Thomas Jefferson Planning District Commission
Charlottesville/Albemarle MPO

401 E. Water St, Charlottesville, VA 22902 www.tjpdc.org
• (434) 979-7310 • info@tjpdc.org email

Agenda
MPO CTAC
Wednesday March 20th, 2019 @ 7:00 p.m.
Water Street Center, 407 E. Water Street, Charlottesville, VA 22902

Item	Time	Description
1	7:00-7:05	**Matters from the Public: limit of 3 minutes per speaker** • *Members of the Public are welcome to provide comment on any public-interest, transportation-related topic, including the items listed on this agenda.*
2	7:05-7:10	**Approval of September 19th draft Meeting minutes*;** *Click here for a copy* • *The November meeting was canceled, no quorum at January meeting*
3	7:10-7:20	**Election of Officers for calendar year 2019***
4	7:20-8:20	**Long Range Transportation Plan** *Click here for Memo* **-** Jakob zumFelde • Recommendations for constrained and vision lists • Review draft document chapters • Plan next steps
5	8:20-8:40	**Staff Updates:** • Hydraulic Planning Advisory Panel • Jefferson Area Bicycle and Pedestrian Plan • Regional Transit Partnership
6	8:40-8:50	**Additional Matters from the Public: limit of 3 minutes per speaker** • *Members of the Public are welcome to provide comment on any public-interest, transportation-related topic, including the items listed on this agenda.*

*Indicates that MPO Staff will be seeking a recommendation or formal action.

Upcoming Meetings:
MPO Policy Board: March 27, 2019 and April 24, 2019
MPO CTAC, April 17th

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Citizen Transportation Advisory Committee

DRAFT Meeting Minutes: September 19, 2018

Committee – Voting Members	Staff
Travis Pietila (Charlottesville) - Present	Jakob zumFelde (MPO)
Mike Dunn (Albemarle) - Present	Chuck Proctor (VDOT)
Ray Heron (Charlottesville) – Present	
Michael Smith (Charlottesville) – Present	
Adam Moore (Charlottesville) - Present	
Fran Hooper (Albemarle) - Present	
Ted Coates (Albemarle) - Present	
David Shreve (Albemarle) – Present	
Chair David Hurst (MPO) – Present	
Vice-chair Pam Riley (Albemarle PC) – Absent	
Nancy Carpenter (MPO) – Absent	
Mac Lafferty (MPO) – Absent	
Hunter Smith (Albemarle PC) - Absent	

Call to Order:
Mr. Hurst called the meeting to order at 7:05 PM.

Matters from the Public:
There were no matters from the public.

Approval of meeting minutes:
The May 16, 2018 meeting minutes were presented. Ms. Hooper made a motion to approve the minutes, Mr. Dunn seconded the motion, and the minutes were approved unanimously.

Discussion regarding election of officers:
Mr. zumFelde explained that the committee's bylaws indicate that election of officers is to take place at the first meeting of the calendar year. Currently, the last elections were held in September of 2017, so there have not been any elections held this calendar year. With this in mind, staff is asking the committee to decide whether to hold elections at this meeting (as indicated on the agenda) or whether to wait until January 2019, when elections will need to be held per the bylaws. A brief discussion was had regarding whether to pursue a change to when the bylaws indicate to hold elections, and no committee members expressed a desire for this change. Ms. Hooper then made a motion to wait until January 2019 to hold the next election of officers. Mr. Pietila seconded the motion and the committee unanimously passed the motion. The next election of officers will take place at the January meeting. Mr. Coates indicated a desire for committee members, including the elected officers, to continue to ensure that the purpose of the committee is clear. There was additional discussion about this topic, with Mr. Proctor indicating

that the LRTP items to be discussed at the meeting are a primary role of the MPO and CTAC. Since the LRTP is only updated every 5 years, this is an important time for the committees.

MAP-21 Performance Measures

Mr. zumFelde provided background on this item, including that federal legislation (MAP-21) has required states and MPOs to set targets for many measures. Mr. zumFelde and Mr. Proctor explained that VDOT has been working to make information available to the MPOs, but this process has been slow and a meeting where information was to be provided was canceled due to the hurricane. Nonetheless, the MPO Policy Board will need to take action at their upcoming meeting, so Mr. zumFelde showed the committee the available information regarding baseline conditions and proposed targets for the performance measures. The measures are related to pavement condition, bridge condition, and system performance and the roadways in the region that are identified as part of the national highway system (NHS). There was some discussion about the measures and suggested targets.

Long Range Transportation Plan (LRTP) Update

Mr. zumFelde provided information about the timeline for the LRTP update, with the deadline for approval being May of 2019. He explained that since project evaluation is now available, the next step of the process will be beginning to funnel down the number of projects being considered for inclusion in the constrained long-range plan.

Mr. zumFelde provided information about Round 1 of the scenario evaluation, including which projects were included in each scenario. He presented and explained the scenario results, with committee members providing feedback on how the results are presented and how to interpret them.

The committee then discussed general questions about the projects. Mr. zumFelde clarified that the multimodal projects do not indicate specific improvements because in most cases the detailed improvements have yet to be determined. Mr. zumFelde then explained that the project review pages had been printed and posted on the wall for the members to review. Mr. zumFelde provided all members with dots to put on the projects on the wall – green dots were used to indicate projects that committee members consider most important to include in the LRTP and blue dots were used to indicate projects that members consider least important to include in the LRTP. Some time was allowed for members to review the projects and place their dots on them. After this, there was a brief discussion in which committee members noted that there was generally agreement on which projects to move forward and which to not include. Mr. zumFelde thanked the committee for their input and explained that the information would be conveyed to the Policy Board, along with similar feedback provided by the MPO Tech committee.

Staff Reports

Mr. zumFelde provided a brief update on the 3-C agreement that was approved by the MPO Policy board in July. It has also been approved by the PDC and the City of Charlottesville and is pending approval by JAUNT and Albemarle County.

Mr. zumFelde and Mr. Proctor provided information about an adjustment made to the TIP (Transportation Improvement Program) to reflect a transfer of funds, with no changes made to the overall amount of money allocated. Additional updates have been made to the TIP to include language related to the MAP-21 performance measures.

Mr. zumFelde reported that the last meeting of the Regional Transit Partnership (RTP) included discussions regarding future funding for transit in the region, among other things. The next meeting will be held October 24 at 4 PM.

Mr. zumFelde provided an update on the Jefferson Area Bicycle and Pedestrian plan, and indicated that this will be a main source of bicycle and pedestrian projects for inclusion in the LRTP. He showed maps of the existing bicycle and pedestrian infrastructure in the region, planned bicycle and pedestrian infrastructure, and a regional network of corridors that staff have created for inclusion in the Plan. Projects on these corridors will be scored using the ActiveTrans Priority Tool and 5 different categories: destinations, equity, improvement over existing conditions, and connectivity. Mr. zumFelde then provided additional details about the timeline for the Plan, and indicated that it will be completed by December of 2018, with approval by the MPO and other stakeholders in early 2019.

Finally, Mr. zumFelde informed the committee that the next CTAC meeting is scheduled for November 21, which is the day before Thanksgiving. As such, staff are suggesting to hold the meeting on the prior Wednesday, November 14, instead. There was consensus among the committee that this was preferable, with no one expressing concern.

Additional Matters from the Public:
There were no matters from the public.

The meeting was adjourned at 8:50 PM.

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Memorandum

To: MPO CTAC
From: Jakob zumFelde, Transportation Planner
Date: March 12, 2019
Reference: Long Range Transportation Plan

Purpose: To update the MPO CTAC on the status of the LRTP process.

Background: The MPO's Long Range Transportation Plan must be updated every five years. The Updated Plan (LRTP 2045) must be approved by May of 2019.

Summary:
A significant amount of information has been provided to the MPO committees over the past year of work on the LRTP. This work has led to the creation of lists of projects that indicate the transportation infrastructure needs and priorities of the region. These lists are provided following this memo. The LRTP Plan document will compile these lists, as well as background information and a description of the LRTP process and evaluation completed. Chapters 1, 2, 3, 4 and 6 of the document are provided in this packet, following the project lists.

Action Items: At the March CTAC meeting, staff will ask committee members to review the projects lists and provide any final suggestions or updates. Staff will also ask for feedback on the draft chapters of the plan document.

If there are any questions or comments, please contact Jakob zumFelde at jzumfelde@tjpdc.org or 434-422-4080.

Draft Proposed Constrained Roadway/Multimodal Project List			Estimated Cost (CY2020) $ Millions		Actions	
Project ID	**Project Name**	**Jurisdiction**	**Constrained Amount**	**Total calculated project Cost**		**Notes**
R3-a	Hydraulic and US 29 Intersection	Both	$ 15.9	$ 79.1	63.2 million to intersection list	Hydraulic 29 project divided into individual parts for constraining
R3-b	Angus Rd Hillsdale Extension 250 Ramp Relocation		$ 50.5	$ 50.5		
R3-c	District Ave Roundabout			$ 8.4	8.4 million to intersection list	
R3-d	Hillsdale Roundabout			$ 10.7	10.7 million to intersection list	
R3-e	Zan Road area improvements		$ 39.3	$ 39.3		
R6	West Main Street multimodal	Charlottesville	$ 11.9	$ 11.9	Funded in Smart Scale III. shifted to Six Year Plan	
R18	Hillsdale Drive to Rio	Albemarle	$ 9.3	$ 9.3		
		TOTAL	**$ 126.9**			
	Estimated roadway constrained amount		$ 126.9			
	Difference		**$ 0.0**			

Draft Roadway Project Vision List

LRTP Project ID	Project Name	Jurisdiction
R2	250 Shadwell	Albemarle
R4	Bypass/Fontaine	Albemarle
R5	US-250 Free Bridge Widening	Both
R7	Route 20 multimodal	Albemarle
R8	Rio Road multimodal	Albemarle
R9	Fifth/Ridge/McIntire multimodal	Charlottesville
R10	Avon Street multimodal	Both
R11	Berkmar Drive Extension	Albemarle
R12	Sunset/Fontaine connector	Albemarle
R13	Eastern Ave connector	Albemarle
R14	Old Lynchburg multimodal	Albemarle
R15	Ivy Road East multimodal	Albemarle
R16	I-64 truck lanes	Albemarle
R17	Ivy Road West multimodal	Albemarle
R19	South Pantops Drive Bridge	Both
R20	Free Bridge Area Capacity Study	Both
C1	Elliot Avenue between Ridge Street and Avon Street	Charlottesville
C2	Preston Avenue between 10th Street NW and McIntire Road	Charlottesville
C3	10th Street NW between Wertland Street and Preston Avenue	Charlottesville
C4	East High Street between 9th Street and Locust Avenue	Charlottesville

Project ID	Project Name	Jurisdiction	Constrained Amount^	Total calculated project Cost	Notes	Action
R3-a	Hydraulic and US 29 Intersection	Both	63.2	79.1	15.9 million included in roadways	Hydraulic 29 project divided into individual parts for constraining
R3-c	District Ave Roundabout		8.4	8.4	8.4 million to intersection List	
R3-d	Hillsdale Roundabout		10.7	10.7	10.7 million to intersection List	
		TOTAL	**82.3**			
	Estimated intersection constrained amount		82.3			
	Difference		**0.0**			
^Cost in Millions $, 2020 year						

Draft Intersection Project Vision List

Locality	Street 1	Street 2	Street Other	Source
Albemarle	Route 250	Crozet Avenue		Albemarle
Albemarle	Route 250	Burnley Station Rd		Albemarle
Albemarle	Route 250 West	Owensville Road		Albemarle
Albemarle	Route 250 West	Tilman Road		Albemarle
Albemarle	Route 29	Woodbrook Drive		Albemarle
Albemarle	Route 20	Route 53		Albemarle
Charlottesville	Route 250 Bypass	Hydraulic Road Interchange		Albemarle/MPO
Charlottesville	Preston Avenue	10th Street NW		City of Charlottesville
Charlottesville	Preston Avenue	Grady Avenue		City of Charlottesville
Charlottesville	Preston Avenue	9th Street NW	Rose Hill Drive	City of Charlottesville
Charlottesville	Fontaine Avenue	Maury Avenue	Jefferson Park Avenue	City of Charlottesville
Charlottesville	Roosevelt Brown Boulevard	Cherry Avenue		City of Charlottesville
Charlottesville	Cherry Avenue	6th Street SW		City of Charlottesville
Charlottesville	Cherry Avenue	Ridge Street	5th Street, Elliot Ave	City of Charlottesville
Charlottesville	Elliot Avenue	Burnet Way	Burnet Street	City of Charlottesville
Charlottesville	5th Street SW	Oak Street		City of Charlottesville
Charlottesville	4th Street SW	Dice Street		City of Charlottesville
Charlottesville	Ridge Street	Oak Street		City of Charlottesville
Charlottesville	Monticello Avenue	Ridge Street		City of Charlottesville
Charlottesville	6th Street SE	Monticello Avenue		City of Charlottesville
Charlottesville	Avon Street	Monticello Avenue		City of Charlottesville
Charlottesville	9th Street	11th Street NE		City of Charlottesville
Charlottesville	9th Street	Grove Avenue		City of Charlottesville
Charlottesville	11th Street NE	Little High Street		City of Charlottesville
Charlottesville	10th Street NE	Little High Street		City of Charlottesville
Charlottesville	East High Street	8th Street NE		City of Charlottesville
Charlottesville	East High Street	7th Street NE		City of Charlottesville
Charlottesville	5th Street SE	Elliot Avenue		City of Charlottesville
Albemarle	Route 250	Stoney Point Road		STARS
Albemarle	Rio Road	Pen Park Ln		STARS
Albemarle	Route 20	Key West Dr		STARS
Albemarle	Ivy Road	Ivy Depot Road		STARS
Albemarle	Route 53	Milton Rd		STARS
Albemarle	Route 250	State Farm Blvd		STARS
Charlottesville	Elliot Avenue	Monticello Avenue		STARS
Albemarle	Route 29	Westfield Rd		STARS
Albemarle	Old Lynchburg Road	5th Street		STARS
Albemarle	Route 250	Louisa Road		STARS
Albemarle	Route 250	Route 240		STARS
Albemarle	Rio	Oldbrook	Northfield	STARS
Charlottesville	Main Street	14th Street		STARS

Draft List of Bridge Projects

VDOT Structure Number	Locality	Street	Crossing	Condition
1120	Albemarle	US 250 (Richmond Rd)	Shadwell Creek	Poor
6224	Albemarle	Keswick Road	Carroll Creek	Poor
6229	Albemarle	Wheeler Road	Moores Creek	Poor
6230	Albemarle	Wheeler Road	Moores Creek	Poor
6258	Albemarle	Blair Park Road	Lickinghole Creek	Poor
8000	Charlottesville	Dairy Road	US 250 Bypass	Poor
1007	Albemarle	SR 20 (Scottsville Rd)	Stream	Fair
1049	Albemarle	US 250 (Ivy Rd)	Mechums River	Fair
1081	Albemarle	SR 22 (Louisa Rd)	Branch Carroll Creek	Fair
1117	Albemarle	US 250 (Richmond Rd)	Camp Branch	Fair
1118	Albemarle	US 250 (Richmond Rd)	Barn Branch	Fair
1139	Albemarle	US 250 (Monacan Trail Road)	Barracks Road	Fair
1154	Albemarle	US 29 (Seminole Trail)	North Fork Rivanna River	Fair
1164	Albemarle	US 29 (Monacan Trail)	Fontaine Avenue	Fair
1165	Albemarle	US 29 (Monacan Trail)	Fontaine Avenue	Fair
1170	Albemarle	SR 20 (Monticello Ave)	Moores Creek	Fair
1171	Albemarle	SR 20 (Monticello Ave)	Moores Creek	Fair
2043	Albemarle	I-64	SR 20 (Scottsville Rd)	Fair
2047	Albemarle	I-64	Rivanna River and Buckingham Branch RR tracks	Fair
2048	Albemarle	I-64	Rivanna River and Buckingham Branch RR tracks	Fair
2051	Albemarle	I-64	Private entrance	Fair
2065	Albemarle	I-64	SR 682 (Broad Axe Rd)	Fair
2066	Albemarle	I-64	SR 682 (Broad Axe Rd)	Fair
2067	Albemarle	I-64	US 29 (Monacan Trail Rd)	Fair
2068	Albemarle	I-64	Moores Creek and Norfolk Southern RR tracks	Fair
2069	Albemarle	I-64	Moores Creek and Norfolk Southern RR tracks	Fair
8006	Charlottesville	Copeley Road	Buckingham Branch RR tracks	Fair
8013	Charlottesville	Rugby Rd	Buckingham Branch RR tracks	Fair
8008	Charlottesville	Park Street	US 250 Bypass	Good
8007	Charlottesville	Locust Avenue	US 250 Bypass	Good

Constrained Bicycle and Pedestrian Project List (Draft)

BPID	Location/Name	Type	Status	Final Tier	Length (miles)	Cost (Low)	Cost (High)	Barrier Cost	LRTP Cost
BP5	Avon St - Monticello Rd	BL		Tier 1	0.31	0.22	0.43		0.32
BP13	US250 - East of Park St	SUP		Tier 1	0.48	0.86	1.80		1.33
BP14	US250 - West of Park St	SUP		Tier 1	0.06	0.10	0.22		0.16
BP20	US29 - Fashion Square	SUP		Tier 1	1.26	2.26	4.73		3.50
BP23	Emmet St - South of US250	SUP		Tier 1	0.33	0.59	1.25		0.92
BP25	Emmet St - Barracks Shopping	SUP		Tier 1	0.55	0.98	2.05		1.52
BP29	Avon St - City Boundry	BL		Tier 1	0.40	0.29	0.56	0.88	1.31
BP30	Copeley Rd	BL		Tier 1	0.37	0.27	0.52		0.39
BP35	Whitewood Rd	BL		Tier 1	0.58	0.55	1.40		0.98
BP36	Greenbrier Dr - East	BL	EX SR	Tier 1	0.43	0.30	0.59		0.45
BP46	Long St	SUP		Tier 1	0.54	0.96	2.01		1.49
BP64	Biscuit Run - Connector	SUP		Tier 1	0.98	1.76	3.69		2.72
BP68	Rivanna River - US29 Connection	SUP		Tier 1	1.10	1.98	4.16		3.07
BP77	John Warner Pkway - Connector	SUP		Tier 1	0.06	0.12	0.24	2.00	2.18
BP78	US250 - Hydraulic crossing	SUP		Tier 1	0.74	1.32	2.77		2.04
BP80	Riverview Park - Crossing	SUP		Tier 1	0.61	1.09	2.29	2.45	4.14
BP95	Rockcreek Rd - Parallel	SUP		Tier 1	0.74	1.33	2.79		2.06
BP103	Meadow Creek - Hillsdale Dr Connector	SUP		Tier 1	0.26	0.46	0.97		0.72
BP116	Hydraulic Rd - East of Hillsdale Dr	SUP	EX SR	Tier 1	0.19	0.33	0.70		0.52
BP121	Broadway St	BL		Tier 1	0.96	0.92	2.32		1.62
BP122	Broadway St Ext	SUP		Tier 1	0.24	0.42	0.89		0.66
BP128	Meadow Creek - Hydraulic	SUP		Tier 1	0.90	1.61	3.37		2.49
BP129	Greenbrier Dr - West	BL	EX SR	Tier 1	0.13	0.12	0.31		0.22
BP130	Sunset Ave - Crossing	SUP		Tier 1	0.06	0.10	0.21	0.42	0.57
BP143	Old Lynchburg Rd	BL		Tier 1	0.63	0.76	2.19		1.47
BP147	Meadow Creek - Greenbriar Park	SUP		Tier 1	0.40	0.72	1.51		1.12
BP154	Stadium Rd	BL		Tier 1	0.25	0.18	0.34		0.26
BP157	9th St SW	BL		Tier 1	0.32	0.23	0.44		0.33
BP161	5th St Hub	SUP		Tier 1	0.54	0.96	2.02		1.49

Column Descriptions

BPID: ID number, corresponds to map
Location/Name: general project location
Type: SUP is shared use path, BL is bike lane and sidewalk, SR is shared road and sidewalk
Final Tier: the final prioritization tier from the Jefferson Area Bicycle and Pedestrian Plan (tier 1 is highest priority)
Length: length of the project in miles
Cost: low and high estimates for cost of the project (in millions), excluding bridges, tunnels or overcoming other barriers
Barrier Cost: initial estimate of cost (in millions) for necessary bridges, tunnels or other infrastructure that crosses major barriers
LRTP Cost: cost (in millions) used for LRTP constraining; calculated as barrier cost added to the average of the low and high costs

Bicycle and Pedestrian Project Vision List (Draft)

Column Descriptions

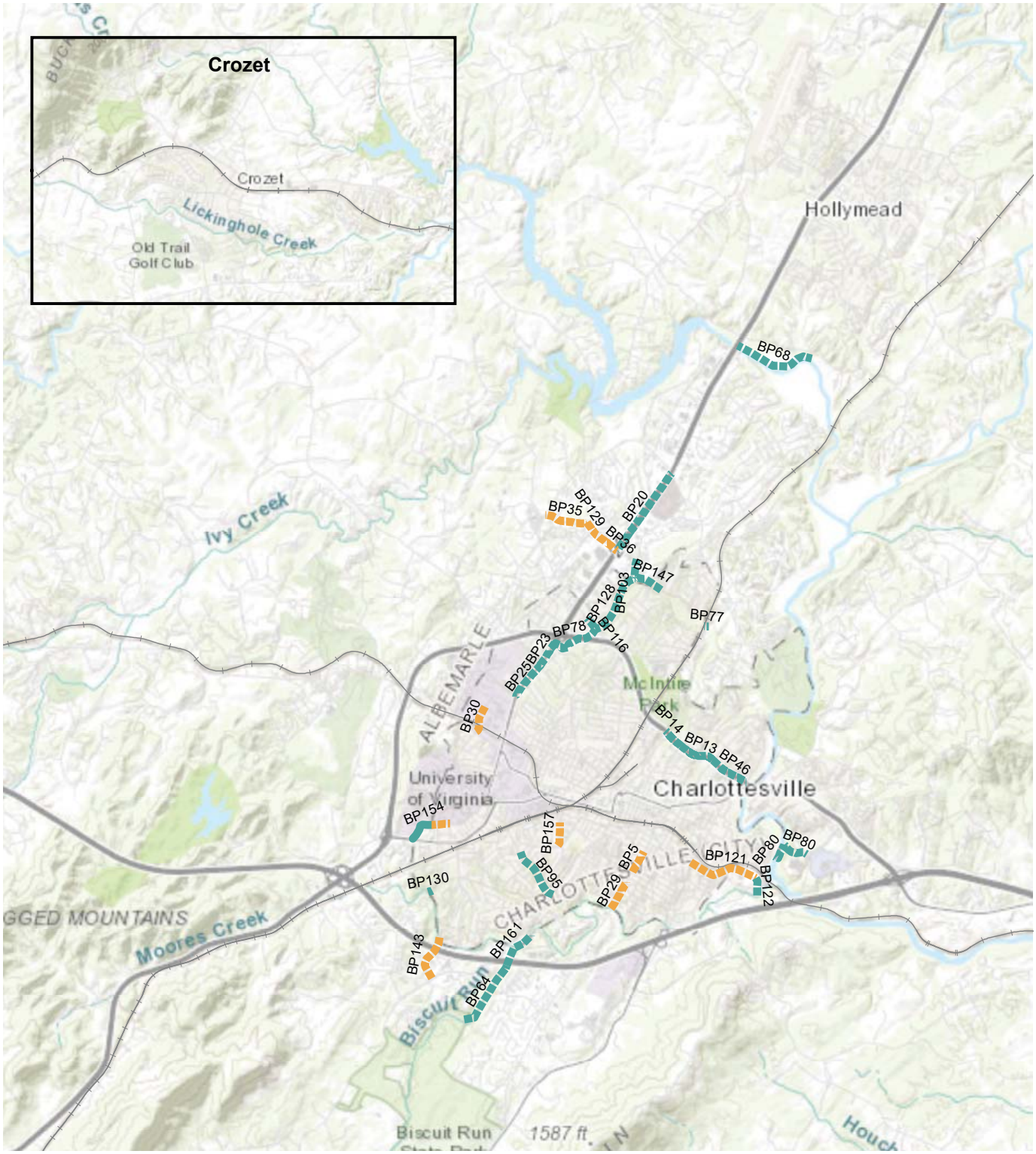
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Cost: low and high estimates for cost of the project (in millions), excluding bridges, tunnels or overcoming other barriers
Barrier Cost: initial estimate of cost (in millions) for necessary bridges, tunnels or other infrastructure that crosses major barriers

BPID	Location/Name	Type	Status	Final Tier	Length (miles)	Cost (Low)	Cost (High)	Barrier Cost
BP1	Ivy Rd - Bypass	SUP	EX SR	Tier 2	0.89	1.60	3.35	0.88
BP2	E Market St - West	BL		Tier 2	0.61	0.43	0.84	
BP4	Barracks Rd - City West	BL		Tier 2	0.52	0.37	0.71	
BP6	Water St	BL	EX SR	Tier 1	0.82	0.58	1.13	
BP7	Ridge McIntire Rd - Downtown	BL		Tier 1	0.28	0.20	0.39	
BP9	Dairy Rd	BL		Tier 3	0.52	0.37	0.72	
BP12	High St - West	BL		Tier 2	0.56	0.40	0.78	
BP15	High St - East	BL		Tier 2	0.37	0.26	0.51	
BP16	Grove Rd	BL		Tier 3	0.80	0.57	1.10	
BP18	US29 - County boarder	SUP		Tier 3	5.91	10.60	22.25	1.40
BP19	US29 - Rio Rd	SUP		Tier 1	1.15	2.06	4.32	
BP21	Fontaine Ave - Interchange	SUP		Tier 2	0.78	1.40	2.95	
BP22	Commonwealth Dr - North	SR		Tier 2	0.75	0.37	1.56	
BP22	Commonwealth Dr - North	SUP		Tier 2	0.16	0.29	0.60	
BP26	Pantops Bridge	SUP		Tier 1	0.12	0.21	0.45	2.10
BP27	Rte 20 - US64 Intersection	SUP		Tier 2	0.81	1.45	3.05	
BP28	5th St	SUP	EX BL	Tier 1	1.80	3.23	6.79	
BP31	Preston Ave	BL		Tier 2	0.66	0.47	0.92	
BP33	Meade Ave	BL		Tier 3	0.41	0.29	0.57	
BP34	Ivy Rd - Ednam	SUP		Tier 3	1.85	3.31	6.95	
BP37	McCormick Rd - West	BL	EX SR	Tier 1	0.39	0.28	0.55	
BP38	Rio Rd - US29	BL		Tier 1	0.40	0.38	0.96	
BP39	Hydraulic Rd - East of Georgetown Rd	SUP		Tier 1	0.67	1.21	2.54	
BP40	Barracks Rd - County	BL		Tier 2	0.94	0.90	2.29	
BP41	Ivy Rd - East of Ivy	SUP		Tier 3	3.04	5.45	11.43	
BP42	Three Nothed Rd	SUP		Tier 3	3.90	6.99	14.68	
BP43	Hydraulic Rd - West of US29	SUP		Tier 1	0.31	0.56	1.18	
BP44	US29 - Bypass	SUP		Tier 3	0.41	0.73	1.53	
BP45	McCormick Rd - East	BL	EX SR	Tier 1	0.51	0.36	0.71	

BPID	Location/Name	Type	Status	Final Tier	Length (miles)	Cost (Low)	Cost (High)	Barrier Cost
BP47	Avon St Ext - County Boundry	SUP		Tier 1	0.74	1.33	2.79	
BP48	Peter Jefferson Pkwy	BL		Tier 2	1.22	1.47	4.23	
BP49	Berkmar Dr - South	BL		Tier 2	0.66	0.80	2.31	
BP50	Commonwealth Dr - South	BL		Tier 2	0.76	0.54	1.06	
BP52	Georgetown Rd	BL		Tier 3	1.09	0.78	1.51	
BP53	Crozet Dr - North	BL		Tier 3	1.20	1.15	2.91	
BP55	Ivy Rd - West of Ivy	SUP		Tier 3	3.58	6.42	13.47	1.40
BP56	Earlysville Rd	BL		Tier 3	0.67	0.80	2.32	
BP58	US29 - Airport	SUP		Tier 3	1.27	2.28	4.80	
BP59	McIntire Rd	SUP		Tier 1	0.43	0.78	1.63	
BP60	Avon St Ext - US64 Crossing	SUP		Tier 1	0.84	1.50	3.15	2.80
BP61	Reservoir Rd	SR		Tier 3	2.82	1.38	5.88	
BP62	US29 - Hydraulic	SUP		Tier 3	0.89	1.59	3.33	
BP66	Rte 20 - South of US64	SUP		Tier 2	1.17	2.09	4.38	
BP69	Southern Railway	SUP		Tier 2	1.96	3.52	7.38	
BP70	Rivanna River - South of Pen Park	SUP		Tier 2	0.53	0.95	1.98	
BP71	Moores Creek - Quarry Park	SUP		Tier 2	0.67	1.20	2.52	
BP72	Stribling Ave Ext	SUP	EX TR	Tier 2	1.17	2.10	4.41	0.52
BP73	Carters Mountain Connector	SUP		Tier 2	0.64	1.15	2.41	2.00
BP74	Moores Creek - East of Monticello Rd	SUP		Tier 2	1.75	3.14	6.60	0.88
BP75	Moores Creek - Pollocks Branch	SUP		Tier 2	0.96	1.73	3.63	
BP76	Highland Ave Ext	SUP		Tier 3	1.03	1.85	3.88	
BP79	Moores Creek - Azalea Park	SUP	EX TR	Tier 2	0.47	0.84	1.75	
BP83	Melbourne Rd	BL		Tier 2	0.69	0.49	0.96	
BP85	Carlton Rd	BL		Tier 2	0.57	0.41	0.79	
BP86	5th St Ext - Old Lynchburg Rd	SUP		Tier 1	1.84	3.29	6.90	
BP87	14th St NW	BL		Tier 2	0.59	0.42	0.81	
BP88	Meadowbrook Heights Rd	BL		Tier 3	0.80	0.77	1.95	
BP89	Rugby Rd - US250	SR		Tier 3	0.70	0.34	1.46	
BP90	Sunet Ave Ext - North	BL	EX SR	Tier 2	0.32	0.39	1.11	
BP91	Rivanna River - Pen Park	SUP		Tier 3	1.65	2.95	6.19	
BP92	Sunset Ave Ext - South	BL		Tier 2	1.34	1.61	4.66	
BP93	Rugby Rd - Dairy Rd	BL		Tier 3	0.42	0.30	0.58	
BP94	Biscuit Run - 5th St Connector	SUP		Tier 2	0.90	1.62	3.39	0.68
BP97	State Farm Blvd	BL		Tier 2	0.86	1.04	2.99	
BP98	Town and Country Ln Ext - Stony Point	BL		Tier 3	0.29	0.34	0.99	
BP99	Mill Creek Dr	SR		Tier 3	1.17	0.57	2.45	
BP100	Riverview Park	SUP		Tier 2	0.41	0.73	1.54	

BPID	Location/Name	Type	Status	Final Tier	Length (miles)	Cost (Low)	Cost (High)	Barrier Cost
BP101	Town and Country Ln Ext - Rivanna	SUP		Tier 3	0.15	0.27	0.56	
BP102	Wakefield Rd	SR		Tier 3	0.39	0.00	0.00	
BP102	Wakefield Rd	SR		Tier 3	0.32	0.00	0.00	
BP102	Wakefield Rd	SUP		Tier 3	0.05	0.09	0.19	
BP104	Bunker Hill Dr	SR		Tier 3	0.41	0.20	0.85	
BP106	Tonsler Park	SR		Tier 2	0.40	0.00	0.00	
BP106	Tonsler Park	SUP		Tier 2	0.36	0.64	1.34	
BP107	Norfolk Southern Railroad	SUP		Tier 2	1.17	2.10	4.41	
BP108	Madison Ave	BL		Tier 2	0.35	0.25	0.48	
BP109	Allied St Ext	SUP		Tier 2	0.30	0.54	1.13	2.00
BP109	Allied St Ext	SUP		Tier 2	0.15	0.27	0.57	
BP109	Allied St Ext	SR		Tier 2	0.42	0.00	0.00	
BP109	Allied St Ext	BL		Tier 2	0.03	0.02	0.04	
BP109	Allied St Ext	SR		Tier 2	0.17	0.00	0.00	
BP110	Jarman Gap Rd	BL		Tier 3	0.67	0.81	2.33	
BP112	Brandywine Dr	SR		Tier 3	0.21	0.00	0.00	
BP113	Berkmar Rd - Airport	BL		Tier 1	0.41	0.50	1.43	
BP115	Hydraulic Rd - East of US29	SUP		Tier 1	0.22	0.39	0.82	
BP117	Holiday Dr	SUP		Tier 2	0.52	0.93	1.96	0.88
BP118	Angus Rd	BL		Tier 2	0.93	0.89	2.26	
BP119	College Dr	BL		Tier 3	0.83	1.00	2.89	
BP120	College Dr Ext	SUP		Tier 2	0.53	0.96	2.01	
BP123	Brandon Ave	SR		Tier 2	0.57	0.14	0.60	
BP123	Brandon Ave	SUP		Tier 2	0.22	0.39	0.83	
BP124	10th St NE	BL		Tier 2	0.34	0.24	0.47	
BP125	Locust Ave	BL		Tier 3	1.01	0.96	2.44	
BP126	Richmond Rd	SUP		Tier 3	4.36	7.82	16.41	
BP127	Foxhaven Farm	SR		Tier 3	1.04	0.51	2.18	
BP131	Moores Creek - East of Avon St	SUP		Tier 2	0.41	0.73	1.54	
BP133	Darden Towe Park	SUP		Tier 2	0.52	0.93	1.95	
BP134	Zan Rd	BL		Tier 2	0.62	0.75	2.15	
BP135	Massie Rd - Copeley Rd	SUP		Tier 1	0.74	1.32	2.78	
BP136	Rugby Rd - Preston Ave	BL		Tier 3	0.30	0.21	0.41	
BP138	College Dr - US64 Crossing	SUP		Tier 3	0.80	1.44	3.03	2.00
BP139	Rivanna River - South Fork	SUP		Tier 3	1.05	1.89	3.96	
BP140	South Pantops Dr	BL		Tier 2	0.90	0.87	2.20	
BP141	New House Dr	BL		Tier 1	0.34	0.41	1.20	
BP142	Rivanna River - Pantops	SUP		Tier 2	1.49	2.68	5.62	

BPID	Location/Name	Type	Status	Final Tier	Length (miles)	Cost (Low)	Cost (High)	Barrier Cost
BP144	Biscuit Run - Park	SUP		Tier 3	1.96	3.51	7.37	
BP145	Rivanna Rive - Darden Towe Crossing	SUP		Tier 2	0.08	0.14	0.30	1.75
BP146	Rivanna River - County Boundry	SUP		Tier 3	0.75	1.34	2.80	
BP148	Avon St Ext - Rte 20	SUP		Tier 3	0.77	1.38	2.89	
BP149	Avon St Ext - South of Mill Creek	SUP		Tier 2	1.13	2.02	4.24	
BP150	Crozet Dr - South	SR		Tier 2	0.22	0.00	0.00	
BP151	Moores Creek - 5th St Crossing	SUP	EX TR	Tier 2	0.62	1.10	2.32	0.88
BP152	Rio Rd - Park St	BL		Tier 2	1.73	2.09	6.02	
BP153	Park St	BL		Tier 2	0.65	0.46	0.90	
BP155	Old Mills Trail	SUP		Tier 2	7.94	14.24	29.89	
BP156	E Market St - East	SR		Tier 3	0.88	0.43	1.84	
BP156	Riverside Ave Ext	SR		Tier 3	0.43	0.11	0.45	
BP158	Foxhaven Farm - Ivy Connector	SUP		Tier 3	1.54	2.76	5.79	
BP159	Moores Creek - Azalea Park Ext	SUP	EX TR	Tier 2	0.65	1.16	2.43	0.88
BP160	US29 - Rivanna Crossing	SUP		Tier 1	0.92	1.65	3.47	1.40



LRTP 2045 Constrained Bicycle/Pedestrian Corridors

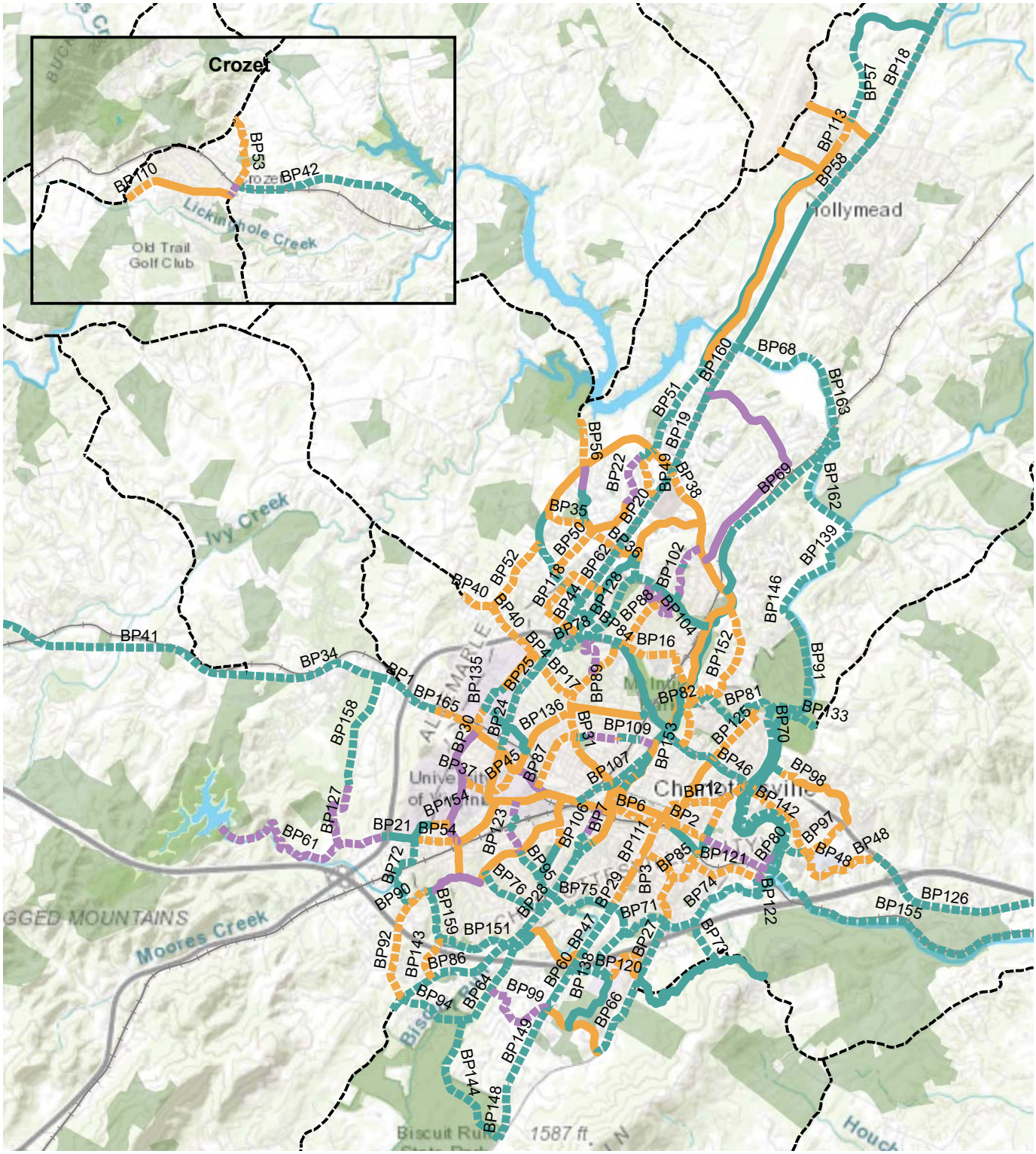
ABOUT THIS MAP: This map depicts the corridors identified as constrained projects for LRTP 2045.

2 Miles

N

FEATURES

- Parks and Conservation
- Lakes and Rivers
- Railroads
- Proposed Bike Lane and Sidewalk
- Existing Bike Lane and Sidewalk
- Proposed Shared Road and Sidewalk
- Existing Shared Road and Sidewalk
- Proposed Shared Use Path
- Existing Shared Use Path
- BP ID Number



Jefferson Area Bike/Ped Plan
Regional Corridors

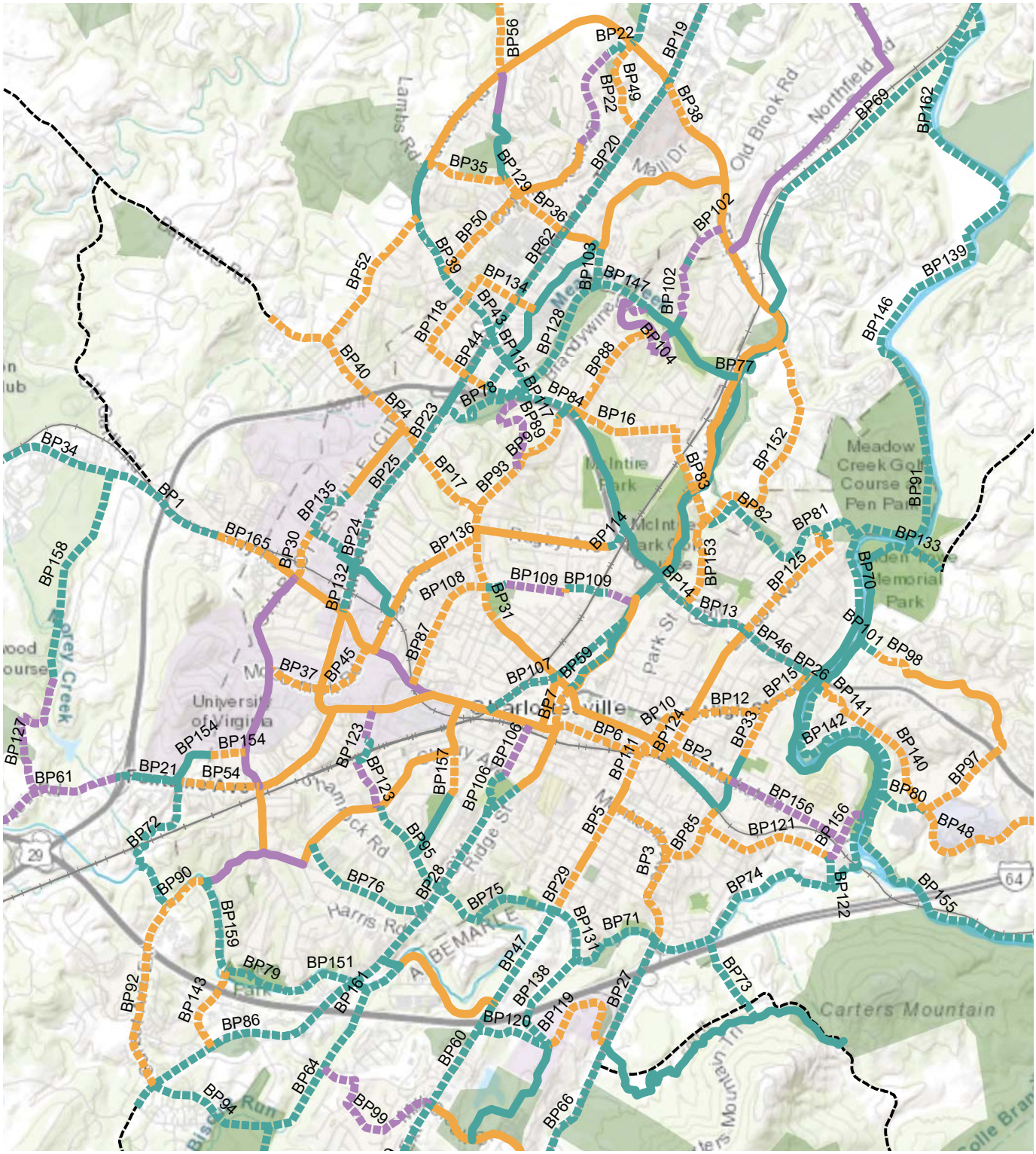
ABOUT THIS MAP: This map depicts the corridors identified as the regional bicycle and pedestrian network. All projects are included in LRTP 2045 Vision lists.

2 Miles

N

FEATURES

- Parks and Conservation
- Lakes and Rivers
- Railroads
- Proposed Bike Lane and Sidewalk
- Existing Bike Lane and Sidewalk
- Proposed Shared Road and Sidewalk
- Existing Shared Road and Sidewalk
- Proposed Shared Use Path
- Existing Shared Use Path
- Rural Corridors
- BP ID Number



Jefferson Area Bike/Ped Plan
Regional Corridors

0.5 Miles

N

ABOUT THIS MAP: This map depicts the corridors identified as the regional bicycle and pedestrian network. All projects are included in LRTP 2045 Vision lists.

FEATURES

- Parks and Conservation
- Lakes and Rivers
- Railroads
- Proposed Bike Lane and Sidewalk
- Existing Bike Lane and Sidewalk
- Proposed Shared Road and Sidewalk
- Existing Shared Road and Sidewalk
- Proposed Shared Use Path
- Existing Shared Use Path
- Rural Corridors
- BP ID Number

Transit Projects

Project ID	Project Name	Jurisdiction	Cost
T1	Express Bus on US-29 Corridor	Both	PE-only $1.0
T2	Commuter Bus to Crozet	Both	$0.30
T3	Bus Route to Avon/Mill Creek	Both	$0.40
T4	Increased Bus Service to Pantops	Both	$0.40
T6	Commuter Service from Valley	Both	N/A

Chapter 1: Regional Demographics

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Table 1-1: Population Growth Projections for 2040

Overview

To effectively consider the future of the Charlottesville-Albemarle region, the MPO must examine the community as it is currently structured; specifically focusing on location, population, unique elements, and specialized populations. The Charlottesville-Albemarle Metropolitan Planning Organization (MPO) region is a diverse and vibrant community. The region is home to the University of Virginia, and boasts one of the longest outdoor pedestrian malls in the nation. Further, its proximity to major urban areas, such as Washington, D.C. and Richmond, VA, and scenic rural areas such Shenandoah National Park make the region an attractive place to settle for a variety of people.

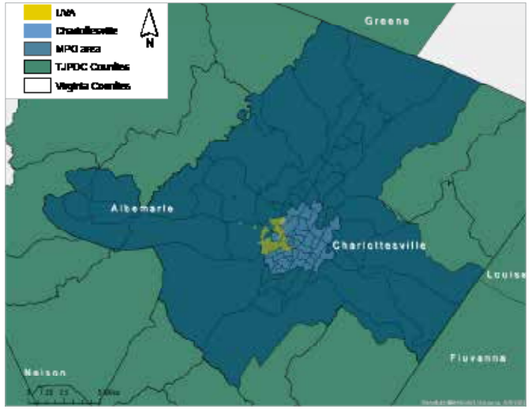
Location

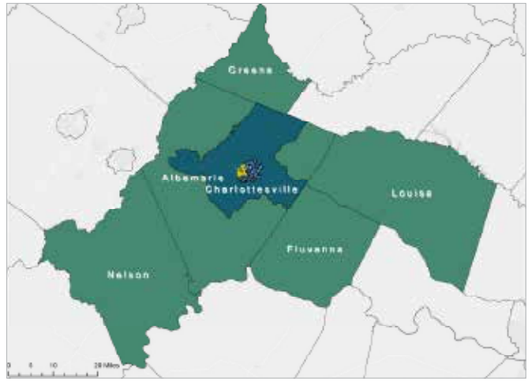
The City of Charlottesville (City) is an independent city surrounded by Albemarle County and located in west Central Virginia, approximately 115 miles southwest of Washington, D.C. and 70 miles northwest of Richmond, VA. Charlottesville is located along the Rivanna River (a tributary of the James River), upstream of the Chesapeake Bay. The Charlottesville-Albemarle Metropolitan Planning Organization was formed in 1982 and is federally mandated due to its urban nature and regional population of more than 50,000 people. The MPO boundaries include the City of Charlottesville, and portions of Albemarle County that are urban or expected to be urban in the next twenty years.

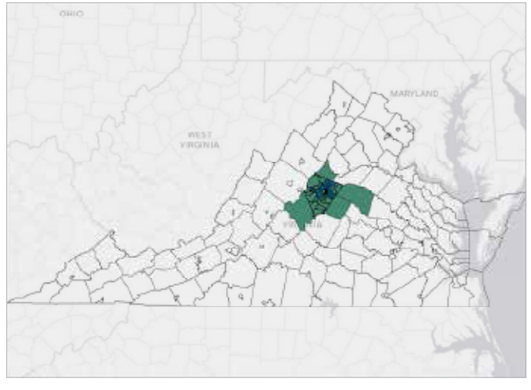
Political Boundaries

Figure 1-1 is provided to help orient the reader with the Charlottesville-Albemarle area. The top map is the Charlottesville-Albemarle MPO, broken down by block group. The middle map in Figure 1-1 shows the Thomas Jefferson Planning District Commission's jurisdiction, and the bottom map shows the Charlottesville-Albemarle MPO within the state of Virginia.

Charlottesville –Albemarle MPO Region (Figure 1-1)







History

The City of Charlottesville and Albemarle County have a long history of rural landscapes, industrialization, growth, and community. The following timeline highlights a few of the major milestones in the region's land and transportation development.

1744 Establishment of Albemarle County

1762 Founding of the City of Charlottesville

1770 Building of Monticello, Thomas Jefferson's home

1819 Founding of the University of Virginia

1850 Railroad services established

1866 City Streetcar services begin

1885 Union Station (now Amtrak) opens

1906 First automobile, a Stanley Steamer, arrives in Charlottesville

1912 The first airplane appears above the City of Charlottesville in April

1927 The first traffic lights start operating in the City of Charlottesville

1936 City streetcar service terminated; tracks paved over

1976 City of Charlottesville opens a pedestrian mall on a portion of Main Street

1982 Charlottesville-Albemarle MPO formed

2004 City named the #1 place to live in North America by Frommer's guidebook

2012 City celebrated its 250th anniversary

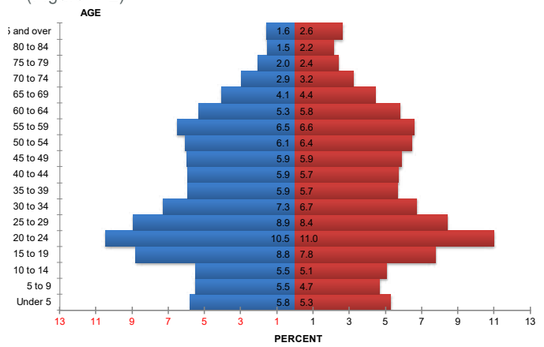
Population

The total population of the MPO region was 127,659 as of 2015. The following describes specific characteristics of residents in the area.

Age & Sex

Figure 1-2 shows the distribution of population in the MPO area, which consists of the entire City of Charlottesville and several block groups from Albemarle County, by age and sex in 2015. Age distribution is typically modeled as a pyramid-type shape, so the age distribution of the MPO, graphed below, revels specific trends. The MPO has a large percentage of young adults and elederly recesidents and a lower percentage of children.

Charlottesville-Albemarle MPO Population by Age and Sex (Figure 1-2)



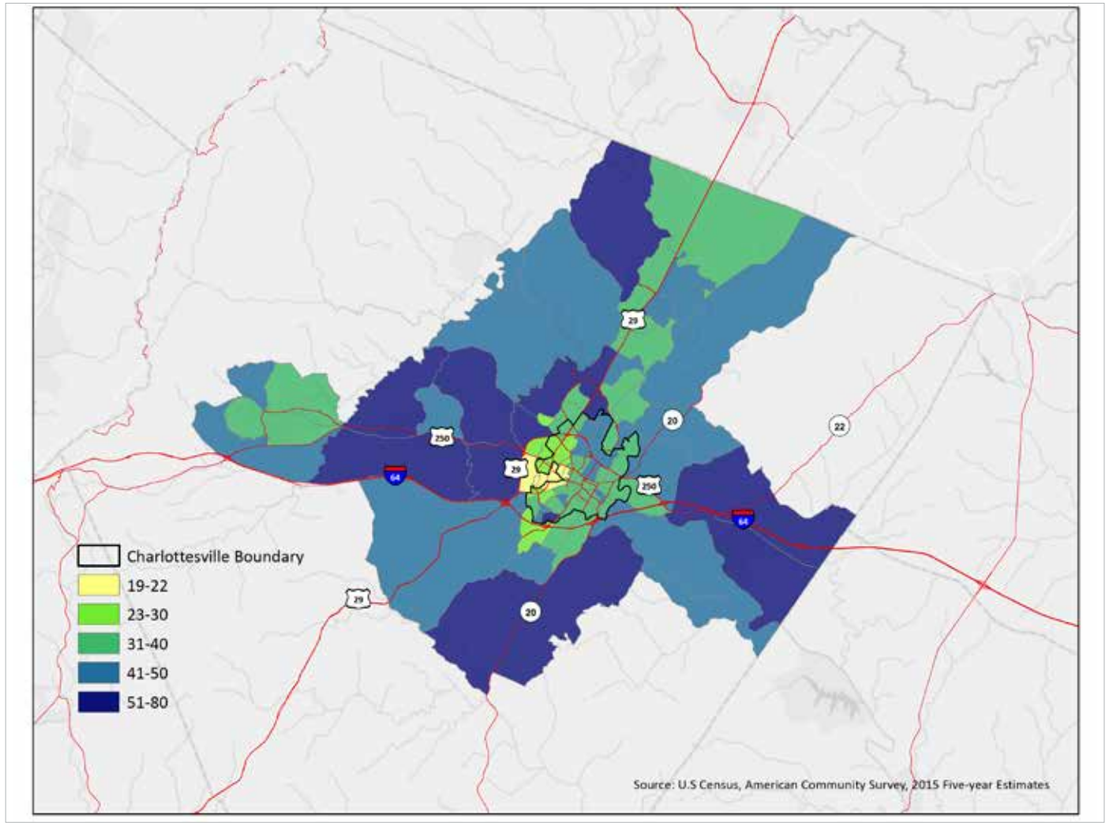
Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates [1]

Age groups 19-22 years and 22-32 years, represented in the lightest shades in Figure 1-3, dominate the areas in close proximity to University grounds. Generally, the population over age 52 is concentrated outside the city.

The total number of enrolled students at the University of Virginia as of Fall 2016 is 22,391, 54% are women. The sex ratios in Albemarle and Charlottesville (Figure 1-4) are comparable (with Albemarle portion of the MPO being slightly lower), despite the University enrolling more women than men.

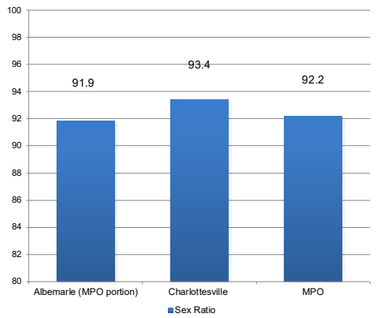
[1] While age is evenly distributed by sex in most categories, there is clearly a much larger population of 20-24 year olds, as well as 15-19 year olds, and 25-29 year olds. This abnormality is, of course, due to the presence of students living in the region while they are enrolled at the University of Virginia.

Median Age by MPO Block Group (Figure 1-3)



The ratios between men and women are very similar between the City and County. In 2015, Charlottesville had just a slightly higher number of male – 93.4 – compared to female residents as Albemarle did, with 91.9 for every 100 females.[2]

Gender Ratio: # men per 100 women (Figure 1-4)



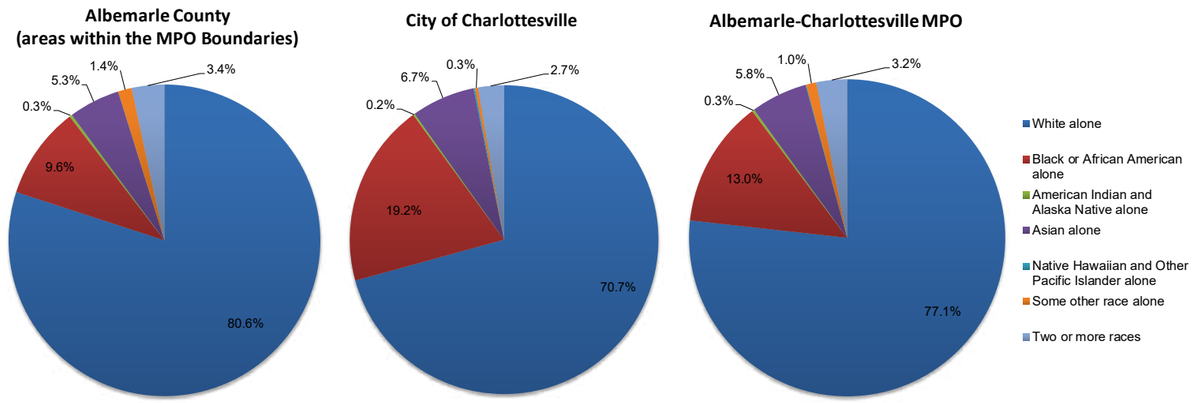
Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

[2] These ratios are from the U.S. Census Bureau's 5-year estimate for the year 2015. The data in Figure 1-2 above is derived from the U.S. Census Bureau's American Community Survey 5-year estimate from 2011-2015.

Racial Composition

The MPO region is made up of people of many races, with about 3/4 of residents identifying as White (Caucasian), 13% identifying as African American, and about 6% identifying as Asian. Overall, the City of Charlottesville has a larger proportion of residents who are racial minorities compared to the areas of Albemarle County that are within the MPO.

Racial Composition in Albemarle & Charlottesville (Figure 1-5)

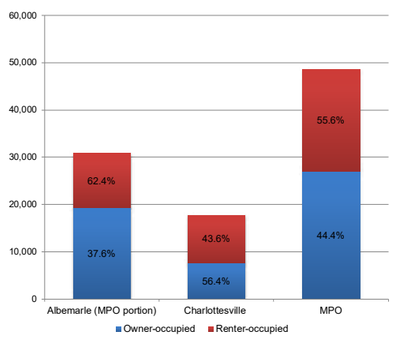


Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Housing

The City of Charlottesville and Albemarle County combined have a total of 63,465 housing units, and the MPO area has a total of 54,289 housing units. Nearly 57% of the housing stock in the MPO area is comprised of single-family detached homes, and 68% of the housing stock is made up of single-unit residences. Almost half of the housing in the combined area was built between 1970 and 2000, and 18% of the housing units were built after 2000.

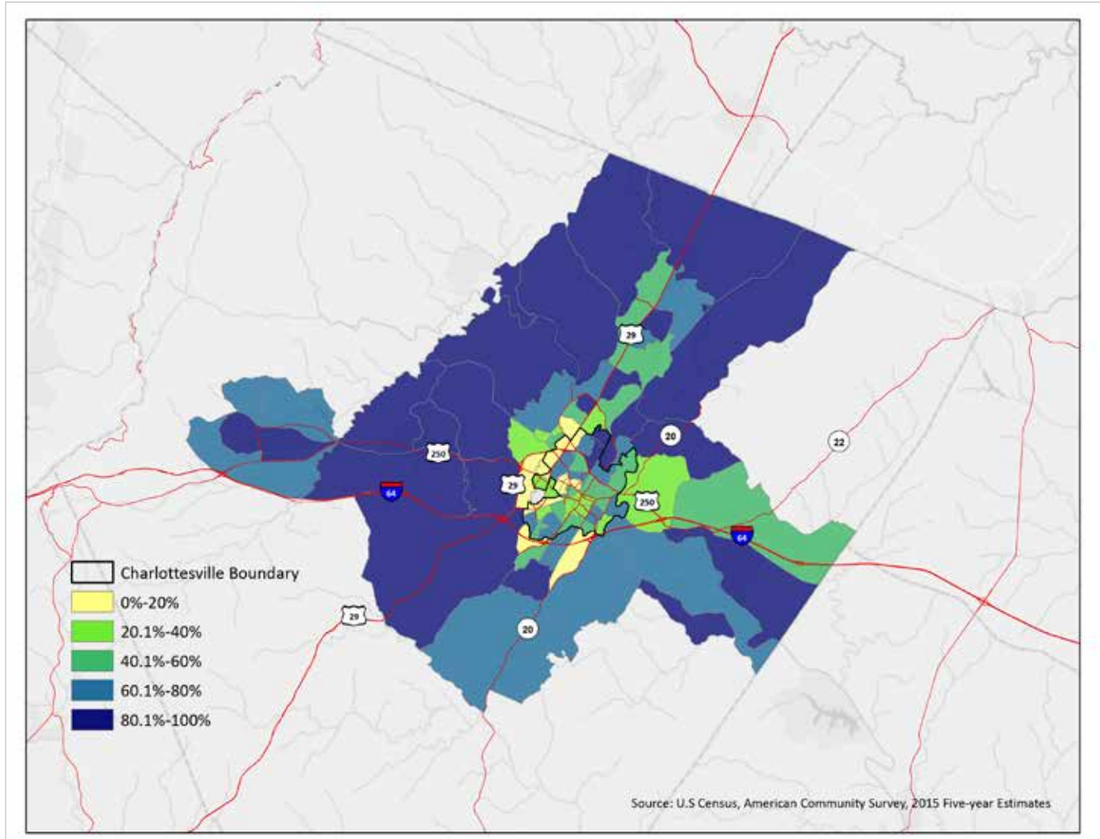
Renter/owner occupancy (Figure 1-6)



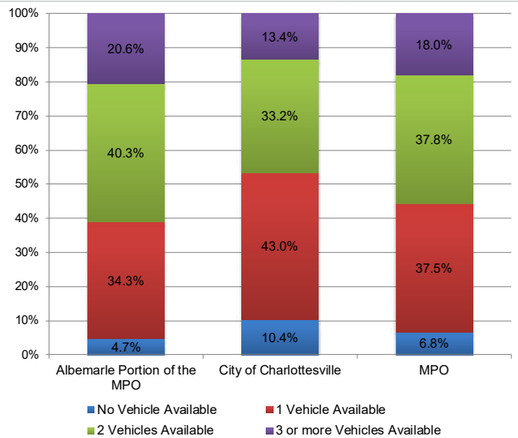
The overall 11% vacancy rate can largely be attributed to rental vacancies. There is a sizable difference in tenant type between City and County's occupied housing, depicted in Figure 1-6. A far bigger share of the occupied housing units in Charlottesville (56.4%) is occupied by renters, compared with the 37.6% in Albemarle County, which lacks the student population of Charlottesville.

Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Percent of Occupied Homes that are Owner-Occupied by MPO Block Group (Figure 1-7)



It is worth noting that less than 5% of residences in the Albemarle portion of the MPO and 10.4% in the city do not have at least one personal vehicle available. 20.6% of Albemarle portion of the MPO residents and 13.4% City residents have three or more vehicles available. In comparison with the City of Charlottesville, MPO area has a relatively higher percentage of residents that with 3 or more vehicles available, and lower percentage of residents without any vehicles.

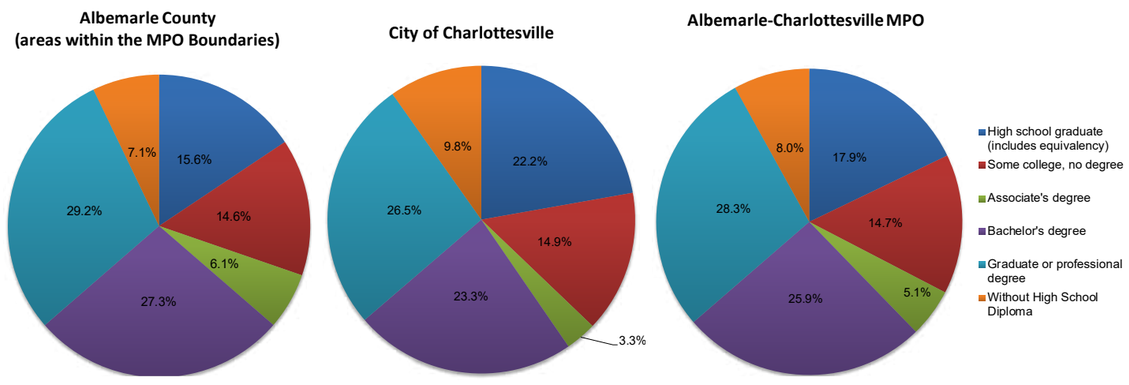


Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Education

Figure 1-8 shows the very highly-educated population in both Charlottesville and Albemarle. Three quarters of the population between ages 18 and 24 have completed some of their college education, and 54% of the population 25 years and over have completed at least a Bachelor's degree, with an additional 20% having completed some college.

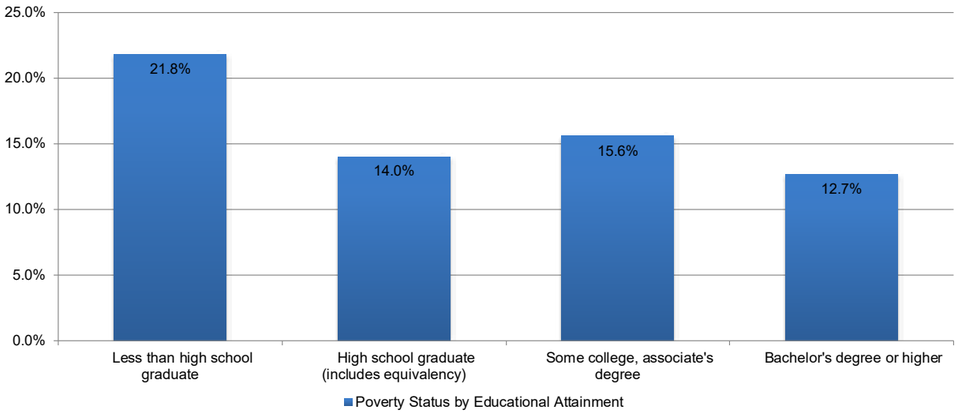
Educational Attainment for 25+ Population (Figure 1-8)



Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Not unlike the rest of the U.S., the poverty rate for residents 25 years and over rises dramatically without the attainment of a high school degree, from 14% to 21.8%. The poverty rate for residents with a Bachelor's degree or higher is 12.7%, though this rate may be inflated by full-time graduate students studying in the area without a sizeable income. (Refer to Figure 1-9).

Poverty Rate by Education for Albemarle & Charlottesville Residents 25+ Years (Figure 1-9)

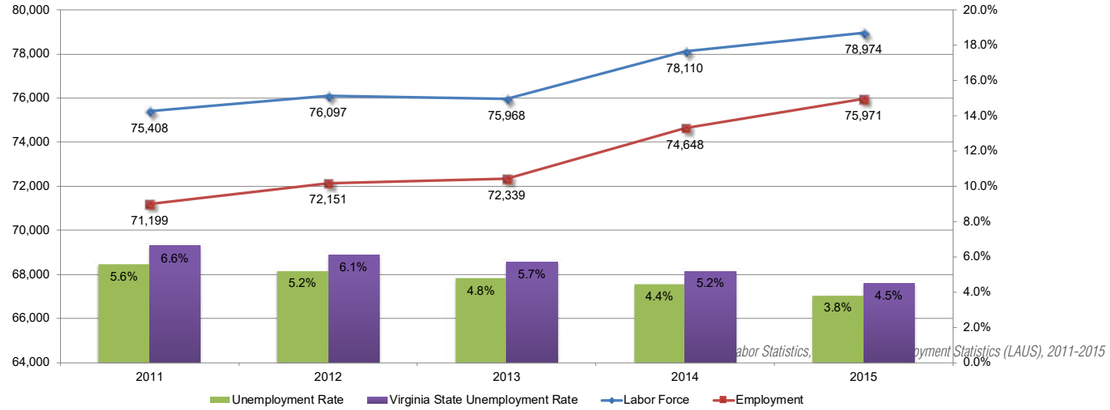


Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Economy and Employment

According to the Bureau of Labor Statistics' data, the average unemployment rate for the combined area of the City of Charlottesville and Albemarle County decreased between 2011 and 2015 from 5.6% to 3.8% (See Figure 1-10). For all the years between 2011 and 2015, the unemployment rate for the area had been lower than the Virginia state unemployment rate. Both the size of the labor force and the number of employment constantly increased in this period of time .

Overall Unemployment Rates by local, regional, state and national (Figure 1-10)



abor Statistics, yment Statistics (LAUS), 2011-2015

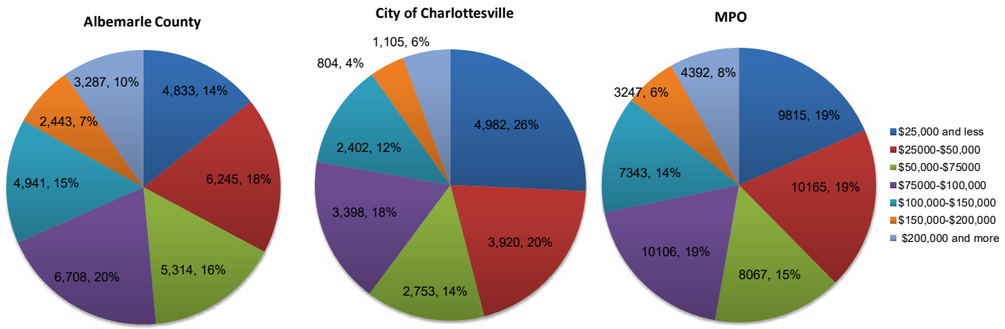
The relative strength of the Charlottesville area is due in large part to its central Virginia location and the nature of the local economy. As the seat of both the City of Charlottesville and Albemarle County governments, Charlottesville serves as an economic, cultural and educational center in Central Virginia. As the home of the University of Virginia, one of the most prestigious and highly-regarded universities in the country, the City derives a number of benefits, both economic and in the quality of life associated with this area (Charlottesville 2011).

The predominant economic sectors are healthcare, service-related industries, leisure and hospitality, and education. Some of the area's largest employers include the University of Virginia, the University of Virginia Medical Center, the Martha Jefferson Hospital, Lakeland Tours, SNL Financial LP, and State Farm Mutual Automobile Insurance. The National Ground Intelligence Center (NGIC), National Radio Astronomy Observatory headquarters, Leander McCormick Observatory, and CFA Institute are other notable employers located in the Charlottesville area. Local governments and school boards are also among major employers in the area.

Income

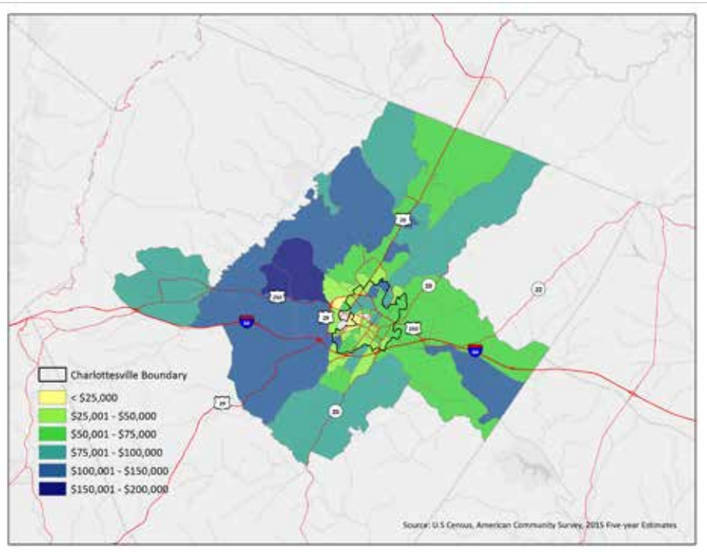
Income level data for the County and City (Figure 1-11) shows that the City holds a greater portion of low-income households. Median household income is $70,342 in Albemarle and $50,727 in Charlottesville, and $66,149 in the state of Virginia. Differences here may be attributed in part to the large student population in Charlottesville. The southwest side of Albemarle County, however, appears to be the most affluent (Figure 1-12).

Household Incomes in 2015 in Albemarle, Charlottesville, and the MPO area (Figure 1-11)



Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Median Household Income in 2011 by Block Group (Figure 1-12)



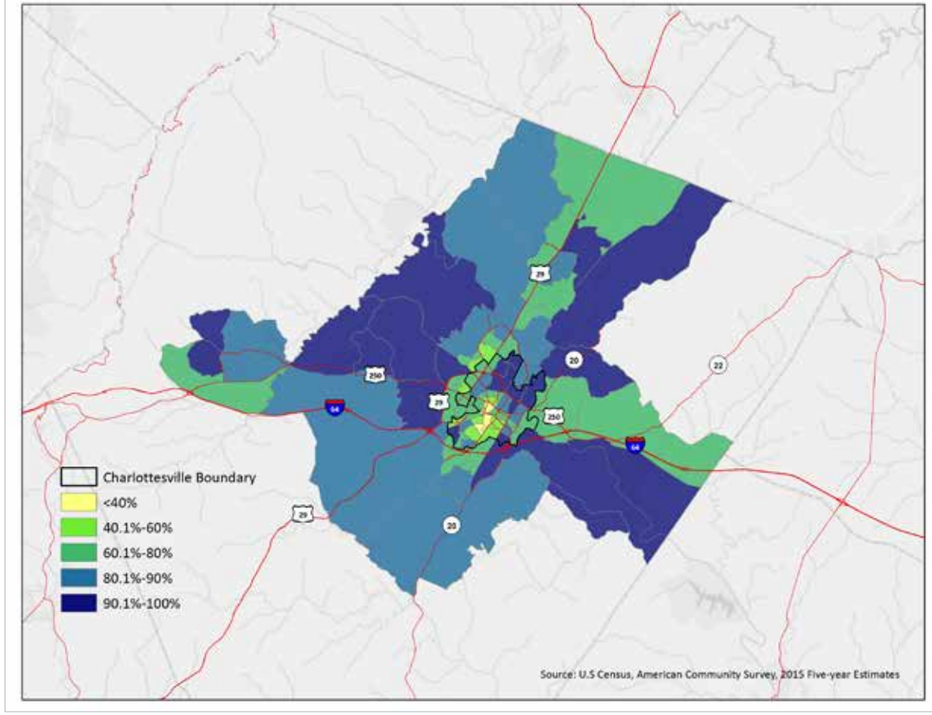
Specialized Communities

The Charlottesville-Albemarle MPO approved its current Title VI Plan on May 25th, 2016 outlining how the MPO achieves Title VI and Environmental Justice compliance. The plan discusses the efforts the MPO makes to include specialized populations in the regional planning process including minorities, the elderly, the disabled, low-income populations, and limited English-speaking populations. The plan also discusses the demographic breakdown of the MPO region and outlines a procedure for filing complaints should any MPO stakeholders feel they were subject to discrimination under Title VI guidelines and accompanying policies, including negative impacts on the health or environment of minority and low income populations.

Racial Minorities

American cities have historically left minority voices out of planning processes that affect their communities. The legacy of marginalization and segregation is seen in the fact that African American, Asian, and other racial minorities are largely clustered in central areas of Charlottesville and Albemarle, like in many cities in the United States. Figure 1-13, which represents the percentage of residents that identify as White-only, shows the higher concentration of minority residents near the downtown area of Charlottesville. Given the region's history, it is important to target outreach and engagement to reach minority populations. In addition to being racially diverse, the City of Charlottesville is also ethnically diverse, with a large Spanish-speaking population. Outreach to this community and other more recent immigrants may require materials that are accessible for limited English-speaking populations.

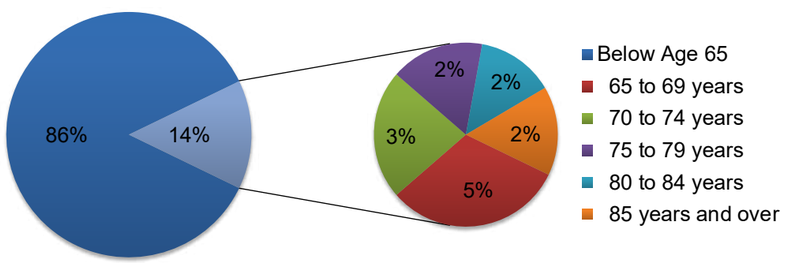
Percentage of Residents that Identify as White Only within the Charlottesville-Albemarle MPO (Figure 1-13)



Elderly

As shown in Figure 1-2 histogram at the beginning of this chapter, nearly 14% (17,305) of the population in Charlottesville-Albemarle MPO area is 65 years or older. Shares of each area's elderly population are broken down further in Figure 1-14. The younger portions of the elderly population represent larger pieces of the secondary pie charts. The elderly may be presented with a variety of barriers that prohibit them from engaging in planning processes. Involving the elderly may mean targeted strategies like sending letters, making phone calls, or making neighborhood visits.

Elderly Populations in Charlottesville-Albemarle MPO area (Figure 1-14)



Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Persons with Disabilities

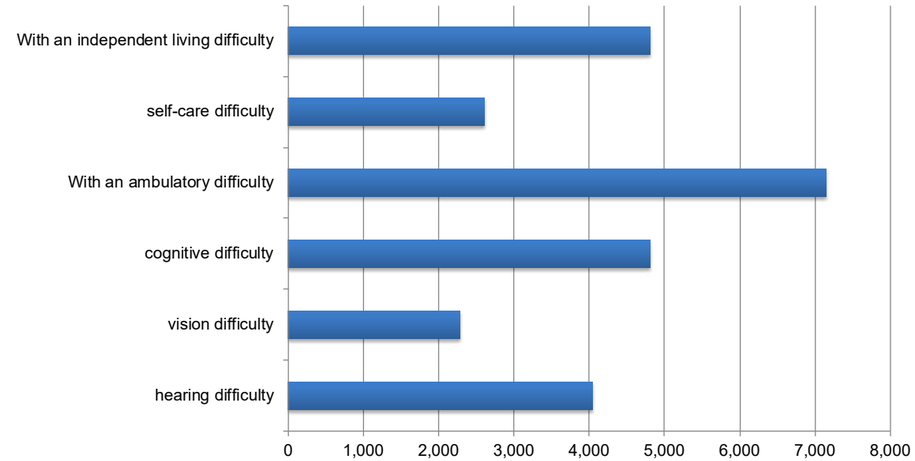
In September 2012 the American Community Survey released County- and City-level estimates regarding the disability characteristics of the MPO's population during the 2011 year. According to the 2015
American Community Survey disability is defined as the product of interactions among individuals' bodies; their physical, emotional, and mental health; and the physical and social environment in which they live, work, or play. Disability exists where this interaction results in limitations of activities and restrictions to full participation at school, at work, at home, or in the community

The questions asked in the 2015 American Community Survey cover six disability types. The six types of disability categorized include:

- **Independent living difficulty** Because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor's office or shopping (DOUT).
- **Self-care difficulty** Having difficulty bathing or dressing (DDRS).
- **Ambulatory difficulty** Having serious difficulty walking or climbing stairs (DPHY).
- **Cognitive difficulty** Because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions (DREM).
- **Vision difficulty** Blind or having serious difficulty seeing, even when wearing glasses (DEYE).
- **Hearing difficulty** Deaf or having serious difficulty hearing (DEAR).
- **Disability status** is determined from the answers from these six types of difficulty. For children under 5 years old, hearing and vision difficulty are used to determine disability status. For children between the ages of 5 and 14, disability status is determined from hearing, vision, cognitive, ambulatory, and self-care difficulties. For people aged 15 years and older, they are considered to have a disability if they have difficulty with any one of the six difficulty types.

Figure 1-15 provides estimates of these characteristics for Albemarle County and the City of Charlottesville. The total share of the population with disabilities increases with age and estimates skew toward residents living with an "Independent Living Difficulty."

Number of People by Disability in Charlottesville-Albemarle MPO Area (Figure 1-15)

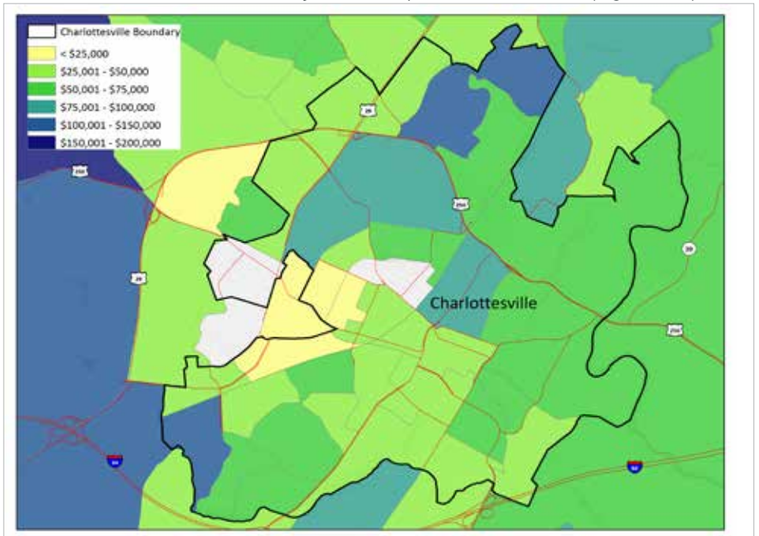


Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Low-Income

According to the U.S. Census Bureau 2011-2015 American Community Survey (ACS) 5-year estimates, Poverty Status in the Past 12 Months, 6.5% of residents in Albemarle portion of the MPO area, and 10.8% of residents in the City of Charlottesville live below the poverty level (Figure 1-17). Poverty thresholds are the dollar amounts used to determine poverty status by the U.S. Census Bureau. Each person or family is assigned one out of 48 possible poverty thresholds, which vary according to size of the family and ages of the members. Persons living in poverty frequently live in low-resource communities where the outcome of a planning project can be higher risk for residents. Additionally, low-income residents are often not active in planning processes due to limited leisure time and energy outside of work and family responsibilities. Engaging low-income communities that could be affected by planning processes is important because appropriate planning projects have the potential to improve a community's quality of life.

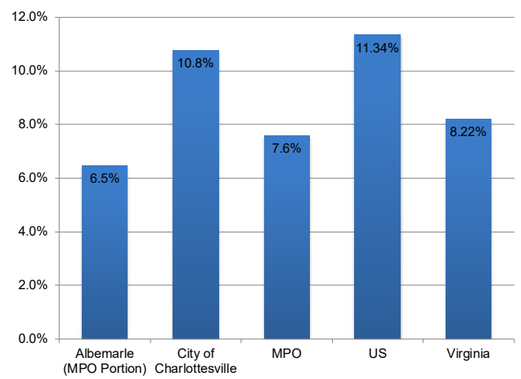
Median Household Income in 2015 by Block Group, Charlottesville view (Figure 1-16)



Source: U.S. Census Bureau, 20115 American Community Survey, 5-year Estimates

Due to the large population of unemployed full-time students at UVA the survey results are skewed. Census block groups on, and adjacent to, the UVA campus have a median household income less than $20,000, likely because a majority of the residents in these areas are students. There are a few block groups (e.g. east of the UVA campus in the 10th & Page neighborhood; in the southeast Belmont neighborhood; and in the westernmost area of the TJPDC shown in Figure 1-21) where the median household income is also less than $20,000, even though there are fewer students that live in these areas. The median household incomes in Albemarle County ($68,449) is significantly greater than the national average ($53,889), and due to the student-populated block groups adjacent to the UVA campus, and the median household income in City of Charlottesville ($49,775) is lower than both national and Virginia state average ($65,015).

Percentage of People living below Poverty Line in 2015 (Figure 1-17)

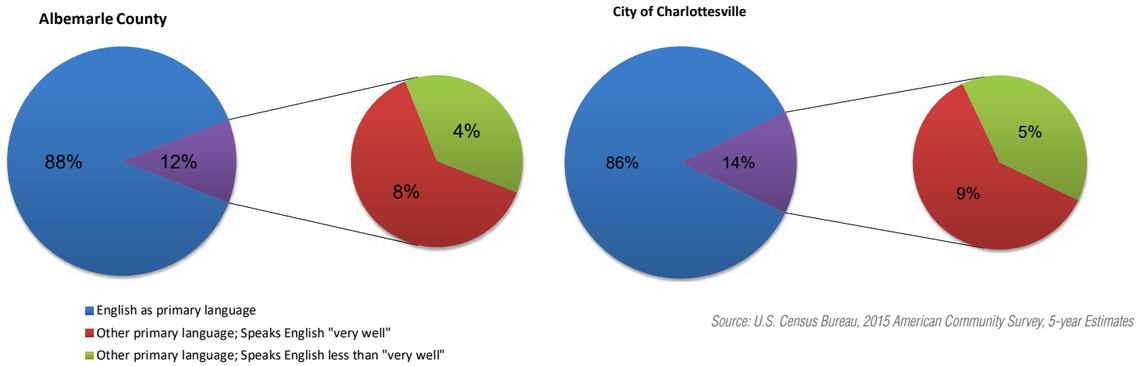


Source: U.S. Census Bureau, 20115 American Community Survey, 5-year Estimates

Limited English-Speaking Population

Limited-English-speaking populations make up approximately 4.7% of the Charlottesville-Albemarle total population. This 4.7% equates to 6,645 citizens in a total population of 139,986. The largest group within this cohort is Spanish-speaking. The percentage of City and County populations that speak limited English are broken down further in Figure 1-18. These populations require targeted outreach in an appropriate language.

Limited-English Speaking Populations (Figure 1-18)



Source: U.S. Census Bureau, 2015 American Community Survey, 5-year Estimates

Responsibilities and Strategies

The MPO makes efforts to include stakeholders in both the development and approval of regionally-significant transportation plans; to ensure that its planning efforts are holistic and include all populations that are part of the regional community. The MPO hosted three public input events, in addition to two public hearings prior to the approval of the 2045 Plan. There have also been a variety of ways to comment on the plan. Residents were able to provide comments at the events, at MPO committee meetings, through the website comment box, or directly to MPO staff. Also, as a federally-funded agency, the Charlottesville-Albemarle MPO has developed a method for receiving and handling complaints should they be made.

Growth Projections

The contents of this chapter describe the Charlottesville-Albemarle MPO as it exists today. Between now and the year 2045 the population is expected to change both in size and composition. Between the year 2015 and the year 2045, the population living within the MPO is expected to increase by 35.3%. Most of this growth is expected to occur in Albemarle County, with comparatively little in Charlottesville. Table 1-1 shows the population growth projections for Charlottesville and Albemarle (within the MPO) for the year 2045.

Population Growth Projections for 2045 (Table 1-1)

Charlottesville			Albemarle (within MPO)			MPO Total		
2015	2045	% increase	2015	2045	% increase	2015	2045	% increase
48,326	56,770	17.5%	85,129	123,822	45.5%	133,455	180,592	35.3%

Source: Rivanna Water and Sewer Authority Regional Water Demand Forecasts, August 24, 2011

Chapter 2: Transportation Assessment

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Public Transit

Bicycle and Pedestrian

Airport

Travel Demand Management

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Table 2-1: Roadway Classification

Overview

This section provides an overview of the regional transportation network, focusing on roadways, bridges, freight, public transit, passenger rail, bicycle and pedestrian facilities, and travel demand management. The physical infrastructure and transportation programming in the MPO influence how the existing transportation system is used and informs opportunities for future improvements.

Roadways

The following section will identify primary roadways in the Metropolitan Planning Organization (MPO) region; provide an overview of roadway classification in Virginia; assess existing operating conditions of major roadways; look at historical traffic growth; describe significant bridges; and describe freight infrastructure within the MPO.

Roadways within the MPO

The region's road network consists of primary, secondary, and local roads. The MPO region contains only one interstate: Interstate 64. US primary roads within the MPO region include US Routes 29, 250, 22, 20, and 53. These are the most heavily used commuter and commercial routes (VDOT 2010).

A network of secondary roads provides residents with connections to local and regional centers. Charlottesville and urban areas of Albemarle County function as hubs for commercial and economic development within the Planning District. Residents from both the urban core and outlying rural areas commute to Charlottesville for work, shopping, and recreation. The following describes the primary and secondary roadways in the MPO region:

» *Interstate 64*

Interstate 64 is an east-west highway that connects the region to Interstate 95 (to the east) and Interstate 81 (to the west). The interstate carries through-traffic, but also serves local traffic in Albemarle County, especially during rush hour, making it a key roadway in the commuter network. Residents and visitors use Interstate 64 to access urban centers and other primary roads.

» *U.S. Route 29*

US 29 is a north-south route that links the region to Washington, D.C. (to the north) and North Carolina (to the south). Within the region, US 29 runs through Greene, Nelson, and Albemarle Counties, as well as the City of Charlottesville, and is the major commuter and truck freight route through central Virginia, connecting Danville, Lynchburg, and Charlottesville. Increased development along US 29, north of Charlottesville, has led to a high level of commuter traffic heading into Charlottesville from residential communities in northern Albemarle County. This six-mile section ranges from four to eight lanes and has eighteen signaled intersections between the US 250 Bypass and Airport Road. Congestion is expected to increase further due to development of residential, industrial, and commercial centers along the corridor. US 29 to the south of Charlottesville is a less-trafficked, four-lane highway that connects with more rural areas of Albemarle County.

» *U.S. Route 250*

US 250 is an east-west corridor that roughly parallels Interstate 64 and connects the Pantops area, Charlottesville, Ivy, and Crozet to the Shenandoah National Forest. The US 250 Bypass originally provided an alternative route to the downtown Charlottesville. However, it is presently one of Charlottesville's most congested corridors. The eastern leg of US 250 in Albemarle County is highly congested due to increasing traffic from Louisa County and the City of Richmond. Moreover, rapid development at Pantops, including Martha Jefferson Hospital, two shopping centers, a large retirement community, and increased residential development, is contributing to the severity of congestion.

» *State Route 22*

Route 22 intersects US 250 at Shadwell and runs east-west through Louisa County. The road runs through the Town of Louisa and handles a moderate amount of local traffic. Route 22 passes through Green Springs National Historic Landmark District and experiences tourist traffic moving through Louisa County to Shadwell: the birthplace of Thomas Jefferson.

» *State Route 20*

Another primary road in Albemarle County is Route 20, a rural highway that runs north-south and connects Charlottesville to the Town of Scottsville. Because it is designated by VDOT as a Virginia Byway for its scenic and historic qualities, and is part of the historic "Journey Through Hallowed Ground," Route 20 carries a moderate amount of tourist traffic.

» *State Route 53*

Route 53 extends from Albemarle County into Fluvanna County and intersects with US 15 in Palmyra. This road, along with secondary Route 616, is heavily used by commuters from the northwest section of the Fluvanna County, particularly those originating from the Lake Monticello community. In Albemarle County congestion on Route 53 is increasing both due to greater volumes of commuter traffic originating in Fluvanna County, and due to tourists travelling to Monticello and Ashlawn: the historic homes of Thomas Jefferson and James Monroe, respectively.

» *Secondary Roads*

The MPO also has a network of heavily used secondary roads which provide residents with connections to local and regional centers. The City of Charlottesville has a dense roadway network that includes 108.31 miles of secondary roads. Albemarle contains 858.94 miles of secondary roads, 220.20 miles of which are unpaved. Secondary roads provide connections from developed areas, residential, or commercial, to larger scale regional roads or primary roads. Secondary roads are typically more robust than local roads. Examples of secondary roads in the urban area are Rio Road and Hydraulic Road.

Roadway Classification

Per the Federal Highway Administration (FHWA) and American Association of State Highway Transportation Officials (AASHTO), functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide.

Roadway Classification in the MPO (Figure 2-1)



There are three functional classifications areas: arterial, collector, and local roads (FHWA 2012). Arterials provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. These roads are typically classified as principal arterials (sub-grouped by Interstate, Freeway/Expressway, and other principal arterials) and minor arterials. Collectors provide a lower level of service at a slower speed, and provide service for shorter distances by collecting traffic from local roads and connecting them with arterials. Collectors are typically classified as major collectors and minor collectors. Finally, local roads consist of all roads not defined as arterials or collectors, and primarily provide access to land with little or no through traffic.

All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow, as illustrated in Figure 2-1. The MPO anticipates an official update of Virginia's functional classification in the near future.

VDOT further classifies roadways as interstate, primary, or secondary roads. (Refer to Table 2-1). Interstates are limited access highways that connect states and major cities. Primary roads connect cities and towns with each other and with interstates. Secondary roads are local connector and county roads, and are generally designated with Route numbers 600 and above.

Roadway Classification (Table 2-1)

Roadway	FHWA Classification	VDOT Classification
Interstate 64	Interstate	Interstate
US 29	Arterial, Principal	Primary
US 250	Arterial, Principal, Minor	Primary
22	Arterial, Minor; Collector, Major	Primary
20	Arterial, Minor; Collector, Major	Primary
53	Collector, Major	Primary

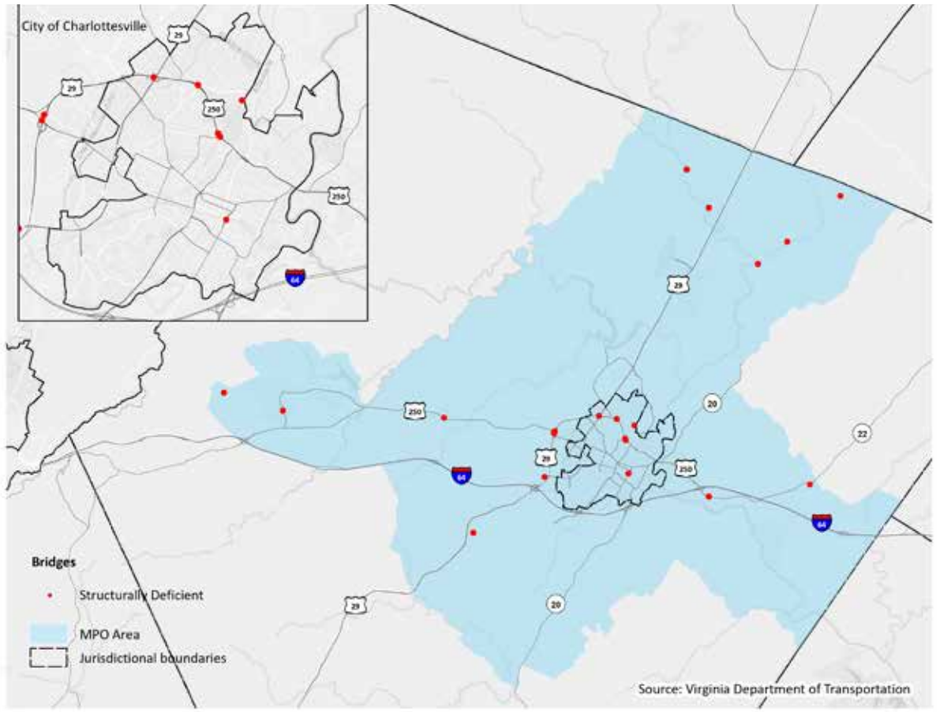
Bridges

One of the concerns in the MPO is bridge conditions. Safe and adequate bridges are a vital component for a fully functional transportation system. Using VDOT bridge condition reports, the entire region of Albemarle County and the City of Charlottesville was reviewed to identify the condition of each bridge and assess the need for improvements.

Of the 272 bridges in Albemarle County (the area outside the Charlottesville boundary in Figure 2-2), the Virginia Department of Transportation (VDOT) Structure & Bridge Division dashboard shows that 27 bridges are structurally deficient (red), 89 bridges are functionally obsolete (yellow), and 156 bridges are non-deficient (green). 90.1% of bridges in the County are yellow or green; slightly less than the VDOT target of 92%. Of the eighteen bridges in the City of Charlottesville (the area within the Charlottesville boundary in Figure 2-2), five are structurally deficient, five are functionally obsolete, and eight are non-deficient. 72.2% of the City's bridges are yellow or green: below the VDOT target of 92% (Figure 2-2).

Structurally Deficient Bridges in the CA-MPO (Figure 2-2)

Source: Virginia Department of Transportation Sufficiency Ratings



#	NAME	CROSSING
1	BLAIR PARK ROAD	LICKINGHOLE CREEK
2	CROZET AVENUE	LICKINGHOLE CREEK
3	IVY ROAD	LITTLE IVY CREEK
4	WHEELER ROAD	BRANCH MOORES CREEK
5	WHEELER ROAD	BRANCH MOORES CREEK
6	FONTAINE AVE. EXT	MOREY CREEK
7	IVY ROAD	RTE 29BY-PASS&250BY-PASS (West)
8	OLD IVY ROAD	RTE 29 & 250 BYPASS
9	ROUTE 250	RTE 29 BUSINESS (North)
10	DAIRY ROAD	RTE 250 BYPASS
11	ROUTE 250	RUGBY AVE (West)
12	ROUTE 250 BYPASS	NS RAILWAY (East)
13	9TH STREET	CSX RAILROAD & WATER ST (North)

#	NAME	CROSSING
14	MELBOURNE ROAD	NORFOLK SOUTHERN RAILROAD
15	FRAYS MILL ROAD	MARSH RUN
16	DICKERSON ROAD	NORTH FORK RIVANNA RIVER
17	RICHMOND ROAD	SHADWELL CREEK
18	WATTS PASSAGE	PREDDY CREEK
19	GILBERT STATION RD	NORFOLK SOUTHER RAILWAY
20	KESWICK ROAD	CARROLL CREEK
21	BURNLEY STATION RD	NORFOLK SOUTHERN RAILWAY
22	IVY ROAD	RTE 29BY-PASS&250BY-PASS (West)
23	ROUTE 250	RTE 29 BUSINESS (South)
24	9TH STREET	CSX RAILROAD & WATER ST (South)
25	ROUTE 250 BYPASS	NS RAILWAY (West)
26	ROUTE 250	RUGBY AVE (East)

Freight

The identification of freight corridors and preservation of freight mobility is a component of the MPO's Long Range Transportation Plan. The MPO is primarily served by truck freight, and supplemented by rail service.

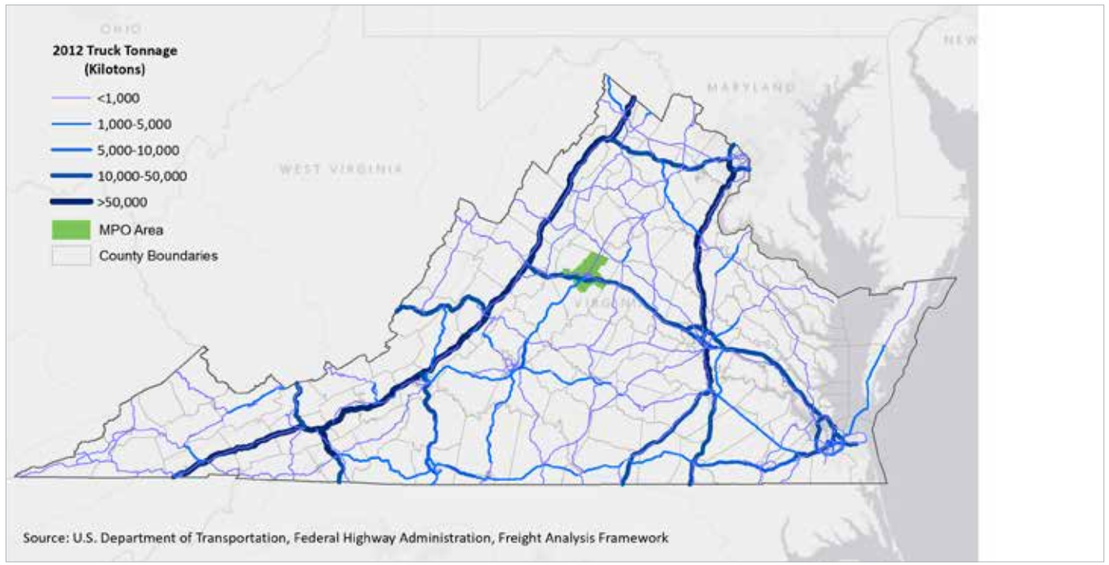
Truck

Albemarle County has one of the largest manufacturing concentrations in Virginia's Piedmont region and truck freight is the region's most utilized method of transporting goods. In the MPO region, Interstate 64 is the primary east-west truck route, transporting goods statewide and connecting neighboring industrial centers, such as Richmond. In 2015, the portion of Interstate 64 which runs through the MPO area carried a daily truck traffic volume that is approximately 11% of total daily traffic in the region. Truck freight also utilizes US 29. US 29 not only serves as the primary truck route in the north-south direction, but also facilitates freight routing changes. One of those routing changes, US 250, also carries significant freight traffic and has become a major shipping corridor in recent years. Maintaining and improving the roadways for such movement is critical to the region's economic development and sustainability.

Approximately thirty-five trucking firms serve the MPO region (TJPED). Three roadways provide primary access to the major commercial areas and business centers at the center of the MPO region: Interstate 64, US 29, and US 250. US 29 has become highly congested due to traffic volume, hilly terrain, reduced speed limit, and the number of signalized intersections, creating difficult driving conditions for freight trucks. Due to increased traffic and subsequent delay on deliveries, carriers have been forced to make adjustments to their operating schedules and routes by making pickups earlier in the day, hiring additional trucks to complete the same number of deliveries, and moving from primary roadways to smaller, secondary roads. Charlottesville may become a larger bottleneck for freight travelling north and south of the region.

As evident from the Freight Analysis Framework (FAF) data shown in Figure 2-3, the highest densities of truck activity are at Virginia's major population hubs: Northern Virginia, Richmond, and Hampton Roads, with concentrations also visible at Roanoke, Lynchburg, and Charlottesville. Around 32-34 thousand and 400-1,200 tons of freight are carried through I-64 and US 29 segments respectively in the Charlottesville-Albemarle MPO area.

Virginia's Inbound/Outbound/Internal Truck Tons (2012) (Figure 2-3)

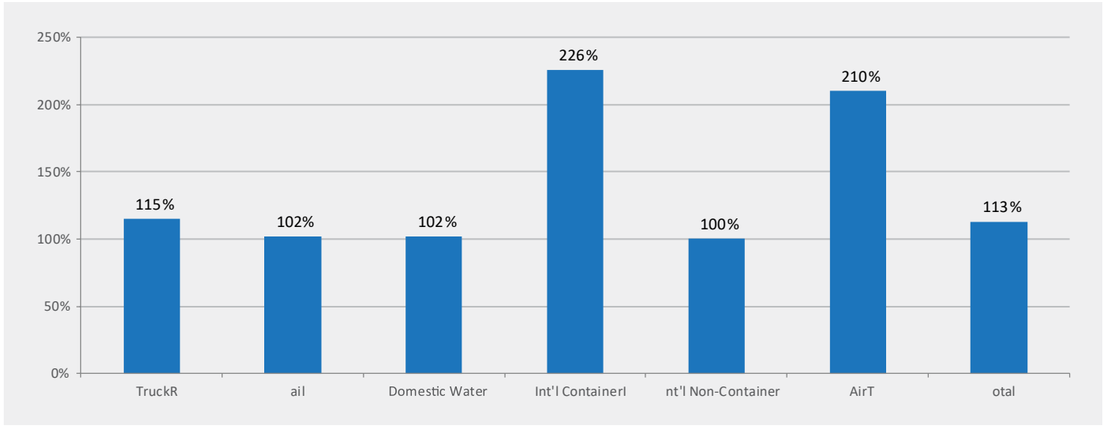


Rail

Freight rail is provided via two railroads which cross at grade in downtown Charlottesville: CSX Transportation and Norfolk Southern Corporation, two of the largest railroad conglomerates in the U.S. The Norfolk Southern line travels north-south through Albemarle County, the City of Charlottesville and Nelson County. The CSX line follows a roughly east-west route through Albemarle County, the City of Charlottesville, and Louisa County, carrying primarily empty coal cars.

CSX has recently leased its short line to the Buckingham Branch Railroad, the majority of which lies in Louisa County. A second CSX route roughly follows the James River in Albemarle, Nelson, and Fluvanna counties. Both Norfolk Southern and CSX have only a few freight sidings or off-loading sites in the region (CvilleRail). As evident in Figure 2-4, both truck and rail freight in Virginia are expected to more than double from their 2004 tonnage by 2035.

Projected Growth in VA Freight Tonnage (Figure 2-4)



Source: Virginia Statewide Multimodal Freight Study, Phase I

Public Transit

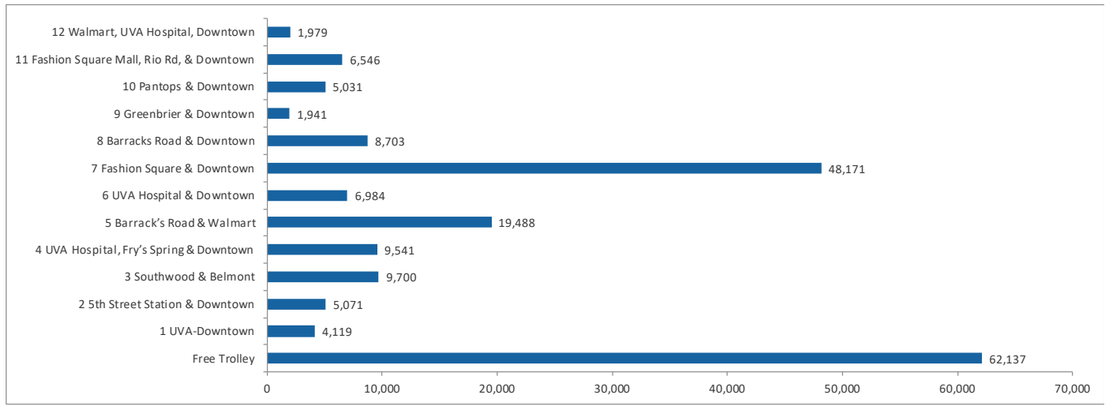
Several public transit options exist within the MPO region, including commuter, local, regional and intra-county bus service provided by Charlottesville Area Transit (CAT), JAUNT, and University Transit Service (UTS). In 2017, the Regional Transit Partnership (RTP) was formed to increase communication and coordination between transit providers, and identify regional transit goals and opportunities. The region is served by inter-city bus service provided by Greyhound; and inter-city passenger rail service provided by Amtrak.

Charlottesville Area Transit (CAT)

CAT provides public bus service to the greater Charlottesville area. CAT offers fourteen daytime and four nighttime routes, serving an average of 7,500 riders daily during the workweek. Displayed in Figure 2-5, the routes with the highest ridership are the Free Trolley, running from Downtown to UVA (33% of trips); Route 7, running from Downtown to Fashion Square Mall (25% of trips); and Route 5, running from Barracks Road to Wal-Mart (10% of trips).

CAT serves a variety of groups within the Charlottesville-Albemarle area and offers several fare types to meet riders' needs. Free ridership is offered to children age five and under; youth ages six to eighteen (summer only); and UVA students, faculty, and staff. Reduced fares are offered to senior citizens and persons with disabilities.

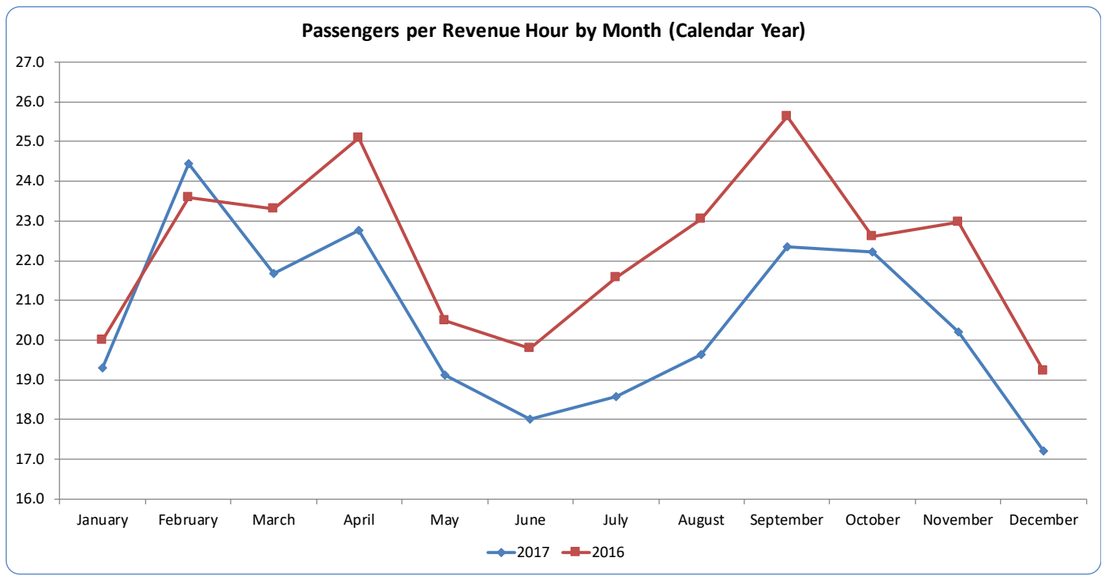
CAT Monthly Ridership by Route (Oct 2017) (Figure 2-5)



Source: 2017 CAT Transit Ridership Data

As Figure 2-6 shows, significantly low CAT ridership in months of May, June and July is related to the decreased presence of the student population in town. February, April and September are the months with highest ridership over a year in CAT service area. The chart also reveals that there has been decreases in transit ridership in calendar year 2017 in comparison with 2016.

CAT System Passengers per Revenue Hour (2016, 2017) (Figure 2-6)



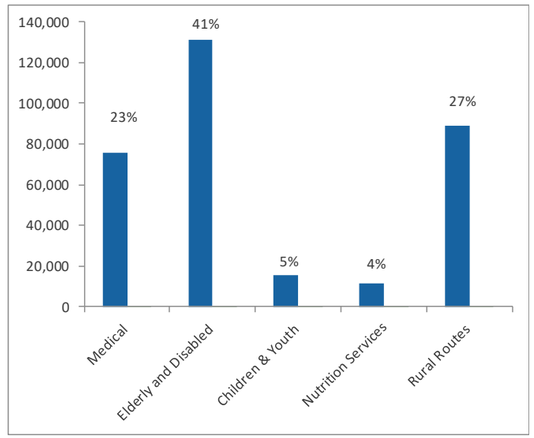
JAUNT

JAUNT is a regional transportation system for Central Virginia and serves as the Americans with Disabilities Act (ADA) paratransit service for CAT. JAUNT is funded by Charlottesville, Albemarle, and other local governments, and uses Federal, State, and local funding to supplement fares.

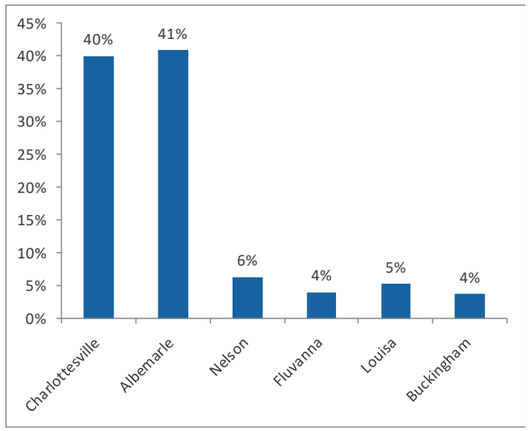
Service is available for all residents of Charlottesville and five surrounding counties in Central Virginia (Albemarle, Fluvanna, Louisa, Nelson, and most recently, Buckingham), and reduced fares are offered for persons with disabilities. JAUNT offers both fixed route and door-to-door service. Riders must schedule trips by phone or email for the latter.

Figure 2-7 shows annual ridership by service type in Fiscal Year 2016-17, with a total ridership of 322,822. JAUNT's highest ridership was in Charlottesville and Albemarle, as shown in Figure 2-8, accounting for 81% of rides taken in FY 2016-17.

JAUNT Ridership by Service Type FY16-17 (Figure 2-7)



JAUNT Ridership by Place of Origin FY16-17 (Figure 2-8)



University Transit Service (UTS)

UTS is the transit service UVA provides to its students, faculty and staff, and the general public. UTS services Central Grounds of UVA and popular student housing areas, including Jefferson Park Avenue and Grady Avenue. UTS currently operates ten routes. Hours vary by route, with many routes running until 3:00 am on weekends during the academic school year. UTS is funded through student activity fees, so there is no fare collected on board the buses. The general public is also permitted to ride "fare free" through a reciprocal agreement with CAT (UTS 2012).

Regional Transit Partnership (RTP)

The Regional Transit Partnership (RTP) serves as an official advisory board, created by the City of Charlottesville, Albemarle County and JAUNT, in Partnership with the Virginia Department of Rail and Public Transportation to provide recommendations to decision-makers on transit-related matters. There are four main goals of the Partnership, including:

- Establishing Strong Communication
- Ensuring Coordination between Transit Providers
- Set the Regions Transit Goals and Vision
- Identify Opportunities

More information can be found on the RTP webpage

Inter-Regional Bus Service

Greyhound offers inter-city bus service from a station on West Main Street in Charlottesville. Bus service is available throughout the day to destinations including Richmond, Lynchburg, Roanoke, Fredericksburg, and Washington DC, with connections available to other major metropolitan areas (Greyhound).

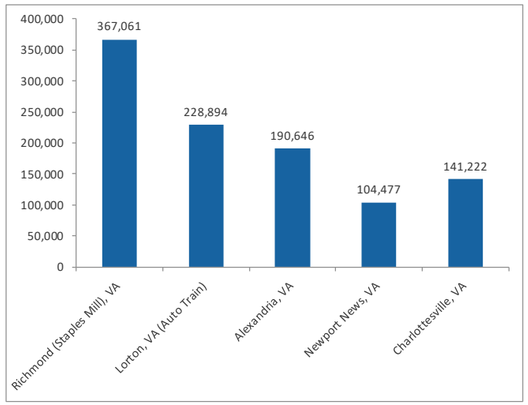
Inter-Regional Passenger Rail

Amtrak currently operates three service routes from Charlottesville Union Station (CVS): the Crescent, running daily from New York City to New Orleans; the Cardinal, operating three days per week between New York City and Chicago; and the Northeast Regional, offering daily service from Roanoke to New York City.

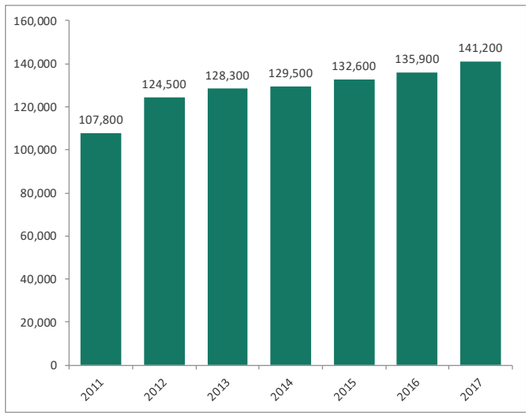
Amtrak's Northeast Regional line has become a reliable transportation alternative for commuters and travelers along the eastern seaboard. Although Virginia is not strictly part of the Northeast Corridor, some Northeast Regional trains continue into Virginia, serving the stations listed in Figures 2-9a. Northeast Regional service south to Alexandria, Richmond, Williamsburg, and Newport News formally began on June 14, 1976. In October 2009 Amtrak extended the Northeast Regional with daily service from Alexandria, VA, via Burke, Manassas, Culpeper, and Charlottesville, to Lynchburg. From late October 2017, this service extended to provide same-seat trips to and from Roanoke, VA. The Washington – Lynchburg service increased by 2.6% in FY 2017 in comparison with FY16, attaining a total of 189,800 passengers. State funding is committed for a second daily train between Roanoke and Washington DC, but this has not been implemented yet due to challenges associated with capacity on the tracks and working with the host railroad company.

As evident in Figure 2-9a, the Charlottesville station is one of the top stations in the state in terms of total ridership, and the ridership has been increasing steadily since FY11 as shown in Figure 2-9b (Rail Passengers Association 2018). An evaluation by Amtrak indicated that the current station does not have the recommended space and capacity to handle the high passenger volumes using the station.

Total Amtrak Station Boardings/Disembarkings for Top Stations in Virginia FY17 (Figure 2-9a)



Charlottesville Amtrak Station Boardings/Disembarkings FY11-FY17 (Figure 2-9b)



Bicycle and Pedestrian

An update to the Jefferson Area Bicycle and Pedestrian Plan was approved by the MPO Policy Board in March 2019. The plan seeks to encourage implementation by providing a focused list of regionally-significant bicycle and pedestrian projects that enhance connectivity and provide routes to important residential and economic centers.

Public outreach completed as part of the plan indicated that the community appreciates existing bicycle and pedestrian infrastructure in the region, and residents have a strong desire for additional infrastructure. In particular, creation of a more connected network would increase the desirability of bicycling and walking, for both transportation and recreation, in the region.

Charlottesville is a bike-friendly city, having earned the League of American Bicyclists' silver designation as a "Bicycle Friendly Community" in 2012. (League of American Bicyclists). Charlottesville was designated a "Gold-Level Pedestrian Community" by Walk Friendly Communities due to its high rates of walking, innovative planning practices, and a centralized, successful Downtown Pedestrian Mall. (Walk Friendly Community 2019).

Data in the Existing Infrastructure map on the following page was assembled from existing facility inventories maintained by Albemarle County, VDOT and the City of Charlottesville. This data was supplemented with an inventory performed by TJPDC interns during the summer of 2017. The existing condition data is not complete and is in the process of being updated. One of the action items from The Jefferson Area Bicycle and Pedestrian Plan is for Albemarle, Charlottesville, UVA and the Planning District Commission to develop procedures to maintain and share comprehensive bicycle and pedestrian infrastructure and facility data. This will include an online regional dataset and map of existing and proposed bicycle and pedestrian infrastructure.

Existing Bicycle Infrastructure: This includes all bike lanes, shared use paths and shared roadways.

Sidewalk Infrastructure: This includes sidewalks and walkways. The inventory primarily includes sidewalk facilities that are on public roadways or provide access to major businesses like shopping centers.

Bike Route 76: Bike Route 76 is a designated, national, on-road bike route that traverses the region. It is the only designated bike route to pass through the Planning District.



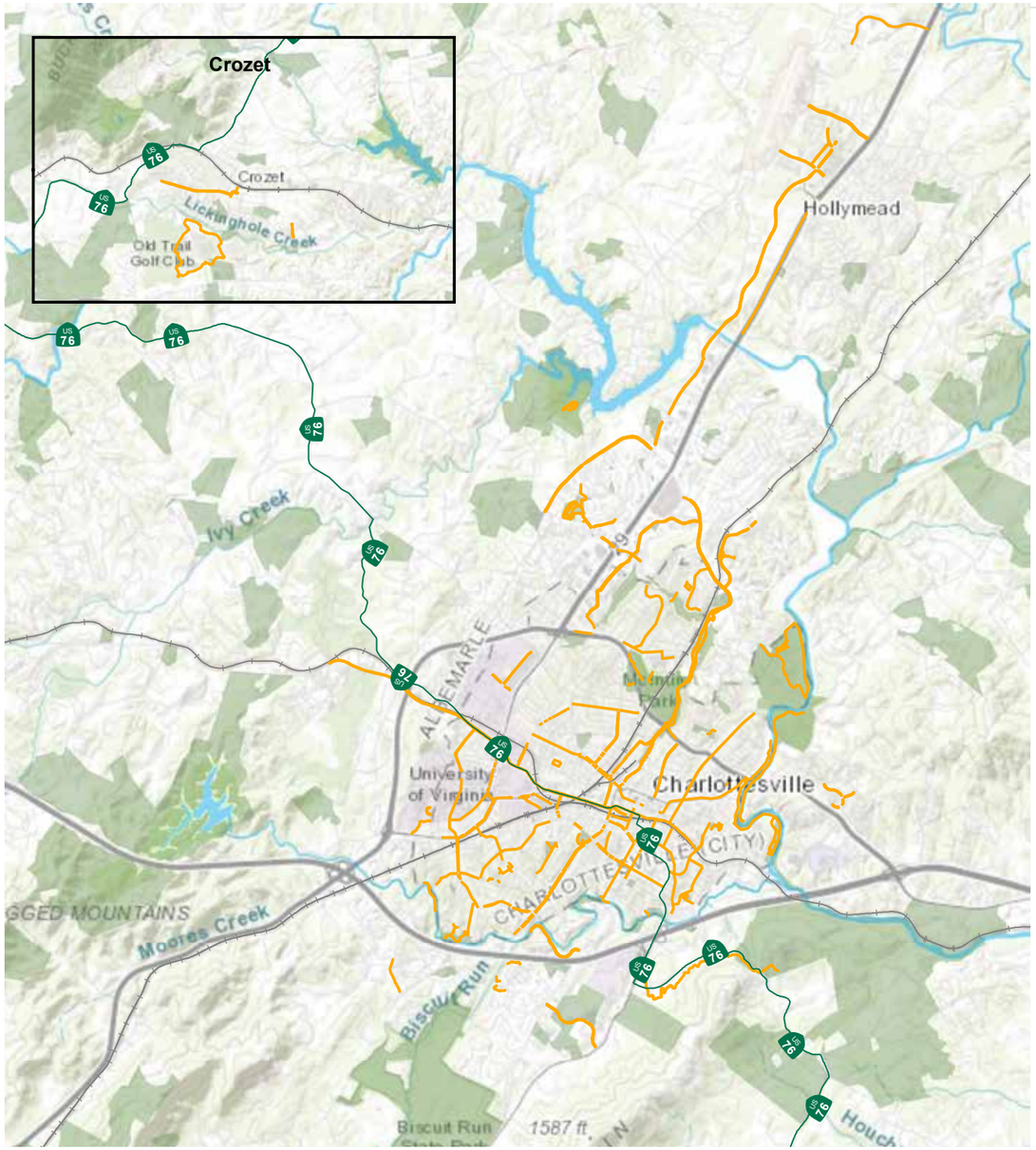


Figure 2-10
Existing Bicycle Infrastructure

1 Mile

N

FEATURES

- Parks and Conservation
- Lakes and Rivers
- Railroads
- Bicycle Infrastructure
- Bike Route 76

ABOUT THIS MAP:

This map provides a contextual reference to the City of Charlottesville, the urbanized area of Albemarle County and surrounding area. The map depicts the existing infrastructure currently in place in regards to bicycle facilities.

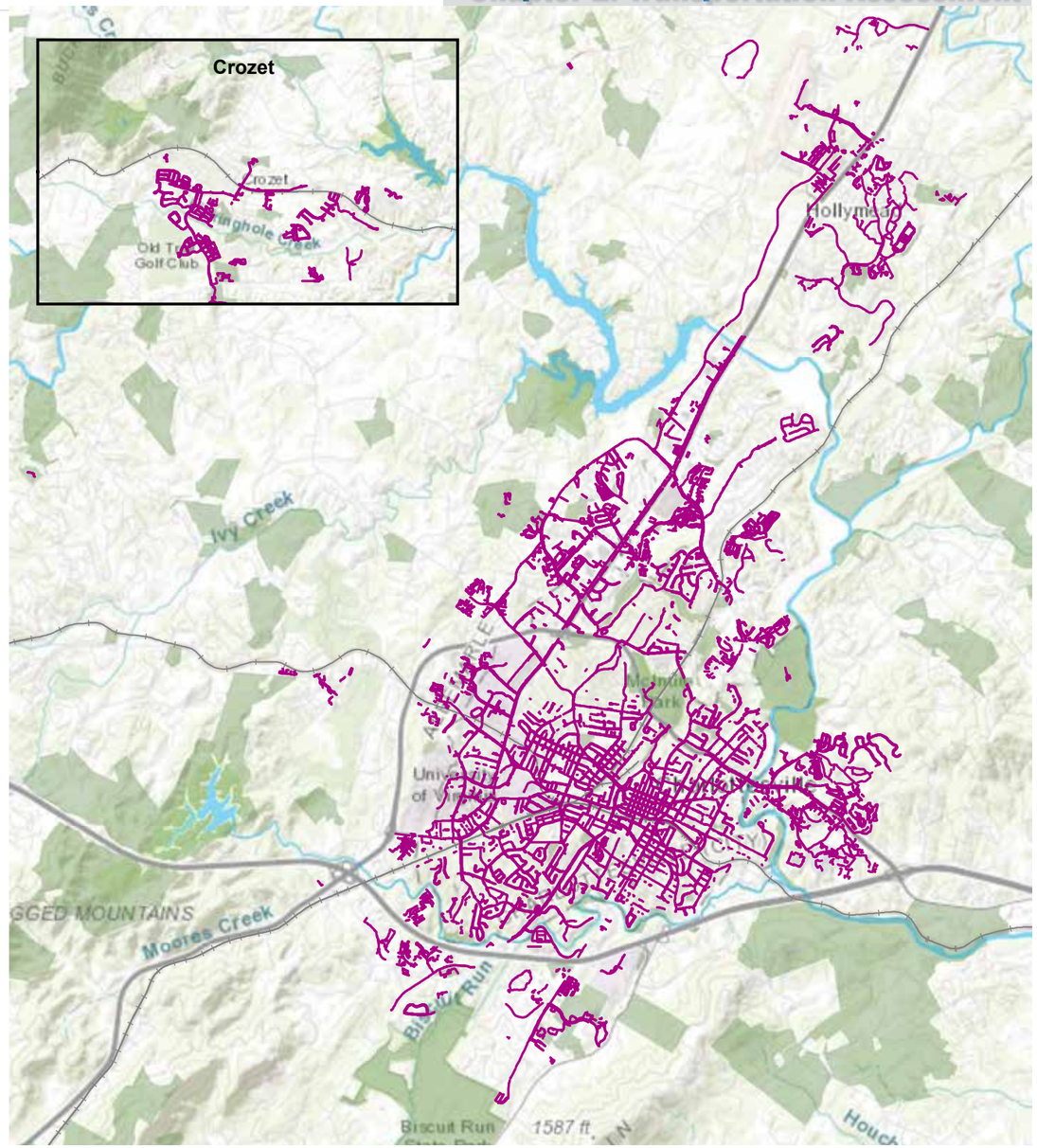


Figure 2-11
Existing Sidewalk Infrastructure

1 Mile

N

FEATURES

- Parks and Conservation
- Lakes and Rivers
- Railroads
- Sidewalk Infrastructure

ABOUT THIS MAP:

This map provides a contextual reference to the City of Charlottesville, the urbanized area of Albemarle County and surrounding area. The map depicts the existing infrastructure currently in place in regards to pedestrian facilities.

Airport

Charlottesville-Albemarle Airport (CHO)

Charlottesville-Albemarle Airport (CHO) is the only commercial service airport in the region. CHO is located eight miles north of Charlottesville and one mile west of US 29 on Airport Road. It is both a general aviation and commercial service airport, offering 50 daily non-stop flights to and from Charlotte, Philadelphia, New York/ LaGuardia, Washington/Dulles, Atlanta and Chicago. The airport is served by Delta Connection, United Express (Atlantic Coast Airlines), American Eagle, and US Airways Express (Piedmont Airlines). The number of enplaned and deplaned passengers has been steadily increasing since 2013. In Fiscal Year 2017, the number of enplaned and deplaned passengers reached 315,099 and 313,512 respectively, marking a 10% increase from Fiscal Year 2016.

General aviation facilities include an executive terminal offering a full-service fixed-base operation, a flight school, and aircraft charter firms.

Transportation to and from CHO is currently limited to automobile. While there are bike lane facilities along Airport Road leading to the airport, these facilities are currently isolated from a greater regional bicycle network. Daily and hourly parking are available at the airport. Car rentals are available in the terminal facility. Many area hotels provide shuttle service from the airport for guests. Taxi companies also provide service to CHO.

Travel Demand Management

Two programs currently implemented for regional Travel Demand Management (TDM) in the MPO region include RideShare and Park & Ride Lots.

RideShare

RideShare is a program run out of the Thomas Jefferson Planning District Commission (TJPDC) in cooperation with the Central Shenandoah Planning District Commission (CSPDC), working to reduce traffic congestion and increase mobility throughout Central Virginia and the Central Shenandoah Valley. Services include free carpool matching, vanpool coordination, and a Guaranteed Ride Home program to provide free rides home in an emergency. RideShare also works with employers to develop and implement traffic reduction programs and advertises the region's Park and Ride lots. There were 521 members in the RideShare carpool matching program and 183 registered users in the Guaranteed Ride Home program as of October 2018 (RideShare).

Park & Ride Lots

There are twenty-seven Park & Ride lots within the RideShare service area – twenty-two located within the TJPDC, twelve of which are located within the MPO area, as listed in Figure 2-10. Some of these lots are formal facilities managed by VDOT and others are informal lots made available to commuters by businesses or organizations that own the property.

Quarterly inventories of the lots are conducted by RideShare. The most active lot is in Waynesboro, with an average of 65 cars each weekday (AUG2). Based on interviews conducted at the lot, and data collected from RideShare, the majority of members parking at this lot are commuting to Charlottesville. The second most active lot is at Zion Crossroads (LOU1), with an average of 40 cars each weekday. Data on commuting destinations was not available for this lot, but Charlottesville and Richmond are likely the primary destinations.

Park and Ride Lots in Region (Figure 2-12)

Albemarle County

- ALB1: Maple Grove Christian Church
- ALB2: Forest Lakes North Health Services Center
- ALB3: Peace Lutheran Church
- ALB4: Wal-Mart South Lot
- ALB5: Mountainside Senior Living
- ALB6: Darden Towe Park
- ALB7: US 29 South and I-64
- ALB8: Avon Street Extended
- ALB9: Keene
- ALB10: Scottsville

Augusta County

- AUG1: Verona
- AUG2: Waynesboro Town Center

City of Charlottesville

- CVL1: Azalea Park

Fluvanna County

- FLU1: Beaver Dam Baptist Church
- FLU2: Lake Monticello (Jefferson Centre)

Greene County

- GRN1: Greene County School System
- GRN2: Ruckersville Walmart

Louisa County

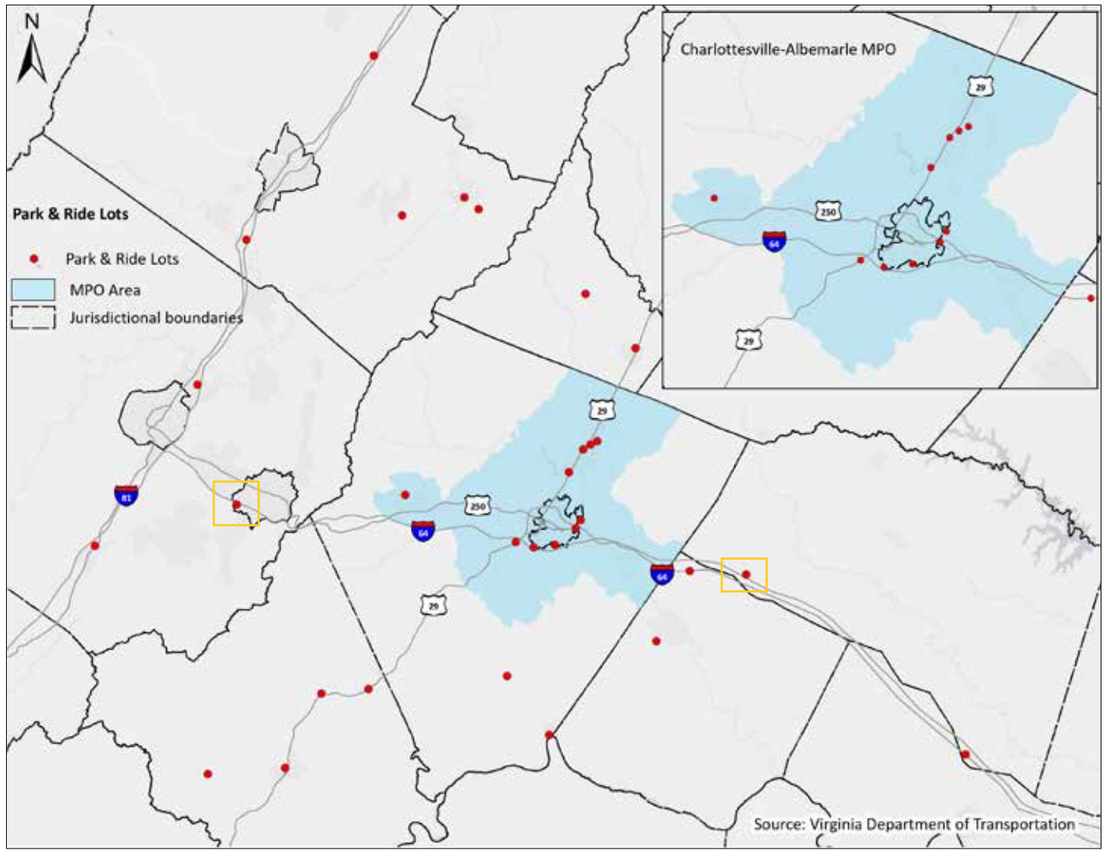
- LOU1: Zion Crossroads
- LOU2: Gum Springs

Nelson County

- NEL1: Route 6 East
- NEL2: Route 6 West
- NEL3: Lovingston Volunteer Fire Department
- NEL4: Route 655 and Route 151

Rockingham County

- ROC1: Massanutten
- ROC2: Elkton - Blue and Gold Dr
- ROC3: Elkton - Tanyard Bridge Road
- ROC4: Mt. Crawford



Most Active Lots

Chapter 3: 2045 LRTP Overview

Overview. . . . . .
Purpose . . . . . .
Conclusion. . . . . .

Overview

The Charlottesville-Albemarle MPO's 2045 Long Range Transportation Plan (LRTP) is a federally mandated plan that looks ahead three decades to assess future transportation projects vital for the region. The plan considers all modes of transportation including roadways, transit, rail, bicycle, pedestrian and air. This planning process updates the previous plan, LRTP 2040, which was approved by the MPO Policy Board in May 2014.

Purpose

The 2045 LRTP is a fundamental document for the Charlottesville-Albemarle community. Not only does it outline the region's long-range transportation vision, it also lists projects that the region anticipates undertaking in the next twenty to thirty years in an effort to attain that vision. The plan contains project lists, which are one of the more critical elements in that federal funding cannot be obligated to transportation projects unless they are included on these lists.

Requirements from FHWA and FTA

In order for transportation projects to be eligible for federal funding, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) require that they be listed in a long range transportation plan. The plan must consider the interaction between land use and transportation planning, as well as the environmental impacts of proposed projects. The MPO is required by federal regulation to review the long range plan every year and update it every five years.

According to the metropolitan planning requirements Titles 23 and 49 U.S.C, LRTP 2040 must also contain a financial plan that demonstrates how it may be implemented using both public and private resources that are reasonably expected to be available over the life of the plan. The purpose of the fiscal constraint requirement is to ensure that the total estimated cost of projects and programs included in the plan (the estimated cost of constructing, operating, and maintaining the transportation system) does not exceed the reasonably available estimated revenues. For the purpose of financial forecasting, historical trends are used with respect to estimating resource availability in the context of an uncertain budgeting process. The Virginia Department of Transportation (VDOT) and the MPO cooperatively develop estimates of funds that will be available to support plan implementation.

It is important to remember that the federal and state funds shown in the LRTP will not be available in exactly the same amounts or within the same funding sources indicated in the Plan. The actual funding amounts depend on the federal and state budget process for any given fiscal year. A major component of the current state funding process, SMART SCALE, is competitive across the state and within VDOT districts, which makes it particularly difficult to estimate future funding. Given the long-term nature of the LRTP, and the degree of uncertainty in the estimation of both costs and revenues, a precise accounting is not required. Shorter term documents, such as the Transportation Improvement Program (TIP), must demonstrate stricter fiscal constraint, ensuring that in the near term, as costs and revenues become easier to predict, fiscal accountability is maintained.

The 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21) instructed MPOs and State departments of transportation to develop Long Range Transportation Plan and Transportation Improvement Plans (TIP) around a performance driven, outcome based approach to transportation planning. The Fixing America's Surface Transportation (FAST) act of 2015 affirmed the performance-based approach. Under the MAP-21/FAST act framework, performance measures are defined for each national goal area through federal agency rulemaking. States, MPOs and public transportation agencies have been working to establish baselines and targets for each measure. Information about these measures, and the targets that have been set by VDOT and the MPO, are provided in Chapter 5.

Local Input

Giving a local voice to federal and state requirements has been central to the planning process. MPO staff conducted various open houses to seek input from the public on transportation needs, provide citizens with an opportunity to review project scenarios and associated performance measure data, and provide input for consideration in structuring a preferred scenario.

Public Input Sessions included:

Open House 1 (September 2017): overview of process and regional transportation needs

Open House 2 (June 2018): debut 2045 modeling & identify transportation deficiencies

Open House 3 (October 2018): input following Round 1 scenario results

Open House 4 (January 2019): input following Round 3 scenario results

First Public Hearing (April 2019): input on draft plan document

Final Public Hearing (May 2019): final review and approval

Other opportunities for public input have existed throughout the 2-year process. These include:

- Committee meeting public comment periods
- Online comment box

Along with the public Open Houses and Public Hearings, TJPDC staff presented to the City of Charlottesville and Albemarle County Planning Commissions. Presentations were made to each body in October 2018 and March 2019.

The TJPDC recognizes that not all communities and its members have enjoyed the same level of access or representation in transportation and other decisions made by public agencies. Therefore, as part of its public participation strategy, the TJPDC takes steps and measures to reach and engage minority, low-income, and other underserved groups in Charlottesville and Albemarle.

Conclusion

The Charlottesville-Albemarle MPO's 2045 Long Range Transportation Plan updates the existing LRTP 2040. To develop this plan, MPO staff worked with the localities and residents to establish future transportation needs for the region between 2020 and 2045. Regional transportation improvement projects are unlikely to receive federal funding unless they are included in the LRTP. Staff relied heavily on public input as well as recommendations from its committees to prioritize which projects are of higher priority to be funded during the life of the plan. The subsequent chapters of this document outline the process utilized to develop the lists of projects that may be funded through 2045.

Chapter 4: Planning for Uncertainty

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Changing Technologies . . . . . .
Sustainable and Resilient Transportation Systems . . . . . .
Conclusion . . . . . .

Overview

This chapter discusses some of the uncertainties when it comes to Long Range Transportation Planning. The chapter provides an overview of technologies and trends that are important factors in transportation planning.

Changing Technologies

The transportation sector entering into a period of rapid change and technological disruption. New services such as bike sharing and Transportation Network Companies (TNCs) coupled with a move towards autonomous vehicles and connected infrastructure are forces that are reshaping how people and goods move. These new technologies and new modes of transportation have the potential to radically reshape the transportation landscape as they mature. With some of the technologies being new there is very little consensus around how to plan for them and make assumptions for the future. Long Range Plans require a planning horizon of 20 years and many of the planning assumptions used for that 20-year horizon are based on historical trends. These trends are changing rapidly and may not be representative of the transportation systems of the future. Therefore, it is important to monitor trends and new developments and adapt the plan to meet the needs of the changing environment.

This plan begins the process of understanding the current state of change and provides a baseline understanding of the new modes and technologies. Future plans will have to begin to address the changing nature of transportation. Many of the projects included in this plan are designed to fix current capacity constraints, improve operational efficiency, safety and mode choice. Therefore, it is expected that the projects will help meet the transportation needs in both the short and long term.

Transportation Network Companies

The MPO area is serviced by two Transportation Network companies (TNCs) / Mobility Service Providers (MSP), UBER and Lyft. These companies rely on online-enabled platforms to connect users and drivers. One of the hallmarks of these systems is the use non-commercial vehicles. In the Commonwealth of Virginia these as companies that "provides prearranged rides for compensation using a digital platform that connects passengers with drivers using a personal vehicle."

The arrival of these services has already begun to change some travel behaviors especially with the large university population in Charlottesville whom lack personal cars. As these services continue to grow in popularity there is the potential for planners to need to rethink the design of downtown streets in order to better facilitate drop off and pickup activities at the curb. TNC services are likely to play a small but growing role within the timeframe of the 2045 Long Range Transportation Plan.

Bike share and Scooters

Bikeshare programs are one of the main forms of innovation that are reshaping active transportation in urban areas. As they become more common in cities around the country, they are contributing to the increasing popularity of bicycles. Bikeshare programs and other shared mobility programs attempt to address the demand for quick and affordable transportation in urban areas. Due to increasing ridership of existing systems as well as new systems being built, 35 million bike share trips were taken in 2017, a 25% increase from 20162. The large increase in new systems was partly due to dockless bike share programs being introduced in 2017, causing the number of bikeshare bikes available to more than double. Station-based systems were previously the only available bikeshare option and even though they are currently still the most used system, dockless systems address the limitation of only being able to ride bikes between stations and needing to know the station locations. Dockless bikeshare programs allow riders the flexibility to be able to travel between desired destinations without worrying about dock locations. There are concerns that without stations, the dockless systems could contribute to a cluttering of cities, but companies are attempting to address this by incentivizing specific areas for parking and creating zones that are off limits. The advancement of technology allows for these programs to be possible and more user friendly. GPS is used to track bikes and smart phones and credit cards make the systems more usable. Many bikeshare companies are also introducing electric bikes and scooters which contribute to revolutionizing the way people travel in cities.



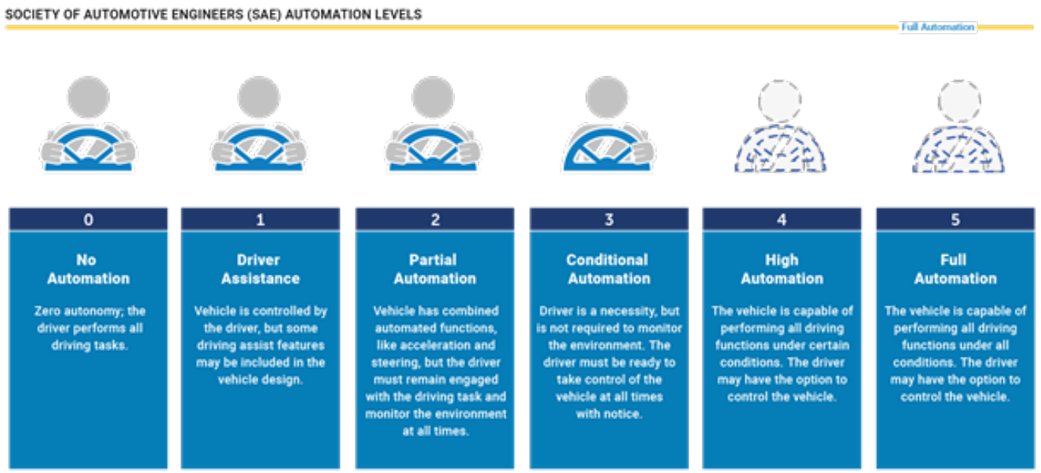
The electric motors for both bikes and scooters allow riders to travel farther distances and makes them accessible to a wider population, including people who may have physical limitations. Despite bikeshare and other shared mobility programs aiming to provide affordable mobility options, the cost and dependence on smartphones and credit cards can still make them inaccessible to some segments of the population. In order to ensure that bikes and scooters are accessible to everyone, many programs have introduced discounts or subsidized passes for riders based on income thresholds and have options for text-to-unlock features.

As these new technologies and modes of transportation become viable in the area, the need for a more connected bicycle and pedestrian network increases. The University of Virginia bikeshare program, UBike, has been successful since it started in 2015 and the popularity of the program has allowed the program to continue to grow. However, UBike is a station-based system and it is limited to the University of Virginia grounds. In 2018, the City of Charlottesville approved a temporary Dockless Scooter and Bicycle Policy Pilot Program to evaluate their impacts in Charlottesville. The City has provided permits to Lime and Bird, and the first dockless scooters and bicycles were introduced in December of 2018. A successful pilot program could lead to bikeshare and other mobility programs expanding and becoming a more permanent fixture in the area.

Connected and Autonomous Vehicles

Connected Vehicles (CVs) and Autonomous Vehicles (AVs) are two technologies which are likely to significantly impact transportation within the time frame of the 2045 Long Range Transportation Plan. CVs refer to vehicles which can communicate with one another to achieve goals such as reducing traffic congestion and improving safety. Autonomous vehicles refer to vehicles which can travel independently of a human operator. The precise timeframe for the widespread implementation of these technologies is uncertain with estimates ranging from the 2020's to the 2040's. There is also disagreement on the costs and benefits the technologies will have on the transportation network. Some research indicates that there is a potential upside for capacity of roadways, while other indicate a downside scenario with roads clogged with roving AVs.

The technology has several potential benefits such as reduced traffic congestion, increased safety, reduced fuel consumption and travel time, lower insurance and healthcare costs, better city planning due to lesser need for parking, increased productivity, and improving personal mobility and public transit. The impact of CVs and AVs on commuting patterns is not clear. Some research suggests that they could increase vehicles miles traveled (VMT) by encouraging workers to live further away from employment and take advantage of their commute time to increase productivity. The impact of CVs and AVs on vehicle ownership is another significant factor. Some research suggests that they will reduce personal vehicle ownership and that consumers will alternatively use on demand driverless transportation services for most of their travel. CVs and AVs also have the potential to significantly change transit. Since the driver generally accounts for over half of the cost of operating a public transit vehicle, driverless vehicles would likely drive down transit costs and perhaps encourage increased private sector transit service.



While the potential benefits of CVs and AVs surpass disadvantages, there are certain barriers to adoption such as public safety and privacy concerns from possible equipment failures and cyber security. There is also uncertainty regarding the impact of partial implementation of CVs and AVs which would result in a mixed fleet of driverless and non-autonomous vehicles. Estimates for how long it would take for most of the vehicle fleet to transition from non-autonomous to driverless vehicles are generally more than ten years National Highway Transportation Safety Administration (NHTSA) estimates that between 2016-2025 will be the period of partially automated safety features such as lane keep assist, adaptive cruise control, traffic jam assist and self-parking. Fully automated safety feature across a large portion of the vehicle fleet such as highway autopilot is not expected until 2025 and beyond. VDOT has developed a Connected and Automated Vehicle Program Plan and the MPO will continue to monitor systems as they evolve over the next five-years.

Transit

Transit has been impacted, and will be increasingly impacted, by new technologies and their applications. Access to real-time transit data, often on cell phones, has made use of transit more desirable. The possibility of autonomous transit vehicles would dramatically decrease the cost of providing transit service. The increase in transportation options, such as the on-demand mobility services provided by TNCs, may decrease the number of people using transit. Yet it is also possible that the transportation changes discussed in this chapter lead to fewer households owning cars and an increase in use of transit in combination with other modes.

Telecommuting and Remote Work

A growing number of area residents are working from home. The latest estimates from the U.S. Census bureau show that approximately 7% (5,402) of residents in the MPO area work from home. A 22% increase since 2010. This accounts for a higher percentage that people who biked and used transit to get to work combined. This data is further supported by a national Gallup survey which found 43% of employees nationally spent at least some time working from home . There are a number of factors that have contributed to an increase in telecommuting. More employers are encouraging workings to telework and advances in technologies have made it more practical. Growth has been strongest in the professional and high-tech sectors.

It is expected that the teleworking trend will continue in the region. With the arrival for 5g cellular technologies and an expansion in rural broadband services. A grater number of residents will have the option to work from home, at least part time.

Sustainable and Resilient Transportation Systems

Resiliency is an increasingly important aspect of planning efforts. Climate change raises important questions about adapting infrastructure for an environment that may have different precipitation or temperature patterns than we experience today. For example, communities in our region, and nationally, have recently been confronted with increases in flooding. A sustainability approach to transportation planning in the twenty-first century will require attention to both resiliency and environmental protection.

The transportation sector has a variety of negative impacts on the environment. Vehicle use of gasoline contributes significantly to regional greenhouse gas emissions through the carbon dioxide emitted during travel. Albemarle County's recent climate action data collection demonstrated that in the year 2000, the transportation sector was responsible for 52% of greenhouse gas emissions in the county, the largest share of emissions by sector, followed by residential uses (27%) and commercial uses (11.5%). The roads that vehicles use are mostly made up of impervious surfaces which increase runoff and pollution of waterways. Making connections between transportation planning and environmental planning can help mitigate these negative impacts.

Strategies that could reduce regional greenhouse gas emissions include increasing public transit frequency and routes; building bicycle and pedestrian infrastructure; and encouraging ride sharing. Many of these strategies involve changing resident behavior to reduce the number of vehicle trips. Strategies should substantively involve citizens to successfully reduce regional greenhouse gas emissions.

Conclusion

Transportation planning currently involves a great deal of uncertainty. The reasons for this uncertainty range from technological innovations to an increasing need for a transportation system that is sustainable and resilient. This was considered as projects were evaluated for inclusion in the LRTP.

Chapter 6:
Transportation Deficiencies Overview

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Transit and Rail . . . . . .
Bicycle and Pedestrian . . . . . .
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Figure 6-8. 2045 Employment Access to Pedestrian Facilities

Overview

Developing a plan for improving any aspect of the community must start with identifying what elements of the community's system are deficient. For this plan, MPO staff examined how the region's future transportation system would function if no future improvements were planned beyond projects included in the State's Six Year Improvement Program (SYIP) or proffered from local developers. Through this process, MPO staff, working with the MPO Committees, identified infrastructure that is expected to be incomplete or insufficient by 2045. All maps consider the 2045 community condition. That is, the analysis for each mode considers the population total and distribution for 2045; the employment total and distribution for 2045; and the road network for 2045 (i.e. projects that are not yet built, but will be by 2045). This analysis initiates the process of determining which projects need to be considered and analyzed as part of the LRTP update. Transportation deficiencies were divided into three categories:

- Roads and Freight
- Transit and Rail
- Bicycle and Pedestrian

Roads and Freight

Roads

The majority of the traffic in the MPO travels via the region's roadway system. Over time, as the Charlottesville-Albemarle region grows, an increasing number of people are expected to use this system, constraining its capacity and resulting in congestion and delays. To ascertain how congested the road system would likely be in the year 2045, the MPO used its Travel Demand Model to forecast where demand on the system is expected to exceed system capacity.

The 2045 Travel Demand Model identifies these congested areas by calculating a Volume-to-Capacity ratio. The ratio indicates the volume of traffic expected on the road, compared with the capacity the roadway can accommodate. Roadways that are approaching capacity, or are over capacity are considered to be deficient. These roads are mapped in Figures 6-1 and 6-2, showing roads that are expected to experience "Minor Congestion" or "Congested." The MPO used VDOT's volume to capacity ratio standards to define minor congestion and congestion.

» *Minor Congestion*

Roads approaching capacity are those with a Level of Service (LOS) E, which indicates that between 85% and 100% of the road's capacity is being used. These roads are expected to experience minor congestion. That is to say, they will be congested during rush hour travel and should operate at free flow conditions during other times of the day.

» *Congested*

Roads over capacity are those with a LOS F, which indicates that the roadway is expected to carry more volume than it was built to handle. These roads are expected to be congested throughout the day.

» *Significance of the Congestion Maps*

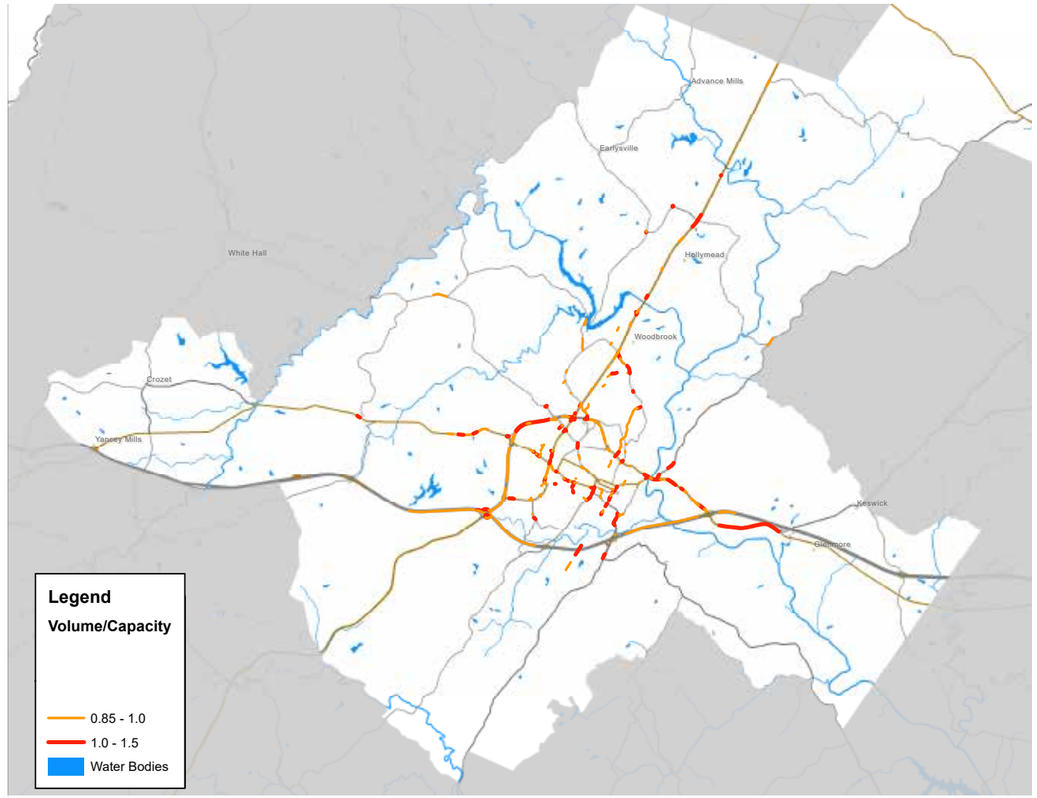
The level of congestion of the transportation system in the 2045 Base Scenario was mapped for two purposes. First, it was used to identify which areas would likely need improvements to reduce congestion and function more efficiently in the future. Secondly, it served as a base, against which each scenario could be compared as they were developed and analyzed.

Freight

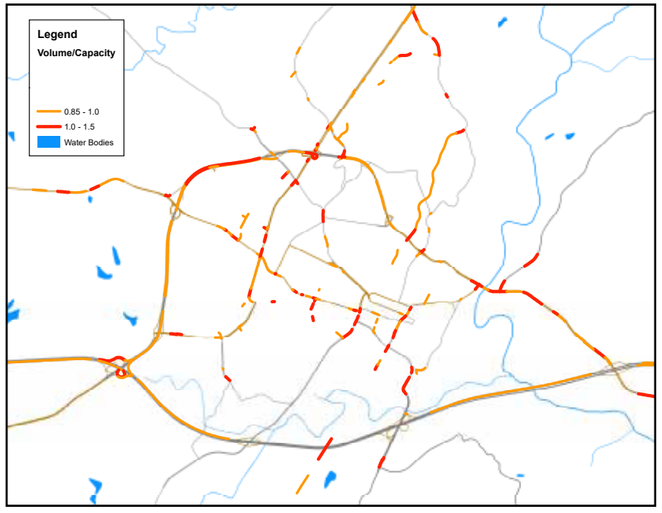
The issue of freight movement throughout the region, while important, is not an overriding concern for regional mobility at this time. As mentioned in Chapter 2 (Existing Conditions), the key freight corridors in the region are Interstate 64 and US 29. Both routes are susceptible to congestion issues that affect general traffic mobility concurrent with any freight movements.

Freight movement along rail corridors is also not currently a prevalent regional traffic concern. At this time, rail freight movement in the region travels through the area to destinations outside the MPO's boundaries. While facilitating the movement of goods throughout the region is a priority discussed in Chapter 4, it is not as prominent in the Charlottesville-Albemarle MPO as it is for other MPOs.

2045 Regional Congestion (Figure 6-1)



2045 Local Congestion (Figure 6-2)



Transit and Rail

Transit

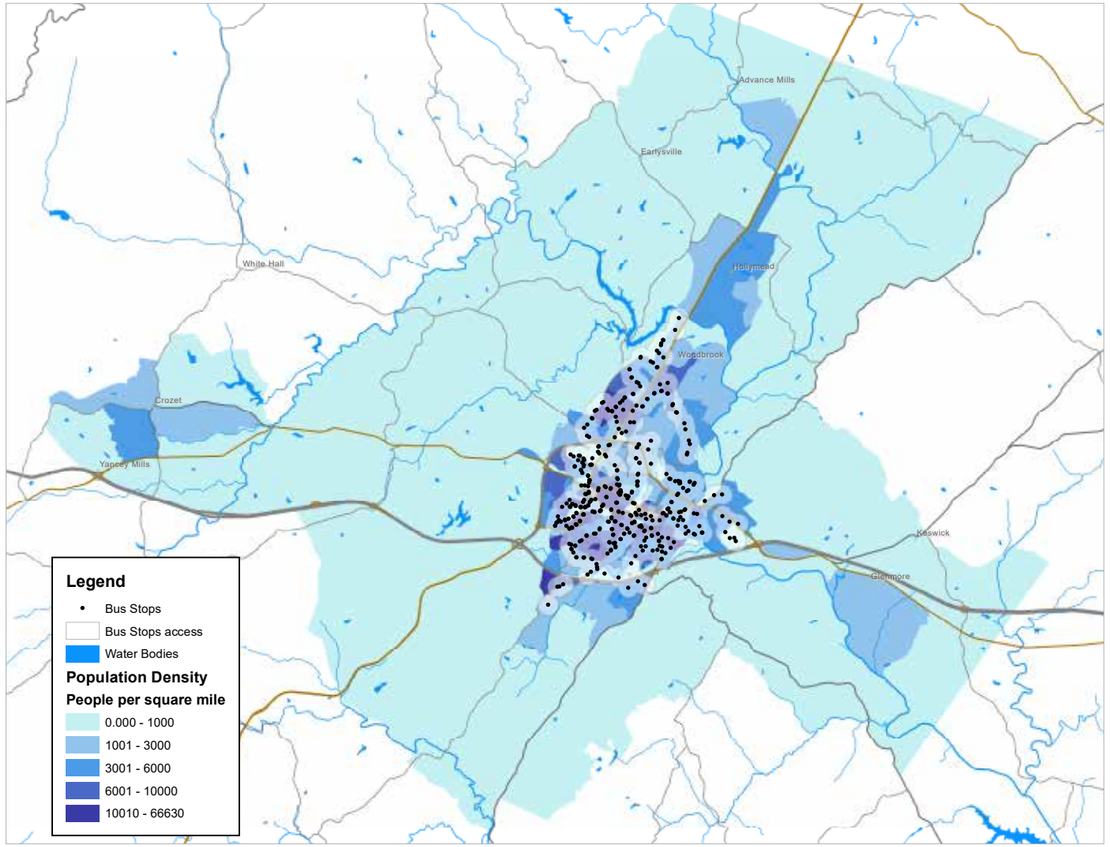
The MPO's transit system is relatively robust compared to other small regions in the state. As discussed in Chapter 2 (Existing Conditions), three transit entities serve the MPO: Charlottesville Area Transit (CAT), run by the City of Charlottesville with additional contributions coming from Albemarle County; University Transit Service (UTS), run by the University of Virginia; and JAUNT, a para-transit service provider for several contiguous counties in the region including the City of Charlottesville and Albemarle County. To determine transit deficiencies in the region, MPO staff was only able to consider transit services that had official bus stops: CAT and UTS.

» Transit Accessibility to Population and Employment Maps

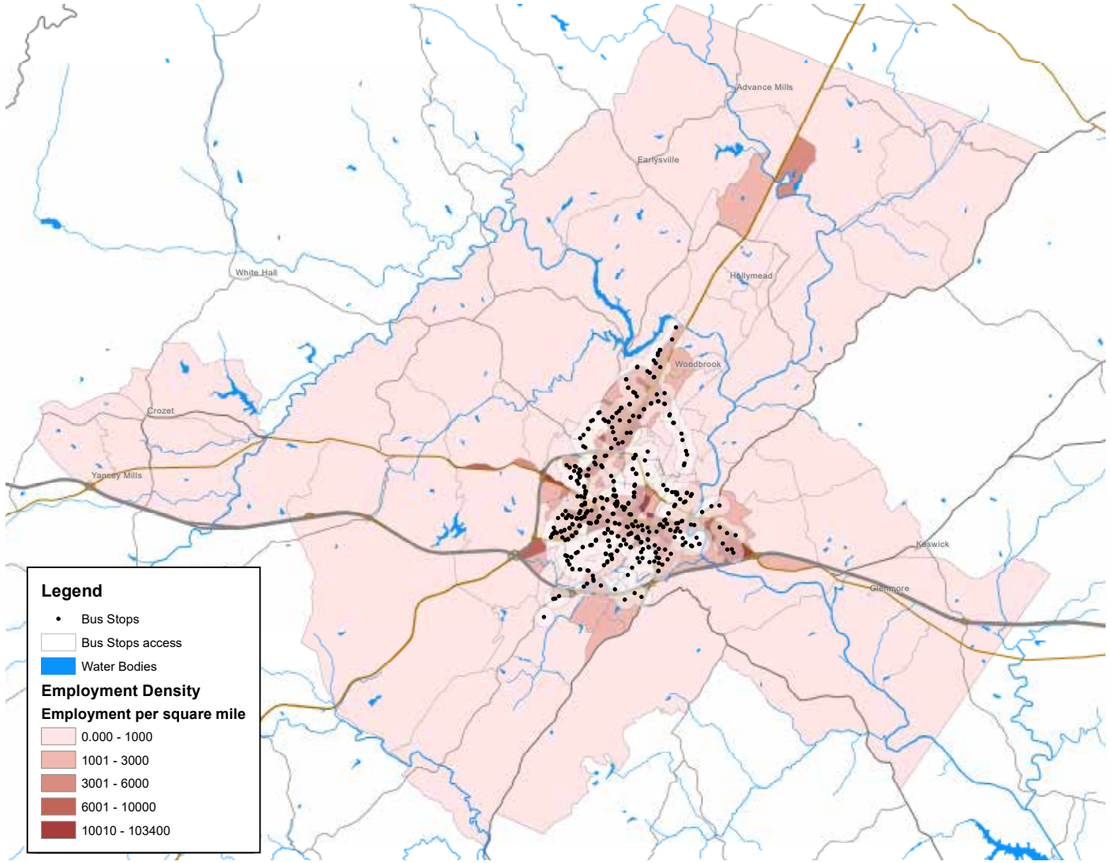
The travel demand model's 2045 population and employment data was used to map the population and employment densities forecast for each zone. Dark shades of blue indicate densely populated zones, while light shades of blue indicate sparsely populated zones. (Refer to Figure 6-3). Similarly, dark shades of red indicate zones with considerable employment opportunities, while light shades of red indicate zones with few employment opportunities. (Refer to Figure 6-4). The existing bus stop locations for UTS and CAT only were added to the maps, as JAUNT does not operate on a fixed service, and future bus stop locations for 2045 cannot be anticipated. The existing bus stops for UTS and CAT were buffered using a one-quarter mile radius, and the population or employment within a one-quarter mile buffer of transit stops was calculated to determine what percentage of the population or employment in 2045 would have access to transit.

Within the MPO, approximately 47% of the population and 71% of employment opportunities are located within a one-quarter mile radius of a bus stop. This means that driving is typically the only viable transportation option. These maps are useful for identifying the general areas that would benefit from additional transit service. Darker shaded areas without bus stops indicate areas where expanded service is expected to perform well due to the high concentration of residents or employment opportunities in these areas.

2045 Population Access to Transit (Figure 6-3)



2045 Employment Access to Transit (Figure 6-4)



Rail

In reviewing regional rail service, it is clear that additional service is important; particularly early morning service that supports business travel between the region and Washington D.C. and other areas in the northeast corridor. As noted in Chapter 2, an evaluation by Amtrak indicated that the current station does not have the recommended space and capacity to handle the high passenger volumes using the station. Passenger rail service, while important for the region, is not a mode that can be fiscally-constrained within the LRTP process.

Bicycle and Pedestrian

The MPO's bicycle and pedestrian network, while robust, is not a viable transportation option for most of the 2045 MPO's population and employment base. This analysis evaluated bicycle and pedestrian accessibility using the existing extent of this network.

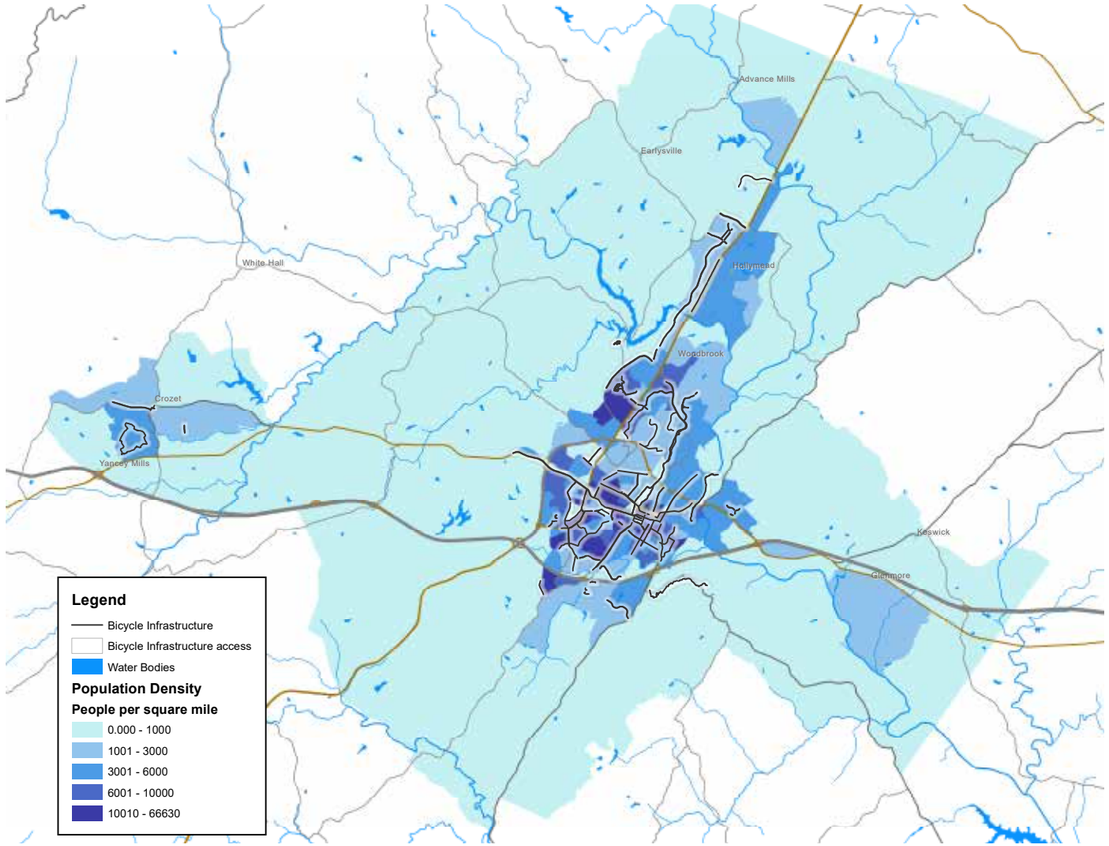
Bicycle

The MPO's bicycle network includes bike lanes, shared use paths, and shared roadway facilities. The analysis focuses on actual, designated bicycling facilities and does not focus on areas that do not have these facilities, but are in fact bikeable due to the nature of the roadway.

» Bicycle Accessibility to Population and Employment Maps

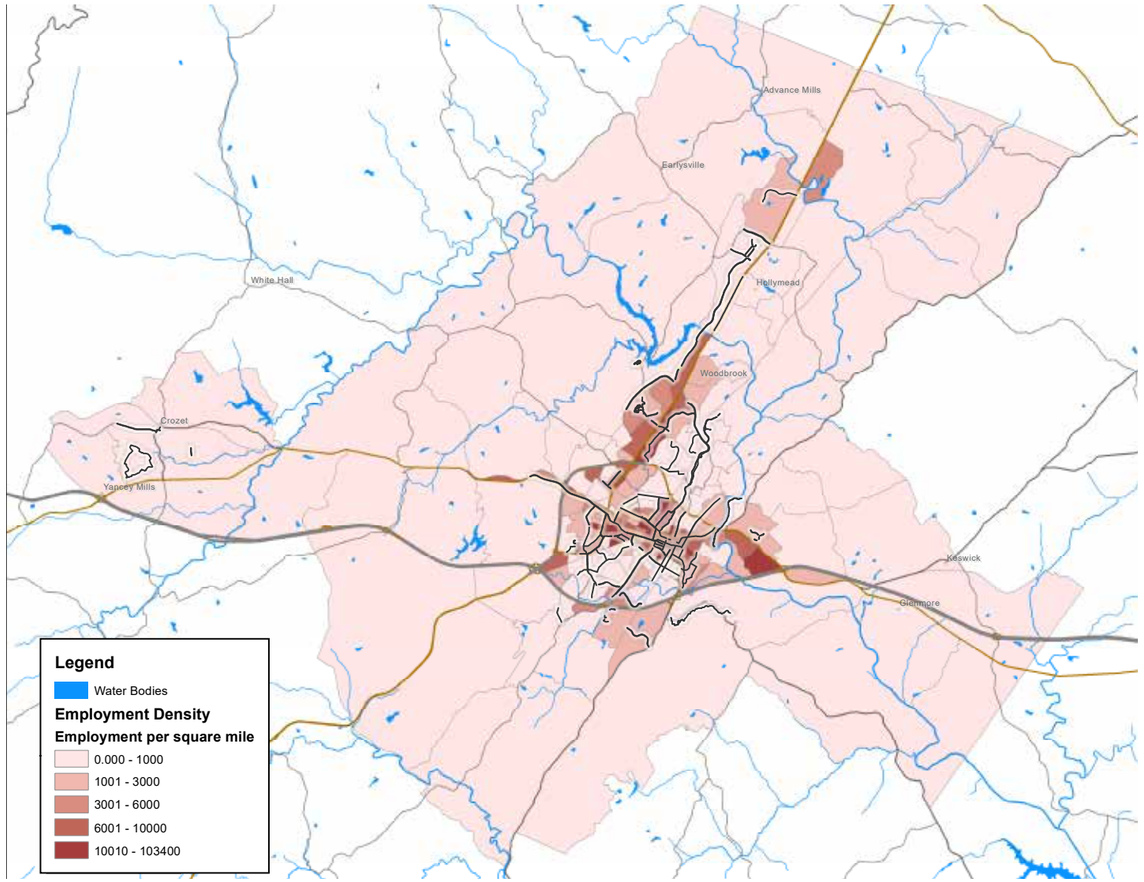
The travel demand model's 2045 data was used to map the population and employment densities forecast for each zone. Dark shades of blue indicate densely populated zones while light shades of blue indicate sparsely populated zones. (Refer to Figure 6-5). Similarly, dark shades of red indicate zones with considerable employment opportunities while light shades of red indicate zones with few employment opportunities. (Refer to Figure 6-6). Existing bicycle facilities were added to each map (thin black lines).The bicycle facilities were then buffered using a distance of five hundred feet. The population or employment within five hundred feet of bicycle facilities was calculated to determine what percentage of the population or employment opportunities in 2045 would have bicycle access.

2045 Population Access to Bike Facilities (Figure 6-5)



Within the MPO, approximately 29% of the projected population and 47% of employment opportunities are located within five hundred feet of a bicycle facility. However, regional biking tends to be limited to smaller zones due to barriers that prohibit bicycling beyond these areas. These maps are useful in identifying the general areas that would benefit from improved connectivity.

2045 Employment Access to Bike Facilities (Figure 6-6)



Pedestrian

The MPO's pedestrian network includes sidewalks and walkable areas, such as the Downtown Pedestrian Mall. This analysis focused on access to this specific walkable network.

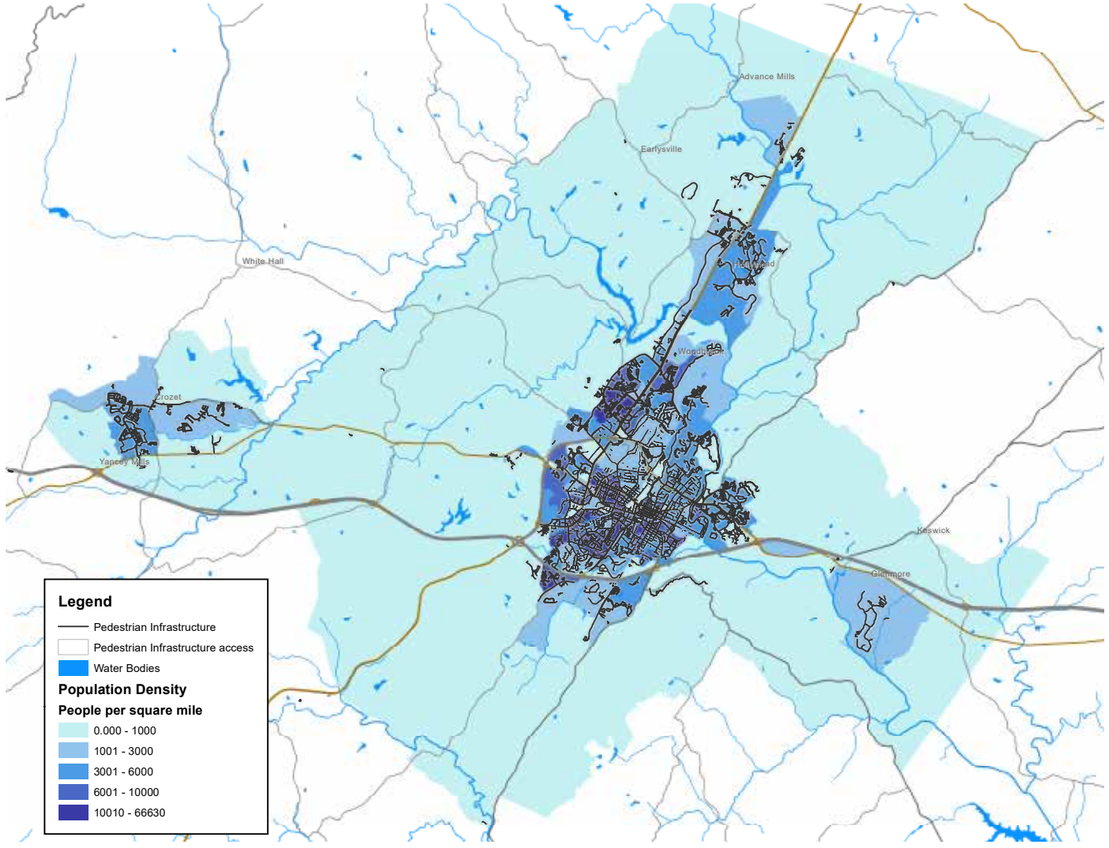
» *Pedestrian Accessibility to Population and Employment Maps*

The travel demand model's 2045 population and employment data was used to map the population and employment densities forecast for each zone. Dark shades of blue indicate densely populated zones, while light shades of blue indicate sparsely populated zones. (Refer to Figure 6-7). Similarly, dark shades of red indicate zones with considerable employment opportunities, while light shades of red indicate zones with few employment opportunities. (Refer to Figure 6-8).

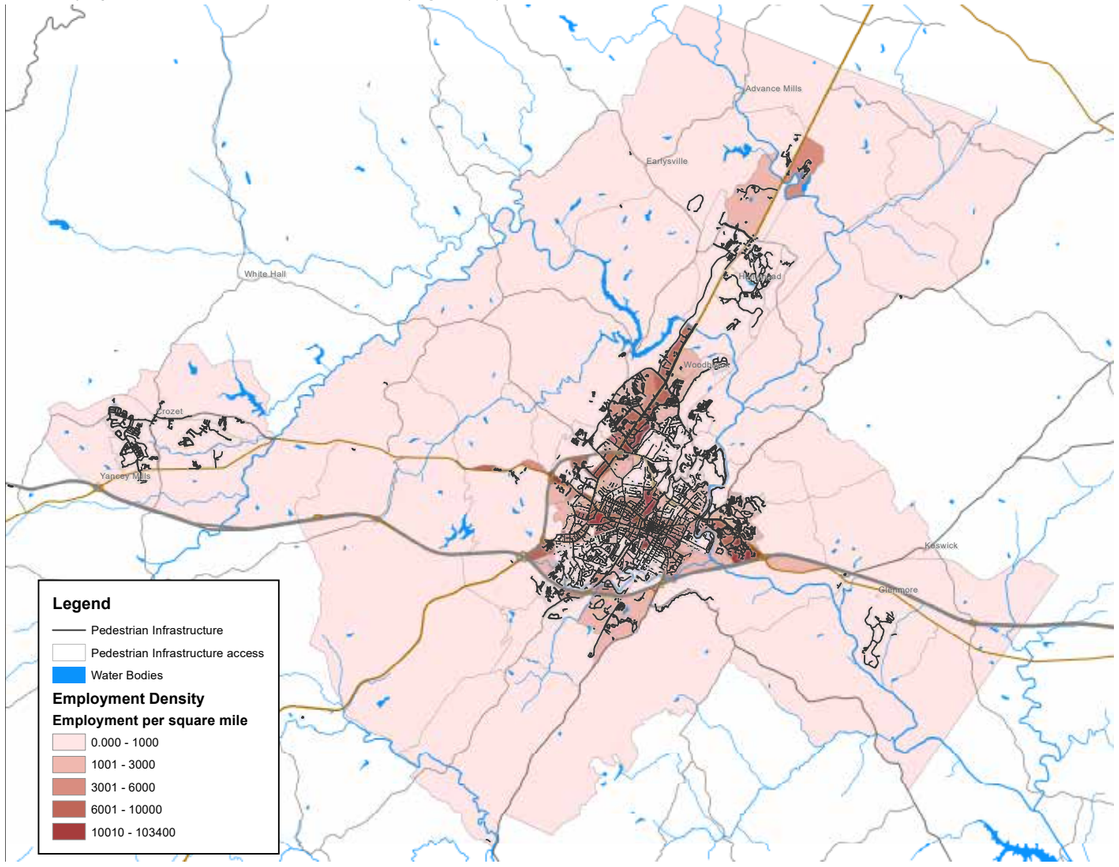
The existing pedestrian facilities were added to the maps and then buffered using a distance of two hundred feet. The population or employment within two hundred feet of pedestrian facilities was calculated to determine what percentage of the population or employment opportunities in 2045 would have access to a sidewalk or walkable area.

Within the MPO, approximately 46% of the population and 60% of employment opportunities are located within two hundred feet of a pedestrian facility. The regional pedestrian network, while extensive, is missing links or extensions that would make the network more effective for the region. These maps are useful in identifying the general areas that would benefit from improved pedestrian connectivity. Darker shaded zones that lack pedestrian facilities indicate areas where an improvement to connectivity is expected to be valuable.

2045 Population Access to Pedestrian Facilities (Figure 6-7)



2045 Employment Access to Pedestrian Facilities (Figure 6-8)



Conclusion

The Transportation Deficiency Analysis provided the MPO with a starting point for considering the most vital and beneficial regional transportation improvements to be considered for the 2045 Long Range Transportation Plan. From this analysis, staff learned that roadway improvements need to be targeted at key locations throughout the region such as the US 29/US 250 Bypass or US 250 at Pantops and Shadwell. Regarding transit improvements, the ongoing work of the Regional Transit Partnership will be valuable in identifying priorities for the transit system. As part of the Jefferson Area Bicycle and Pedestrian Plan, staff determined that access via bike facilities is limited by significant barriers prohibiting connectivity, despite reasonable access to facilities within the urban core. Likewise, staff established that the pedestrian network is missing key links that could provide greater accessibility.

Staff used this information, along with recommendations from other plans, to develop an initial list of proposed roadway, transit, bicycle, and pedestrian projects targeted at improving these areas. Potential roadway and transit projects were modeled to evaluate their potential impacts and benefits for the community. These projects are discussed further in Chapter 7. Bicycle and pedestrian projects were taken from the 2019 Jefferson Area Bicycle and Pedestrian Plan. Intersection and Bridge projects were identified based on VDOT and locality evaluations. These projects are discussed further in Chapter 8.