

# NEW RIVER VALLEY MPO

## BICYCLE & PEDESTRIAN MASTER PLAN

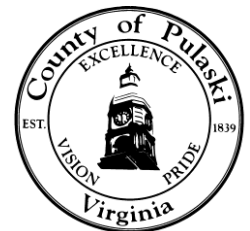
2014



TOWN OF  
**Blacksburg**  
*a special place*



THE NEW RIVER CITY  
**RADFORD**  
VIRGINIA



# New River Valley MPO

## Bicycle and Pedestrian Master Plan

<b>EXECUTIVE SUMMARY</b> .....	<b>III</b>
<b>SECTION 1 – INTRODUCTION</b> .....	<b>1</b>
1.1 PLANNING PURPOSE .....	1
1.2 THE STUDY AREA .....	2
1.3 EVALUATING SYSTEM CHARACTERISTICS .....	3
<b>SECTION 2 – PLANNING PROCESS</b> .....	<b>4</b>
2.1 DEVELOPING A MULTIMODAL SYSTEM .....	4
2.2 LOCAL INPUT .....	7
2.3 GOALS & OBJECTIVES .....	8
<b>SECTION 3 – RECOMMENDATIONS</b> .....	<b>9</b>
3.1 NRV MPO AREA BLUEPRINT .....	9
3.2 BLACKSBURG AREA MULTIMODAL SYSTEMS PLAN .....	11
3.3 CHRISTIANSBURG AREA MULTIMODAL SYSTEMS PLAN .....	15
3.4 RADFORD AREA MULTIMODAL SYSTEMS PLAN .....	19
<b>SECTION 4 – NEXT STEPS</b> .....	<b>23</b>
4.1 PHASE 1 - REVIEW .....	23
4.2 PHASE 2 – DELINEATION OF MODAL EMPHASIS .....	24
4.3 PHASE 3 – IMPLEMENTING GUIDELINES & STANDARDS .....	27
4.4 ONGOING COMMITMENTS .....	27
<b>SECTION 5 – PLAN CONTRIBUTORS</b> .....	<b>28</b>
PLAN DEVELOPMENT .....	28
PHOTOS, GRAPHICS, & MAPPING .....	28
<b>SECTION 6 – PUBLIC INPUT</b> .....	<b>29</b>
 <b>TABLES</b>	
TABLE 1: GOALS & OBJECTIVES .....	8
TABLE 2: CORRIDOR CLASSIFICATION MATRIX .....	24
TABLE 3: HOW TO CHOOSE DESIGN STANDARDS .....	25
TABLE 4: DESIGN STANDARDS BY TRAVEL MODE .....	26
TABLE 5: POTENTIAL AVENUE, PEDESTRIAN MODAL EMPHASIS EXAMPLE .....	26

**FIGURES**

FIGURE 1: MULTIMODAL CORRIDOR PLAN-----IV, 10  
FIGURE 2: NRVMPPO BOUNDARY----- 2  
FIGURE 3: NRVMPPO AREA ACCESSIBILITY RATING ----- 3  
FIGURE 4: MULTIMODAL SYSTEM PLAN COMPONENTS ----- 4  
FIGURE 5: CONCEPT OF ACTIVITY DENSITY ----- 5  
FIGURE 6: CONCEPT OF MULTIMODAL DISTRICTS ----- 5  
FIGURE 7: CONCEPT OF MULTIMODAL CENTERS ----- 5  
FIGURE 8: CONCEPT OF THROUGH CORRIDORS ----- 6  
FIGURE 9: CONCEPT OF PLACEMAKING CORRIDORS ----- 6  
FIGURE 10: TYPICAL CORRIDOR ELEMENTS ----- 7  
FIGURE 11: NRVMPPO AREA ACTIVITY DENSITY ----- 9  
FIGURE 12: NRVMPPO AREA MULTIMODAL CORRIDORS ----- 9  
FIGURE 13: BLACKSBURG AREA ACTIVITY DENSITY ----- 11  
FIGURE 14: BLACKSBURG AREA MULTIMODAL DISTRICTS ----- 12  
FIGURE 15: BLACKSBURG AREA MULTIMODAL CORRIDORS ----- 13  
FIGURE 16: BLACKSBURG AREA MULTIMODAL SYSTEM PLAN----- 14  
FIGURE 17: CHRISTIANSBURG AREA ACTIVITY DENSITY ----- 15  
FIGURE 18: CHRISTIANSBURG AREA MULTIMODAL DISTRICTS----- 16  
FIGURE 19: CHRISTIANSBURG AREA MULTIMODAL CORRIDORS ----- 17  
FIGURE 20: CHRISTIANSBURG AREA MULTIMODAL SYSTEM PLAN ----- 18  
FIGURE 21: RADFORD AREA ACTIVITY DENSITY ----- 19  
FIGURE 22: RADFORD AREA MULTIMODAL DISTRICTS----- 20  
FIGURE 23: RADFORD AREA MULTIMODAL CORRIDORS ----- 21  
FIGURE 24: RADFORD AREA MULTIMODAL SYSTEM PLAN ----- 22  
FIGURE 25: FUNCTIONAL CLASSIFICATION EXAMPLE ----- 24

**PROJECT WEBSITE**

[WWW.NRVPDC.ORG/NRVMPPO/](http://WWW.NRVPDC.ORG/NRVMPPO/)

NOTE: ACCESS THE PROJECT WEBSITE TO EXPERIENCE THE 2014 BICYCLE & PEDESTRIAN PLAN ONLINE. IN ADDITION, DOWNLOAD NEW DATA TO ASSIST WITH LOCAL PLANNING EFFORTS.




## Executive Summary

Late in the autumn of 2012, the New River Valley Metropolitan Planning Organization (NRVMPO) recognized that pending MAP-21 federal legislation identified alternative transportation as an area of focus. At that time, the NRVMPO was possibly the single remaining MPO in the Commonwealth that didn't have an approved bicycle/pedestrian plan. In 2013, the NRVMPO partnered with the New River Valley Planning District Commission to develop a Bicycle and Pedestrian Master Plan.

The purpose of the NRVMPO Bicycle and Pedestrian Master Plan is to develop a long-range multimodal transportation system strategy. The planning process was led by a sub-committee of the MPO. Representatives participated from localities within the 2013 expanded planning area, existing transit providers, universities, and community stakeholders. To complete the plan, the MPO sub-committee utilized the Virginia Department of Rail and Public Transportation's (DRPT) Multimodal System Design Guidelines to create a multimodal system plan.

DRPT's Guidelines broke the planning phase into six steps: 1) Identify Existing Conditions, 2) Evaluate Activity Density, 3) Develop Multimodal Districts, 4) Identify Multimodal Centers, 5) Establish Corridors with Modal Emphasis, 6) Create a Multimodal Transportation Plan.

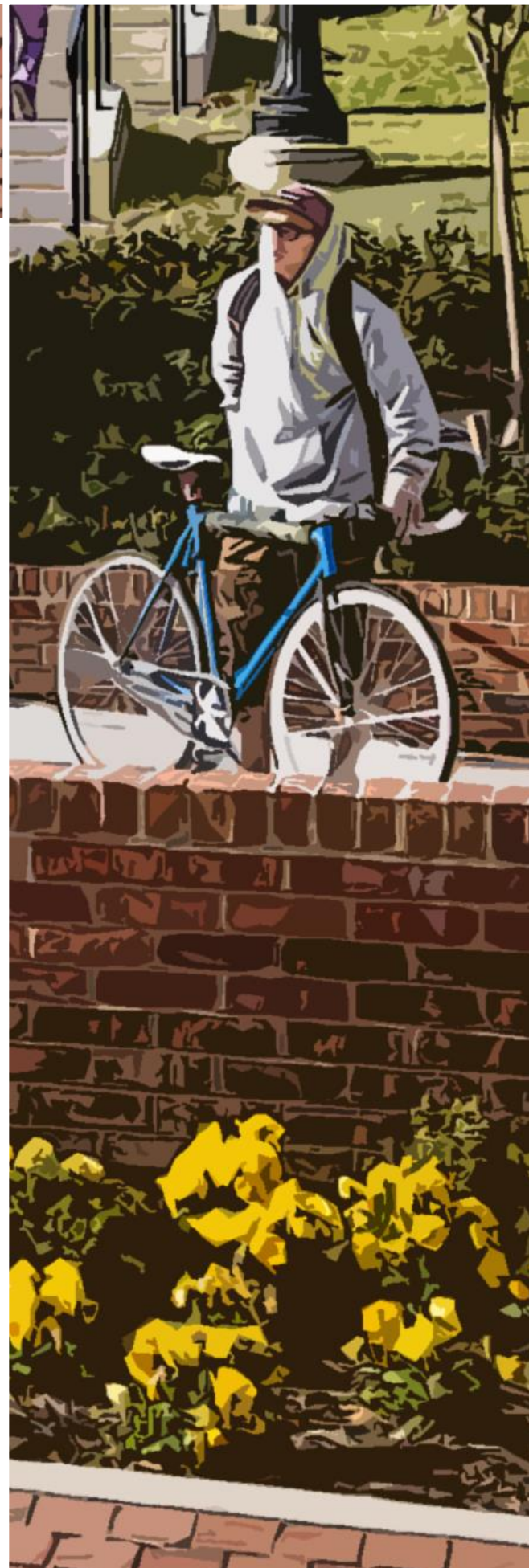
A multimodal system plan is simply a comprehensive evaluation of all transportation modes within the planning area. The analysis component of the plan focuses on the relationship between automobile, transit, bicycle, and pedestrian systems as they related to key population and employment centers.

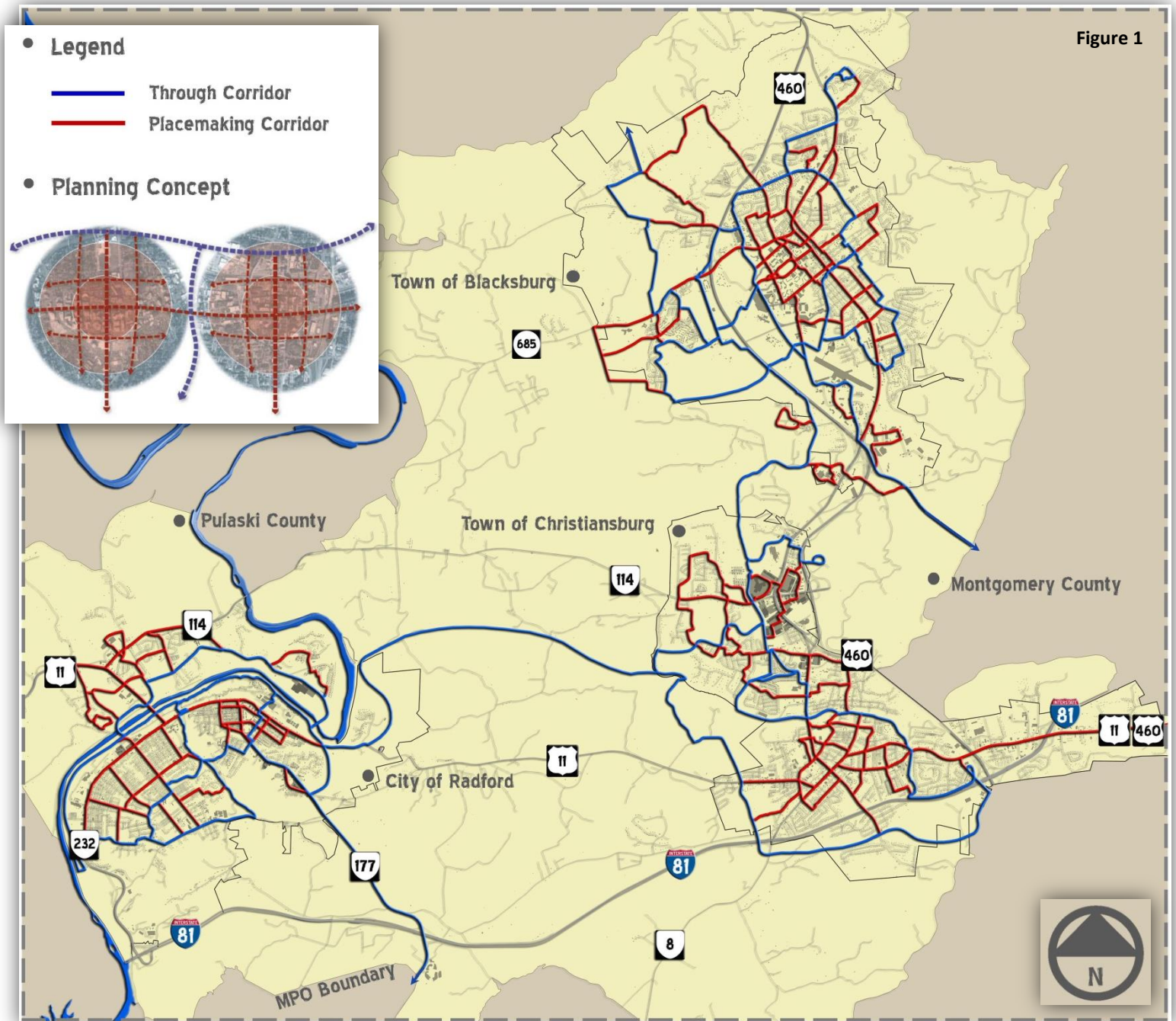


Working Group Members reviewed the MPO’s existing Long-Range Transportation Plan, local plans, and the VTrans 2035 Plan Update to identify goals for the plan. 2014 NRVMPPO Bicycle and Pedestrian Master Plan Goals included:

- A. Mobility, Connectivity, and Accessibility**  
Creating reliable options and ensuring linkages between modes of transportation
- B. Safety**  
Investing safety dollars at busy intersections with known conflicts between modes of transportation
- C. Cost Efficient Use of Public Dollars**  
Optimizing existing facilities and investing in projects that maximize the movement of people
- D. Economic Vitality**  
Improving access between housing and employment centers and increasing recreational assets to attract new businesses
- E. Environmental Stewardship**  
Utilize local resources and environmentally safe practices
- F. Public Health**  
Support active lifestyles by creating more areas to walk and bike and improve access to healthy goods

The goals are essentially the foundation of the Master Plan. Goals establish common ground, create measures, and provide clarity for the purpose of the plan. The information provided in this plan does not impose specific design recommendations. The plan is intended to enable decision makers to evaluate potential impacts of bicycle and pedestrian projects.





The 2014 NRVMPPO Bicycle and Pedestrian Master Plan identifies a network of interconnected corridors that would allow travelers to move within and between key activity centers. The map (above) illustrates primary Through Corridors and Placemaking Corridors. Section 2 provides a more in-depth view of the planning process and Section 3 provides an example of how to implement the planning concepts in the region. Lastly, Section 4 outlines how to maintain the plan and how it can be further developed.



## Section 1 – Introduction

### 1.1 Planning Purpose

The purpose of the Bicycle and Pedestrian Master Plan is to develop a long-range multimodal transportation system strategy. There are a variety of reasons to plan for a multimodal transportation system that incorporates walking, bicycling, and transit accommodations. For instance: creating options, fuel cost savings, increasing physical activity, potential traffic and parking congestion relief, or improving the quality of life.

Interestingly, the 2000 – 2010 decade saw an increase in driving age population; however, for the first time in 50 years the driving population exceeded the number of personal vehicles.<sup>1</sup> A 2009 National Household Travel Survey found that in rural areas (less than 2,000 people/square mile) about 5% of households do not own a vehicle; compared to more urbanized areas (over 10,000 people/square mile) where approximately 30% of households do not own a vehicle.

Across the nation, communities are planning more travel choices. For example, Cleveland, Ohio, seeks to develop an active system that ensures all residents live within a 10-minute bike ride of a trail connecting to major employment centers. Although over half of American's trips are less than 3 miles<sup>2</sup>, the lack of bicycle/pedestrian infrastructure or transit options, encourages most to drive where they need to go.

Some factors, such as weather or terrain cannot be changed; however, others such as the availability of infrastructure and presence of transit can. The first step towards improving bicycle and pedestrian infrastructure and accessibility to transit is developing a multimodal systems plan. A multimodal systems plan will help communities to identify where investments in infrastructure and services will have significant and lasting impacts.

---

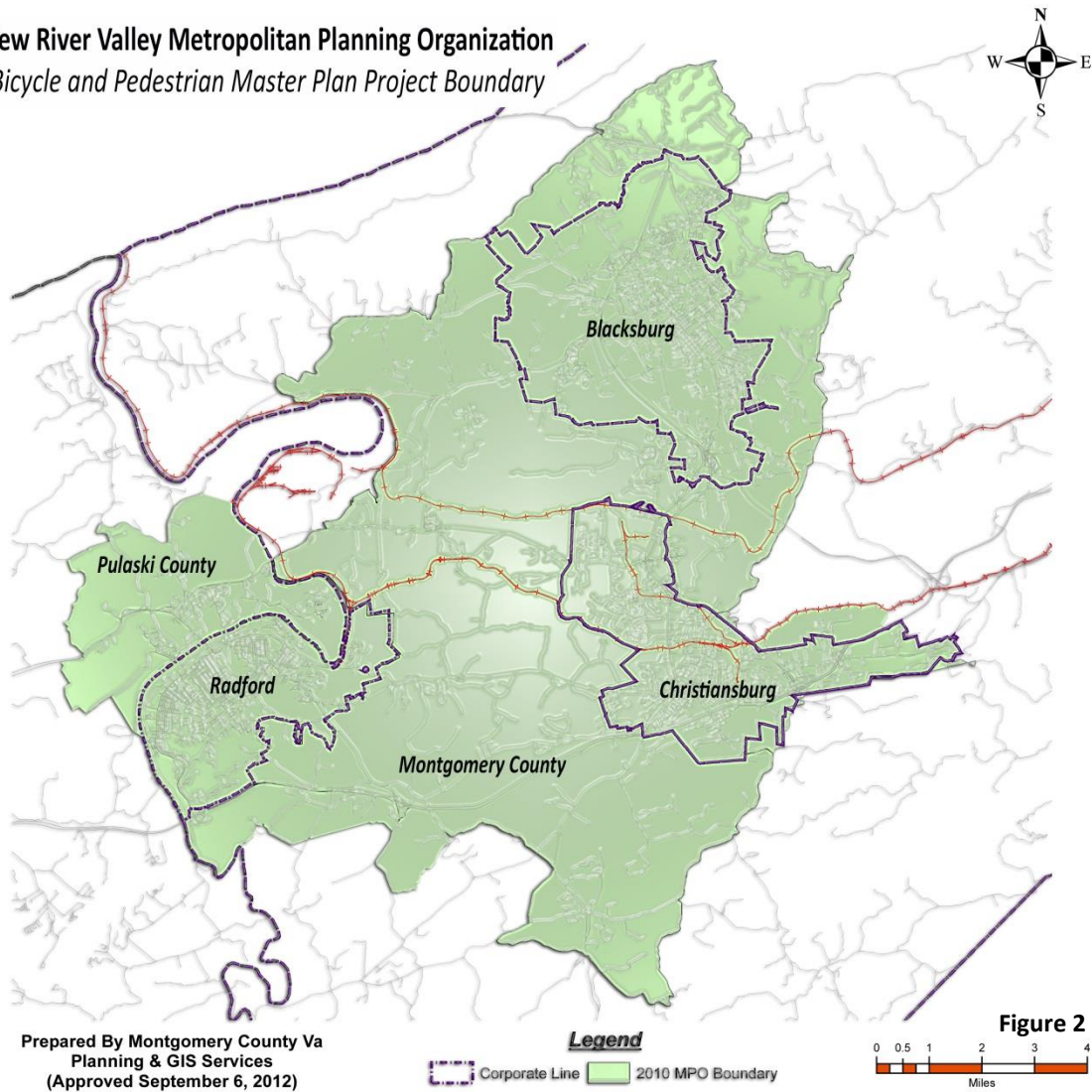
<sup>1</sup> American Association of State Highway and Transportation Officials, *Commuting in America 2013, Brief B7 – Vehicle and Transit Availability*.

<sup>2</sup> Federal Highway Administration, *National Household Survey 2001*. Retrieved from 2008 Active Transportation for America Report.

### 1.2 The Study Area

In 2013, the NRVMPPO extended the original planning boundary to incorporate the urbanized portions of Montgomery and Pulaski Counties, the City of Radford, and the Towns of Blacksburg and Christiansburg. The NRVMPPO is a federally required planning body responsible for transportation planning and project selection within urbanized areas with a population greater than 50,000 people. The map below illustrates the MPO planning area.

**New River Valley Metropolitan Planning Organization**  
*Bicycle and Pedestrian Master Plan Project Boundary*



Established in 2003, the overall population of the NRVMPPO area encompasses 170 square miles and has a population of 99,552 people. The average population density is 701 people per square mile.



### 1.3 Evaluating System Characteristics

The NRVMPPO region offers a roadway system that ensures access from home to work for households with a vehicle; however, the existing built-environment influences travelers to avoid walking or biking in certain areas. Residents are limited to utilizing automobiles due to the availability and quality of existing infrastructure and services. In addition to availability, people choose to drive because of their unwillingness to commit to increases in travel time associated with walking or biking to a destination.

The existing bicycle and pedestrian built-environment lacks connectivity between activity centers. “Last mile connections” is one way commuters, who choose alternative modes of transportation, express challenges with accessibility. The map below identifies areas within the NRVMPPO region that lack accessibility to biking, walking, and transit options between key activity centers:

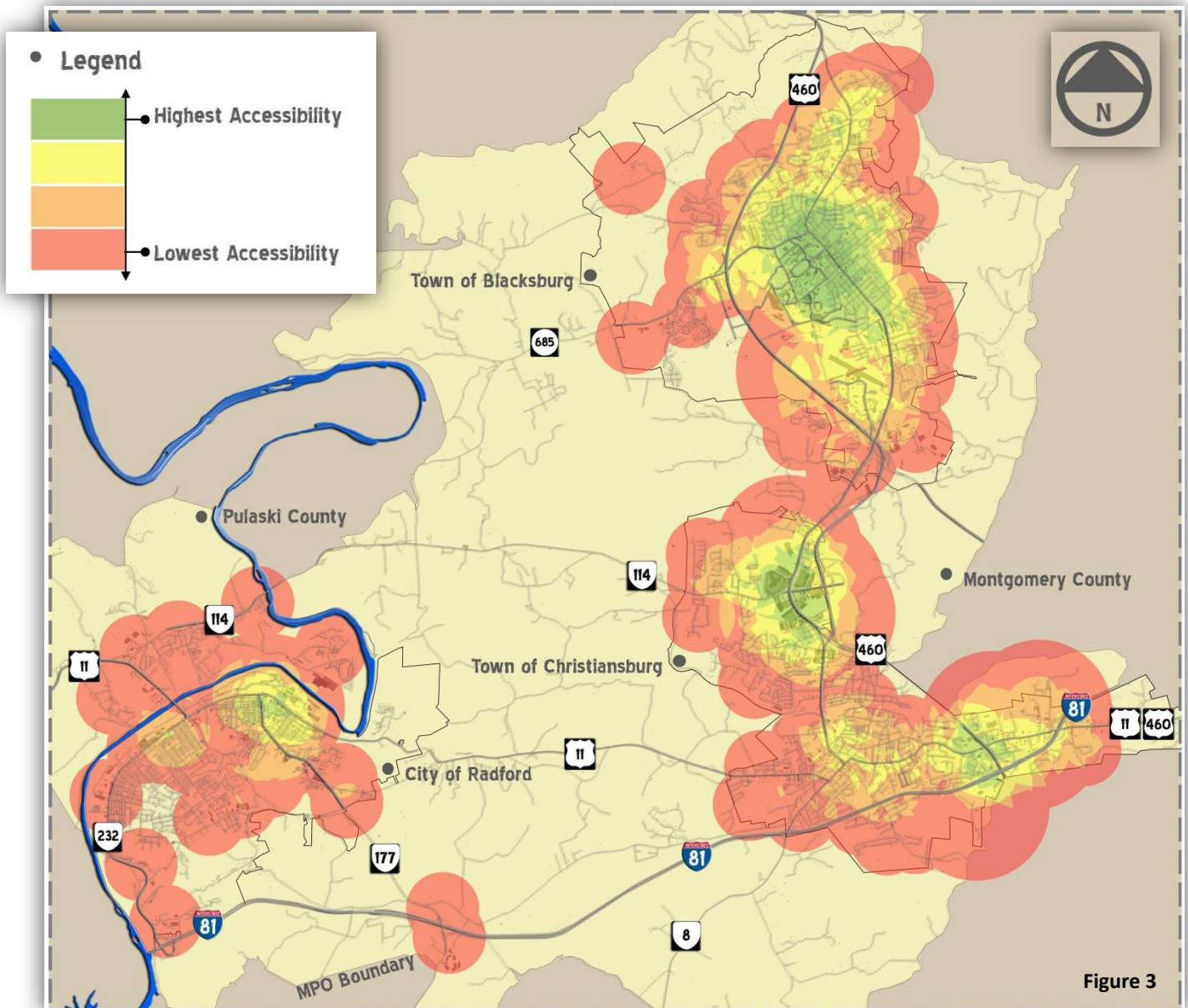


Figure 3



## Section 2 – Planning Process

### 2.1 Developing a Multimodal System

The NRVMPPO Bicycle and Pedestrian Working Committee utilized the Virginia Department of Rail and Public Transportation’s (DRPT) Multimodal System Design Guidelines to create the Bicycle and Pedestrian Master Plan. A multimodal system plan is simply a comprehensive evaluation of all transportation modes within the planning area.

Automobile, transit, bicycle, and pedestrian systems were analyzed in comparison to key population and employment centers. A Multimodal System Plan outlines a network of connected corridors that allows travelers to move within and between destinations. Figure 4 shows the components that make up a Multimodal Systems Plan. The NRVMPPO followed the six-step process to complete the regional plan.

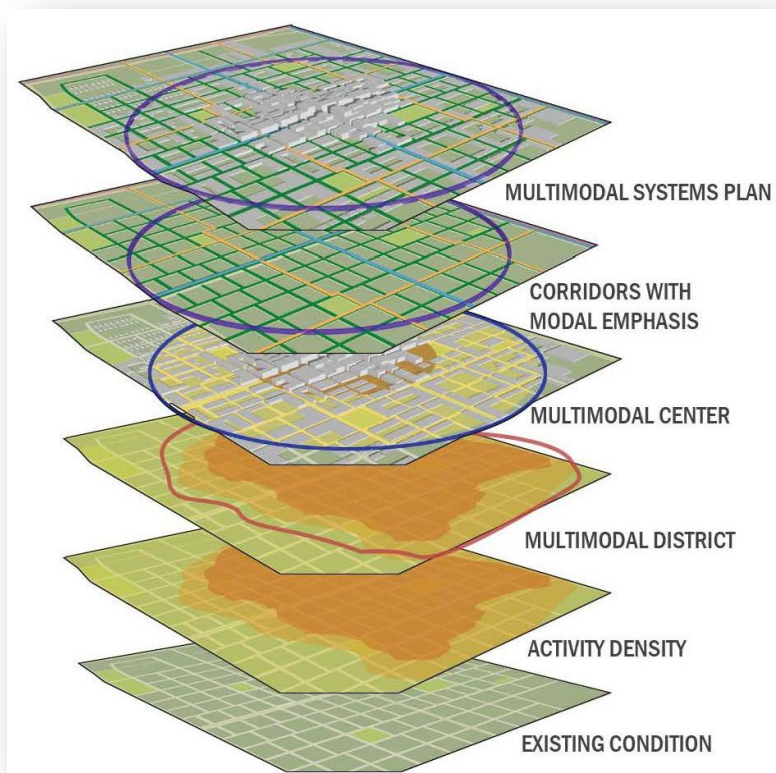
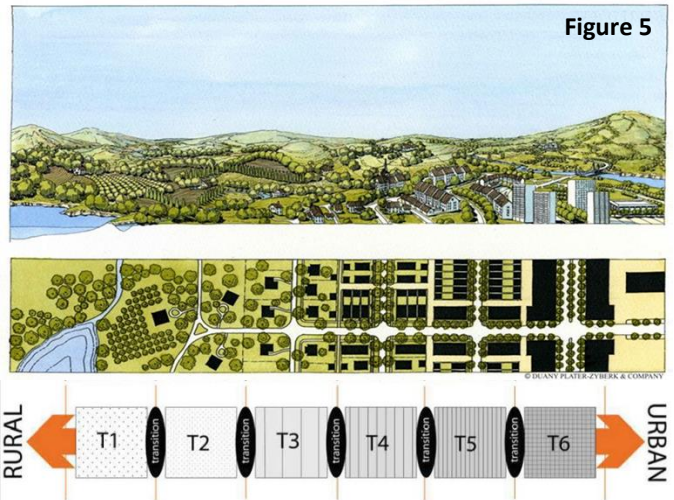


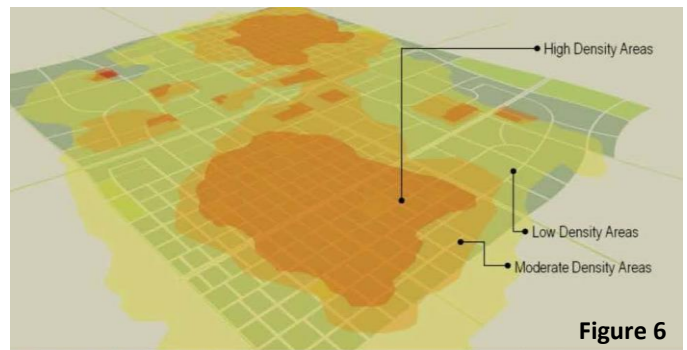
Figure 4

**Step 1 Existing Conditions:** Collect existing land use, transit route/stop, trail, sidewalk, and infrastructure data. Assembling the information is typically a mapping and analysis exercise that consists of existing local/regional plans and GIS layers. The NRVPCDC took this analysis a step further by evaluating the availability of transportation options by corridor.

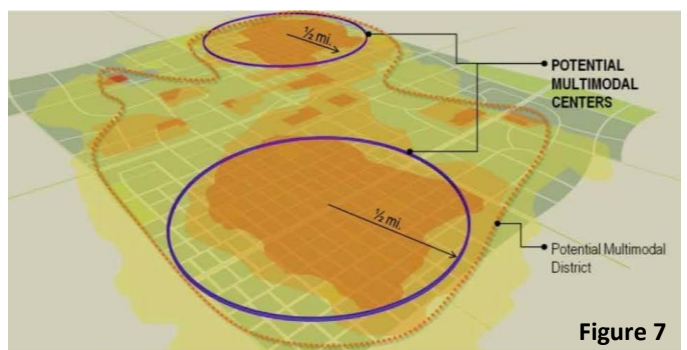
**Step 2 Activity Density:** Measuring the density of population and jobs per acre is also referred to as “activity density.” Understanding activity densities allows planners to determine what size bus might be needed along a specific transit route, if a 10ft wide trail is needed vs. a 5ft wide sidewalk, or if an existing transportation corridor will be able to handle increasing amounts of traffic. In general, activity density can be classified into six transect zones, ranging from remote rural areas to dense urbanized areas. Figure 5 illustrates the concept of activity density interpreted as a transect zone.



**Step 3 Multimodal Districts:** Based on existing and future growth areas, a multimodal district is any portion of a city/town or region of any size that offers good potential multimodal characteristics. A multimodal district should have higher densities of population and jobs per acre and have existing infrastructure or right-of-way that could support transit, bicycle, and pedestrian improvements. Figure 6 illustrates the concept of multimodal districts.

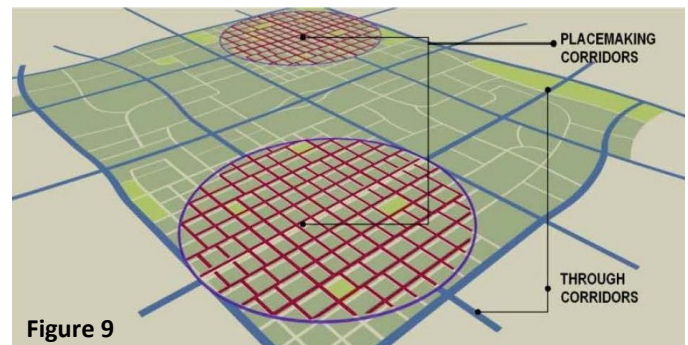
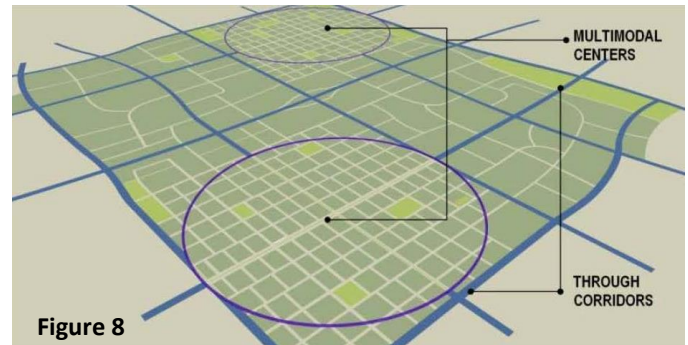


**Step 4 Multimodal Centers:** Once multimodal districts are delineated, the next step is to identify the centers that form the nucleolus of activity. By applying a ¼ -mile, ½-mile, and 1-mile radius travelsheds the primary walksheds and bikesheds begin to take shape. The travelshed circles help to located existing corridors or plan new alignments that support walking, biking, and transit needs in the area. Figure 7 illustrates the concept of multimodal centers.



**Step 5 Modal Emphasis:** The process of identifying an interconnected system of corridors that could support biking, walking, and transit. Once delineated, each corridor should have the potential to accommodate a balance of travel modes. Prioritizing modal emphasis creates design flexibility so that designers can identify solutions based on the density of population and jobs. Chapter 4.2 describes the concept of modal emphasis.

**Step 6 Multimodal Systems Plan:** A completed multimodal systems plan identifies Through Corridors and Placemaking Corridors within a planning area. The corridors demonstrate an interconnected transportation system for automobiles, transit, bicycles, and pedestrians. Placemaking Corridors facilitate movement within a multimodal center – while Through Corridors connect travelers from one multimodal center to another. Figures 8 and 9 illustrate the concept of multimodal corridors.



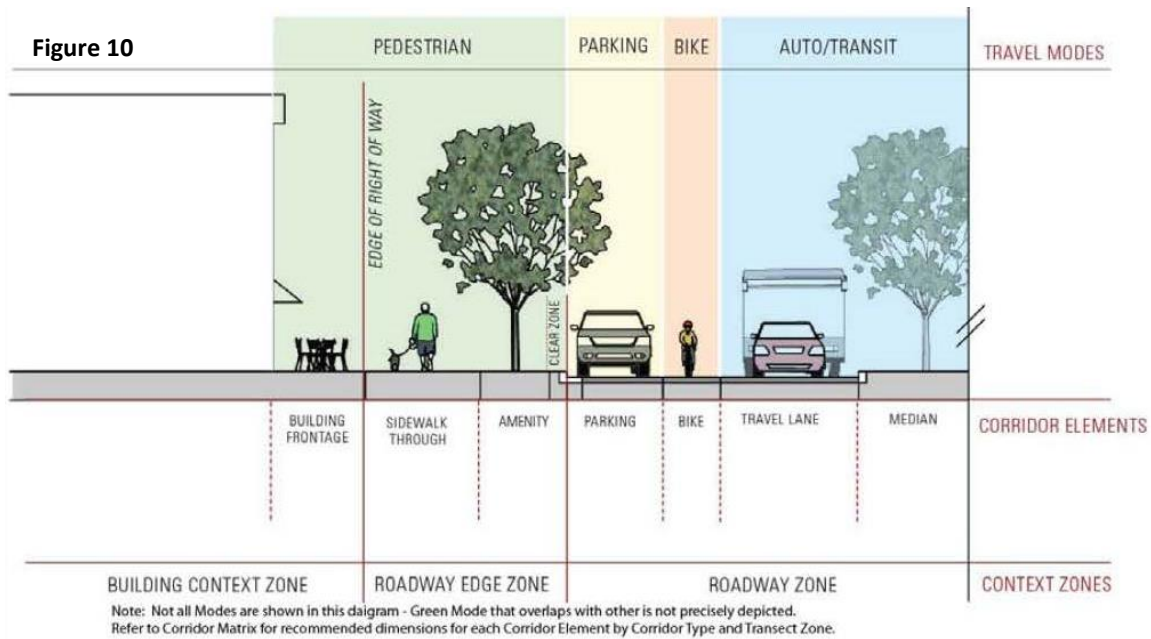
Once the planning process is complete, specific design considerations can be evaluated along multimodal systems corridors. Corridors have different functions relative to access, mobility, and multimodal features. Within the NRVMPPO, Placemaking corridors are further divided into three types: Major Avenue, Avenue, and Local. Each of the Placemaking Corridors has a unique function and interface with surrounding land uses:

Major Avenues contain the highest density of destinations, intensity of activity, and mix of modes. Typically, Major avenues have sidewalks to accommodate high numbers of pedestrians, high transit ridership for local bus routes, and the traffic speed is low.

Avenues connect Local Streets and Major Avenues to Through Corridors. Avenues typically accommodate shorter trips, providing access to businesses and residential areas as a primary function. Pedestrian and bicycle activity is very common, and traffic speed is low to moderate.

Local Streets contain the lowest amount of activity, slowest speeds, and provide the highest levels of access. Bicyclists typically share the road with vehicles because of lower speed and traffic volumes. Local Streets typically offer sidewalks for pedestrians and are predominantly found in residential areas where trips begin or end.

Within each multimodal corridor type, there is a spectrum of activity density ranging from T-1 to T-4 (Transect Zones). The purpose of applying Transect Zones to corridors is to describe the surrounding activity density along a particular corridor. Transect Zones (T1 = Rural vs. T4 = Urban) directly correspond to the levels of activity density. Activity densities are further broken down into segments of a corridor that contain different contexts such as buildings, pedestrian, parking, bike, auto, and transit. The diagram below illustrates typical corridor elements.



The primary goal is to analyze potential design standards for Travel Modes based on the identified density of activity. In order to develop design standards, DRPT worked closely with VDOT to develop a matrix of typical solutions to offer localities flexible framework for multimodal corridor design. Design standards include optimum, minimum, and somewhere in-between recommendations. The flexibility in design standards allows communities to optimize corridor elements that support key travel modes along any particular corridor.

### 2.2 Local Input

Input was sought throughout the planning process. Existing Comprehensive Plans, Campus Master Plans, local and multijurisdictional bike/ped plans, and statewide plans were utilized to identify routes and set goals. A group of local government staff and transportation agencies contributed during the data collection and analysis portions of the planning process. Next, 1-on-1 meetings were held with each locality and their respective transportation partners to contribute feedback on draft content. Finally, on May 29, 2014, a Public Meeting was held and local residents had the opportunity to share their ideas in person or online. The combination of input from each group added significant value to the planning process.

### 2.3 Goals & Objectives

Primary Goals and Objectives for the MPO’s multimodal system plan include:

---

#### Goal A: Mobility, Connectivity & Accessibility

- Facilitate the movement of people (of all ages and abilities) and goods
- Create transportation options for underserved segments of population
- Ensure linkages and reliability between various modes of transportation throughout the NRVMPPO region
- Evaluate all modes of transportation

#### Goal B: Safety

- Target safety investment dollars at locations with known automobile/cyclists/pedestrian related incidents
- Implement multimodal traffic control devices at busy intersections

#### Goal C: Cost Efficient Use of Public Dollars

- Optimize and market the use of existing facilities
- Invest in projects that benefit the movement of people vs. vehicles

#### Goal D: Economic Vitality

- Coordination of economic development, housing, and transportation planning
- Provide greater access to existing and future employment, activity, and education centers
- Attract businesses by investing in recreational bicycling and walking infrastructure

#### Goal E: Environmental Stewardship

- Reduce idle time of motor vehicles
- Reduce the region’s percentage of single occupant vehicles
- Utilize local resources and environmentally responsible practices

#### Goal F: Public Health

- Support active lifestyles by creating more opportunities for walking and bicycling
- Create more access to goods, services, and local food

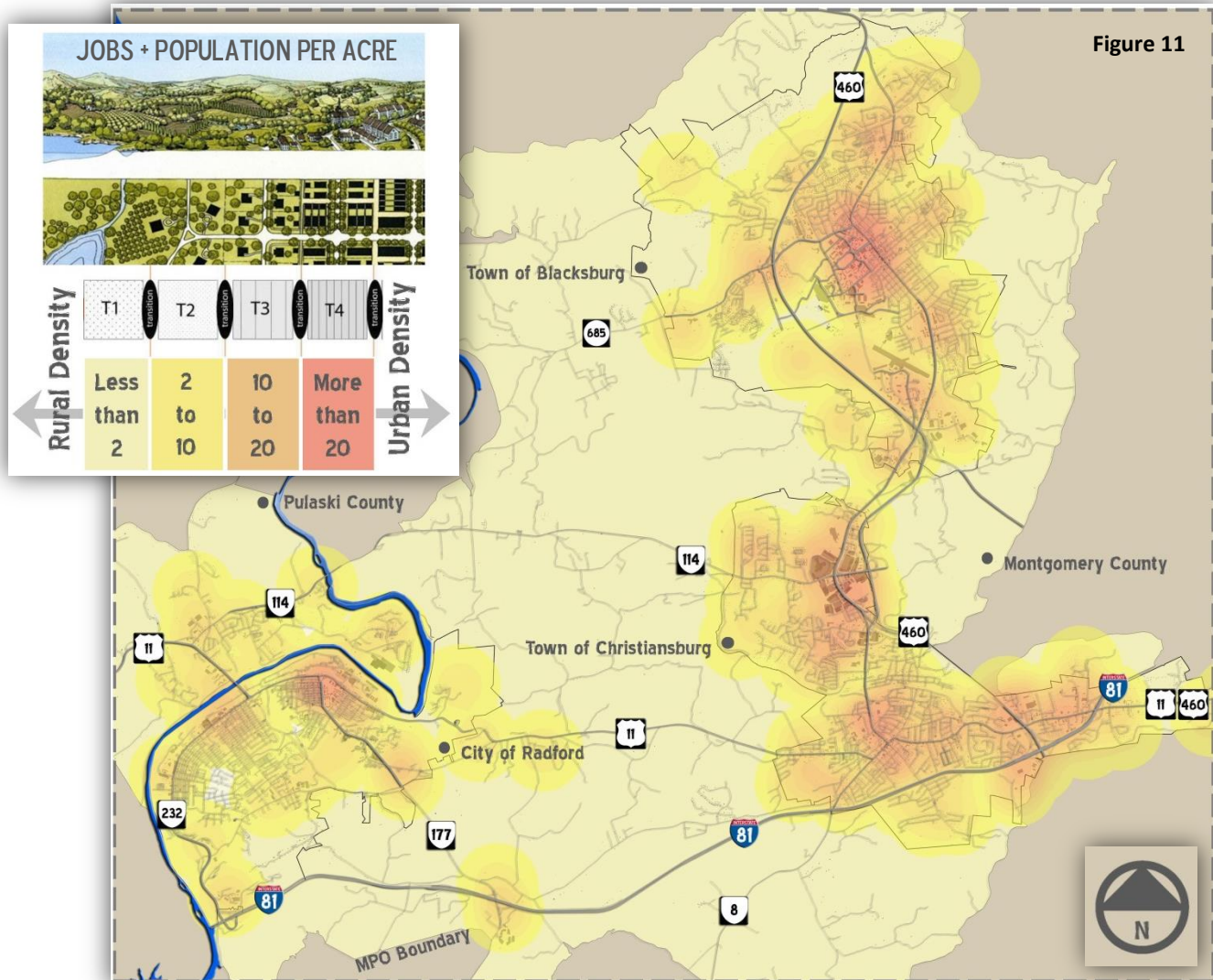
Table 1



## Section 3 – Recommendations

### 3.1 NRVMP O Area Blueprint

The NRVMP O is a transportation policy-making organization serving the Towns of Blacksburg and Christiansburg, the City of Radford, and portions of Montgomery and Pulaski County. The MPO provides information, resources, and public input necessary to improve the performance of the region’s transportation system. Utilizing DRPT’s Multimodal Design Guidelines, the MPO evaluated behavioral and activity characteristics of the area. The map below identifies activity density within the MPO:



The MPO worked directly with the local governments, universities, and transportation agencies throughout the planning process. The MPO Bicycle and Pedestrian Master Plan, to the fullest extent practical, incorporates existing local, regional, and statewide plans. The final plan identifies a continuous system of interconnected corridors that could serve as multimodal corridors. The map below illustrates the conceptual multimodal corridor plan for the MPO area:

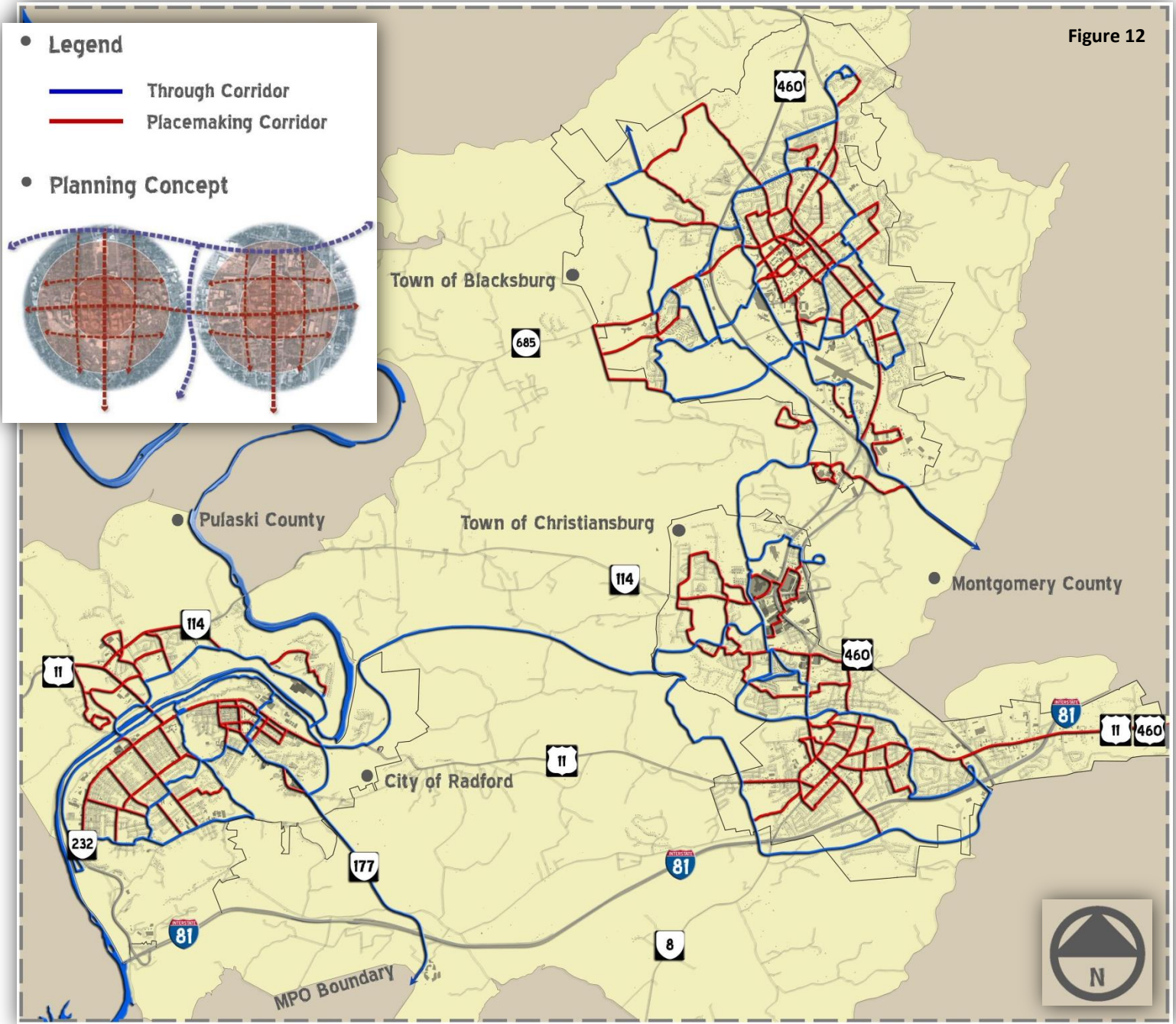


Figure 12

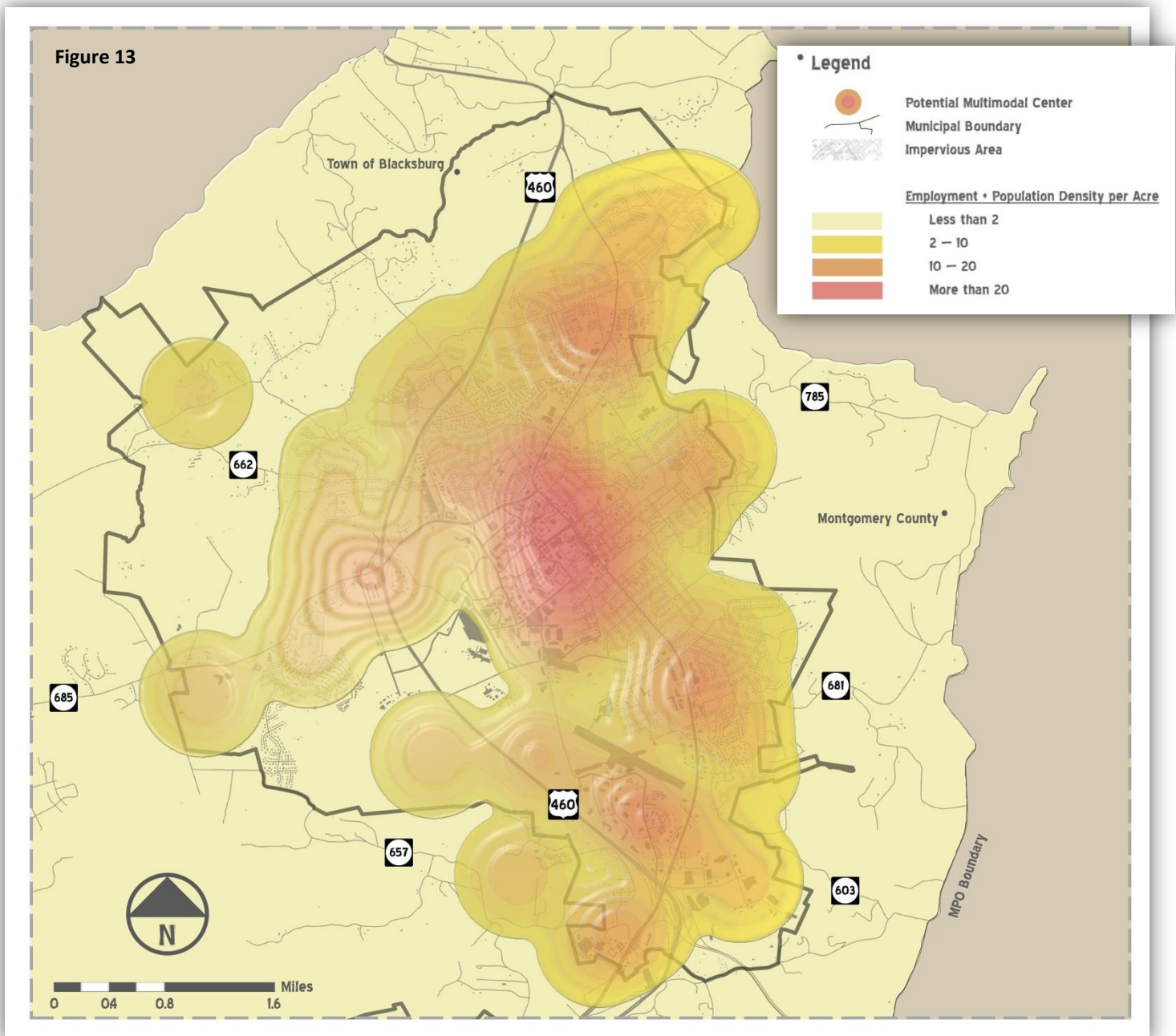
The subsequent sections of this plan provide a higher level of detail for the most urbanized portions of the MPO region.



### 3.2 Blacksburg Area Multimodal Systems Plan

**Step 1 Existing Conditions:** The Blacksburg Area’s existing transportation system includes supporting infrastructure for pedestrians, bicyclists, public transit, and automobile traffic. The existing transportation system can be viewed online here: <http://www.nrvpdc.org/nrvmpo/documents.html>.

**Step 2 Activity Density:** Measuring the density of population and jobs per acre is also referred to as “activity density.” The highest concentration of employment and population density occurs around the Virginia Tech Campus, extending throughout the historical 16-Block’s area. The map below illustrates activity density throughout the Blacksburg Area.



**Step 3 Multimodal Districts:** Based on existing and future growth areas, a multimodal district is any portion of a city/town or region of any size that offers good potential multimodal characteristics. Based on existing and future population and employment growth projections, a total of seven multimodal districts were identified within the Blacksburg Planning Area. The map below illustrates multimodal districts within the planning area.

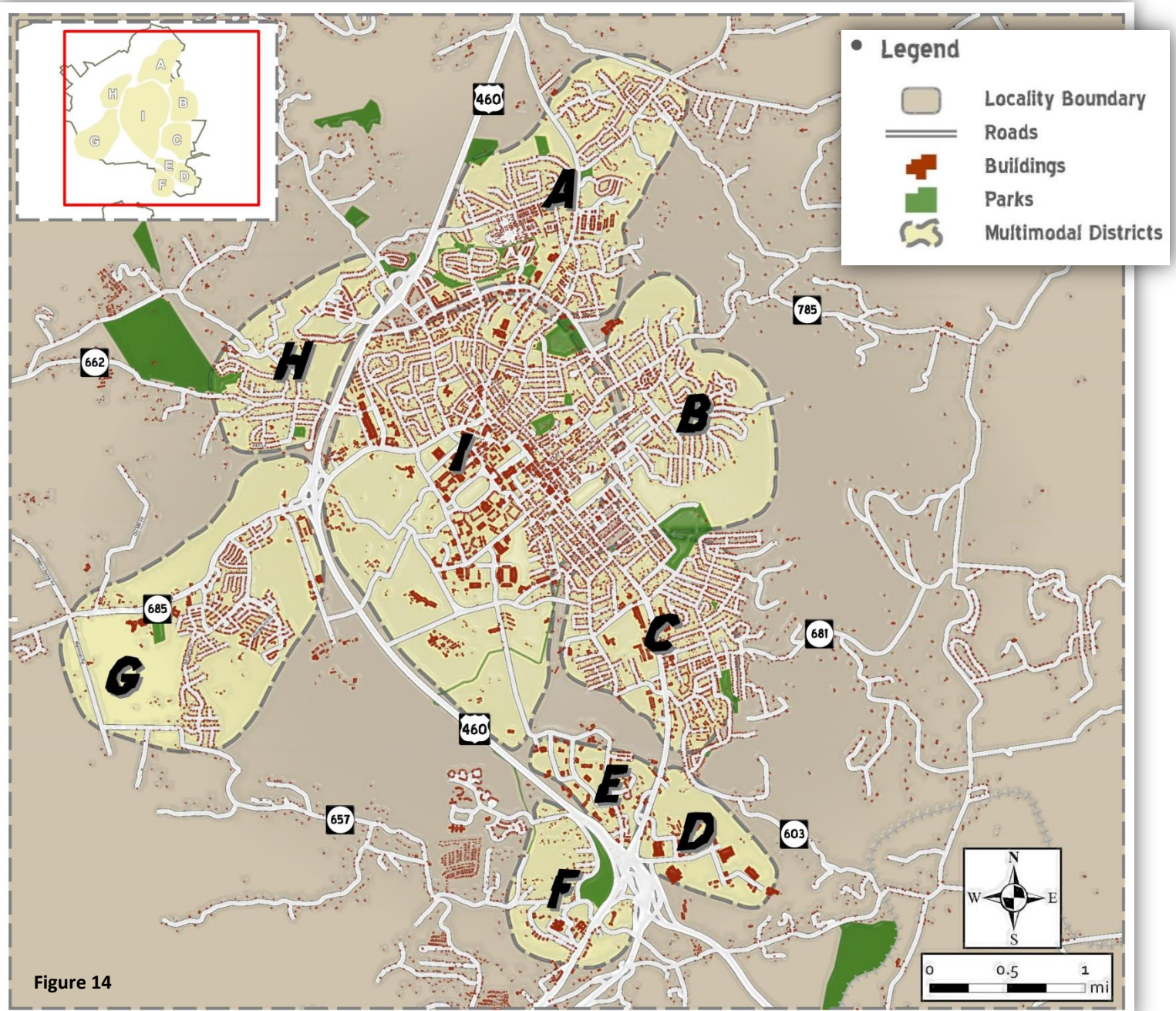


Figure 14

**Step 4 + 5 Multimodal Centers + Modal Emphasis:** Identify the Through and Placemaking transportation corridors that support the identified Multimodal Districts. Based on the population and employment density, modes of transportation can be emphasized in the design of transportation corridors. The map below illustrates corridors with modal emphasis throughout the Blacksburg Area.

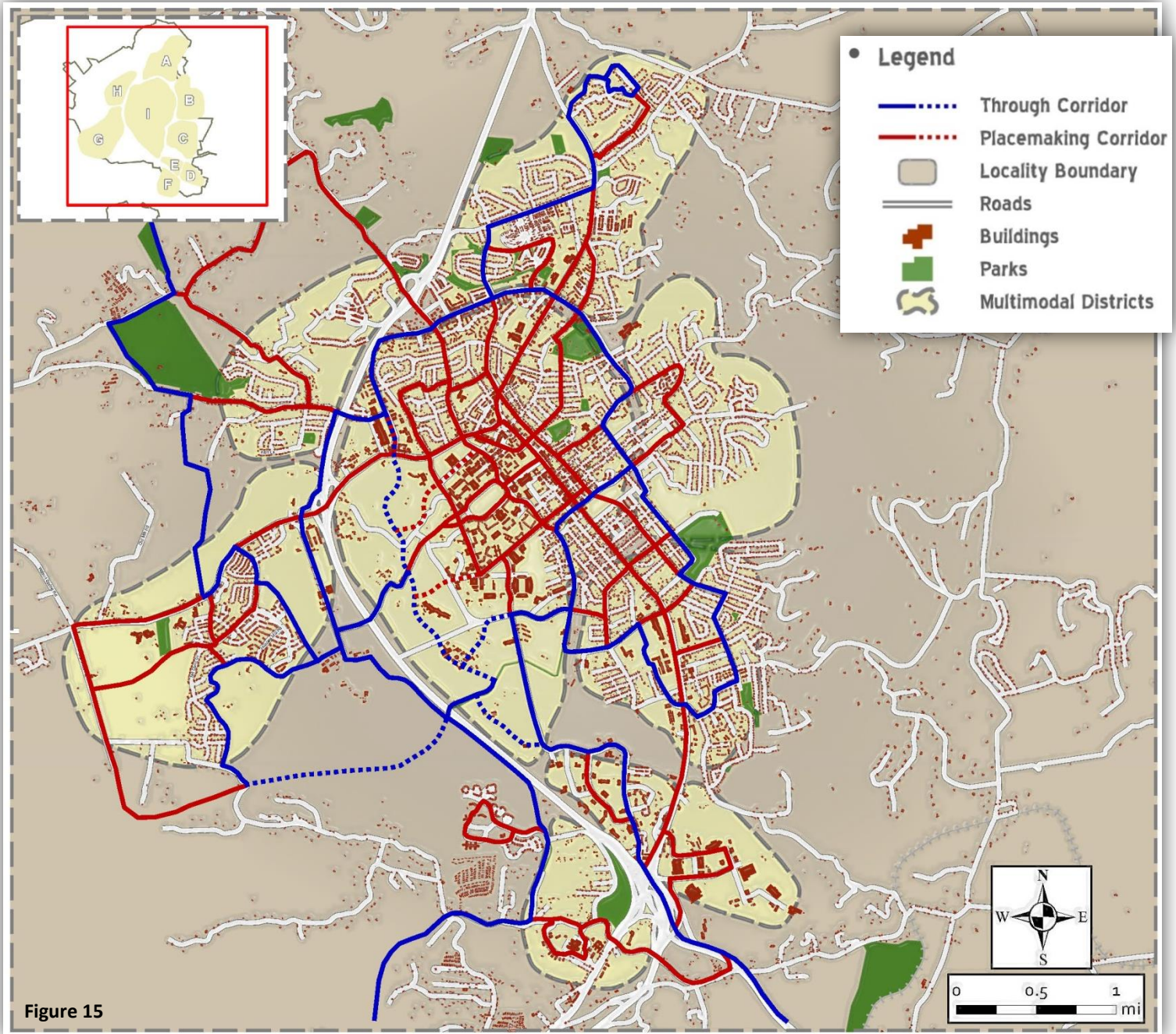
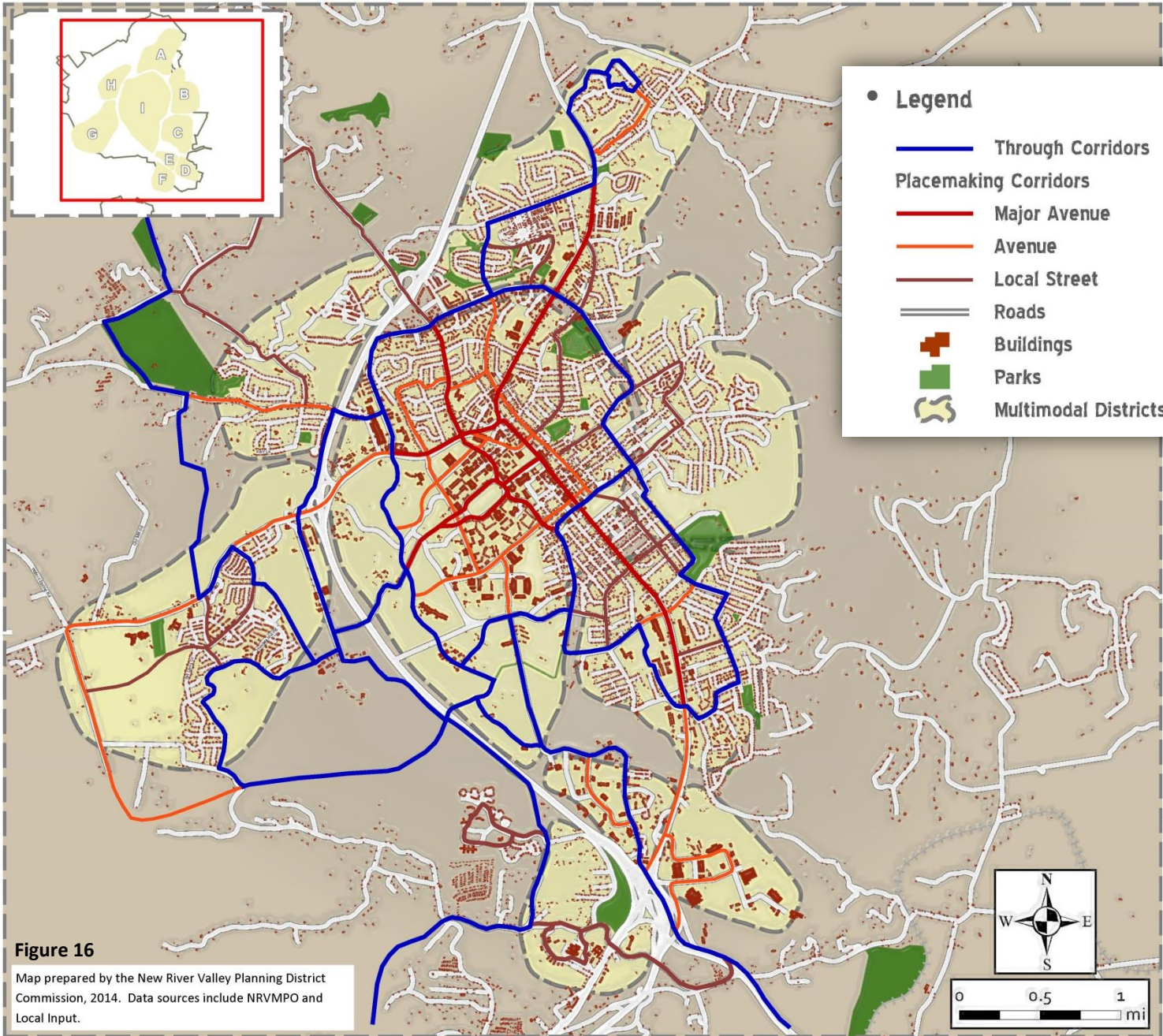


Figure 15

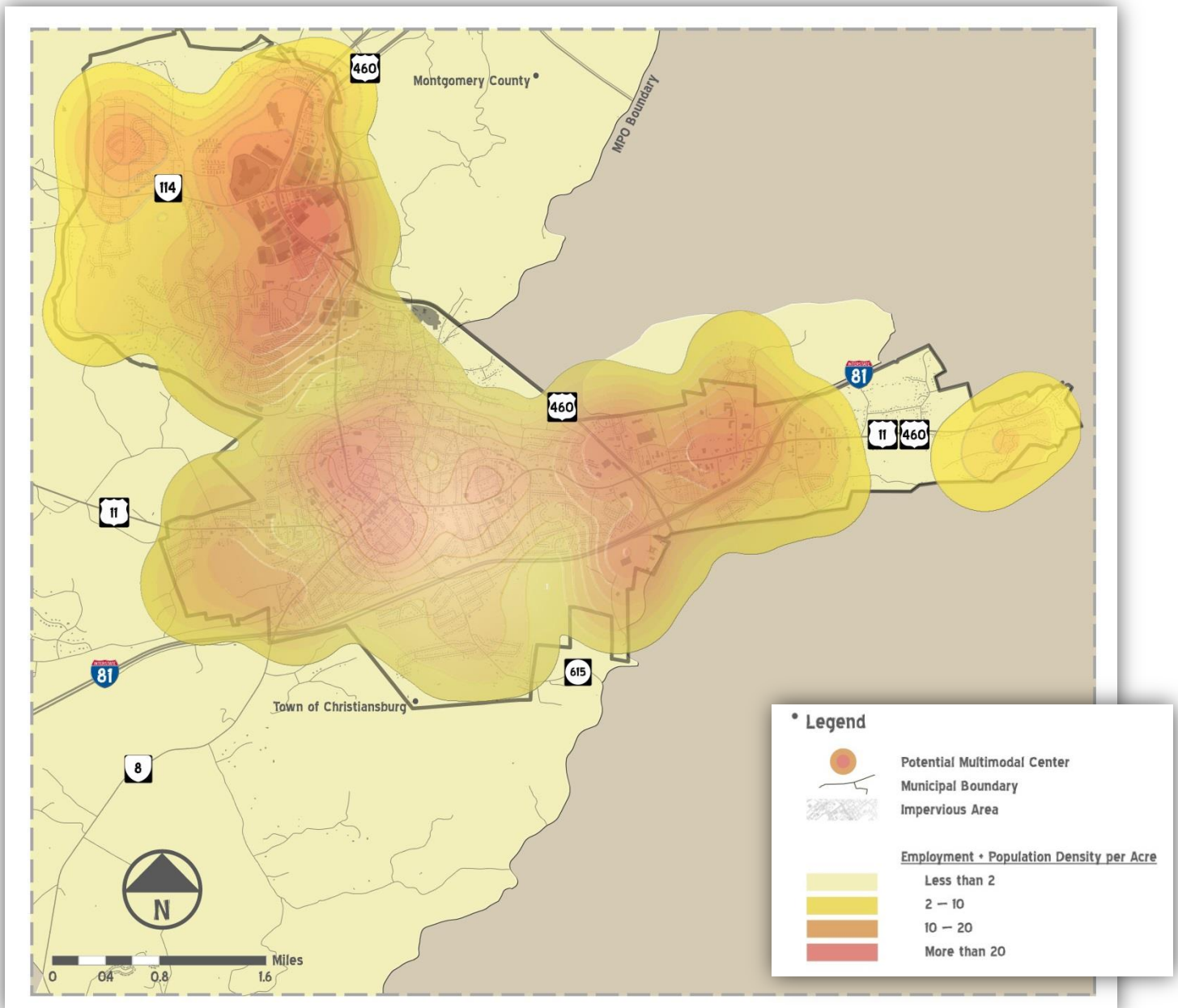
**Step 6 Multimodal Systems Plan:** A completed multimodal systems plan identifies the multimodal transportation corridors within the planning area. A range of design solutions are identified to support each corridor based on the previous five steps of the plan. The illustration below identifies the multimodal transportation plan for the Blacksburg Area.



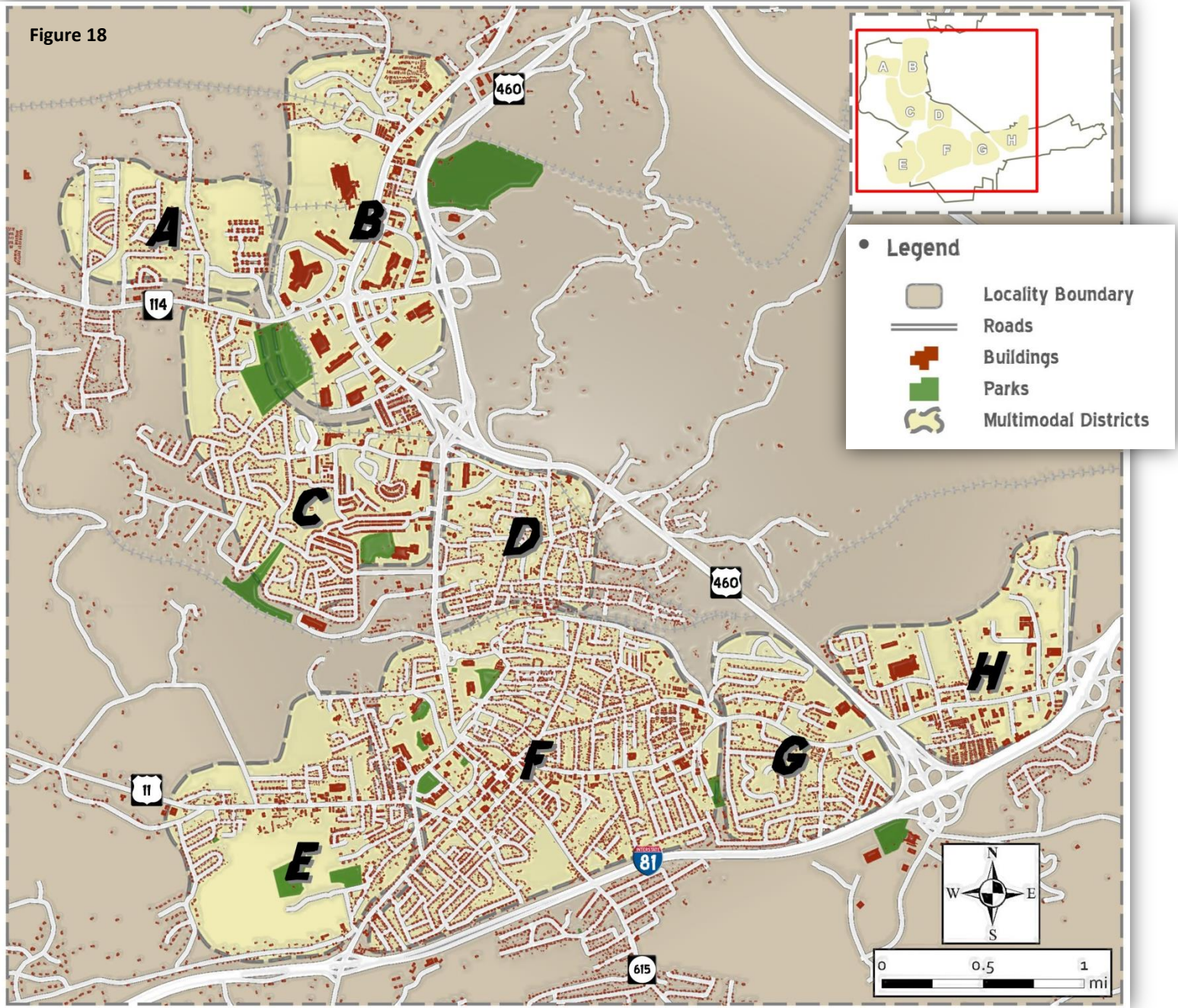
### 3.3 Christiansburg Area Multimodal Systems Plan

**Step 1 Existing Conditions:** The Christiansburg Area’s existing transportation system includes supporting infrastructure for pedestrians, bicyclists, public transit, and automobile traffic. The existing transportation system can be viewed online here: <http://www.nrvpdc.org/nrvmpo/documents.html>.

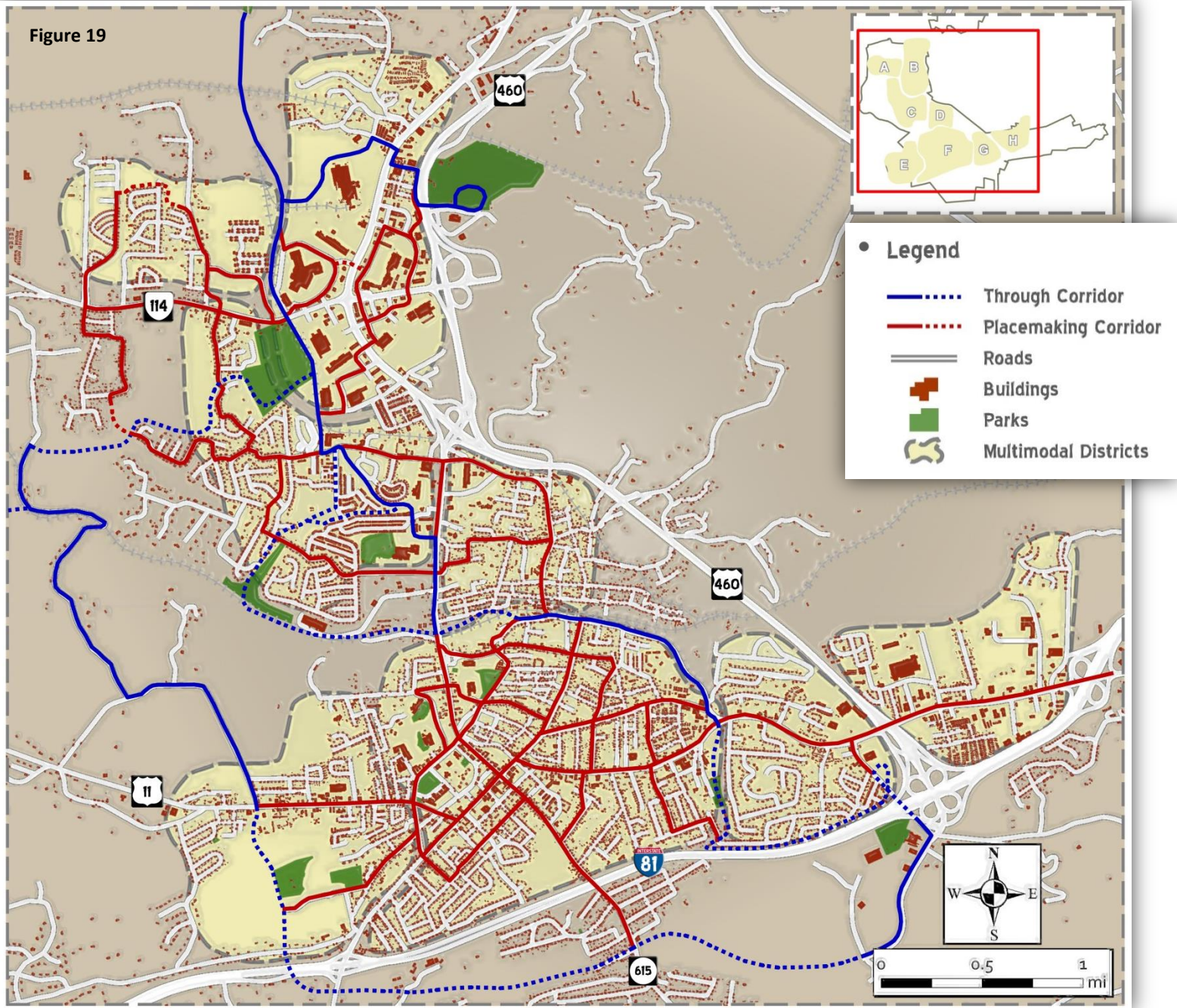
**Step 2 Activity Density:** Measuring the density of population and jobs per acre is also referred to as “activity density.” The highest concentration of employment and population density occurs around the NRV Mall area. The map below illustrates activity density throughout the Christiansburg Area.



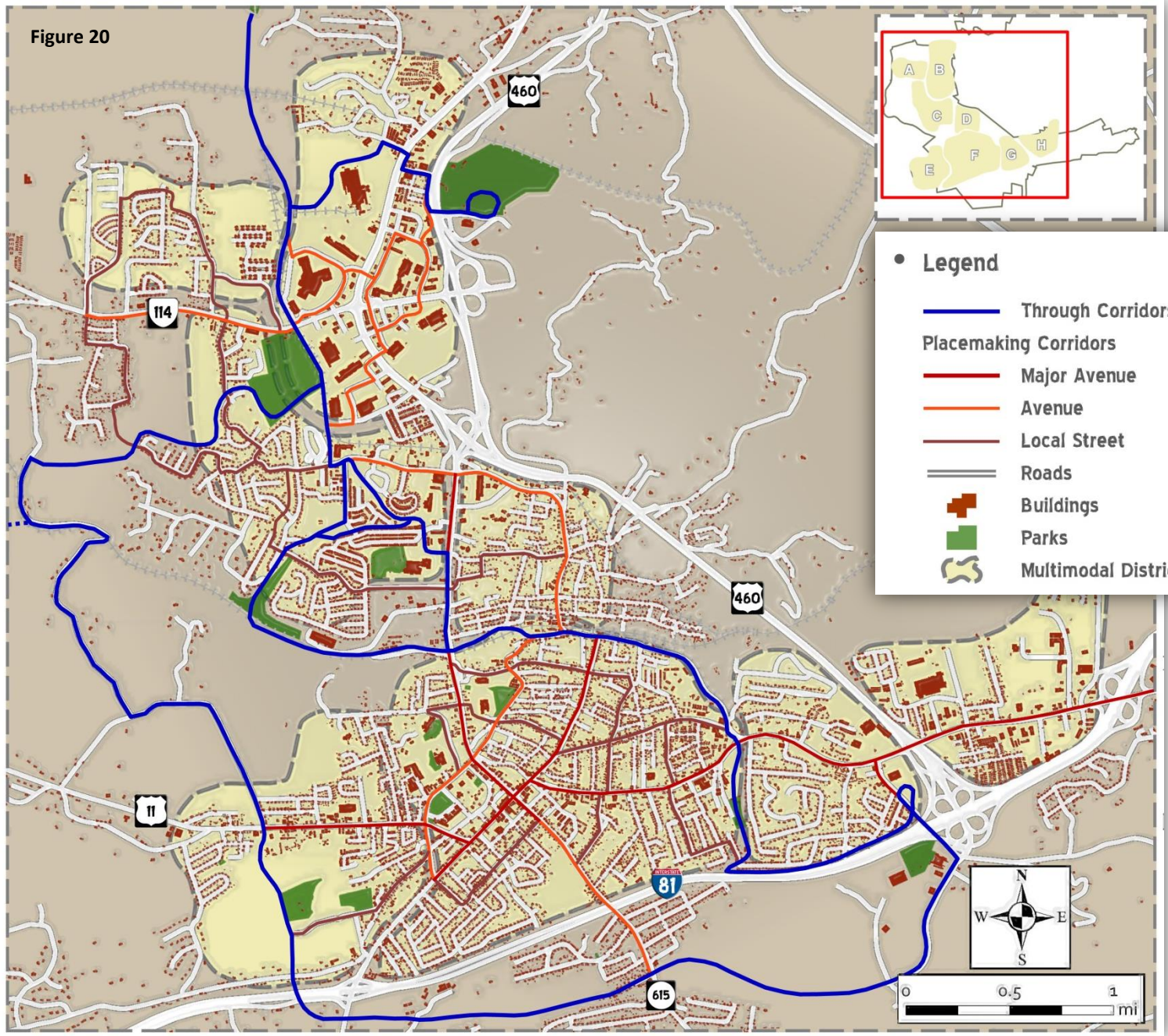
**Step 3 Multimodal Districts:** Based on existing and future growth areas, a multimodal district is any portion of a city/town or region of any size that offers good potential multimodal characteristics. Based on existing and future population and employment growth projections, a total of seven multimodal districts were identified within the Christiansburg Planning Area. The map below illustrates multimodal districts within the planning area.



**Step 4 + 5 Multimodal Centers + Modal Emphasis:** Identify the Through and Placemaking transportation corridors that support the identified Multimodal Districts. Based on the population and employment density, modes of transportation can be emphasized in the design of transportation corridors. The map below illustrates corridors with modal emphasis throughout the Christiansburg Area.



**Step 6 Multimodal Systems Plan:** A completed multimodal systems plan identifies the multimodal transportation corridors within the planning area. A range of design solutions are identified to support each corridor based on the previous five steps of the plan. The illustration below identifies the multimodal transportation plan for the Christiansburg Area.

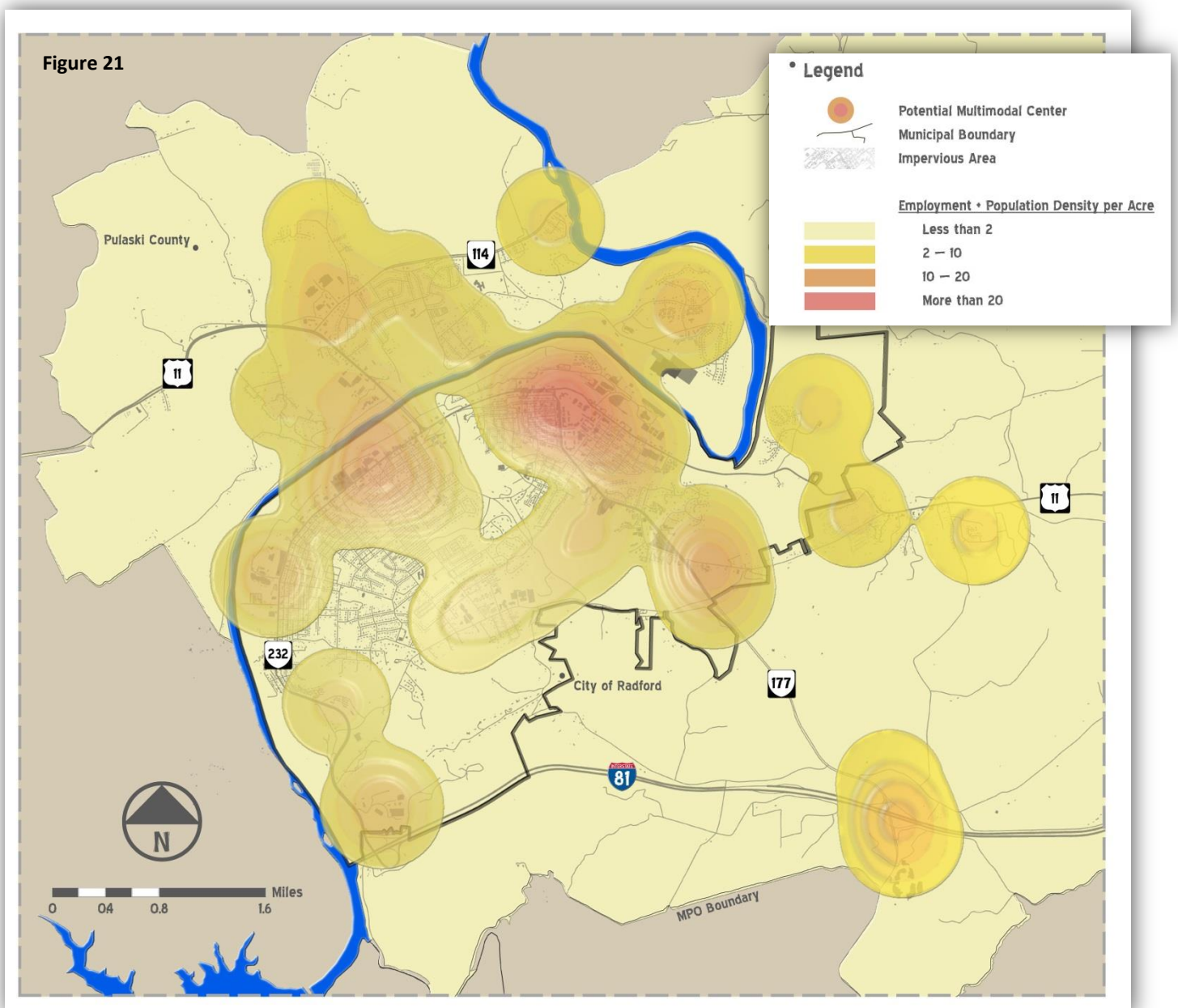




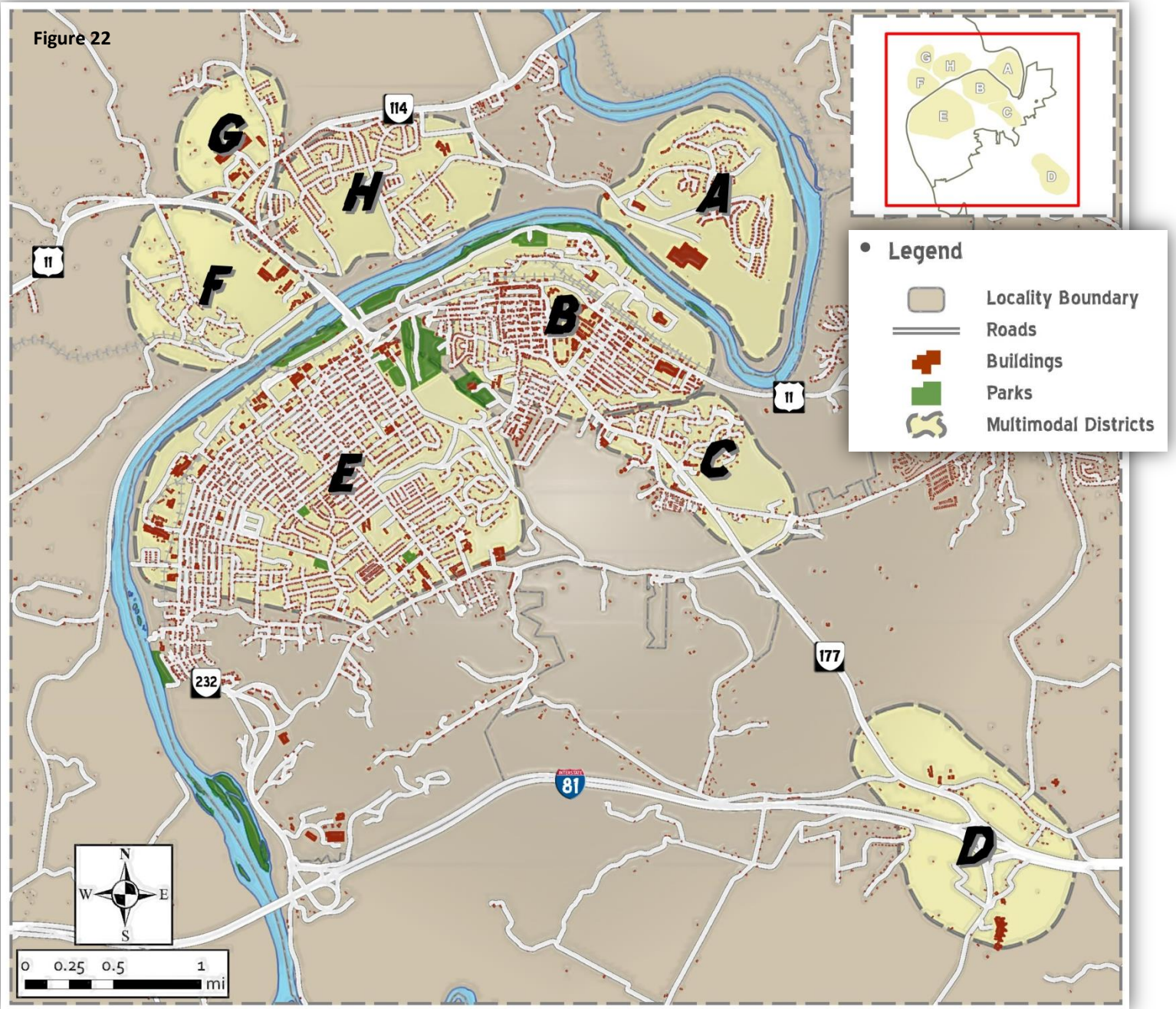
### 3.4 Radford Area Multimodal Systems Plan

**Step 1 Existing Conditions:** Collecting existing land use, transit route/stop, trail, sidewalk, and infrastructure data. The Radford Area’s existing transportation system includes supporting infrastructure for pedestrians, bicyclists, public transit, and automobile traffic. The existing transportation system can be viewed online here: <http://www.nrvpc.org/nrvmpo/documents.html>.

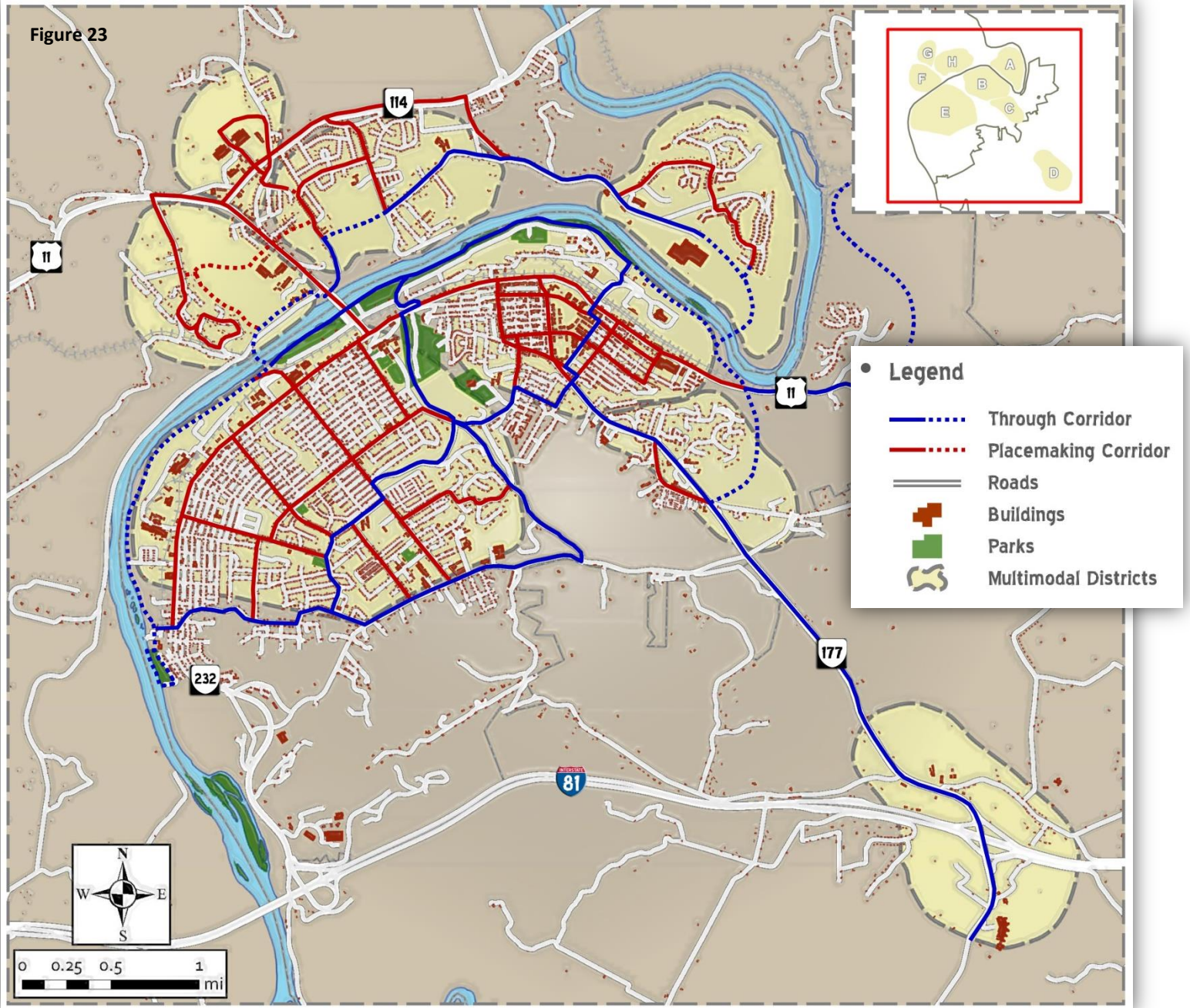
**Step 2 Activity Density:** Measuring the density of population and jobs per acre is also referred to as “activity density.” The highest concentration of employment and population density occurs around the Radford University Campus, extending into downtown East-Radford. The map below illustrates activity density throughout the Radford Area.



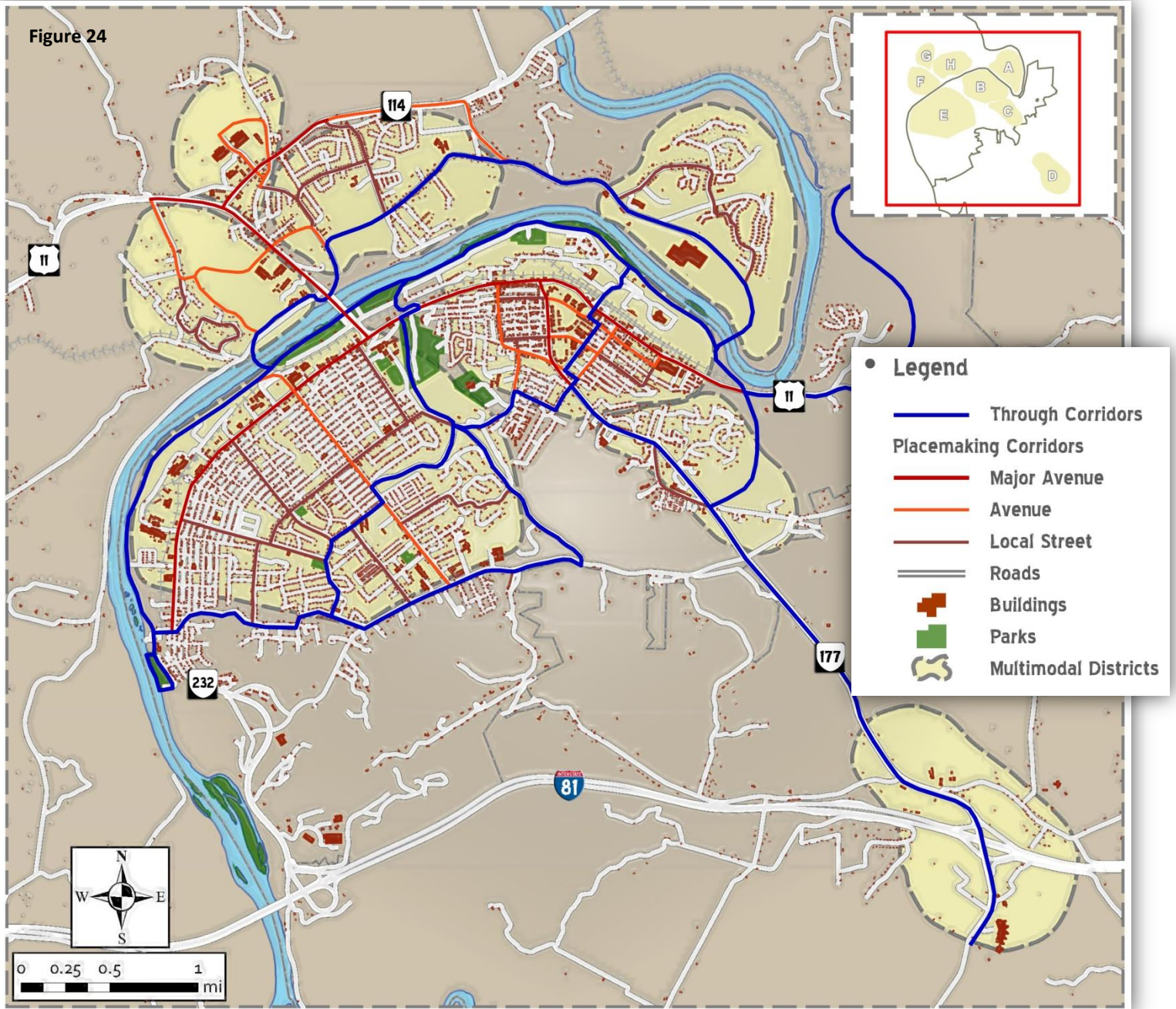
**Step 3 Multimodal Districts:** Based on existing and future growth areas, a multimodal district is any portion of a city/town or region of any size that offers good potential multimodal characteristics. Based on existing and future population and employment growth projections, a total of seven multimodal districts were identified within the Radford Planning Area. The map below illustrates multimodal districts within the planning area.



**Step 4 + 5 Multimodal Centers + Modal Emphasis:** Identify the Through and Placemaking transportation corridors that support the identified Multimodal Districts. Based on the population and employment density, modes of transportation can be emphasized in the design of transportation corridors. The map below illustrates corridors with modal emphasis throughout the Radford Area.



**Step 6 Multimodal Systems Plan:** A completed multimodal systems plan identifies the multimodal transportation corridors within the planning area. A range of design solutions are identified to support each corridor based on the previous five steps of the plan. The illustration below identifies the multimodal transportation plan for the Radford Area.





## Section 4 – Next Steps

### *4.1 Phase 1 - Review*

As a component of the MPO's planning program, the NRVMPPO engaged local transportation stakeholders, interested parties, and the public. Stakeholders that contributed to the Bicycle and Pedestrian Master Plan included: local residents, Town of Blacksburg, Town of Christiansburg, City of Radford, Montgomery County, Pulaski County, Virginia Tech, Radford University, Blacksburg Transit, Pulaski Area Transit, Radford Transit, New River Valley Bicycle Association, VDOT, and DRPT.

The MPO's Technical Advisory Committee (TAC) met immediately following regularly scheduled meetings to contribute their expertise on transportation infrastructure, services, activity density, and existing plan integration. The TAC's contributions provided ground-truth on existing data, which greatly benefited analysis.

Following the data collection and analysis development phase, the MPO met with each local government 1-on-1. Meeting attendees included local government staff, university staff, and transit agency staff specific to the Blacksburg, Christiansburg, and Radford areas. The purpose of the meeting was to review local corridor selections and to establish goals for the plan.

To complete the planning process, the MPO facilitated a public meeting on May 29, 2014. A total of 9 local residents attended the meeting. Many people took advantage of the opportunity to review the plan, interactive maps, and contribute feedback online. Public Comments are in Section 6 of this plan.

Once the TAC approves the plan, anticipated in summer of 2014, it will move on to the Policy Board for endorsement. Local communities have the option to continue refining the plan, as outlined in Section 4.2.

#### 4.2 Phase 2 – Delineation of Modal Emphasis

Localities have the option to further develop this plan by creating approved typical sections for multimodal corridors. The process would require evaluating the proposed multimodal system and identifying the modal emphasis along each corridor. Identifying the modal emphasis will enable communities to identify optimum typical sections that fit within existing right-of-way. The process of modal emphasis involves:

1. Utilize the Multimodal System Plan to Confirm Corridor Classification (Major Avenue, Avenue, or Local Street): Multimodal corridor classifications directly correlate with typical corridor elements that need to be considered in design solutions. Table 2 (below) identifies how the multimodal corridor classification system should relate to VDOT’s existing functional classification.

Corridor Classification Matrix				
VDOT Functional Class	Interstate (50 – 70 mph)	Arterial (30 – 60 mph)	Collector (30 – 50 mph)	Local Street (20 – 30 mph)
Multimodal Corridor Classification	Through Corridor			
		Major Avenue		
		Avenue		
				Local Street

Table 2

Example: How does VDOT’s Functional Classification align with the Multimodal Corridor Plan?

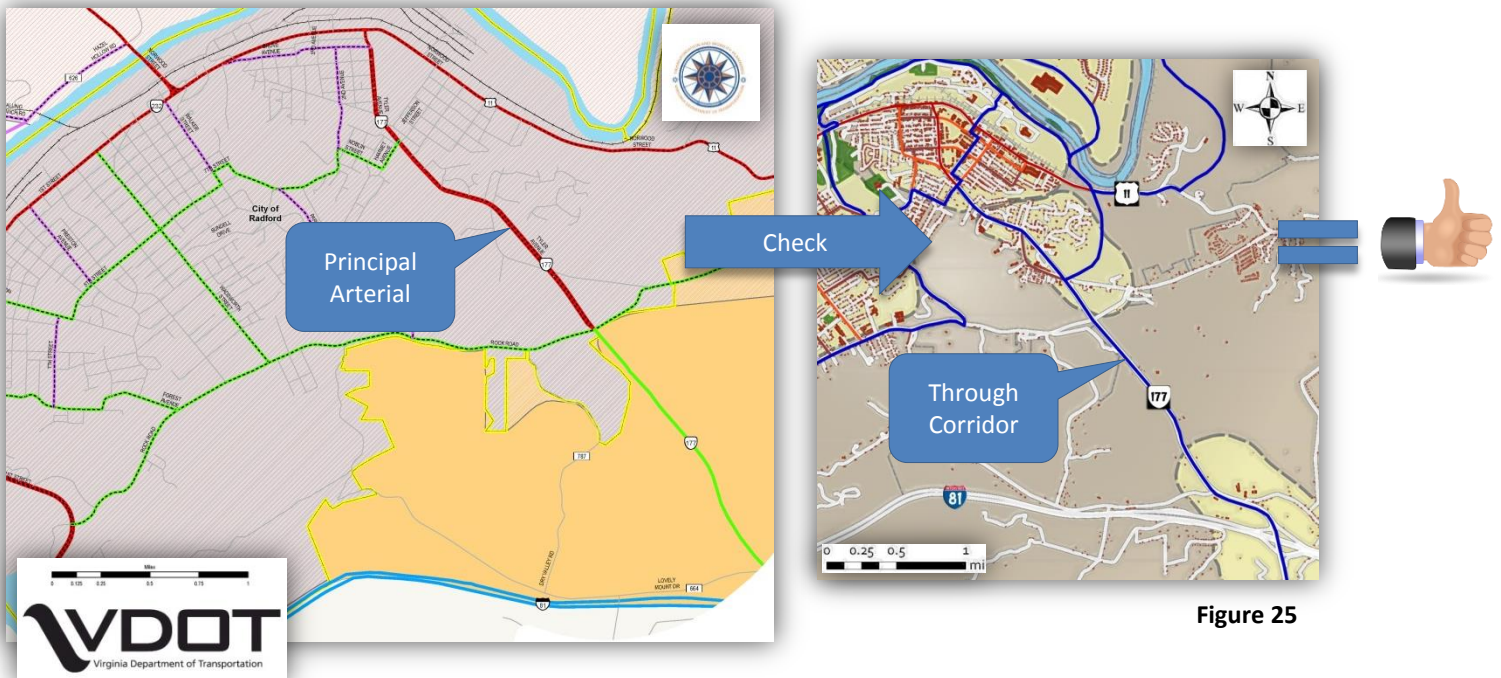


Figure 25

- Establish a Modal Emphasis Priority for Each Corridor: The purpose of identifying modal emphasis is to create flexible framework for design solutions. Utilize Table 3 (below) to explore trade-offs among corridor elements. A multimodal corridor’s design is guided by the Corridor Typology. Specific modal emphasis can be prioritized to optimize design features based on existing demand.

How to Choose Design Standards Based on Type of Corridor Element					
	Modal Emphasis	Primary	Secondary	Contributing	Non-Contributing
Corridor Typology (Select the Primary Modal Emphasis to Guide Design Choice)	Pedestrian	<ul style="list-style-type: none"> <li>• Sidewalk</li> </ul>	<ul style="list-style-type: none"> <li>• Building Frontage</li> <li>• Amenity</li> </ul>	<ul style="list-style-type: none"> <li>• Parking</li> </ul>	<ul style="list-style-type: none"> <li>• Bike</li> <li>• Travel Lane</li> <li>• Median</li> </ul>
	Bicycle	<ul style="list-style-type: none"> <li>• Bike</li> </ul>	<ul style="list-style-type: none"> <li>• SHARROW</li> </ul>	<ul style="list-style-type: none"> <li>• Amenity</li> </ul>	<ul style="list-style-type: none"> <li>• Building Frontage</li> <li>• Sidewalk</li> <li>• Parking</li> <li>• Median</li> </ul>
	Transit	<ul style="list-style-type: none"> <li>• Travel Lane</li> </ul>	<ul style="list-style-type: none"> <li>• Sidewalk</li> </ul>	<ul style="list-style-type: none"> <li>• Building Frontage</li> <li>• Amenity</li> <li>• Bike</li> </ul>	<ul style="list-style-type: none"> <li>• Parking</li> <li>• Median</li> </ul>
	Green	<ul style="list-style-type: none"> <li>• Amenity</li> </ul>	<ul style="list-style-type: none"> <li>• Median</li> </ul>	<ul style="list-style-type: none"> <li>• Building Frontage</li> </ul>	<ul style="list-style-type: none"> <li>• Sidewalk</li> <li>• Parking</li> <li>• Bicycle</li> <li>• Travel Lane</li> </ul>
	Parking	<ul style="list-style-type: none"> <li>• Parking</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• Bike</li> </ul>	<ul style="list-style-type: none"> <li>• Building Frontage</li> <li>• Sidewalk</li> <li>• Amenity</li> <li>• Travel Lane</li> <li>• Median</li> </ul>
Which Standard to Choose:		Use optimum standards	May use minimum standard in constrained ROW	May use minimum standard in constrained ROW	May use minimum standard

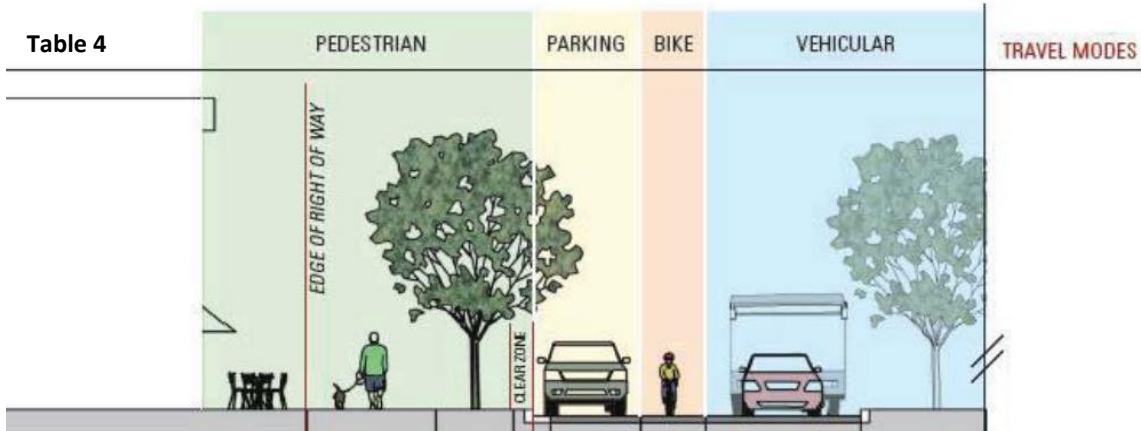
**Table 3**

Example: If an existing corridor’s modal emphasis is Pedestrian, then:

- Sidewalks should be designed to the optimum standard
- Building frontage and amenity elements should be designed to the optimum standard as right-of-way allows
- Parking could be designed to meet the minimum standard
- Bike, travel lane, and median elements could be designed to the minimum standard as right-of-way allows

3. Create Proposed Cross Sections: Utilizing Table 4 (below), to evaluate specific design standards based on the typology of the corridor. Proposed cross sections should accommodate the most important travel modes along the corridor.

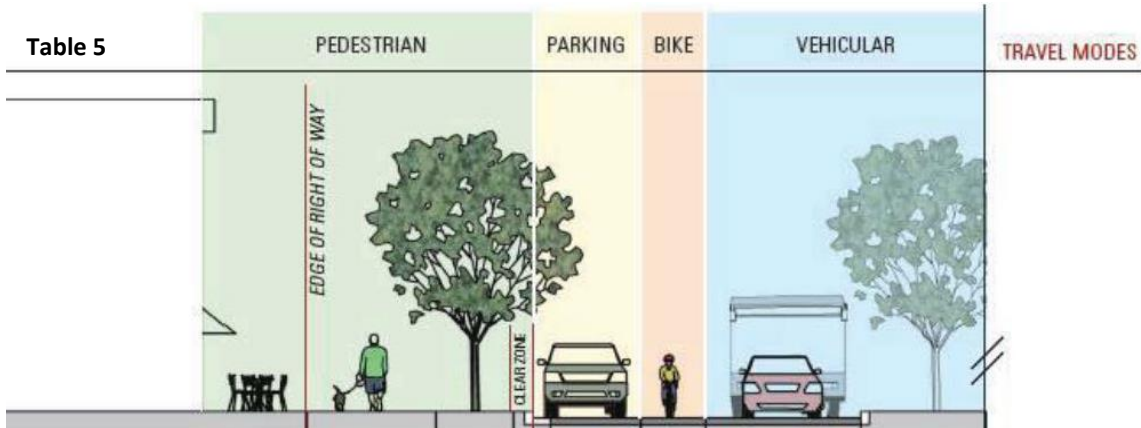
**Table 4**



	PEDESTRIAN			PARKING	BIKE	VEHICULAR		TRAVEL MODES
BUILDING ZONE	BUILDING FRONT.	SIDEWALK ZONE	BUFFER	PARKING LANE	BIKE LANE	TRAVEL LANE	MEDIAN	
OPTIMUM/(MID)/STANDARD (ALL DIMENSIONS IN FEET)	12/7/5	6	9.5/7.5	8	6	12	18/9/0	Major Avenue
	15/10/7	6	7.5/6	8/7	6/5	12	18/9/0	Avenue
	30/20/15	6/5	6.5/0	7	SHARE	11	NA	Local Street

Example: An existing Avenue, determined to have a Pedestrian Modal Emphasis:

**Table 5**



	PEDESTRIAN			PARKING	BIKE	VEHICULAR		TRAVEL MODES
BUILDING ZONE	BUILDING FRONT.	SIDEWALK ZONE	BUFFER	PARKING LANE	BIKE LANE	TRAVEL LANE	MEDIAN	
	10 FT	6.5 FT	NA	NA	NA	24 FT	12 FT	EXISTING AVENUE
	10 FT	6.5 FT	10 FT	8 FT	6 FT	12 FT	0 FT	POTENTIAL AVENUE



#### *4.3 Phase 3 – Implementing Guidelines & Standards*

Once modal emphasis is delineated along each multimodal corridor, localities may choose to obtain approval from DRPT and VDOT. The Multimodal System Plan Review & Approval Process currently involves two phases:

1. VDOT and DRPT will review the plan in map form. The components of the plan should address locality plans for each transportation mode (consistent with § 15.2-2223 of the Virginia Code) as applicable and identify the following key elements:
  - a. Types of Multimodal Centers (T4, T3, etc.)
  - b. Existing Travel Modes
  - c. Modal Emphasis on each corridor (pedestrian, bicycle, etc.)
2. In addition to Phase 1 requirements, VDOT and DRPT will review and approve typical sections using the Multimodal Design Standards based on the type of center and the modal emphasis identified in the Multimodal System Plan.

Localities have the option to implement the Multimodal Design Guidelines and Standards. This document does not constitute standard, specification, or regulation.

#### *4.4 Ongoing Commitments*

As of 2014, the Multimodal Design Guidelines are relatively new. Few Virginia communities have had the opportunity to apply the standards in their community. As such with any plan, the 2014 NRVMPPO Bicycle and Pedestrian Plan is intended to be regularly reviewed and updated.

This report was prepared with funding assistance received through the Federal Highway Administration, United States Department of Transportation, and the Federal Transit Administration. The contents of this document reflect the views of the authors and do not necessarily reflect the official views or policy of the funding partners. Additional project level assessments and/or studies of alternatives may be necessary.



## Section 5 – Plan Contributors

### *Plan Development*

Adele Schirmer, Blacksburg  
Andrew Warren, Blacksburg  
Anne McClung, Blacksburg  
Beth Lohman, NRV Bicycle Association  
Brad Buchanan, Montgomery County  
Dan Brugh, New River Valley MPO  
David Clarke, VDOT  
Dean Crane, Blacksburg  
Debby Freed, Virginia Tech  
Elijah Sharp, New River Valley PDC  
Erik Olsen, New River Valley MPO  
Fritz Streff, NRCC  
Jared Linkous, Pulaski County  
Jim Hurt, City of Radford  
Julio Stephens, Radford University  
Karen Drake, Montgomery County  
Kevin Byrd, New River Valley PDC  
Kitty Zeringue, Virginia Tech  
Mitchell Haugh, Montgomery County  
Michael Gray, VDOT  
Nichole Hair, Christiansburg  
Patrick Burton, New River Valley PDC  
Randal Gwinn, New River Valley MPO  
Randy Wingfield, Christiansburg  
Steve Sandy, Montgomery County

### *Photos, Graphics, & Mapping*

David Battreall, New River Valley PDC  
Elijah Sharp, New River Valley PDC  
Jonnell Sanciangco, NRVPCDC  
Michael Sutherland, Montgomery Co.  
Radford University  
Virginia Tech



## Section 6 – Public Input

*June 22, 2013 - Lele*

I'd really like to see a sidewalk or bike lane/path on Merrimac road connecting the residences to the Huckleberry trail. Currently it is a dangerous walk/ ride with little or no shoulder.

*May 11, 2014 - Wayne*

While I see a desire of bicyclist to utilize streets and roadways I also see the extreme danger of vehicle traffic. Many bicyclists believe that they have just as much right to use busy streets and highways as vehicles do, however, they fail to realize that they can not compete with a vehicle weighing in excess of one ton. They will lose every time. Bicycle trails should never be mixed with vehicular traffic. If such a need should arise such as a special event, the road should be closed for the event.

Bicyclist often claim that they have the same rights and must adhere to the same laws as vehicles. This is not true. They can not maintain a constant speed such as 35mph on some roads. Therefore, they are creating a safety hazard for vehicles as well as themselves.

Bicyclist should be required to register and license their bikes with DMV if they will be riding on streets and highways.

I feel that my tax dollars should be spent on maintain streets and roadways/highways and not bike trails/paths. Diving in today's society is dangerous enough with folks using cell phones without adding the additional danger of bicyclists running red lights, stop signs and taking up the entire lane doing far less that the posted speed limit.

*May 18, 2014 - George*

Thank you for the opportunity to review this document and submit comments.

1. The document is a work of art and all those who participated (the Plan Contributors), especially Elijah Sharp's graphics staff, all deserve considerable praise for a job well done.
2. The art of converting raw data to visual graphical representation is extremely important to allow everyone the opportunity to discuss the same issue or topic.
3. The document appears to be "cutting-edge" technology in terms of what DRPT and VDOT are requesting regarding modal corridors, and specifically, multimodal corridors.
4. I understand the Multimodal Design Guidelines are new, few Virginia communities have applied the standards, and the NRV MPO Bicycle and Pedestrian Master Plan is intended to be a guideline around which communities in this planning area can develop their individual multimodal plans. If my understanding is incorrect, I stand corrected and this can be discussed at the public meeting.
5. While I understand this document is a guideline and localities have the option of implementing such, it is precisely this flexibility that causes a great deal of anxiety and concern.
6. Before I began reading the document, I was expecting a table somewhere in the document with metrics, benchmarks, or some sort of measureable/achievable goals – a plan or vision about the integration of multimodal transportation for those citizens who wish to

transport themselves in an active, responsible, and safe manner.

7. While the document is an excellent foundation for multimodal development, without some sort of expectation of implementation and coordination between the communities represented in the document, I fear very little will be achieved. Admittedly, there are accomplishments that can be noted such as the extension of the Huckleberry Trail on both ends of the original trail, the new bicycle/pedestrian bridge across Rt. 114; and the designation of Virginia Tech as a Bicycle Friendly University, and all the infrastructure that goes with that designation.

But, there is a distinct lack of momentum in other areas of the metropolitan planning district. As a concerned citizen for cycling, I would like to see an overarching committee (perhaps the Plan Committee listed in this report) that worked with the county and the three municipalities in the MPO, to encourage the development of long term and short term plans for multimodal accomplishments, and bench marks for achieving those goals. Long term, there are (or should be) plans to connect Blacksburg, Christiansburg, Radford and Pulaski with safe bicycle passage. We currently now have interconnecting public transportation for most of this area. But a long-term plan to link the New River Valley and the Roanoke River Valley with safe bicycle passage is a worthy goal. For short-term goals, what about the Draper Road extension in Blacksburg and accessibility to bi-directional riding for cyclists? The Town cannot seem to resolve this simple issue. Maybe others could have a positive impact in facilitating a decision. Likewise, what about the connections between the Huckleberry Trail Extension and shopping areas in the Spradlin Farm area of the NRV mall for cyclists and pedestrians?

Where are these communities in moving toward designation as “Bicycle Friendly Communities”? The 2014 BFC list is out. There are now 310 communities (by my count) and 43 Honorable Mention Communities. This designation is a direct measure of the individual community’s commitment to quality of life issues and travel by bicycle (and often, success in being designated as a BFC is tied to other forms of

active transportation such as walking and public transit, i.e., multimodal transportation). The communities in this NRV MPO document are not even on the “honorable mention” list. They are not even close to being considered. Even Portsmouth, VA was a new BFC this year!!!!

Being designated a BFC is important to more than just cyclists. Designation is an index of livability for the community. Designation says the community is moving toward multimodal transportation, sustainability, and inclusion of its citizens who choose to transport themselves in active, independent ways.

8. I think this report is an excellent step in the right direction. It is very visual and very well done. It is good to see this MPO of the New River Valley using cutting-edge technology to lay plans for the future of multimodal transportation in this area. I think the plan needs to take another giant step forward and find a way to develop ideas, plans, and benchmarks for implementation of multimodal transit that would encourage, guide, and coordinate local communities in their development of multimodal transportation systems.

*May 21, 2014 - Erik*

From a transit point of view, I think what is missing/needed is linkages or NEEDED linkages to transit centers and, in fact, all bus stops (and even park and rides or parking lots near bus stops). Starting with the most popular ones makes sense, but identifying neighborhoods, sidewalks that are NEAR bus stops would be a first step. Then look at those areas and identify, then prioritize sidewalks/shared-use trails that are either needed, or that exist nearby that could be extended to provide better connections. A recent transit survey revealed that 97.5% of riders walk to bus stops, 8% bicycle to a stop, and 6% drive to a stop. So accommodating improved/extended sidewalks, multi-use trails (and improved crosswalks, etc.) would help immensely. Even in areas where the walk would be over 0.25 miles (e.g., up to 1 mile) to get to a bus stop, a good connection would allow people to feel safer/enjoy getting to transit stops.

*May 29, 2014 - Donald*

I would recommend extending the proposed Huckleberry Trail along the future connector road (ties in where Patrick Way intersects Franklin) - avoiding the Tall Oaks Subdivision.

Greatly improve traffic flow and avoid vehicle/bicycle conflicts in a dense residential area. Existing home owners are concerned about potential increased liabilities regarding conflicts with pedestrian and cyclists where the trail crosses Tall Oaks Boulevard.

The traffic on Tall Oaks Boulevard comes from 248 townhomes.

*New River Valley  
Metropolitan Planning Organization*

*August 7, 2014*

**Resolution accepting the final report prepared by the New River Valley Planning District Commission for the development of the New River Valley MPO Bicycle – Pedestrian Master Plan.**

**On a motion by Anne McClung seconded by Michael Barber and carried unanimously,**

WHEREAS, the localities that comprise the MPO all have approved bicycle plans, and

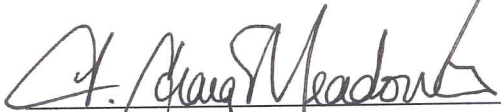
WHEREAS, the MPO has not had a consolidated bicycle and pedestrian plan, and

WHEREAS, the MPO contracted with the New River Valley Planning District Commission to develop a plan for the MPO, and

WHEREAS, the PDC has worked with the localities and the public to develop a consolidated plan, and

WHEREAS, the TAC has reviewed and recommends approval.

NOW, THEREFORE, BE IT RESOLVED, that the New River Valley MPO approves the New River Valley MPO Bicycle Pedestrian Plan.



F. Craig Meadows, Chairman





TOWN OF  
**Blacksburg**  
*a special place*



THE NEW RIVER CITY  
**RADFORD**  
VIRGINIA

