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

Agenda
MPO CTAC
Wednesday, July 21st, 2021 @ 7:00 p.m.
Virtual Meeting via Zoom

https://us02web.zoom.us/j/81623462451?pwd=TnYzL2ZUTWRERjNwUDM2eEo1UDYzZz09
Password: 100374

Item	Time	Description
0	7:00-7:05	**Attendance and Emergency Statement**
1	7:05-7:07	**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 – limit three minutes per speaker*
2	7:07-7:10	**Approval of draft meeting minutes*** • See **March 2021 CTAC Minutes DRAFT**
3	7:10-7:20	**Future meeting topics and questions** *CTAC members can ask questions of staff; CTAC members can raise potential discussion topics for future agenda items*
4	7:20-7:35	**Electronic Meeting Policy* - Sandy Shackelford (CAMPO)** • See **CTAC Remote Participation Memo** • See **CTAC Remote Participation Policy**
5	7:35-7:55	**Electric Vehicle Report – Lucinda Shannon (CAMPO)** • See **Electric Vehicle Report** • See **EV Presentation Slides**
6	7:55-8:25	**Smart Scale Application Recommendations* - Sandy Shackelford (CAMPO)** • See **July MPO Smart Scale Memo** • See **July MPO Smart Scale Presentation**
7	8:25-8:30	**Additional Matters form 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 – limit three minutes per speaker*

** A recommendation to the Policy Board and/or vote is expected for this item*

Upcoming Meetings:
MPO Tech Committee (3rd Tuesday): September 21st at 10am
MPO Policy Board (4th Wednesday): July 28th at 4pm
MPO CTAC (3rd Wednesday): September 15th at 7pm

NOTICE of ELECTRONIC MEETING:

This meeting of the Citizen Transportation Advisory Committee is being held pursuant to Code of Virginia § 2.2-3708.2, which allows a public body to hold electronic meetings when the locality in which it is located has declared a local state of emergency, and the catastrophic nature of the emergency makes it impracticable or unsafe to assemble a quorum in a single location, and the purpose of the meeting is to provide for the discharge of its lawful purposes, duties, and responsibilities.

This meeting is being held via electronic video and audio means through Zoom online meetings and is accessible to the public with closed captioning and there will be an opportunity for public comment during that portion of the agenda.

Notice has been provided to the public through notice at the TJPDC offices, to the media, web site posting and agenda.

The meeting minutes will reflect the nature of the emergency, the meeting was held by electronic communication means, and the type of electronic communication means by which the meeting was held.

A recording of the meeting will be posted at www.tjpdc.org within 10 days of the meeting.

Charlottesville-Albemarle Metropolitan Planning Organization
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Citizen Transportation Advisory Committee

Draft Meeting Minutes: May 19, 2021

Committee – Voting Members (Present)

Chair – Tristan Fessel (Albemarle County)
Vice Chair – Stuart Gardner (MPO)
Daniel Bailey (Albemarle County – Planning Commission)
Lucas Beane (City of Charlottesville)
Donna Chen (MPO)
Nicholas Garber (Albemarle County)
Patrick Healy (City of Charlottesville)
Ray Heron (City of Charlottesville)
Lee Kondor (Albemarle County)
Marty Meth (Albemarle County)
Travis Pietila (MPO)

Voting Members (Absent)

Gary Heaton (City of Charlottesville – Planning Commission)
Joseph French (City of Charlottesville)

Staff (Present)

Chuck Proctor – VDOT
Jessica Hersh-Ballering – TJPDC/CAMPO
Lucinda Shannon – TJPDC/CAMPO
Sandy Shackelford – TJPDC/CAMPO

Call to Order

The virtual meeting (held on the Zoom platform) was called to order by Stuart Gardner at 7:02pm.

Matters from the Public

There were no matters from the public.

Approval of March 17th 2021 Meeting Minutes

Marty Meth moved to approve the March meeting minutes. Lee Kondor seconded the motion. The motion passed.

Future Meeting Topics and Questions

Marty Meth requested to accept member Lee Kondor's offer to present to CTAC on roundabouts and requested that there also be a presentation from VDOT staff on the same topic.

Travis Pietila requested a presentation on the results of the electric vehicle study.

Unified Planning Work Program (UPWP) FY22– Sandy Shackelford (CAMPO)
Sandy Shackelford shared the UPWP draft and explained the next steps in the approval process. The committee discussed the UPWP draft and shared their feedback for the MPO Policy Board. This agenda item begins at 9:33.

Smart Scale Update and Discussion – Sandy Shackelford (CAMPO)
Sandy Shackelford described the process by which the MPO chooses the projects for which it will apply for Smart Scale funding, specifying what makes projects eligible and competitive. Sandy described all of the projects that had been identified by City of Charlottesville, Albemarle County, and CAMPO staff as potential MPO applications.

Lee Kondor described the two projects he submitted as additions to the staff-identified potential projects. CTAC members asked questions and offered feedback on these submissions.

Sandy Shackelford determined that CTAC wanted all staff-identified projects and the additional two projects submitted by the CTAC member to be brought to the MPO Policy Board for consideration.

This agenda item begins at 32:38.

Staff Updates – Jessica Hersh-Ballering (TJPDC/CAMPO)
Jessica Hersh-Ballering described the two DRPT-funded transit grants in process. She described recent tasks completed and highlighted next steps. This agenda item begins at 1:27:40.

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

The meeting was adjourned at 8:37 PM.

Thomas Jefferson Planning District Commission

Regional Vision ▪ Collaborative Leadership ▪ Professional Service

MEMO

To: Regional Transit Partnership

From: David Blount, Deputy Director

Date: June 24, 2021

Re: Remote Electronic Participation in Meetings Policy

Purpose:
To consider adoption of a CTAC policy allowing members to participate in meetings by electronic communication means.

Background:
The Virginia Freedom of Information Act, at § 2.2-3708.2 of the *Code of Virginia*, permits individual members of a public body to participate in a public meeting through electronic participation. Such participation is authorized only if the public body has adopted a written policy allowing for and governing participation of its members by electronic communication means, including an approval process for such participation. Consistent with state enabling provisions, the Citizen Transportation Advisory Committee began allowing meetings to be held without the physical presence of members during the declared state of emergency. However, the Citizens Transportation Advisory Committee has not yet adopted a policy, as enabled in 2018, to authorize remote participation by individual members at meetings when a quorum is physically assembled.

Recommendation: Staff recommends that CTAC adopt the attached policy, titled Remote Electronic Participation, as authorized by subsection C of § 2.2-3708.2 of the *Code of Virginia*.

401 East Water Street ▪ Post Office Box 1505 ▪ Charlottesville, Virginia 22902-1505
Telephone (434) 979-7310 ▪ **Fax** (434) 979 1597 ▪ **Virginia Relay Users:** 711 (TDD) ▪ **email:** info@tjpdc.org ▪ **web:** www.tjpdc.org

REMOTE ELECTRONIC PARTICIPATION

This purpose of this policy is to provide for the Citizen Transportation Advisory Committee to permit a member to participate in a committee meeting through electronic communication means from a remote location, provided that:

A. Notification of Inability to Attend Because of Personal Matter, Disability, Medical Condition or Location.

On or before the day of the meeting, the member shall notify the Chair that he or she is unable to attend the meeting due to a personal matter; a temporary or permanent disability or other medical condition that prevents physical attendance; that a family member's medical condition requires the member to provide care for such family member; or that that such member's principal residence is more than 60 miles from the meeting location identified in the required notice for such meeting. The member must identify with specificity the nature of the personal matter.

B. Quorum Physically Assembled; Approval of Remote Electronic Participation.

A quorum of the Citizen Transportation Advisory Committee must be physically assembled at the primary or central meeting location. The Citizen Transportation Advisory Committee members present must approve of the remote electronic participation; however, the decision shall be based solely on the criteria in Section A, without regard to the identity of the member or items that will be considered or voted on during the meeting.

C. Record of Action.

The Citizen Transportation Advisory Committee's minutes shall reflect the specific nature of the personal matter; the disability or medical condition; the fact that a family member's medical condition that required the member to provide care for such family member, thereby preventing their physical attendance; or that such member's principal residence is more than 60 miles from the meeting location identified in the required notice for such meeting, as well as the remote location from which the absent member participated. If the absent member's remote participation is disapproved because participation would violate this policy, the disapproval shall be recorded in the Citizen Transportation Advisory Committee's minutes with specificity.

D. Audibility of Absent Member.

The Citizen Transportation Advisory Committee shall make arrangements for the voice of the absent member to be heard by all persons in attendance at the meeting location. If, for any reason, the voice of the absent member cannot reasonably be heard, the meeting may continue without the participation of the absent member.

E. Limitation on Remote Electronic Participation in Calendar Year.

Electronic participation by the absent member as provided in this policy shall not exceed two, or 25% of the meetings rounded up the next whole number, whichever is greater, Citizen Transportation Advisory Committee meetings in each calendar year.

(Authorized pursuant to *Code of Virginia* § 2.2-3708.2)

Electric Vehicle Charging Station Study

Thomas Jefferson Region

ABSTRACT

This study identifies means to improving supports for the use of electric vehicles for area residents in the Thomas Jefferson Planning District Commission region—increasing transportation options, reducing fossil fuel emissions, and improving transportation infrastructure.

Thomas Jefferson Planning District Commission

Summer 2021

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Introduction

Local governments will be the first to respond to community needs precipitated by the effects of climate change and are uniquely posed to take a leadership role in charting a resilient future while reducing the impacts of climate change. In alignment with Virginia's goal to reduce greenhouse gas emissions by 30% in 2030 and reach net zero by 2050, the City of Charlottesville, Albemarle County, and University of Virginia have set emission reduction goals as well. Electric vehicle (EV) use is part of these plans to reduce emissions and mitigate climate change in the Charlottesville Albemarle area. While electric vehicles include hybrid electric vehicles, plug-in hybrid electric vehicles and battery electric vehicles, this study will focus on battery electric vehicles because they are the most reliant on charging infrastructure.

The objective of this study is to help the Thomas Jefferson Planning District Commission (TJPDC) region increase transportation options, reduce fossil fuel emissions, and improve transportation infrastructure by identifying means to improving supports for the use of electric vehicles for area residents. This report provides a background for the local and global need to reduce greenhouse gases, confirms how the use of electric vehicles is one step towards this goal, and reports the number of electric vehicles and charging infrastructure in the TJPDC region. The final sections explore factors that affect EV adoption and use, and shares examples other communities use to support the growth of EV use.

Background

As the effects of climate change continue to tax the global community and TJPDC area with more frequent extreme weather events and diminished public health, national and local governments are looking for ways to mitigate climate change by reducing greenhouse gas emissions. Transportation is one of the largest contributors to emissions in our region and supporting alternatives to traditional gas fueled vehicles is identified as a strategy to reduce contributions to greenhouse gases.

Rising temperatures are identified as a measure of the severity of climate change and have been well documented by the United States government and scientists globally for over 70 years. The Intergovernmental Panel on Climate Change (IPCC) links rising global temperatures to greenhouse gasses produced by human activities and predicts significant long-term effects including rising temperatures, increased drought, and more extreme weather events. (NASA, 2020) July 2020 was the hottest recorded in the Northern Hemisphere since records began in 1951. In fact, the last six July's have been the hottest recorded global temperatures on record. (US Department of Commerce, 2020) The City of Charlottesville, Albemarle County, and the University of Virginia have all proactively taken steps to support initiatives to reduce greenhouse gas emissions, including supporting the use of EVs.

Benefits of EVs

The Commonwealth of Virginia responded to the threat of global warming by committing to reducing statewide greenhouse gas (GHG) emissions by 30% by 2030 and to reach net zero by 2050. (Alena Yarmosky, 2020) The City of Charlottesville, Albemarle County, and the University of Virginia set similar goals to reduce carbon emissions in our region. While climate change is a global issue, local governments will be responding to the effects, such as more frequent and greater weather events, greater temperature extremes, and public health risks associated with a changing climate. (Centers for Disease Control and Prevention, 2019)

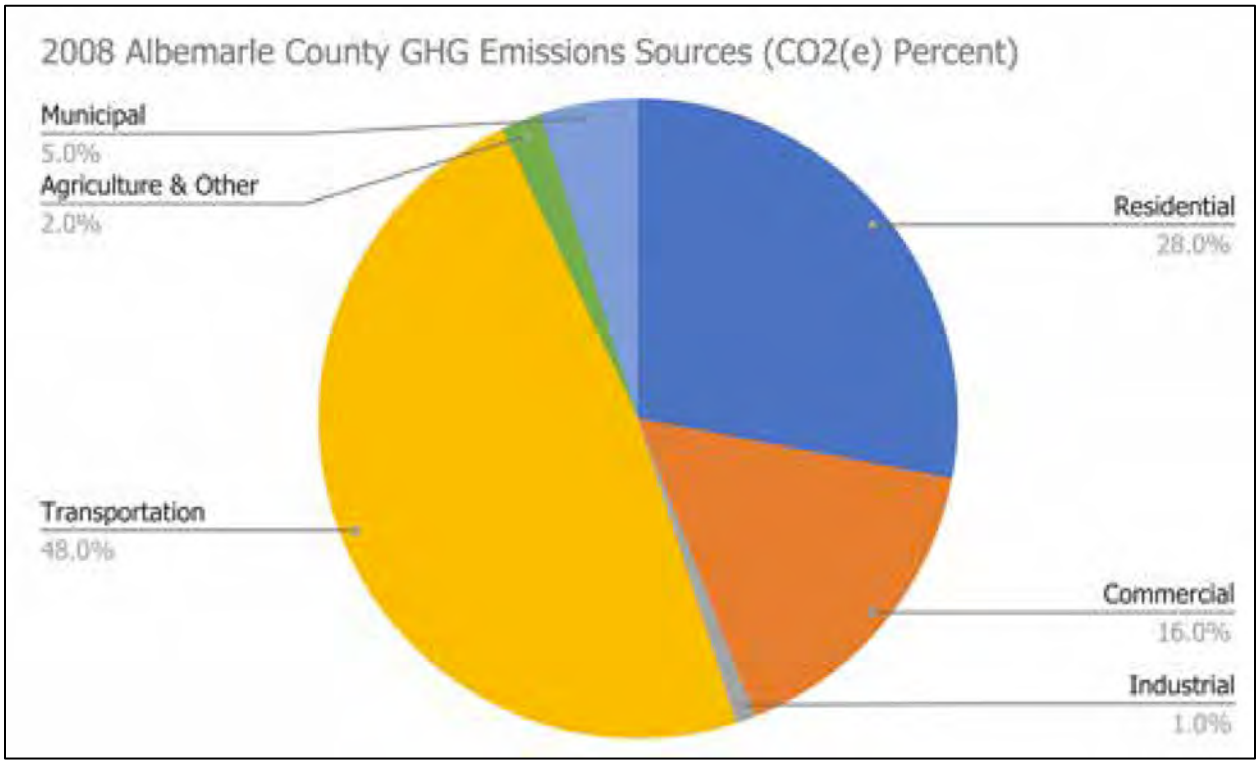
The Charlottesville area has been active in reducing their reliance on fossil fuels and emission reduction for several years. The Charlottesville City Council unanimously endorsed the US Mayors Climate Protection Agreement in 2006. Albemarle County's Board of Supervisors unanimously approved a Cool County Resolution in 2007 and in that same year, the University of Virginia solidified their commitment to reduce greenhouse gas emissions. (The LCAPP Steering Committee, 2011)

In 2009 the City of Charlottesville and Albemarle County assembled a committee of local representatives, including the University of Virginia to coordinate the community's response to climate change. They produced a report, titled Local Climate Action Planning Process (LCAPP), outlining a five-part framework to aid discussion and understanding of the region's energy use and help organize approaches and strategies to reach net zero by 2050. One of the recommendations in the Framework is to support the use of EVs by developing municipal and private sector guidelines for electric EV charging stations, parking, and incentives. (The LCAPP Steering Committee, 2011)

Albemarle County's 2008 inventory of greenhouse gas emissions[1], found that county's emissions were over 1.6 million tons carbon dioxide equivalent. When broken down by emission source, transportation accounted for almost half (48%) of the emissions of greenhouse gasses in the county. The City of Charlottesville's percentage of emissions for transportation was slightly less, but still accounted for the greatest emission source. (The LCAPP Steering Committee, 2011) Figure 1, copied from Albemarle County's Climate Action Plan Phase One illustrates the other emission sources in the county, including residential as the second highest source at 28%. (Albemarle County, Winter 2020)

[1] The measurements used included the total amount of all GHGs (expressed as an equivalent amount of CO2) generated to produce the energy needs of the community – whether the energy use is derived from fossil fuel combustion directly (such as by driving a gas vehicle) or indirectly (such as by using electricity generated by a natural gas-fired power plant) –minus the amount of GHGs sequestered within the community due to new practices that draw down carbon out of the atmosphere, like planting new trees (afforestation) and regenerative agriculture.

Figure 1: GHG Emissions Sources in Albemarle County



Source: Albemarle County Climate Action Plan Phase One

The City of Charlottesville has taken steps to reduce greenhouse gas emissions. The City Council Vision 2025: A Green City and Comprehensive Plans include actions to mitigate climate change on a local level. The City conducted greenhouse gas inventories in 2000, 2013, 2016, and 2018 finding that in 2016 greenhouse gas emissions were reduced by 23% since their baseline inventory in 2000. (City of Charlottesville, 2019)

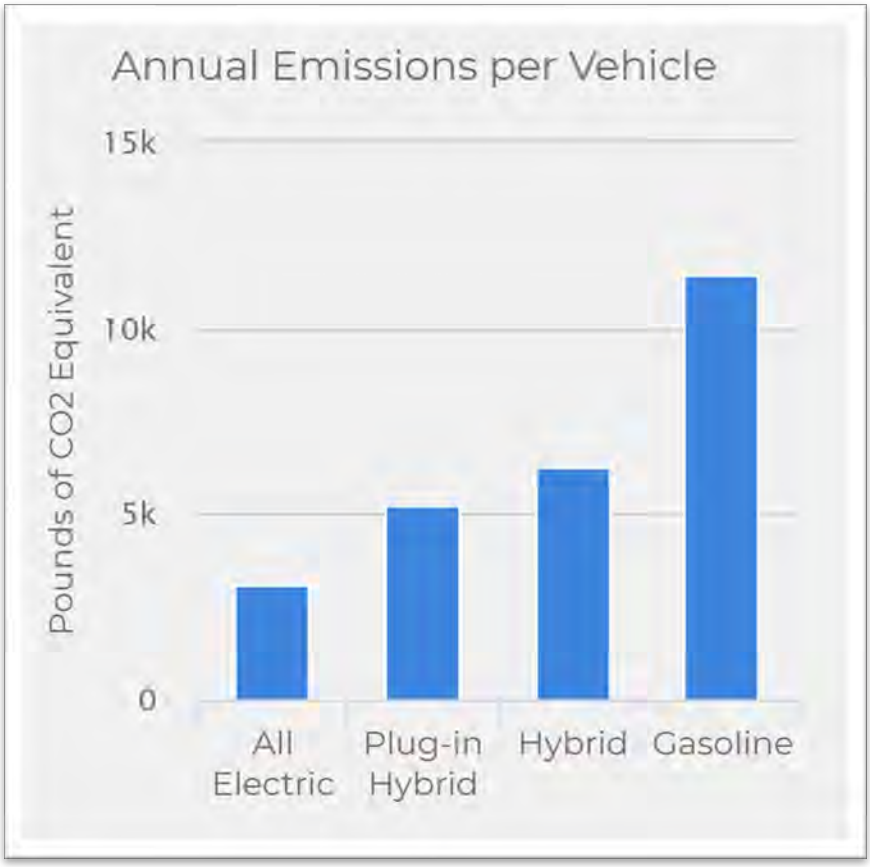
The US Department of Energy estimates that EV's in Virginia produce almost 70% less CO2 emission than traditional gas-powered vehicles. In Virginia, EV's generate approximately three thousand pounds of CO2 equivalent emissions per year per vehicle compared to gasoline powered vehicles which produce approximately eleven thousand pounds of CO2 equivalent annual emissions per vehicle. This amount was calculated using the "Well-to-wheel"[2] method for calculating emissions for vehicle miles traveled. This includes the emissions generated by producing the electricity used to charge EVs, assuming they are not being charged using renewable resources like solar and wind. (Energy, Emissions from Hybrid and Plug-In Electric

[2] "Well-to-wheel emissions include all emissions related to fuel production, processing, distribution, and use. In the case of gasoline, emissions are produced while extracting petroleum from the earth, refining it, distributing the fuel to stations, and burning it in vehicles. In the case of electricity, most electric power plants produce emissions, and there are additional emissions associated with the extraction, processing, and distribution of the primary energy sources they use for electricity production." (Energy, Emissions from Hybrid and Plug-In Electric Vehicles, 2020)

Vehicles, 2020)

Figure 2 illustrates estimated emissions based on fuel types used, including EV's, Plug-in Hybrid, Hybrid, and Gasoline vehicles based on average electricity sources in Virginia. As you can see, in Figure 2, EV's produce significantly less emissions than traditional gas-powered vehicles.

Figure 2: Comparison of Vehicle Emissions



Source: (Energy, Emissions from Hybrid and Plug-In Electric Vehicles, 2020)

Number of EVs in TJPDC

In 2020, there were 509 electric vehicles registered in the TJPDC region. According to projections, this number will continue to increase as the availability of EVs increase and purchase prices decrease. In addition, as the older EVs age there will be more used EVs available on the market, helping the purchase price decrease over the years.

Table 1 uses information gathered by Virginia Clean Cities from annual vehicles registration

data from the Virginia Department of Motor Vehicles to demonstrate the number of EVs registered in the TJPDC area over the past 12 years.

Table 1: Number of Electric Vehicles Registered in TJPDC Area

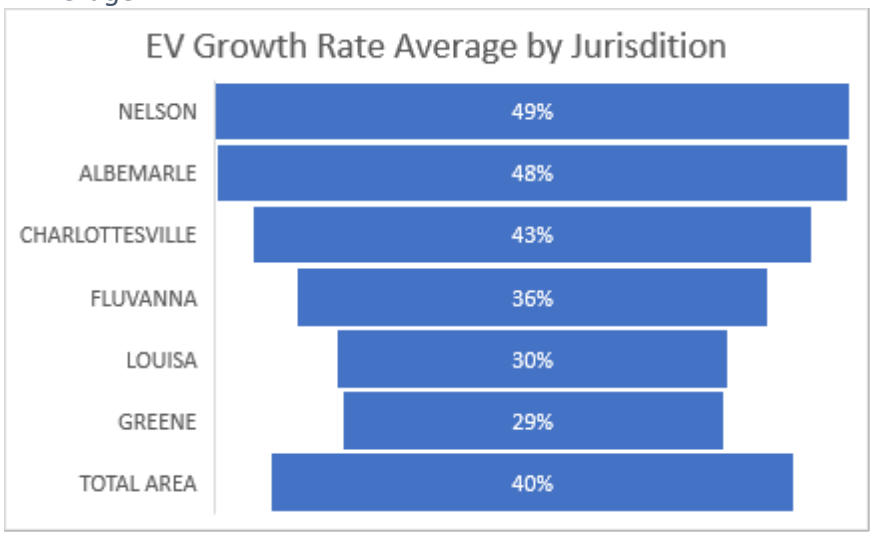
Jurisdiction	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ALBEMARLE	5	9	10	10	15	26	42	48	85	101	183	298
CHARLOTTESVILLE	3	4	8	8	10	12	17	18	28	49	84	119
GREENE	2	2	2	2	-	-	-	2	5	7	8	8
NELSON	-	1	1	1	1	1	1	2	5	6	15	25
FLUVANNA	2	4	5	3	3	3	5	3	5	6	14	23
LOUISA	3	4	6	7	4	5	6	6	9	15	21	36
Total	15	24	32	31	36	47	71	77	132	184	325	509

Source: Virginia Annual Vehicle Registration Data provided by Virginia DMV to Virginia DEQ each year

As seen in Table 1, the number of EVs in the TJPDC area has grown over the past twelve years. Based on the number of vehicles registered, EV registrations in the TJPDC area have grown between 30% and 49%. Figure 3 shows that while Albemarle County and the City of Charlottesville have the highest number of EVs, 298 and 119 respectively, Nelson County's EV registrations are growing at a faster rate. Virginia Clean Cities calculates the average growth for the state during 2008 to 2019 to be similar to TJPDC's EV growth, 39%.

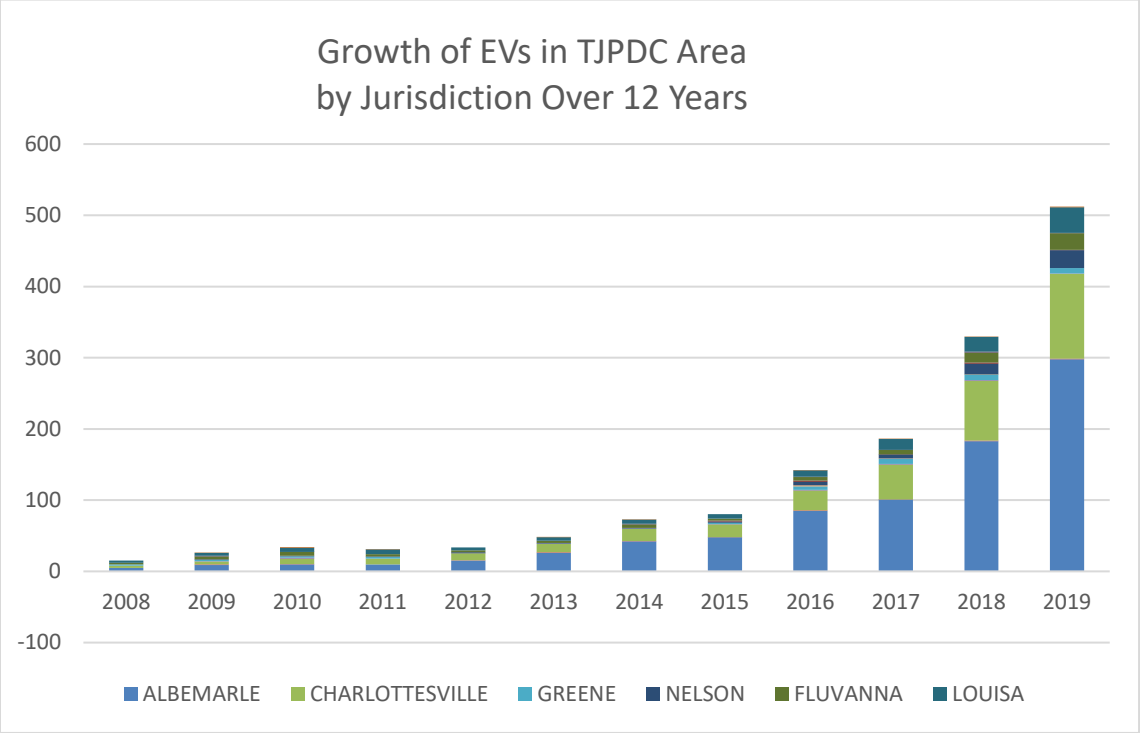
Figure 4 illustrates the EV registration growth over a period of 12 years, from 2008 to 2019, in the TJPDC region. Each bar on the *Growth of EVs in TJPDC Area by Jurisdiction Over 12 Years* chart is segmented to show the number of EV registrations for each jurisdiction by color.

Figure 3: Growth Rate by Jurisdiction, Weighted 12 Year Average



Source: Virginia Annual Vehicle Registration Data provided by Virginia DMV to Virginia DEQ each year

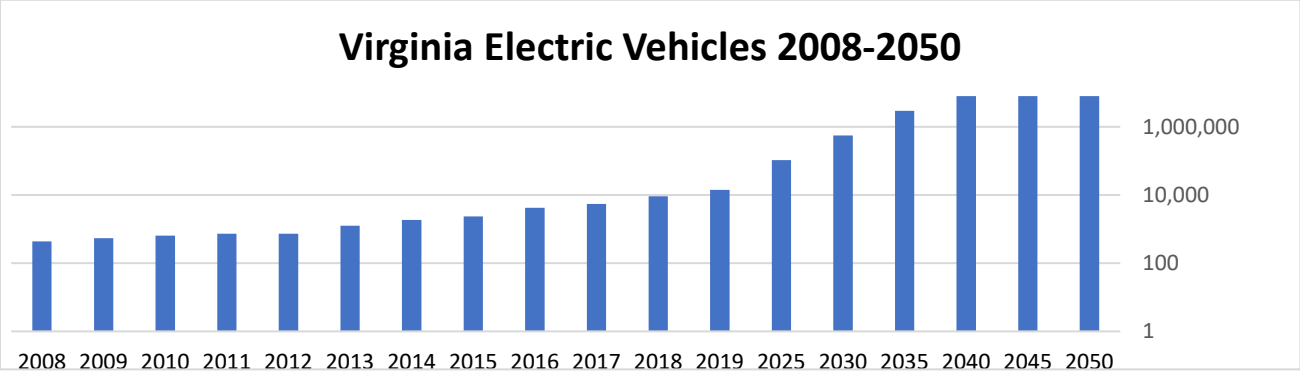
Figure 4: Historical EV Growth in TJPDC



Source: Virginia Annual Vehicle Registration Data provided by Virginia DMV to Virginia DEQ each year

Virginia Clean Cities used Annual Vehicle Registration Data from the Virginia DMV to project EV ownership growth over the next fifty years, estimating that by 2050, there will be eight million EVs in the commonwealth. Figure 5 illustrates the projected growth rate of EVs in Virginia.

Figure 3: Projected EV Population in Virginia



Source: Virginia Clean Cities

If current trends hold, there will be tens of thousands more electric vehicles on Virginia's roadways in the coming decades.

Infrastructure Supporting EVs in TJPDC Region

In their Climate Action Plan, Albemarle County recognizes that climate change has the potential to impact the county, its residents, and especially its agriculturally based businesses. Thus, threatening the local economy and rural character. Increasing public EV charging infrastructure is one of the strategies outlined in the county's plan to mitigate climate change. Two steps identified to increase EV charging stations are through local ordinances and policies encouraging new developments to include EV charging stations and explore partnerships and funding strategies to support EVs. (Albemarle County, Winter 2020)

As Charlottesville set goals to reduce greenhouse gas emissions by 45% by 2030 and to reach net zero by 2050, the city is also drafting its climate action plan. (Woods, 2020) The city reports that residents and visitors are requesting more public charging stations. The city is working to support EV use to provide more transportation options, lower transportation costs, reduce noise and air pollution, and greenhouse gas emissions for their residents. Access to public charging station in the city is especially important for people who live in apartments, condominiums and rental properties and cannot install a charging station at their homes. Public charging stations also support the businesses on the Downtown Mall through the installation of EV chargers near the mall for customers to dine and shop while their EVs are charging. (City of Charlottesville, 2020)

EV Charging Stations in the TJPDC Region

In 2020, there were 20 public EV charging stations in the TJPDC area. Most are in the City of Charlottesville (10) and seven are in Albemarle County. Greene County has no charging stations, Nelson, Louisa, and Fluvanna each have one. Table 2 illustrates the number of public charging stations in the TJPDC region by locality.

The City of Charlottesville supports EV drivers in the region through several initiatives, including the development and support of a publicly accessible EV charging network and educational events. The City maintains several web pages with information and resources to support EV users. In 2020, the City installed two DC Fast Chargers (City of Charlottesville, 2021) in their Water Street Parking Garage and has offered EV Charger Mini Grants since 2013. (City of Charlottesville, 2021) The EV Charger Mini Grant program helps private property owners install public EV charging stations. In 2019 they hosted an educational *Charlottesville Electrify Your Ride* event for EV owners and enthusiasts. (Charlottesville, 2020)

Table 2: Number of EV Charging Stations in TJPDC

Jurisdiction	# Stations	Jurisdiction	# Stations
ALBEMARLE	7	NELSON	1
CHARLOTTESVILLE	10	FLUVANNA	1
GREENE	0	LOUISA	1

Source: www.plugshare.com

Types of EV Charging Stations

EV charging stations or electric vehicle supply equipment (EVSE) comes in three major categories and can be tailored to different types of vehicles based on the vehicle model. The categories are based on the maximum amount of power the charger provides to the vehicle.

- Level 1: Does not require installation of additional charging equipment, it uses the typical 120 V AC plug and is used frequently by residents to charge their personal vehicles. Level 1 chargers deliver 2 to 5 miles of range per hour.
- Level 2: Requires the installation of additional charging equipment, it uses 240 V (residential) or 208 V (for commercial). Level 2 chargers deliver 10 to 20 miles of range per hour. These types of chargers are used in residential, public stations, and workplaces.
- DC Fast Charge: Requires instillation using specialized high-powered equipment, using 480 V AC to provide 60 to 80 miles of range in 20 minutes of charging. These stations are used mostly in public areas along heavy traffic corridors. (US Department of Energy, Energy Efficiency & Renewable Energy, 2020)

In addition to supporting residents who live in apartments and other housing types that do not support the installment of EV chargers, public chargers are needed to extend the range of the vehicles away from driver's homes—and to support lower range EVs such as plug-in hybrids that have an average range of 50 miles. At the moment, Clean Cities Virginia estimates that there are enough charging stations for ½ of 1% of EV trips in Virginia; if EV technology is going to effectively support the goal mitigating global carbon pollution, the number of EVs on the road needs to increase.

Table 3 and Figure 6 show the locations of public charging stations in the TJPDC region. Most of the public charging stations are in garages, primarily at hotels, the University, and City parking.

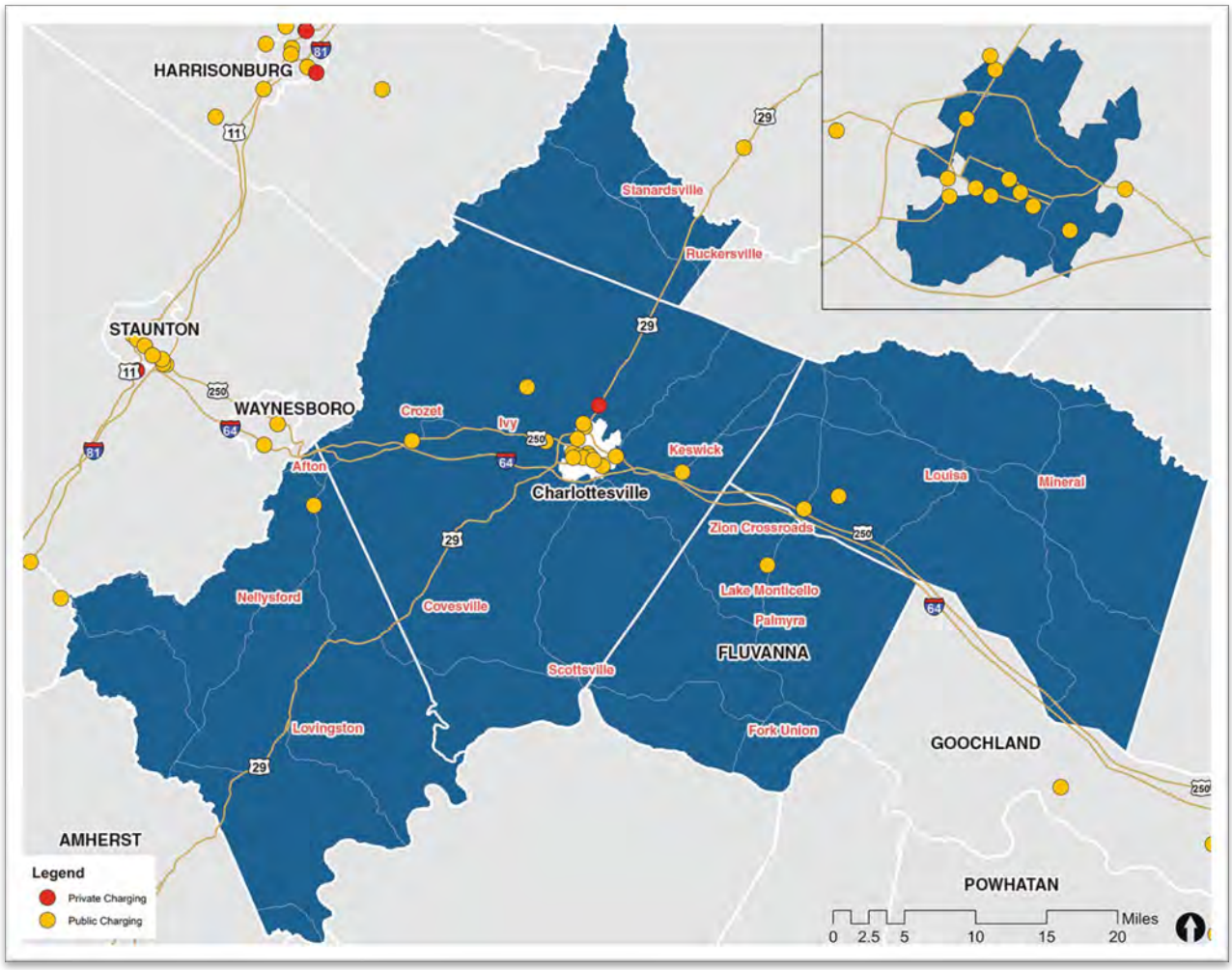
See next page

Table 3: Location of EV Charging Stations in TJPDC

EV Charging Station Locations			
Station Name	Street Address	County	EV Level EVSE Num
Colonial Nissan	200 Myers Dr	Albemarle	2
The Shops at Stonefield - Tesla Supercharger	2100 Hydraulic Rd	Albemarle	NA
Hyatt Place Charlottesville - Tesla Destination	2100 Bond St	Albemarle	3
Foxfield Inn, a Select Registry Property - Tesla Destination	2280 Garth Rd	Albemarle	2
BMW of Charlottesville	1295 Richmond Rd	Albemarle	2
Pro Re Nata Brewery - Tesla Destination	6135 Rockfish Gap Tpk	Albemarle	4
Keswick Hall & Golf Club - Tesla Destination	701 Club Dr	Albemarle	3
University of Virginia	400 Emmet St S	Charlottesville	1
Kardinal Hall	722 Preston Ave	Charlottesville	2
Graduate Charlottesville - Tesla Destination	1309 W Main St	Charlottesville	3
Boar's Head Inn - Tesla Destination	200 Ednam Dr	Charlottesville	3
The Flats at West Village - Tesla Destination	852 W Main St	Charlottesville	2
Oakhurst Inn - Tesla Destination	100 Oakhurst Cir	Charlottesville	2
Barracks Road Shopping Center	1117 Emmet St N	Charlottesville	NA
Martin Horn	210 Carlton Rd	Charlottesville	1
Omni - Charlottesville	212 Ridge McIntire Rd	Charlottesville	1
Water Street Garage	200 E Water St	Charlottesville	NA
TRAINING CENTER	1293 Salem Church Rd	Fluvanna	2
Prospect Hill Plantation Inn - Tesla Destination	2887 Poindexter Rd	Louisa	2
Afton Mountain Bed & Breakfast - Tesla Destination	10273 Rockfish Valley Hwy	Nelson	1

Source: www.plugshare.com

Figure 4: Charging stations in Charlottesville



Source: TJPDC

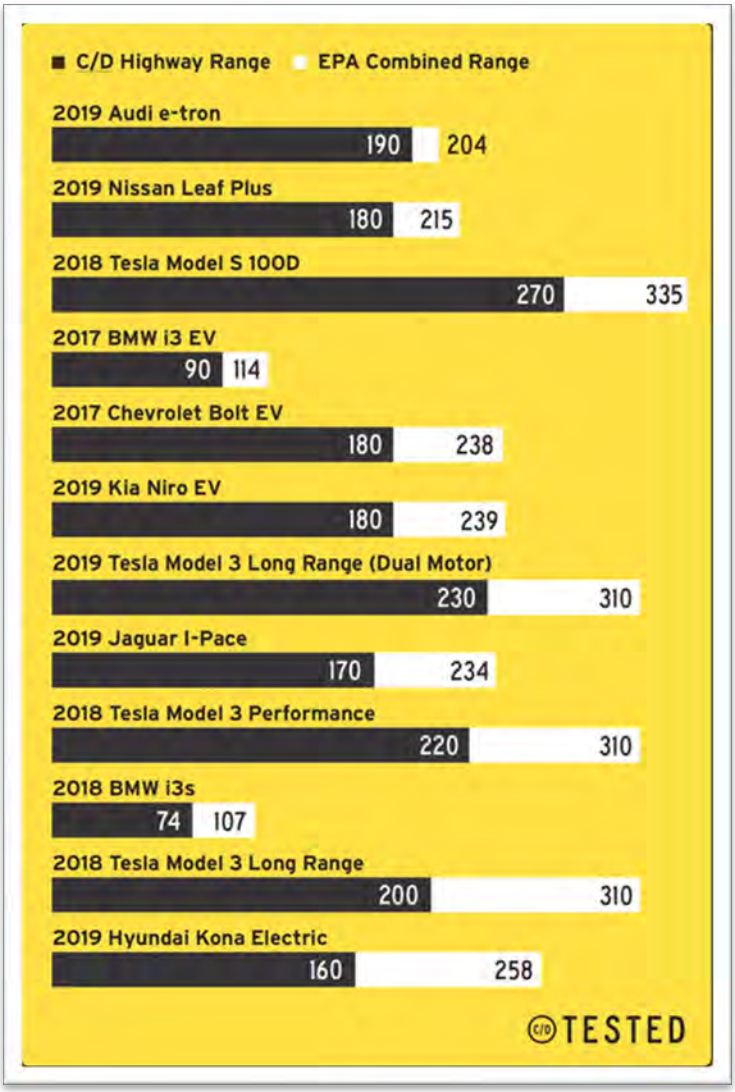
EV Range

Most EVs have to fill-up/re-charge twice as frequently as gas-powered vehicles. In their May 22, 2020 article, *EV Range: Everything You Need to Know*, Car and Driver Magazine estimated that EVs are limited to driving nearly half the distance of a gas-powered vehicle. This makes the location and availability of charging stations a major factor in EV usage. The Environmental Protection Agency (EPA) rates vehicles in multiple variants based on the speed the car is driven. Because of EV's regenerative power from decelerating, gas mileage improves in stop and go driving conditions and at lower speeds. The EPA's combined range[3] for EVs varies between 110 miles and 373 miles.

Car and Driver tested EVs at a steady 75 mph to estimate the lowest mileage range. The ranges resulting in this test fell short of both the EPA's highway and combined range estimates. Figure 7, copied from Car and Driver's website shows the Car and Driver (C/D) and the EPA ranges for top EVs in the United States. (Vanderwerp, 2020)

As shown in Figure 7, Based on Car and Driver's conservative estimates, electric vehicles can require charging as soon as 74 miles. Tesla models have significantly more range with the 2018 Tesla Model S 100D lasting 270 miles. The EPA's combined estimates for the Tesla 2018 Model S 100D were up to 335 miles before needing a charge. This is longer than most trips in the TJPDC area.

Figure 5: Estimate Driving Miles Range from Car and Driver



Source: Car and Driver (Vanderwerp, 2020)

[3] The EPA's range is used as the advertised figure for electric vehicles that are sold in the US. The 310-mile range is an estimate of the number of miles the vehicle should be able to travel in combined city and highway driving from a full charge.

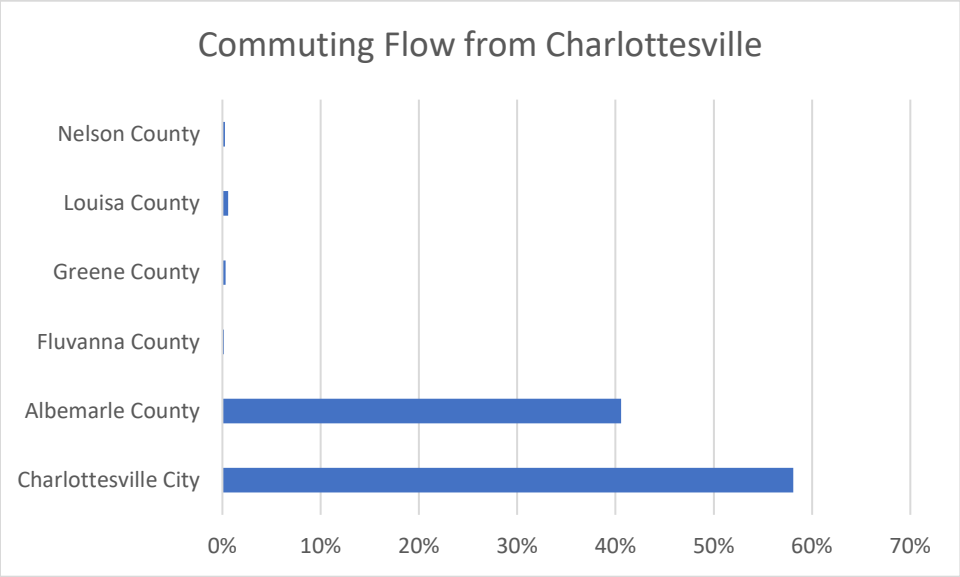
Commuting and Trip Patterns in TJPDC Region

The US Census collects locations of employers and where workers live. The data shows that most of the commuting trips in the TJPDC region are 25 miles or less and that most commuting trips in TJPDC take place within Albemarle county. Major employment areas include the following locations.

- The University of Virginia
- Charlottesville Downtown area
- Pantops area—US 250
- Fontaine Research Park
- University Research Park—Northfork
- Rt. 29 Corridor—US 250 to the Airport
  (Thomas Jeffesrson Planning District Commission, 2016)

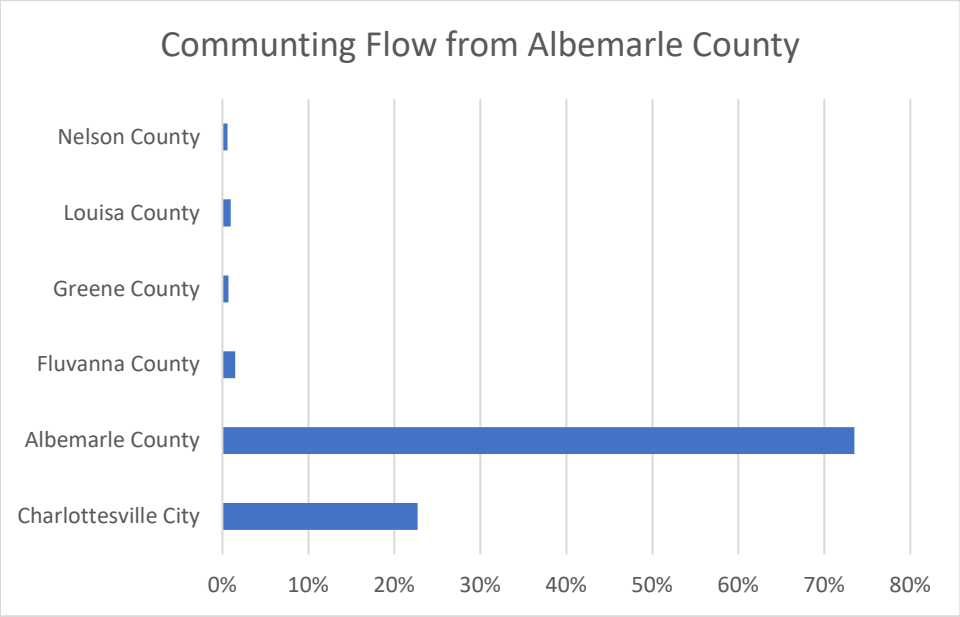
Most trips for work by residents of the TJPDC area are within the county or to other close locations within the region. As seen in Figures 8 through 13, more than fifty percent of commute trips in the TJPDC region are within a jurisdiction, except for Fluvanna and Greene counties who had more trips going to Albemarle County. Sixty percent of Greene county's residents travel to Albemarle County for employment destinations. Thirty-eight percent of Fluvanna's residents travel to Albemarle County for employment and another twenty-eight percent travel to Charlottesville. (US Census, 2020) Most commutes in the TJPDC region are short enough to not need a public charging station during the trip, especially if employers have charging stations at their facilities. These numbers will have changed during and after COVID as more people are working remotely and population and employment circumstances have changed.

Figure 6



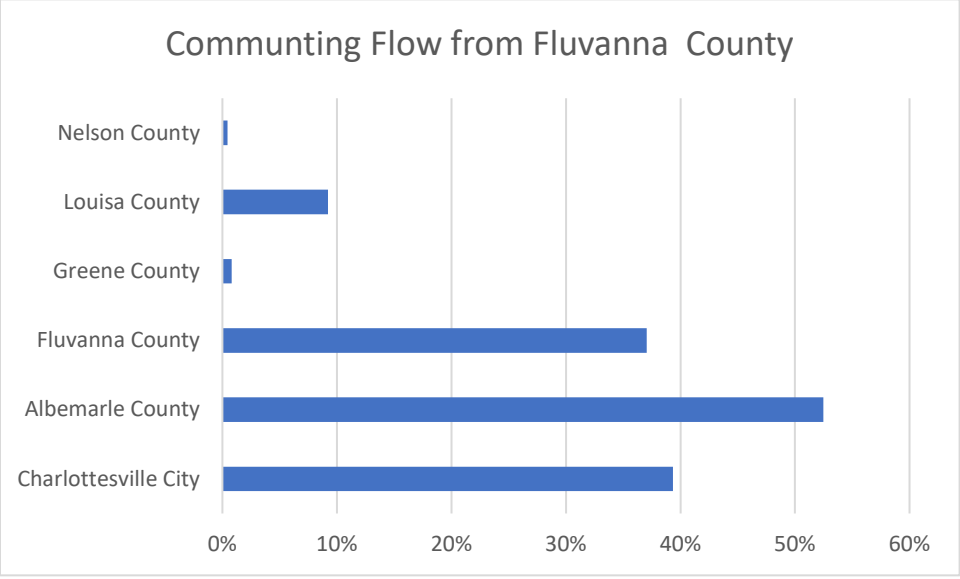
Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Figure 7



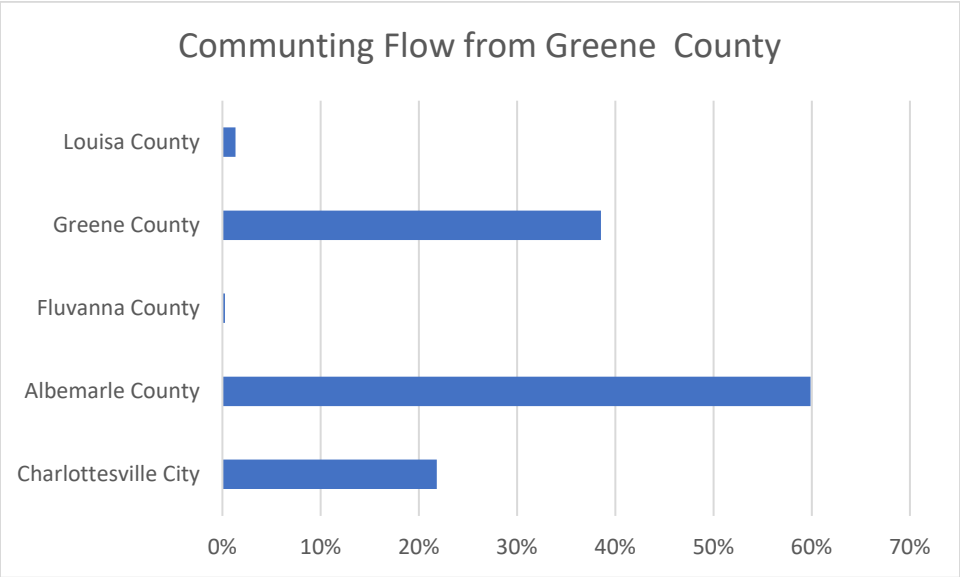
Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Figure 8



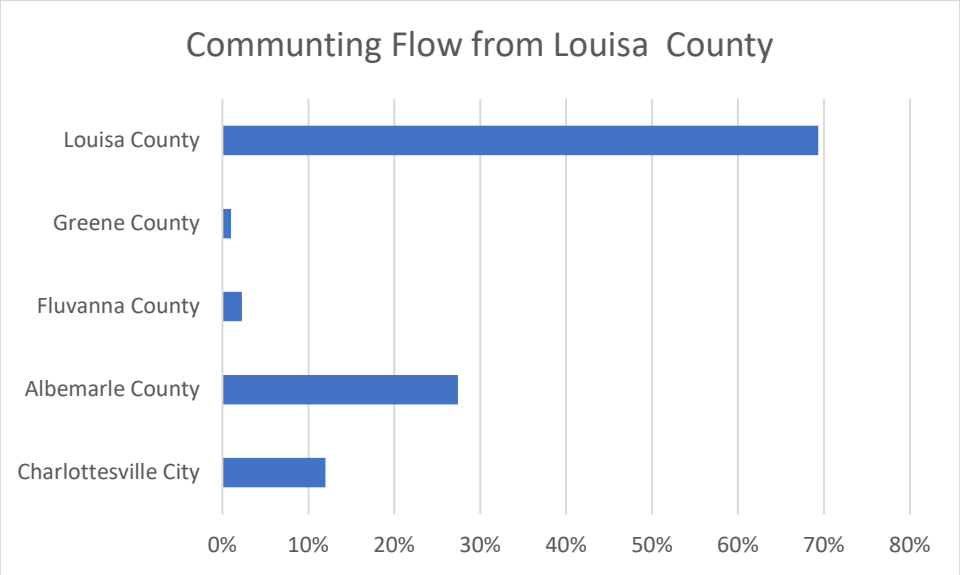
Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Figure 9



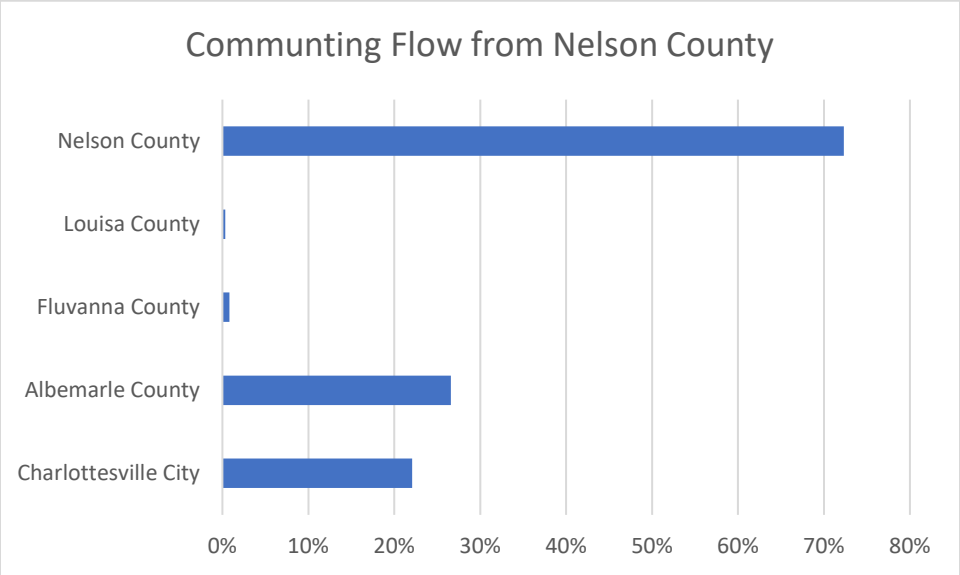
Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Figure 10



Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Figure 11



Source: US Census, 2011-2015, 4 Year ACS Commuting Flows

Factors that Affect EV Adoption

As with national markets, the challenges to EV adoption in the TJPDC area are mostly financial. However, there are also design considerations that local governments can implement to encourage the use of EVs. Some factors that negatively affect EV growth in the TJPDC area include the cost of purchasing vehicles, higher licensing fees, and lack of charging infrastructure.

Many electric vehicle models are more expensive than their gas-powered counterparts if they are bought new. Because it is a newer technology, the cost of purchasing EVs is higher than gas-powered vehicles and there are less used EVs available for sale. It is difficult to connect the future savings to a consumer when there are cheaper cars with more places to buy fuel, but this gap is shortening. Chen and Paleti's report, *Would You Consider a "Green" Vehicle? Anticipating Electric Vehicles, Adoption Patterns and Emissions Impacts in Virginia*, (2018) expects that federal and state financial incentives are critical factors to support EV adoption by helping to offset higher purchase prices. (Chen & Paleti, 2018) A September 2020 article in the New York Times, *The Age of Electric Cars Is Dawning Ahead of Schedule*, reports that with lower battery costs, EV purchase prices are dropping at a higher rate than expected. (Ewing, 2020) (Hanley, 2020)

In addition to the higher purchase cost, often the future benefits of an EV are not well known by consumers. There are many upsides including cheaper fuel and less maintenance. ChargEVC, a not-for-profit trade and research organization, estimates that the average driver could save almost $800 per year in fuel costs by switching to an EV. In addition to lower fuel costs, EVs

have one third of the moving parts compared to gasoline vehicles which translates to less maintenance related costs. (ChargeEvC, 2020)

In Virginia, the licensing fee for an electric vehicle is increasing from $64 to $88 a year compared to $40 for gas fueled cars. According to the Virginia Department of Motor Vehicles, effective July 1, 2022, fuel-efficient[4] and electric vehicles will be charged a Highway User Fee of $88 a year to offset the reduced gas tax revenue from the use of these vehicles. Starting in the spring of 2021, the Highway Use Fee will be tied to the fuel tax rate and the average number of miles traveled by a passenger vehicle in Virginia. (Virginia Department of Motor Vehicles, 2020) This added cost could be a discouraging aspect of investing in an electric vehicle.

Charging infrastructure is a key factor when considering the purchase of an EV. Depending on the part of the state, there could be many charging stations that allow for a quick vehicle charge or charging stations could be farther apart requiring a special trip to charge a vehicle. The EPA reports that 80% of privately owned EV charging is completed at home. Only 40% of households in the US have electricity located within 20 feet of the parking area. (US Department of Energy, Energy Efficiency & Renewable Energy, 2020)

According to the 2015-2019 American Community Survey 5-Year Estimates, 34% of the TJPDC housing units are not single-family detached homes. Meaning that occupants may not have the option of installing a charging station in the garage or near their house. Occupants also may not own a parking space to install a charger in. This number of attached units in the TJPDC region, 38,331, includes 1-unit attached (townhome), 2-units up to 20 or more units and the 32 boats, RVs, and vans counted as housing units in Albemarle. Figure 14 breaks down the number of attached units versus the number of detached units. While all but the City of Charlottesville have more detached or single-

THE U.S. EPA REPORTS THAT 80% OF PRIVATELY OWNED EV CHARGING IS COMPLETED AT HOME.

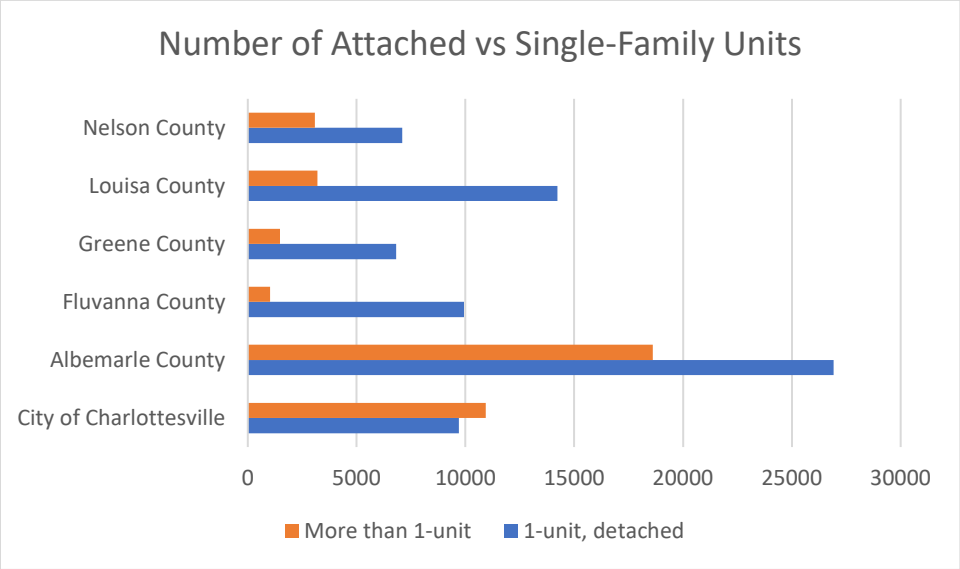
THERE ARE AN ESTIMATED 40K HOUSING UNITS IN THE TJPDC REGION WITH POTENTIAL BARRIERS TO CHARGING EVS AT HOME.

Sources: U.S. Department of Energy, Energy Efficiency & Renewable Energy, 2020 and *U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates*

[4] Fuel efficient vehicles are defined as having a combined miles-per-gallon rating of 25 or greater, electric vehicles, or alternative fuel vehicles that run on something other than gasoline or diesel.

family units, there are still almost forty thousand households in the region with barriers to charging an electric vehicle at home.

Figure 12: Estimated Number of Housing Units that are Suitable to Installing an EV Charger



Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

People who live in apartments, condominiums, and townhouses, as well as those in communities with homeowners' associations may have barriers to charging EVs at home. Commutes and most trips in the PDC region are relatively short and less than the range of most EVs, making home charging the most likely practice, especially in rural areas.

Table 4 breaks down the housing unit types by each jurisdiction.

Table 4: Number and type of Housing Units by Jurisdiction

Number and Type of Housing Units by Jurisdiction			
Geographic Area	**% More than 1-Unit**	**More than 1-unit**	**1-unit Detached Single-Family**
City of Charlottesville	53%	10,938	9,704
Albemarle County	41%	18,606	26,914
Fluvanna County	9%	1,018	9,930
Greene County	18%	1,481	6,810
Louisa County	18%	3,203	14,235
Nelson County	30%	3,085	7,090
Total TJPDC Region	34%	38,331	74,683

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Recommendations

Based on the research conducted and other initiatives that are already underway in the region, these are the opportunities that stakeholders could consider to support the adoption of electric vehicles throughout the region. Stakeholders like local governments, developers, educational institutions like the University of Virginia (UVA), utility companies, Virginia Department of Transportation (VDOT), transit providers, non-profits, and the TJPDC and MPO can all work together to reduce greenhouse gas emissions through initiatives supporting the adoption of electric vehicles. These opportunities include the areas of Infrastructure, funding, policy, and information gathering and sharing.

Infrastructure

Opportunity	Stakeholders
Identify convenient and highly visible public locations that could support EV charging infrastructure such as shopping centers, parking decks, stadiums, etc.	Local Governments Developers UVA
Collaborate with utility companies to provide EV charging infrastructure near utility pole sites that can be accessed via street parking to provide access to those in high-density housing without access to building-based charging infrastructure.	Local Governments Utility Companies VDOT
Assess opportunities to collaborate with transit providers as they consider opportunities to expand EV fleets.	Local Governments VDOT Jaunt CAT UTS
Collaborate with VDOT to consider incorporation of EV charging station infrastructure at new or existing Park and Ride lots.	Local Governments VDOT MPO/PDC
Include installation of EV charging infrastructure at major employment centers throughout the region.	Developers
Include EV charging infrastructure in new housing developments, especially multi-family developments.	Local Governments Developers Affordable Housing Agencies

Funding

Opportunity	Stakeholders
Pursue public/private partnerships and/or state and federal grants to support an increase in the availability of EV charging infrastructure.	Local Governments
Offer subsidies and grants to owners of multi-family residential developments to support the installation of EV charging infrastructure.	Local Governments UVA
Offer subsidies and grants to employers to support the installation of	Local Governments

EV charging infrastructure.	UVA

Policy

Opportunity	Stakeholders
Develop local ordinances and policies that encourage or require new developments to provide EV charging stations, as appropriate.	Local Governments
Assess a reduction of the personal property tax rate for EVs.	Local Governments
Assess opportunities to develop utility demand response programs to facilitate electric vehicle charging.	Utility Companies Local Governments Community Climate Collaborative MPO/PDC
Consider incentive programs to encourage owners of existing commercial/residential developments and employment centers to install EV infrastructure.	Local Governments
Support state and federal legislation encouraging the adoption of EVs like tax breaks and other incentives.	Local Governments Community Climate Collaborative

Information Gathering/Sharing

Opportunity	Stakeholders
Develop an inventory of existing multi-family housing developments that do not have access to building-based electrical infrastructure.	Local Governments MPO/PDC Affordable Housing Agencies
Develop a comprehensive database of resources to include information on financial incentives and technical guidance for stakeholders interested in adopting/supporting EV use.	Local Governments Community Climate Collaborative UVA MPO/PDC
Collaborate with local stakeholders on unified marketing and programming to support greater EV adoption throughout the region.	Local Governments Community Climate Collaborative UVA MPO/PDC

Guidance

Many communities are leading the way in the adoption of EVs and reducing greenhouse gases, California's EV charging network is four years ahead of Virginia's (Chen & Paleti, 2018) and many European countries are investing in infrastructure to support public charging stations for residents of dense neighborhoods with limited off-street parking. Some examples of how communities are implementing recommendations like the ones above are provided in this section.

For example, through London's Go Ultra Low Cities funding program, neighborhoods are installing EV charger ports on streetlight posts in front of public parking spaces. As of the fall of 2020, the Boroughs of Kensington and Chelsea have 43 Source London[5] charging ports and 225 lamp column chargers operated by Ubitricity. (The Royal Borough of Kensington and Chelsea, 2020) The March 24, 2020 CleanTechnica article, *Siemens Brings Street Light EV Charging To London Neighborhood,* reported that the City of Westminster has over 300 public EV charging stations and plans to reach a thousand stations in the 2021. (Hanley, 2020)

Some of the information identified through this research can assist the TJPDC region to encourage the adoption of EVs are listed below.

- Sample guidelines for EV Charging Stations, siting, and design
- Sample local ordinances and policies to encourage new developments to include EV charging stations (Zoning, Parking, and signage, building codes and permitting)
- Strategies to support the addition of charging stations for residents who live in multi dwelling units
- Available financial incentives and strategies
- Power grid and electric utility policies and planning
- Analysis of need for non-residential/employer charging stations and locations for the public
- Examples of successful strategies implemented by other agencies/governments

The next section offers examples of guidelines and ordinances localities in the United States have used to support building additional EV charging stations and EV use.

Sample Guidelines for EV Charging Stations

The Charlottesville *Local Climate Action Planning Process Report* recommends supporting the use of EVs by developing municipal and private sector guidelines for EV charging stations, parking, and incentives. The US Department of Energy, *A Guide to the Lessons Learned from the Clean Cities Community Electric Vehicle Readiness Projects* provides examples of guidelines and considerations localities enacted to encourage the use of EVs in their community. (Frades, 2014) Some of the topics to consider in developing guidelines are shared in this section. The

[5] Source London is a membership-based charging network of on-street parking EV charging stations that are powered by 100% renewable energy. In 2020 they had over 1,000 7kW and 22kW charging stations in London. They plan to double that amount by the end of 2020. (Bolloré Group, 2020)

section after this one, *Sample Local Ordinances*, provides considerations and examples of ordinances to support EVs in the development process.

Fairfax County, Virginia has an easy-to-use webpage explaining their permitting process for charging stations. They require plans for commercial and multi-family installations. Single-family units only submit electrical permits. The website has information about the requirements specific for EV charger installations and defines the types of electric vehicles and the types of chargers. (Fairfax County, 2020) Localities in the TJPDC region can consider the following design characteristics to add to their building codes:

- Structure and characteristics of the charging station itself
- Location and characteristics of parking spaces
- Uniform signage, including wayfinding signs
- ADA standards

Public charging stations will also have additional considerations like:

- Parking restrictions;
- Terms of use—hours of operation, cost to charge, cost to park, time limits; and
- Enforcement.

Providing clear guidelines for charging stations will help people install, find, and use the stations. Developers will have clear designs on what they are expected to plan for and produce. EV drivers will know what to look for and how to use the stations if they are all uniform, they will be easily recognizable, and all have similar operating procedures. This also signifies the localities' support for electric vehicles and supporting infrastructure.

The type of structure the EV charger is mounted on should be considered so that it is accessible to all kinds of users and does not interfere with local pedestrian and vehicle movement. For example, the height the charger is mounted can help avoid damage to vehicles and the charger as the result of collisions.

Specifying EV Charger parking space configurations can also include directions on whether builders should locate chargers in perpendicular, parallel, or angled parking spaces. Parking spaces should be designed to accommodate the added space needed to mount EV charges. Some localities choose to locate EV stations in less desirable locations to discourage non-charging vehicles from using them while other localities use the location of EV charging spaces as an incentive for using EVs. For example, St. Louis Park, MN specifies the following in their ordinances.

"The EVCS[6]s shall be located in desirable and convenient parking locations that will serve as an incentive for the use of electric vehicles." (Cooke & Ross, 2019)

[6] EVCS - Electric Vehicle Charging Station

Clear uniform signs on roadways and at parking facilities are recommended to help drivers find charging locations and understand the use requirements. For example, are EVs allowed to park in charging locations while not charging? Some public EV parking limits the amount of time vehicles can use the space. Who should an EV driver contact for assistance if the station is out-of-order? What are the costs and terms to use the charger?

Municipalities will also want to consider enforcement for parking in public EV charging spaces. If EV chargers are in prime parking spots, it is essential to ensure that EV drivers can use the spaces and that non-EVs are not blocking the spaces. This can include clear consistent rules with consequences posted in visible locations throughout the region.

By providing minimum standards or required designs for charging stations, localities can facilitate a smooth permitting process while planning for future technologies and trends. When developing these standards, consider the electrical supply equipment standards and parking space requirements.

Sample Local Ordinances

Albemarle County's *Climate Action Plan* suggests using local ordinances and policies to encourage new developments to include EV charging stations and explore partnerships and funding strategies to support EVs. In their 2019 report, *Summary of Best Practices in Electric Vehicle Ordinances,* the Great Plains Institute provides examples of zoning ordinance language and associated tools as a guide for cities on developing EV-ready zoning standards.

Including mention of where EV charging stations are allowed in ordinances helps streamline installation, eliminates confusion, and affirms the localities support for EV infrastructure. For example, Iowa Clean Cities Coalition recommends defining what types of EV charging installments are allowable by land use. For example, level 1 and 2 EV charging stations are allowed in all zones and level 3 stations are restricted to specific zoning districts or require a special use permit. (Ross, 2019)

Retrofitting parking structures can be much more expensive than outfitting garages during the initial construction phase. **Minimum requirements** and **make-ready standards** can be used to ensure that new buildings, especially multifamily residential developments are designed with future EV charging needs in mind. Localities often recommend or require that a proportion of parking spaces contain EV charging stations or be EV ready. For example, Howard County, MD has the following minimum requirement.

"For new occupancies subject to this section: at least 1 parking space for each 25 residential units shall feature energized outlets." (Cooke & Ross, 2019)

Some localities base their proportion requirements on land use, requiring more EV spaces in multifamily developments and lodging and less in retail, eating and drinking establishments.

Localities can also allow flexibility to exchange EV charging stations for meeting existing minimum parking requirements. For example, Middletown, CT provisions state:

"Requests for reduction of general parking spaces in exchange for additional EV parking: For any development that exceeds the minimum number of EVCs as required … The reduction of parking cannot be greater than 10% of the total amount of parking for the proposed development." (Cooke & Ross, 2019)

Make-ready standards or requirements for new construction can facilitate the installment of EV charging stations as the need arises. For example, St. Louis Park, MN requires all new, expanded, and reconstructed parking areas for multifamily residential uses to provide the electrical capacity necessary to accommodate the future hardwire installation of Level 2 EV charging stations for a minimum of 10% of required parking spaces. (Ross, 2019)

The Great Plains Institute provides the following recommendation for make-ready standards for multifamily parking spaces in a structure to ensure that electrical conduit (trunk line) and subpanels are preinstalled throughout the parking garage to allow Level-2 Charging Equipment to be connected in the future.

"Require that all parking spaces in a parking structure be made "EV-Capable" i.e. conduit be installed throughout the structure and subpanels sized to accommodate 60A or 40A breakers for each." (Cooke & Ross, 2019)

Conclusion

Statewide and nationally, EVs are recognized as an integral part of climate change mitigation strategies. As the City of Charlottesville, the University of Virginia, and Albemarle County Continue to develop strategies to mitigate climate change and reduce emissions, EVs will be part of the plans.

While financial incentives, like tax breaks, for purchasing EVs have been found to be an effective incentive for the adoption of EV technology, there are political barriers to tax incentives for EVs in Virginia. Localities can take actions in other ways, by laying out clear pathways for the installation and use of charging stations by using ordinances and incentives to encourage new developments to plan for and install charging infrastructure. Charlottesville's EV Charger Mini-Grant program helps increase charging options near commercial and retail activities and their website offers useful information and links about EVs, regulations and charging stations for potential hosts and EV users.

There are 10 public EV charging stations in the City of Charlottesville and 7 in Albemarle, with more coming. These stations are in public parking garages and retail/commercial parking lots. Most EV charging is completed at home and places of employment where vehicles will be parked for numerous hours. Increasing charging options for people who live in apartments and/or don't have designated parking with infrastructure to support installing an EV charger

will reduce a common barrier to EV purchase and use. Secondly, places of employment providing EV charging options for employees will also help support EV use. Localities in the TJPDC area can address this barrier with, guidelines, ordinances, and incentives to support the installation of EV charging infrastructure for multifamily housing and employment centers.

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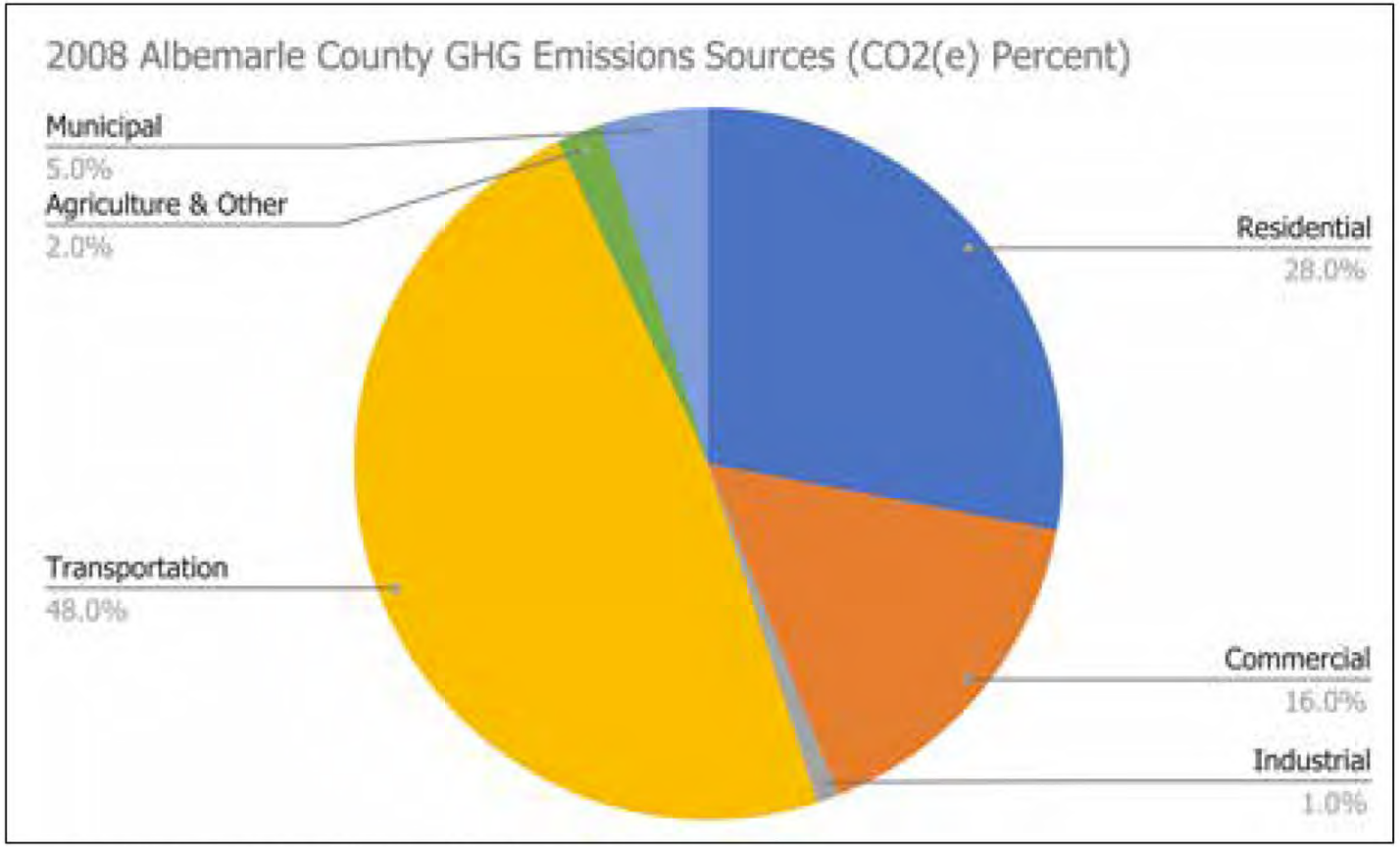
Electric Vehicle Charging Station Study

Region 10

Benefits of Electric Vehicle Use

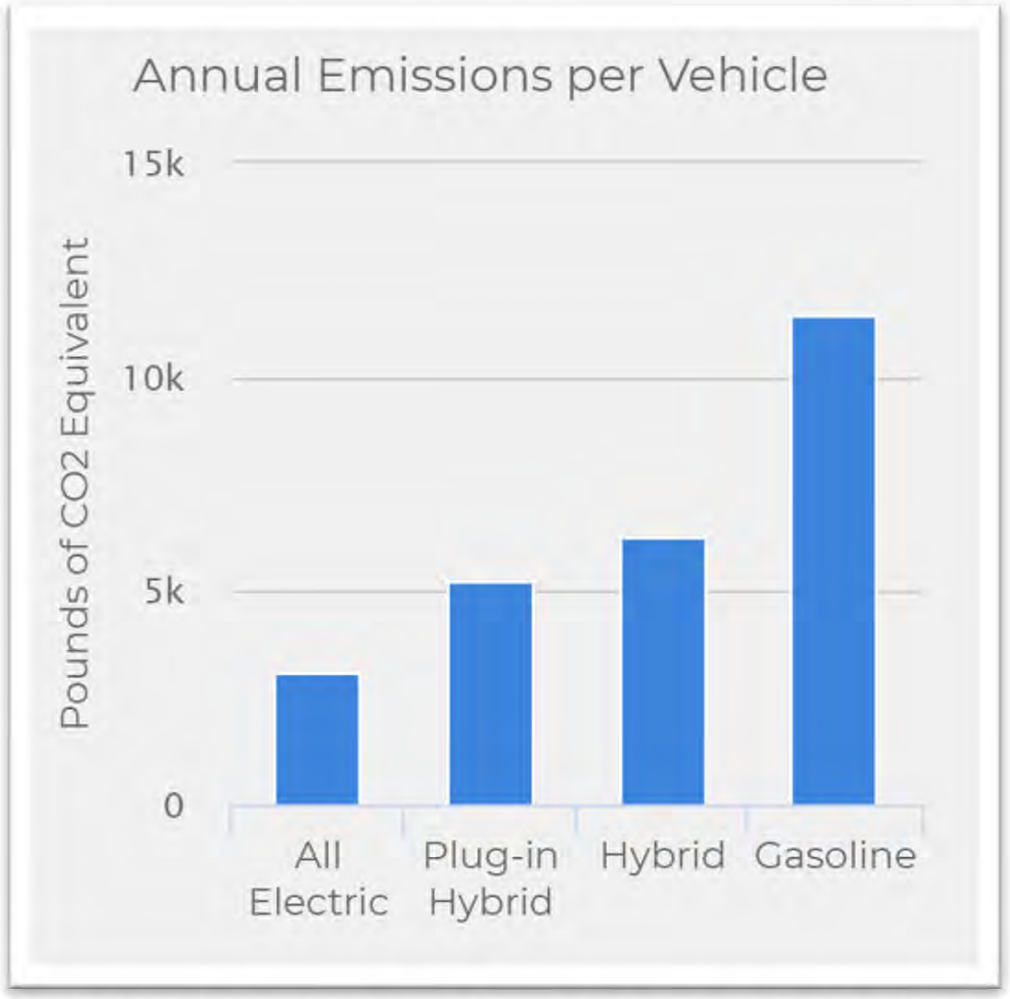
Transportation is the largest single source of greenhouse gas emission in the MPO area.

Figure 1: GHG Emissions Sources in Albemarle County



Source: Albemarle County Climate Action Plan Phase One

Figure 2: Comparison of Vehicle Emissions



Source: (Energy, Emissions from Hybrid and Plug-In Electric Vehicles, 2020)

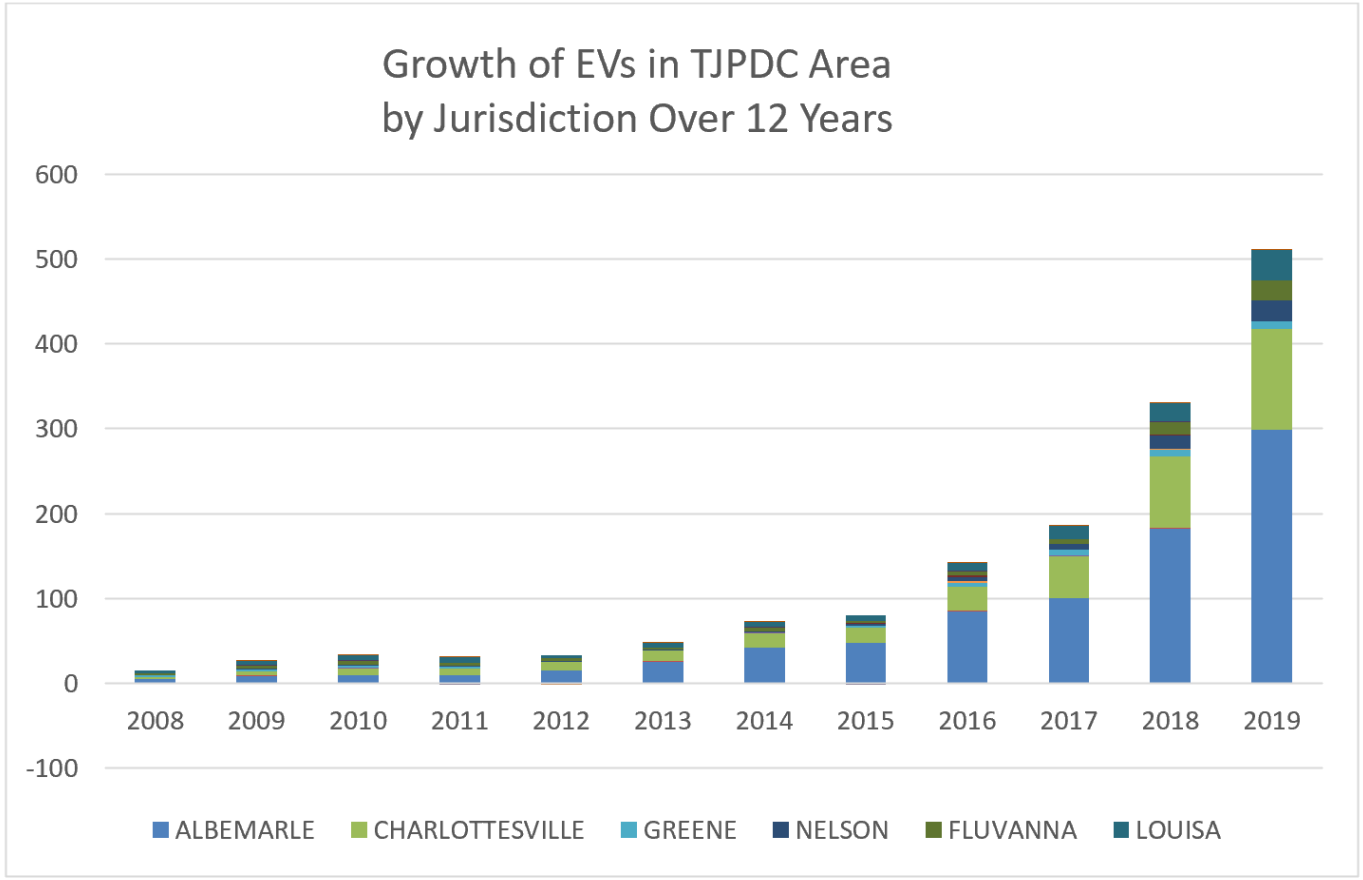
Benefits of Electric Vehicle Use

EVs produce almost 70% less emissions than gas-powered vehicles.

Benefits of Electric Vehicle Use

EV registrations in the TJPDC area have grown between 30% and 49% from 2008 to 2019

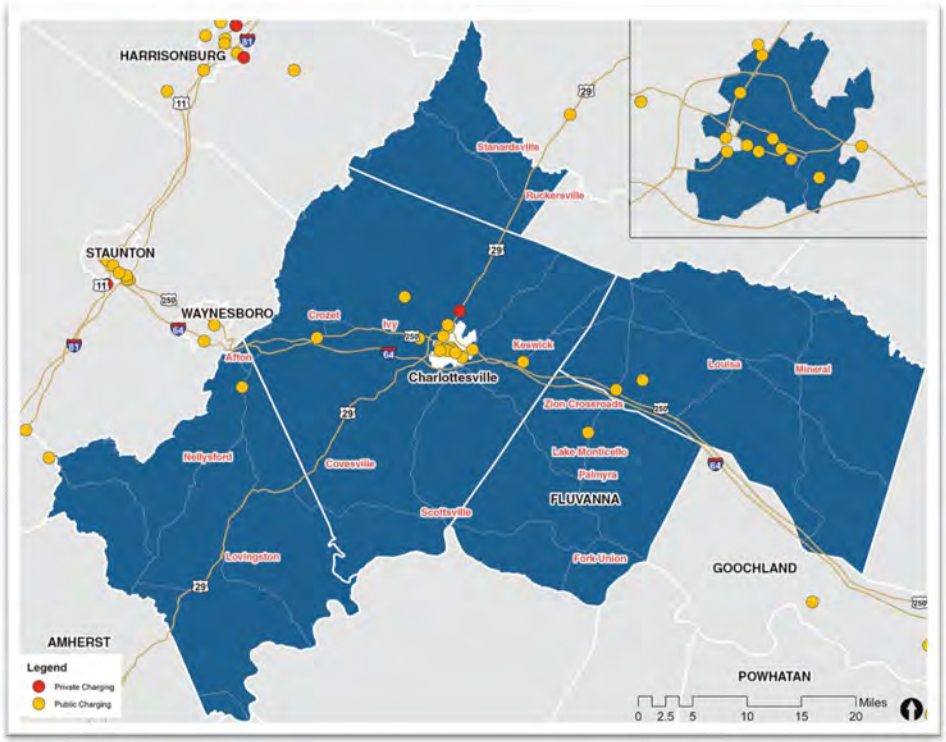
Figure 4: Historical EV Growth in TJPDC



Source: Virginia Annual Vehicle Registration Data provided by Virginia DMV to Virginia DEQ each year

Infrastructure Supporting EVs in TJPDC's Region

Figure 6: Charging stations in Charlottesville



Source: TJPDC

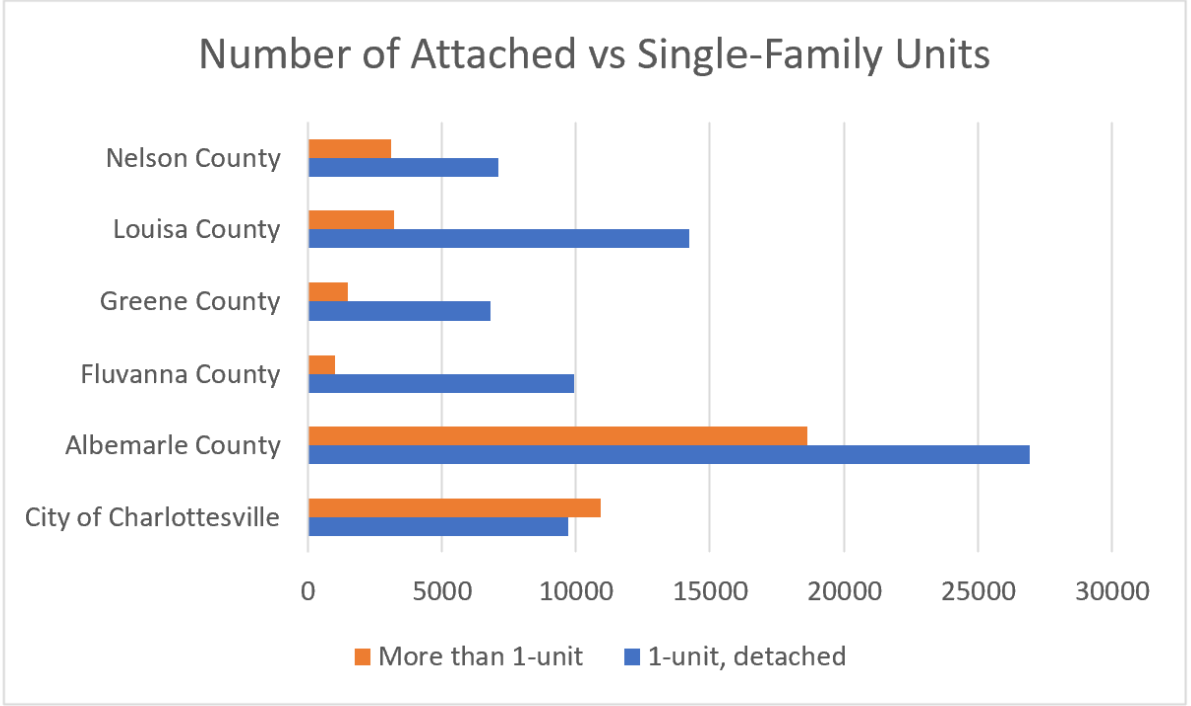
Table 2: Number of EV Charging Stations in TJPDC

Jurisdiction	# Stations	Jurisdiction	# Stations
ALBEMARLE	7	NELSON	1
CHARLOTTESVILLE	10	FLUVANNA	1
GREENE	0	LOUISA	1

Source: www.plugshare.com

The U.S. EPA reports that 80% of privately owned EV charging is completed at home.

Figure 14: Estimated Number of Housing Units with Parking that is Suitable to Installing an EV Charger



Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

There are an estimated 40K housing units in the TJPDC region with potential barriers to installing home charging facilities

Table 4: Number and type of Housing Units by Jurisdiction

Number and Type of Housing Units by Jurisdiction			
Geographic Area	**% More than 1-Unit**	**More than 1-unit**	**1-unit Detached Single-Family**
City of Charlottesville	53%	10,938	9,704
Albemarle County	41%	18,606	26,914
Fluvanna County	9%	1,018	9,930
Greene County	18%	1,481	6,810
Louisa County	18%	3,203	14,235
Nelson County	30%	3,085	7,090
Total TJPDC Region	-	38,331	74,683

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Strategies to encourage personal EV use

Financial incentives for vehicle purchase and charging infrastructure

Support installation of charging infrastructure for residents who do not own parking close enough to install EV charging infrastructure

Strategies to support personal EV use

- Install charging infrastructure in public parking spaces that residents use to park overnight
- Provide guidelines for EV charging stations
- Develop local ordinances and policies to encourage new housing developments to include EV charging infrastructure
- Makeready standards, encourage new multi-family construction to provide electrical capacity necessary to accommodate future charging infrastructure
- Encourage employers to install EV charging stations for employees

Charlottesville-Albemarle Metropolitan Planning Organization
POB 1505, 401 E. Water St, Charlottesville, VA 22902 www.tjpdc.org
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Memorandum

To: MPO Committee Members
From: Sandy Shackelford, Director of Planning & Transportation
Date: July 13, 2021
Reference: Smart Scale Round 5 Staff Recommendations

Purpose:

The MPO has been working to develop a new process to improve public engagement opportunities in its development of Smart Scale project applications. The framework that the MPO has established is to select up to two projects of regional interest that would benefit from additional public engagement and facilitate a process to refine the projects and prepare applications for Round 5 Smart Scale submissions.

Background:

CA-MPO has reviewed its process of identifying and selecting SMART SCALE projects to move forward in Round 5 with the MPO Committees in previous meeting. An overall schedule of project identification and preparation is included for your reference as we move through the selection process.

CA-MPO staff has continued to work with Albemarle County, Charlottesville City, and VDOT staff to develop suggested projects for consideration by the MPO committees and the Policy Board based on previous studies and plans that have been completed that they consider to be beneficial to both localities. In addition, another project was suggested by CTAC that was also added to the list of potential projects as reviewed in June.

Following the schedule and process that has been developed for the CA-MPO SMART SCALE project selection process, the MPO Technical Committee and CTAC will be asked to recommend the projects that will be prepared for SMART SCALE Round 5 applications, with CA-MPO staff supporting additional engagement for up to two of the recommended projects.

The list of potential projects that has been identified by staff for consideration by the MPO Policy Board **is as follows**:

- District Avenue Roundabout
- Hillsdale Avenue Extension
- Rivanna River Bike & Pedestrian Crossing
- Avon Street Corridor
- 5th Street Corridor

The project that was suggested by a CTAC member is a grade separated ramp between US 250 and US 29 with termini on 250 west of the intersection with US 29 and on US 29 near Seminole Court, referred to as the US 29/250 flyover.

Project slides are attached to this memo for reference and review.

Staff developed goals for the Round 5 process were to develop and submit SMART SCALE projects that:

- Will be competitive based on project costs and benefits;
- Have been vetted through a public process;
- Have demonstrated public support; and
- Are documented in existing plans/studies.

After reviewing each of the projects against the goals that staff had developed early in the process, staff is recommending moving forward with the following projects:

- District Avenue Roundabout
- Rivanna River Bike & Pedestrian Crossing (with additional engagement)
- Avon Street Corridor Multi-Modal Improvements: Extend bike and pedestrian infrastructure from Druid Avenue in Charlottesville to Avon Court Park and Ride in Albemarle
- 5th Street Corridor Intersection and Multi-Modal Improvements: Intersection improvements at 5th Street and 5th Street Station Parkway and extension of bike/pedestrian infrastructure to tie into recently approved Fifth Street Hubs and Trail project

Since the District Avenue roundabout, Avon Street Corridor, and 5th Street Corridor projects were all developed through a study that involved high levels of public engagement, staff is recommending that minimal engagement would be needed as part of the development of those applications. CA-MPO staff would plan to convene at least 1-2 meetings with a stakeholder group for each of these three projects as final applications are developed.

Staff is recommending additional support to develop an application for the Rivanna River Bike & Pedestrian Crossing that would include both technical support and additional public/stakeholder engagement. Staff recommend first exploring whether there are opportunities to further reduce the project costs, and then supporting the project through additional engagement as an application is prepared and submitted.

The Hillsdale South Extension project was not recommended to move forward due to the project expense. It is a project that is on the Constrained List in the Long Range Transportation Plan, but due to the project cost, it is unlikely to score competitively in SMART SCALE. The project could be considered for submission by the Thomas Jefferson Planning District Commission if their four project slots are not otherwise committed closer to the application deadline.

The US 29/250 flyover project was also not recommended to move forward due to a number of factors. A similar project was considered during the development of the Hydraulic Small Area Plan and was not moved forward as a recommendation during the development of that plan. This project has not been vetted through a public process, is not included as a recommendation in any local or regional plans, and the cost of the project makes it unlikely to score competitively through the SMART SCALE process.

Recommendation:

Staff requests a recommendation from the MPO Technical Committee and CTAC to the Policy Board regarding the projects that should be submitted for SMART SCALE Round 5. Additionally, staff requests a recommendation on which of the project(s) should receive additional support during the application development. Table 1 summarizes the staff recommendation.

Table 1. Summary of staff recommended projects.

Project	Cost estimate (in millions)	Public Process	Plan	Staff Recommendation	Additional Engagement
District Avenue Roundabout	$8.4	Yes	Yes	Yes	Minimal
Hillsdale South Extension	$34.3	Yes	Yes	No	
Rivanna River Bike/Ped Crossing	$11.3 - $15.3	Yes	Yes	Yes	Yes
Avon Street Corridor	TBD	Yes	Yes	Yes	Minimal
Fifth Street Corridor	TBD	Yes	Yes	Yes	Minimal
29/250 Flyover	$50	No	No	No	

If there are any questions or comments, please contact Sandy Shackelford at sshackelford@tjpdc.org.

Table 2. Smart Scale Project Selection and Application Development Schedule

March 2021	Initial discussions about potential projects with MPO Committees.
April 2021 – May 2021	Receive requests for projects to be considered as Smart Scale applications from localities, CTAC, MPO Tech, and Regional Transit Partnership.
May 2021	Finalized list of projects requested for consideration from MPO committees and local governments will be presented to the MPO committees for initial review.
July 2021	CTAC and MPO Tech will make recommendations for up to two projects that should be selected for additional public engagement; the MPO Policy Board will select up to two projects that will move forward with additional public engagement.
September 2021	The Policy Board will appoint an advisory committee for each project that is selected as needing additional public engagement.
October 2021 – April 2022	MPO staff will facilitate public engagement process for selected projects.
February/March 2022	MPO staff will facilitate public workshops for all potential Smart Scale projects within the MPO region, coordinating with Charlottesville and Albemarle County.
April 2022	MPO staff will finalize project details with advisory committees based on additional public feedback received through the public workshops.
May 2022	Pre-application deadline.
June – July 2022	MPO staff will work with Charlottesville and Albemarle staff to coordinate requests for resolutions of support, economic development data, and any other supporting documentation needed for application submittals. MPO staff will coordinate with VDOT for any technical documentation that is needed for application submissions.
August 2022	Full application deadline.

Project options

District Avenue Roundabout

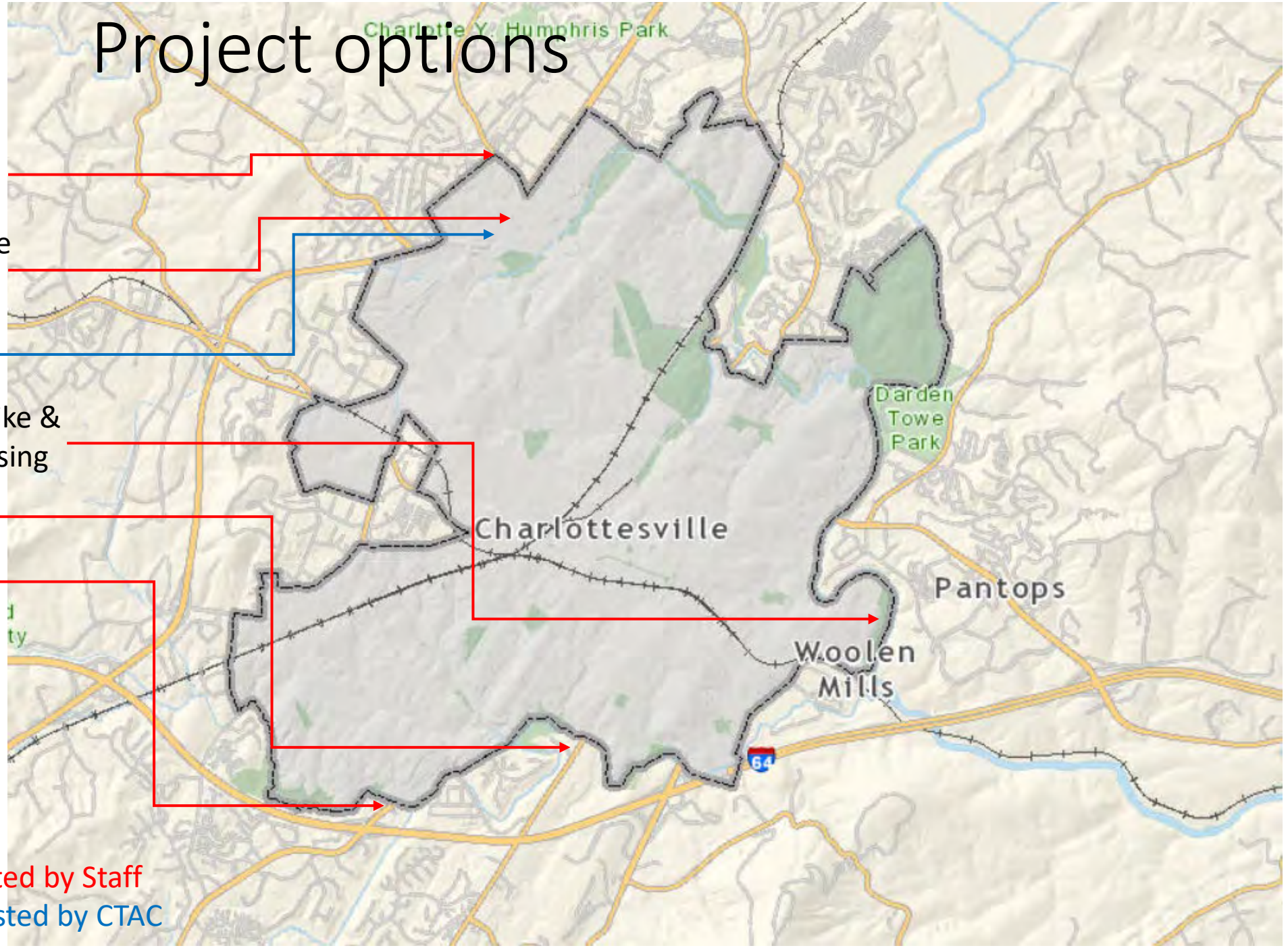
Hillsdale Avenue Extension

US 29/250 Flyover

Rivanna River Bike & Pedestrian Crossing

Avon Street

5th Street



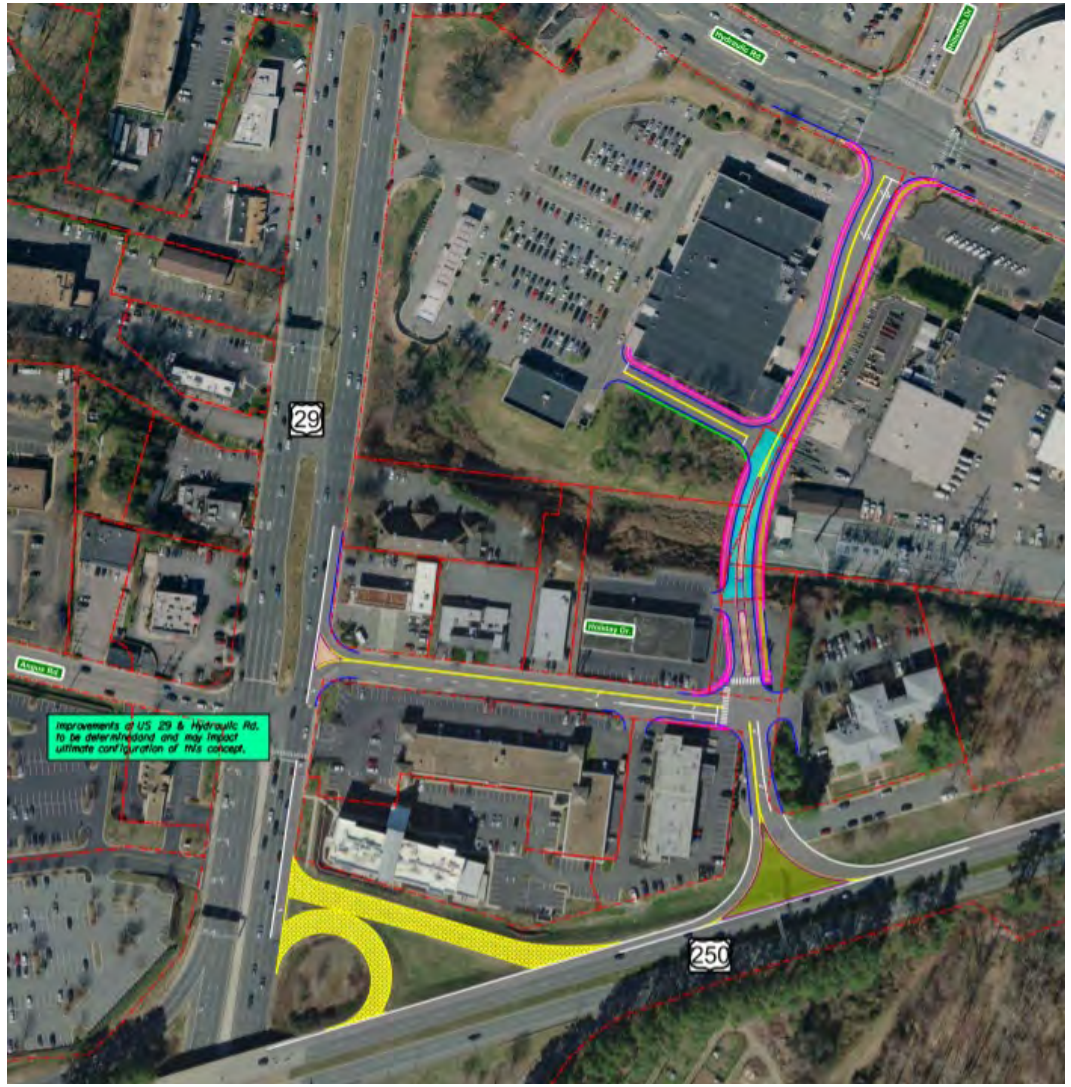
RED – Suggested by Staff

BLUE – Suggested by CTAC

District Avenue Roundabout

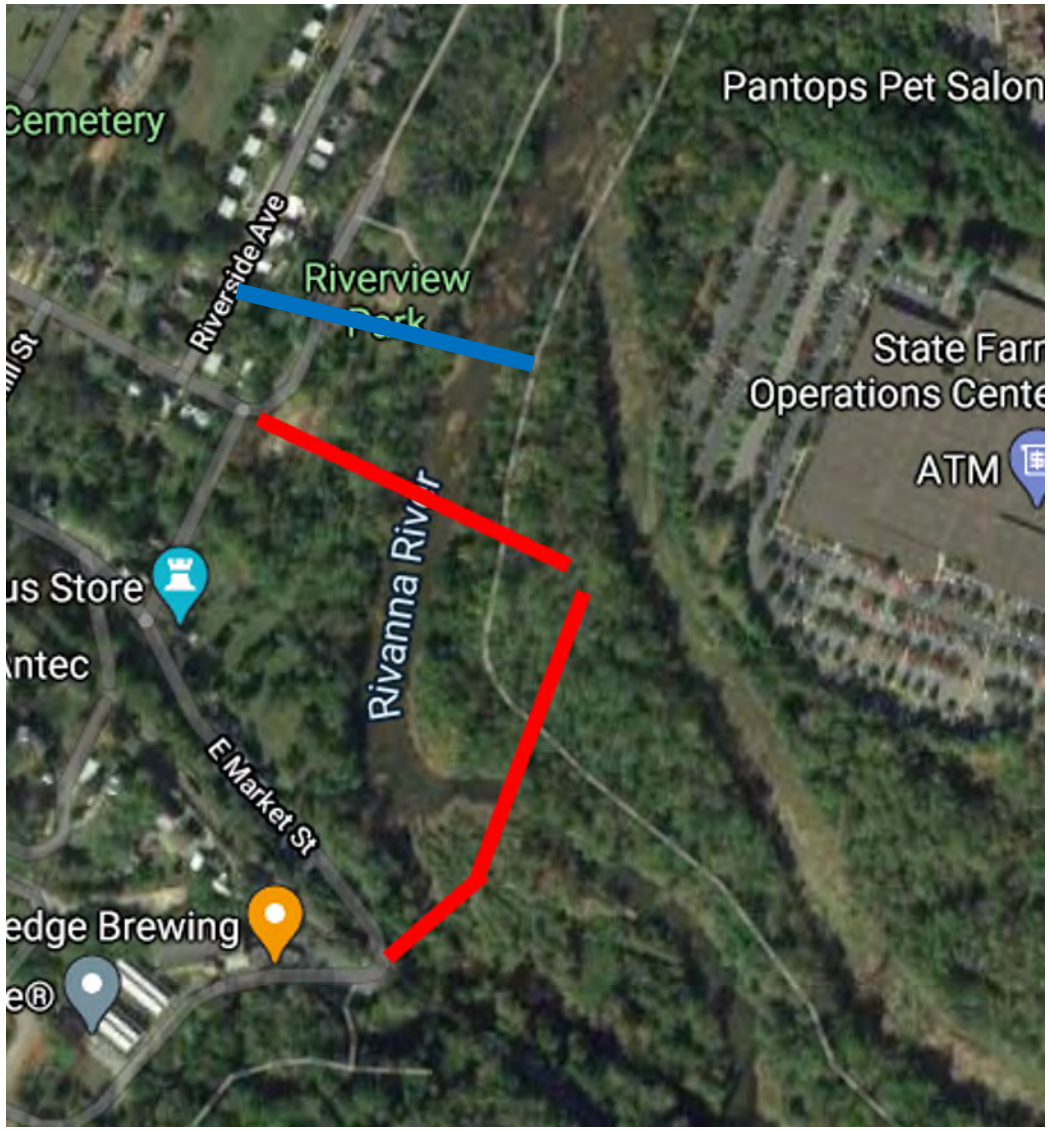
- $8.4 million estimated cost as of LRTP
- Recommended in the Hydraulic/29 Small Area Plan and on the constrained list in the LRTP
- Staff recommended project
- Minimal engagement recommended by staff

Hillsdale Avenue Extension

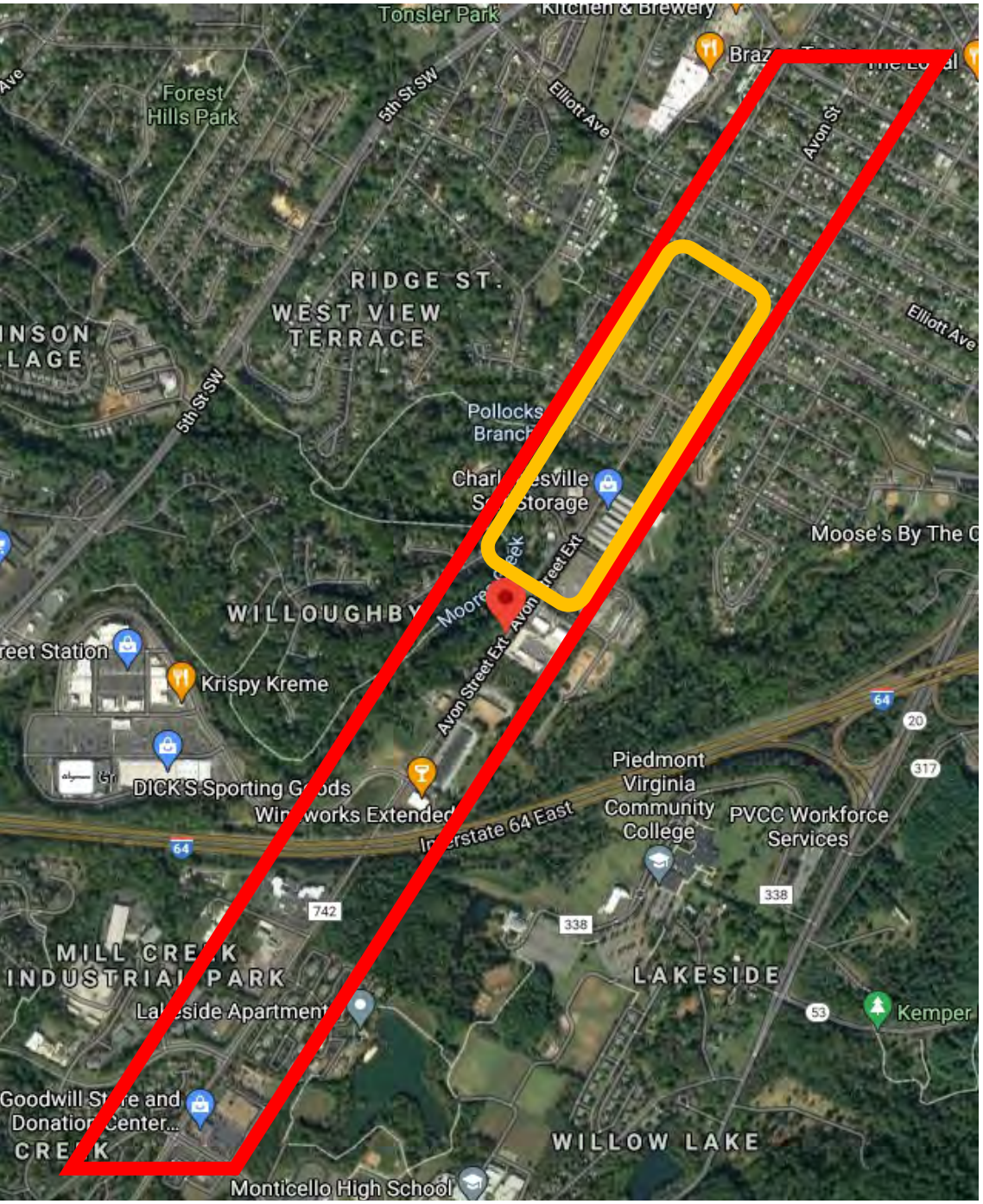


- $34.3 million estimated cost based on Round 4 submission
- Recommended as part of the Hydraulic/29 Small Area Plan and on the LRTP Constrained List
- Submitted in SMART SCALE ROUND 4
- Not likely to score competitively due to project cost
- Not recommended for one of the CA-MPO's submissions
  - Could be submitted by TJPDC if there are available slots

Rivanna River Bike and Pedestrian Crossing



- $11.3 million to $15.3 million consultant-developed cost estimate
- Recommended in the CA-MPO's Long Range Transportation Plan, Jefferson Area Bike & Pedestrian Plan, Pantops Small Area Master Plan
- Feasibility study completed by VHB in 2020
- Two potential design options were developed for consideration (third option suggested by CTAC member)
- Staff recommended project
- Additional effort spent on reducing project cost and public engagement recommended by staff



Avon Street Multi-Modal Improvements

- Project costs TBD
- Avon Street RE(Vision) study completed for Albemarle County in 2020
- Bike and pedestrian facility needs identified in the Charlottesville Bicycle and Pedestrian Master Plan
- LRTP Vision List
- Staff recommends developing application for cohesive bike/ped infrastructure along Avon Road from Druid Avenue (City) to Avon Court Park and Ride (County)
- Minimal engagement recommended by staff

5th Street Multi-Modal Improvements

- Intersection improvements estimated at $2.8; Bike/ped infrastructure costs TBD
- LRTP Vision List
- Corridor study completed by VDOT in January 2021
- Staff recommends developing application to address the 5th Street Station Parkway intersection and to extend bike/ped infrastructure from recently approved Fifth Street Hubs and Trail project north

US 29/250 Flyover

- $50 million estimated cost by CTAC member
- Not recommended as part of the Hydraulic/20 Small Area Plan
- Not documented in any local or regional adopted plan
- Not likely to score competitively
- Not recommended by staff