Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

Metropolitan Transportation Plan (MTP) 2050
Introduction to Project Evaluation

December 12, 2023

AECOM

Agenda

1. **Performance-Based Planning**
   - Overview
   - Why is it important?

2. **MPO Project Evaluation/Scoring Examples**
   - Maricopa County (Phoenix) – 2050 LRTP
   - Kingsport, TN – 2045 LRTP

3. **Application to *Sustainable Choices 2050***
   - Enhance project selection

4. **Next Steps**

Performance-Based Planning

Overview

Performance-based planning….

- applies performance management principles to the transportation system

- provides a linkage to long-range, policy and investment decisions

- connects performance to the LRTP goals/objectives

- is data-driven

Why is it Important?

- <u>informs</u> project selection, overall enhances decision-making process

- consistent, uniform approach

- supports FHWA's Transportation Performance Management (TPM) process
  - performance target setting and reporting

- consistent with public feedback from the 2045 MTP

TPM Supports National Performance Goals

Transportation Performance Management

HOW WE GET THERE

Focusing on Performance for Safe, Reliable Journeys

The Federal Highway Administration defines Transportation Performance Management (TPM) as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals.

Investment Decisions

Using goals, measures, and data to make better informed decisions about how to invest transportation funding.

Aimed at a Better Performing Transportation System

Setting targets, developing plans, reporting results, and being accountable for performance.

For Connected and Productive Communities

Focusing on the efficient delivery of goods and safe, reliable journeys to work, to school, to shopping, to community activities.
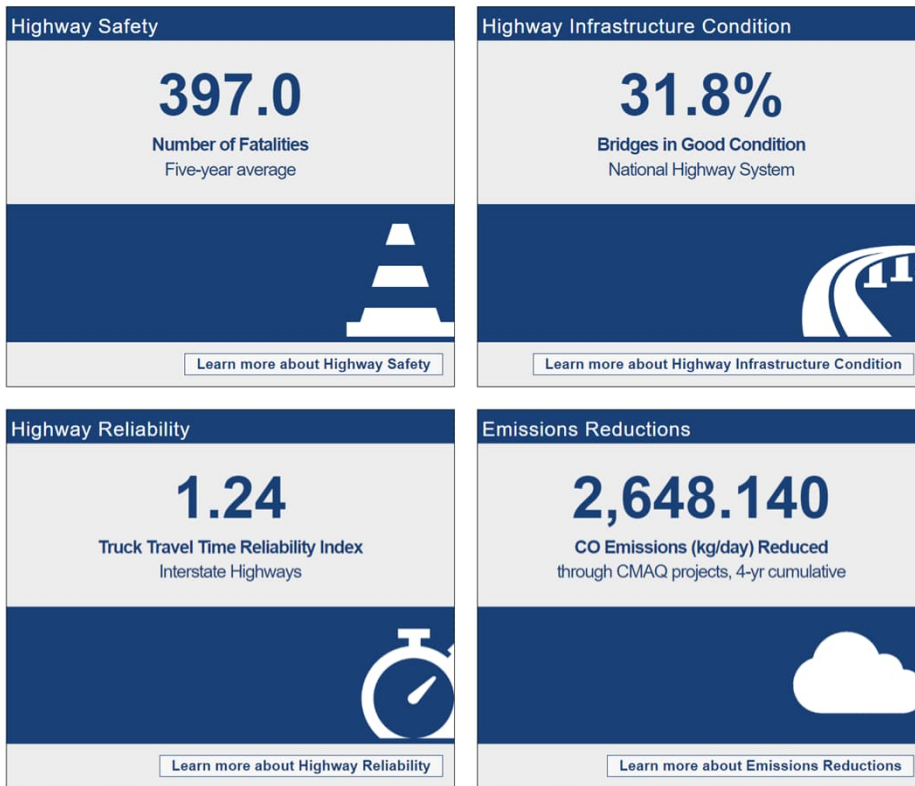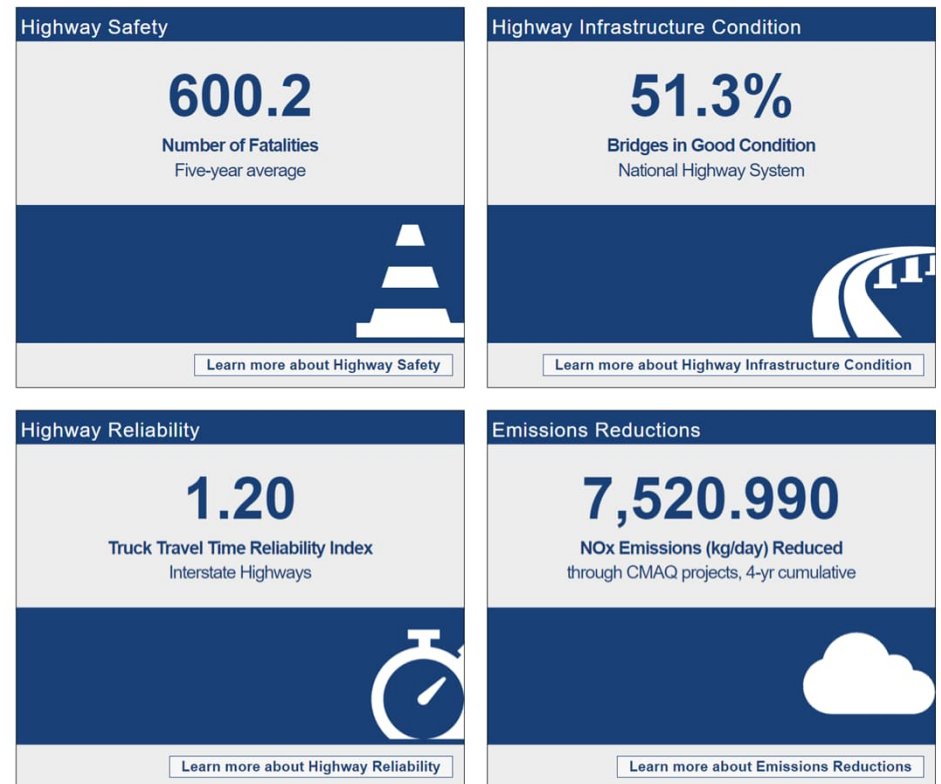
National Performance Goals

➢ **Safety** - achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

➢ **Infrastructure Condition** - maintain the highway infrastructure asset system in a state of good repair

➢ **Congestion Reduction** - achieve a significant reduction in congestion on the NHS

➢ **System Reliability** - improve the efficiency of the surface transportation system

➢ **Freight Movement and Economic Vitality** - improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development

➢ **Environmental Sustainability** - enhance the performance of the transportation system while protecting and enhancing the natural environment.

➢ **Reduced Project Delivery Delays** - reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion…

Support State DOT Planning
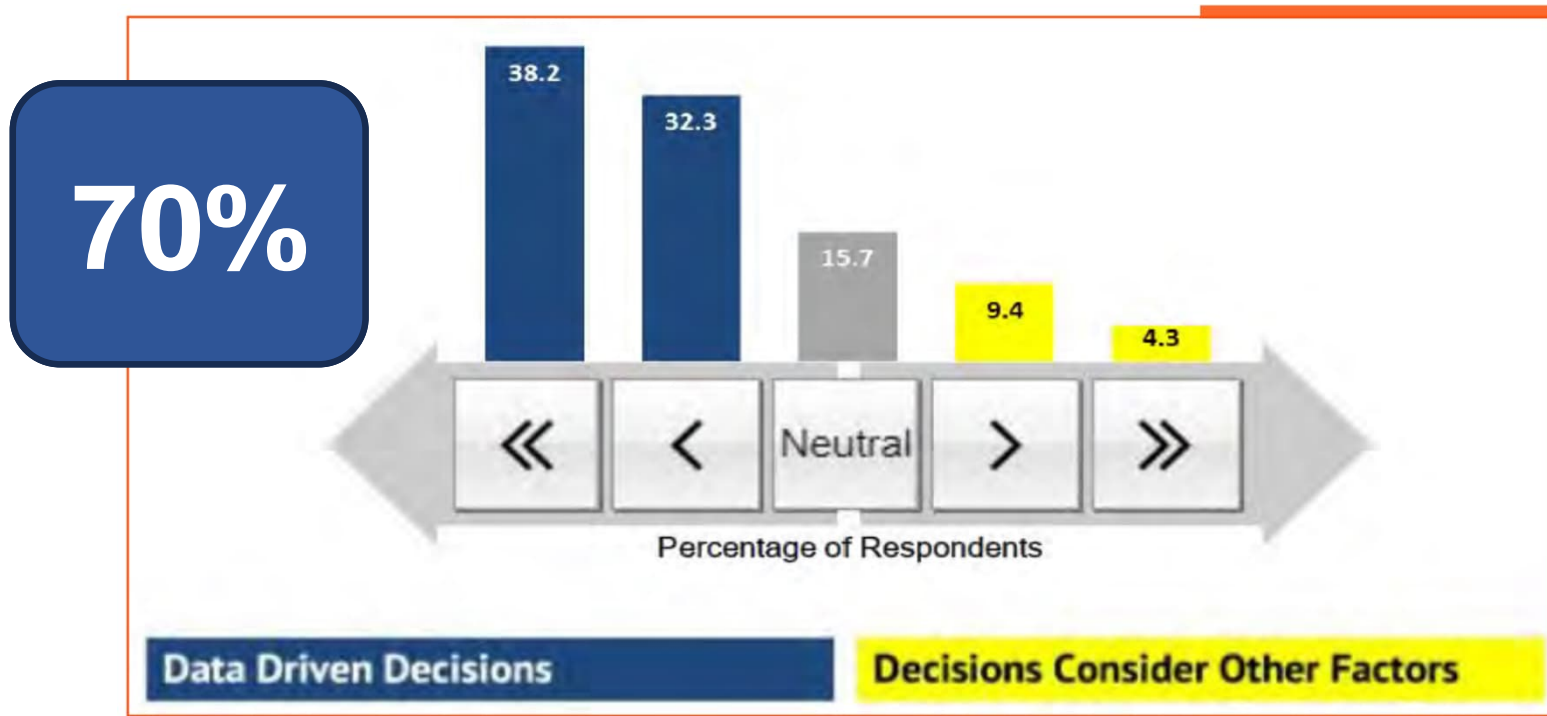
State Performance Dashboard - Minnesota

Highway Safety

397.0

Number of Fatalities
Five-year average

Learn more about Highway Safety

Highway Infrastructure Condition

31.8%

Bridges in Good Condition
National Highway System

Learn more about Highway Infrastructure Condition

Highway Reliability

1.24

Truck Travel Time Reliability Index
Interstate Highways

Learn more about Highway Reliability

Emissions Reductions

2,648.140

CO Emissions (kg/day) Reduced
through CMAQ projects, 4-yr cumulative

Learn more about Emissions Reductions

State Performance Dashboard - Wisconsin

Highway Safety

600.2

Number of Fatalities
Five-year average

Learn more about Highway Safety

Highway Infrastructure Condition

51.3%

Bridges in Good Condition
National Highway System

Learn more about Highway Infrastructure Condition

Highway Reliability

1.20

Truck Travel Time Reliability Index
Interstate Highways

Learn more about Highway Reliability

Emissions Reductions

7,520.990

NOx Emissions (kg/day) Reduced
through CMAQ projects, 4-yr cumulative

Learn more about Emissions Reductions

Consistent with Public Input

- 2045 LRTP Public Survey Results

70%

Data values: 38.2, 32.3, 15.7, 9.4, 4.3

« | ‹ | Neutral | › | »

Percentage of Respondents

Data Driven Decisions | **Decisions Consider Other Factors**

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

MPO Project Evaluation/Scoring Examples

- Maricopa County (Phoenix) – 2050 LRTP
- Kingsport, TN – 2045 LRTP
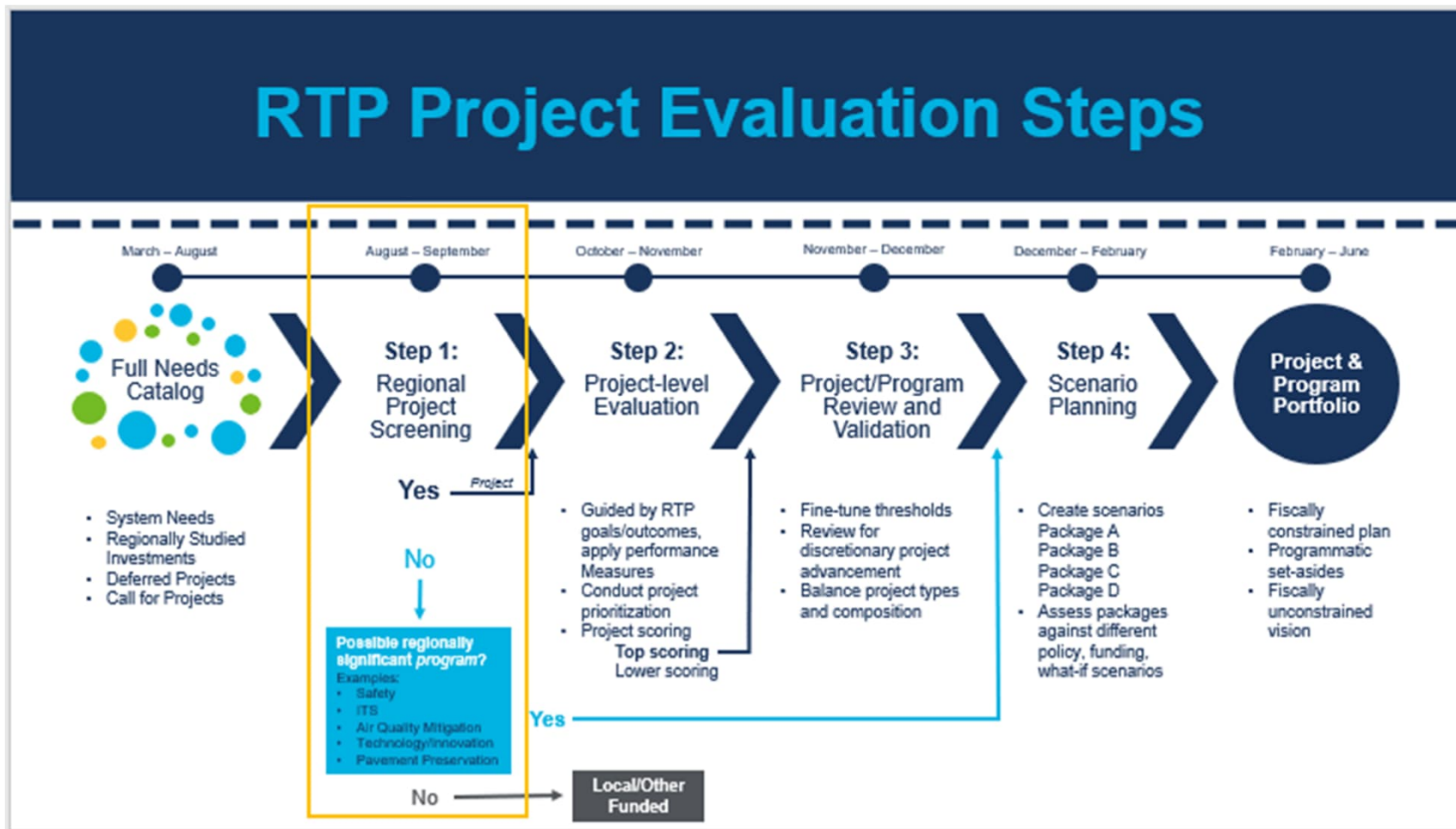
Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

EXAMPLE
Maricopa County (Phoenix) 2050 LRTP

This is an example only…this is not the exact methodology that will be used for *Sustainable Choices 2050*.

Maricopa County (Phoenix) 2050 LRTP

Updated Highway Framework

Goals	Intended Outcome	Evaluation Criteria	Performance Measures	Potential Data Sources
Safety	Does the project improve locations with crash concerns?	Improve Crash Rate	Total Crash Rate	Safety Data Database
	Does the project improve locations with fatal and series crash concerns?	Improve Serious & Fatal Crash Rate	Serious & Fatal Crash Rate	
Prosperity	Does the project serve existing employment locations?	Connect Existing Employment	Current Employment (TAZ)	MAG Travel Demand Model / Socioeconomic Data
	Does the project benefit future employment locations?	Connect Future Employment	Future Employment (TAZ)	
Responsiveness	Does this project address an area with reliability concerns?	System Reliability	Planning Time Index Truck Planning Time Index (NHS only)	INRIX/HERE Database
Livability *				
Preservation	Does the project improve existing maintenance or preservation issues	Pavement Condition	Pavement Condition	ADOT Pavement Condition (IRI, Rutting, % Cracking)
	Does the project improve existing maintenance or preservation issues	Bridge Condition	Bridge Rating	ADOT Bridge Inspection Inventory
Mobility	Does the project address a location with travel delay?	Reduce Travel Times	Travel Time Index	INRIX/HERE Database
	Does the project address a location with recurring traffic congestion?	Ease of Movement	Volume / Capacity (LOS)	MAG Travel Demand Model
	Does the project improve freight vehicle efficiency?	Improve Freight Efficiency	NHS Truck Travel Time Index	INRIX/HERE Database
	Does the project improve address access for critical populations?	Improve Access	% EJ populations	US Census Data

* The Livability RTP goal will be incorporated in the Step 3 Project/Program Review and Validation and Step 4 Scenario Planning to assess the cumulative impact of the draft investment portfolio.

MOMENTUM

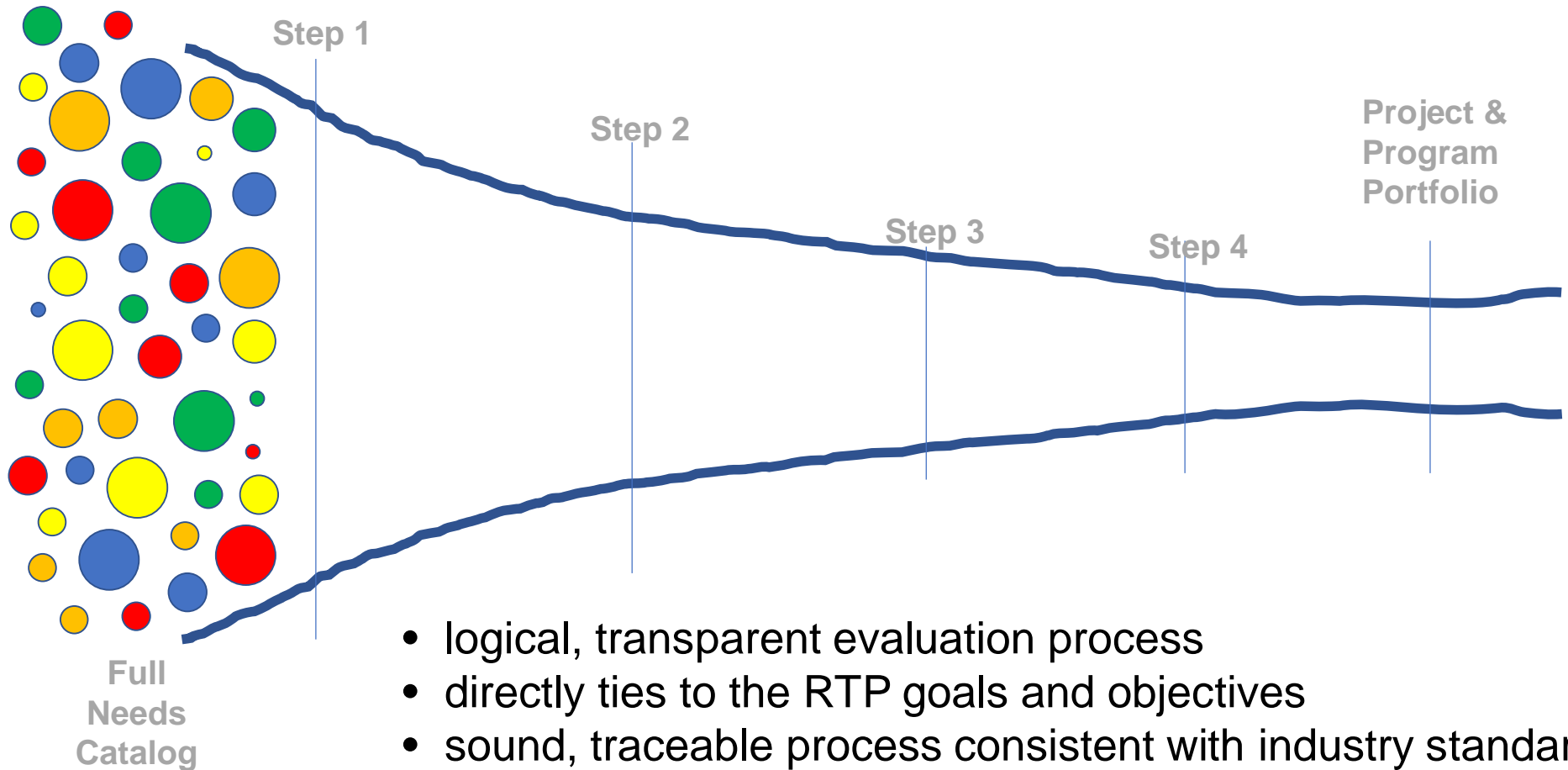# Maricopa County 2050 Performance-Based Planning
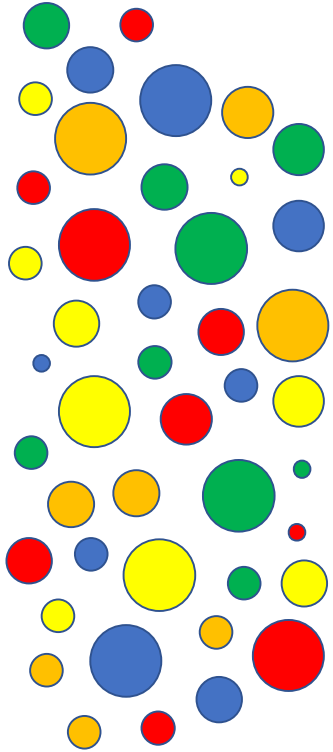
Full Needs Catalog

- **The Full Needs Catalog includes:**
  - ✓ System Needs
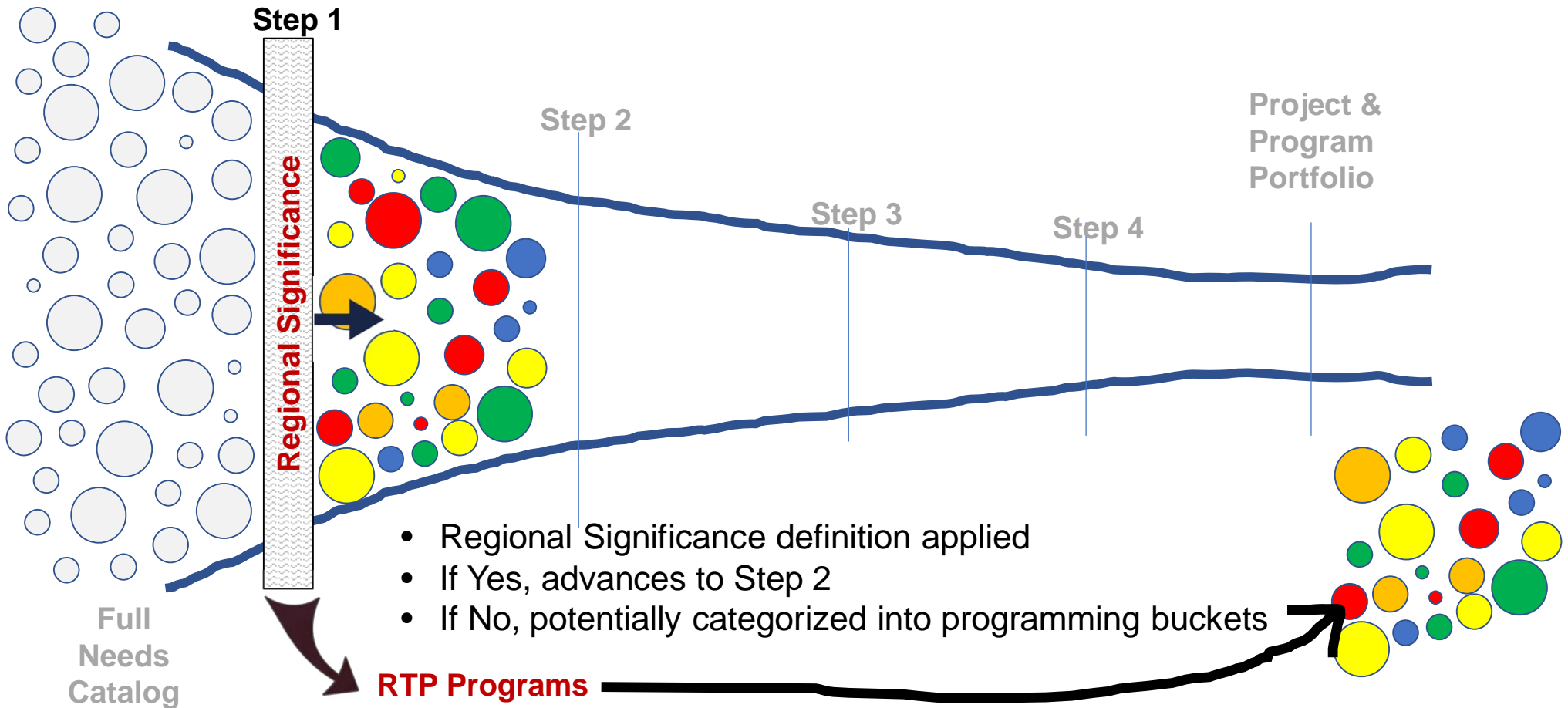 - ✓ Regional Studied Investments
  - ✓ Call for Projects

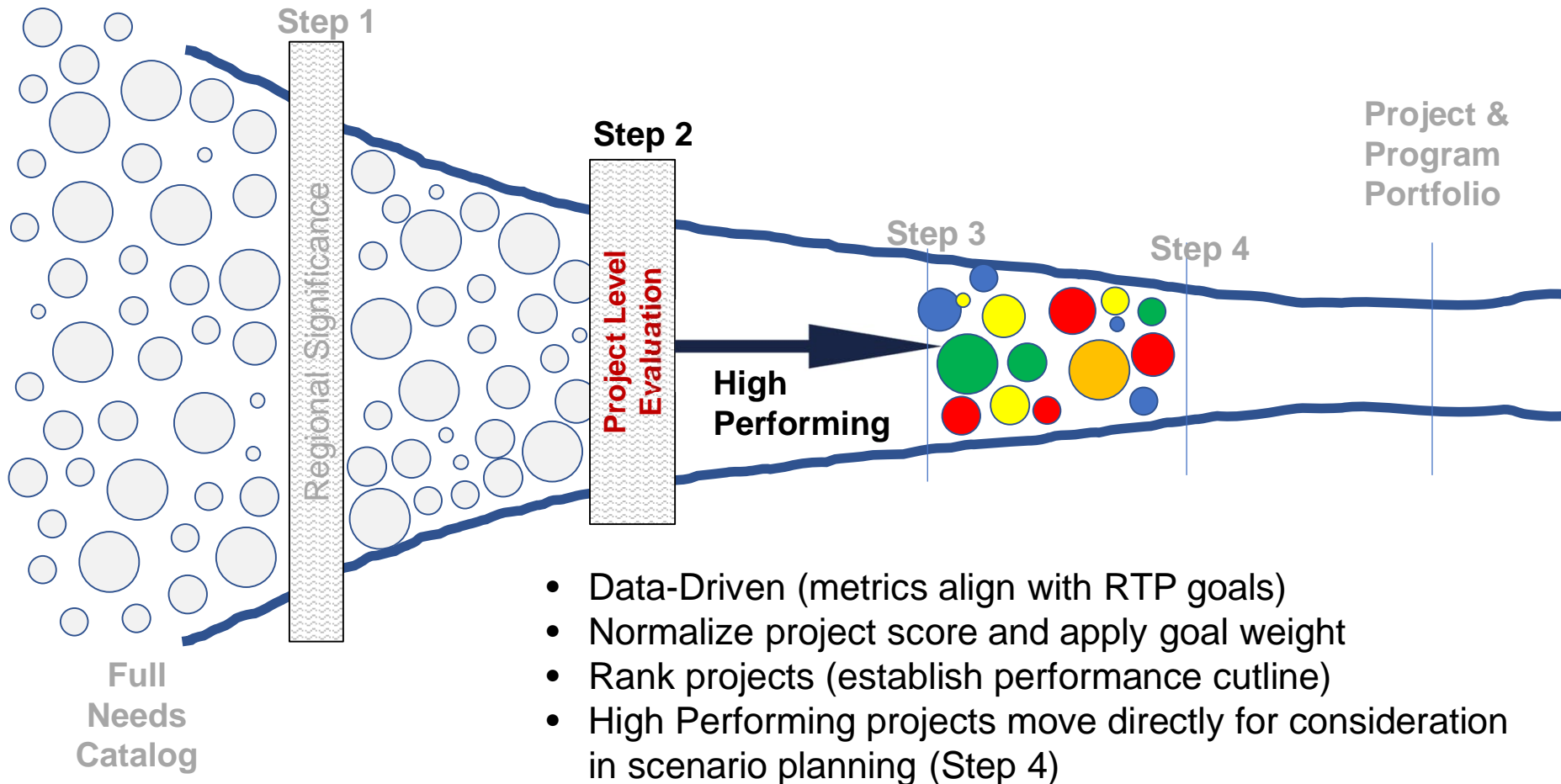# Maricopa County 2050 Performance-Based Planning

Step 1

Step 2

Step 3

Step 4

Project & Program Portfolio

Full Needs Catalog

- logical, transparent evaluation process
- directly ties to the RTP goals and objectives
- sound, traceable process consistent with industry standards

Maricopa County 2050 Performance-Based Planning

Step 1

Step 2

Step 3

Step 4

Project & Program Portfolio

Regional Significance

Full Needs Catalog

- Regional Significance definition applied
- If Yes, advances to Step 2
- If No, potentially categorized into programming buckets

RTP Programs

Maricopa County 2050 Performance-Based Planning

Step 1

Step 2

Step 3

Step 4

Project & Program Portfolio

Regional Significance

Project Level Evaluation

High Performing

Full Needs Catalog

- Data-Driven (metrics align with RTP goals)
- Normalize project score and apply goal weight
- Rank projects (establish performance cutline)
- High Performing projects move directly for consideration in scenario planning (Step 4)

Maricopa County 2050 Performance-Based Planning

Step 1

Step 2

Average or Low Performing

Step 3

Step 4

Project & Program Portfolio

Regional Significance

Project Level Evaluation

Full Needs Catalog

- In unique circumstances, projects that fall below the cutline (Average or Low Performing) can be evaluated against qualitative criteria

Maricopa County 2050 Performance-Based Planning

Step 1

Step 2

Step 3

Step 4

Project & Program Portfolio

Regional Significance

Project Level Evaluation

Project Review

Full Needs Catalog

Projects No Longer Considered in RTP, or become part of the "Fiscally Unconstrained Vision"

Maricopa County 2050 Performance-Based Planning

Step 1 — Regional Significance

Step 2 — Project Level Evaluation

Step 3 — Project Review

Step 4 — Scenario Planning

Full Needs Catalog

Project & Program Portfolio

Scenario A
Scenario B
Scenario C
Scenario D

Maricopa County 2050 Performance-Based Planning

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

EXAMPLE
Kingsport, TN MPO 2045 LRTP

This is an example only…this is not the exact methodology that will be used for *Sustainable Choices 2050*.

Roadway/Freight Needs and Opportunities

Combined Map

- Network Connectivity
- Safety
- Congestion / Restricted Travel Corridors
- Traffic Operations

Other Considerations

- Truck Parking
- ITS / Technology

Legend

Municipality
- Kingsport
- Church Hill
- Mount Carmel
- Weber City
- Gate City

Major Roadways
County Boundary
MTPO Boundary

0   0.75 1.5   3
                    Miles
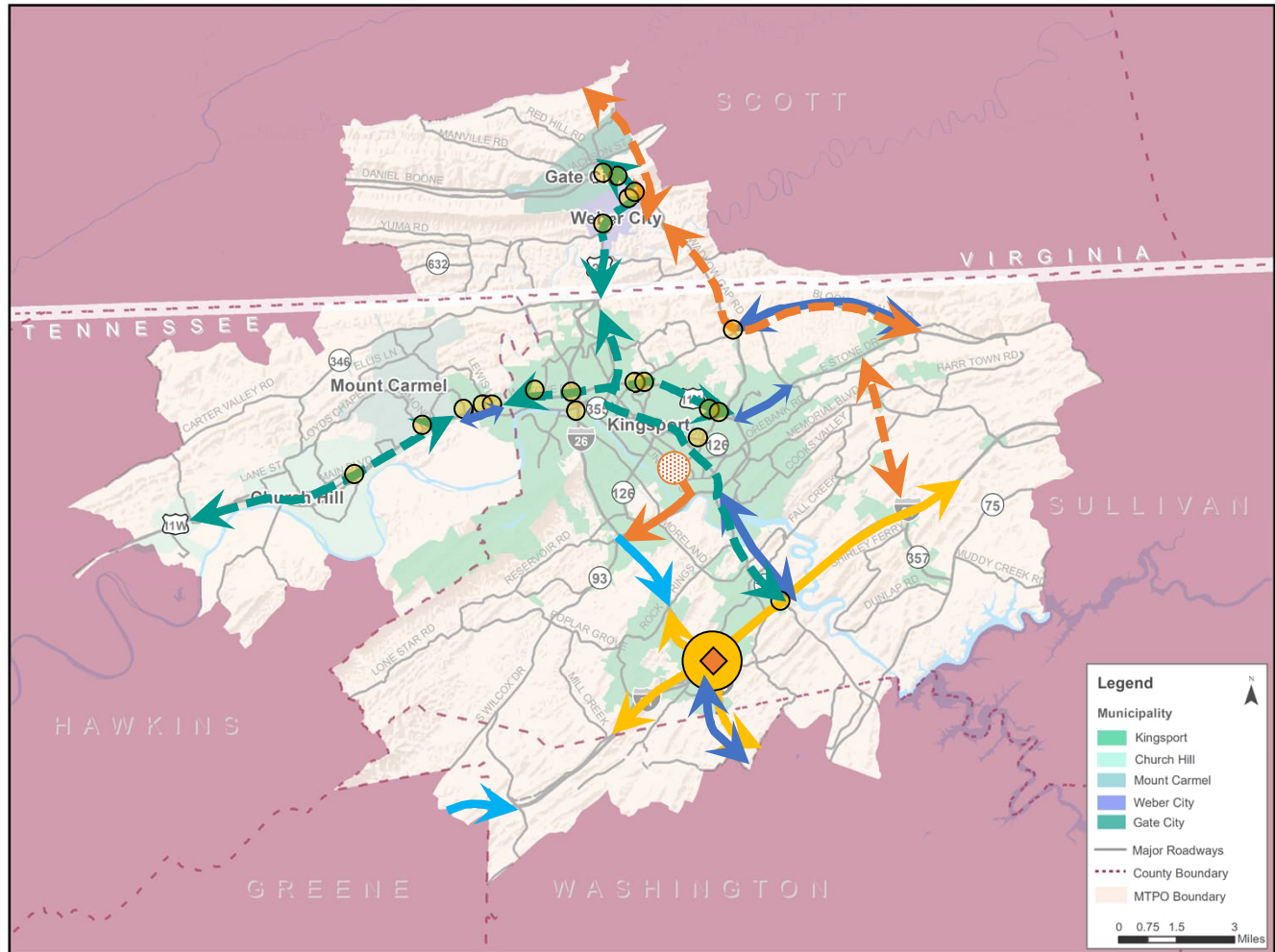
Potential Projects

- Reviewed the 2040 LRTP

- Address a need or area of concern

- Represent a variety of improvements (i.e., safety, capacity, access management, etc.)

- Potential projects scored using 20 measures
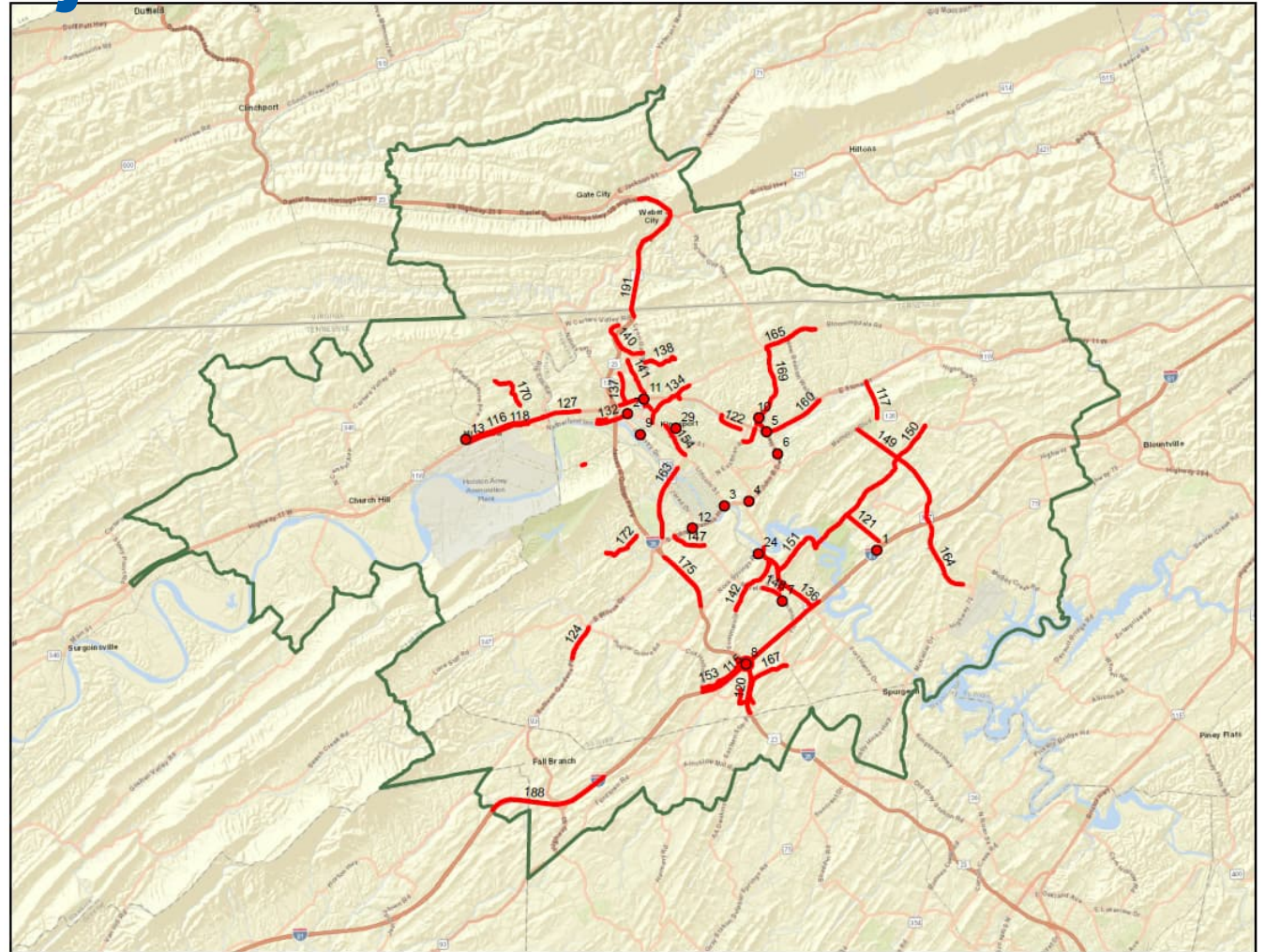
Scoring Categories and Measures

Safety

- Measure #1 – Number of vehicle crashes
- Measure #2 – Number of bike/pedestrian crashes
- Measure #3 – Fatal and serious injury vehicle crashes

Operational Efficiency

- Measure #4 – Existing LOS addressed
- Measure #5 – Future LOS addressed
- Measure #6 – Traffic signal project and / or incorporates new technology
- Measure #7 – Creates parallel facility / system redundancy
- Measure #8 – Difference between existing and projected future volumes

Accessibility

- Measure #9 – Population growth surrounding project (2018 - 2045)
- Measure #10 – Employment growth surrounding project (2018 - 2045)
- Measure #11 – Improves connectivity of system

Active Transportation

- Measure #12 – Non-motorized demand near project
- Measure #13 – Number of above average EJ and underserved populations touched by project
- Measure #14 – Pedestrian Level of Traffic Stress (LTS) and Bicycle LTS

Environmental

- Measure #15 – Number of challenging areas the project touches (floodplains, historical areas, steep slopes, and parks)
- Measure #16 – Project improves capacity without widening or adding new facility

Economic

- Measure #17 – Percent of trucks in existing network
- Measure #18 – Within 1/2 mile of identified economic development nodes
- Measure #19 – Job access score
- Measure #20 – Improves access to identified tourist destinations

Scoring Categories and Measures

25 — Safety

- Measure #1 (10 points) – Number of vehicle crashes
- Measure #2 (5 points) – Number of bike/pedestrian crashes
- Measure #3 (10 points) – Fatal and serious injury vehicle crashes

20 — Operational Efficiency

- Measure #4 (5 points) – Existing LOS addressed
- Measure #5 (5 points) – Future LOS addressed
- Measure #6 (2 points) – Traffic signal project and / or incorporates new technology
- Measure #7 (5 points) – Creates parallel facility / system redundancy
- Measure #8 (3 points) – Difference between existing and projected future

10 — Accessibility

- Measure #9 (3 points) – Population growth surrounding project (2018 - 2045)
- Measure #10 (3 points) – Employment growth surrounding project (2018 - 2045)
- Measure #11 (4 points) – Improves connectivity of system

15 — Active Transportation

- Measure #12 (5 points) – Non-motorized demand near project
- Measure #13 (5 points) – Number of above average EJ and underserved populations touched by project
- Measure #14 (5 points) – Pedestrian Level of Traffic Stress (LTS) and Bicycle LTS

10 — Environmental

- Measure #15 (5 points) – Number of challenging areas the project touches (floodplains, historical areas, steep slopes, and parks)
- Measure #16 (5 points) – Project improves capacity without widening or adding new facility

20 — Economic

- Measure #17 (5 points) – Percent of trucks in existing network
- Measure #18 (5 points) – Within 1/2 mile of identified economic development nodes
- Measure #19 (5 points) – Job access score
- Measure #20 (5 points) – Improves access to identified tourist destinations

Project Results (ranking)

Scoring Results for Potential/Planned Projects (Sorted by Total Score)

Project Information					Safety (Max: 25)					
					1- Number of vehicle crashes		2- Number of bike/pedestrian crashes		3- Fatal and serious injury vehicle crashes	
Project ID	Route	Location (From/To)	Description	Total Score	Data (Range: 1 - 525)	Score (Max: 10)	Data (Range: 1 - 1)	Score (Max: 5)	Data (Range: 1 - 16)	Score (Max: 10)
160	Stone Drive (US-11W)	John B. Dennis (SR-93) / New Beason Well Road	Widen to 6 lanes	72	354	10	1	3	7	10
136	Fort Henry Drive (SR-36)	Moreland Drive/Hemlock Road / I-81	Improve intersections, coordinate signal timings, and evaluate driveway cuts	71	379	10	1	3	5	8
191	US-23	Kane Street / W Carters Valley Rd	Access management improvements, pedestrian accommodations, and coordination of traffic signals	71	368	10	1	3	16	10
116	Stone Drive (US-11W)	Hammond Avenue / East Avenue	Widen from 4 to 6 lanes	68	525	10	1	3	4	8
163	Wilcox Drive (SR-126)	John B. Dennis (SR-93) / Industry Drive	Replace center turn lane with raised landscaped median providing left turn lanes	66	146	6	1	3	2	4
11	Lynn Garden Drive	Stone Drive (US-11W)	Improve interchange ramps	65	1	1	1	3	1	4
134	Bloomingdale Pike	Stone Drive West (US-11W) / near Shipp Springs Road	Widen from 2 to 3 lanes to include center turn lane and other safety improvements	65	222	10	1	3	5	8
131	Fort Henry Drive (SR-36)	Holston River Bridge / Hemlock Road	Safety improvements, install median, add turn lanes, widen bridge	63	156	8	1	3	4	8
154	East Sullivan Street	Church Circle / N Wilcox Drive	Widen from 2 to 3 lanes with multimodal and aesthetic improvements	61	148	6	1	3	1	4
169	John B. Dennis (SR-93)	Stone Drive (US-11W) / Bloomingdale Road	Implement access management	61	412	10	1	3	4	8
3	John B. Dennis (SR-93)	Lincoln Street	Upgrade intersection	60	63	4	1	3	4	8

Top Scoring Projects (60+ Points)

1) 72 points – Stone Drive (US-11W) [Project ID #160]

2) 71 – Fort Henry Drive (SR-36) [#136]

2) 71 – US-23 [#191]

3) 68 – Stone Drive (US-11W) [#116]

4) 66 – Wilcox Drive (SR-126) [#163]

5) 65 – Lynn Garden Drive [#11]

5) 65 – Bloomingdale Pike [#134]

6) 63 – Fort Henry Drive (SR-36) [#131]

7) 61 – East Sullivan Street [#154]

7) 61 – John B. Dennis (SR-93) [#169]

8) 60 – John B. Dennis (SR-93) [#3]

8) 60 – I-26/I-81 Interchange [#8]

9) 60 – I-81 Mainline [#115]

8

X = Project Rank (sorted by total project score)
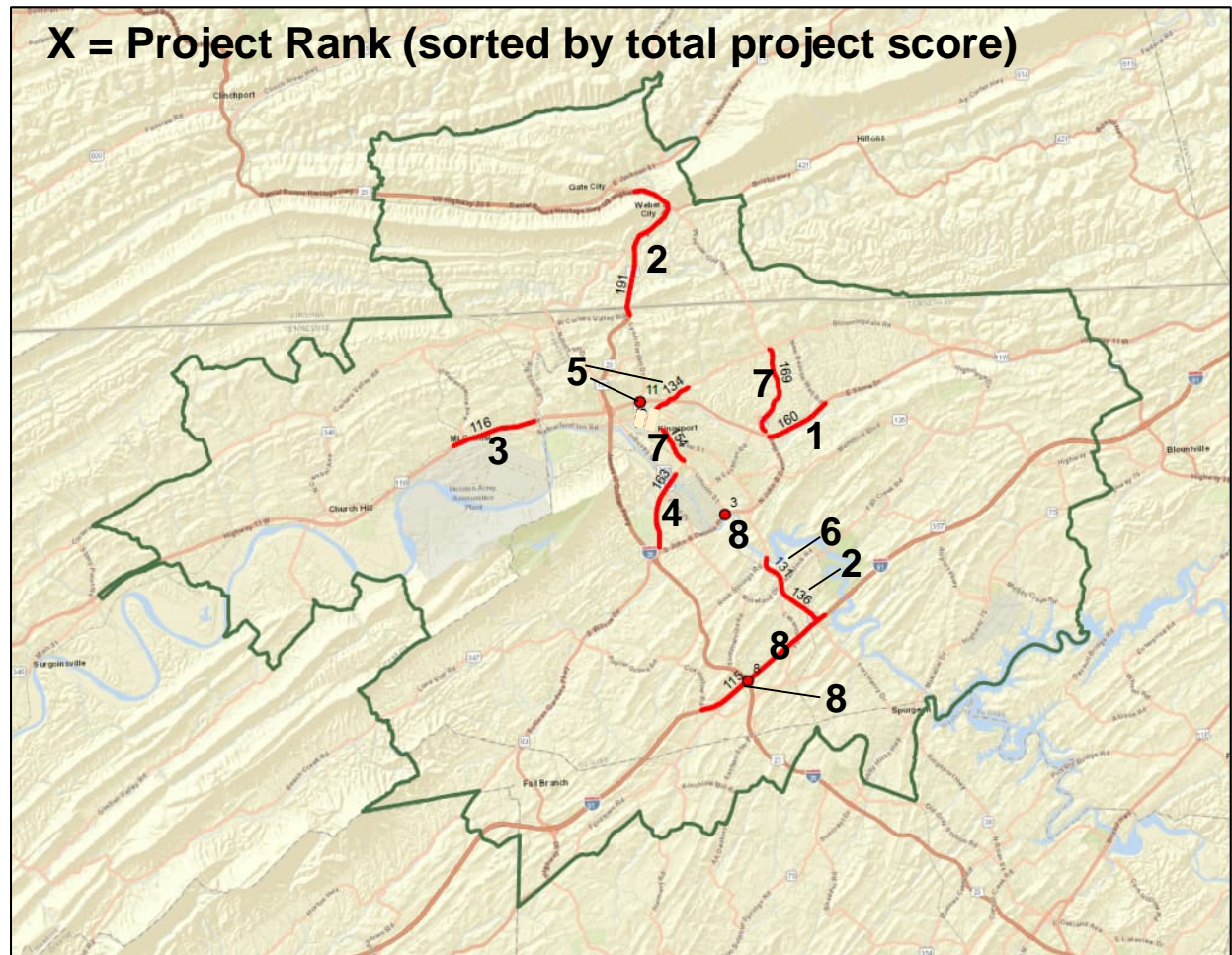
Comparison of Needs

Regional Needs

Top Scoring Projects
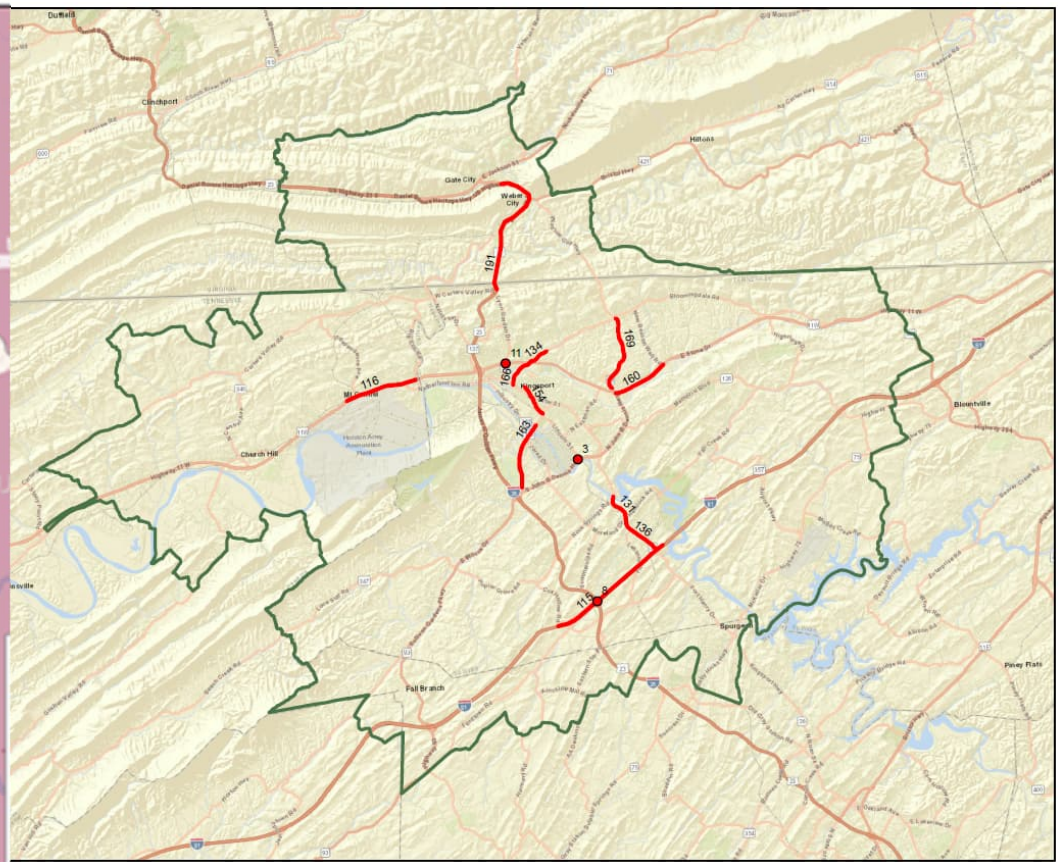
Stone Drive (US-11W)

- Rank # 1 (72 points)
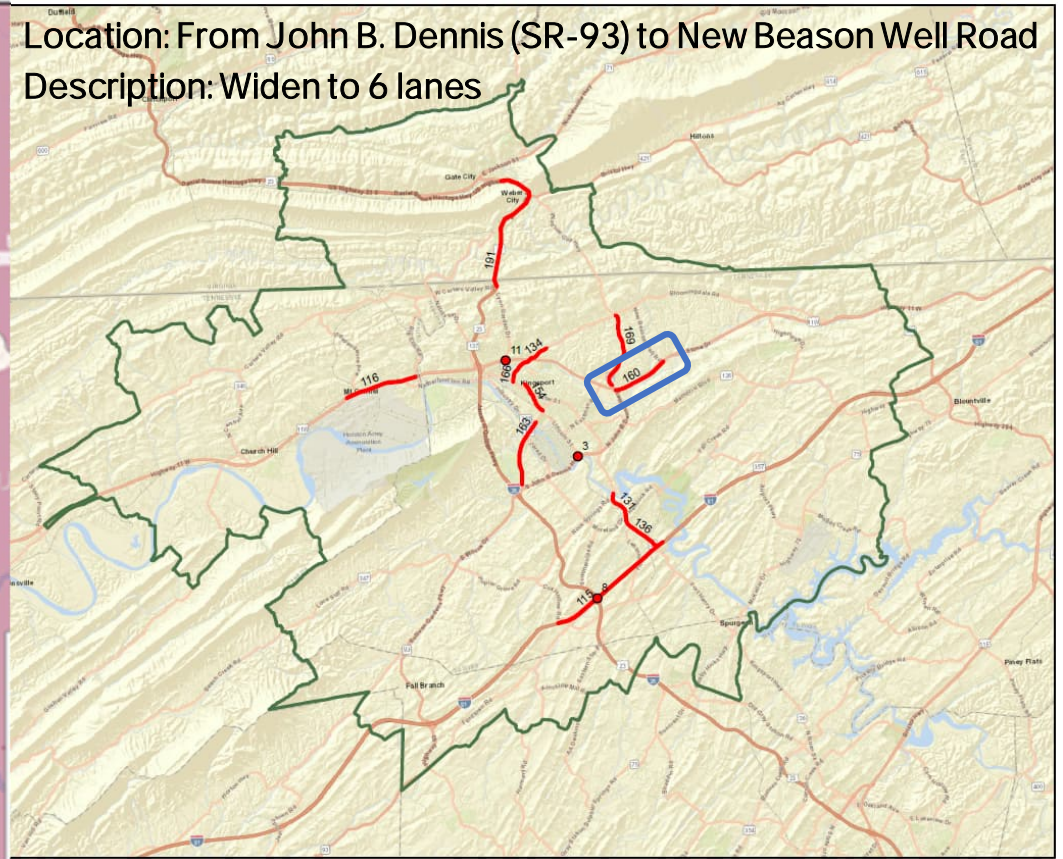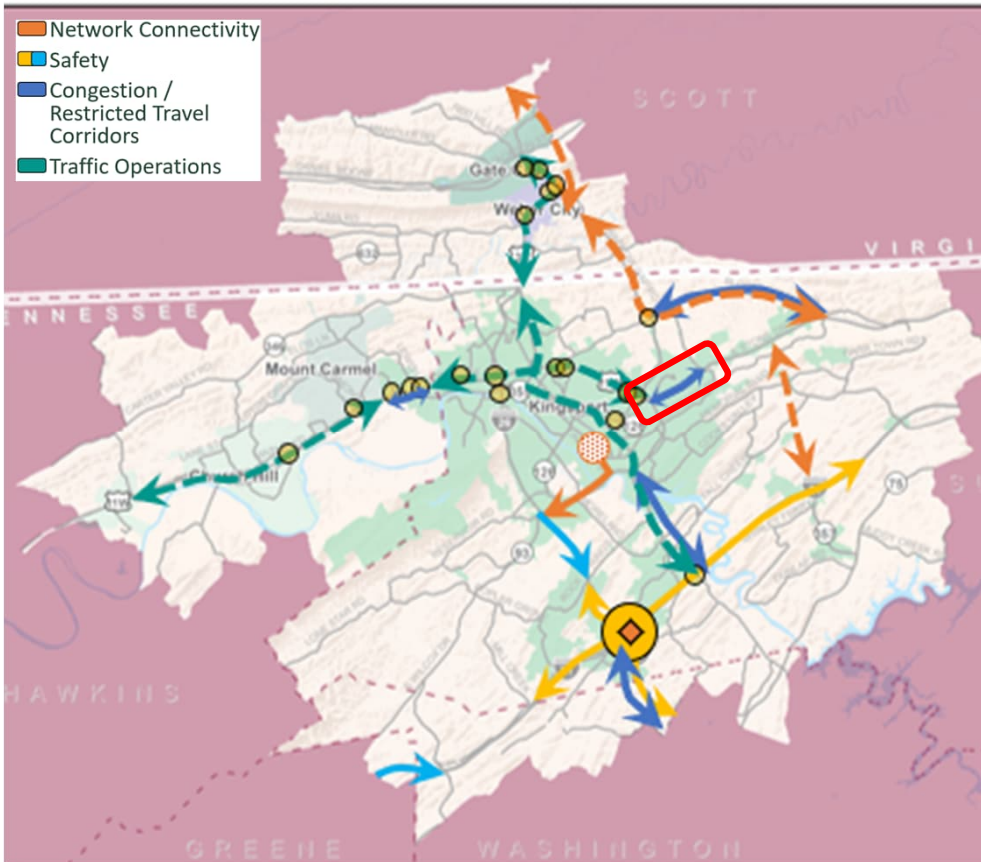
Location: From John B. Dennis (SR-93) to New Beason Well Road

Description: Widen to 6 lanes
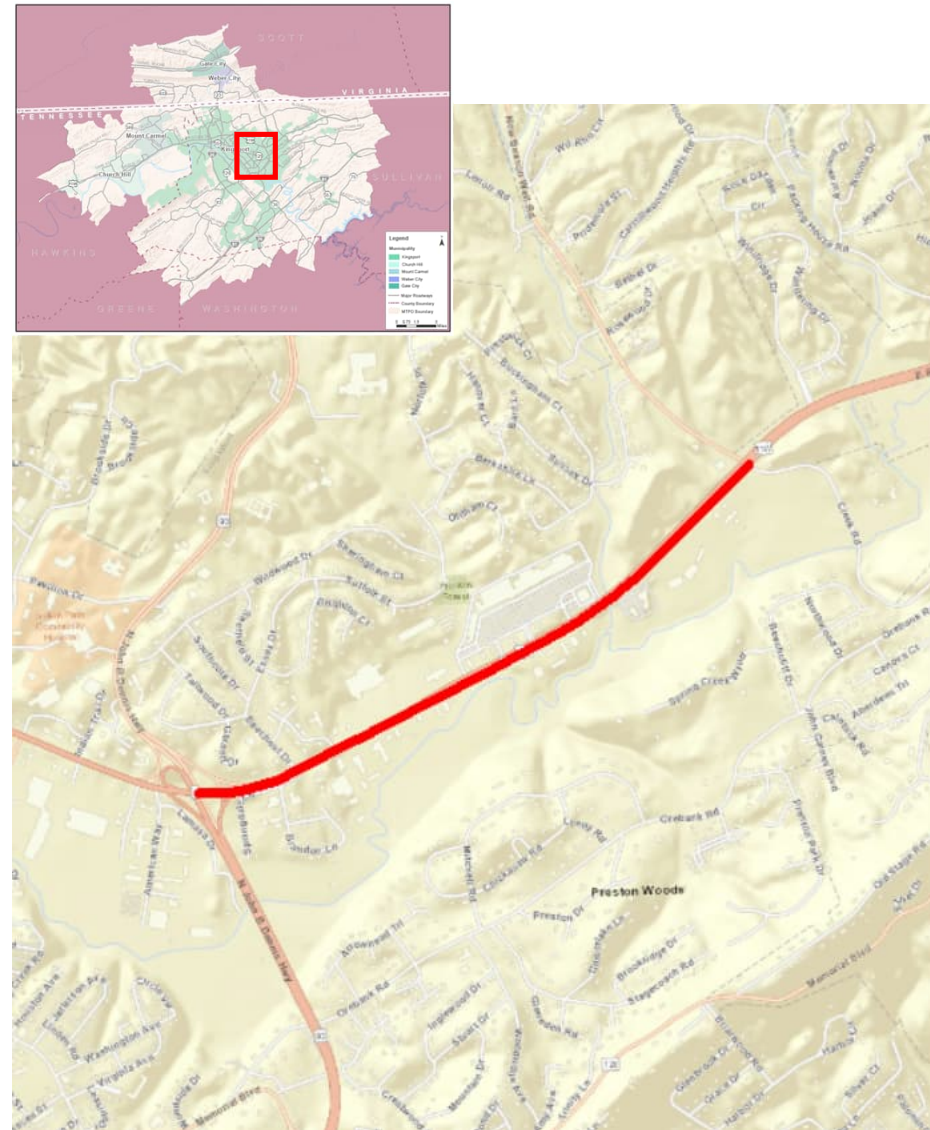
Tier I Projects

Stone Drive (US-11W)

ID# 160
Location: From John B. Dennis (SR-93) to New Beason Well Road
Description: Widen to 6 lanes

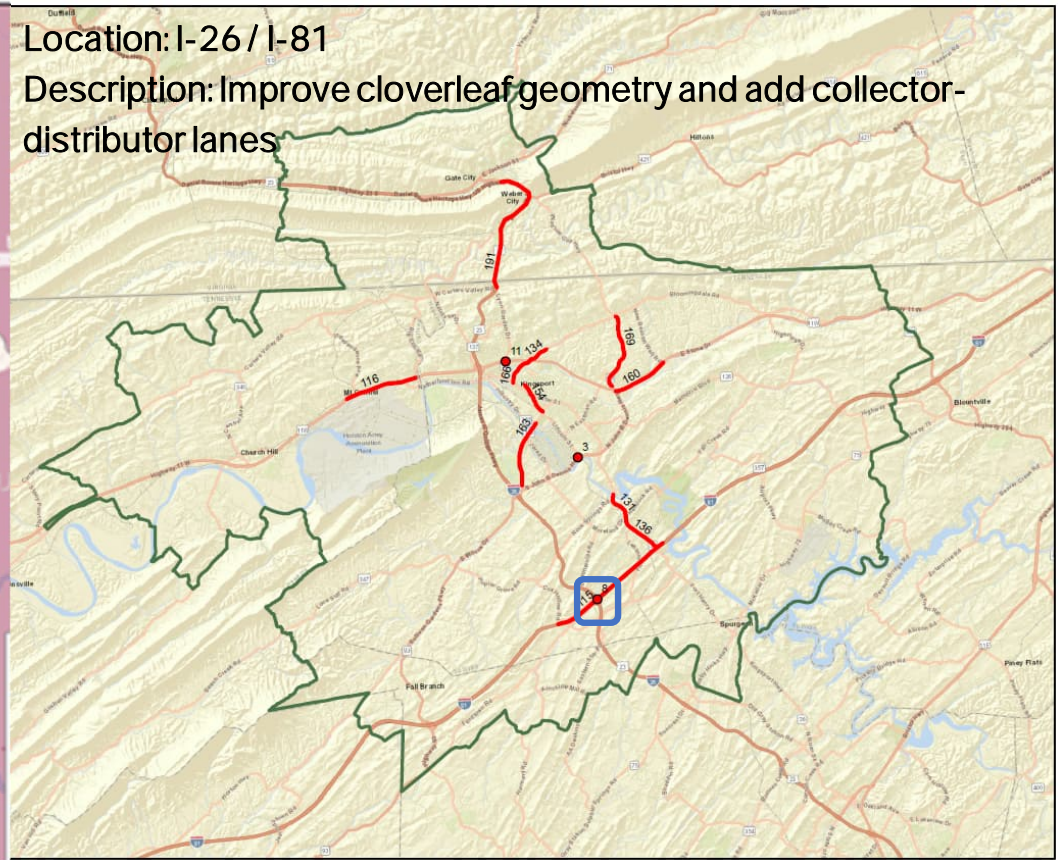Total Score: 72 (Rank 1)

- Safety – 23

- Operational Efficiency - 10

- Accessibility – 6

- Active Transportation – 15

- Environmental – 5

- Economic – 13

Tier I Projects

I-26 / I-81 Interchange

- Rank # 8 (60 points)

Location: I-26 / I-81

Description: Improve cloverleaf geometry and add collector-distributor lanes
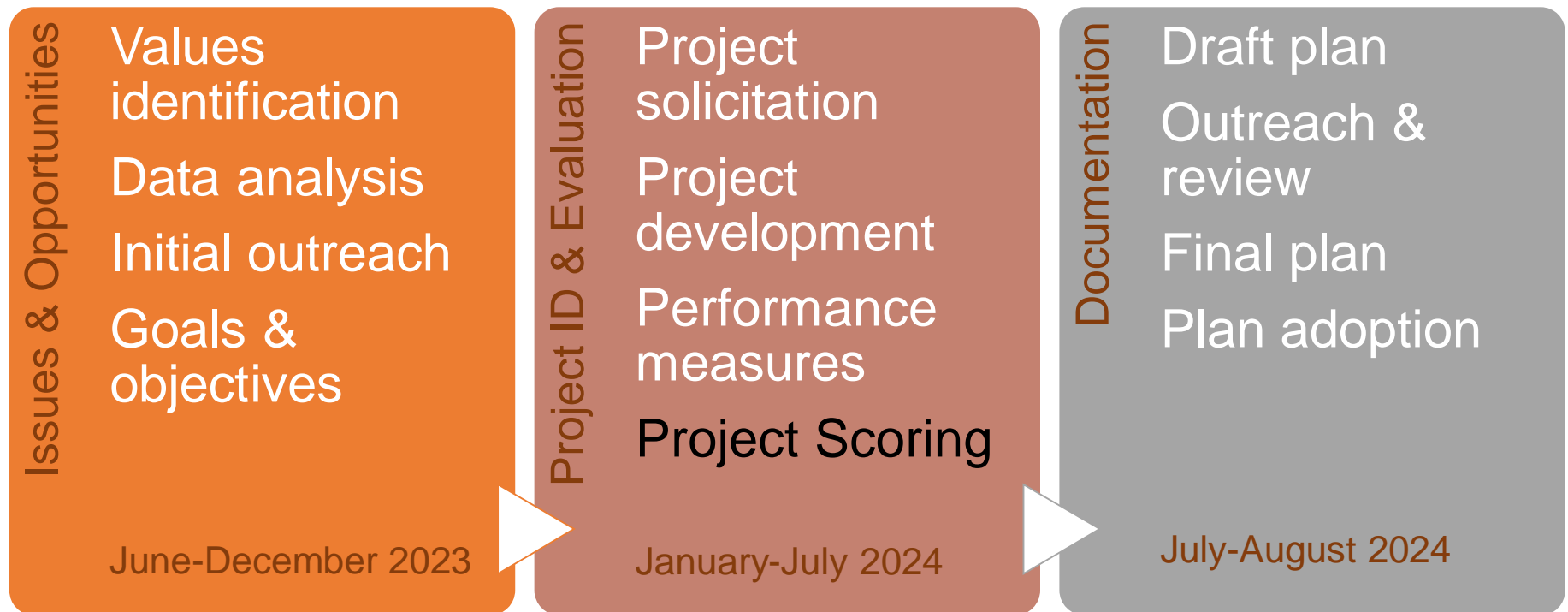
Application to Sustainable Choices 2050

Project Schedule

Issues & Opportunities

Values identification

Data analysis

Initial outreach

Goals & objectives

June-December 2023

Project ID & Evaluation

Project solicitation

Project development

Performance measures

Project Scoring

January-July 2024

Documentation

Draft plan

Outreach & review

Final plan

Plan adoption

July-August 2024

Planning Framework

Data, Vision & Values

Goals & Objectives

Strategies & Tactics

Proposed Project 1

Proposed Project 2

Proposed Project 3

Performance Measures and Federal Criteria

Performance Evaluation

Recommended 2050 LRTP Projects
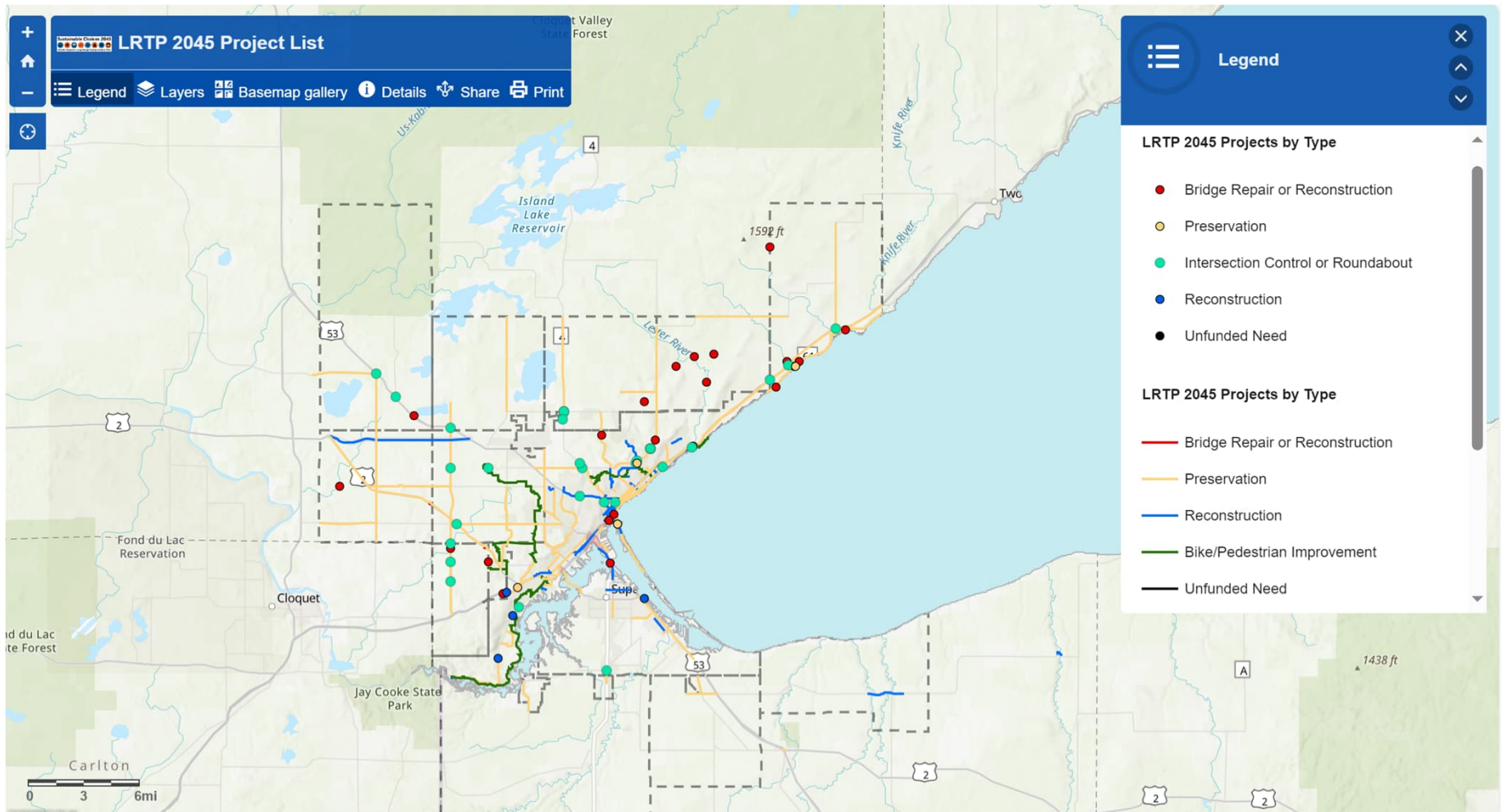(fiscally constrained, environmental justice, environmental mitigation)
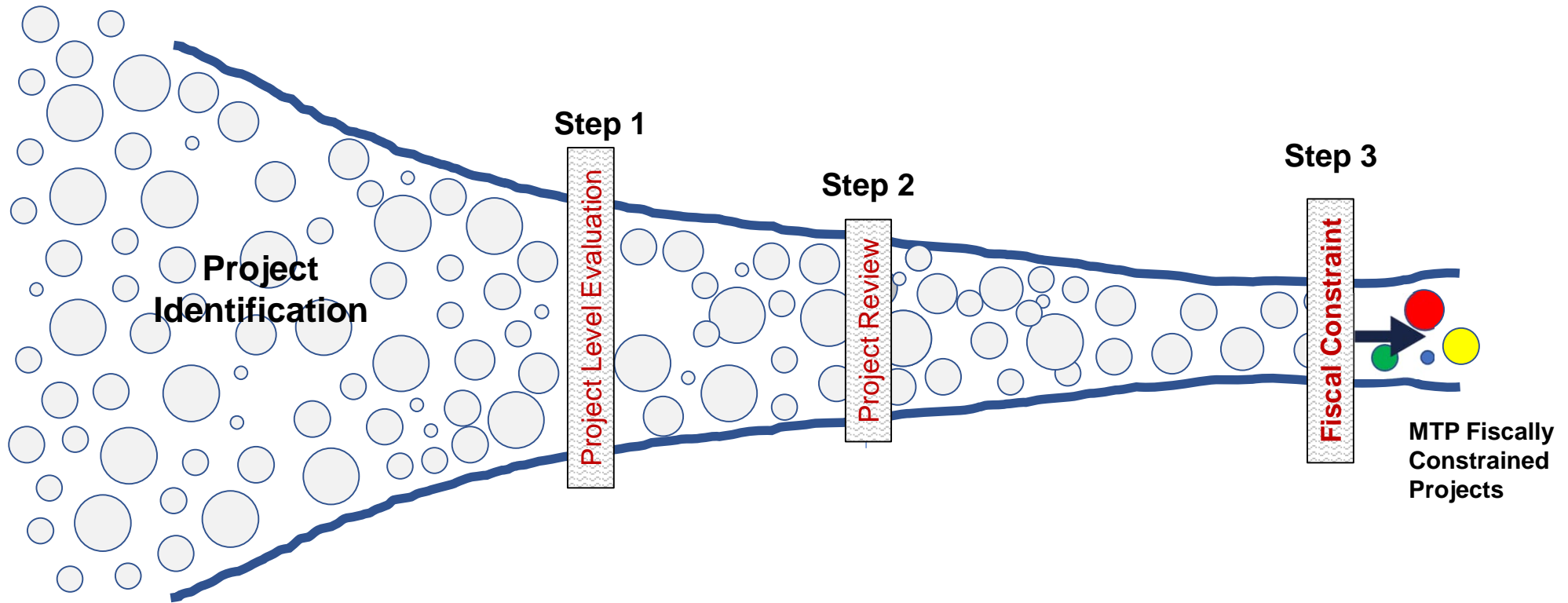
Sustainable Choices 2050 Goals

- **Goal 1** Promote **public health** and **energy conservation**, and protect and **enhance the environment** through responsible Duluth-Superior area transportation system policies and design.

- **Goal 2** Ensure the Duluth-Superior area transportation system supports the development and maintenance of a **safe, healthy, and connected community** that provides opportunities and choices for people of all ages, incomes, and abilities.

- **Goal 3** Ensure the **safety and security** of the Duluth-Superior area transportation system for all users and modes, including being prepared to handle emergencies and disasters.

- **Goal 4** Ensure the Duluth-Superior area transportation system is an **integrated multimodal network** that supports **people and goods** getting to where they need to go in an efficient manner.

- **Goal 5** **Develop and maintain** the Duluth-Superior area transportation system to support **economic productivity** and competitiveness, including **tourism**.

2045 LRTP Projects

How might this look for Sustainable Choices 2050?

Step 1 — Project Level Evaluation

Step 2 — Project Review

Step 3 — Fiscal Constraint

Project Identification

MTP Fiscally Constrained Projects

Next Steps

What's Next?

- Work with staff to establish the project evaluation process for *Sustainable Choices 2050*

- Establish project scoring criteria

- Establish goal area weights

- Further discussion as part of jurisdictional meetings

- Committee updates/feedback on project evaluation

Questions / Discussion