Regional Study on Transportation Project Prioritization for Economic Development and Growth

Technical Memorandum 1

Prepared for:

Roanoke Valley Transportation Planning Organization

313 Luck Ave SW, Roanoke, VA 24016

Prepared by:

Economic Development Research Group, Inc.

155 Federal Street, Suite 600, Boston, MA 02110

TO: Cristina Finch, Wayne Strickland, RVARC
FROM: Peter Plumeau, Naomi Stein, Adam Blair, EDR Group
DATE: December 21, 2017 *(Revised January 2, 2018)*
RE: Technical Memorandum #1 and Summary of Key Outcomes

This memo summarizes the findings of Task 1 of the *Regional Study on Transportation Project Prioritization for Economic Development and Growth*, "Relate Regional Transportation/Economic Development Goals and Document Undocumented Transportation Needs." We presented and discussed these findings at a November 29, 2017 stakeholder workshop and steering committee meeting in Roanoke. Also included is a summary of key meeting outcomes. The memo is structured into two parts:

- Part I summarizes the morning discussion at the stakeholder workshop which focused on the relationship between transportation and economic development, and the alignment between existing regional transportation and economic development goals.
- Part II summarizes the afternoon presentation and discussion at the steering committee meeting, which focused on transportation needs (documented and undocumented).

The Appendix contains tables listing the short and medium-term unconstrained Vision 2040 projects by mode.

PART I – TRANSPORTATION & ECONOMIC DEVELOPMENT

We reviewed the following questions with the stakeholders that attended the Transportation for America (T4A) workshop on November 29, 2017:

- How are transportation investment and economic development related?
- What are the Roanoke Valley's economic development goals?
- What are the Roanoke Valley's transportation investment goals?
- Where do the goals align?

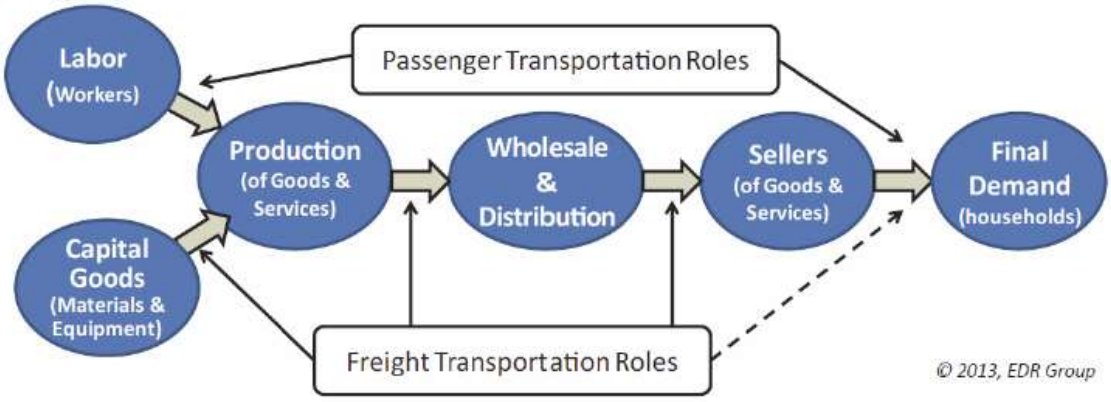
Transportation and Economic Development

Ms. Naomi Stein of EDR Group shared the relationship between transportation and economic development, as shown in Figure 1.

To produce goods and services, businesses need workers and material inputs—whether that's office paper or car parts. Their access to these inputs depends on the transportation system. Similarly, transportation is necessary to move goods along a supply chain through intermediate stages such as wholesale and distribution to the point of consumption by customers. Costs and reliability of the transportation system at points along this process affect a company's "bottom line" directly. Transportation can also affect the quality of labor or suppliers that a company can reach. Moreover, the efficiency of company operations can also be influenced by agglomeration economies wherein greater

market reach enabled by transportation allows for higher productivity (greater output for a given unit of input).

Figure 1 The Role of Transportation in the Economy



Ms. Stein also reminded the group of the explicitly economic perspective adopted by Virginia's Office of Intermodal Planning and Investment (OIPI) in the *VTrans 2040* Plan. As shown in Figure 2, the Commonwealth's long-range multimodal transportation plan approaches transportation needs by asking how transportation can help in attracting and retaining the best workforce as well as help support freight that is key to the ability of Virginia businesses to operate and sell their goods to outside markets.

Figure 2 VTrans 2040 Economic Perspective[1]

Comprehensive Economic Development Strategy Goals

Ms. Stein then provided an overview of the goals developed by the Roanoke region in the recently adopted Roanoke Valley-Alleghany Regional Comprehensive Economic Development Strategy (CEDS) 2017 Annual Update (shown in Table 1). The region seeks to diversify its economic base, develop, and maintain a skilled workforce, and ensure infrastructure (including transportation) is adequate to

[1] http://www.vtrans2040.com/

facilitate growth and trade. The CEDS goals also recognize the value of the region's existing strengths and defines a path that builds effectively from these strengths through sustainable growth and redevelopment.

Table 1 CEDS Goals[2]

Goal
Encourage regional economic vitality through an increasingly **diverse base of businesses** including entrepreneurial startups and large employers.
Develop and maintain a **skilled workforce** ready to meet the challenges presented by the creative economy.
Ensure the region has **adequate infrastructure** in place to facilitate the **growth of higher-wage industry clusters** and to ensure **connectivity** with regions nationally and globally.
Project a **positive identity** for the Roanoke Valley-Alleghany Region.
Improve the **Multimodal Transportation Network** of the Roanoke Valley-Alleghany Region
Seek to maintain and promote the region's **natural beauty** as well as its **cultural amenities**, and seek **sustainable growth** opportunities.
Seek to reuse existing underutilized commercial, institutional, and industrial properties and target them for **redevelopment**.
Seek to ensure that the region offers a strong and diverse mix of **housing** opportunities.
Address **resiliency** through coordination of the Regional Pre-Disaster Mitigation Plan and CEDS.

Transportation Goals

Transitioning into transportation planning, Ms. Stein presented the goals included in the region's most recent long-range transportation plan: *Vision 2040*. These goals are organized into five focus areas that also correspond to those included in *VTrans 2040*, as shown in Table 2.

Table 2 Transportation Goals[3]

Goal	Description
Economic Competitiveness and Prosperity	Invest in a transportation system that supports a robust and **diversified economy**, enables global **competitiveness, productivity, and efficiency**, and enhances **travel and tourism**.
Accessible and Connected Places	Provide opportunities for people to **access** jobs, services, and activity centers and for businesses to **access** distribution hubs and the region's workforce.
Safety and Security	Provide a **safe and secure** transportation system for all travel modes.
Proactive and Efficient System Management	Maintain the transportation system in **good condition** and leverage technology to **optimize** system performance and operations.

[2] http://rvarc.org/CEDS

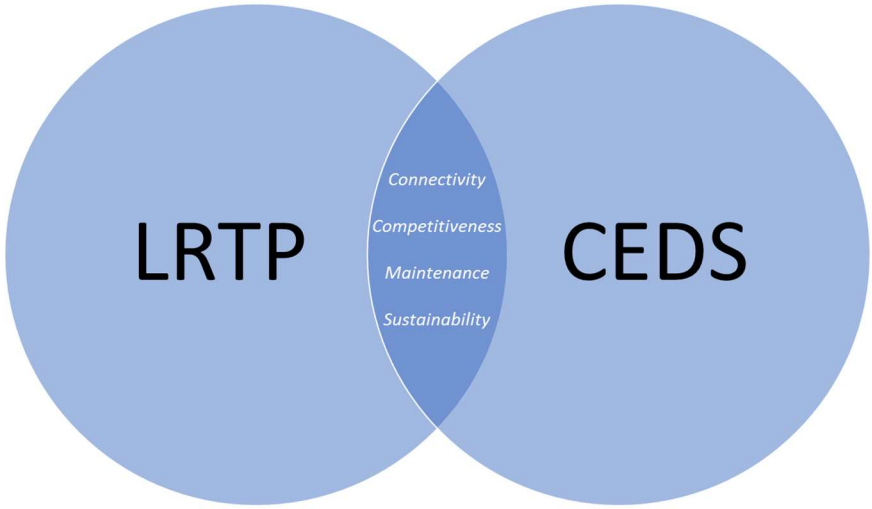
[3] http://rvarc.org/transportation/mpo-urban-transportation/long-range-plan/

Healthy Environment	Protect the **agricultural, natural, historic, and cultural environment**; preserve good air quality; minimize stormwater impacts and promote **active living through multimodal** transportation options.

Alignment

Ms. Stein presented the findings of EDR Group's review of the alignment between the CEDS and Vision 2040. The review identified four key areas of alignment: connectivity, competitiveness, maintenance, and sustainability (Figure 3).

Figure 3 Areas of Alignment Between CEDS and Vision 2040



Connectivity

The connectivity theme addresses the need to maintain connections within the region and with the broader global economy:

- **LRTP:** *"Provide opportunities for people to access jobs, services, and activity centers and for businesses to access distribution hubs and the region's workforce."*
- **CEDS:** *"… facilitate the growth of higher-wage industry clusters and to ensure connectivity with regions nationally and globally."*

Competitiveness

Competitiveness represents a focus in the region on how well the transportation system supports business, addressing specific sectors like tourism, and focusing on a diverse business base:

- **LRTP***: "Invest in a transportation system that supports a robust and diversified economy, enables global competitiveness, productivity, and efficiency, and enhances travel and tourism."*

- **CEDS***: "Encourage regional economic vitality through an increasingly diverse base of businesses including entrepreneurial startups and large employers."*

Maintenance

Maintenance refers to the mandate to think as a region about long term care of the system as well as how to get the most value from the assets the region already has:

- **LRTP***: "Maintain the transportation system in good condition and leverage technology to optimize system performance and operations."*
- **CEDS***: "Ensure the region has adequate infrastructure in place…Improve the Multimodal Transportation Network of the Roanoke Valley-Alleghany Region."*

Sustainability

Finally, the alignment area of sustainability recognizes the ample natural and cultural resources in the region and seeks to align transportation and economic development strategies to keep the region and its growth sustainable in the long run:

- **LRTP***: "Protect the agricultural, natural, historic, and cultural environment; preserve good air quality; minimize stormwater impacts and promote active living through multimodal transportation options."*
- **CEDS***: "Seek to maintain and promote the region's natural beauty as well as its cultural amenities, and seek sustainable growth opportunities."*

PART II – TRANSPORTATION NEEDS

The afternoon meeting of the steering committee sought to establish a baseline understanding of regional transportation needs that can support future prioritization of investment, planning, and advocacy efforts.

TPO Framework for Prioritization

Ms. Stein set the stage for the discussion by showing how transportation needs represent the foundation for the prioritization framework formally adopted by the TPO on February 23, 2017:

- Transportation Needs
- Priorities
- Solutions
- Projects
- Alignment Review

What is a Transportation Need?

Ms. Stein introduced the concept of a "transportation need" as that which is necessary for the region to:

1. Maintain its current economy, and
2. Spur sustainable new economic growth.

In this same vein, Ms. Stein presented the *VTrans 2040* definition used in the statewide needs assessment process:

> "[T]he gap between the transportation system in place currently that serves the current industries in a region, and the future transportation system needed to serve the desired future economy in the region."

The high-level concept of need can then be broken down into three components that help address the types of questions or analysis that can support needs identification:

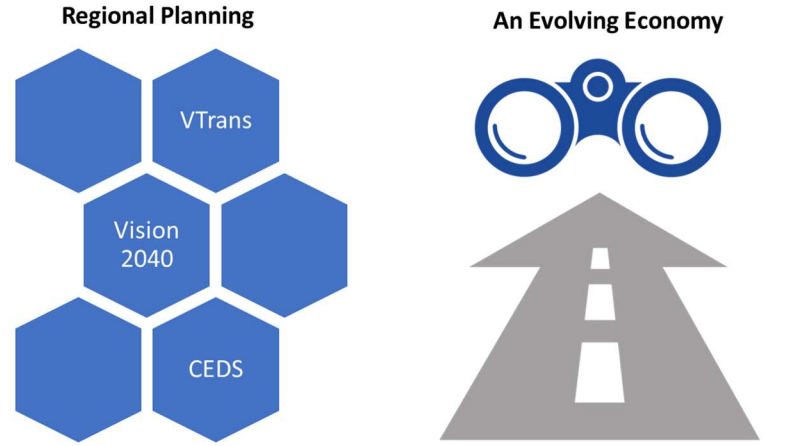
1. **Maintain** what is working well (requires an understanding of the current ways in which the economy of the region relies on transportation)
2. **Improve** existing elements that are essential but not working well (as identified through analysis of performance relative to standards of acceptability)
3. **Sustainably support** economic growth (based on an evaluation of emerging needs and a shared vision of the desired regional economic future)

Build on Previously Identified Needs

Ms. Stein also outlined the dual goals of the current study (Figure 4):

1. To build on the foundational understanding of needs already contained in various levels and types of plans in the region, and
2. To consider the implications of an evolving economy to further refine previously identified needs.

Figure 4 Two-Fold Approach to Needs[4]



VTrans 2040

Table 3 presents the needs identified in the *VTrans 2040* Regional Needs Profile for the Roanoke Region. OIPI led an effort to develop and implement a statewide transportation needs assessment process as part of the *VTrans 2040* Plan. A key purpose of the needs assessment is to serve as a screen for projects under the HB2 prioritization process. The process assessed transportation needs at three scales:

- Corridor of Statewide Significance (COSS)
- Regional Networks
- Urban Development Areas (UDA)

The Regional Networks scale corresponds most directly to the regional perspective of the TPO and is therefore the focus here.

Table 3 VTrans Needs: Roanoke Regional Network[5]

A. Walkable/Bikeable Places
Enhance regional and inter-regional walkability and bikeability at regional activity centers; in particular, focus on completing the regional greenway network and make last mile connections to existing and future greenways.
B. I-81/US 11 Reliability
The I-81/US 11 corridor and connected facilities serve as a major artery for regional freight and passenger movement. Ensuring reliability on the corridor is paramount to regional economic success.

[4] Icons created by Alexander Skowalsky and Musmellow from Noun Project

[5] http://www.vtrans.org/resources/vmtp_oct2015/DRAFT_RoanokeNeedsProfile_10_02_15.pdf

C. Regional TDM
The Roanoke region includes park-n-ride access and TDM programs and services. However, multiple activity centers and commuter oriented corridors would benefit from TDM programs that can help reduce the number of vehicles on the network and the individual burden of a long or congested commute.
D. Inter-Regional Network Connectivity
Roanoke's economy, and therefore passenger and freight movement, is closely linked to surrounding regions such as Lynchburg and Blacksburg/ Christiansburg. Increasing network connectivity between regions ensures local economic success.
E. Regional Mode Choice
Multiple activity centers in the region are underserved by transit. Providing multiple connections between major activity centers provides travel choices and improves regional connectivity. In particular, making multimodal connections with future Amtrak service will be key to the success of the region and to the new passenger rail service.
F. US 460 Reliability and Bottleneck Relief
There aren't major congestion issues in Roanoke, in relation to the rest of Virginia. However, bottlenecks do occur where some of the major arteries in the region converge; particularly relating to the US 460 corridor, parallel rail network, and the downtown and Tanglewood Mall activity centers. Addressing these bottlenecks is key to regional mobility and network fluidity.

The needs assessment identified a need for more walkable and bike-able places in the region, particularly in activity centers. It also points to need for reliability on major highway corridors as well as ways to better manage and get out ahead of congestion. The need assessment also recognized that the region is closely linked to others such as Lynchburg and Blacksburg/Christiansburg. From a multimodal perspective, the profile defines a need to strengthen the level of transit accessibility at and between major activity centers and addresses the multimodal opportunities presented by the new Amtrak service. Finally, the profile points to targeting local bottlenecks where they do occur.

Vision 2040

Ms. Stein then discussed the TPO's planning work, focusing on two specific types of analysis that have already been done in the region and incorporated into Vision 2040 that point to needs in the region. First is the identification of areas of emphasis within the Congestion Management Plan (CMP). This identification process addresses the notion of "Improving existing elements that are essential but not working well," introduced earlier in the discussion of transportation needs. Figure 5 shows the top 10 CMP Areas of Emphasis. The TPO identified these areas using a methodology that incorporated public input, analysis of google traffic data, an assessment of volume-to-capacity ratios as contained in the regional travel model, and field verification by TPO staff.

Vision 2040 also introduced the noteworthy concept designating multimodal districts and centers in the region as a way of targeting the planning and implementation of integrated multi-modal transportation systems. This addresses the previously defined needs approach of "sustainably supporting economic

growth." Table 4 summarizes the characteristics of multimodal districts and centers. These designations represent a way of recognizing locations where there is already potential for more modal balance and to build on that.

Figure 6 shows the currently designated districts and centers in the region. The Vision 2040 plan also noted there is significant overlap between these different types of focus areas or identification of needs, as described in Table 5. In these areas of overlap, strategies aimed at meeting the need for greater modal options can yield further benefits by assisting in congestion mitigation.

Figure 5 Congestion Management Plan Areas of Emphasis and "Watch List"[6]

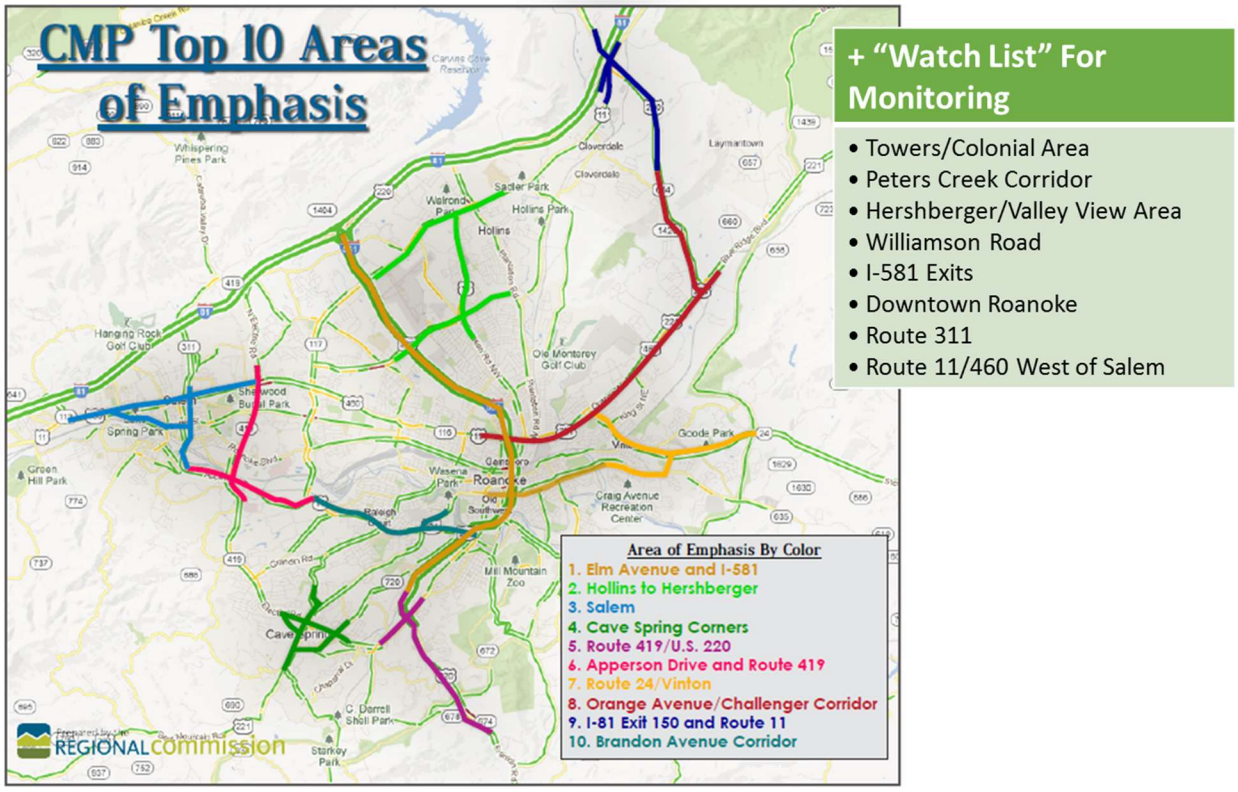


Table 4 Characteristics of Multimodal Districts and Centers[7]

Designation	Characteristics
Multimodal District	• Land use characteristics support multimodal travel (higher density, mixed-use)

[6] http://rvarc.org/transportation/mpo-urban-transportation/long-range-plan/

[7] Adapted from http://rvarc.org/transportation/mpo-urban-transportation/long-range-plan/

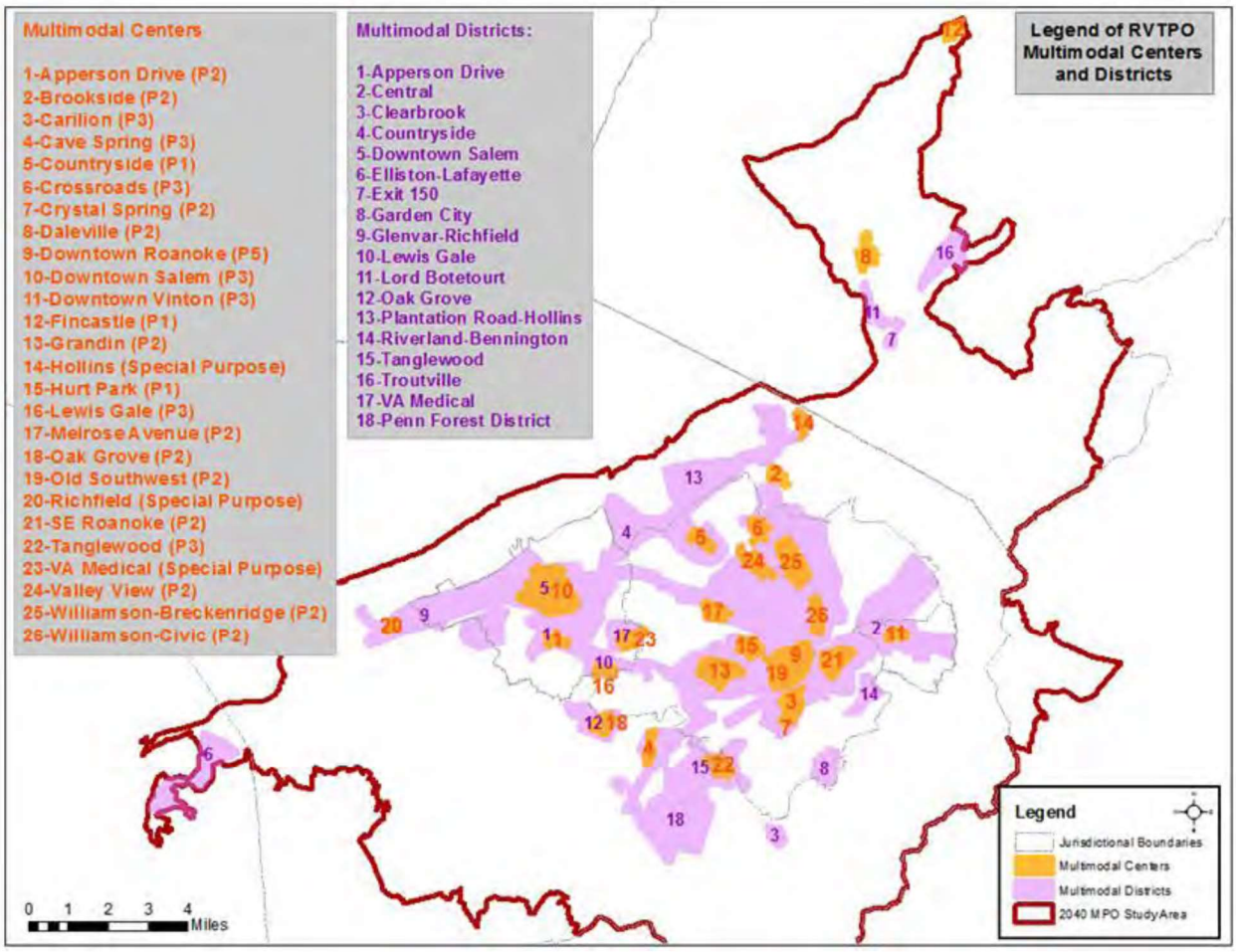
	• Relatively easy to make trips without a car – as characterized through the number of bus routes and the existence of safe walking/biking paths (currently or proposed)
Multimodal Center	• A smaller area of even higher multimodal connectivity and more intense activity • Roughly equivalent to a 10-minute walk or a one-mile area

Table 5 Overlap Between CMP Focus Areas and Multimodal Districts and Centers[8]

TOP 10 CMP AREAS OF EMPHASIS	CORRESPONDING MULTIMODAL DISTRICT	CORRESPONDING MULTIMODAL CENTER
Elm Avenue and I-581	Central District	Downtown Roanoke Center
Hollins to Hershberger	Plantation Road - Hollins District	Hollins Center
Salem	Downtown Salem District	Downtown Salem Center
Cave Spring Corners	Central District	Cave Spring Center
Route 419/U.S. 220	Tanglewood District, Clearbrook District	Tanglewood Center
Apperson Drive and Route 419	Apperson Drive District	Apperson Drive Center
Route 24/Vinton	Central District	Downtown Vinton Center
Orange Avenue/Challenger Corridor	Central District	N/A
I-81 Exit 150 and Route 11	Exit 150 District, Lord Botetourt District	Daleville Center
Brandon Avenue Corridor	Central District	Grandin Center

[8] http://rvarc.org/transportation/mpo-urban-transportation/long-range-plan/

Figure 6 Designated Multimodal Districts and Centers and the Roanoke Region[9]



An Evolving Economy

Ms. Stein concluded the presentation on needs by highlighting several trends, transitions, or evolutions identified in existing regional planning documents and by TPO staff that may to shape the way regional transportation needs evolve into the future. These include:

- Observations of millennial preferences that tend to favor more urbanized environments with multimodal mobility options
- The uncertain influence of technology including connected and automated vehicles and transportation network companies (e.g. Lyft, Uber)
- Growing interest in agri-tourism and medical-related tourism (tourism being dependent on interregional travel)
- The influence of an aging population

[9] http://rvarc.org/transportation/mpo-urban-transportation/long-range-plan/

- Concerns about an inadequate supply of talent and "brain drain" (i.e. challenges in retaining highly-educated, trained, and/or young persons within the region)
- Identified opportunities to cultivate student retention (including, potentially, livability-oriented transportation solutions such as transit-oriented development and shared mobility services)
- Recent successes in business growth: e.g. Altec (180 additional jobs), Eldor (350 new jobs), Community College Shared Services Center (200 new), Movie Screen Manufacturer (50 new), Ballast Point (175 new) Brewery, Virginia Tech – Carilion (1000 new), Deschutes (108 new) Breweries, AEP (102 additional)[10]

Key Outcomes: Group Discussion – Needs

Following the presentation, members of the Steering Committee engaged in a "brainstorm" session regarding regional transportation needs that can be traced to the region's understanding of desired economic development. The identified draft needs were refined and presented at the RVTPO Policy Board meeting on December 14, 2017. Table 6 displays these draft needs.

Beyond this preliminary identification of needs and priorities, the discussion also revealed a consensus opinion from the steering committee that the region wishes to get better at *'thinking big by thinking regionally'* and to put more concerted effort into developing strong regional transportation concepts that address economic development goals and can be effectively marketed or advocated.

Table 6 Draft Needs/Priorities

Category	Details
Draft Priority Transportation Needs/Problems	• Lack of travel time reliability between Roanoke/Blacksburg which is essential due to increasing worker/student flow • Lack of connectivity between the Roanoke-Blacksburg Regional Airport and Downtown Roanoke • Vehicle congestion on Route 460 East between Downtown Roanoke and Alternate 220 • Vehicle congestion on Route 220 South between Clearbrook and Route 419 due to people commuting toward Downtown Roanoke • Lack of transit access for residents in the City of Roanoke to jobs in surrounding areas • Lack of connectivity from transit to final destinations • Lack of trails/bikeways between destinations *(lower priority since region is already successful in getting funding)*
Other Possible Regional Transportation Priorities	• Lack of walkable mixed-use places throughout the region – i.e. "placemaking" environment. • Increasing vehicle congestion on Route 220 North between I-81 and Greenfield • Insufficient flight options at affordable prices from ROA.

[10] Figures provided by TPO Staff.

APPENDIX: SHORT/MEDIUM VISION 2040 PROJECTS

Ms. Stein shared the projects listed in Table 7 through Table 10 with the Steering Committee as a potential candidate list from which to select regional priorities. The listed projects are short or medium-term Vision 2040 unconstrained projects. These projects would require additional funding above the level currently anticipated in the region, and are targeted to address current or near- term needs.

Table 7 Highway Projects - Candidate Projects – S/M Vision 2040

Project	Jurisdiction
I-581 and Peters Creek Rd. Interchange Improvements	Roanoke County
Interchange Lighting at I-81 Exits 137-150	Multi-Jurisdictional
Route 115/Plantation Road Improvements	Roanoke County
Route 220 Expressway/Route 419 Interchange Improvement and Route 220 Acceleration Lane	Multi-Jurisdictional
Route 625/Hershberger Road Improvements	Roanoke County
Secondary Access Points from Rutrough Road and Road Circulation Improvements	Roanoke County
Walnut Avenue/8th Street Intersection Improvements	Town of Vinton

Table 8 Pedestrian/Bicycle Projects - Candidate Projects – S/M Vision 2040

Project	Jurisdiction
Apperson Drive Improvements	City of Salem
Braeburn Drive Improvements	City of Salem
Campbell Ave Improvements	City of Roanoke
Church Ave Improvements	City of Roanoke
Cove Road Improvements	City of Roanoke
Jefferson Street Improvements	City of Roanoke
King Street Improvements	City of Roanoke
Liberty Road Improvements	City of Roanoke
Lick Run Greenway	City of Roanoke
Memorial Ave Streetscape Improvements	City of Roanoke
Route 11 Bike/Pedestrian Improvements	Roanoke County
Route 221/Brambleton Ave Pedestrian Improvements	Roanoke County
Route 682/Garst Mill Road Improvements	Roanoke County
Virginia Ave/Route 24 Bicycle Improvements	Town of Vinton
West Main Street/Greenway Connection	Roanoke County

Table 9 Transit Projects - Candidate Projects – S/M Vision 2040

Project	Jurisdiction
Bus Stop Accessibility Improvements	Multi-Jurisdictional
Downtown Roanoke Intermodal Station	Multi-Jurisdictional
Roanoke County Transfer Facilities	Multi-Jurisdictional

Table 10 Intelligent Transportation Systems (ITS) Projects - Candidate Projects - S/M Vision 2040

Project	Jurisdiction
Comprehensive Traffic Intersection Improvements	Town of Vinton
Hardy Road Signal Coordination and Improvements	Town of Vinton