Roanoke Valley Transportation PLANNING ORGANIZATION
Staffed by the REGIONAL commission

313 Luck Avenue, SW
Roanoke, Virginia 24016
P: 540.343.4417 / F: 540.343.4416
rvtpo.org

October 7, 2021

MEMORANDUM

TO: Members, Transportation Technical Committee

FROM: Cristina Finch, AICP, LEED AP, Secretary to the Transportation Technical Committee

SUBJ: October 14, 2021 TTC Meeting/Agenda

The October meeting of the Transportation Technical Committee (TTC) will be held Thursday, October 14, 2021 at 1:30 p.m. at the Roanoke Valley-Alleghany Regional Commission office (Top Floor Conference Room), 313 Luck Avenue, SW, Roanoke, VA. In accordance with Virginia Occupational Safety and Health regulations, all attendees (vaccinated or unvaccinated) must wear a mask while inside the Commission building. All attendees who are unvaccinated or are otherwise at-risk must physical distance themselves from others. RVARC staff will make the necessary accommodations to comply with these regulations.

TTC AGENDA

1. Welcome, Call to Order, Roll Call ..... *Vice Chair Jamison*

2. Approval of the Consent Agenda items..... *Vice Chair Jamison*
   A. Approval of the Agenda
   B. Action on the September 9, 2021 TTC Minutes, pp. 2-13

3. Vice Chair's Remarks ..... *Vice Chair Jamison*

4. **Action Needed**: Nominating Committee Report, p. 14.....*Megan Cronise & Michael Gray*
   - Additional Nominations from the floor

5. Continued Development of the Update to the Roanoke..... *Cristina Finch & Cambridge Systematics*
   Valley Transportation Plan: Needs Prioritization and Draft Objectives/Performance Measures, pp. 15- 35

6. Other Business

7. Comments by TTC Members and/or Citizens

8. Adjournment (by 3:00 p.m.)

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MINUTES

The September meeting of the Transportation Technical Committee was held on Thursday, September 9, 2021 at 1:30 p.m. at the Roanoke Valley-Alleghany Regional Commission, 313 Luck Avenue, SW, Roanoke, VA.

VOTING MEMBERS PRESENT

David Givens	County of Botetourt
Megan Cronise	County of Roanoke
Will Crawford	County of Roanoke
Wayne Leftwich	City of Roanoke
Ben Tripp, *Chair*	City of Salem
Anita McMillan	Town of Vinton
Cody Sexton	Town of Vinton
Dorian Allen	Greater Roanoke Trans. Company (Valley Metro)
Frank Maguire	Roanoke Valley Greenway Commission
Michael Gray	Virginia Dept. of Transportation - Salem District

VOTING MEMBERS ABSENT

Mariel Fowler	County of Bedford
Dan Brugh	County of Montgomery
Mark Jamison, *Vice Chair*	City of Roanoke
Nathan Sanford	Unified Human Serv. Transp. System (RADAR)
Daniel Sonenklar	Virginia Dept. of Rail and Public Transportation

NON-VOTING MEMBERS ABSENT

Kevin Jones	Federal Highway Administration

RVARC Staff Present: Cristina Finch, Bryan Hill, William Long and Virginia Mullen.

1. WELCOME, CALL TO ORDER, ROLL CALL

Chair Tripp called the meeting to order at 1:30 p.m. and asked Cristina Finch, Secretary to the TTC, to call the roll. Ms. Finch stated that a quorum was present.

2. APPROVAL OF CONSENT AGENDA ITEMS

The following consent agenda items were distributed earlier:

A. September 9, 2021 RVTPO Meeting Agenda
B. August 12, 2021 TTC Minutes

Motion: by Anita McMillan to approve items (A) and (B) under the consent agenda, as presented; seconded by Megan Cronise.

TTC Action: Motion carried unanimously.

3. CHAIR REMARKS

Chair Tripp announced that today is his last TTC meeting, after sixteen years of serving on the Committee and regrets not being able to serve longer. He has accepted a new position with the Town of Christiansburg. According to Section 6 of the TTC Bylaws "*A vacancy in the office of Chair or Vice Chair shall be filled for the unexpired term at an election during the next TTC meeting following occurrence of the vacancy, except that no such action shall be taken unless placed on the agenda mailed or electronically communicated to all members*". Chair Tripp appointed Megan Cronise and Michael Gray to serve on the Nominating Committee and to propose a nominee(s) to fill the remainder of his two-year term ending in July 2022. The bylaws also state that the Vice Chair shall serve as a Chair in the absence of the Chair, therefore Mr. Jamison will serve as the Chair at the October 14, 2021 TTC meeting. If any member is interested in serving, they should contact the nominating committee. The election of the new Chair will be held at the next meeting.

Chair Tripp noted that one of the goals as a Chair he had was to run the meetings smoother. He is happy to have accomplished that goal.

Anita McMillan introduced the new Greenway Commission coordinator Mr. Frank Maguire. Mr. Maguire stated he was excited to have been selected as the new Greenway Commission coordinator and looks forward to working with this group.

4. RECOMMENDATION ON AMENDMENT #4 TO THE ROANOKE VALLEY TRANSPORTATION PLAN

Cristina Finch presented the staff report describing the changes in the draft Amendment #4 to the Roanoke Valley Transportation Plan. Ms. Finch distributed the updated marketing brochure for members to view since it wasn't included in the agenda packet. Ms. Finch also noted that the Aviation Drive project was listed twice in the document therefore she removed one of the references. Also, the Greenway Connection Riverland Road Project was listed in the summary table at the beginning of the document, but Ms. Finch removed it since it is already included in Appendix A. There were also several other small clarifications. The document has been already reviewed by the Policy Board and has been advertised for public comment. Mr. Sexton commented that the process this time around was a lot better compared to the one in 2017.

Motion: by Cody Sexton to recommend to the RVTPO Policy Board the approval of Amendment #4 to the Roanoke Valley Transportation Plan with staff presented changes; seconded by Wayne Leftwich.

TTC Action: Motion carried unanimously.

5. CONTINUED DEVELOPMENT OF THE UPDATE TO THE RONOAKE VALLEY TRANSPORTATION PLAN

David Jackson and Sarah Windmiller from Cambridge Systematics presented how they prioritized transportation needs; Rachel Ruhlen presented the prioritization of Access needs.

An adjusted weighting was presented compared with what was provided in the agenda packet. TTC members were asked to review the methodology and the draft prioritized needs and provide feedback to staff. Ms. Finch shared current activities to update the planning process and integrate performance as being developed with the OIPI GAP grant and Michael Baker consultant team. (The PowerPoint presentation is included with the Minutes.)

Mr. Leftwich asked to look at the spreadsheet from the presentation to see how the weighting works. Ms. Finch responded that the spreadsheet was included in the staff report but staff plans on sending an updated version to the TTC members as well.

Mr. Gray asked what version of the document will be presented to the Policy Board. Ms. Finch replied that details will not be provided yet, just a general update on the project.

Mr. Gray asked for clarification on the mentioned objectives under GAP. Ms. Finch clarified that the GAP team is helping staff build the performance based process and one element of that is developing objectives.

6. OTHER BUSINESS

A. Analysis of "SMART SCALE Round 4"

William Long presented the "Analysis of SMART SCALE Round 4" that was previously distributed with the agenda packet. Discussion ensued. Cristina Finch also reminded the TTC members that the deadline to submit the SMART SCALE submission request form is Friday, November 12, 2021.

B. Update on FY23 and FY24 Transportation Alternatives Set-Aside Block Grant Program Application

Cristina Finch reported that pre-applications for the TA program have been submitted and the full applications are due October 1, 2021. Staff have received notice that two projects were submitted for RVTPO: Williamson Road Pedestrian Improvement Project, City of Roanoke and Glade Creek Greenway Vinyard West, Town of Vinton. Both projects are around half a million dollars each and included in the Amendment #4 to the Roanoke Valley Transportation Plan.

7. COMMENTS BY MEMBERS AND / OR CITIZENS

Cody Sexton thanked Chair Tripp for his service.

9. Adjournment

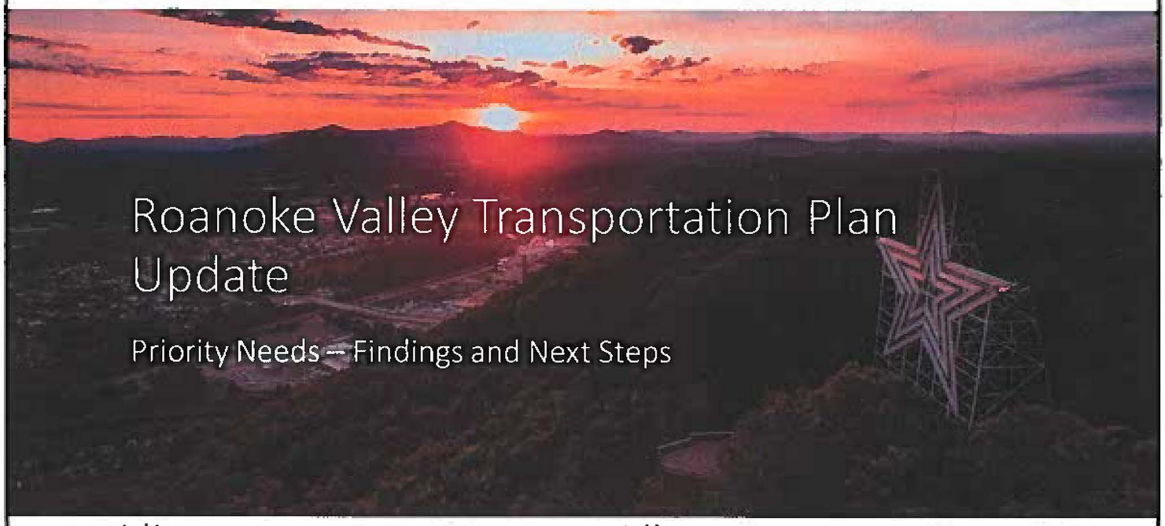
The meeting was adjourned at 3:00 p.m.

_____

Cristina D. Finch, AICP, LEED AP, Secretary,
Transportation Technical Committee

Roanoke Valley Transportation PLANNING ORGANIZATION
REGIONAL commission

September 9, 2021



Roanoke Valley Transportation Plan Update

Priority Needs – Findings and Next Steps

presented to
Transportation Technical Committee

presented by
Cambridge Systematics, Inc.

CAMBRIDGE SYSTEMATICS

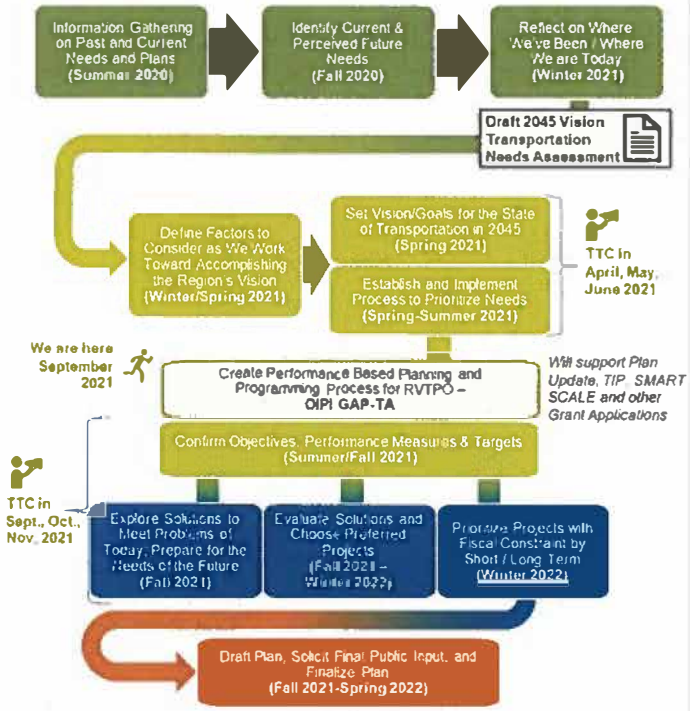
1

Priority Needs

Purpose – Use readily available data representing Plan goal areas to assess the importance of each need

Outcome – Priority list of needs, by need type, that RVTPO and the TTC can review to decide where to focus attention on solutions for possible inclusion in the Roanoke Valley Transportation Plan

This approach is a tool to inform decisions by regional planning partners on the next steps of the planning process, helping ensure that the Plan addresses the region's most critical needs while helping to meet goals



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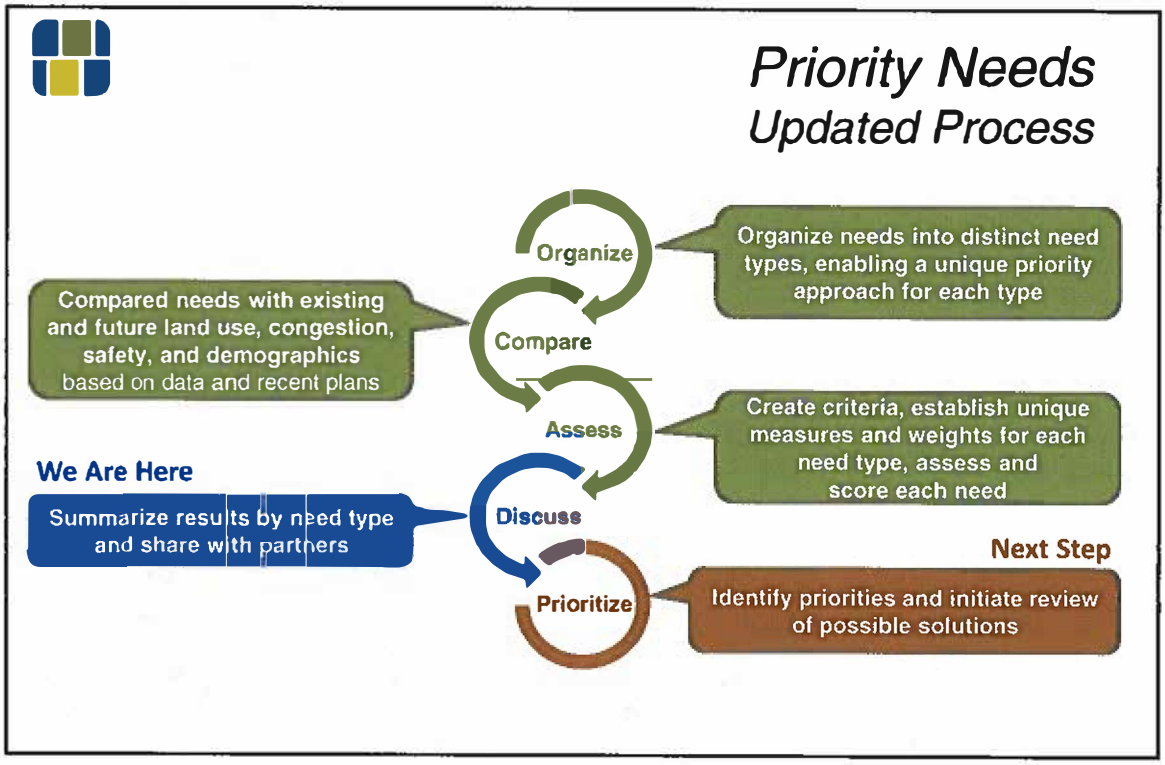
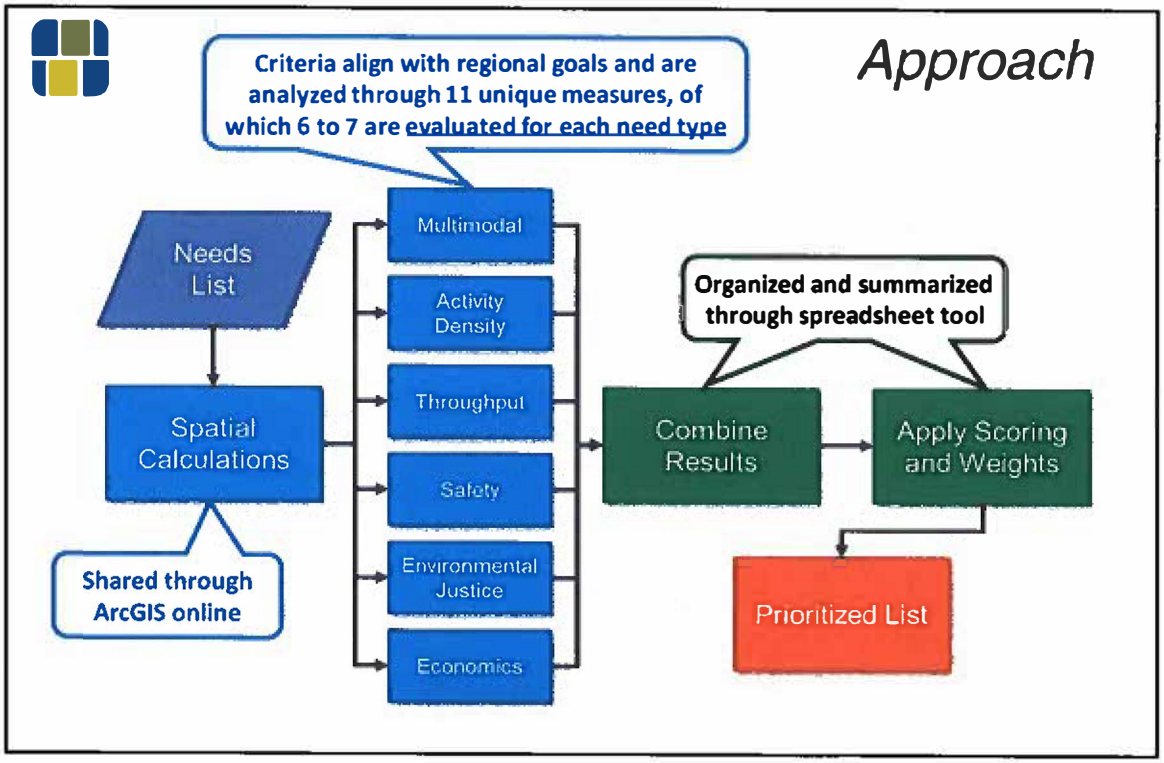

Priority Needs
Updated Process
Organize
Organize needs into distinct need types, enabling a unique priority approach for each type
Compared needs with existing and future land use, congestion, safety, and demographics based on data and recent plans
Compare
Assess
Create criteria, establish unique measures and weights for each need type, assess and score each need
We Are Here
Summarize results by need type and share with partners
Discuss
Next Step
Prioritize
Identify priorities and initiate review of possible solutions

3


Approach
Criteria align with regional goals and are analyzed through 11 unique measures, of which 6 to 7 are evaluated for each need type
Needs List
Spatial Calculations
Shared through ArcGIS online
Multimodal
Activity Density
Throughput
Safety
Environmental Justice
Economics
Organized and summarized through spreadsheet tool
Combine Results
Apply Scoring and Weights
Prioritized List

4

Criteria and Measures

Theme	Description
Data and Plan Focused	
Multimodal	Overlap with designated multimodal centers and/or districts
Activity Density	Overlap with current (2019) and future (2045) combined population and employment density within the need area by Traffic Analysis Zone (TAZ)
Throughput	Overlap with the change in need area vehicle miles traveled (2019 to 2045) and overlap with identified priority corridors from Congestion Management Process
Safety	Overlap with potential for safety improvement (PSI) locations identified in Roanoke Valley Regional Transportation Safety Study and priority non-motorized safety needs from the VDOT pedestrian safety action plan (PSAP)
Environmental Justice	Overlap with regional equity emphasis areas as identified by VTrans
Economics	Overlap with future development priority location as identified through the recent Transportation and Economic Development study and/or with designated Urban Development Areas (or growth areas)

5

Weighting

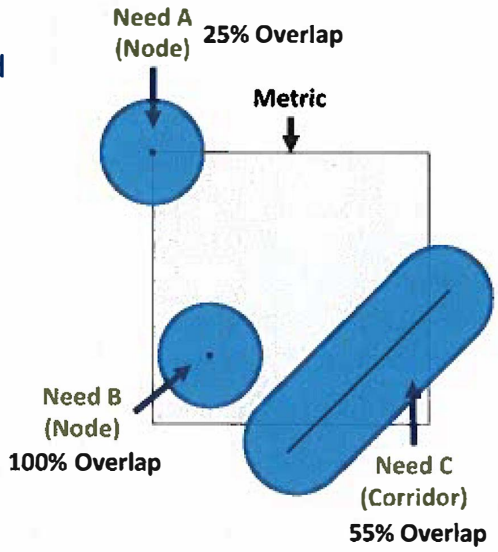
Optional safety need type weighting

Criteria & Measures	Multimodal		Activity Density		Throughput		Safety		Environmental Justice	Economics	
Need Type	Centers	District	2019	2045	Priority Corridor	VMT Change	VTrans Needs (PSI)	PSAP	Equity Emphasis Areas	Development Priority Locations	Urban Development Areas
Vehicle Safety			5	5		20	50		20	5	5
Pedestrian Safety	5	5		10				50	20	5	5
Bicycle Safety	5	5		10				50	20	5	5
Transit Safety	5	5		10				50	20	5	5
Congestion			15	15		15			25	15	15
System Management			12.5	12.5	12.5	12.5			25	12.5	12.5
System Management (Transit)	10	10		20		20			20	10	10
Access	Different approach relying on mostly a qualitative review										

6

Spatial Calculations (GIS Analysis)

- **Spatial Analysis**
  - Indicates if metric applies to each need
- **Based on Overlap with Metric**
  - 1/8th mile buffer applied to each need
  - Analysis calculates overlap amount
- **Exception with Activity Density and VMT**
  - Activity Density
    - Weighted proportional overlap
  - VMT
    - Percentile of VMT Growth
  - See *Needs Prioritization Methodology* document for more information



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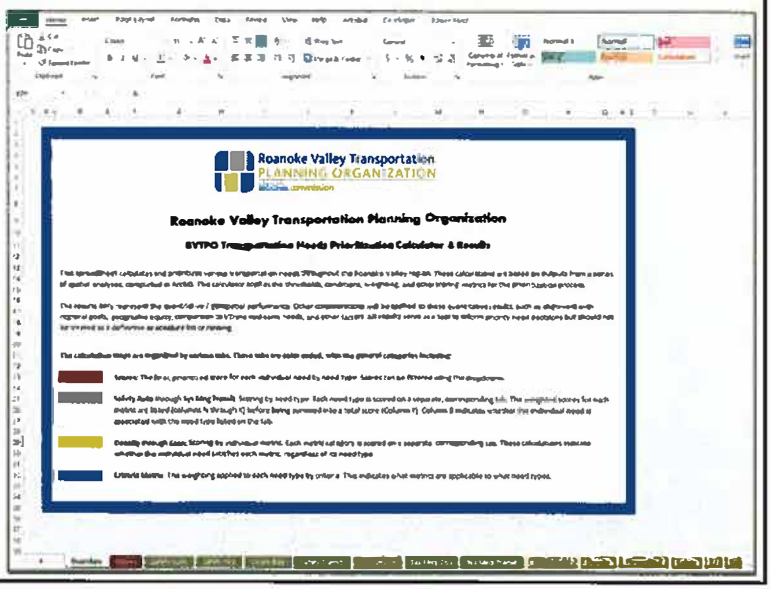
Spreadsheet Tool

- **Needs Priority Calculator**
  - Results from spatial calculations
  - Assigns need type
  - Applies weights
  - Calculates scores



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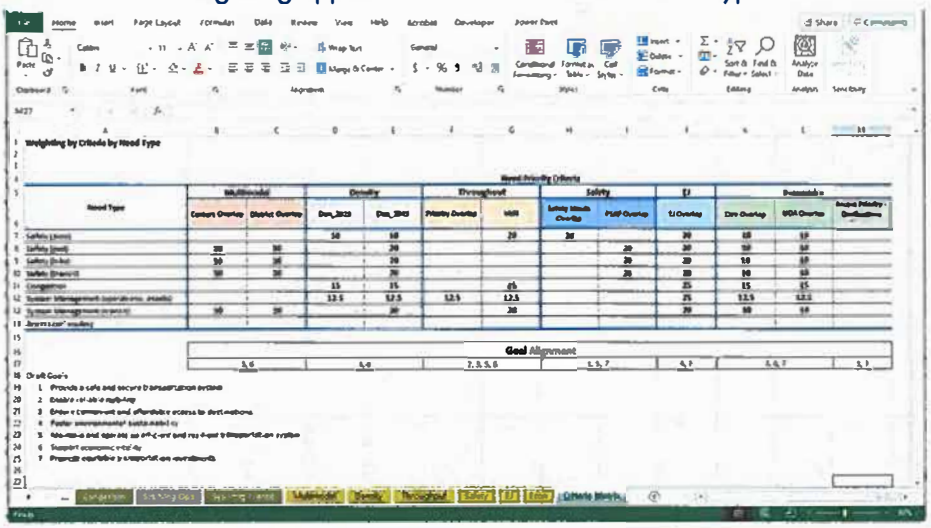
Calculations

Criteria Matrix

Weighting applied to each criteria and need type



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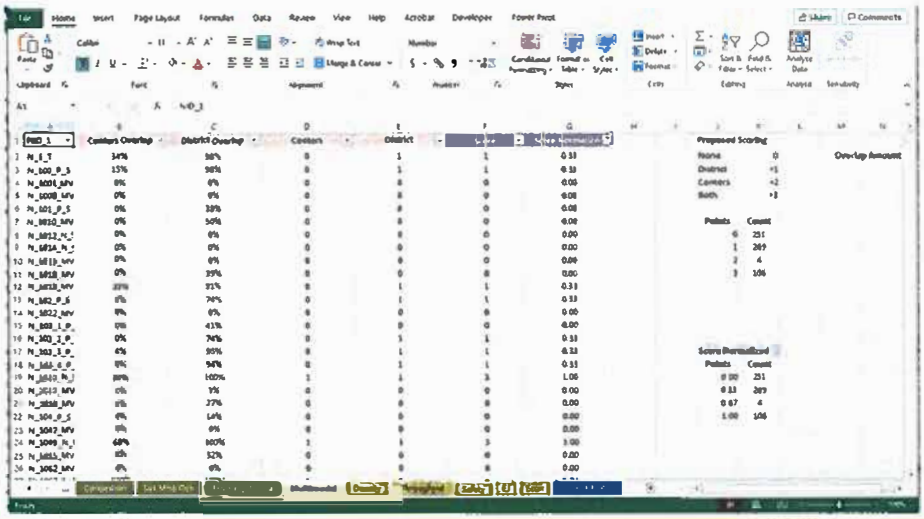
Calculations

Metric Scoring

GIS Analysis Results



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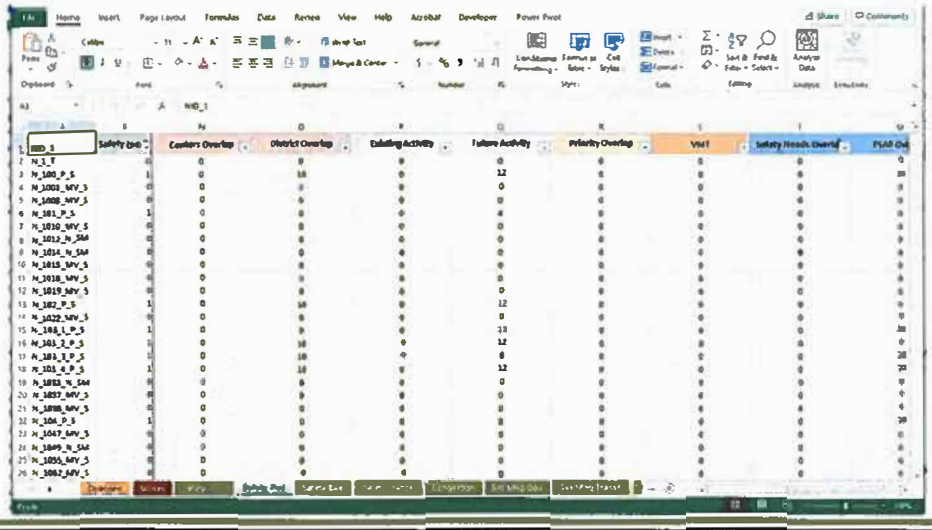
Calculations

Needs Scoring

Scoring from all metrics, with weighting



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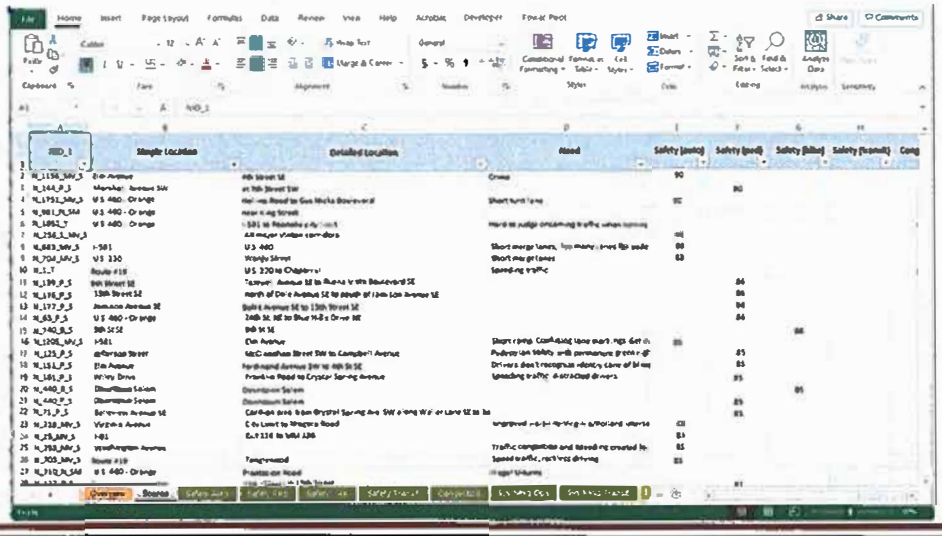
Calculations

Final Score

Final, prioritized score



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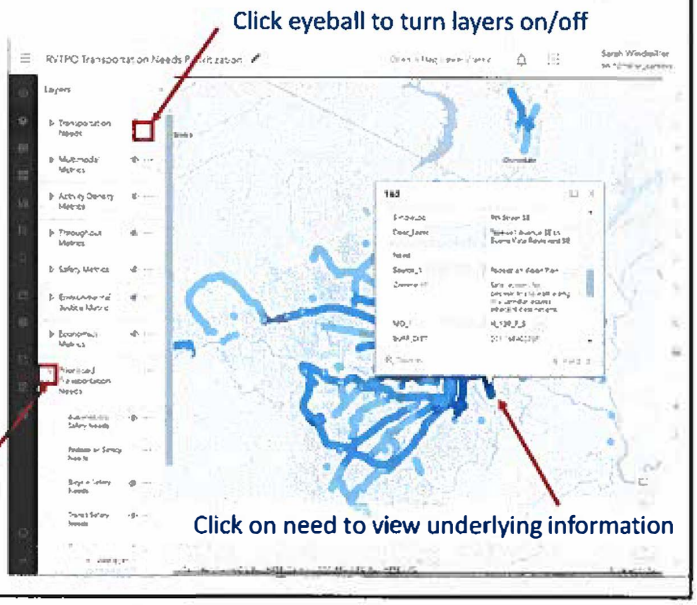
Mapping Information

- **Online Map (ArcGIS Online)**
  - Location of Needs
  - Underlying Metrics
  - Scoring Results



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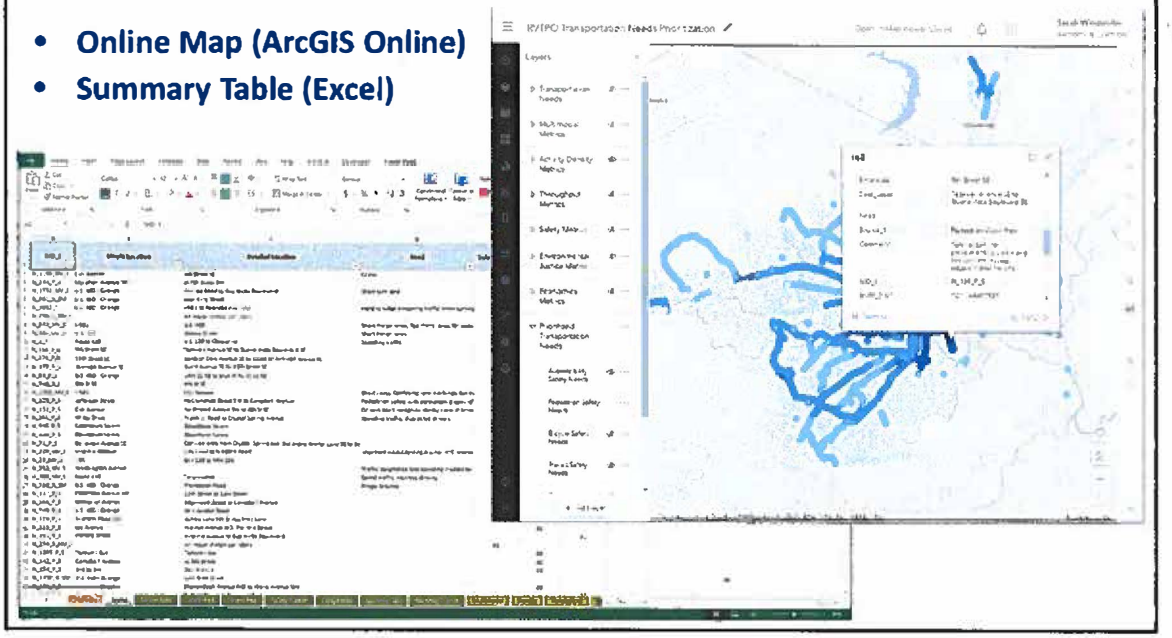
Summary Results

- **Online Map (ArcGIS Online)**
- **Summary Table (Excel)**



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Weighting – Access Needs

Criteria & Measures				
Need Type	# affected	Severity	Environmental Justice	Total
Access (Transit)	5	5	2	12
Access (Not transit)	5	5	2	12

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Access Needs
Example Criteria Considerations

Mode	What is here?	Does this affect # of people, the severity of lack of access, or environmental justice?
All modes	Government services	• Severity – many government services are essential and available in only one place (i.e. a courthouse), lack of access is high severity
All modes	Essential services	• Severity – necessary but may be available in multiple locations (i.e. a grocery store or health clinic), lack of access is moderate severity
All modes	Retail, services	• Severity – may not be necessary and may be available in multiple locations, lack of access is low severity • Number of people • Environmental justice (low wage jobs)
Transit	Bus service	• Severity – No existing bus service is high severity, existing bus service without sidewalks is moderate severity, existing bus service without other amenities is low severity
Motor vehicle	Average Annual Daily Traffic	• Number of people

16

Questions to Consider

As you review the approach and the results, consider the following:

- Are there any criteria and/or measures that we have missed (where data is readily available)?
- Do the measures for each need type and the weights make sense (e.g., do the highest weighted measures best identify the most critical aspects of the need type)?
- For each need type, do the results make sense? Do the needs in the top tier generally align with your perspective/opinion for the region or your jurisdiction?
- Do the results appear unbalanced or biased based on geography, development type, or corridor type?

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Next Steps

- **TTC review of needs prioritization results through 9/17**
  - Submit comments/questions/ideas directly through RVTPO staff
- **Present priority needs to Policy Board (9/23)**
- **Develop and review Draft objectives**
  - Consistent with process developed by GAP team
- **GAP team outlines process to develop solutions**
- **Next TTC meeting (October 14th)**
  - Reach conclusion on Needs Prioritization outcomes
  - Review Draft objectives
  - Discuss solution development process

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2021 TTC NOMINATING COMMITTEE REPORT & ELECTION OF OFFICERS

TTC Meeting October 14, 2021

At the September 9, 2021 TTC meeting, Chair Tripp appointed a Nominating Committee (Megan Cronise, Roanoke County and Michael Gray, VDOT) tasked with preparing a slate of nominees for the TTC office of Chair to fulfill the two-year term vacated by Chair Tripp which will end after the conclusion of the July 14, 2022 TTC meeting. A history of these positions is shown in the table below.

Term Years	Chair	Chair's Agency	Vice-Chair	Chair's Agency
2020-2022	Ben Tripp	City of Salem	Mark Jamison	City of Roanoke
2018-2020	Cody Sexton	Botetourt County	Ben Tripp	City of Salem
2016-2018	Cody Sexton	Botetourt County	Ben Tripp	City of Salem
2014-2016	David Holladay	Roanoke County	Liz Belcher	Greenway Com.
2012-2014	Michael Gray	VDOT	Mark Jamison	City of Roanoke
2010-2012	Michael Gray	VDOT	Mike Kennedy	Town of Vinton
2008-2010	Michael Gray	VDOT	Mike Kennedy	Town of Vinton

RECOMMENDATION:
The Nominating Committee is recommending:

Chair – Mark Jamison, Roanoke City

Note: Additional nominations may be made from the floor during the October 14, 2021 TTC meeting.

TTC ACTION: Election of Chair to fulfill the remaining two-year term vacated by Chair Tripp ending at the conclusion of the July 14, 2022 TTC meeting.

Roanoke Valley Transportation PLANNING ORGANIZATION
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STAFF REPORT
October 14, 2021 TTC Meeting
SUBJ: Continued Development of the Update to the Roanoke Valley Transportation Plan

Needs Prioritization:

RVTPO staff and the consultant team have been working since June to develop, test, and apply a needs prioritization process. The purpose of this process is to use readily available data to help assess the importance of individual needs identified through the Needs Assessment by aligning each need with data that represents aspects of the Roanoke Valley Transportation Plan goals. The outcome of the process is a prioritized list of needs, organized by need type, that RVTPO staff and the TTC can review as a means to make decisions on committing resources to investigating solutions for possible inclusion in the fiscally constrained long-range plan.

Prior to the September TTC meeting, the following information was provided for TTC review:

1. **Needs Prioritization Methodology Report** – This methodology documentation outlines the process for prioritizing various transportation needs throughout the Roanoke Valley region. Included is the overall process for completing the prioritization and an overview of the needs criteria and individual metrics within each criteria.

2. **Needs Prioritization Spreadsheet Model** – The spreadsheet model includes each individual need and the associated prioritization result for each criteria outlined in the methodology report. Access enabling viewing and downloading the spreadsheet model is available here:

3. **Needs Prioritization Online Map** – The online map enables a spatial understanding of the needs that were prioritized and the outcomes of the methodology.

   Access to the online map is available here:
   https://camsys.maps.arcgis.com/apps/mapviewer/index.html?webmap=cd8980f1444144a0ba613fb8f474103b

   Access to the on-line access needs map is available here:
   https://rvarc.maps.arcgis.com/apps/webappviewer/index.html?id=1a524c07e8e7486ea7cb414fa3a3c147

The described methodology and associated files represent the quantitative / geospatial performance. Other considerations should be applied to these quantitative results, such as alignment with regional goals, geographic equity, comparison to VTrans mid-term needs, and other factors. **The results serve as a tool to inform priority need decisions but should not be treated as a definitive or absolute list or ranking.**

During the October 14th TTC meeting, we will discuss TTC feedback received to date on the Needs Prioritization methodology and discuss how we will use the results of Needs Prioritization to start the next steps of Plan development – identification and review of potential solutions.

Plan Objectives:

Prior to initiating the process of identifying and reviewing solutions, RVTPO staff and the consultant team developed a Draft set of plan objectives. Objectives help us describe how the RVTPO will attain the Plan vision and goals that the TTC reviewed in May and June. As a reminder, the Plan vision and goals are:

VISION: The Roanoke Valley's seamless regional multimodal transportation system is safe, cost-effective, environmentally conscious, well maintained and reliable, accessible for all users, and promotes economic vitality of the community.

GOALS:

- **Provide a safe and secure transportation system**
- **Enable reliable mobility**
- **Enable convenient and affordable access to destinations**
- **Foster environmental sustainability**
- **Maintain and operate an efficient and resilient transportation system**
- **Support economic vitality**
- **Promote equitable transportation investments**

It is important to identify objectives prior to develop solutions so that our approach to addressing priority needs will be consistent with achieving the Plan vision and goals.

Objectives also create the framework for other steps of the Plan development process, including:

- Objectives inform how we reach agreement on preferred solutions
- Objectives can guide the development of criteria to prioritize projects for inclusion in the fiscally constrained Plan
- Objectives help create performance measures to assess how the region's transportation system performs today and into the future, consistent with the Plan goals and objectives.

Included with this staff report is a summary document presenting the context within which Draft objectives were developed, and a summary table of Draft objectives for TTC review, considerations supporting development of those objectives, and potential performance measures.

To facilitate the review of the Draft objectives, RVTPO staff and the consultant team have developed a questionnaire for TTC members to complete prior to the October 14th TTC meeting. The questionnaire is available to complete here:

https://survey.alchemer.com/s3/6557047/RVTPO-Plan-Update-Draft-Objectives

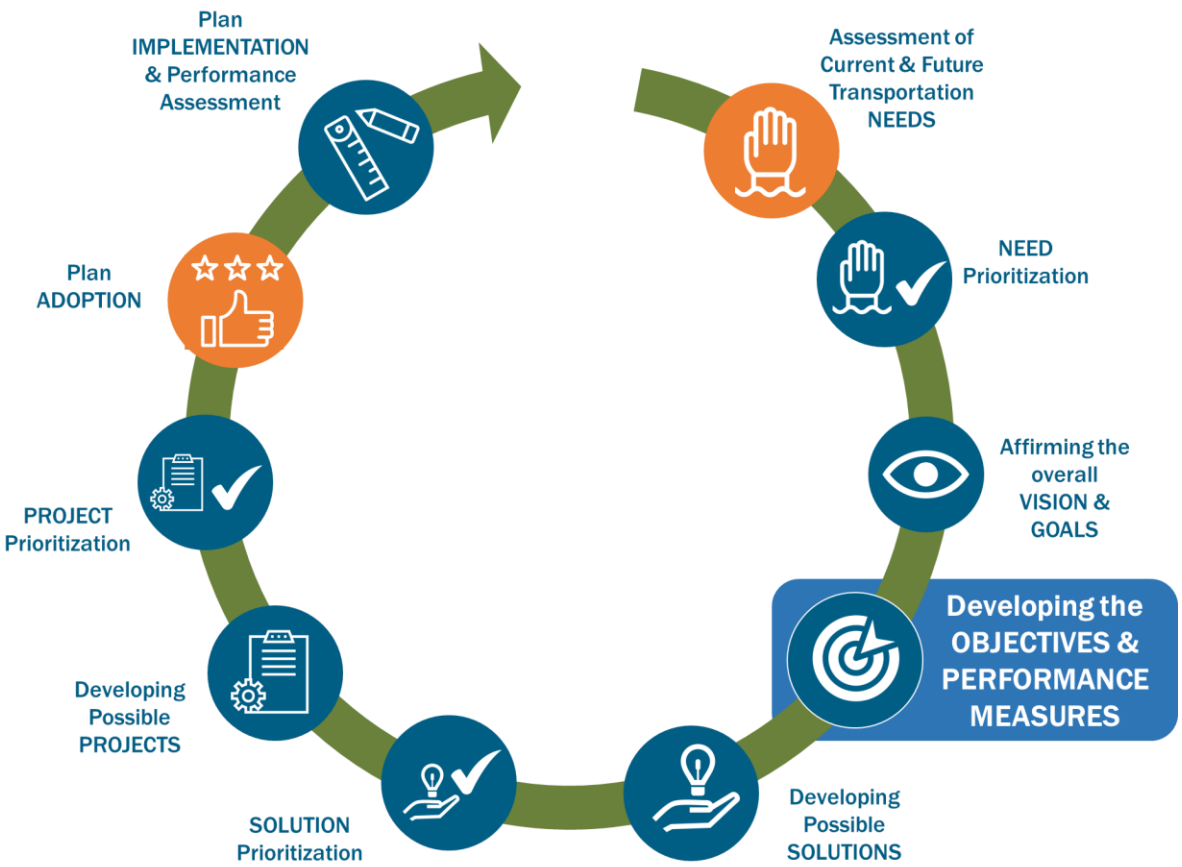
TTC Action: In October we are asking the TTC to only review the Draft objectives. After objectives are finalized by the TTC and reviewed by the Policy Committee, we will then proceed with developing Draft performance measures.

Objectives & Performance Measures in the Roanoke Valley Transportation Plan Update

Objectives Definition: Describe how the RVTPO will attain the Plan vision and goals. Objectives represent specific desired Plan outcomes.

Objectives Purpose: Objectives inform how to develop solutions to respond to needs, how to prioritize projects within the Plan, and how to track the Plan and overall system performance.

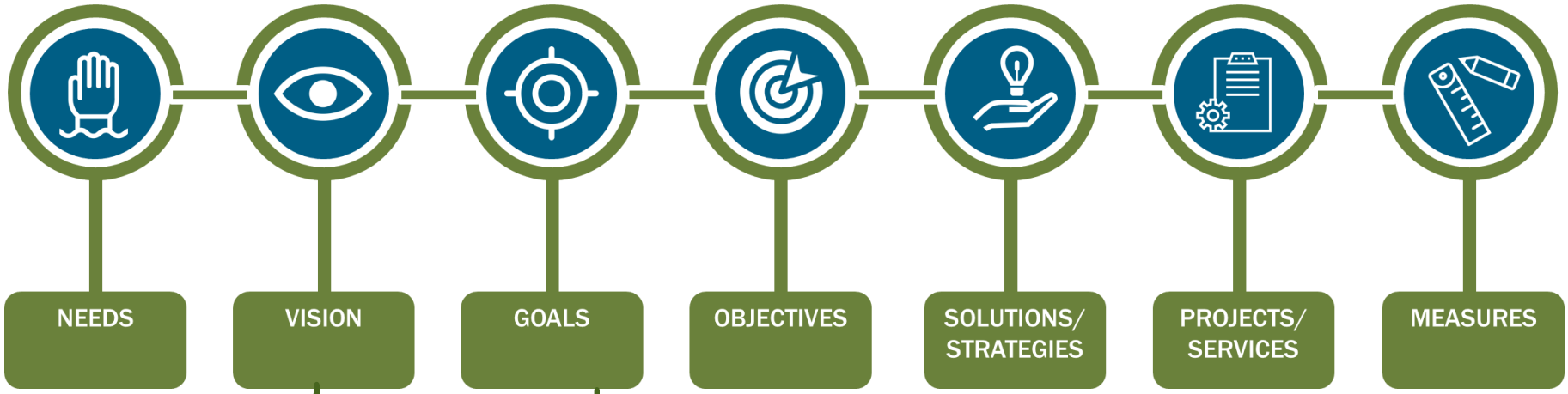
Performance Measures Definition: Quantify objectives, enabling the RVTPO to assess the degree to which the system is achieving objectives.



Considerations:

- Not all objectives and performance measures directly speak to system performance.
- Objectives inform tactical approaches for developing preferred solutions and could inform Plan project prioritization.
- Some objectives fully meet the SMART framework and are readily measurable based on available data. The SMART framework is:
  - **S = Specific**
  - **M = Measurable**
  - **A = Agreeable**
  - **R = Relevant**
  - **T = Time-Bound**
- An objective could relate to multiple goals, for example, many objectives with the accessibility goal also support the equity goal.

Elements of the Transportation Planning Process



VISION:

The Roanoke Valley's seamless regional multimodal transportation system is safe, cost-effective, environmentally conscious, well maintained and reliable, accessible for all users, and promotes economic vitality of the community.

GOALS:

- **Provide a safe and secure transportation system**
- **Enable reliable mobility**
- **Enable convenient and affordable access to destinations**
- **Foster environmental sustainability**
- **Maintain and operate an efficient and resilient transportation system**
- **Support economic vitality**
- **Promote equitable transportation investments**

DRAFT Objectives and Possible Performance Measures

Draft Objective for Review	Considerations	Performance Measure Possibilities
Goal 1: Provide a safe and secure transportation system		
a. Reduce injuries and fatalities on the multimodal transportation system.	• Consistent with FHWA required measures • Can break out into fatalities, injuries, motorized/nonmotorized, and transit • Data readily available • Can segment by community to track safety impacts on specific populations (see Goal 7) • Transit safety measures also include security related events (within the National Transit Database - NTD)	Motorized, non-motorized, and transit safety performance measures and targets are specified through FHWA and FTA rulemakings (these apply at both the Statewide and MPO level).
Goal 2: Enable reliable mobility		
a. Maintain vehicle travel time reliability on priority corridors.	• Focus on Congestion Management Process priority corridors. • Consistent with FHWA required measures. • Can expand to more corridors than National Highway System (based on availability of data)	Travel time reliability performance measures on the National Highway System (NHS) are specified through FHWA rulemakings. Other performance measures exist beyond FHWA, including those developed by VDOT and OIPI for corridor level analysis and statewide planning (VTrans).
b. Maintain transit and passenger rail on-time performance (OTP).	• Segmented by system – Amtrak, Valley Metro • Data availability through Department of Rail and Public Transportation and National Transit Database (often at least 1 year behind)	Amtrak on-time performance is reported on a monthly basis by DRPT and also is a Federally required measures through FRA. DRPT and FTA also report transit reliability by provider.

Draft Objective for Review	Considerations	Performance Measure Possibilities
Goal 3: Enable convenient and affordable access to destinations		
a. Provide motorized access to inaccessible properties identified for future development.	• New developments should be accessible by more than one direction to enable multi-directional vehicle connectivity to the roadway network.	Track number of localities with ordinances or policies that incentivize or require multiple accesses in new developments.
b. Increase the number of destinations accessible by transit.	• Could include types of destinations (e.g., essential services) • Transit level of service measure is an option (see ARC Rural Transit in Appalachia Study) • Multiple accessibility measures to consider – including VTrans/SMART SCALE measures	Track the number of destinations adjacent to bus stops and hours of day/days of week with transit service.
c. Increase transportation system connectivity between inter-regional travel modes.	• Connections to Amtrak, intercity bus terminals, and airport	Track the number and frequency of regional connections offered.
d. Increase transit, bicycle and pedestrian connections within all multimodal centers and districts.	• Transit, on and off-road bicycle and pedestrian connections within centers and districts	Focus on measures that assess the system extent of available transit-walk connections, transit-bike connections, walk-bike connections.
Goal 4: Foster environmental sustainability		
a. Manage growth in total vehicle travel per regional household.	• Direct tie to greenhouse gas emissions and overall transportation system sustainability • A substantial share of regional VMT is pass-thru (minimal benefit to the region's economy, but does create an environmental impact)	Measures should balance impact of economic growth with potential for managing or decreasing VMT per person or per household.
b. Manage emissions from on-road transportation.	• Focuses on vehicle and fuel technology opportunities in the region	Measures could track investments in zero-emission technologies (buses, county fleets, charging stations).
c. Minimize / mitigate new impervious surfaces.	• Helps consider environmental risks associated with transportation system expansion, particularly in environmentally sensitive areas.	Minimize and mitigate new impervious surface area outside of designated growth areas and in floodplains.

Draft Objective for Review	Considerations	Performance Measure Possibilities
Goal 5: Maintain and operate an efficient and resilient transportation system		
a. Maintain state and national standards for infrastructure and asset condition.	• Both Federal and State measures, each have unique applicability to the regional planning and performance management process.	Bridge and pavement condition measures are related (but intentionally focusing on different outcomes) for FHWA and VDOT. RVTPO should incorporate both sets of measures into this process. There are also transit state of good repair measures reported by each provider, with targets for Tier 2 providers (like Valley Metro) established statewide through coordination with DRPT.
Goal 6: Support economic vitality		
a. Ensure redevelopment and new developments in designated growth areas and multimodal centers/districts are supported by more than one mode of transportation infrastructure.	• Could include access to regional economic development sites and VTrans industrial development areas	Track the number of developments approved adjacent to more than one existing or planned transportation mode.
b. Maintain truck travel time reliability.	• Consistency with VTrans Freight Element (which tracks these locations) • Truck travel time reliability measure would help characterize performance of the overall regional freight system	FHWA tracks truck travel time reliability on Interstates. Data is available on all NHS routes.
c. Maintain acceptable levels of congestion during peak travel periods on priority corridors.	• Multiple possible measures to consider consistent with VTrans, I-81, Federal requirements, and other planning processes.	Performance measures should be consistent with (or build from) measures used within the Congestion Management Process.

Draft Objective for Review	Considerations	Performance Measure Possibilities
Goal 7: Promote equitable transportation investments		
a. Promote and ensure benefits and avoid or mitigate disproportionate adverse effects of transportation projects included in this Plan on minority and low-income communities.	• Assume that NEPA process protects communities from disproportionate impacts • Within solution development and prioritization process, could consider benefits & burdens qualitatively for each project • Need careful, regional specific definition of these communities (confirm if the VTrans Equity Emphasis Area addresses RVTPO objectives) (applies to all measures)	Track project benefits to these communities and identify projects or project types that could create burdens to targeted disadvantaged communities, and assemble information on decisions to help mitigate impacts.
b. Ensure at least 40% of new non-vehicle based investments primarily benefit minority and low-income communities.	• Consider unique benefits of each project on these communities • Incorporate benefits to these communities within project prioritization • Justice40 initiative builds on environmental justice outlined in Executive Order 12898	Track progress toward 40% of non-highway investments providing documented benefits primarily for minority and low-income populations.
c. Reduce traffic injuries and fatalities in minority and low-income communities.	• Special attention to provide a safe and secure transportation system in these communities	Segment FHWA safety performance measures, and other possible safety measures as applicable within these communities.
d. Maintain state and national standards for infrastructure condition in minority and low-income communities.	• Special attention to maintain and operate an efficient and resilient transportation system in in these communities	Segment FHWA and Virginia bridge and pavement performance measures within these communities.

Task 3:

PROCESS FOR DEVELOPING OBJECTIVES AND PERFORMANCE MEASURES

Process Outline

The following document gives a general outline of the process for developing objectives and performance measures as part of the long-range transportation planning process. It is broken into two parts: the process for developing objectives and the process for developing performance measures. The chart below shows the elements in the Roanoke Valley transportation planning process. It outlines all the steps in the performance-based planning process used to develop the transportation plan. However, these are not arranged in the sequence in which they occur. The chart at the end of the document shows the general sequence of these steps and tasks in the order in which they occur.

Objectives Development Process

The process of developing objectives consists of three parts. The first part involves brainstorming objective statements for consideration. It includes examples and other selection sources to help think of ideas. It also includes reviewing federal or state required performance measures and how they relate in a quantitative way to objectives. The second part involves evaluating and refining the objectives. While Part One helps generate draft objectives, Part Two establishes criteria for evaluating draft objectives. Part Three lists a series of example and potential draft objectives.

Definitions of Terms

To avoid ambiguity, it is necessary to clearly define the terminology used in these processes. Clear, detailed terms and definitions provided below clarify each step and its outcomes.

Needs – Transportation problem or issue identified in the community currently

Future Factors – Potential future need or consideration

Vision – Describes the desired future state

Goals – Broad statement of desired results, given an understanding of the needs

Objectives – A specific desired result, as it relates to making progress toward a goal, that may be accomplished by multiple strategies/solutions.

Projects/Services – The preferred means to address a transportation need and achieve an objective. These are identified in the constrained list of projects, and the vision list of projects **Solution/Strategy** – Idea of how the region can achieve desired results.

Performance Measures – The quantitative link to objectives, performance measures assess the degree to which past investments have addressed transportation needs and meet acceptable thresholds. Performance measures guide strategies/solutions and selection of projects/services to best address transportation needs and meet objectives. Measures are not the same as prioritization criteria used for prioritizing needs, solutions, or projects though they may be related or similar in some cases.

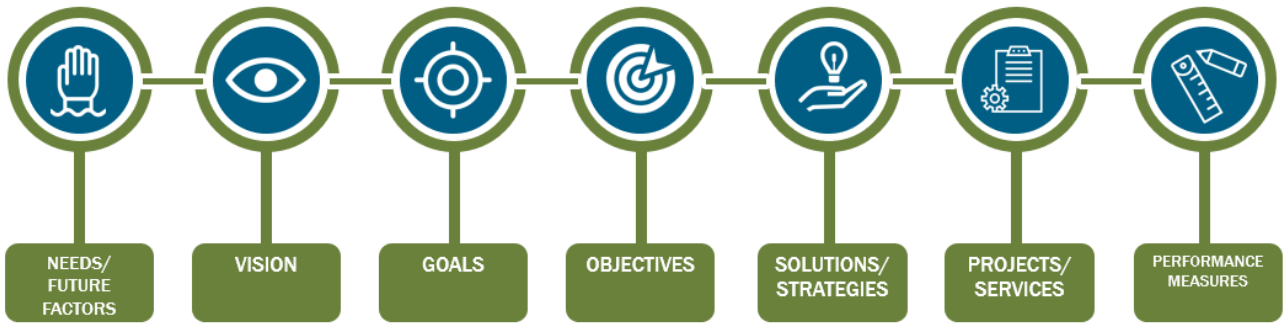


Figure 1. Chart of the basic elements in the performance-based planning process of the Roanoke Valley Transportation Plan

Guidelines for Developing Objectives

The following guidelines for developing clear and measurable objectives are based on the FHWA "Performance-Based Planning and Programming Guidebook."

- Objectives should support local goals, but also be informed by objectives established by federal and state programs
- Objectives must be attainable, measurable, and flexible with multiple possible ways to accomplish the objective.
- Objectives should be as specific as possible, and if possible, attainable within a working timeframe.
- Objectives are accomplished by outlining strategies/solutions (general plans of action) then determining appropriate projects/services (how the solution will be executed) for the preferred solution.
- Solutions should not be included in the objective as there might be more than one possible solution to address the objective.

Part 1: Developing Draft Objectives

Part One is about idea generation. It provides a process for developing objective themes and basic ideas for evaluation in consideration of priority needs. Steps in this process include the following.

1. **Identify themes based on priority needs under each Goal:** Under each goal, list the priority needs that are related to the attainment of a goal. For example, under the overall goal of safety, different themes of priority needs could include reducing pedestrian crashes or reducing auto crashes at intersections.

2. **Translate themes into candidate objectives:** Turn each identified theme into a candidate objective using the SMART framework (i.e. that objectives should be *Specific, Measurable, Agreed Upon, Realistic, and Time-Bound*). For example, the theme of reducing pedestrian crashes could be turned into a draft objective that is measurable and realistic such as "reduce the number of non-motorized fatalities and serious injuries." "Increase the number of pedestrian-activated signalized intersections in the region by an average of five percent per year."

3. **Compare candidate objectives to Need Prioritization methods:** The candidate objectives in the Roanoke Region should be compared to the regional Needs and the methods used to prioritize Needs. Some of the objectives (such as those related to safety or reliability) may have a more direct relationship to the Needs Prioritization Criteria than others. While it is not necessary that every objective be correlated to one of the Need Prioritization Criteria, they should not conflict with one another. For example, if the Environmental Justice criterion for Need Prioritization is based on presence of low income, elderly, and disadvantaged populations, the objectives for Equity should not use a completely different set of indicators.

4. **Apply additional refinement criteria to candidate objectives:** This process can filter candidate objectives through several other criteria, such as:
    a. Relationship to the SMART framework (i.e. that objectives should be *Specific, Measurable, Agreeable, Relevant, and Time-Bound*),
    b. Relevant state and federal programs (including:
        i. VTrans objectives
        ii. Smart Scale evaluation factors
        iii. U.S. DOT federal planning factors and performance measures)

5. **Develop refined objectives:** The final step involves detailing all the parts of the SMART criteria elements for the objectives defined to be more specific, measurable, and time-bound (e.g., reduce the person hours of total delay on highways and major arterials associated with traffic incidents by X percent over Y years.). As objectives are refined, they should also be linked with specific sources of data that will be used to measure performance of each objective. Although selecting performance measures is a related step in the process, each objective should have an identified set of data and potential measures that can be used to gauge performance over time.

Part 2: Vetting the Draft Objectives

Part Two describes the process for vetting the candidate objectives with stakeholders to be able to affirm the final set of objectives for the planning process. The primary stakeholders in this process are the Technical Committee (TTC) and the Policy Board. Public involvement was conducted during the Needs process and the public will be brought back in to review the final Goals, Objectives, Measures, etc. when the Plan is in draft form. Steps in this process include:

1. **Briefing for TTC on the definitions of Needs, Goals, Objectives, And Measures:** The TTC's involvement will help to validate the candidate objectives. This involvement should begin with developing their understanding of key terms in the process.

2. **Homework for the TTC:** Following the initial briefing on key terms and definitions, the TTC should be given a homework assignment to review the list of candidate objectives. The TTC will have the opportunity to mark up the draft objectives and metrics. The TTC should have meaningful involvement in this step, evaluating each objective and providing thorough input electronically or through an online survey.
3. **TTC meetings or work session:** A work session should be conducted with the TTC to review the results of their evaluation and affirm the final preferred objectives. This coordination should end with a recommendation on the final objectives to the Policy Board.
4. **Policy Board:** As the decision-making body, the Policy Board will have authority for final approval of the Goals, Objectives, Measures framework and results. This process should also reinforce building support, to validate the final Roanoke Valley Transportation Plan.

Part 3. Example Objectives

Based on the process above and the parameters in the FHWA Performance-Based Planning and Programming Guidebook, a list of potential draft objectives for consideration has been included at the end of this document. The sample objectives were identified through various sources including VTrans objectives, objectives from other MPO plans and from the RVAMPO 2035 transportation plan. However, it should be noted that some objectives from the RVAMPO 2035 Plan may not be appropriate as potential objectives since they do not fit the "SMART" criteria for defining objectives. They have been included for reference and as potential candidate ideas for Solutions or Projects. Likewise, other potential objectives may be vague and require additional detail to make them obtainable.

Performance Measures Development Process

Types of Performance Measures

The process of developing performance measures can occur at two points in the performance-based planning process:

1. Federal performance measures - Federal FAST Act provisions mandate system performance measures and targets. The performance measures and targets defined through federal guidance were adopted by state DOTs and MPOs, including the RVTPO, in the past few years.

2. Regional performance measures – Additional performance measured adopted by the RVTPO that are not federally required. These measures quantitatively assess progress towards meeting objectives and through them the region's goals and vision.

Note: Prioritization criteria for needs, solutions or projects *- these are not performance measures, rather they are criteria developed for selecting or prioritizing needs, solutions or projects. The criteria are typically developed at the MPO or regional level to ensure that needs prioritization, solution evaluation, and project selection occur in a fair and transparent process. These criteria may be closely aligned with some performance measures.*

The purpose of utilizing federal or developing additional unique regional performance measures is to have a way to track the changes in the transportation system over time and progress toward achieving the region's vision, goals and objectives.

Performance measures are the quantitative counterpart to objectives. Thus, ideally performance measures should be aligned with both goals and objectives, and they should show progress toward meeting the region's transportation goals by several means, including addressing the region's transportation needs. The intent is to have a set of system performance measures corresponding with each objective so that progress toward the objectives can be measurable.

Relationship to Federal Measures

USDOT requires that MPOs track a set of performance measures, as defined on page 24 of the Regional Transportation Improvement Program: https://rvarc.org/wp-content/uploads/2021/08/FY21-24TIP-083121.pdf

These measures allow the RVTPO to track progress toward some of the region's goals and objectives, but not all the regional goals have federal performance measures associated with them. The following table compares the RVTPO regional goals with the federally required performance measures. As shown in the table, there is not a direct correspondence between some of the goals and the federal performance measures.

This is to be expected since the federal performance measures are only intended to track system performance, whereas local or regional goals may relate to other priorities that are not directly related to the state of the system, such as economic development or environmental sustainability.

However, as objectives are developed, there can be a

closer correspondence between the objectives and the federal performance measures. For the objectives that do not have a federally required performance measure, the RVTPO should select a performance measure that it can track every year to monitor progress toward achieving the objective.

RVTPO Goals	Applicable Federally Required Performance Measures
1.Provide a safe and secure transportation system	Safety and Public Transit Agency Safety Plan
2.Enable reliable mobility	Highway System Performance
3.Ensure convenient and affordable access to destinations	N/A
4.Foster environmental sustainability	N/A
5.Maintain and operate an efficient and resilient transportation system. Maintain and operate an efficient and resilient transportation system	Pavement and Bridge, and Transit Asset Management
6.Support economic vitality	N/A
7. Promote equitable transportation investments	N/A

Process for Developing Regional Performance Measures

The process of developing additional regional performance measures follows logically from the process of identifying objectives and consists of a similar sequence of steps-developing candidate measures, selecting criteria to refine them, and vetting the measures with stakeholders.

1. Refine and finalize objectives
Performance measures need to be directly tied to the objectives. It may be necessary to refine the list of objectives to ensure that each of the federally mandated performance measures has a measurable objective linked to it.

2. Identifying gaps in performance measures
Identify gaps where no federally required performance measure corresponds to an objective.

3. Developing candidate performance measures
This step involves brainstorming a list of candidate regional performance measures to go with each objective.

Candidate performance measures can be derived from sources such as:

- The list of performance measures that the RVTPO tracked up until 2017. These performance measure reports are available at: https://rvarc.org/transportation/mpo_urban_transportation/performance_measures
- VTrans system performance measures - these include the surrogate performance measures aligned with each VTrans goal, which are available on page 23 of the VTrans draft policy guide:(https://vtrans.org/resources/DRAFT_VTrans_Policy_Guide_2021.pdf
- Performance measures that have been developed by other MPOs. Virginia examples include those developed by the Hampton Roads TPO, the Central Virginia MPO and others.

4. Evaluating performance measures
The next step involves evaluating performance measures and refining draft performance measures based on objective standards. One source of standards for refining performance measures is the Roanoke Valley TPO Transportation Performance Management Technical Assistance Recommendations Report, prepared by Transportation for America. Although that report focused on project prioritization criteria, some of its guidelines for selecting good criteria are applicable to selection of system performance measures as well, including:

a. Work toward a small number of performance measures that directly support the identified goals and objectives.
b. Keep the number of performance measures small to make them easier to track and digest, increasing the likelihood that the performance measures will be used meaningfully.
c. Ensure that the data for the performance measure is available. Data must be available or be able to be made available for the performance measure to be tracked each year.
d. Ensure that the performance measure is easy to understand.

Additional Considerations for Evaluating the Measures

In addition to the above recommendations, other considerations should be reviewed when refining and evaluating the candidate performance measures, such as:

- Is the desired direction of the measure clear? If not, it can be hard to know whether progress is being made. Each performance measure should have a desired direction (e.g. increase in values or decrease in values).

- Can the RVTPO directly influence the performance measure through its work, including through its project selection? Some performance measures may be important for the region but too broad for the RVTPO to influence through its transportation work. If measures cannot be influenced directly or indirectly, the RVTPO will be evaluating itself on performance measures over which it has no influence.

5. Vetting the draft performance measures

The process for vetting the draft performance measures is essentially the same as the process for vetting the candidate objectives as described above. Steps in this process include:

a. **Recap for TTC on the process of defining Needs, Goals, Objectives, And Measures:** The TTC may need a brief recap of how performance measures fit into the overall cycle of performance-based planning in the transportation plan.
b. **Homework for the TTC:** Following the initial briefing on the overall process, the TTC should be given a homework assignment to review the list of draft performance measures. The TTC will have the opportunity to mark up the draft performance measures with input provided electronically or through an online survey.
c. **TTC meetings or work session:** A work session should be conducted with the TTC to review the results of their evaluation and affirm the final preferred performance measures. This coordination should end with a recommendation on the final objectives and any new regional performance measures to the Policy Board.
d. **Policy Board Review:** As the decision-making body, the Policy Board will have authority for final approval of the Goals, Objectives, Performance Measures framework and results. This process should also reinforce building support, to validate the final Roanoke Valley Transportation Plan.

Overall Process Chart

The following flowchart depicts how the various elements of the process connect. It is based on the RVTPO's framework for prioritization originally approved in 2017. The identified regional Needs start the process and shape the Goals, which inform the prospective objectives. The prioritized Needs report and objectives work together to form possible Solutions and Strategies. The preferred Solutions are developed into specific Projects or Services, and these are prioritized as well as measured to ensure that their performance relates back to the original Goal and Objective.

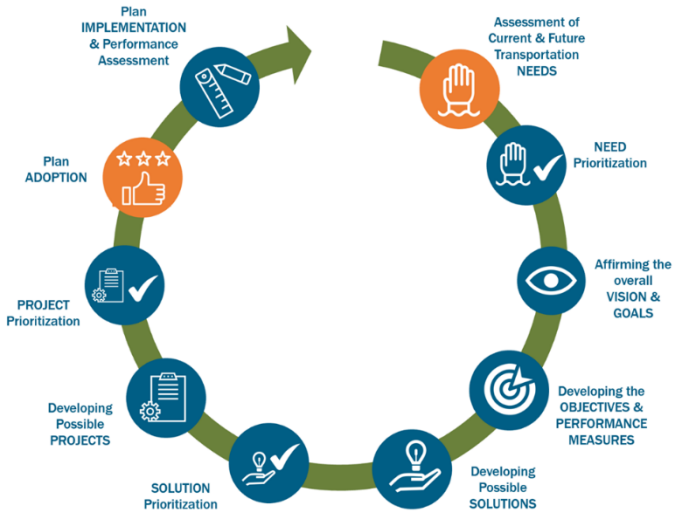


Figure 2. Chart showing how objectives fit within the overall Roanoke Valley Transportation Plan process

Figure 3. Table of Potential Objectives for Consideration

2045 Draft LRTP Goals	Potential Objectives	Idea Source
1. Provide a safe and secure transportation system	Reduce vehicle crash rate (EPDO/KAs) and frequency	VDOT safety measure
	Maintain state of good repair	RVTPO Needs Assessment references pedestrian/ADA facilities in poor repair
	Reduce injuries and fatalities along the region's multi-modal transportation system	Other MPO Examples. Same as VTrans
	Improve the security of the transportation system's users through the coordination of agencies, responders, and departments (transportation and non-transportation).	Other MPO Examples
	Reconfigure, restripe, and/or resurface urban collectors and arterials to include bicycle lanes, sidewalks, or pedestrian paths in accordance with local comprehensive plans and local design guidelines.	RVAMPO CLRTP 2035 Objective
	Use data analysis to identify top regional accident locations on a vehicle miles traveled, entering volume, or other standard measure.	RVAMPO CLRTP 2035 Objective
	Identify regionally significant right of way or human factors that have the potential to lead to accidents in anticipated projects listed in this plan.	RVAMPO CLRTP 2035 Objective
	Promote educational safety programs	Other MPO Examples
	Reduce the number and rate of motorized fatalities and serious injuries	VTrans
	Reduce the number of non-motorized fatalities and serious injuries	VTrans
	Provide a safe and secure environment for the traveling public, addressing roadway hazards, pedestrian and bicycle safety, and transit security.	Other MPO example (Maricopa Association of Gov'ts)
	Increase safety with an adaptive transportation system for all users, including minimizing conflicts between motorized and non-motorized modes.	Other MPO example (HRTPO)
	Ensure the security of the region's transportation infrastructure and its users.	Other MPO example (HRTPO)

2045 Draft LRTP Goals	Potential Objectives	Idea Source
2. Enable reliable mobility	Improve system reliability	VDOT measure
	Reduce traffic congestion on primary travel corridors within the region.	Other MPO Examples
	Maintain reliability and performance for freight, transit, bike and pedestrian modes of travel.	Other MPO Examples
	Integrate technologies, techniques, and programs to maximize the efficiency of the existing system.	Other MPO Examples
	Maintain regional vehicle hours of delay at present level.	Other MPO Examples
	Increase performance and awareness of Travel Demand Management (TDM) program	RVAMPO CLRTP 2035 Objective
	Consider corridor improvements as a combination of a series of intersection or bottleneck improvements coupled with appropriate safety and accessibility.	RVAMPO CLRTP 2035 Objective
	Target future areas that are projected to have a concentration of "carless households" in retirement age ranges.	RVAMPO CLRTP 2035 Objective
	Investigate daily bus service between Roanoke Valley and Smith Mountain Lake to connect retired lake residents with regional airport and other transportation connections.	RVAMPO CLRTP 2035 Objective

	Emphasize capacity management through low-cost investments - prioritize projects that focus on lower cost operations and management type improvements such as intersection improvements, transit priority, and complete street solutions.	Other MPO Examples
	Improve reliability on key corridors for all modes	VTrans
	Maintain an acceptable and reliable level of service on transportation and mobility systems serving the region, taking into account performance by mode and facility type.	Other MPO example (Maricopa Association of Gov'ts)

NOTE: Some Objectives from the RVAMPO 2035 Plan may (in orange font) may not be appropriate as potential objectives since they do not fit the "SMART" criteria for defining objectives. They have been included for reference and as potential candidate ideas for Solutions or Projects. Likewise, other potential objectives may be vague and require additional detail to make them obtainable.

2045 Draft LRTP Goals	Potential Objectives	Idea Source
3. Ensure convenient and affordable access to destinations	Increase destinations accessible by transit	RVTPO Needs Assessment
	Incorporate and coordinate transportation improvements with existing and planned future land uses to minimize infrastructure cost.	Other MPO Examples
	Provide safe, reliable, and affordable connections to employment, education, healthcare, and other essential services.	Other MPO Examples
	Improve and enhance regional and long-distance transit usage and coverage within the region.	Other MPO Examples
	Improve and enhance bicycle and pedestrian facilities within the region.	Other MPO Examples
	Preserve needed future transportation corridors early in the planning process.	Other MPO Examples
	Plan for non-interstate park and ride lots by including construction costs or private sector partnership costs in the Financially Constrained List of Transportation Projects.	RVAMPO CLRTP 2035 Objective
	Provide bicycle accommodations on key commute corridors.	RVAMPO CLRTP 2035 Objective
	Increase pedestrian access and safety on collector and arterial roads.	RVAMPO CLRTP 2035 Objective
	Construct "Roanoke River Greenway" as defined in "2007 Update to the Roanoke Valley Conceptual Greenway Plan" by end of CLRTP 2035 time horizon.	RVAMPO CLRTP 2035 Objective
	Develop at least 10 active or completed Safe Routes to Schools (SRTS) plans or projects by the end of the CLRTP 2035 time horizon.	RVAMPO CLRTP 2035 Objective
	Provide residents of the region with access to jobs, shopping, educational, cultural, and recreational opportunities and provide employers with reasonable access to the workforce in the region.	Other MPO example (Maricopa Association of Gov'ts)
	Provide a variety of transportation options that accommodates all users.	Other MPO example (HRTPO)
	Reduce delay and improve travel efficiency.	Other MPO example (HRTPO)
	Increase the coordination of the transportation system, across and between modes, for people and goods.	Other MPO example (HRTPO)
	Provide a variety of transportation options that accommodates all users.	Other MPO example (HRTPO)

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2045 Draft LRTP Goals	Potential Objectives	Idea Source
4. Foster environmental sustainability	Reduction in air pollution	RRTPO Regional Prioritization
	Improve air quality through the reduction of emissions.	Other MPO Examples
	Promote coordination of planning to avoid disturbance of sensitive natural areas and historical properties while minimizing transportation impacts on neighborhoods.	Other MPO Examples
	Build arterial and collector streets as "complete streets", accommodating automobiles, bikes, buses and sidewalks.	Other MPO Examples
	Implement projects and policies that help reduce the growth of VMT to be more consistent with the rate of population growth.	Other MPO Examples
	Maintain a planning process that integrates and coordinates transportation planning with land use, water and natural resource conservation.	Other MPO Examples
	Reduce per-capita vehicle miles traveled	VTrans
	Reduce transportation related NOX, VOC, PM, and CO emissions	VTrans
	Minimize the environmental impact of future growth and transportation.	Other MPO example (HRTPO)
	Promote compatibility between transportation improvements and planned land use and economic development patterns.	Other MPO example (HRTPO)

2045 Draft LRTP Goals	Potential Objectives	Idea Source
5. Maintain and operate an efficient and resilient transportation system Maintain and operate an efficient and resilient transportation system	Increase system resiliency to existing and future climate and extreme weather impacts.	Other MPO Examples
	Maximize useful life of assets through prioritized infrastructure repair and maintenance.	Other MPO Examples
	Ensure safe travel along the region's multimodal transportation system through a properly preserved system.	Other MPO Examples
	Manage access to major facilities to maintain throughput adn encourage compatible land uses.	Other MPO Examples
	Consult local government design guidelines and neighborhood plans to more accurately develop project cost estimates for candidate LRTP 2035 projects.	RVAMPO CLRTP 2035 Objective
	Provide funds for signal timing coordination and synchronization plans and studies on key regional corridors.	RVAMPO CLRTP 2035 Objective
	Provide for the continuing preservation and maintenance needs of transportation facilities and services in the region, eliminating maintenance backlogs.	Other MPO example (Maricopa Association of Gov'ts)
	Make investments to improve flood resiliency.	Other MPO example (HRTPO)

NOTE: Some Objectives from the RVAMPO 2035 Plan may (in orange font) may not be appropriate as potential objectives since they do not fit the "SMART" criteria for defining objectives. They have been included for reference and as potential candidate ideas for Solutions or Projects. Likewise, other potential objectives may be vague and require additional detail to make them obtainable.

2045 Draft LRTP Goals	Potential Objectives	Idea Source
6. Support economic vitality	Increase work accessibility	SMART SCALE measure
	Provide for the efficient movement of goods by rail and truck and improve connections to global markets.	Other MPO Examples
	Enhance travel and tourism connectivity to regionally and nationally significant resources.	Other MPO Examples
	Assure adequate transportation connectivity between Downtown Roanoke and Biomedical Center Complex on Reserve Ave.	RVAMPO CLRTP 2035 Objective
	Develop telework as a complement to existing commuting patterns and as an inter-regional transportation option for those living in the RVAMPO area and teleworking to larger metropolitan areas.	RVAMPO CLRTP 2035 Objective
	Continue to investigate an increased role for rail, both intermodal freight and a possible re-establishment of passenger rail service.	RVAMPO CLRTP 2035 Objective
	Respond to mobility needs of the workforce population	Other MPO Examples
	Prioritize transportation investments that serve residential, commercial, and logistics development sites and other priority places identify in MPO's plan.	Other MPO Examples
	Address regional freight first and last mile connections.	Other MPO Examples
	Reduce the amount of travel that takes place in severe congestion	VTrans
	Reduce the number and severity of freight bottlenecks	VTrans
	Maintain a reasonable and reliable travel time for moving freight into, through and within the region, as well as providing high-quality access between intercity freight transportation corridors and freight terminal locations, including intermodal facilities for air, rail, and truck cargo.	Other MPO example (Maricopa Association of Gov'ts)
	Support efficient freight movement.	Other MPO example (HRTPO)
	Support accessibility for tourism.	Other MPO example (HRTPO)
	Support regional growth and productivity.	Other MPO example (HRTPO)

NOTE: Some Objectives from the RVAMPO 2035 Plan may (in orange font) may not be appropriate as potential objectives since they do not fit the "SMART" criteria for defining objectives. They have been included for reference and as potential candidate ideas for Solutions or Projects. Likewise, other potential objectives may be vague and require additional detail to make them obtainable.

2045 Draft LRTP Goals	Potential Objectives	Idea Source
7. Promote equitable transportation investments	Increase destinations accessible by underserved communities	RRTPO Regional Prioritization
	Prioritize MPO investments that benefit equity populations	Other MPO Examples
	Minimize potential harmful environmental, health and safety effects of MPO funded projects for all equity populations	Other MPO Examples
	Promote investments that are accessible to all people regardless of ability	Other MPO Examples
	Improve access from equity emphasis areas (EEAs) to jobs	Loosely derived from VTrans data
	Improve access to activity centers	Loosely derived from VTrans data
	Address the needs of the elderly and other population groups that may have special transportation needs, such as non-drivers or those with disabilities.	Other MPO example (Maricopa Association of Gov'ts)
	Ensure that mobility benefits positively affect low-income residents.	Other MPO example (HRTPO)
	Engage a diverse public in the development of the region's transportation system.	Other MPO example (HRTPO)

Appendix – RVTPO Federal Performance Measures

Rule and Effective Date(s)	Performance Measures
Safety Final Rule published 1/15/16. Effective date 1/14/16. RVTPO adopted PM targets 1/25/18.	• Number of fatalities • Fatality rate (per 100 million VMT) • Number of serious injuries • Serious injury rate (per 100 million VMT) • Number of non-motorized fatalities and serious injuries
Pavement and Bridge Final Rule published 1/18/17. Effective date 5/20/17. RVTPO adopted PM targets 10/25/18.	• % of pavements on the Interstate system in good condition • % of pavements on the Interstate system in poor condition • % of pavements on the non-Interstate NHS in good condition • % of pavements on the non-Interstate NHS in poor condition • % of NHS bridges classified as in good condition • % of NHS bridges classified as in poor condition
Highway System Performance Final Rule published 1/18/17. Effective date 5/20/17. RVTPO adopted PM targets 10/25/18.	• % of person miles traveled on the Interstate system that are reliable • % of person miles traveled on the non-Interstate NHS that are reliable • % of Interstate system mileage providing for reliable truck travel times (Truck Travel Time Reliability)
Transit Asset Management Final Rule published 7/26/16. Effective date 10/1/16. RVTPO adopted PM targets 10/25/18	• % of revenue vehicles that have met or exceeded their useful • life benchmark • % of non-revenue vehicles that have met or exceeded their • useful life benchmark • Percentage of track segments with performance restrictions • Percentage of facilities rated in poor condition
Public Transit Agency Safety Plan Final Rule published 7/19/18. Effective date 7/19/19. RVTPO adopted PM targets 1/28/21.	• Fatalities (total number of reportable fatalities per year) • Fatalities (rate per total vehicle revenue miles by mode) • Injuries (total number of reportable injuries per year) • Injuries (rate per total vehicle revenue miles by mode) • Safety events (total number of safety events per year) • Safety events (rate per total vehicle revenue miles by mode) • System Reliability: Distance between Major Failures • System Reliability: Distance between Minor Failures

Beginning in the fall of 2017, the RVTPO has coordinated with VDOT, DRPT, Valley Metro, RADAR, the Federal Highway Administration, and the Federal Transit Administration to set and adopt performance measure targets. The target establishment dates vary based on the effective date of the federal Final Rule, the establishment of state targets by VDOT (no later than one year following effective date of Final Rule), and the development or acceptance of VDOT targets by the MPO (no later than 180 days after VDOT target is set)