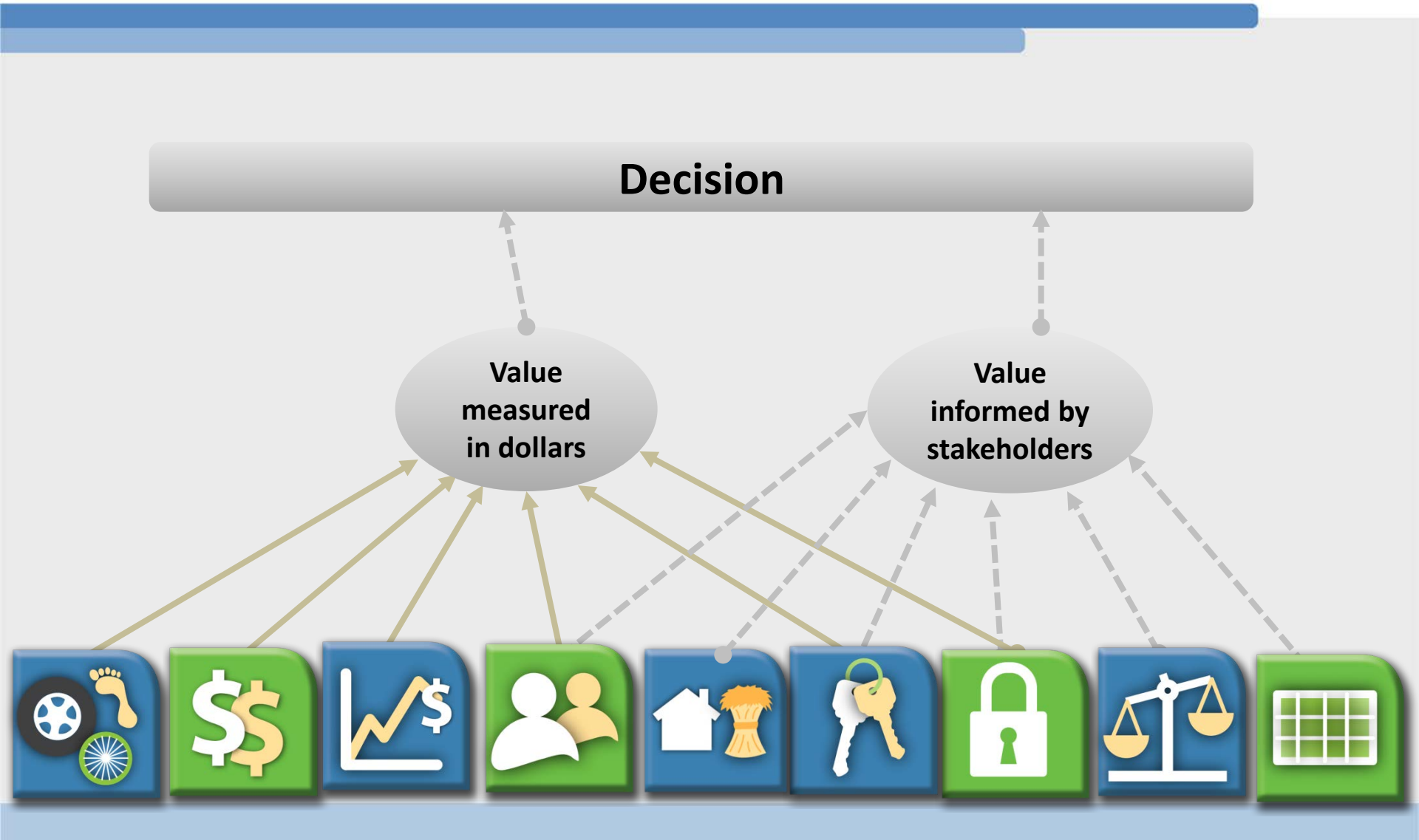
What Mosaic does not do

- *Mosaic results do not specify decisions*
- Mosaic is a decision assistance process and tool for use in large scale transportation planning, not for project alternative analysis
  - A plan scale is needed to fairly evaluate direct and indirect impacts of different transportation solutions
- While there are indicators representing other fields (e.g. health, environment) Mosaic is for transportation analysis
- Mosaic puts a lot of different information together on shared scales; it is intended as a gauge, not to be precise

How Mosaic fits into the planning process



Two ways to measure value



MOSAIC
Value and Cost Informed Planning

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- Before You Start . . .
- Engaging Mosaic
- Step 1: Identify Bundles Of Actions
- Step 2: Establish The Framework
- Step 3: Weight Modal Indicators With Stakeholders
- Step 4: Populate The Tool
- Step 5: Interpret The Results
- Step 6: Use The Results To Make Decisions

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User's Guide

Mosaic is designed to be u n
beginning to end. Before a nary
work must be done and to

Before you start: outline

Engaging mosaic, explai

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Categories & Indicators

Click on the icons below to learn more about each Mosaic Category and its General and Specific Indicators.

ACCESSIBILITY

ECONOMIC VITALITY

ENVIRONMENTAL STEWARDSHIP

EQUITY

FUNDING THE TRANSPORTATION SYSTEM/FINANCE

LAND USE AND GROWTH MANAGEMENT

MOBILITY

QUALITY OF LIFE AND LIVABILITY

SAFETY AND SECURITY

What's included in the User's Guide & website

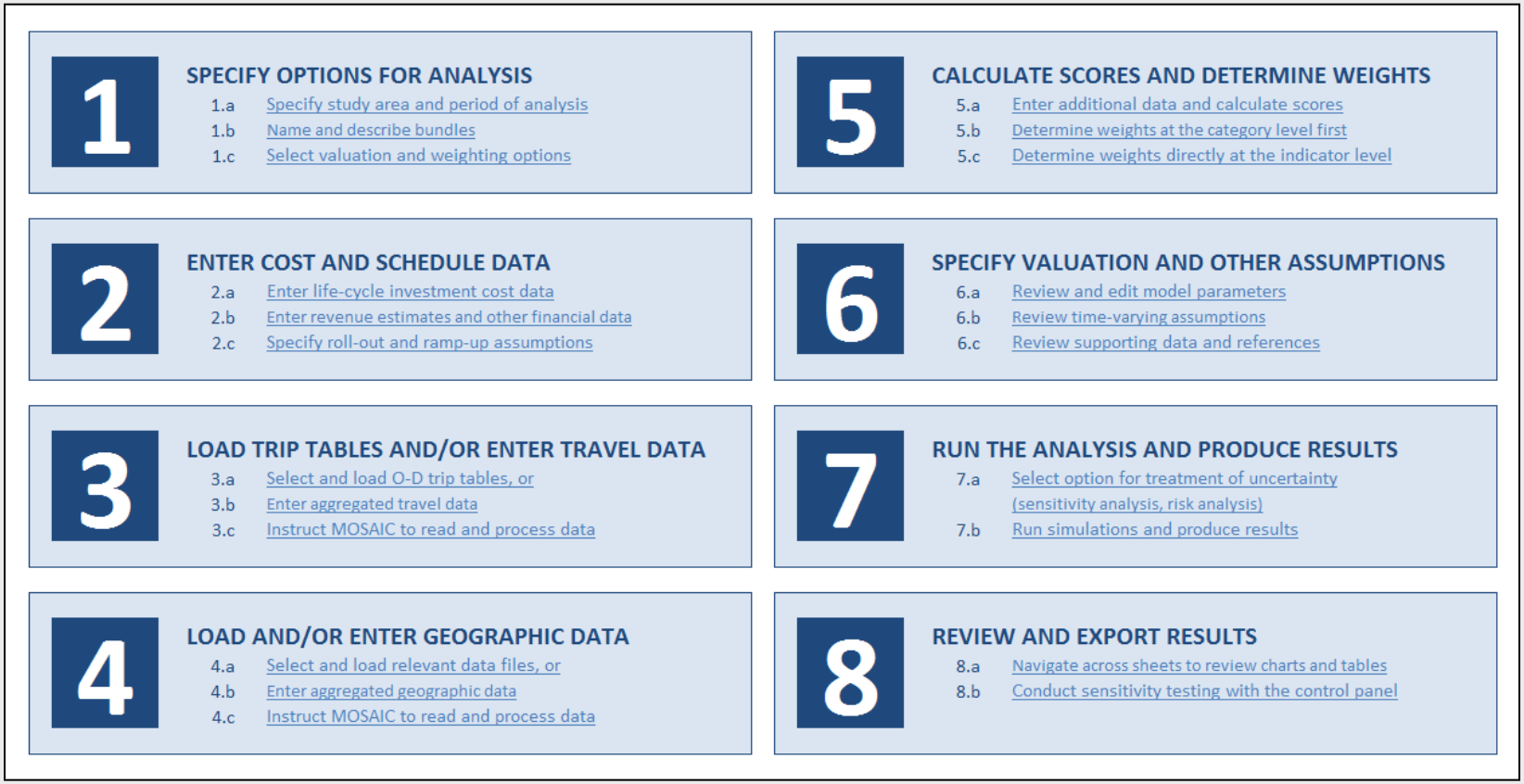
- Explains recommended process for using Mosaic
- Explains each category and indicator
- Explains how to input information into Mosaic
- Provides references and links
  - To ODOT's related project site
  - Mosaic tool documentation explaining each indicator's calculations in detail
  - Programs Guide

What's included in the Programs Guide

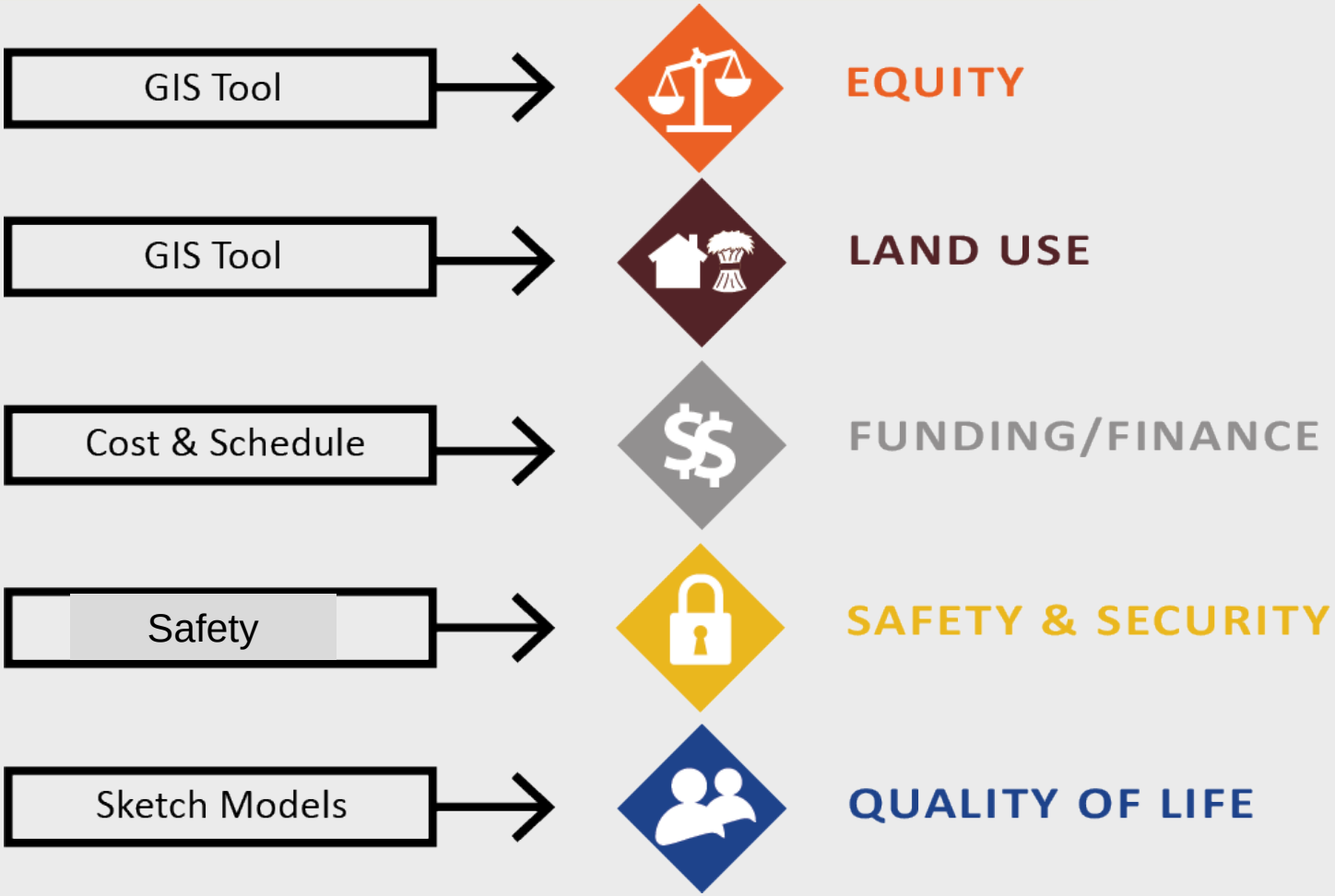
- Twenty programs that are considered to be beneficial and are generally recommended for implementation
- The named programs have sufficient and relevant benefit or cost information
- Helps and advises users that choose to incorporate these programs into their bundles:

  - Bicycle and Pedestrian Programs
  - Land Use Programs
  - Operations/ Intelligent Transportation System (ITS) Programs
  - Pricing Programs
  - Transit Programs
  - Travel Demand Management Programs

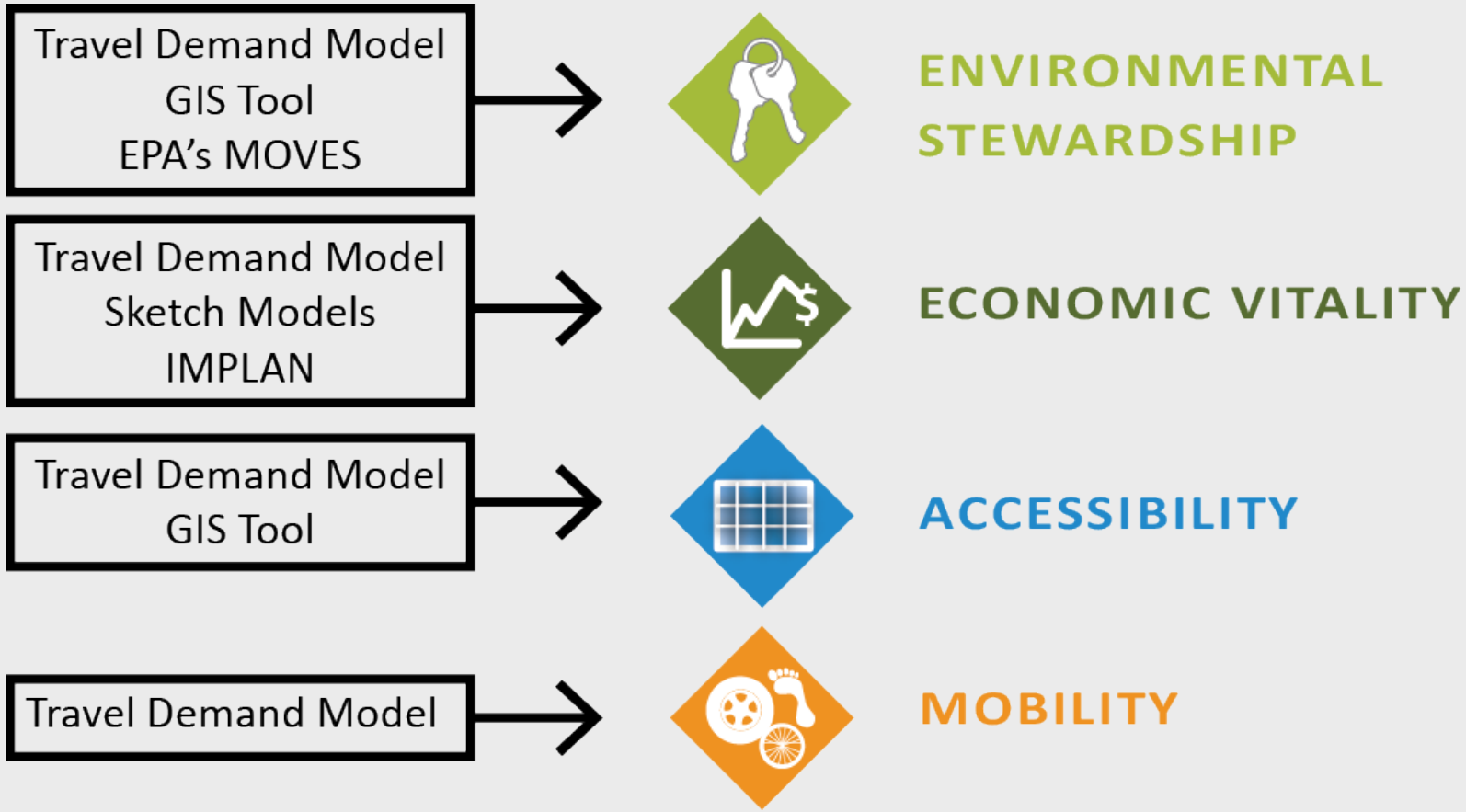
The Mosaic tool is an Excel workbook



Data sources for Mosaic indicators

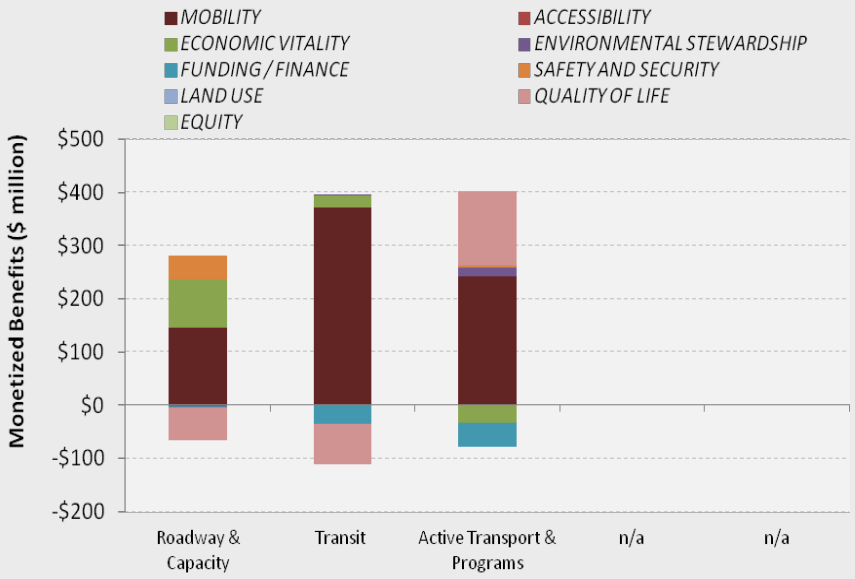


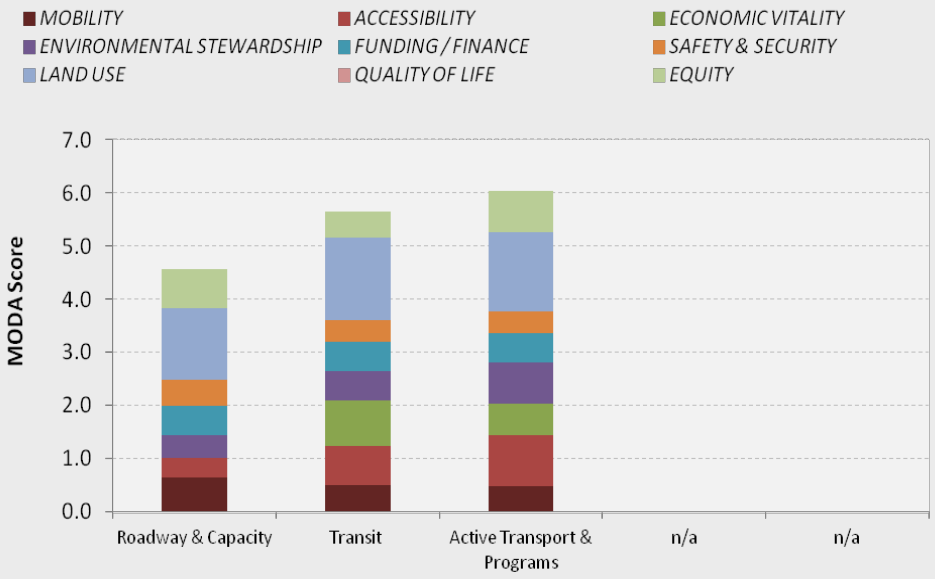
Data sources for Mosaic indicators (cont.)



Mosaic tool outputs

- Tables: record of parameters and assumptions
- Charts: variety of charts to compare costs, MODA (weighted value) scores, and benefit-cost scores





What we've learned: weighting

- Stakeholder values are important and should be made explicit
- Stakeholders should weight the importance of their values at least once during the process, and definitely weight them after results are available
- Users value flexibility when weighting indicators
  - Whether to weight all indicators or just non-monetized indicators
  - Whether to weight categories or indicators first

What we've learned: results

- Graphical display is essential to understanding; different people will prefer different displays
- The measured values of *each* indicator within a category must be clearly displayed
- The *reasons behind* the measured values must be clearly explained
- The comparison of monetized results to non-monetized results is essential; it leads to a deeper understanding of value
- Some results are surprising and challenging

Applications that yield best results

- Jurisdictions with network travel demand models
- Planning applications where stakeholders want to evaluate multiple, distinctive “bundles” (a.k.a., scenarios, visions, investment packages or strategies)
- Jurisdictions willing to measure value in both monetary and non-monetary ways, in order to derive fullest value from the Mosaic process and tool

Expertise required

1. A broad understanding of travel behavior and how it responds to changes in networks, policies and programs
2. For those places where travel models exist, the ability to use existing models to generate travel forecasts
3. Familiarity with geographic information system (GIS) software and the layers of data available in the study area
4. The ability to estimate planning-level costs of transportation improvements

Expertise required

5. Familiarity with socio-economic data (e.g., population, household, employment) commonly used in transportation planning
6. Familiarity with the terminology of travel behavior, spatial data, and economic analysis
7. Experience in using Excel-based analytic tools

Summary

- Mosaic is designed to measure as much as possible in dollars, though you can choose quantitative or qualitative measurement
- A lot of the data Mosaic uses is likely to be developed for a plan anyway; Mosaic helps structure that process
- Mosaic will help you evaluate scenarios developed in a transportation planning process
- You will need to consider all the information Mosaic can provide and determine what is best for your community

Questions and discussion

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Mosaic website:

www.oregonmosaic.org

ODOT project history website:
http://www.oregon.gov/ODOT/TD/TP/pages/lcp.aspx