TECHNICAL APPENDIX A

TCAMPO Plan2045

Public Participation Report

June 2022

INTRODUCTION:

The Tri-Cities Area MPO conducted an extensive public participation process for *Plan2045*. Public participation for *Plan2045* consisted of these primary areas:

- Creation of TCAMPO webpage and Plan2045 ~~webpage, and~~webpage and use of the Crater PDC newsletter.
- Created a Plan2045/MPO distribution list (from website, Metroquest surveys, etc.) to update/notify persons and groups of the milestones and opportunities to participate
- Advertised Plan2045, surveys, and draft document using website, Facebook/ Instagram ads, local Facebook groups, PDC newsletter, MPO members' newsletters/emails.
- Online Surveys:
    - Vision, Goals, and Objectives Metroquest survey (December 2020-January 2021)
    - Transportation Problems, Issues, and Needs Locations Metroquest survey (July-August 2021)
    - Persons were also asked if they wanted to be included in an email list
- Draft *Plan2045* report out for 30-day public review

Efforts were made to reach out to disadvantaged and underserved populations, including:

- Informing minority and non-English speaking media about opportunities to review and respond to surveys; *Plan2045* Committee meetings, TAC ~~meetngs~~meetings, and Policy Committee meetings; and documents
- Using social media groups and social media advertising to the zip codes in the Tri-Cities Planning Area with links to surveys, meetings, and documents (note: according to FHWA in their "FHWA VPI Webinar: Engaging Traditionally Underserved Communities using Virtual Public Involvement" webinar, the primary way many of these groups have internet access is via their phones or tablets, FHWA noted this method is more effective than in-person public meetings)

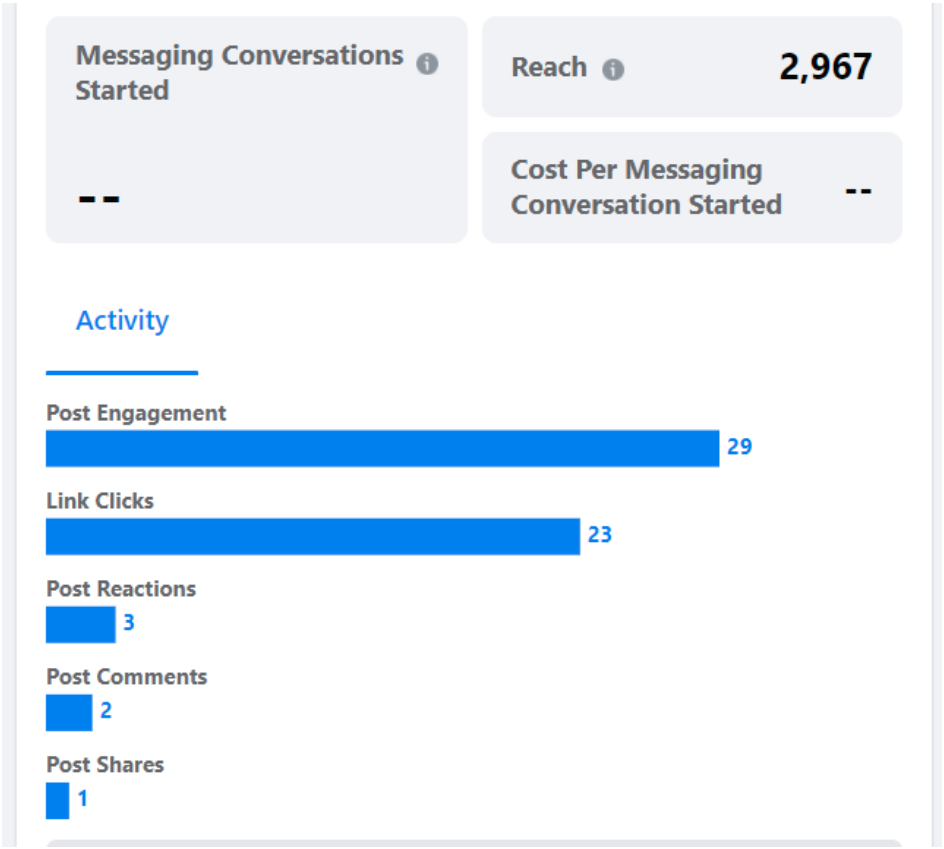
The TAC also served as the *Plan2045* Committee, plus a member of the RRTPO's staff who conducts their long-range plans (for coordination between RRTPO and TCAMPO, as the TCAMPO Director served on the RRTPO's long-range plan committee). TAC members informed their public about the progress of *Plan2045* by various means.

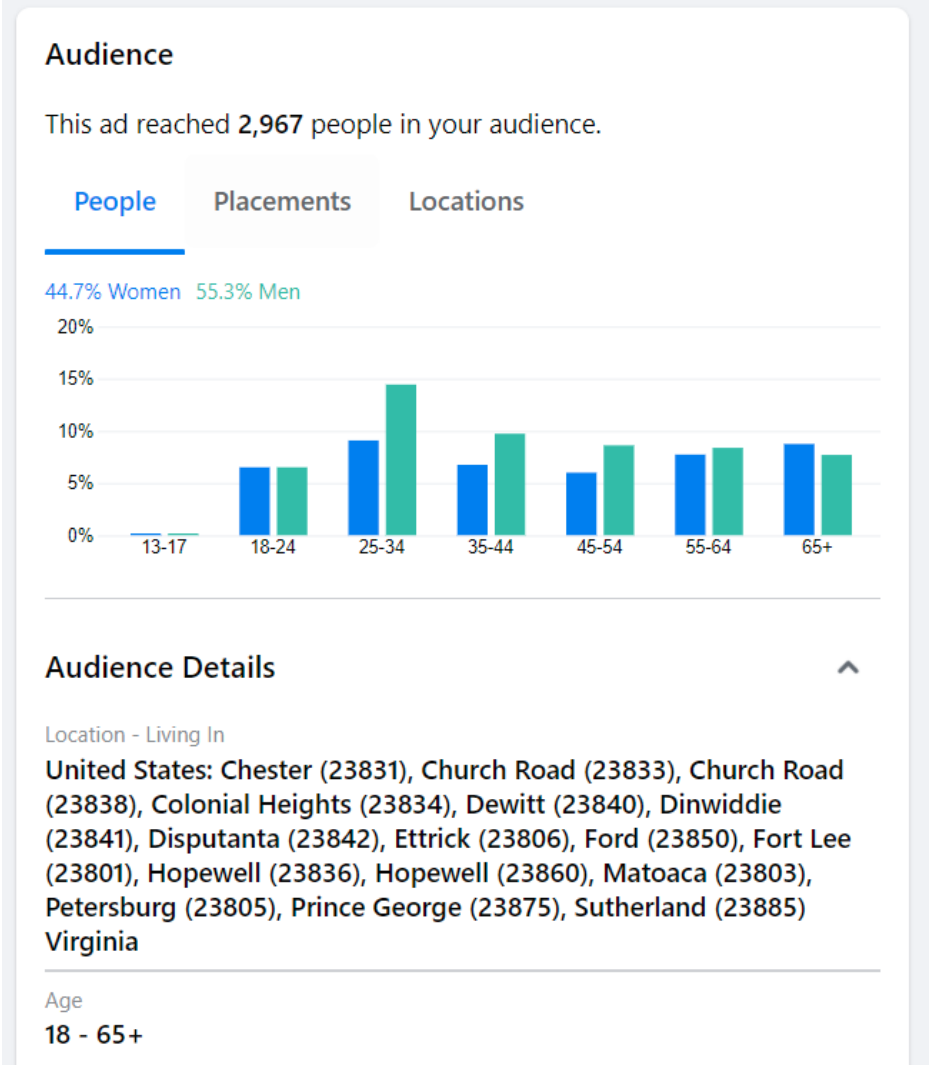
METROQUEST SURVEY #1: VISION, GOALS, AND OBJECTIVES

Background:

- Developed in December 2020 with help from VDOT Richmond District
- Survey ran from December 26, 2020, to January 31, 2021
- Note: This is the first time TCAMPO did a survey for its MTP
- Survey asked for public responses regarding:
    - Relative importance of goals (safety, accessibility, health/equity, connectivity, economic vitality, environment, maintenance & operations, resiliency)
    - How important various aspects are for each goal
    - How the MPO should divide its limited funds for project types ("chips exercise")

Promotion:

- Facebook ads: 5,187 total ads posted/boosted from TCAMPO's Facebook page.
    - First set (December 26-Jan 8); 2,967 reached
    - 

- 

- Second set: (January 9-January 31); 2,220 reached


Messaging Conversations Started
--
Reach
2,220
Cost Per Messaging Conversation Started
--
Activity
Post Engagement
63
Link Clicks
57
Post Reactions
3
Post Shares
2
Post Comments
1
See Less

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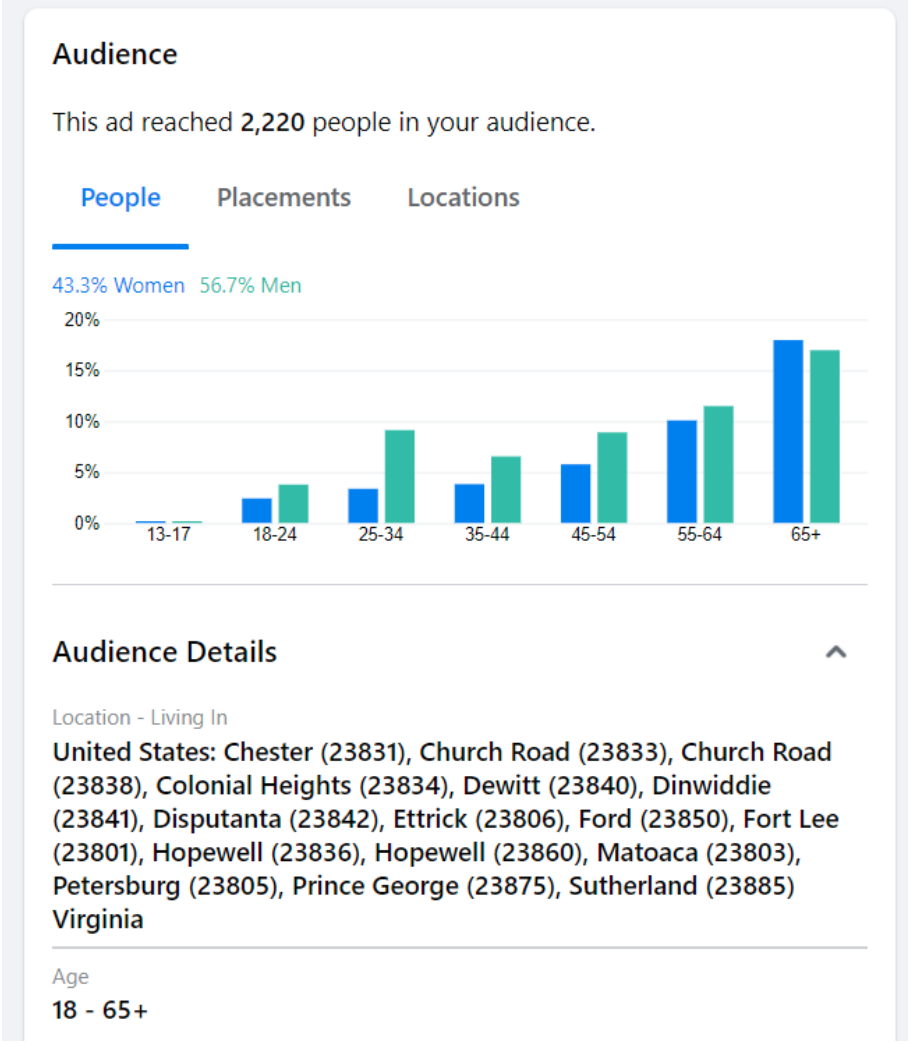
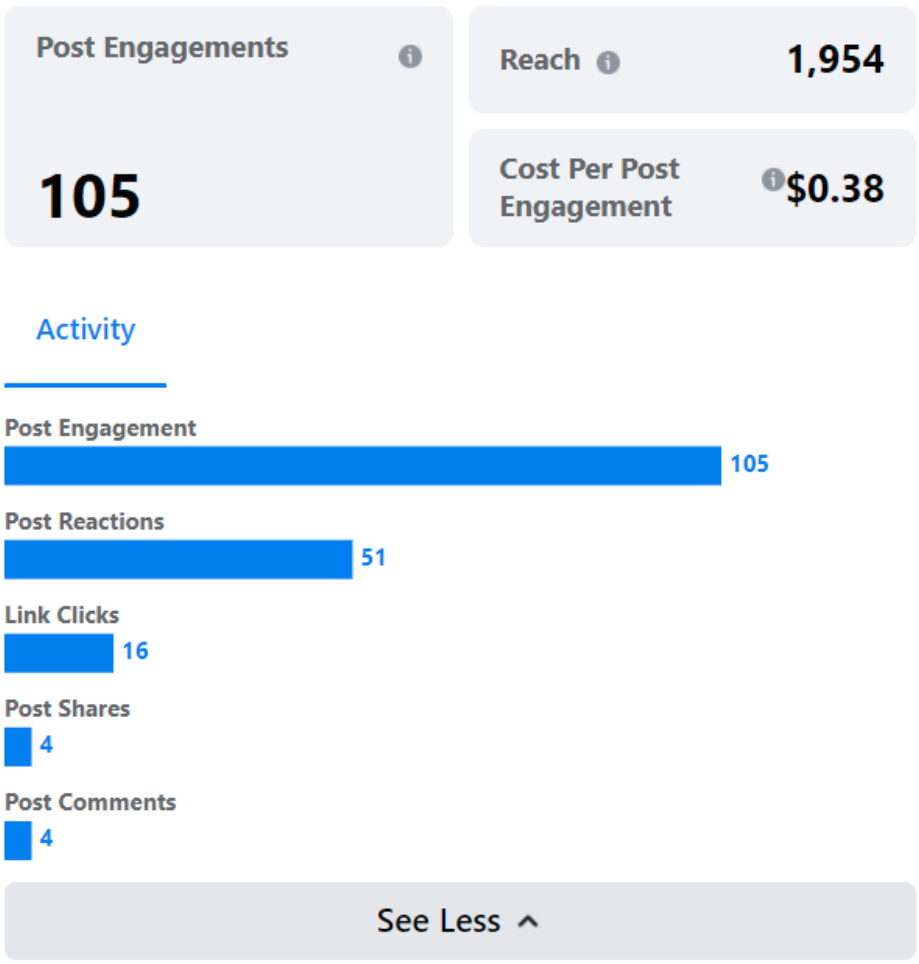
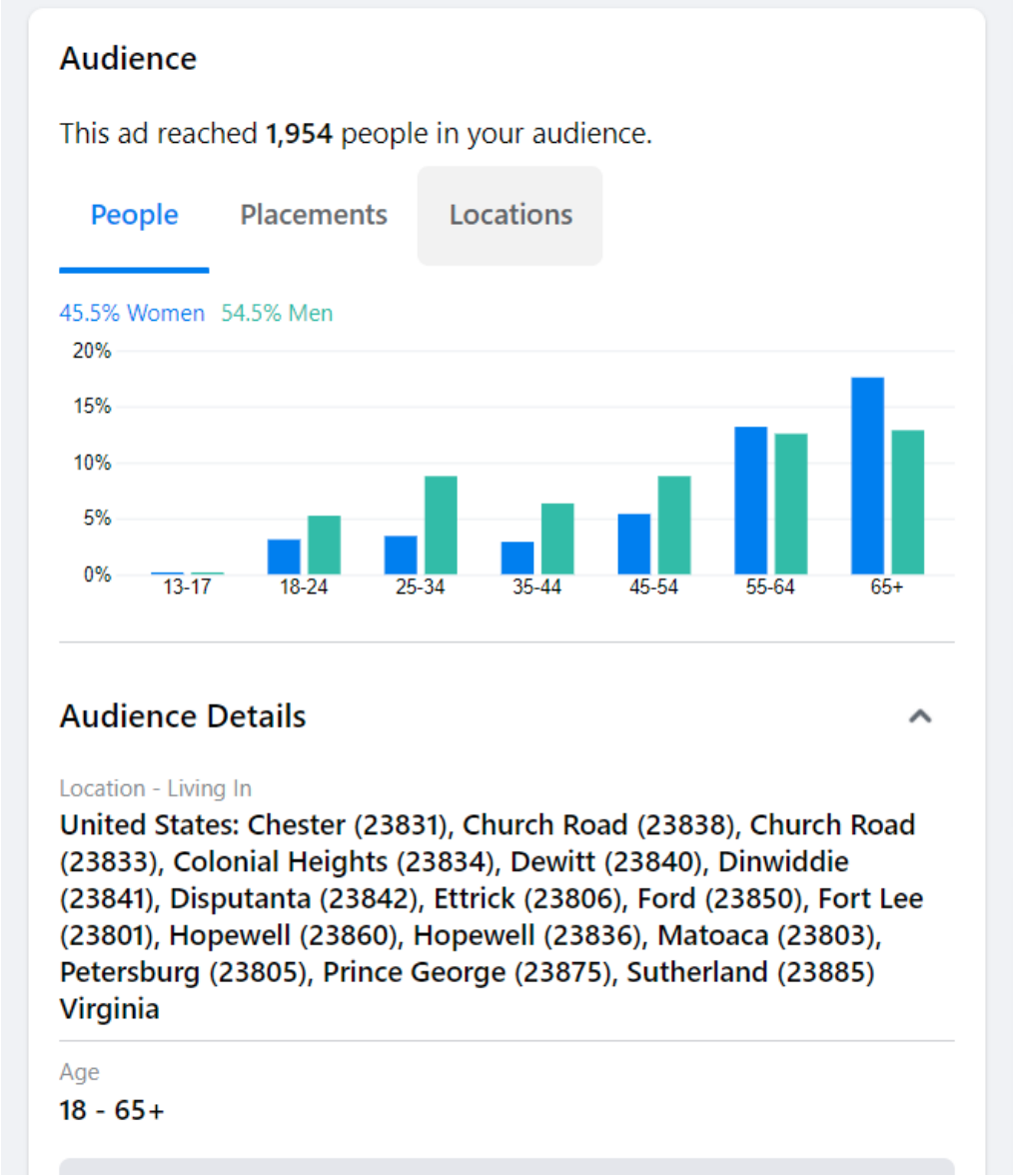


- Instagram ads: 1,954 reached/boosted from TCAMPO's Instagram page


Post Engagements
105
Reach
1,954
Cost Per Post Engagement
$0.38
Activity
Post Engagement
105
Post Reactions
51
Link Clicks
16
Post Shares
4
Post Comments
4
See Less



- Ad with link to survey posted 3-4 times each to local Facebook groups in Colonial Heights, Petersburg, Dinwiddie, Hopewell, and Prince George County
- Survey also sent to TAC and Policy Committee distribution lists (including the media) for further advertising on locality websites, etc.
- Survey was placed in the TCAMPO, Crater PDC and *Plan2045* webpages (over 1,200 hits in January 2021)

Results:

- 244 visits to survey site
- 125 persons filled out the entire survey
- 26 persons asked to be added to the email list for *Plan2045* and/or MPO
- Demographics:

    - Age of respondents to this question (rounded to nearest %):
        - 19-30 – 7%
        - 31-40 – 14%
        - 41-50 – 20%
        - 51-60 – 23%
        - 61+ - 36%
    - Race of respondents to this question (rounded to nearest %):
        - Black or African American – 19%
        - Hispanic or Latino – 2%
        - Native Hawaiian or Other Pacific Islander -2%
        - White – 77%
- Responses:
    - Rankings of Importance:
        - #1 Safety
        - #2 Accessibility
        - #3 Health and Equity
        - #4 Connectivity
        - #5 Economic Vitality
        - #6 Environment
        - #7 Maintenance and Operations
        - #8 Resiliency
    - "Chips exercise" (how to spend each dollar, by project type)
        - Road Safety – 22%
        - Bike/Ped – 22%
        - Intercity Bus or Rail* – 20%*
        - Transit – 12%
        - New/Expanded Roads – 9%
        - Air – 7%
        - Remaining _8%

      **Note: a significant set of persons from the Concerned Citizens of Ettrick (which supports keeping the Petersburg Station in Ettrick) appear to have given this answer; it is also not clear if some respondents defined "intercity" as meaning travel by bus or rail from Tri-Cities to Richmond or Hampton Roads.*

<u>Lessons Learned:</u>

- This was a long and potentially confusing survey; fortunately, MPO staff had decided to do this survey first, then do the Problems, Issues, and Needs Locations survey in Summer of 2021
- Make sure an online survey lasts at least a month
- It appears our Facebook targeted older persons and Instagram targeted younger persons, so divide the advertising between these social media platforms

- We can only know the race and home/work/school locations of respondents by asking these questions in the survey. Facebook and Instagram only give age and sex.
- Advertising on social media reaches a wider and larger audience, may better reach low-income, disadvantaged, and underserved populations at a low price.
- We need to better engage minority and non-English speaking persons. We have begun reaching out to these media to help keep these groups informed and get these populations engaged, keep asking and reaching While whites represent 53% of the total population of the entire localities, 77% of the survey respondents (that answered this question) stated they were white. It is hoped the Problems, Issues, and Needs Locations survey in the Summer of 2021 (being better connected to residents and shorter and easier to fill out on a phone or tablet) will yield a better result.

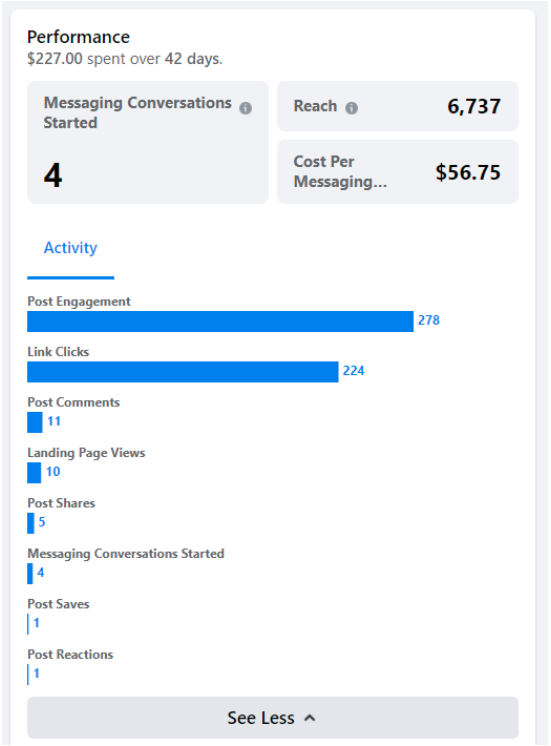
See the results on the Plan2045 Engagement webpage.

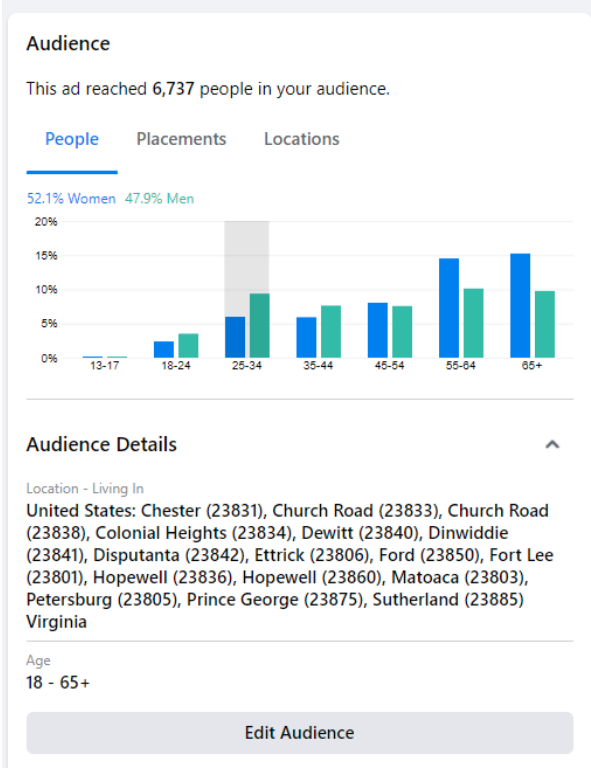
METROQUEST SURVEY #2: PROBLEMS, NEEDS, ISSUES SURVEY

Background:

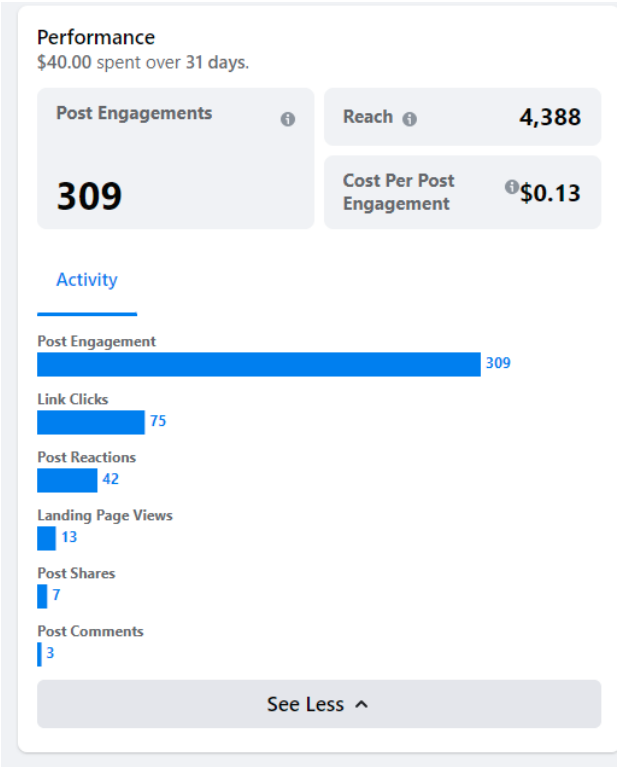
- Developed in July 2021 with help from VDOT Richmond District
- Survey ran from July 15, 2021, to August 15, 2021
- Survey asked for public responses regarding:
    - Identify and map needs, problems, and issues
    - Response to proposed Draft *Plan2045* Vision

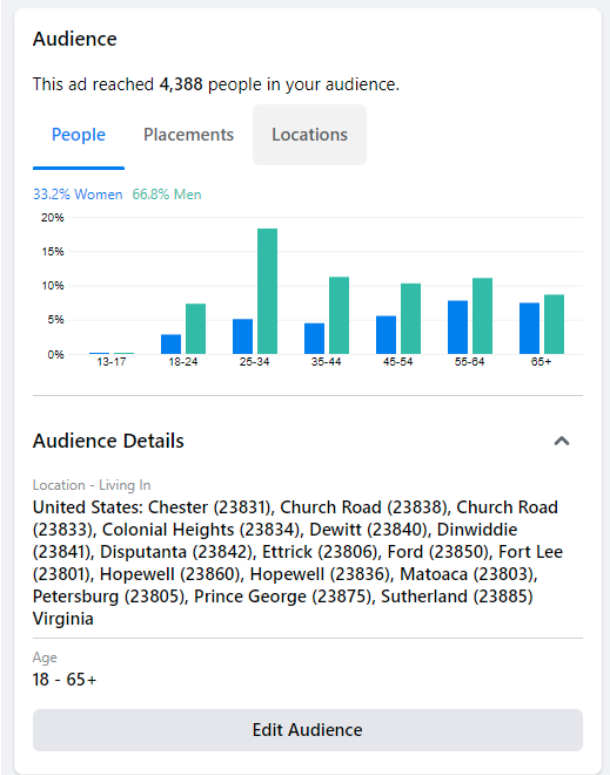
Promotion:

- Facebook ads: 6,737 total ads posted/boosted from TCAMPO's Facebook page and local issues-oriented Facebook groups.
    - Boosted July 9 – August 20; 6,737 reached
    - 

- o 

- Instagram ads: posted/boosted from TCAMPO's Instagram page July 15-August 15:
  - 4,388 reached

- 



- Ad with link to survey posted 3-4 times each to local Facebook groups in Colonial Heights, Petersburg, Dinwiddie, Hopewell, and Prince George County
- Survey also sent to TAC and Policy Committee distribution lists (including the media) for further advertising on locality websites, etc.
- Survey sent to local media
- Survey was placed in the TCAMPO, Crater PDC and *Plan2045* webpages (over 200 hits in July 2021)

Results:

- 299 clicks to survey site from Facebook and Instagram
- 125 persons filled out the entire survey
- An additional 42 persons asked to be added to the email list for *Plan2045* and/or MPO
- Demographics:
    - Age of respondents to this question (rounded to nearest %):
        - 19-30 – 7%
        - 31-40 – 14%
        - 41-50 – 20%
        - 51-60 – 23%
        - 61+ - 36%

    - Race of respondents to this question (rounded to nearest %):
        - Black or African American – 19%
        - Hispanic or Latino – 2%
        - Native Hawaiian or Other Pacific Islander -2%
        - White – 77%
    - Household Income:
    - See the results on the Plan2045 Engagement page
- Responses:
    - Responses vary from poor pavement to congestion to intersection safety to needing sidewalks, etc.

Lessons Learned:

- It continues to appear that Facebook targeted older persons and Instagram targeted younger persons, so we need to continue to divide the advertising between these social media platforms
- We were able to know the race, household income, and home/work/school locations of respondents by asking these questions in the survey. We will need to also for household size to more fully assess if we are capturing Low Income persons (i.e., percent below poverty level). Facebook and Instagram only give age and sex.
- Advertising on social media reaches a wider and larger audience, appears to better reach low-income, disadvantaged, and underserved populations at a low price.
- Our Facebook presence and engagement with others was improved; we received almost 600 post engagements with about 100 likes and comments through our Facebook posts (our site and the issues-oriented local Facebook Groups).
- We need to continue to improve engaging minority and non-English speaking persons. We began reaching out to these media before this Needs, Problems, and Issues survey started to help keep these groups informed and get these populations engaged, keep asking and reaching. We were better able to lower the whites (53% of the total population of the entire localities) from 77% of the survey respondents in the first survey to 66% in this survey stating they were white.
- While many persons were reached via Facebook/Instagram (11,125), and from them there were 587 "clicks" going from Facebook/Instagram to the survey, only 125 completely filled out the survey. This could be due to some persons multiple times going to the survey, which would pump up the number going to the survey. RRTPO noted about 1,000 persons responded to their survey for *ConnectRVA 2045* (the RRTPO portion of the urban area is about 825,000 of the 2010 urban area population), which equals 0.12% of the total population. The TCAMPO portion of the urban area is about 128,000 population, which using RRTPO's 0.12% response

rate would have been 153 persons (which we are slightly short). Other MPOs are experiencing much higher completed surveys. We plan on even broader and varied promotion of the *Draft Plan2045* in the Spring of 2022.

Draft Plan2045 Document Public Participation Public Involvement Period
April 15 – May 15, 2022

Outreach/Advertisements:

- Announcement on Crater PDC and Plan2045 webpage
- Facebook ads – 14,568 persons reached
- Instagram ads – 5,457 persons reached
- In multiple Facebook local issues groups
- MPO Member/Interested parties ads/notes
- Legal ads published April 22 in Richmond Times-Dispatch, Petersburg Progress-Index, and Richmond Free Press (minority)
- Public Meeting April 26, 4-6 p.m.; at the Petersburg Public Library

Results:

- 429 clicks from Facebook and Instagram ads to the Plan2045 website
- 6 likes on Facebook, 16 likes on Instagram
- 3 persons used our "Get Connected" comments tool on the *Plan2045* webpage
- 659 persons connected to the Plan2045 Engagement webpage from April 1, 2022 – May 18, 2022
- Received written comments from 5 people
- Received one oral comment/question at the Public Meeting
- Two persons (beyond the MPO and VDOT) attended the 4/26 Public Meeting
- Invited to give an overview of *Plan2045* to the Colonial Heights Planning Commission

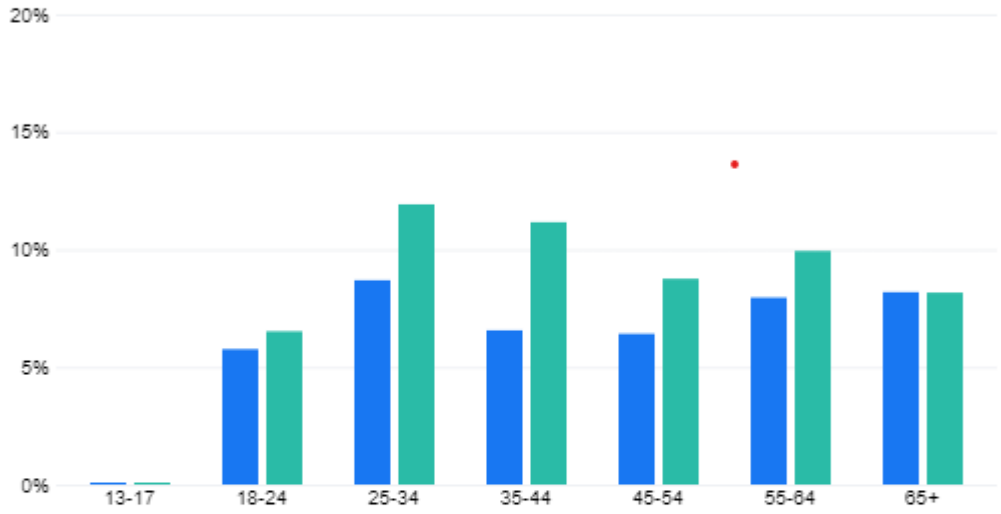
Reach

Virginia 100 %

Age and gender

The estimated breakdown of people who saw your ads.

43.6% Women 56.4% Men



Placements

Where people saw your ads.

News Feed on Mobile App	42 %
Instagram Feed on mobile devices	17 %
Suggested videos feed on mobile devices	15 %

See more

Reach

The number of people who saw your ads at least once.

Ads summary

Tri-Cities Area Mpo spent $388.16 on 3 ads in the last 60 days.

Last 60 days: Mar 16, 2022 - May 14, 2022

Reach	Post engagement	Messaging Conversations Started	Link clicks
18,988 ↑ 100%	462 ↑ 100%	--	434 ↑ 100%
See more	See more	See more	See more

Recent ads

Completed • May 6 • Created by Tri-Cities Area Mpo				View results
Boosted Instagram media	3,648 Reach	-- Messaging Conversatio...	$57.75 Spent at $10.00 per...	
Completed • May 2 • Created by Tri-Cities Area Mpo				View results
Boosted Instagram media	1,809 Reach	19 Link clicks	$16.14 Spent at $10.00 per...	
Completed • Apr 13 • Created by Tri-Cities Area Mpo				View results
Website visitors The Draft Plan2045:...	14,568 Reach	410 Link clicks	$319.97 Spent at $10.00 per...	

See all ads

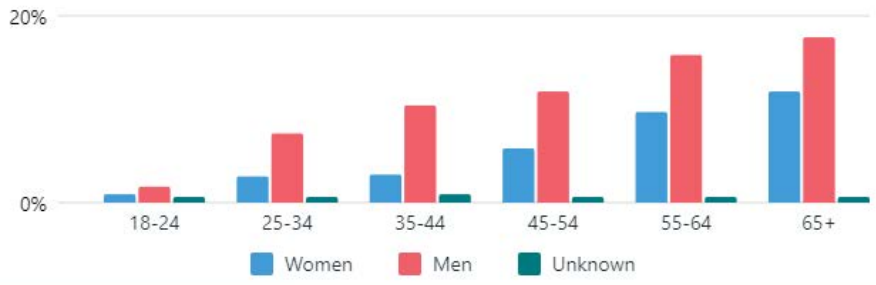
Audience

Last 60 days

Post Engagement

462

Age & gender | Placements | Locations



Recommendations and Needs from Various Plans and Studies

Plan2045 Vision Regionally Signficant and Scored Projects				
Locality	Route	Location	Comment	Project UPC
Chesterfield	10	I-295 to N. Enon Church Rd	Widen from 4-6 lanes in median	
Prince George	144	Appomattox River to Puddledock Rd	Widen from 4-6 lanes in median	
Prince George	144	Puddledock Rd to Oaklawn (Rt 36)	Widen from 4-6 lanes in median	

I-95 RSA Projects				
Locality	Route	Location	Comment	Project UPC
Colonial Heights	95	Exit 53 SB Improve interchange configuration at Roslyn Road to address safety issues (Further Study Required)	Formerly had a Chapter 527 report	
Petersburg	95	Exit 52 Improve I-95 SB interchange configuration at Washington St. (further study required)	Change from stop sign to yield?	
Petersburg	95	Wagner Road interchange	Remove weaving so Route 460 can be officially placed	
Petersburg	95	Capacity Constraint: Off Ramp at Rives Rd Interchange	Need Interchange Improvement by 2017 (TCAMPO)	

I-95 Corridor Study Candidate Projects				
Locality	Route	Location	Comment	Project UPC
Petersburg	85/95	I-85 NB to I-95 SB	Relocate off-ramp further south down CD road to Crater Rd	
Petersburg	95/85	I-95 NB Flyover	Build flyover ramp from I-95 NB to I-85 SB	
Colonial Heights	95 SB	Roslyn/Southpark Interchange	Extend acceleration lane, study further improvements	
Petersburg	85	Route 1 Interchange	Extend acceleration lane	
Petersburg	95	Exit 52 Improve I-95 SB interchange configuration at Washington St. (further study required)	Change from stop sign to yield?	
Petersburg	95	Exit 48 Improve interchange configuration at U.S. 460 (Wagner Road) to remove weaving movements (Further Study Required)	Remove weaving so Route 460 can be officially placed	
Petersburg	95	Exit 47 Improve interchange configuration at Rives Rd (Further Study Required)	Former project to improve interchange	
Petersburg	95	Capacity Constraint: Off Ramp at Rives Rd Interchange	Need Interchange Improvement by 2017 (TCAMPO)	

I-85 Technical Memorandum Recommendations				
Locality	Route	Location	Comment	Project UPC
Petersburg	85/95	I-95 NB to I-85 SB Flyover	Also in I-95 Corridor Study	
Dinwiddie	85	Extend acceleration lane from Route 1 NB		
Dinwiddie	85	Exit 63 improve safety and operations	Evaluate Interchage to improve safety and operations traveling onto and off of US 1 and I-85. Include the US 1 segment bewtween Simmons Ave and Simpson rd	
Dinwiddie	85	Exit 61 Safety	Evaluate intersections on US 460 between the SB I-85 ramp and the intersection of US 1 and US 460. Study should focus on improving safety at the SB I-85 ramp node, and well as operations and safety at the intesection of US 460 and US 1	
Dinwiddie/ Petersburg	1	US 1: I-85 to Atlantic St.	Evaluate segment for further study to reduce congestion at and improve access management	
Dinwiddie	1	US 1: Franklin Street to Cox Rd	Evaluate segment for further study to reduce congestion at Cox Rd and US 1 and reduce angle crashes along segment	
Dinwiddie	1	NB US 1: Exit 63A to Simmons Ave	Evaluate NB US 1 segment to eliminate confusing lane drop and merge area on US 1 with I-85	
Dinwiddie	1	NB US 1: Exit 63A	Widen and lengthen NB US 1 turn lane onto I-85 NB	
Dinwiddie	1	US 1: Exit 63A to Sterling Rd	Evaluate segment for further study to improve access management	
Dinwiddie	1	US 1/US 460 intersection	Study interesection to reduce angle crashes. Re-evaluate clearance intervals, consider innovative intersections, and determine pavement width	

I-295 Technical Memorandum Recommendations				
Locality	Route	Location	Comment	Project UPC
Chesterfield	295	Varina-Enon Bridge	Install Wind Advisory System	

I-85/95 Interchange Feasibility Study Projects				
Locality	Route	Location	Comment	Project UPC
Petersburg	85/95	I-85 NB to I-95 SB	Relocate off-ramp further south down CD road to Crater Rd	
Petersburg	85/95	I-95 NB ramps	Combine NB off ramps and realign NB on-ramp	
Petersburg	95/85	I-95 NB Flyover	Build flyover ramp from I-95 NB to I-85 SB	

2016 TCAMPO CMP Needs Locations				
Locality	Route	Location	Comment	Project UPC
Chesterfield	10	2020 Congestion - N. Enon Church Rd (Rt 746) to I-295 Ramp	Need additional 1 lane in each direction by 2020	
Chesterfield	144	2020 Congestion - Rt 144 Temple Ave from ECL Colonial Heights to Prince George CL	Need additional 1 lane in each direction by 2020	
Colonial Heights	95	2020 Congestion - Temple Ave Ramp (Rt 144) to NCL Colonial Heights	Need additional 1 lane in each direction by 2020	
Hopewell	36	2020 Congestion - Oaklawn Blvd from WCL Hopewell to Jefferson Park Rd	Need additional 1 lane in each direction by 2020	
Hopewell	36	2020 Congestion - Oaklawn Blvd from Jefferson Park Rd to I-295	Need additional 1 lane in each direction by 2020	
Prince George	95	2020 Congestion - I-95 from Warwick Swamp to NB Off Ramp Rt 301	Need additional 1 lane in each direction by 2020	
Prince George	95	2020 Congestion - I-95 NB Off ramp Rt 301 to SB On Ramp I-295	Need additional 1 lane in each direction by 2020	
Prince George	144	2020 Congestion - Rt 144 from Prince George CL to Puddledock Rd	Need additional 1 lane in each direction by 2020	
Prince George	144	2020 Congestion - Rt 144 from Puddledock Rd to Rt 36	Need additional 1 lane in each direction by 2020	

Trail Plans				
Locality	Route	Location	Comment	Project UPC
Multi-Jurisdiction		Appomattox River Trail Master Plan Trails (trails all along the Appomattox River, both sides)	FOLAR Master Plan, RRTPO Regional Bike-Ped Plan	
Multi-Jurisdiction		Fall Line Trail (ATP), Branders Bridge Rd to Patton Park	ATP Trail Plan	

RTC Model Needs, 2017 to 2045				
Locality	Route	Location	Comment	Project UPC
Chesterfield	10	Capacity Constraint: E Hundred Rd from Old Bermuda Hundred Rd to Riverside Blvd	Capacity Improvements	
Chesterfield	10	2020 Congestion - N. Enon Church Rd (Rt 746) to I-295 Ramp	Capacity Improvements	
Chesterfield	295	Capacity Constraint: E Hundred Rd & I-295 Interchange	Capacity Improvements	
Chesterfield	295	Capacity Constraint: I-295 & Meadowville Rd Interchange	Capacity Improvements	
Chesterfield	620	Capacity Constraint: Ramblewood Dr from Golf Course Rd to Woods Edge Rd	Capacity Improvements	
Chesterfield	620	Capacity Constraint: Woods Edge Rd from Lawing Dr / Wood Edge Rd to Walthall Creek Dr	Capacity Improvements	
Chesterfield	626	Capacity Constraint: Woodpecker Rd from Bradley Bridge Rd to Sandy Ford Rd	Capacity Improvements	
Chesterfield	626	Capacity Constraint: Woodpecker Rd from Woodpecker Rd/ Matoaca Rd intersection to Lakeview Dr / Chestnut Ridge Rd	Capacity Improvements	
Chesterfield/ Hopewell	10	Capacity Constraint: Rt 10 E Hundred Rd from Point of Rocks Rd to N 6th Ave	Capacity Improvements	
Chesterfield/ Colonial Heights	95	Capacity Constraint: I-95 from Willis Rd to Temple Ave	Capacity Improvements	
Colonial Heights	95	Capacity Constraint: I-95 SB from Conduit Rd to Southpark Blvd	Capacity Improvements	
Colonial Heights	N/A	Capacity Constraint: Dupuy Ave from Boulevard to Battery Place	Capacity Improvements	
Colonial Heights/ Petersburg	95	Capacity Constraint: I-95 from Southpark Blvd to E. Bank St	Capacity Improvements	
Dinwiddie/ Petersburg	85	Capacity Constraint: I-85 from Airport St to Youngs Rd	Capacity Improvements	
Hopewell	10	Capacity Constraint: E. Randolph Rd from E. City Point Rd to Winston Churchill Drive	Capacity Improvements	
Hopewell/ Prince George	295	Capacity Constraint: I-295/Oaklawn Interchange	Capacity Improvements	
Petersburg	95	Capacity Constraint: I-95 from Wagner Rd to County Dr	Capacity Improvements	
Petersburg	95	Capacity Constraint: I-95 NB On Ramp at County Dr Interchange	Capacity Improvements	
Petersburg	95	Capacity Constraint: Off Ramp at Rives Rd Interchange	Capacity Improvements	
Petersburg	95/85	Capacity Constraint: I-85/95 Interchange	Capacity Improvements	
Prince George	95	Capacity Constraint: I-95 from I-295/I-95 Interchange to TCAMPO line	Capacity Improvements	

Route 36 STARS Study				
Locality	Route	Location	Comment	Project UPC
Hopewell	36	Crossings intersection	Innovative intersection	
Hopewell	36	Tri-Cities intersection	Innovative intersection	

VDOT Pedestrian Safety Action Plan (PSAP) Study 1.0 (VDOT) and PSAP Study 2.0 (City)				
Locality	Route	Location	Comment	Project UPC
Chesterfield	1	Old Hundred Rd to Colonial Hts NCL	PSAP 1.0 Priority 1 (top .1%)	
Colonial Heights	1	Colonial Hts NCL to Colonial Hts. SCL	PSAP 2.0 Priority 2 (top 1%)	
Colonial Heights	144	Route 1 to roundabout	PSAP 2.0 Priority 3 (top 5%)	

Colonial Heights		Ellerslie Ave, Rt 1 to Conduit	PSAP 2.0 Priority 3 (top 5%)	
Hopewell	10	Hopewell NCL to Hopewell ECL	PSAP 2.0 Priority 3 (top 5%)	
Hopewell	36	Hopewell WCL to Rt 10	PSAP 2.0 Priority 1 (top .1%)	
Hopewell	156	Hopewell SCL to Rt 10	PSAP 2.0 Priority 2 (top 1%)	
Hopewell		W. Broadway Ave, N. 6th Ave to Rt 10	PSAP 2.0 Priority 3 (top 5%)	
Hopewell		N. 6th Ave, w. Broadway to Winston Churchill	PSAP 2.0 Priority 3 (top 5%)	
Hopewell		Danville St, Miles Ave. to s. 17th Ave	PSAP 2.0 Priority 3 (top 5%)	
Hopewell		Courthouse Rd, Ashland Ave to Arlington Rd	PSAP 2.0 Priority 3 (top 5%)	
Hopewell		Old Iron Rd, Courthouse Rd to Monroe Ave	PSAP 2.0 Priority 3 (top 5%)	
Petersburg	1	Wythe St, S. Jefferson St to Summit St.	PSAP 2.0 Priority 1 (top .1%)	
Petersburg	1	Adams St, Petersburg NCL to Central Park	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Adams St, Central Park to Apollo St	PSAP 2.0 Priority 2 (top 1%)	
Petersburg	36	Bollingbrook St, Adams St to N Crater Rd	PSAP 2.0 Priority 2 (top 1%)	
Petersburg	36	N. Crater Rd, Bollingbrook St to E Wythe St	PSAP 2.0 Priority 2 (top 1%)	
Petersburg	360	Crater Rd, E Wythe St to Petersburg SCL	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		3rd St., Bollingbrook St to Henry St.	PSAP 2.0 Priority 1 (top .1%)	
Petersburg		Henry St, 3rd St. to N. Jefferson St.	PSAP 2.0 Priority 1 (top .1%)	
Petersburg		N. Jefferson St., Henry St to E. Wythe St.	PSAP 2.0 Priority 1 (top .1%)	
Petersburg		Bank St., N. Sycamore St. to Adams St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		E. Bank St., Adams St. N. Madison St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		E. Bank St., N. Crater Rd to E. Washington St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		N. Sycamore St., Bollingbrook St. to Washington St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		Union St., N of Washington St. to Wythe St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Halifax St., Wythe St. to S. West St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg	36	E. Wythe St., N. Crater Rd to Washing ton St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg	36	E. Washington St., E. Wythe St. to Petersburg ECL	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Puddledock Rd, Rt 36 to Harrison Creek	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		S. West St., Halifax St. to Lincoln St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		Patterson St., S. West St. to Augusta Ave.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Farmer St., Youngs Rd. to Halifax St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		S. West St., Willcox St. to Young Ave	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		Young Ave, S. West St. to Halifax St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		Virginia Ave., Halifax St. to High Pearl Rd	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		High Pearl Rd., St. Matthew St. to Homestead Dr.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		W. South Blvd, High Pearl Rd to Crater Rd	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		S. South St., Farmer St. to Lee Ave	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		Lee Ave, S. South St. to Halifax St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Harding St., New St. to St. Matthew St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		St. Matthew St., High Pearl Rd to Harding St.	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		S. Sycamore St., Wythe St. to S. Crater Rd	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Porterville St., Halifax St. to Harding St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		New St., Harding St. to Harrison St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Corling St., Harrison St. to S. Sycamore St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Harrison St., New St. to Corling St.	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Graham Rd, S. Sycamore St. to Jefferson Pl	PSAP 2.0 Priority 2 (top 1%)	
Petersburg		Wagner Rd, S. Crater Rd. to I-95	PSAP 2.0 Priority 3 (top 5%)	
Petersburg		County Drive, I-95 to I-295	PSAP 2.0 Priority 3 (top 5%)	

Vtrans Priority 1 Locations

Locality	Route	Location	Comment	Project UPC
Colonial Heights	1	Boulevard/Temple Ave intersection	High Safety, congestion, TDM, bicycle access, pedestrian access	109264
Chesterfield	1	Happy Hill and Woods Edge intersections	Already addressed with HSIP and MPO funds	104661
Chesterfield	1	Rt 144 (Harrowgate Rd) intersection	High safety and capacity preservation needs	
Chesterfield	10	Rt 742 (N. Enon Church Rd) intersection	High safety, congestion, and bicycle access needs	
Hopewell	36	Winston Churchill/High St intersection	High safety, TDM, bicycle access needs	
Petersburg	36	Puddledock Rd intersection	High congestion, safety, TDM needs	101030
Petersburg		Wagner Rd/ Poplar intersection	High safety, TDM, bicycle access needs	
Prince George	144	Puddledock Rd intersection	High congestion, safety, TDM needs	105131

Note: all Priority 1 projects are District Priorities, none are Statewide

Priority 2 Locations (District and Statewide)

Locality	Route	Location	Comment	Project UPC
Colonial Heights	1	Boulevard/Ellerslie intersection	High safety, bicycle access needs	
Colonial Heights	1	Boulevard, Temple Ave to Branders Bridge	High TDM, bicycle access	107534
Colonial Heights	1	Boulevard, Piedmont to Dupuy Ave	High TDM, bicycle access, pedestrian access	52434, 3945
Colonial Heights	144	From Conduit to Mall Entrance	High TDM and bicycle access needs	98882 (int.)
Colonial Heights	144	Charles Dimmock Parkway intersection	High safety, bicycle access needs	97691
Colonial Heights		Dimmock Pwky, Southpark Blvd - Temple Lake Dr	High safety need	
Colonial Heights		Conduit Rd, Home Depot to Elmwood	High safety need	

Chesterfield	1	From Woods Edge to Harrowgate	High capacity preservation need	
Chesterfield	626	Branders Bridge/Lakeview intersection	Roundabout project?	109229
Dinwiddie	1	Rt 1/226 intersection	High TDM, distressed area needs	73268
Dinwiddie	1	Rt 1/Ritchey Ave/Weakley Rd intersection	High safety, distressed area needs	
Dinwiddie	600	Ferndale/River Rd intersection	High safety, distressed area needs; SS funded	112715
Hopewell	36	Oaklawn/Crossing intersection	High safety, STARS study; SSS application	
Hopewell	36	Oaklawn, Crossings to I-295	High safety, STARS study; SS application	
Hopewell	10	W. Randolph/Riverside Ave intersection	High bicycle access, distressed area needs	
Hopewell	10	E. Randolph/N. Main St intersection	High bicycle access, distressed area needs	
Hopewell	10	E. Randolph/E. City Point Rd intersection	High bicycle access, ped access, distressed area needs	
Hopewell	36	Oaklawn Blvd/Miles Ave intersection	High safety, distressed area needs	
Hopewell	36	Winston Churchill, Cavalier Sq. to Twin Rivers Rd	High bicycle access, distressed area needs	
Hopewell		15th Ave, W. City Point Rd through Maryland Ave	High safety, bicycle access needs, distressed area needs	
Hopewell		S. Mesa/Danville St intersection	High safety, distressed area needs	
Hopewell		W. Broadway/21st Ave intersection	High safety, distressed area needs	
Hopewell		W. Broadway, S. 15th Ave to N. 6th Ave	High bicycle access, distressed area needs	
Petersburg	1	Washington/West St. intersection	High bicycle access, distressed area needs	
Petersburg	301	Washington/Crater Rd intersection	TDM, distressed area needs	
Petersburg	I-95 SB	NCL to St. Andrews St	TDM, rail on-time, distressed area needs	
Petersburg	I-95 NB	Wythe St to Washington St.	TDM, pavement, distressed area needs	
Petersburg	I-95 SB	Rives Rd/I-95 SB ramps intersection	TDM, rail on-time, distressed area needs	
Petersburg	301	Crater Rd/Washington intersection	TDM, distressed area needs	
Petersburg	301	Crater Rd/Mingea St intersection	Distressed area needs	
Petersburg	301	Crater Rd/Graham Rd intersection	High safety, transit equity, bicycle access needs	
Petersburg	301	Crater Rd, Graham Rd to South Blvd	High safety, transit equity, bicycle access needs	
Petersburg	301	Crater Rd/Sycamore/Walnut intersection	High safety	
Petersburg	301	Crater Rd., RR overpass to Oak Hill Rd	High safety	
Petersburg	301	Crater Rd/Wagner Rd intersection	High safety, bicycle access needs	
Petersburg	301	Crater Rd, Wagner Rd to Rives Rd	High safety, bicycle access needs	
Petersburg	36	From Puddledock Rd to Prince George Co	High safety, distressed area needs	
Petersburg	36	E. Washngton St, Amelia St to Puddledock Rd	High safety, distressed area needs	
Petersburg	Bus 460	From Hickory Hill Rd to Wagner Rd	High safety, distressed area needs	
Petersburg	Alt 301	Sycamore St, Wythe to Central Park	High safety, distressed area needs	
Petersburg	Alt 301	Sycamore St/North Blvd intersection	High safety	
Petersburg	Alt 301	Sycamore St, East Blvd to Wyanoke	High safety, transit equity	
Petersburg		Third/Bank St intersection	TDM, distressed area needs	
Petersburg		Halifax/Virginia/Young Ave intersection	High safety, bicycle access, distressed area needs	
Petersburg		Wagner Rd, Rt 1 - I-95	High safety, TDM, bicycle access needs	
Prince George	36	Ramp/Sisisky intersection	High congestion, TDM, pavement needs; ARRA projects	
Prince George	106	Rt 106/156 intersection	High TDM, pavement needs	
Prince George	460	W. Quaker Rd to Wells Station Rd	High TDM	

Commerce Corridor Study				
Locality	Route	Location	Comment	Project UPC
Chesterfield		Improvements to CSX Bermuda Hundred Lead. Construction of sidings and leads as needed to provide rail access to select parcels within Meadowville Area	Rail	
Multi-Jurisdiction	95	Maintain and enhance I-95 mainline capacity	Freight and Intermodal	

State Park and Ride Plan Update				
Locality	Route	Location	Comment	Project UPC
Dinwiddie	85	New Park and Ride Lot at I-85 & Rt 460/Airport Rd, Exit 61	Recent State PNR study update	
Petersburg	95	New New Park & Ride lot near Crater Rd/Graham Rd (Exit 50)	Earlier State PNR plan, I-85/95 Interchange Feasibility Study	
Petersburg	95	New 100-space Park & Ride lot near Winfield/Rt 460 and I-95 (Exit 50)	Recent State PNR plan update, I-85/95 Interchange Feasibility Study	
Prince George	295	New Park & Ride lot near I-295 & Rt 460/ County Drive	Recent State PNR plan update	

State Railway Plan (2017)				
Locality	Route	Location	Comment	Project UPC
Multi-Jurisdiction		Atlantic Gateway Rail: S-Line Transfer-Provide a mechanism to allow for the transfer from CSX to public ownership of the S-Line, an abandoned rail line that runs from North Carolina to the Petersburg area.	Passenger Rail, State Railway Plan 2017	

2019 Transportation Socio-Economic Data

Prepared by the Tri-Cities Area Metropolitan Planning Organization; approved September 12, 2019 by the Tri-Cities Area MPO Policy Committee

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Introduction

Developing and adopting a metropolitan transportation plan (MTP) is a huge job. Once an MTP is adopted, staff and decision-makers often look at the document with justified pride, having spent enormous effort developing a plan focus, and move on to the next job. This is one of a proposed series of whitepapers intended to keep the MTP current, address easily understood parts of the MTP, allow partner agencies and the public more opportunities to meaningfully participate in transportation planning, and better inform decision-makers.

The whitepapers are organized similarly, and each will include a title, our contact information, a revision history, MPO context, the regulatory citation that we are working with information showing current conditions, a discussion of conditions, recommendations for improvement and cited literature.

Context

The Tri-Cities Metropolitan Planning Organization was created on March 21, 1974, by agreement between the Crater Planning District Commission and the Virginia Department of Highways. The Cities of Colonial Heights, Hopewell, Petersburg and the Counties of Chesterfield, Dinwiddie and Prince George also entered into supporting a continuing transportation planning process for the metropolitan area. On November 7, 1979, Virginia's Secretary of Transportation designated the Tri-Cities Area Policy Committee as the Metropolitan Planning Organization for the Tri-Cities Area. **Figure 1** shows the MPO's planning area and its location in the Commonwealth of Virginia. To better understand transportation in the Tri-Cities Area you may wish to read our *Tri-Cities Area Year 2040 Transportation Plan* located at https://www.craterpdc.org/transportation/mpo.htm

Tri-Cities MPO Planning Area Selecting the Base and Design Years for the Socio-Economic Data

Methodology for the Base Year

For the 2012 Base Year Data Traffic Analysis Zone (TAZ) Numbers were changed in Richmond Regional TPO and Tri-Cities Area MPO to be consistent with each other. In previous years, the Richmond Regional TPO and Tri-Cities Area MPO did not have TAZs that followed each other for the Virginia Department of Transportation Traffic Analysis Model. These new TAZ Numbers were used for the 2017 Base Year Data. For 2017 Base Year Data, TAZs were assigned for all of Dinwiddie County and Prince George County, not just TAZs in the Tri-Cities Area MPO Planning Area (as was done in previous SE data exercises).

Population and Housing

The 2017 base year methodology for development housing and population data used a bottom up approach for tracking local residential development. Chesterfield County (Tri-Cities Area MPO members) was the only locality that tracked their annual growth through their Continuing, Cooperative and Comprehensive data process, also known as 3-C data. Crater Planning District Commission (CPDC) and local staff decided to use this approach for all jurisdictions in developing the population and housing data as part of the 2017-2040 Socioeconomic update.

In the previous 2040 Long-Range Transportation Plan effort, for the 2012 base year development, the CPDC attended a 3-C workshop led by Henrico, Chesterfield and Hanover to better understand how housing and population data is tracked. CPDC Staff used the Henrico method for this effort also to develop a standard model template for the rest of jurisdiction as follows:

- Record certificate of occupancies (COs) or Building Permit and demolitions by address/location and using GIS, spatially joining each CO or building permit and demolition point to the transportation analysis zone (TAZ).
- Since the 2010 Census Summary File 1 (SF1) data was completed on April 1, 2010 each jurisdiction was instructed to track their COs or building permits and demolitions from April 1 – Dec 31, 2010, and then for each subsequent calendar year 2011 and 2017.
- Using the 2010 Census SF1 data as the starting point, all the Census blocks with total population, group quarters population, total housing units, vacant housing units, and occupied housing units where nested into each TAZ.
- COs or building permit and demolitions dating from April 1 – Dec 31, 2010 were then input-ted into 3-C model for year 2010.
- The same step above was repeated for 2017 which calculated the population and housing data through the end of 2017.
- Vacancy rates and average household sizes used the 2010 Census SF1 for years 2010 - 2017 as more accurate estimates than ACS.
- Overall locality population data were compared to the 2017 American Community Survey (ACS) and the 2017 Weldon Cooper Estimates of Population.

Base Year (2017) Automobiles

The following methodology was used to determine auto distribution by TAZ in the Region:

- The source for auto data is the Census Transportation Planning Products (CTPP) 2006-2010 5-year estimates based on ACS 2006-2010 released on October 31, 2013. The CTPP releases data in many geographic levels, TAZ (henceforth called CTPP TAZ) being one.

Note on Chesterfield County

Chesterfield County is shared between the Tri-Cities Area MPO and the Richmond Regional TPO. To improve consistency and efficiency, staff from the Richmond TPO developed the base and design year socioeconomic data for all of Chesterfield County and shared them with the Tri-Cities MPO staff. TCAMPO is including those estimates in this report for completeness.

Figure 1: Tri-Cities Area MPO Metropolitan Planning Area

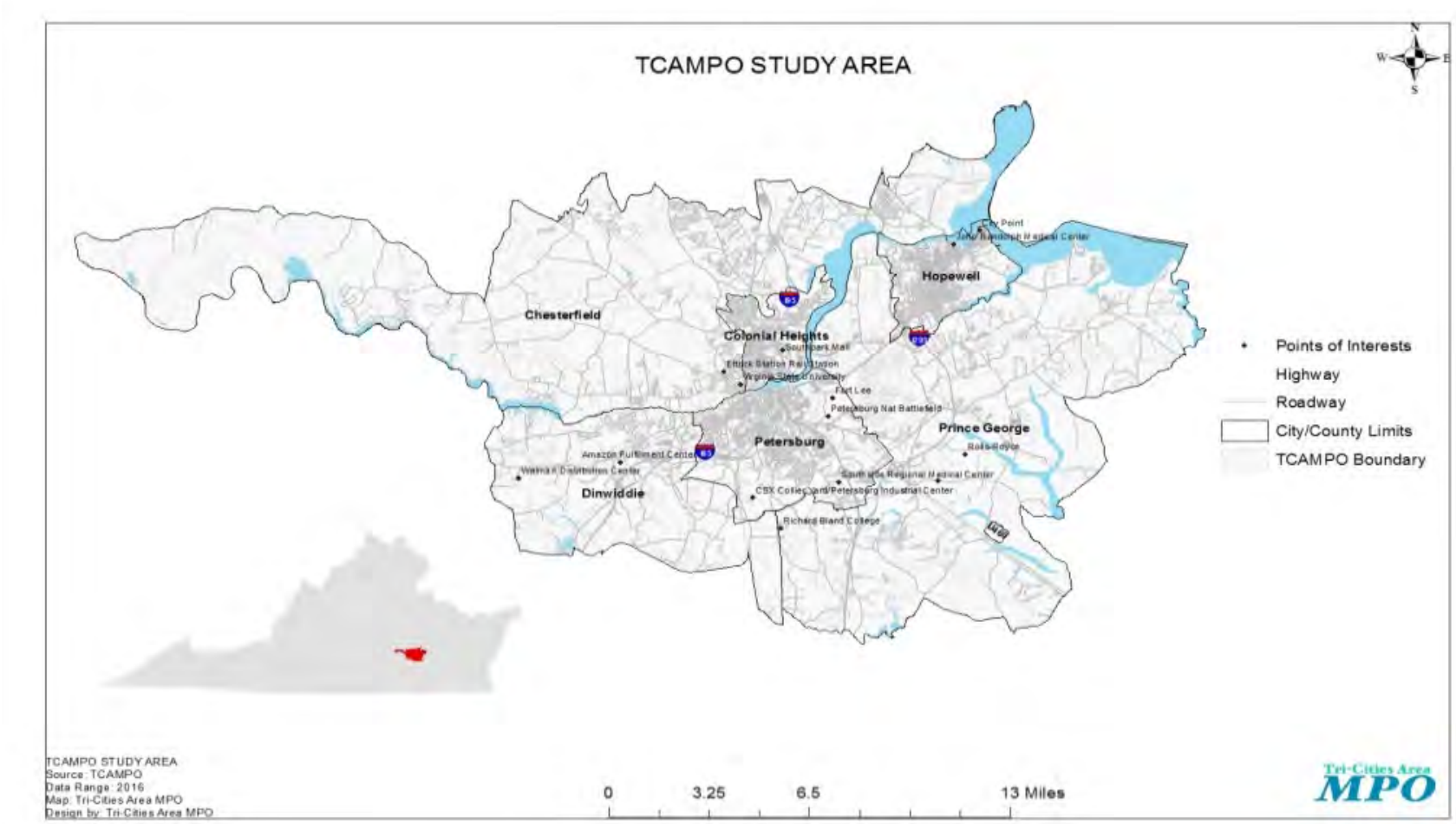

Table 1: 2017 Base Year Summary Table

Jurisdiction	Population			Housing Units	Households	Autos	School Enrollment		Employment		
	In Households	In Group Quarters	Total				K-12	College	Retail	Non-Retail	Total
Chesterfield	40,919	2,764	43,683	15,863	14,909	36,623	6,614	4,714	980	9,404	10,384
Colonial Heights	16,704	691	17,395	8,405	6,782	7,935	3,591	-	3,094	6,250	9,344
Dinwiddie	27,838	666	28,504	11,307	9,980	15,932	4,523	1,000	620	8,027	8,647
Hopewell	23,196	480	23,676	10,447	8,910	12,799	4,934	-	556	6,581	7,137
Petersburg	31,785	1,133	32,918	14,128	12,410	22,176	5,676	-	2,123	11,007	13,130
Prince George (w/o Ft. Lee)	20,954	1,069	22,023	10,285	9,593	22,113	9,044	-	833	6,812	7,645
Prince George (Ft Lee)	16,163	3,950	21,313	8,130	2,659	4,318	2,387	-	100	24,290	24,390
Grand Total	**177,559**	**10,753**	**189,512**	**78,565**	**65,243**	**121,896**	**36,769**	**5,714**	**8,306**	**72,371**	**80,677**

Table 2: Design Year (2045) Summary Table

Jurisdiction	Population			Housing Units	Households	Autos	School Enrollment		Employment		
	In Households	In Group Quarters	Total				K-12	College	Retail	Non-Retail	Total
Chesterfield	55,000	2,764	57,764	21,382	20,094	49,720	8,106	6,000	988	16,101	17,089
Colonial Heights	16,119	691	16,810	8,664	6,590	8,050	2,900	-	2,990	6,040	9,030
Dinwiddie	33,708	670	34,378	13,003	12,287	24,574	4,439	1,000	748	9,506	10,254
Hopewell	23,636	250	23,886	10,321	9,798	13,184	4,700	-	574	6,792	7,366
Petersburg	27,457	1,189	28,646	20,624	10,564	12,714	4,500	-	1,622	8,590	10,212
Prince George (w/o Ft. Lee)	27,294	660	27,954	15,203	13,997	25,615	6,483	-	762	12,647	13,409
Prince George (Ft Lee)	5,396	9,250	14,646	3,028	2,951	5,677	517	-	114	16,832	16,946
Grand Total	**188,610**	**15,474**	**204,084**	**92,225**	**76,281**	**139,534**	**31,645**	**7,000**	**7,798**	**76,508**	**84,306**

Table 3: 2017 Autos/Household

Jurisdiction	Autos	Households	Ratio
Chesterfield	36,623	14,909	2.46
Colonial Heights	8,390	7,171	1.17
Dinwiddie	15,952	9,980	1.60
Hopewell	12,799	8,910	1.43
Petersburg	22,176	12,410	1.83
Prince George	26,431	12,252	2.16
Grand Total	**122,371**	**65,632**	**1.86**

TAZ Framework:

The TAZ framework used for the socioeconomic data report (henceforth called Model TAZs) nests to form CTPP TAZs.

- There are 280 CTPP TAZs and 388 Model TAZs in the Tri-Cities Region.
- 200 of CTPP TAZ retain the same geographic footprint as the model TAZs. These TAZs are referred to "Non- Split Model TAZs".

The remaining 80 CTPP TAZs have been split into 180 Model TAZs. These TAZs are "Split Model TAZs". The methodology for automobile calculation for Split and Non-Split Model TAZs differs and are described below:

- For Non-Split Model TAZs
  Two tables were used from CTPP 2006-2010, Table B111103 (Aggregate Number of Vehicles Available in Households) and Table A112100 (Total households). Since the Non-Split Model TAZs retain same geographic structure as CTPP TAZs the data from the above two tables, Total Autos and Total House- holds were used directly. Autos per Household ratio for each Non -Split Model TAZ were then derived.
- For Split TAZs
  - Total Household for each- Split Model TAZ for Decennial Census 2010 was calculated using the Census block data.
  - The total household was then aggregated to CTPP TAZ.
  - A ratio of total households for the CTPP TAZ and the total households of nested Split Model TAZ was calculated to arrive at the distribution of households in each Split Model TAZ.
  - Two tables from CTPP 2006-2010, Table B111103 (Aggregate Number of Vehicles Available in Households) and Table A112100 (Total households) downloaded previously were then multiplied by the ratio determined in the previous step to calculate

total autos and total households for split Model TAZs.

- The total autos were then divided by total household to get the autos per household ratio.

To arrive at 2017 automobiles per TAZ the ratio from the previous step was multiplied by the 2017 households provided by jurisdictional 3-C data.

School Enrollment

K-12 school enrollment was compiled using the fall of 2017-2018 academic enrollment numbers provided by Virginia's Department of Education (DOE). K-12 private school enrollment was compiled by calling/email private school administrators to get enrollment totals for 2017-2018 school year. University and college enrollment were compiled through phone calls to each institution, using the fall enrollment of the 2017-2018 academic year. These enrollment numbers include both full-time and part-time students. These institutions include 4-year universities, 2-year colleges, post-graduate programs, certificate programs, technical schools, and proprietary colleges and universities (for-profit institutions of higher learning).

Employment

The TCAMPO staff used the 2nd quarter 2017 VEC data as the main source to conduct the employment process of the 2017 SE Base Year Data. The 2017 VEC data was provided with latitude and longitude coordinate systems for most of the employer addresses, allowing staff to plot all of the points rather than geocoding over 12,000 employer addresses. 99.9% of the 2017 VEC employment was either plotted or successfully geocoded. Employer addresses without latitude and longitude coordinates were geocoded after their addresses were verified.

With a point layer for the 2017 employment, a thorough spot-checking process was performed; staff compared it against the 2008 employment using the new TAZ geography. Any major differences were reality-checked. Some differences reflected employers relocating or going out of business. Other addresses were geocoded on the wrong side of the street or employment needed to be disaggregated into several locations.

The 2008 base year employment made use of the VEC data and verified through contact with employers of 50 or more and disaggregated employment where it was necessary. The extensive verification of the 2008 base year employment data to verify the 2017 VEC data using the 2008-point file. It is recognized that even though different economic conditions existed between 2008 - 2017, a base year comparison was helpful at the TAZ level.

Fort Lee Military Employment was compiled by calling/email (2017 Fort Lee Fast Facts Data Sheet) the Tri-

Cities Area MPO Technical Committee Member representative for Fort Lee and compiling employment data for TAZs that Fort Lee is within. Virginia Employment Commission (VEC) does not collect/record employment in the Fort Lee TAZs.

Forecasting the Future Year

To maintain consistency with the Richmond Regional TPO and the shared regional travel demand model the MPO forecasted population and employment by TAZ to 2045.

TCAMPO staff used a top down approach to estimate 2045 population and employment. The 2045 Weldon Cooper Center projections were used as population control totals for each jurisdiction. In turn the employment control totals for each jurisdiction were set by multiplying the 2017 ratio of jobs per person by to population control total for 2045 to establish the control total jobs for each jurisdiction.

The MPO staff used the Weldon Cooper Center's 2045 population estimates (developed in 2017) as the control totals for the jurisdictions in the MPO.

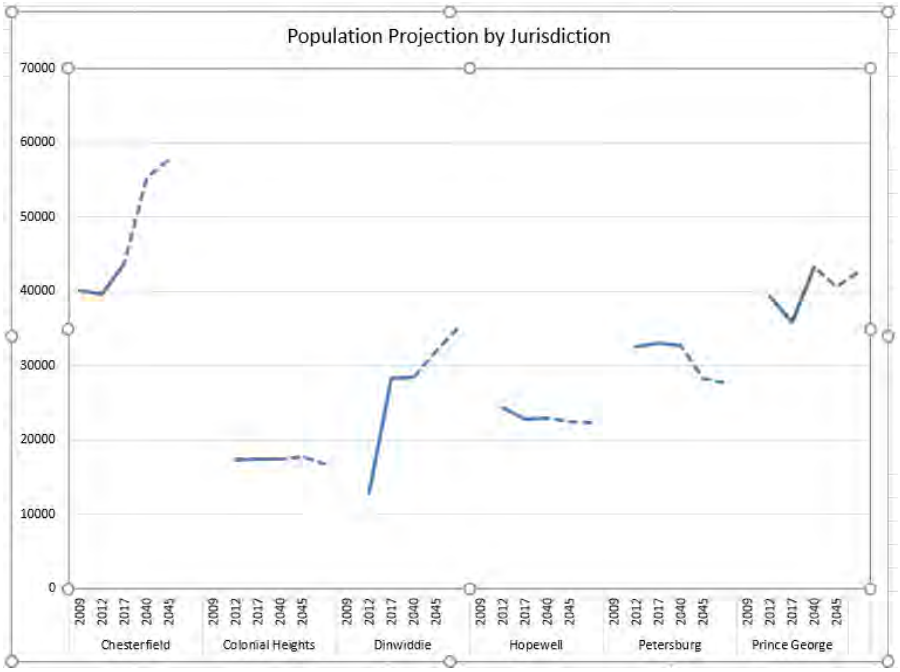

Figure 2: Population Change in the Tri-Cities Region

Projecting Population

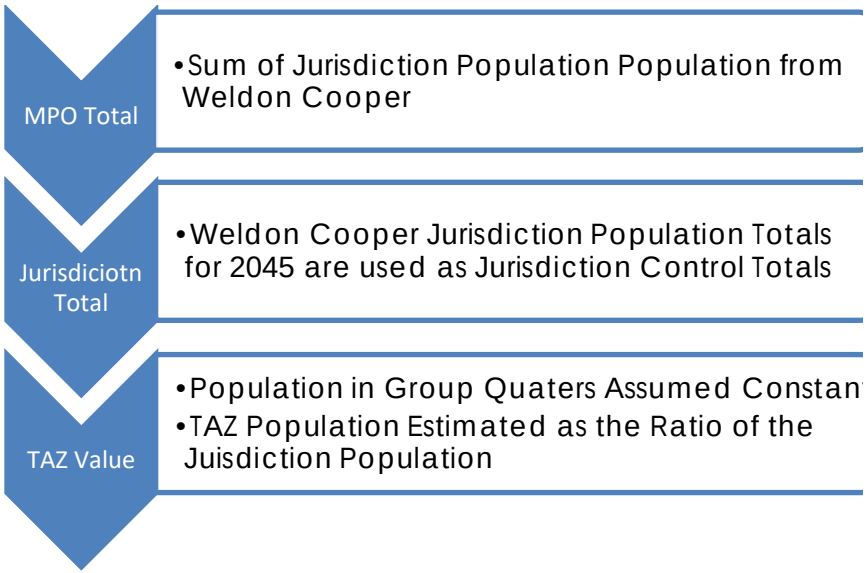

Figure 3: Assigning Design Year Population To TAZ

Population in Group Quarters

The population in group quarters is assumed to remain constant during the forecast period. This means that the number of persons in group quarters and their location remain the same throughout the projection period.

The population in households for 2045 for each TAZ is calculated using the formula below.

Population in Households

The population in households, for each jurisdiction, was developed by subtracting the number of persons in group quarters from the Weldon Cooper Center control total for each jurisdiction using the formula below.

$$PTaz45_i = PJur45 \times \frac{PTaz17_i}{PJur17}$$

Persons per Household

This was computed by dividing the number of persons by the number of households

Projecting Automobiles

Automobile estimates for 2045 use the same proportion of autos to population as in 2017

Table 4: Autos/Household Trend

Jurisdiction			Historic		Projected
	2009	2012	2017	2040	2045
Chesterfield	2.18	2.09	1.82	1.22	2.40
Colonial Heights	1.07	1.88	1.17	1.43	1.40
Dinwiddie	1.43	2.22	1.61	2.04	2.00
Hopewell	1.45	1.87	1.43	1.34	1.34
Petersburg	3.24	1.70	1.30	1.17	1.17
Prince George	1.62	2.06	1.69	1.83	1.83

Projecting Students

Table 5: Estimated Student Enrollment by Jurisdiction

Jurisdiction	Students/ Household Population (2017)	Household Population (2045)	K-12 Enrollment (2045)
Chesterfield (pt.)	0.11	55,000	8,106
Colonial Heights	0.20	16,119	2,900
Dinwiddie	0.15	33,708	4,439
Hopewell	0.20	23,444	4,700
Petersburg	0.19	27,751	4,500
Prince George	0.38	42,600	7,000
Total			31,645

College enrollment:

John Tyler Community College (JTCC), Virginia State University (VSU), and several proprietary colleges are located in Chesterfield County. JTCC's total enrollment (both campuses in Chesterfield) was extrapolated to 2040 based on historical enrollment numbers. Once the total enrollment was projected enrollment based on campus location was allocated based on the 2017 enrollment distribution. VSU enrollment was also extrapolated to 2040 based on historical enrollment numbers. The proprietary colleges were assumed to remain constant.

Table 6: College Enrollment

	2,017	2,045
Chesterfield	4,714	7,000
Colonial Heights	-	-
Dinwiddie	1,000	1,000
Hopewell	-	-
Petersburg	-	-
Prince George	-	-
Total	5,714	8,000

Projecting Employment

An employment control total of 181,391 was established by Chmura Economics and Analytics and accepted by Chesterfield County staff. To reach this employment the County would increase by an additional 64,957 jobs from its 2017 base year employment. The County provided new retail, office, and industrial development (square footage) by TAZ by year ranges (2010-2014, 2015-2020, 2020-2025, and 2025-2040). Revisions by RRPDC staff added employment in James River Industrial Park and Meadowville Technology Park based on recent announcements and additional capacity. This resulted in an additional employment of 53,809 being allocated to 55 TAZs. The remaining employment of 11,148 (needed to reach the control total) was distributed proportionally to all remaining 187 TAZs not previously allocated to account for natural employment growth based on the 2017 employment distribution.

Socioeconomic Data Tables (2017 and 2045)

The following pages include the Socioeconomic Data Maps and Tables for each jurisdiction by TAZ. The format used is similar to what is used by RRTPO for their SE Data Report.

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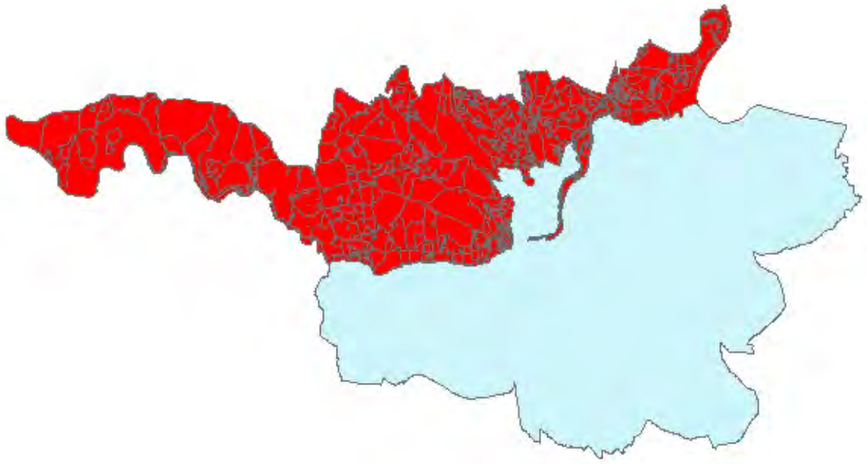
Chesterfield
MPO



Source: Tri Cities Area Metropolitan Planning Organization, 2013

0 2.5 5 10 Miles

Top

Chesterfield County

	Population						Housing						School Enrollment				Employment					
	Total		In Occupied Housing Units		In Group Quarters		Housing Units		Households		Automobiles		Grade K-12		Colleges		Total		Retail		Non-Retail	
TAZ	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
892	756	859	756	859	0	0	307	349	288	327	672	763	0	0	0	0	4,223	4,235	462	462	3,761	3,773
893	6	7	6	7	0	0	4	5	4	5	9	11	0	0	3,735	3,735	960	960	534	534	426	426
894	209	246	209	246	0	0	72	85	68	80	194	228	0	0	0	0	1,850	1,941	240	240	1,610	1,701
895	3,128	4,021	3,128	4,021	0	0	1,070	1,375	1,005	1,292	2,978	3,828	2,305	2,753	0	0	914	929	240	240	674	689
896	747	1,034	747	1,034	0	0	261	361	245	339	805	1,114	0	0	0	0	65	65	8	8	57	57
897	1,591	2,599	1,591	2,599	0	0	538	879	506	827	1,608	2,628	0	0	0	0	129	129	14	14	115	115
898	513	605	513	605	0	0	211	249	198	234	613	724	0	0	0	0	*	1	*	0	*	1
899	252	521	252	521	0	0	105	217	99	205	255	528	0	0	0	0	*	5	*	0	*	5
900	95	1,356	95	1,356	0	0	42	599	39	557	105	1,500	0	0	0	0	18	18	0	0	18	18
901	254	300	254	300	0	0	109	129	102	120	285	335	0	0	0	0	27	27	1	1	26	26
902	168	198	168	198	0	0	70	83	66	78	191	226	0	0	0	0	0	0	0	0	0	0
903	436	679	436	679	0	0	168	262	158	246	469	730	0	0	0	0	19	19	0	0	19	19
904	741	874	741	874	0	0	274	323	257	303	870	1,026	0	0	0	0	6	7	1	1	5	6
905	259	305	256	302	3	3	106	125	100	118	307	362	0	0	0	0	*	6	*	0	*	6
906	192	253	192	253	0	0	90	119	85	112	184	242	0	0	0	0	*	5	*	0	*	5
907	729	924	729	924	0	0	303	384	285	361	881	1,116	0	0	0	0	36	36	0	0	36	36
908	173	204	173	204	0	0	73	86	69	81	191	224	0	0	0	0	*	2	*	0	*	2
909	331	1,776	331	1,776	0	0	129	692	121	649	276	1,480	0	0	0	0	0	0	0	0	0	0
910	618	752	618	752	0	0	254	309	239	291	675	822	1,707	2,039	0	0	*	267	*	13	*	254
911	79	251	79	251	0	0	35	111	33	105	119	379	0	0	0	0	*	2	*	0	*	2
912	46	54	46	54	0	0	19	22	18	21	60	70	0	0	0	0	0	0	0	0	0	0
913	415	489	415	489	0	0	169	199	159	187	233	274	0	0	0	0	*	12	*	1	*	11
914	1,810	2,139	1,806	2,135	4	4	699	826	657	777	1,561	1,846	1,053	1,258	0	0	178	178	0	0	178	178
915	830	985	830	985	0	0	305	362	287	341	897	1,066	0	0	0	0	5	5	0	0	5	5
916	1,726	2,145	1,726	2,145	0	0	600	746	564	701	1,704	2,118	0	0	0	0	75	75	3	3	72	72
917	1,644	1,993	1,644	1,993	0	0	610	739	573	695	1,639	1,988	0	0	0	0	*	6	*	0	*	6
918	971	1,145	971	1,145	0	0	379	447	356	420	819	966	206	452	0	0	19	19	3	3	16	16
919	1,356	1,612	1,356	1,612	0	0	459	546	431	512	838	995	597	713	0	0	*	109	*	0	*	109
920	795	1,004	790	999	5	5	299	378	281	355	678	857	0	0	0	0	27	27	7	7	20	20
921	1,493	1,508	1,493	1,508	0	0	554	560	521	526	1,456	1,470	0	0	0	0	33	33	0	0	33	33

* - Employment was redacted due to Virginia Employment Commission (VEC) confidentiality agreement, where an employer made up at least 80% of employment OR there was 3 employers or less.

Top

Chesterfield County

TAZ	Population						Housing				Automobiles		School Enrollment				Employment					
	Total		In Occupied Housing Units		In Group Quarters		Housing Units		Households				Grade K-12		Colleges		Total		Retail		Non-Retail	
	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
922	1,402	2,560	1,402	2,560	0	0	531	970	499	911	783	1,429	0	0	0	0	122	124	78	78	44	46
923	480	566	480	566	0	0	224	264	210	248	355	419	0	0	0	0	774	834	98	98	676	736
924	10	151	10	151	0	0	6	91	6	91	16	243	0	0	0	0	559	729	70	70	489	659
925	1,485	1,751	1,485	1,751	0	0	533	628	501	591	1,181	1,393	0	0	0	0	323	345	0	0	323	345
926	868	1,024	868	1,024	0	0	301	355	283	334	825	974	560	669	0	0	*	404	*	3	*	401
927	4	5	4	5	0	0	2	3	2	3	7	11	0	0	0	0	3,191	3,782	141	141	3,050	3,641
928	23	27	23	27	0	0	8	9	8	9	29	33	0	0	0	0	695	948	217	225	478	723
929	1,618	1,908	1,618	1,908	0	0	562	663	528	623	1,566	1,848	0	0	0	0	44	44	1	1	43	43
930	1,002	1,226	1,002	1,226	0	0	339	415	319	390	940	1,149	0	0	0	0	9	10	0	0	9	10
931	332	391	332	391	0	0	138	163	130	153	316	372	0	0	0	0	11	11	0	0	11	11
932	1,571	1,852	1,571	1,852	0	0	675	796	634	747	1,436	1,692	516	616	0	0	137	137	24	24	113	113
933	2,206	2,744	2,206	2,744	0	0	949	1,180	892	1,110	1,457	1,813	0	0	0	0	*	152	*	0	*	152
934	219	558	219	558	0	0	88	224	83	211	233	592	0	0	0	0	94	493	36	36	58	457
935	69	81	69	81	0	0	28	33	26	31	78	93	0	0	0	0	919	4,430	5	5	914	4,425
936	22	26	22	26	0	0	10	12	9	11	16	20	0	0	0	0	13	1,615	0	0	13	1,615
937	812	1,689	812	1,689	0	0	302	628	284	591	880	1,831	0	0	0	0	56	56	0	0	56	56
938	510	796	510	796	0	0	195	304	183	286	532	831	0	0	0	0	4	4	1	1	3	3
939	959	1,131	959	1,131	0	0	375	442	352	415	961	1,133	0	0	0	0	*	4	*	0	*	4
940	153	180	153	180	0	0	69	81	65	76	175	205	0	0	0	0	0	0	0	0	0	0
941	389	459	389	459	0	0	157	185	148	175	423	500	0	0	0	0	0	0	0	0	0	0
942	259	305	259	305	0	0	116	137	109	128	268	315	0	0	0	0	*	6	*	0	*	6
943	326	384	326	384	0	0	123	145	116	137	307	363	970	1,159	0	0	*	188	*	0	*	188
944	729	859	723	853	6	6	277	327	260	307	595	703	0	0	0	0	*	6	*	0	*	6
945	329	388	329	388	0	0	134	158	126	149	280	331	0	0	0	0	16	18	0	0	16	18
946	923	1,233	923	1,233	0	0	359	480	337	450	814	1,087	0	0	0	0	*	2	*	0	*	2
947	703	916	703	916	0	0	276	360	259	337	601	782	0	0	0	0	*	48	*	0	*	48
948	327	386	327	386	0	0	144	170	135	159	261	307	421	503	0	0	114	114	13	13	101	101
949	803	947	803	947	0	0	356	420	335	395	615	725	0	0	0	0	6	6	0	0	6	6
950	824	883	332	391	492	492	141	166	132	155	321	377	0	0	0	0	161	161	135	135	26	26
951	1,920	2,272	1,920	2,272	0	0	785	929	738	873	1,701	2,012	0	0	0	0	10	10	0	0	10	10

* - Employment was redacted due to Virginia Employment Commission (VEC) confidentiality agreement, where an employer made up at least 80% of employment OR there was 3 employers or less.

Top

Chesterfield County

	Population						Housing						School Enrollment				Employment					
	Total		In Occupied Housing Units		In Group Quarters		Housing Units		Households		Automobiles		Grade K-12		Colleges		Total		Retail		Non-Retail	
TAZ	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
952	275	341	275	341	0	0	120	149	113	140	194	240	0	0	0	0	*	1	*	0	*	1
953	597	603	594	600	3	3	246	248	231	233	333	336	0	0	0	0	*	12	*	11	*	1
954	2,358	2,360	211	213	2,147	2,147	99	100	93	94	12	12	0	0	4,713	4,713	*	863	*	0	*	863
955	912	1,057	808	953	104	104	334	394	314	370	393	463	584	697	0	0	476	479	96	96	380	383
Total	340,848	437,512	336,197	432,861	4,651	4,651	132,586	169,660	124,595	159,420	293,337	375,168	62,779	77,677	20,985	20,985	131,120	177,742	34,646	43,522	96,474	134,220

* - Employment was redacted due to Virginia Employment Commission (VEC) confidentiality agreement, where an employer made up at least 80% of employment OR there was 3 employers or less.

Note: totals are for the entire County, in RRTPO and Tri-Cities MPO areas

Colonial Heights

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MPO_1

Colonial Heights

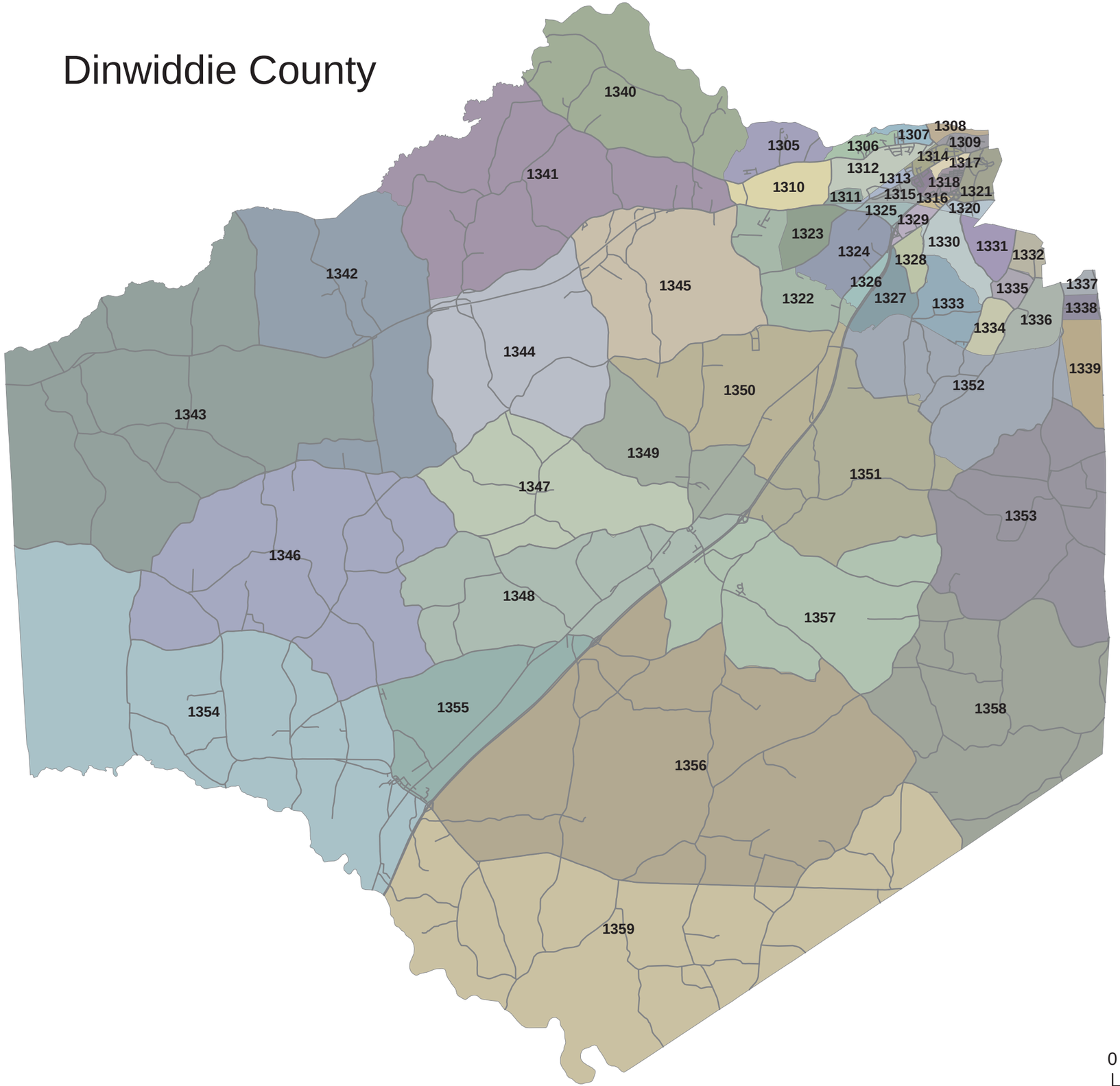
MPO

Source: Tri Cities Area Metropolitan Planning Organization, 2013

Colonial Heights

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
976	No	1,330	1,275	1330	1,275	0	0	546	533	639	746	584	540	0	0	11	11	2	2	9	9
977	No	1,090	1,053	1090	1,053	0	0	461	522	539	731	0	0	0	0	19	18	19	18	0	0
978	No	189	183	189	183	0	0	64	60	75	84	0	0	0	0	207	200	11	11	196	189
979	No	90	87	90	87	0	0	36	35	42	49	0	0	0	0	101	98	99	96	2	2
980	No	156	151	156	151	0	0	61	56	71	78	370	263	0	0	59	57	6	6	53	51
981	No	523	505	523	505	0	0	208	240	243	336	0	0	0	0	8	8	8	8	0	0
982	No	89	86	89	86	0	0	27	30	32	42	0	0	0	0	136	131	50	48	86	83
983	No	735	710	735	710	0	0	280	250	328	293	0	0	0	0	49	48	35	34	14	14
984	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	50	0	0	52	50
985	No	778	752	778	752	0	0	294	308	344	360	0	0	0	0	151	146	80	77	71	69
987	No	353	341	353	341	0	0	124	128	145	150	0	0	0	0	640	618	0	0	640	618
988	No	857	828	857	828	0	0	367	330	429	386	322	236	0	0	703	679	3	3	700	676
989	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	332	321	28	27	304	294
990	No	990	962	851	823	139	139	376	350	440	410	0	0	0	0	8	8	0	0	8	8
991	No	405	391	405	391	0	0	109	243	128	284	0	0	0	0	293	283	76	73	217	210
992	No	294	285	234	226	59	59	97	90	113	105	0	0	0	0	228	221	7	7	221	214
993	No	326	315	326	315	0	0	118	112	138	131	0	0	0	0	192	186	6	6	186	180
994	No	217	210	217	210	0	0	105	85	123	99	0	0	0	0	179	173	0	0	179	173
995	No	185	178	185	178	0	0	263	72	308	84	0	0	0	0	2	2	0	0	2	2
996	No	605	584	603	582	2	2	265	249	310	291	0	0	0	0	455	440	0	0	455	440
997	No	347	336	347	336	0	0	125	119	146	139	0	0	0	0	0	0	0	0	0	0
998	No	1,195	1,171	704	680	491	491	274	274	321	321	0	0	0	0	32	31	0	0	32	31
999	No	149	144	149	144	0	0	54	59	63	69	0	0	0	0	0	0	0	0	0	0
1000	No	833	805	833	805	0	0	360	340	421	398	0	0	0	0	2	2	0	0	2	2
1001	No	98	95	98	95	0	0	28	38	33	44	663	537	0	0	40	39	32	31	8	8
1002	No	715	691	715	691	0	0	286	265	335	310	0	0	0	0	27	26	0	0	27	26
1003	No	235	227	235	227	0	0	96	93	112	109	0	0	0	0	26	25	0	0	26	25
1004	No	929	898	929	898	0	0	346	366	405	428	0	0	0	0	16	15	0	0	16	15
1005	No	857	828	857	828	0	0	302	339	353	397	0	0	0	0	1	1	1	1	0	0
1006	No	470	454	470	454	0	0	165	154	193	180	582	454	0	0	0	0	0	0	0	0
1007	No	740	715	740	715	0	0	260	235	304	275	870	714	0	0	1	1	0	0	1	1
1008	No	506	489	506	489	0	0	177	175	207	205	200	156	0	0	0	0	0	0	0	0
1009	No	143	138	143	138	0	0	56	55	66	64	0	0	0	0	305	294	195	188	110	106
1010	No	924	881	924	881	0	0	436	370	510	433	0	0	0	0	373	360	373	360	0	0
1011	No	15	15	15	15	0	0	4	5	5	6	0	0	0	0	43	42	5	5	38	37
1012	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,657	1,601	439	424	1,218	1,177
1013	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	752	726	439	424	313	302
1014	No	27	26	27	26	0	0	12	10	14	12	0	0	0	0	148	143	52	50	96	93
1015	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,171	1,131	439	424	732	707
1016	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	675	652	439	424	236	228
1017	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	242	250	242	0	0
		17,395	***16,810***	***16,704***	***16,119***	***691***	***691***	***6,782***	***6,590***	***7,935***	***8,050***	***3,591***	***2,900***	***0***	***0***	***9,344***	***9,029***	***3,094***	***2,990***	***6,250***	***6,040***

Dinwiddie County

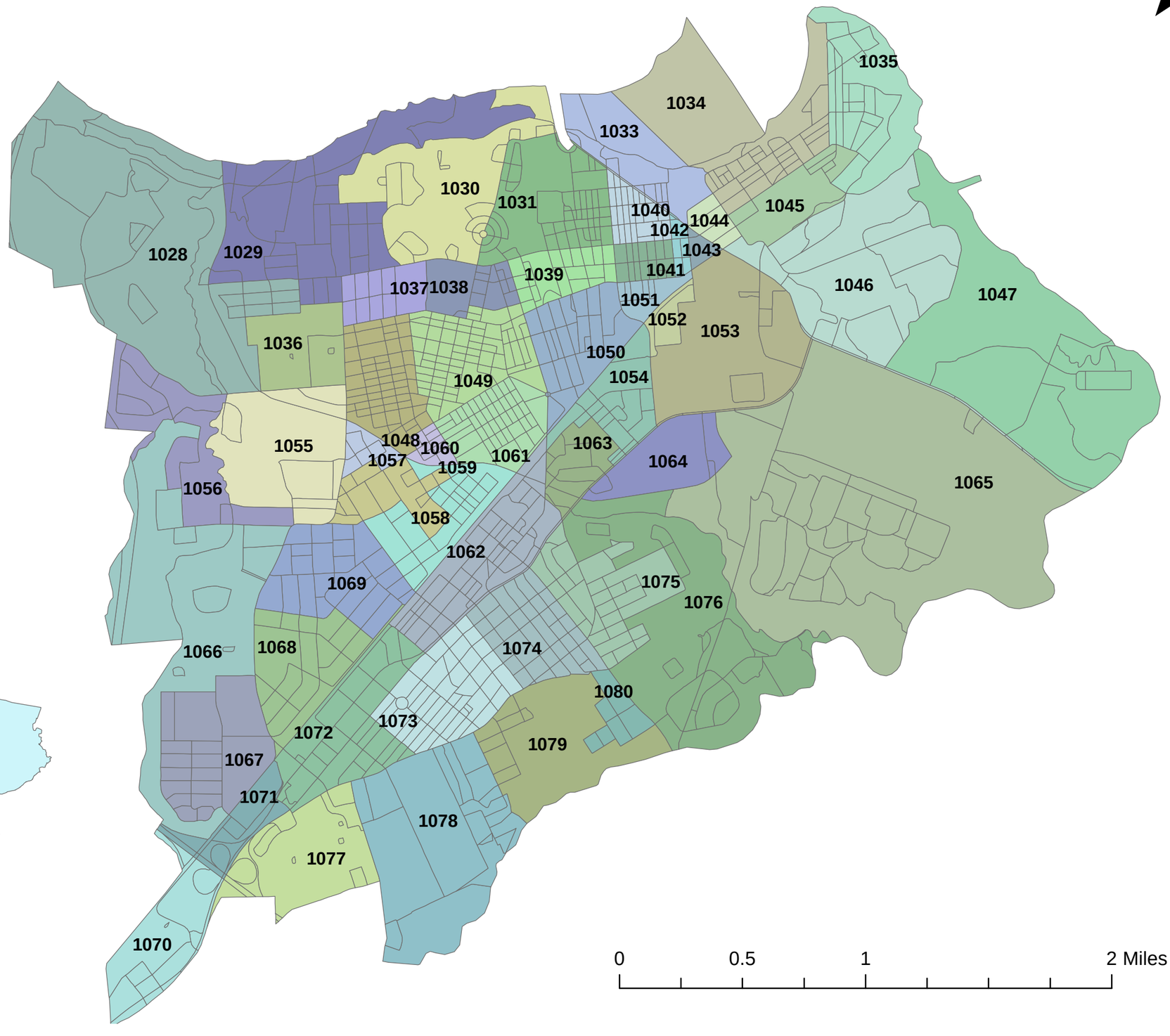


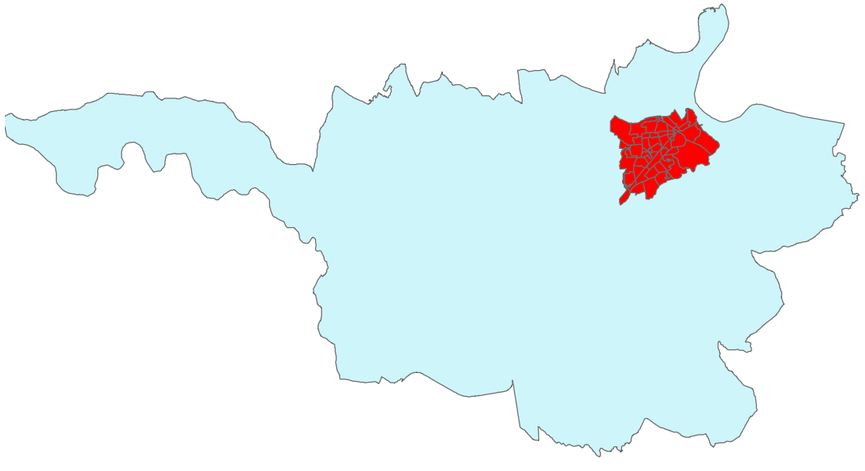
Dinwiddie

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1305	No	803	1,304	803	1,304	0	0	256	596	297	1,192	0	0	0	0	62	75	0	0	62	75
1306	No	155	300	155	300	0	0	46	100	53	200	84	0	0	0	10	12	0	0	10	12
1307	No	1,979	379	1,979	379	0	0	617	667	993	1,334	0	0	0	0	1	1	0	0	1	1
1308	No	83	312	83	312	0	0	33	111	53	222	0	0	0	0	18	22	0	0	18	22
1309	No	996	368	341	368	0	0	136	91	219	182	0	0	0	0	882	1,064	58	70	824	994
1310	No	330	400	330	400	0	0	119	133	192	266	0	0	0	0	488	589	0	0	488	589
1311	No	70	70	70	70	0	0	30	30	48	60	0	0	0	0	3	4	0	0	3	4
1312	No	494	500	494	500	0	0	151	177	243	354	0	0	0	0	205	247	0	0	205	247
1313	No	265	588	265	588	0	0	113	196	182	392	0	0	0	0	89	107	0	0	89	107
1314	No	1,076	1,076	1,076	1,076	0	0	320	320	515	640	0	0	0	0	10	12	10	12	0	0
1315	No	468	1,000	468	1,000	0	0	165	333	266	666	0	0	0	0	5	6	1	1	4	5
1316	No	375	991	375	991	0	0	143	356	230	712	0	0	0	0	0	0	0	0	0	0
1317	No	327	457	327	457	0	0	109	131	175	262	0	0	0	0	217	261	80	96	137	165
1318	No	890	950	890	950	0	0	291	316	469	632	0	0	0	0	80	96	16	19	64	77
1319	No	267	368	267	368	0	0	108	110	174	220	0	0	0	0	76	91	11	13	65	78
1320	No	320	320	320	320	0	0	124	124	200	248	0	0	0	0	69	83	1	1	68	82
1321	No	389	1,089	389	434	655	655	110	184	177	368	0	0	0	0	1,294	1,561	0	0	1,294	1,561
1322	No	1,339	1,500	1,339	1,500	0	0	458	500	737	1,000	528	528	0	0	76	91	21	25	55	66
1323	No	256	39	256	39	0	0	106	13	171	26	0	0	0	0	857	859	0	0	857	859
1324	No	93	111	93	111	0	0	31	31	50	62	0	0	0	0	253	305	107	129	146	176
1325	No	22	22	22	22	0	0	12	12	19	24	0	0	0	0	1,031	1,243	6	7	1,025	1,236
1326	No	0	167	0	167	0	0	0	58	0	116	0	0	0	0	10	12	0	0	10	12
1327	No	136	140	136	140	0	0	43	47	69	94	0	0	0	0	0	0	0	0	0	0
1328	No	148	167	148	167	0	0	57	39	92	78	0	0	0	0	150	181	5	6	145	175
1329	No	231	231	231	231	0	0	85	85	137	170	0	0	0	0	47	57	34	41	13	16
1330	No	90	100	90	100	0	0	31	37	50	74	0	0	0	0	51	62	0	0	51	62
1331	No	129	129	129	129	0	0	51	51	82	102	0	0	0	0	470	567	0	0	470	567
1332	No	113	72	113	72	0	0	41	25	66	50	0	0	0	0	0	0	0	0	0	0
1333	No	669	705	666	700	3	5	212	233	341	466	0	0	0	0	2	2	0	0	2	2
1334	No	67	873	67	873	0	0	24	174	39	348	0	0	0	0	9	11	0	0	9	11
1335	No	221	642	218	637	3	5	82	212	132	424	0	0	0	0	1	1	0	0	1	1
1336	No	300	379	300	379	0	0	105	100	169	200	0	0	0	0	8	10	0	0	8	10
1337	No	26	328	21	323	5	5	8	117	13	234	0	0	0	0	0	0	0	0	0	0
1338	No	12	624	12	624	0	0	4	223	6	446	0	0	1,000	1,000	206	248	1	1	205	247
1339	No	333	360	333	360	0	0	119	120	192	240	0	0	0	0	3	3	2	2	1	1
1340	No	580	535	580	535	0	0	220	257	354	514	0	0	0	0	20	24	10	12	10	12
1341	No	1,027	1,359	1,027	1,359	0	0	370	391	596	782	398	398	0	0	25	30	15	18	10	12
1342	No	545	891	545	891	0	0	260	267	419	534	0	0	0	0	16	19	0	0	16	19
1343	No	535	600	535	600	0	0	250	280	403	560	0	0	0	0	29	35	0	0	29	35

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1344	No	675	858	675	858	0	0	260	252	419	504	0	0	0	0	17	20	5	6	12	14
1345	No	900	624	900	624	0	0	285	213	459	426	0	0	0	0	5	6	5	6	0	0
1346	No	555	724	555	724	0	0	230	307	370	614	0	0	0	0	2	2	2	2	0	0
1347	No	270	635	270	635	0	0	100	416	161	832	0	0	0	0	1,063	1,282	100	121	963	1,161
1348	No	710	1,047	710	1,047	0	0	270	426	435	852	343	343	0	0	76	92	20	24	56	68
1349	No	865	824	865	824	0	0	350	282	564	564	1,058	1,058	0	0	106	128	30	36	76	92
1350	No	840	713	840	713	0	0	345	243	555	486	1,842	1,842	0	0	42	51	20	24	22	27
1351	No	760	947	760	947	0	0	285	366	459	732	0	0	0	0	20	24	10	12	10	12
1352	No	655	858	655	858	0	0	210	332	338	664	0	0	0	0	14	16	7	8	7	8
1353	No	950	1,259	950	1,259	0	0	355	322	572	644	0	0	0	0	79	95	25	30	54	65
1354	No	490	500	490	500	0	0	190	195	306	390	270	270	0	0	96	116	10	12	86	104
1355	No	670	800	670	800	0	0	270	320	435	640	0	0	0	0	95	115	0	0	95	115
1356	No	995	858	995	858	0	0	420	292	676	584	0	0	0	0	36	42	8	10	28	34
1357	No	1,215	1,236	1,215	1,236	0	0	360	391	580	782	0	0	0	0	35	42	0	0	35	42
1358	No	930	902	930	902	0	0	270	292	435	584	0	0	0	0	16	19	0	0	16	19
1359	No	865	1,147	865	1,147	0	0	340	391	547	782	0	0	0	0	172	207	0	0	172	207
		28,504	***34,378***	***27,838***	***33,708***	***666***	***670***	***9,980***	***12,287***	***15,932***	***24,574***	***4,523***	***4,439***	***1,000***	***1,000***	***8,647***	***10,247***	***620***	***748***	***8,027***	***9,506***

Hopewell





Source: Tri Cities Area Metropolitan Planning Organization, 2013

Hopewell

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1028	No	1,600	1,726	1,600	1,726	0	0	614	779	880	1,044	0	0	0	0	1	1	0	0	1	1
1029	No	238	216	238	216	0	0	110	100	158	134	0	0	0	0	9	9	0	0	9	9
1030	No	536	593	536	593	0	0	221	254	317	340	0	0	0	0	6	6	3	3	3	3
1031	No	635	678	635	678	0	0	241	283	346	379	0	0	0	0	62	64	13	13	49	51
1032	No	62	69	62	69	0	0	26	26	37	35	0	0	0	0	0	0	0	0	0	0
1033	No	367	374	144	150	223	224	199	81	285	109	618	602	0	0	744	767	12	12	732	755
1034	No	534	539	534	539	0	0	199	217	285	291	0	0	0	0	12	12	11	11	1	1
1035	No	995	953	995	953	0	0	361	398	518	533	0	0	0	0	47	49	0	0	47	49
1036	No	105	113	105	113	0	0	42	53	60	71	0	0	0	0	2	2	0	0	2	2
1037	No	188	188	188	188	0	0	70	73	100	98	0	0	0	0	56	58	0	0	56	58
1038	No	303	317	303	317	0	0	115	119	165	159	0	0	0	0	14	14	0	0	14	14
1039	No	182	184	182	184	0	0	62	76	89	102	0	0	0	0	836	863	34	35	802	828
1040	No	269	264	269	264	0	0	89	89	128	119	0	0	0	0	97	100	35	36	62	64
1041	No	178	173	178	173	0	0	53	56	76	75	0	0	0	0	122	126	12	12	110	114
1042	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	68	3	3	63	65
1043	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203	209	5	5	198	204
1044	No	77	73	77	73	0	0	39	42	56	56	0	0	0	0	116	120	48	50	68	70
1045	No	223	245	223	245	0	0	80	107	115	143	0	0	0	0	151	156	0	0	151	156
1046	No	243	249	243	249	0	0	109	104	156	139	0	0	0	0	931	961	20	21	911	940
1047	No	3	0	0	0	3	0	0	0	0	0	0	0	0	0	110	113	13	13	97	100
1048	No	753	757	753	757	0	0	298	295	427	395	0	0	0	0	3	3	2	2	1	1
1049	No	782	775	782	775	0	0	287	297	412	398	658	633	0	0	24	25	0	0	24	25
1050	No	954	954	951	954	3	0	383	381	549	511	0	0	0	0	83	86	29	30	54	56
1051	No	14	14	14	14	0	0	5	6	7	8	0	0	0	0	85	88	0	0	85	88
1052	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	3	3	6	6
1053	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164	169	0	0	164	169
1054	No	358	894	358	894	0	0	173	338	248	453	0	0	0	0	268	277	49	51	219	226
1055	No	426	455	426	455	0	0	206	210	295	281	1,782	1,689	0	0	391	404	0	0	391	404
1056	No	349	361	349	361	0	0	116	122	166	163	0	0	0	0	0	0	0	0	0	0
1057	No	309	322	309	322	0	0	116	112	166	150	0	0	0	0	0	0	0	0	0	0
1058	No	75	77	75	77	0	0	19	29	27	39	0	0	0	0	2	2	0	0	2	2
1059	No	465	486	465	486	0	0	185	191	265	256	0	0	0	0	0	0	0	0	0	0
1060	No	98	95	98	95	0	0	37	37	53	50	0	0	0	0	0	0	0	0	0	0
1061	No	520	516	520	516	0	0	202	184	290	247	0	0	0	0	20	21	0	0	20	21
1062	No	551	546	551	546	0	0	171	194	245	260	0	0	0	0	189	195	61	63	128	132
1063	No	64	56	64	56	0	0	17	20	24	27	0	0	0	0	138	143	119	123	19	20
1064	No	304	299	304	299	0	0	105	103	151	138	907	874	0	0	13	13	0	0	13	13
1065	No	0	2	0	2	0	0	0	1	0	1	0	0	0	0	1,605	1,657	19	20	1,586	1,637
1066	No	1,122	1,496	1,122	1,496	0	0	409	553	587	741	0	0	0	0	6	6	0	0	6	6
1067	No	828	1,054	828	1,054	0	0	302	389	433	521	0	0	0	0	0	0	0	0	0	0
1068	No	316	327	316	327	0	0	302	127	433	170	0	0	0	0	17	18	0	0	17	18
1069	No	300	324	300	324	0	0	129	230	185	308	0	0	0	0	1	1	0	0	1	1

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1070	No	238	368	108	238	130	130	40	40	60	60	0	0	0	0	0	0	0	0	0	0
1071	No	37	37	37	37	0	0	13	16	19	21	0	0	0	0	100	103	0	0	100	103
1072	No	1,313	1,400	1,300	1,387	13	13	516	530	740	710	288	280	0	0	350	361	58	60	292	301
1073	No	882	898	881	885	1	13	328	532	470	713	0	0	0	0	16	16	7	7	9	9
1074	No	410	413	410	413	0	0	121	334	174	448	0	0	0	0	7	7	0	0	7	7
1075	No	848	328	848	328	0	0	262	146	376	196	0	0	0	0	21	22	0	0	21	22
1076	No	1,291	688	1,291	688	0	0	450	305	645	409	681	622	0	0	0	0	0	0	0	0
1077	No	963	1063	863	963	100	100	300	300	450	450	0	0	0	0	0	0	0	0	0	0
1078	No	986	1,059	986	1,059	0	0	317	503	455	674	0	0	0	0	33	34	0	0	33	34
1079	No	207	206	207	206	0	0	316	90	453	121	0	0	0	0	7	7	0	0	7	7
1080	No	440	452	440	452	0	0	155	326	222	437	0	0	0	0	0	0	0	0	0	0
		22,941	***23,676***	***22,468***	***23,196***	***473***	***480***	***8,910***	***9,798***	***12,799***	***13,184***	***4,934***	***4,700***	***0***	***0***	***7,137***	***7,364***	***556***	***574***	***6,581***	***6,792***

Petersburg

Source: Tri Cities Area Metropolitan Planning Organization, 2013

N

0 0.5 1 2 Miles

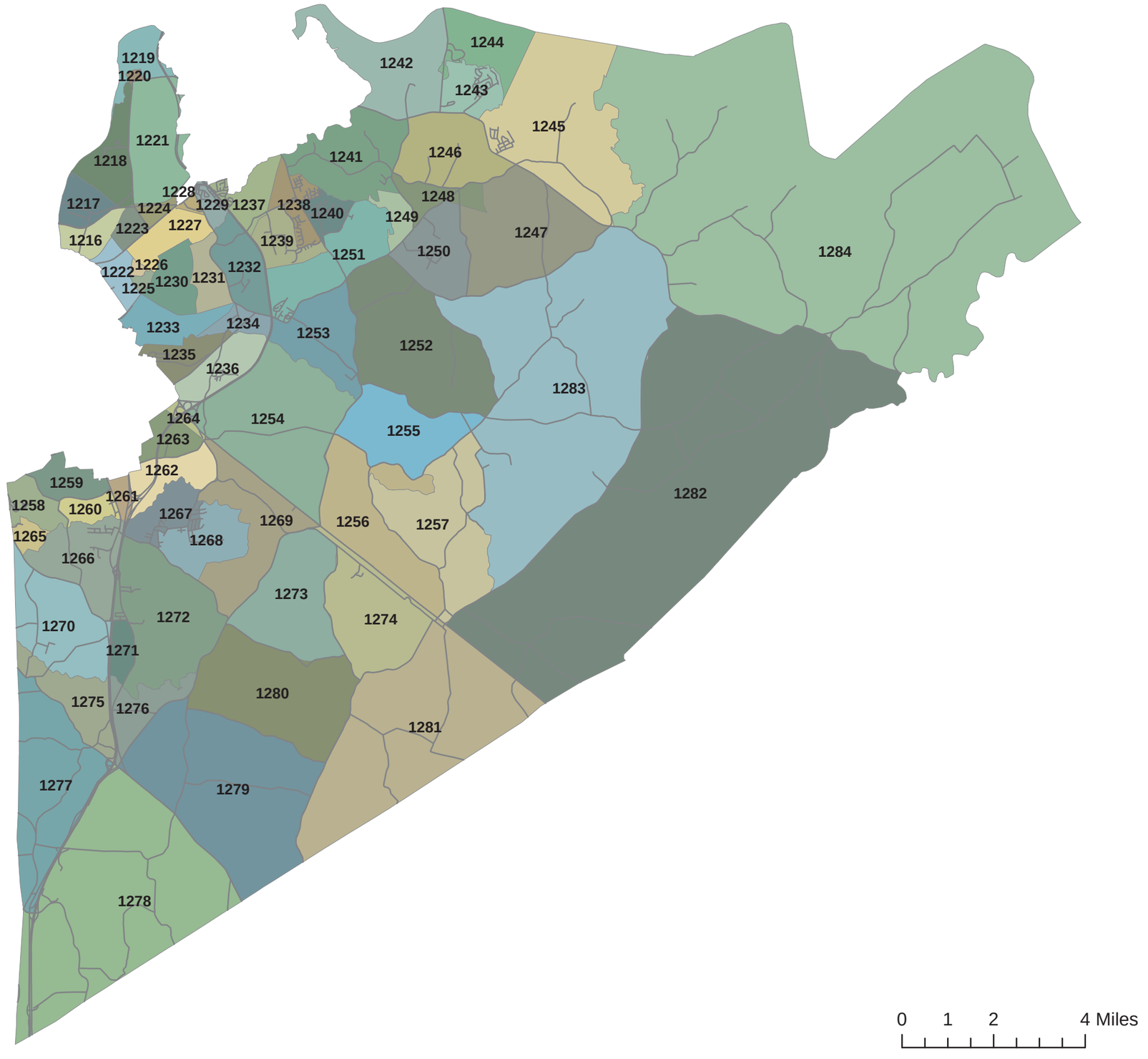
Petersburg

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1091	No	20	13	20	13	0	0	10	6	6	12	0	0	0	0	4	15	4	0	0	15
1092	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	3	263	3	0	0
1093	No	431	219	428	217	3	2	127	70	360	81	0	0	0	0	185	211	131	211	54	0
1094	No	158	99	158	99	0	0	50	32	150	13	0	0	0	0	1	0	0	0	1	0
1095	No	450	265	450	265	0	0	135	84	161	103	0	0	0	0	0	105	0	105	0	0
1096	No	94	54	93	48	1	6	29	16	80	106	0	0	0	0	29	42	0	0	29	42
1097	No	403	179	397	179	6	0	149	79	340	139	0	0	0	0	6	1	6	0	0	1
1098	No	426	265	426	265	0	0	182	115	350	12	0	0	0	0	44	0	0	0	44	0
1099	No	106	265	106	265	0	0	183	115	300	59	0	0	0	0	0	28	0	5	0	23
1100	No	56	42	56	42	0	0	34	34	17	80	0	0	0	0	26	0	0	0	26	0
1101	No	115	371	49	305	66	66	43	95	73	300	0	0	0	0	255	36	33	0	222	36
1102	No	202	398	202	398	0	0	96	179	61	500	0	0	0	0	569	0	2	0	567	0
1103	No	11	6	11	6	0	0	4	2	9	2	0	0	0	0	103	48	3	27	100	21
1104	No	134	180	13	59	121	121	5	23	18	100	0	0	0	0	53	180	0	2	53	178
1105	No	14	25	14	25	0	0	12	7	5	10	0	0	0	0	9	456	7	2	2	454
1106	No	155	820	155	820	0	0	89	350	2	25	0	0	0	0	308	79	4	0	304	79
1107	No	0	17	0	17	0	0	0	5	130	34	0	0	0	0	212	47	0	5	212	42
1108	No	227	132	227	132	0	0	60	34	230	36	174	174	0	0	43	5	23	3	20	2
1109	No	32	40	32	40	0	0	9	11	30	30	0	0	0	0	11	244	0	0	11	244
1110	No	112	90	97	72	15	18	29	21	70	90	0	0	0	0	77	188	9	18	68	170
1111	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	16	10	0	0	16
1112	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	16	9	7	19	9
1113	No	2	3	2	2	0	1	1	1	2	10	0	0	0	0	36	63	18	8	18	55
1114	No	158	67	158	67	0	0	61	31	41	13	0	0	0	0	0	7	0	7	0	0
1115	No	32	31	32	31	0	0	14	10	30	12	0	0	0	0	13	29	5	14	8	15
1116	No	200	99	200	99	0	0	74	46	64	175	68	43	0	0	71	14	2	0	69	14
1117	No	262	100	262	100	0	0	90	48	92	3	0	0	0	0	285	4	66	4	219	0
1118	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	8	0	2	20	6
1119	No	20	26	20	26	0	0	13	8	0	29	0	0	0	0	201	108	81	53	120	55
1120	No	49	45	49	45	0	0	24	15	40	187	0	0	0	0	8	176	2	0	6	176
1121	No	200	132	200	132	0	0	50	46	90	131	0	0	0	0	22	81	0	65	22	16
1122	No	835	835	835	829	0	6	331	331	545	50	0	0	0	0	471	97	0	2	471	95
1123	No	539	159	539	153	0	6	231	94	480	94	0	0	0	0	22	5	3	0	19	5
1124	No	509	360	424	259	85	101	95	77	207	72	0	0	0	0	0	18	0	0	0	18
1125	No	329	398	327	398	2	0	99	108	360	5	520	223	0	0	66	381	0	3	66	378
1126	No	190	283	190	279	0	4	56	78	160	13	0	0	0	0	70	15	0	0	70	15
1127	No	23	13	19	13	4	0	19	6	18	7	0	0	0	0	11	0	0	0	11	0
1128	No	26	40	26	40	0	0	25	16	25	37	0	0	0	0	39	53	2	0	37	53
1129	No	48	33	48	33	0	0	15	9	40	30	0	0	0	0	10	56	0	0	10	56
1130	No	100	166	100	166	0	0	35	48	25	74	0	0	0	0	80	11	18	2	62	9
1131	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	30	2	0	22	30
1132	No	50	173	50	173	0	0	24	67	40	36	0	0	0	0	874	22	7	14	867	8

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1133	No	41	135	41	135	0	0	22	12	34	16	0	0	0	0	1	51	0	2	1	49
1134	No	167	62	58	-47	109	109	38	26	80	17	0	0	0	0	83	24	0	6	83	18
1135	No	142	78	139	53	3	25	39	38	80	26	0	0	0	0	87	694	0	0	87	694
1136	No	206	113	181	113	25	0	76	37	70	109	0	0	0	0	19	1	0	0	19	1
1137	No	291	213	291	213	0	0	113	59	97	486	0	0	0	0	95	67	0	0	95	67
1138	No	510	299	510	299	0	0	149	108	430	33	0	0	0	0	23	69	3	0	20	69
1139	No	1,416	1,416	1,416	1,416	0	0	452	452	291	36	409	245	0	0	140	15	0	0	140	15
1140	No	115	82	115	79	0	3	40	22	66	117	0	0	0	0	22	78	0	2	22	76
1141	No	185	166	182	166	3	0	66	42	150	140	0	0	0	0	6	16	0	0	6	16
1142	No	483	313	483	313	0	0	121	84	187	76	0	0	0	0	0	112	0	0	0	112
1143	No	890	890	890	890	0	0	299	154	805	104	0	0	0	0	9	18	0	0	9	18
1144	No	280	213	268	201	12	12	96	62	251	79	540	275	0	0	0	5	0	0	0	5
1145	No	443	249	443	249	0	0	156	97	249	102	0	0	0	0	8	0	6	0	2	0
1146	No	37	307	37	307	0	0	12	144	25	537	0	0	0	0	0	7	0	0	0	7
1147	No	668	328	660	320	8	8	231	131	500	108	0	0	0	0	6	5	0	5	6	0
1148	No	723	696	720	690	3	6	269	290	610	61	347	336	0	0	11	2	0	0	11	2
1149	No	502	171	496	166	6	5	167	114	180	124	0	0	0	0	3	0	1	0	2	0
1150	No	425	156	425	153	0	3	126	79	360	99	528	370	0	0	0	5	0	0	0	5
1151	No	371	166	371	166	0	0	118	75	125	523		0	0	0	0	10	0	1	0	9
1152	No	107	365	107	315	0	50	38	116	123	118	0	0	0	0	145	2	6	0	139	2
1153	No	948	1,326	898	1,262	50	64	225	550	750	56	0	0	0	0	227	0	13	0	214	0
1154	No	587	361	587	360	0	1	290	141	500	55	0	0	0	0	1	5	0	5	1	0
1155	No	282	132	282	127	0	5	70	61	240	6	0	0	0	0	20	122	7	10	13	112
1156	No	335	240	330	235	5	5	139	73	97	45	0	0	0	0	59	171	2	0	57	171
1157	No	131	103	83	53	48	50	27	17	70	80	0	0	0	0	22	6	0	5	22	1
1158	No	497	235	449	185	48	50	160	87	380	270	0	0	0	0	122	12	0	2	122	10
1159	No	466	466	466	466	0	0	149	149	390	1,800	0	0	0	0	28	46	28	0	0	46
1160	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	17	0	0	6	17
1161	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	121	0	23	70	98
1162	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	42	0
1163	No	79	200	79	200	0	0	37	92	70	26	0	0	0	0	117	4	0	0	117	4
1164	No	582	393	462	273	120	120	147	97	95	76	0	0	0	0	19	56	0	0	19	56
1165	No	104	68	104	68	0	0	45	28	90	140	0	0	0	0	0	34	0	0	0	34
1166	No	338	189	335	186	3	3	127	87	425	18	504	378	0	0	7	93	6	0	1	93
1167	No	449	449	449	449	0	0	380	101	380	37	0	0	0	0	96	15	15	0	81	15
1168	No	34	26	34	26	0	0	16	10	35	60	0	0	0	0	0	5	0	5	0	0
1169	No	167	99	167	99	0	0	64	42	140	74	0	0	0	0	159	13	0	12	159	1
1171	No	635	290	635	290	0	0	330	120	533	360	0	0	0	0	0	2	0	2	0	0
1172	No	926	223	926	223	0	0	354	58	532	180	0	0	0	0	9	8	0	0	9	8
1173	No	224	224	224	224	0	0	86	88	186	121	0	0	0	0	26	21	0	0	26	21
1174	No	266	77	266	77	0	0	86	30	150	117	0	0	0	0	50	40	0	0	50	40
1175	No	323	323	323	323	0	0	134	134	295	295	0	0	0	0	1	1	0	0	1	1
1176	No	0	200	0	200	0	0	0	80	0	24	0	0	0	0	32	26	0	0	32	26

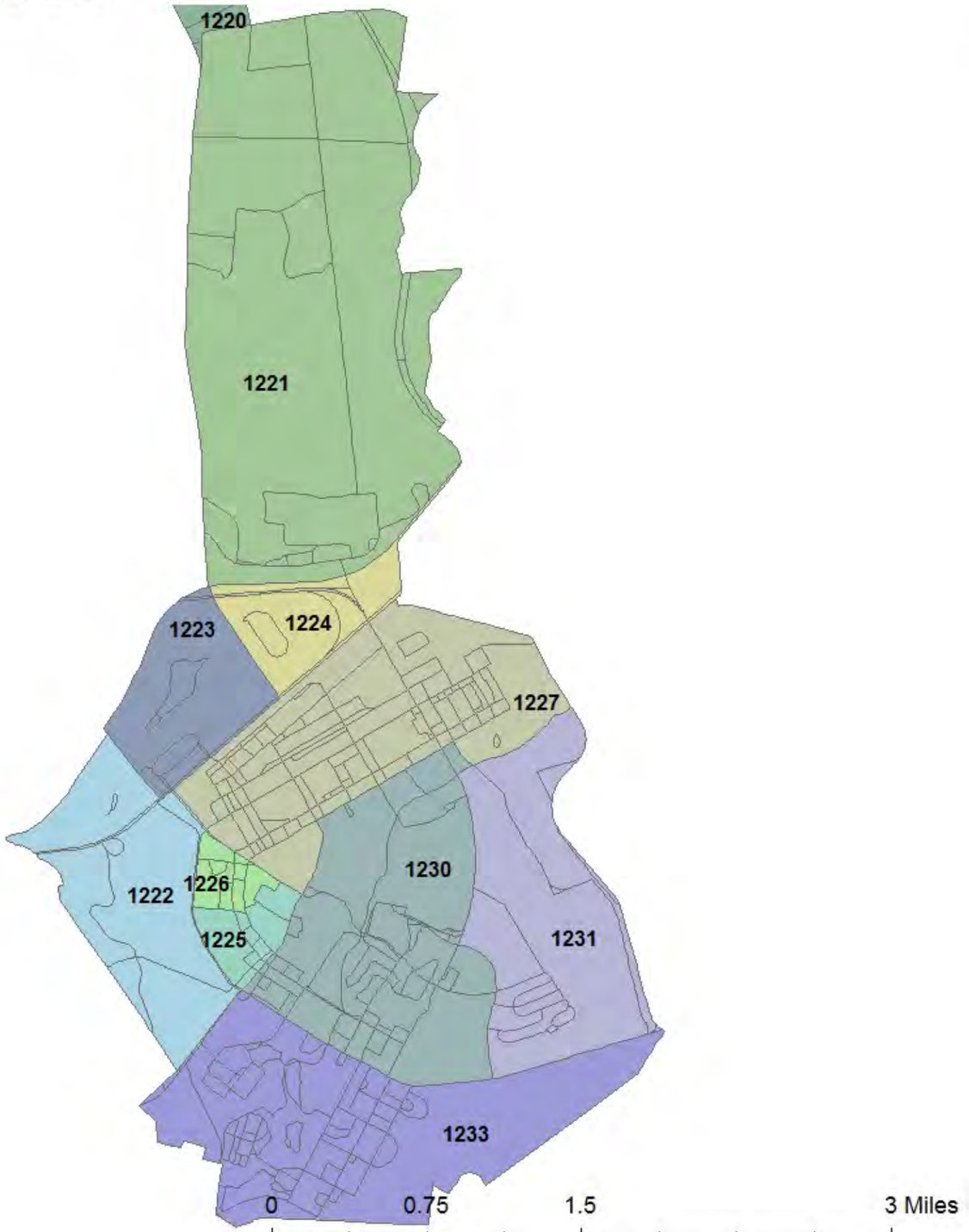
TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1178	No	233	260	233	260	0	0	60	109	155	56	0	0	0	0	602	482	0	0	602	482
1179	No	400	40	400	40	0	0	149	20	383	36	0	0	0	0	52	41	13	10	39	31
1180	No	910	80	910	80	0	0	282	32	372	70	0	0	0	0	17	13	0	0	17	13
1181	No	167	223	167	223	0	0	67	150	45	35	0	0	0	0	16	12	3	2	13	10
1182	No	96	190	48	190	48	0	77	86	121	6	0	0	0	0	0	0	0	0	0	0
1183	No	398	180	398	180	0	0	122	74	315	22	0	0	0	0	19	15	4	3	15	12
1184	No	1,590	1,590	1,590	1,590	0	0	531	531	882	24	512	512	0	0	19	15	1	1	18	14
1185	No	53	26	53	26	0	0	14	7	25	0	0	0	0	0	0	0	0	0	0	0
1186	No	194	30	194	30	0	0	128	13	194	11	304	194	0	0	36	29	0	0	36	29
1187	No	0	50	0	50	0	0	0	20	0	107	0	0	0	0	84	0	6	0	78	0
1188	No	2	30	2	30	0	0	1	20	3	90	0	0	0	0	268	67	0	5	268	62
1189	No	29	49	29	40	0	9	20	16	20	0	0	0	0	0	95	214	44	0	51	214
1190	No	58	180	49	180	9	0	22	75	273	8	0	0	0	0	24	76	15	35	9	41
1191	No	308	290	308	290	0	0	120	120	110	109	0	0	0	0	67	19	0	12	67	7
1193	No	1,372	1,372	1,372	1,372	0	0	492	492	500	45	0	0	0	0	119	54	10	0	109	54
1194	No	42	30	42	30	0	0	12	12	22	40	0	0	0	0	200	95	175	8	25	87
1195	No	274	300	274	300	0	0	95	125	230	200	0	0	0	0	10	160	6	140	4	20
1196	No	0	480	0	480	0	0	0	200	0	1,000	1,770	1,684	0	0	1	8	0	5	1	3
1197	No	42	100	42	100	0	0	11	300	35	155	0	0	0	0	230	1	150	0	80	1
1198	No	214	300	210	296	4	4	62	900	150	13	0	0	0	0	69	184	0	120	69	64
1199	No	1,226	1,226	1,226	1,226	0	0	493	493	1,030	40	0	0	0	0	71	55	62	0	9	55
1200	No	1,665	2,200	1,342	1,877	323	323	615	824	700	937	0	0	0	0	1,019	56	604	50	415	6
1201	No	305	55	305	55	0	0	119	24	341	0	0	0	0	0	2,796	2,648	89	483	2,707	2,165
1202	No	77	77	77	77	0	0	37	37	112	120	0	0	0	0	104	407	100	71	4	336
1203	No	702	343	699	340	3	3	238	141	624	420	0	0	0	0	52	368	0	32	52	336
1204	No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	460	296	40	3	420	293
1205	No	468	460	468	460	0	0	154	192	302	600	0	0	0	0	370	0	4	0	366	0
		32918	***28646***	***31785***	***27457***	***1133***	***1189***	***11918***	***11517***	***21666***	***13605***	***5676***	***4434***	***0***	***0***	***13130***	***10212***	***2123***	***1622***	***11007***	***8590***

Prince George



Fort Lee

Source: Tri Cities Area Metropolitan Planning Organization, 2013



Prince George with Fort Lee

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1216	No	0	312	0	312	0	0	0	160	0	293	0	0	0	0	674	635	200	188	474	447
1217	No	400	390	0	390	400	0	40	192	100	351	0	0	0	0	90	84	0	0	90	84
1218	No	340	320	340	320	0	0	172	160	376	293	0	0	0	0	31	30	0	0	31	30
1219	No	600	600	0	0	600	600	14	0	15	0	0	0	0	0	616	579	0	0	616	579
1220	Yes	1,200	1,200	0	0	1,200	1,200	0	0	0	0	0	0	0	0	361	340	0	0	361	340
1221	Yes	0	214	0	214	0	0	0	115	0	210	0	0	0	0	100	94	0	0	100	94
1222	Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1223	Yes	6,190	619	6,190	169	0	450	119	89	177	163	176	176	0	0	6,190	0	0	0	6,190	0
1224	Yes	800	1,785	0	285	800	1,500	0	149	227	273	0	0	0	0	4,000	5,819	0	0	4,000	5,819
1225	Yes	620	1,936	120	1,336	500	600	90	717	239	1,312	325	325	0	0	1,800	3,760	0	0	1,800	3,760
1226	Yes	600	942	300	142	300	800	150	149	17	273	0	0	0	0	900	1,692	0	0	900	1,692
1227	Yes	6,000	3,425	6,000	1,425	0	2,000	900	717	728	1,312	0	0	0	0	0	846	0	0	0	846
1228	No	27	1,184	27	1,184	0	0	11	631	35	1,155	0	0	0	0	934	0	417	0	517	0
1229	No	407	819	407	819	0	0	131	437	360	800	0	0	0	0	36	879	0	393	36	486
1230	Yes	3,003	2,684	1,403	1,184	1,600	1,500	650	631	1,500	1,155	0	0	0	0	4,539	34	100	0	4,439	34
1231	Yes	1,400	914	1,400	214	0	700	450	220	800	403	586	586	0	0	1,500	4,267	0	94	1,500	4,173
1232	No	346	321	346	321	0	0	135	279	348	511	0	0	0	0	100	1,410	21	0	79	1,410
1233	Yes	1,500	927	750	427	750	500	300	315	630	576	0	0	0	0	5,000	94	0	20	5,000	74
1234	No	658	561	658	561	0	0	288	230	450	421	975	517	0	0	50	4,700	41	0	9	4,700
1235	No	24	786	0	766	24	20	316	322	945	589	0	0	0	0	2	46	0	38	2	8
1236	No	15	772	0	757	15	15	82	403	155	737	636	636	0	0	1	2	0	0	1	2
1237	No	798	386	798	386	0	0	367	207	670	379	0	0	0	0	7	1	0	0	7	1
1238	No	950	347	950	347	0	0	385	177	1,365	324	0	0	0	0	142	7	69	0	73	7
1239	No	601	472	601	472	0	0	211	218	420	399	0	0	0	0	38	133	0	64	38	69
1240	No	423	419	423	419	0	0	205	177	355	324	0	0	0	0	6	36	0	0	6	36
1241	No	558	499	558	499	0	0	242	200	470	366	0	0	0	0	5	6	0	0	5	6
1242	No	14	107	14	107	0	0	4	57	13	104	0	0	0	0	21	5	0	0	21	5
1243	No	600	481	600	481	0	0	233	223	770	408	0	0	0	0	6	20	0	0	6	20
1244	No	120	116	120	116	0	0	52	68	92	124	0	0	0	0	33	6	0	0	33	6
1245	No	629	205	629	205	0	0	223	70	535	128	0	0	0	0	3	32	1	0	2	32
1246	No	363	1,193	363	1,193	0	0	150	637	290	1,166	0	0	0	0	11	3	10	1	1	2
1247	No	184	1,336	184	1,336	0	0	74	710	150	1,299	0	0	0	0	79	10	0	9	79	1
1248	No	820	1,523	820	1,523	0	0	312	637	515	1,166	0	0	0	0	1	74	0	0	1	74
1249	No	652	606	652	606	0	0	219	309	218	565	0	0	0	0	8	1	8	0	0	1
1250	No	216	419	216	419	0	0	87	222	180	406	0	0	0	0	16	8	0	8	16	0
1251	No	816	286	816	286	0	0	317	153	685	280	606	606	0	0	1,032	1,032	0	0	1,032	1,032
1252	No	543	205	543	205	0	0	213	109	664	199	0	0	0	0	31	31	0	0	31	31
1253	No	367	329	367	329	0	0	142	179	300	328	2,347	2,233	0	0	368	29	0	0	368	29
1254	No	18	154	0	134	18	20	109	70	252	128	797	797	0	0	1,189	1,189	0	0	1,189	1,189
1255	No	445	401	445	401	0	0	190	179	370	328	0	0	0	0	10	347	0	0	10	347
1256	No	185	160	185	160	0	0	71	50	126	92	0	0	0	0	243	9	0	0	243	9
1258	No	3	107	0	107	3	0	17	57	25	104	0	0	0	0	0	228	0	0	0	228

TAZ	FT Lee TAZ	Population						Households		Automobiles		School Enrollment				Employment					
		Total		In Occupied Housing Units		In Group Quarters						Grade K-12		Colleges		Total		Retail		Non-Retail	
		2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045	2017	2045
1259	No	94	27	94	27	0	0	57	14	100	26	0	0	0	0	48	0	3	0	45	0
1260	No	109	107	109	107	0	0	59	78	119	143	0	0	0	0	10	45	0	3	10	42
1261	No	28	27	28	27	0	0	13	26	20	48	0	0	0	0	52	9	0	0	52	9
1262	No	215	169	215	169	0	0	79	78	135	143	0	0	0	0	0	50	0	0	0	50
1263	No	61	303	61	303	0	0	24	163	57	298	499	467	0	0	4	0	0	0	4	0
1264	No	5	432	5	432	0	0	4	230	5	421	0	0	0	0	22	4	0	0	22	4
1265	No	9	343	0	338	9	5	140	276	520	505	0	0	0	0	105	20	14	0	91	20
1266	No	556	1,202	556	1,202	0	0	241	641	474	1,173	0	0	0	0	119	99	12	13	107	86
1267	No	794	641	794	641	0	0	345	457	596	836	0	0	0	0	2	112	1	11	1	101
1268	No	812	1,496	812	1,496	0	0	394	641	742	1,173	0	0	0	0	9	2	0	1	9	1
1269	No	650	285	650	285	0	0	273	151	542	276	455	962	0	0	871	871	25	0	846	871
1270	No	396	347	396	347	0	0	166	123	564	225	0	0	0	0	19	42	1	23	18	19
1271	No	73	53	73	53	0	0	27	45	70	82	0	0	0	0	0	18	0	1	0	17
1272	No	260	276	260	276	0	0	101	191	225	350	0	0	0	0	35	0	0	0	35	0
1273	No	100	98	100	98	0	0	45	65	84	119	0	0	0	0	115	33	0	0	115	33
1274	No	404	187	404	187	0	0	169	99	426	181	0	0	0	0	451	108	10	0	441	108
1275	No	155	454	155	454	0	0	64	243	130	445	0	0	0	0	0	424	0	9	0	415
1276	No	217	775	217	775	0	0	88	412	180	754	0	0	0	0	0	0	0	0	0	0
1277	No	581	597	581	597	0	0	237	267	500	489	0	0	0	0	0	0	0	0	0	0
1278	No	819	873	819	873	0	0	404	412	1,016	754	0	0	0	0	0	0	0	0	0	0
1279	No	545	606	545	606	0	0	265	297	460	544	0	0	0	0	0	0	0	0	0	0
1280	No	244	712	244	712	0	0	101	376	312	688	0	0	0	0	0	0	0	0	0	0
1281	No	729	739	729	739	0	0	294	446	610	816	0	0	0	0	0	0	0	0	0	0
1282	No	825	347	825	347	0	0	371	186	1,123	340	0	79	0	0	0	0	0	0	0	0
1283	No	819	695	819	695	0	0	435	371	1,485	679	0	0	0	0	0	0	0	0	0	0
1284	No	401	347	401	347	0	0	185	186	369	340	0	0	0	0	0	0	0	0	0	0
	Total	***43,336***	***42,600***	***37,117***	***32,690***	***6,219***	***9,910***	***12,252***	***17,099***	***26,431***	***31,291***	***7,402***	***7,384***	-	-	***32,035***	***30,355***	***933***	***876***	***31,102***	***29,479***
	FT Lee	***21,313***	***14,646***	***16,163***	***5,396***	***5,150***	***9,250***	***2,659***	***3,102***	***4,318***	***5,677***	***1,087***	***1,087***	-	-	***24,390***	***16,946***	***100***	***114***	***24,290***	***16,832***
	Co. Only	***22,023***	***27,954***	***20,954***	***27,294***	***1,069***	***660***	***9,593***	***13,997***	***22,113***	***25,615***	***6,315***	***6,297***	-	-	***7,645***	***13,409***	***833***	***762***	***6,812***	***12,647***

TECHNICAL APPENDIX D

TRI-CITIES AREA MPO

DEMOGRAPHIC DETAILS: ENVIRONMENTAL JUSTICE AND TITLE VI

AUGUST 2021

ACKNOWLEDGEMENT

This report was prepared in cooperation with the United States Department of Transportation, Federal Highway Administration, the Virginia Department of Transportation, Virginia Department of Rail and Public Transportation, GRTC Transit Systems and the representatives of the six local jurisdictions of the Tri-Cities Area and is the collective work of state, regional and local representatives of the Tri-Cities Area Metropolitan Planning Organization (TCAMPO) Transportation Advisory Committee.

DISCLAIMER

The contents of this report reflect the views of the TCAMPO. Crater PDC and TCAMPO are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Virginia Department of Rail and Public Transportation (VDRPT) or the Virginia Department of Transportation (VDOT). This report does not constitute a standard, specification, or regulation.

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Environmental Justice

Based on the legal framework of Title VI of the Civil Rights Act of 1964 and Executive Order 12898 (Environmental Justice), every Metropolitan Planning Organization (MPO) receiving federal funds is required to ensure that the most disadvantaged populations are protected from negative impacts and are best equipped to derive positive benefit during the planning process and evaluation. The process for including consideration for these special populations in planning is referred to as "Environmental Justice", or EJ for short. Those disadvantaged groups traditionally are defined as Minority and Low-Income populations. Other factors (also used for Title VI) include the social planning factors for special populations including Individuals with Disabilities, Zero Car Households, Elderly populations, and Limited English Proficiency (LEP) populations. The datasets for each category were accessed from *2013-2017 American Community Survey 5-Year Estimates* from the U.S. Census Bureau and summarized as follows in *Exhibit EJ1*. The EJ concentration area of each EJ population group is depicted on the charts when its percentage exceeds its average percentage level of the Tri-Cities Area as a whole.

This section focuses on statistics of each EJ/Title VI subject dataset. Care was made to match the methodology and datasets to RRTPO's *2045 Long Range Growth Forecast Analysis as part of* ***ConnectRVA 2045,*** since portions of Chesterfield County are in both MPO Planning Areas. *It should be noted that Census Tract 9801 in Hopewell has zero population and is blank on the maps.*

More detailed analysis will be incorporated into ***Plan2045.*** Further steps of analysis will entail developing a methodology to display the EJ index at Census Tract level by aggregate data sets from the six environmental justice subjects with a defined weight. This EJ index, once developed, will be used to evaluate and score transportation projects, and for other planning purposes.

Exhibit EJ1: Tri-Cities Area Environmental Justice Factors by Locality 2017

Environmental Justice Datasets	Dataset Level	ACS Table
Minority Population	Census Tract	Table DP05
Low Income Population	Census Tract	Table S1701
Median Income	Census Tract	Tables S1101 and B19013
Individuals with Disabilities	Census Tract	Table B18101
Zero Car Households	Census Tract	Table DP04
Elderly Population	Census Tract	Table DP05
Limited English Proficiency (LEP) Population	Census Tract	Table B16005

Source: 2013-2017 American Community Survey 5-Year Estimates

Minority Population

Minority populations are defined as persons who identify themselves as Black or African American, American Indian and Alaska Native, Asian, Hawaiian and Other Pacific Islanders, Hispanic or Latino and Native, Some other race alone, and Two or More races. In other words, Minority Population includes all people who have not identified themselves as White (Non- Hispanic or Latino and Single Race Alone) in US Census race and ethnicity questions.

The average percentage of minority population of the Tri-Cities localities in *Exhibit EJ2* is 41.27% in 2017 and the total minority population is 195,329; the total minority population is 91,573 or 49.39% for the localities with only Tri-Cities Area Chesterfield County census tracts. Blacks or African Americans makes up 131,221, which is 67% of the total minority population; or 71,343 which is 78% for the localities with only Tri-Cities Area Chesterfield County census tracts. Hispanic or Latino is the second largest minority population group with 35,528 people which is 7.5% of the total; and 11,624 which is 6.27% for the localities with only the Tri-Cities Area Chesterfield County census tracts.

Exhibit EJ2: Tri-Cities Area Population by Race by Locality 2017

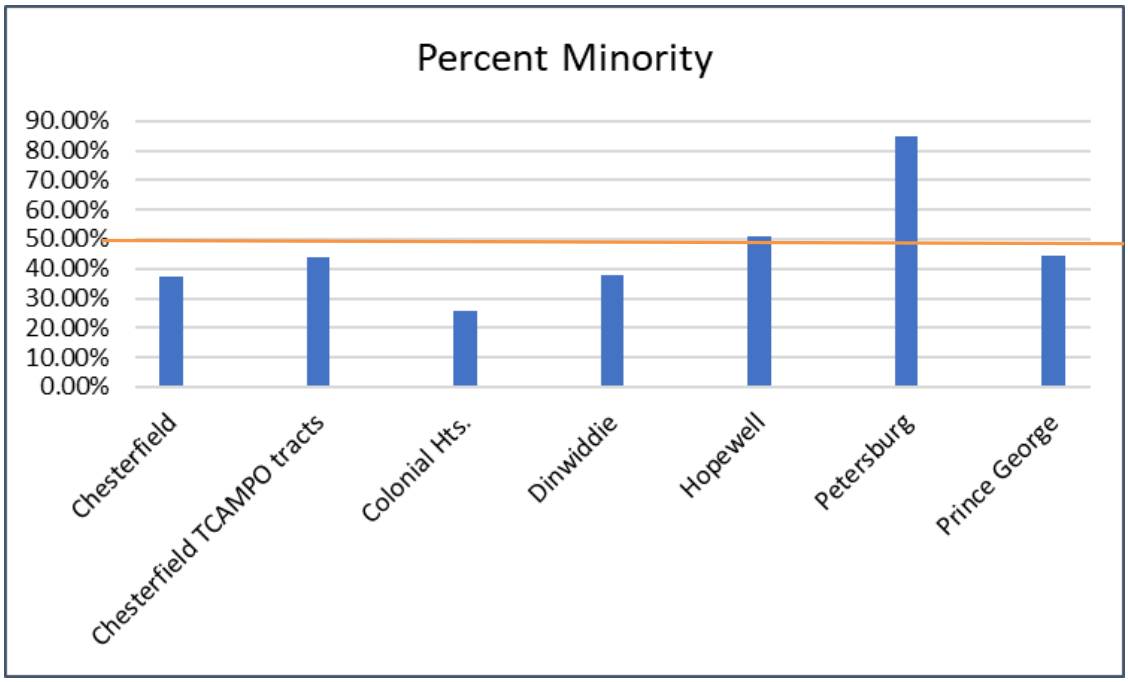
Jurisdiction	Total Population[1]	Not Hispanic or Latino and Single Race Alone							Hispanic or Latino	Minority
		White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race alone	Two or more races		
Chesterfield	335,594	210,795	75,068	747	11,562	85	942	8,711	27,684	124,799
		62.80%	22.40%	0.20%	3.40%	0.00%	0.30%	2.60%	8.20%	37.20%
Chesterfield TCAMPO tracts	47,681	26,638	15,190	82	649	13	0	1,329	3,780	21,043
		55.87%	31.86%	0.17%	1.36%	0.03%	0.00%	2.79%	7.93%	44.13%
Colonial Hts.	17,582	13,068	2,312	87	675	0	34	435	971	4,514
		74.33%	13.15%	0.49%	3.84%	0.00%	0.19%	2.47%	5.52%	25.67%
Dinwiddie	28,033	17,422	8,912	0	119	12	131	544	893	10,611
		62.15%	31.79%	0.00%	0.42%	0.04%	0.47%	1.94%	3.19%	37.85%
Hopewell	22,353	10,905	8,940	24	290	0	18	540	1,636	11,448
		48.79%	39.99%	0.11%	1.30%	0.00%	0.08%	2.42%	7.32%	51.21%
Petersburg	32,037	4,806	24,223	86	343	13	152	922	1492	27,231
		15.00%	75.61%	0.27%	1.07%	0.04%	0.47%	2.88%	4.66%	85.00%
Prince George	37,704	20,978	11,766	199	794	48	103	964	2852	16,726
		55.64%	31.21%	0.53%	2.11%	0.13%	0.27%	2.56%	7.56%	44.36%
Total Localities	**473,303**	**277,974**	**131,221**	**1,143**	**13,783**	**158**	**1,380**	**12,116**	**35,528**	**195,329**
		58.73%	**27.72%**	**0.24%**	**2.91%**	**0.03%**	**0.29%**	**2.56%**	**7.51%**	**41.27%**
TCAMPO (approx)	**185,390**	**93,817**	**71,343**	**478**	**2,870**	**86**	**438**	**4,734**	**11,624**	**91,573**
		50.61%	**38.48%**	**0.26%**	**1.55%**	**0.05%**	**0.24%**	**2.55%**	**6.27%**	**49.39%**

1. Population for whom race is determined

Source: 2013-2017 American Community Survey 5-Year Estimates, Table DP05

For the localities, two minority population percentages are higher than the Area's average including Petersburg (85%) and Hopewell (51%) as shown in *Exhibit EJ3*.

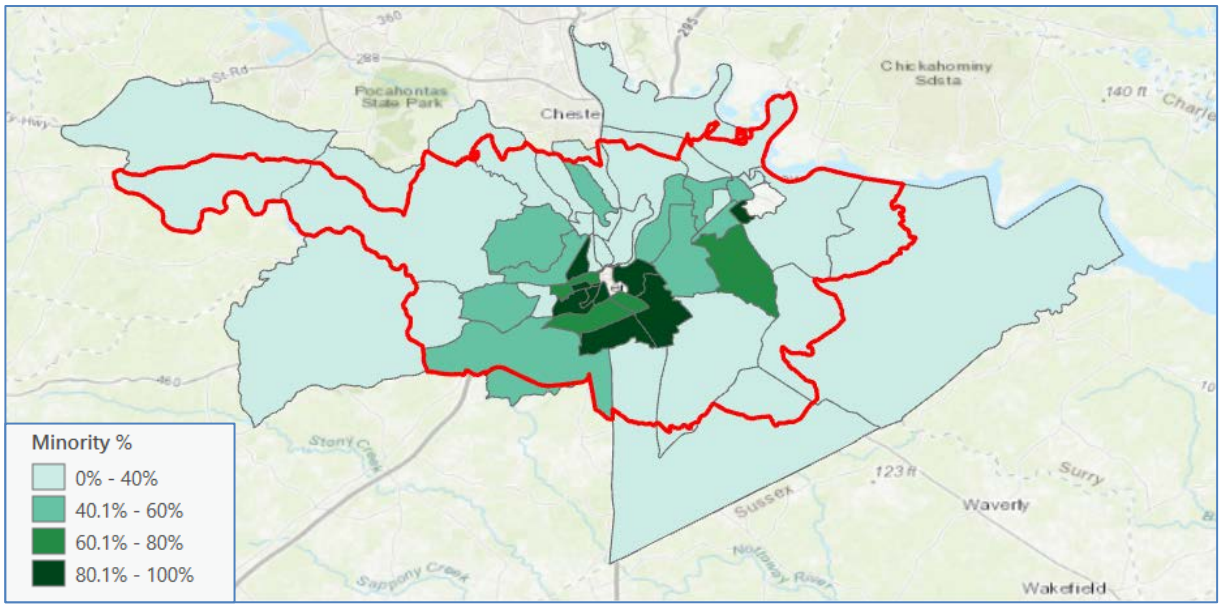
Exhibit EJ3: Percentages of Minority Population in Tri-Cities Area by Locality 2017



Source: 2013 - 2017 American Community Survey 5 - Year Estimates, Table DP05

Exhibit EJ4 illustrates minority population concentration areas at the census tract level. The areas with the highest concentration appear in Petersburg and Hopewell.

Exhibit EJ4: Map of Tri-Cities Area Minority Population at Census Tract Level 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table DP05

Low Income Population

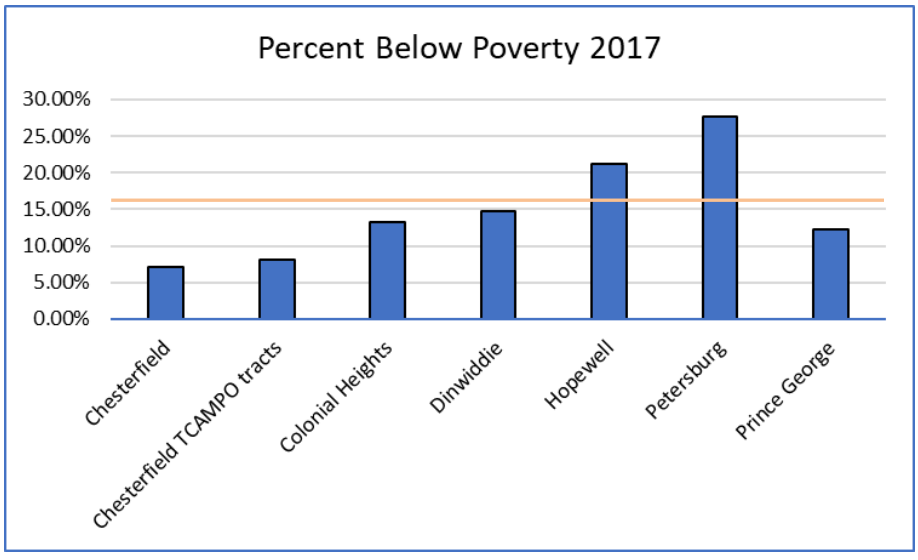
The average percentage of the population classified as being Low Income or falling below the poverty level in the Tri-Cities Area is 12.28% for the total localities' populations and 15.49% for the localities with only Tri-Cities Area Chesterfield County census tracts (*Exhibit EJ5*). Petersburg City has 8,646 people whose income in the past 12 months from 2017 was below poverty level and has the highest poverty percentage at 27.57%. Hopewell is another locality which has a substantially higher poverty percentage than the Area level, 4,670 residents, or 21.19% (*Exhibit EJ6*).

Exhibit EJ5: Tri-Cities Area Population Living in Poverty by Locality 2017

Jurisdiction	Total Population	Income in the past 12 months below poverty level	Percentage
Chesterfield	331,055	23,707	7.16%
Chesterfield TCAMPO tracts	45,615	3,674	8.05%
Colonial Heights	17,468	2,312	13.24%
Dinwiddie	27,441	4,062	14.80%
Hopewell	22,037	4,670	21.19%
Petersburg	31,363	8,646	27.57%
Prince George	33,653	4,134	12.28%
Total Localities	**463,017**	**47,531**	**12.28%**
TCAMPO Area	177,577	27,498	15.49%

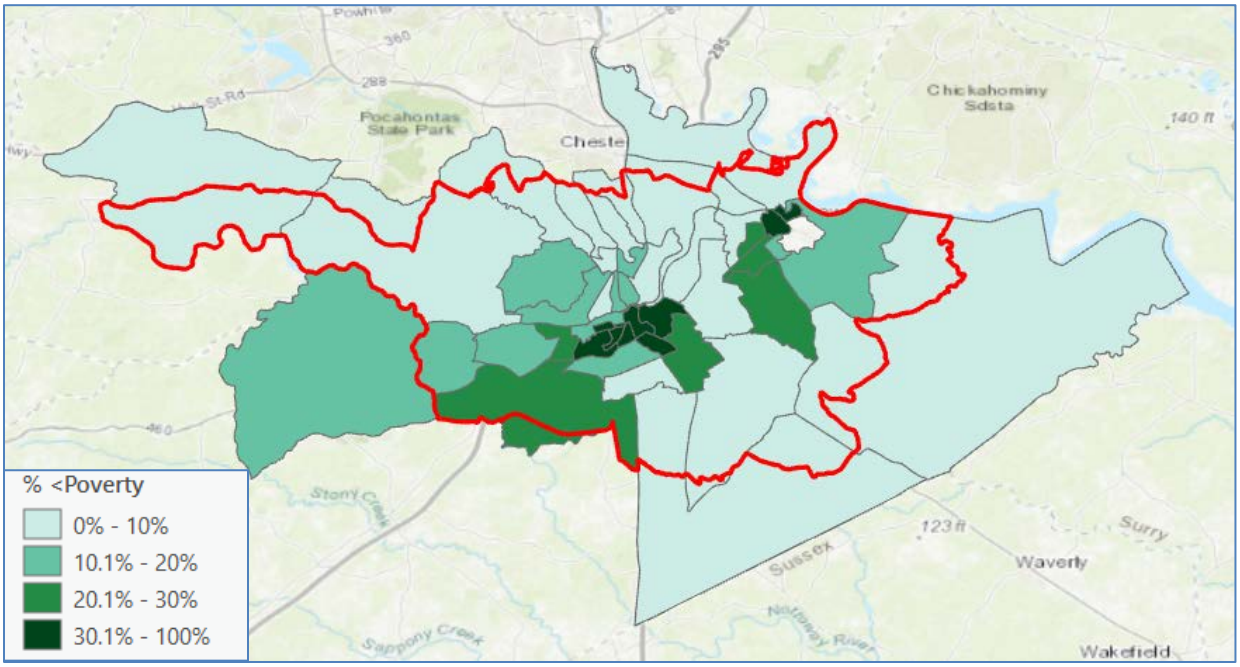
Population for whom poverty status is determined
Source: 2013-2017 American Community Survey 5-Year Estimates, Table S1701

Exhibit EJ6: Tri-Cities Area Population Living in Poverty by Locality 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table S1701

Exhibit EJ7: Tri-Cities Area Population Living in Poverty at Census Tract Level 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table S1701

Areas of Persistent Poverty (APP)

The Federal Government has also established a measure called Areas of Persistent Poverty (APP), which has been first used for the RAISE program. An "Area of Persistent Poverty" is defined by the 2021 Consolidated Appropriations Act. A project is located in an Area of Persistent Poverty for the RAISE grant program if:

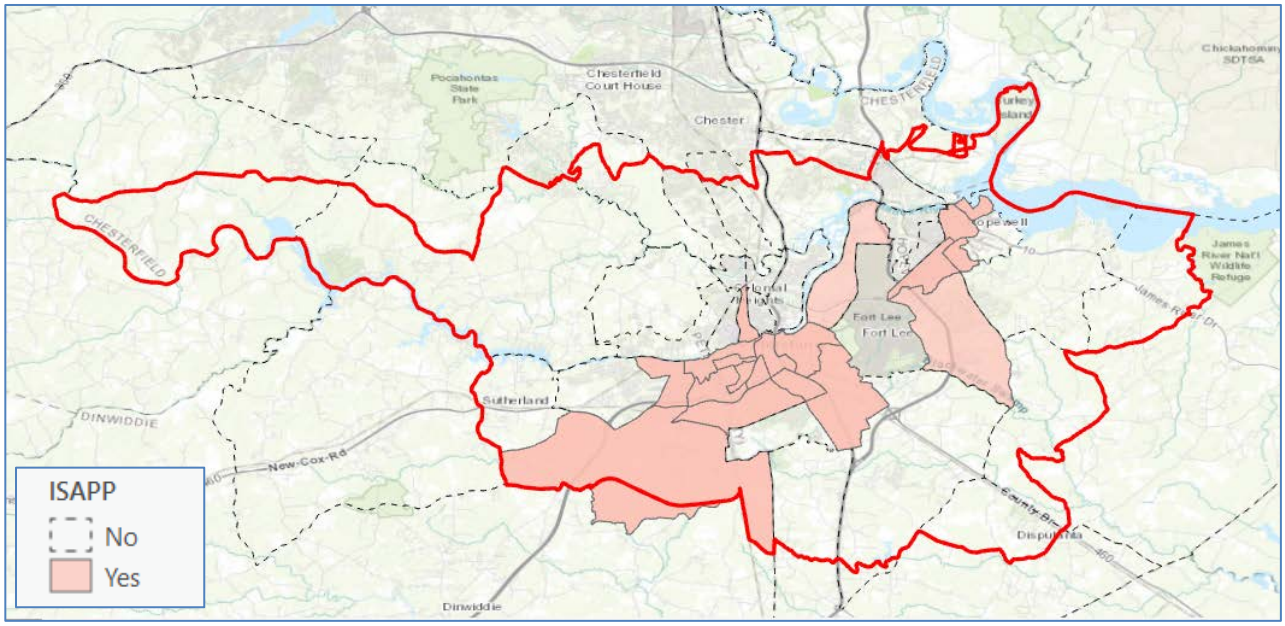
(1) the County in which the project is located consistently had greater than or equal to 20 percent of the population living in poverty in all three of the following datasets: (a) the 1990 decennial census; (b) the 2000 decennial census; and (c) the 2019 Small Area Income Poverty Dataset; OR

(2) the Census Tract in which the project is located has a poverty rate of at least 20 percent as measured by the 2014-2018 5-year data series available from the American Community Survey of the Bureau of the Census; OR

(3) the project is located in any territory or possession of the United States.

The map below shows the APP census tracts in Tri-Cities. All localities have at least one APP census tract, and in Petersburg all but one of the census tracts are APP.

Exhibit EJ8: Tri-Cities Area Areas of Persistent Poverty (APP)



Source: RAISE Grant website

Household Median Income

Household Median Income by locality is also used as a supplemental source to measure income levels shown in *Exhibit EJ9*. Since the Household Median Income of the Area is not directly available, the weighted mean of household median income by each locality was calculated. This amount is $68,755 for all localities, and $55,621 for localities with Tri-Cities Area Chesterfield census tracts. Hopewell and Petersburg are well below this weighted mean as shown in *Exhibit EJ10*.

Exhibit EJ9: Tri-Cities Area Median Household Income by Locality 2017

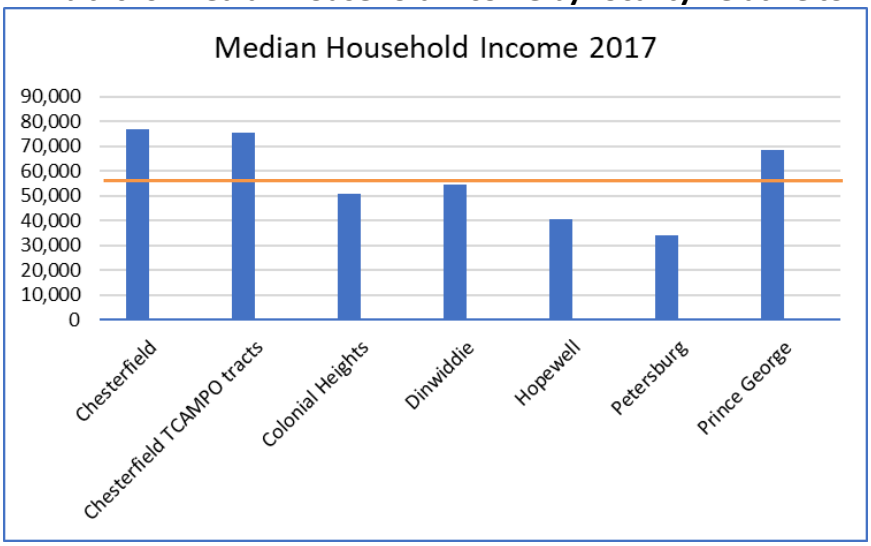
Jurisdiction	Total Households 2017	Median Household Income 2017
Chesterfield	120,907	76,969
Chesterfield TCAMPO tracts	15,916	75,657
Colonial Heights	7,092	50,952
Dinwiddie	10,347	54,640
Hopewell	9,123	40,712
Petersburg	13,262	33,939
Prince George	11,298	68,461
Total Localities	**172,029**	**68,755**
TCAMPO Area	67,038	55,578

1. Households for whom median household income in the past 12 months (in 2017 inflation-adjusted dollars) is determined

** This is calculated by weighted average of Household Median income from each Jurisdiction.*

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Tables S1101 (number of households) and B19103 (median income)

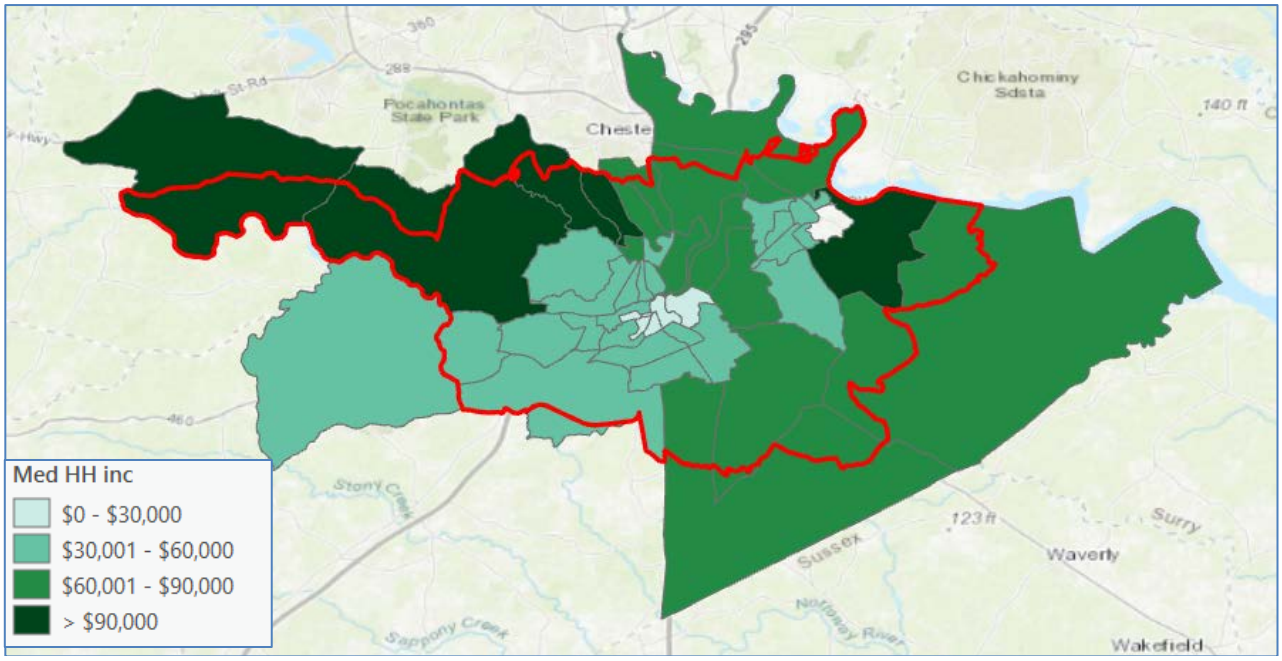
Exhibit EJ10: Median Household Income by Locality Relative to Area 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table S1101 and B19013

Exhibit EJ11 shows how the Low-Income population is distributed in the Area. The highest concentrations are in the central portion of the City of Petersburg.

Exhibit EJ11: Tri-Cities Area Median Household Income at Census Tract Level 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table B19013

Individuals with Disabilities (Disability Status)

Disability Status is one of the crucial indicators to measure where the special transportation services are needed the most including public transit, paratransit and services by other providers. The percentage of persons with at least one disability is around 11.6% for the Area.

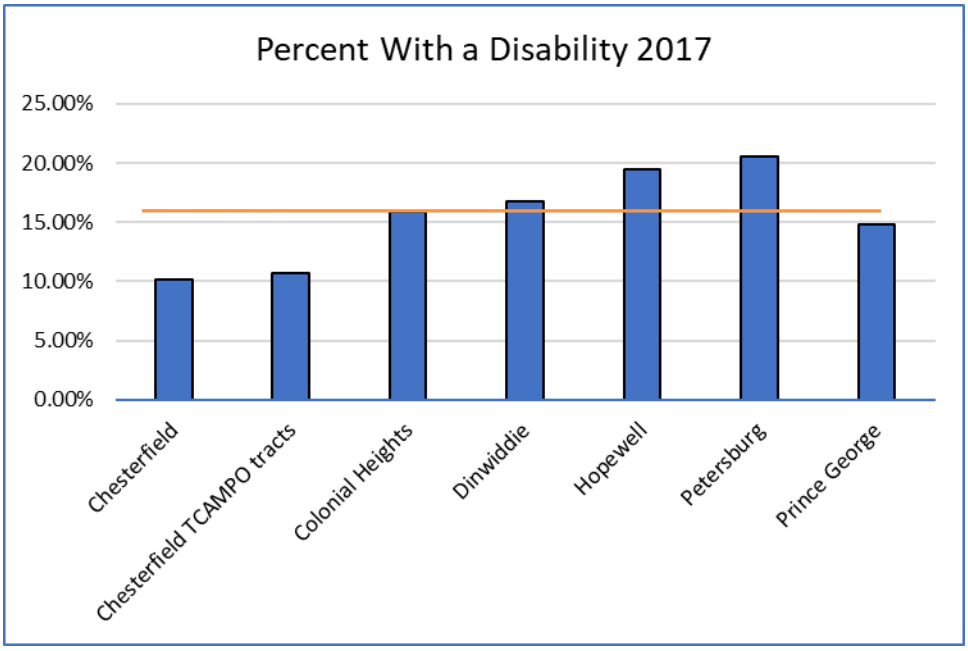
Of the 121,000 persons with a disability, 90% live in Chesterfield County, Henrico County and Richmond City as indicated in *Exhibit EJ12*. *Exhibit EJ13* shows two localities which have substantially higher percentages include Hopewell and Petersburg.

Exhibit EJ12: Individuals with Disabilities by Locality 2017

Jurisdiction	Total Population	Persons with a Disability	Percentage
Chesterfield	333,209	33,818	10.15%
Chesterfield TCAMPO tracts	47,528	5,089	10.71%
Colonial Heights	17,440	2,768	15.87%
Dinwiddie	27,716	4,637	16.73%
Hopewell	21,987	4,270	19.42%
Petersburg	31,078	6,394	20.57%
Prince George	32,783	4,838	14.76%
Total Localities	**464,213**	**56,725**	**14.76%**
TCAMPO Area	178,532	27,996	15.68%

1. Population for whom disability status is determined
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table B18101

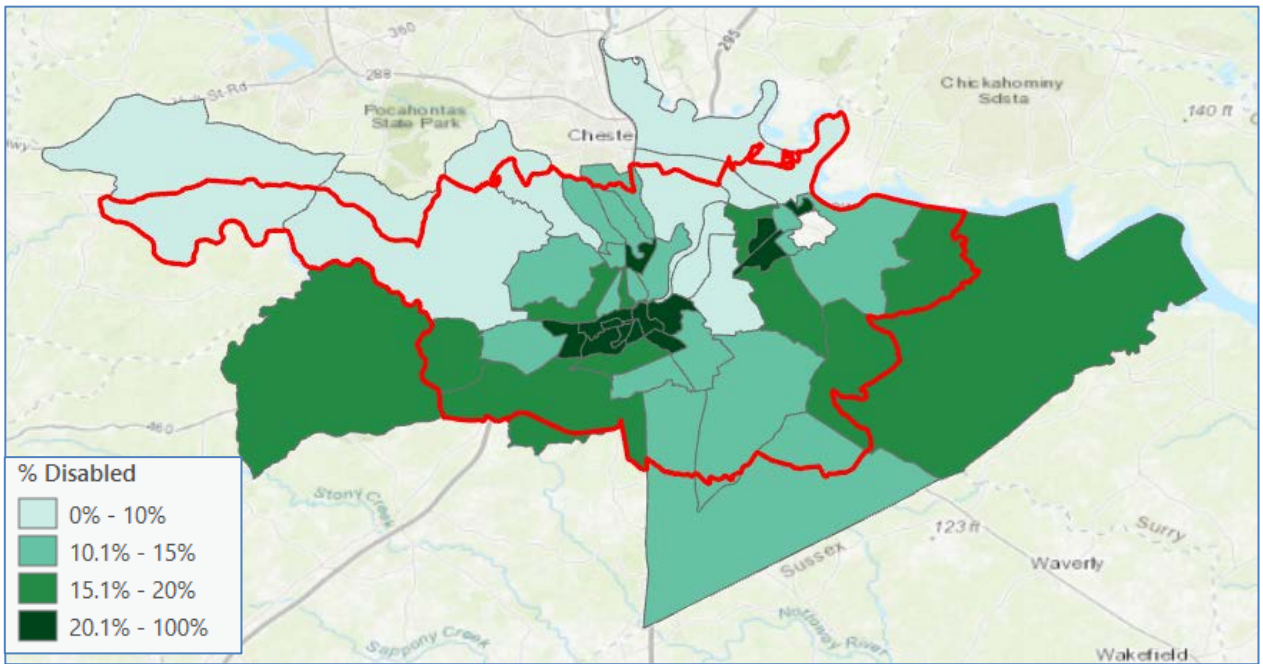
Exhibit EJ13: Individuals with Disabilities by Locality 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table B18101

Exhibit EJ14 indicates the areas with the highest disability percentages are located in Petersburg and Hopewell.

Exhibit EJ14: Map of Tri-Cities Area Disability Status at Census Tract Level 2017



Source: 2013-2017 American Community Survey 5-Year Estimates, Table B18101

Zero-Car Households

Around 8,500 of the total 175,000 households in the Tri-Cities Area do not own a vehicle, an average Area percentage of Zero-Car Household of 2.8% (all localities) and 7.48% (localities with Tri-Cities Area Chesterfield census tracts) as shown in *Exhibit EJ15* and *Exhibit EJ16*. Petersburg has the highest proportion of zero-car households, at 2,659 households, or 16.23%. In addition to the limited financial capability for car ownership, residents of the City of Petersburg have the opportunity for access to transit choices (ex: PAT). As Exhibit EJ17 shows, the City of Petersburg and City of Hopewell have the highest proportion of Zero-Car Households.

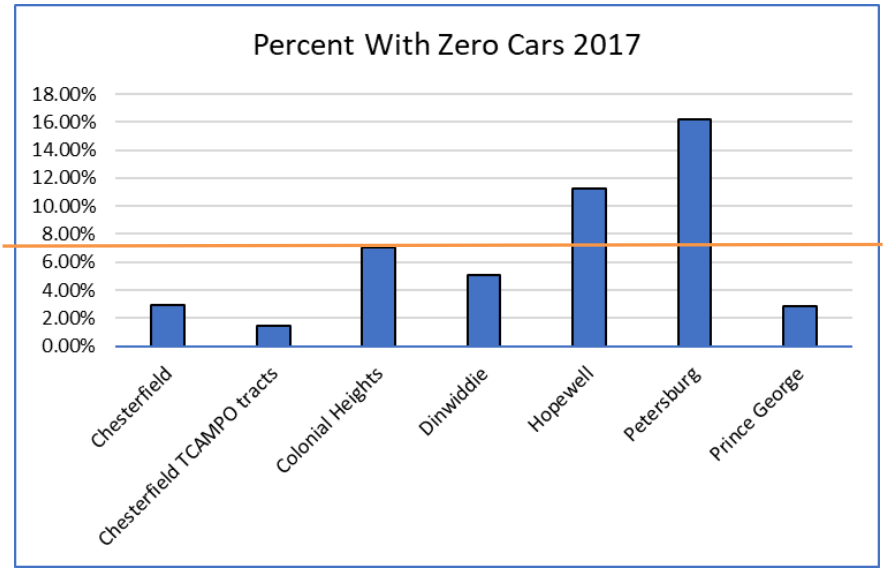
Exhibit EJ15: Tri-Cities Area Zero Car Households by Locality 2017

Jurisdiction	Total Households	Zero Car Households	Percent With Zero Cars
Chesterfield	120,907	3,497	2.89%
Chesterfield TCAMPO tracts	16,746	239	1.43%
Colonial Heights	7,092	501	7.06%
Dinwiddie	10,347	523	5.05%
Hopewell	9,123	1,025	11.24%
Petersburg	16,385	2,659	16.23%
Prince George	11,298	319	2.82%
Total Localities	**175,152**	**8,524**	**2.82%**
TCAMPO Area	70,991	5,266	7.42%

1. *Households for whom vehicle ownership status is determined*
2. *This does not include 1-person household with 1 vehicle available*

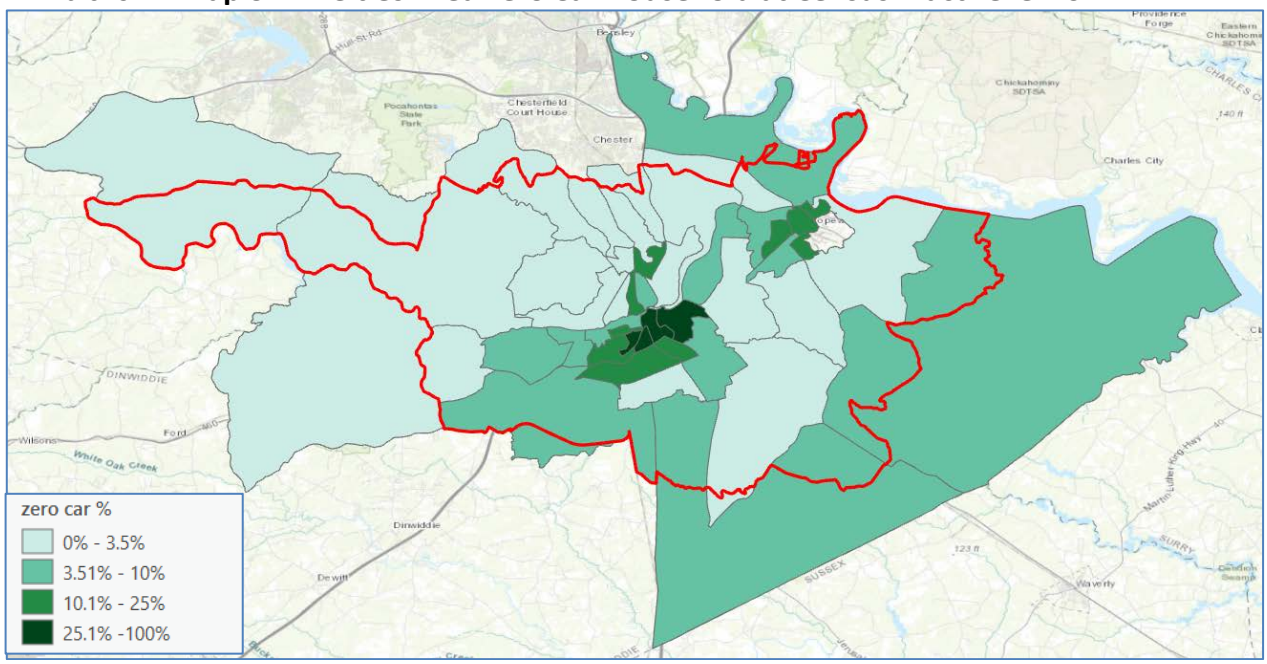
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table DP04

Exhibit EJ16: Zero Car Households by Locality Relative to Area 2017



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table DP04

Exhibit EJ17: Map of Tri-Cities Area Zero Car Household at Census Tract Level 2017



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table DP04

Elderly Population

The population older than 65 years in the Area was nearly 66,500 people and 12.64% (26,965 persons or 14.55% in localities with Tri-Cities Area Chesterfield census tracts) in 2017 shown in *Exhibit EJ18*. The average elderly population in 2017 was 13.9% of the Area, which is slightly higher than it was in 2013. Colonial Heights and Dinwiddie exceed the Area average shown in *Exhibit EJ19*. *Exhibit EJ20* illustrates the elderly population distribution around the Area. The

highest concentration area of elderly population is mainly in Colonial Heights and the rural portions of the Area.

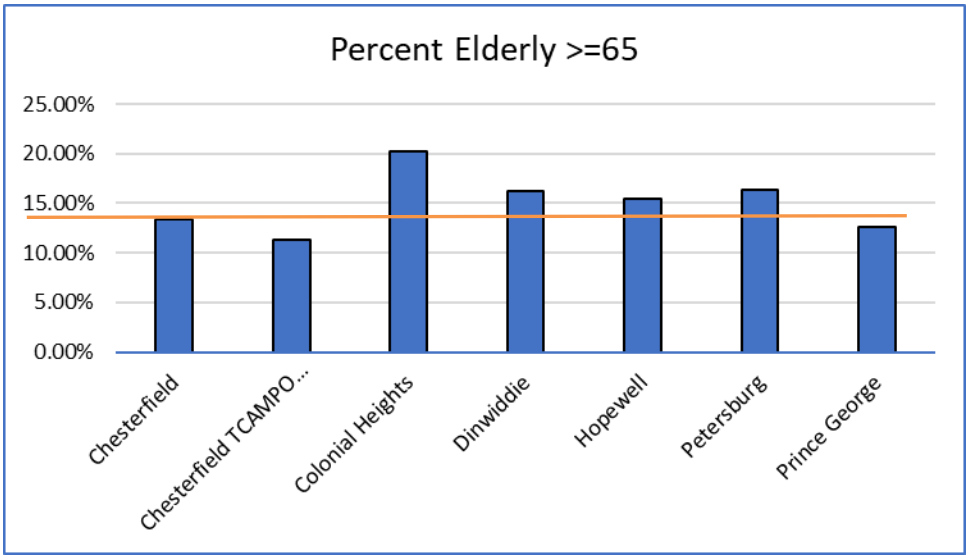
Exhibit EJ18: Tri-Cities Area Elderly Population (Age ≥ 65) by Locality 2017

Jurisdiction	Total Population	Population Elderly >=65	Percent Elderly >=65
Chesterfield	335,594	44,886	13.38%
Chesterfield TCAMPO tracts	47,681	5,394	11.31%
Colonial Heights	17,582	3,562	20.26%
Dinwiddie	28,033	4,550	16.23%
Hopewell	22,353	3,463	15.49%
Petersburg	32,037	5,230	16.32%
Prince George	37,704	4,766	12.64%
Total Localities	**473,303**	**66,457**	**12.64%**
TCAMPO Area	185,390	26,965	14.55%

1. Population for whom age is determined

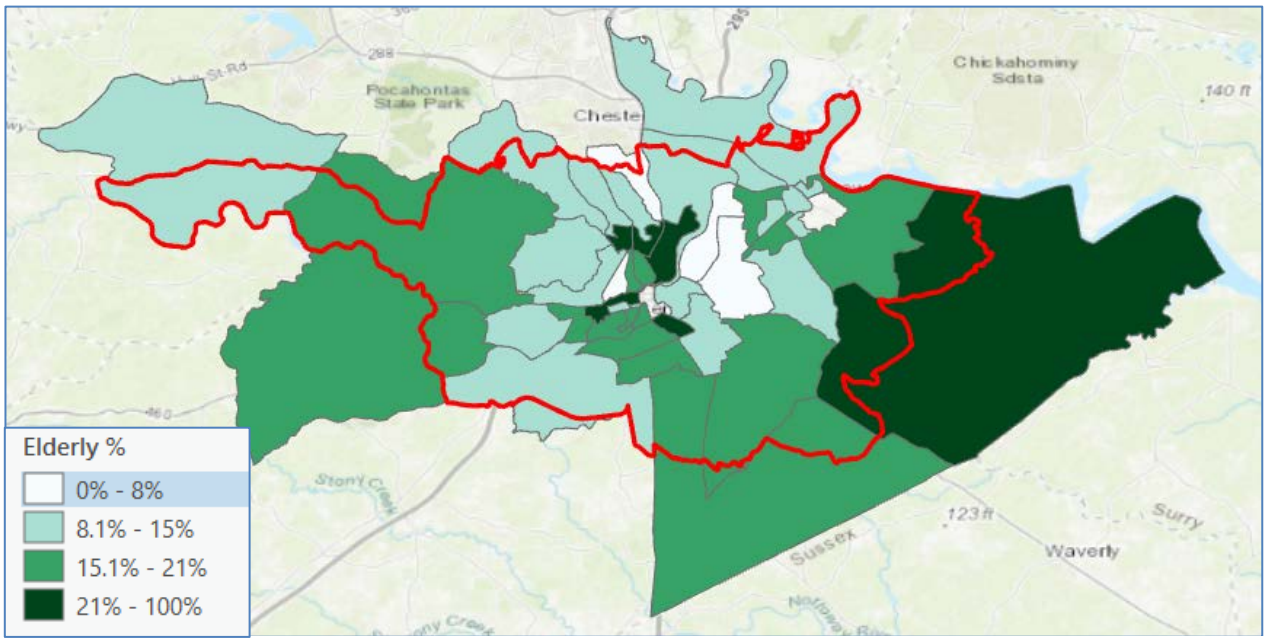
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table DP05

Exhibit EJ19: Elderly Population (Age≥65) by Locality Relative to Area 2017



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table DP05

Exhibit EJ20: Map of Tri-Cities Area Elderly Population (Age ≥ 65) at Census Tract Level 2017



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table B101001

Limited English Proficiency (LEP) Population

Limited English Proficiency, or LEP refers to individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. According to the data from the 2013-2017 American Community Survey 5-Year Estimates provided by the U.S. Census Bureau, the total LEP population of the entirety of the localities in the Tri-Cities Area is around 8,000, or 1.81% of the total; the LEP population in the Area localities with the Tri-Cities Area Chesterfield County census tracts is 1,903, or 1.09%. The majority of LEP individuals in the Tri-Cities Area are Spanish speaking (and the largest share of the Spanish-speaking LEP individuals in the Tri-Cities Area reside in Census Tracts 1005.06 and 1005.08 in Chesterfield County along Route 1, with next highest share in Petersburg).

The TCAMPO's LEP Plan (adopted in 2016) addresses these 4 factors:

I. Demography: number and/or proportion of LEP persons served and languages spoken in service area.
II. Frequency: rate of contact with service or program.
III. Importance: nature and importance of program/service to people's lives.
IV. Resources: available resources, including language assistance services.

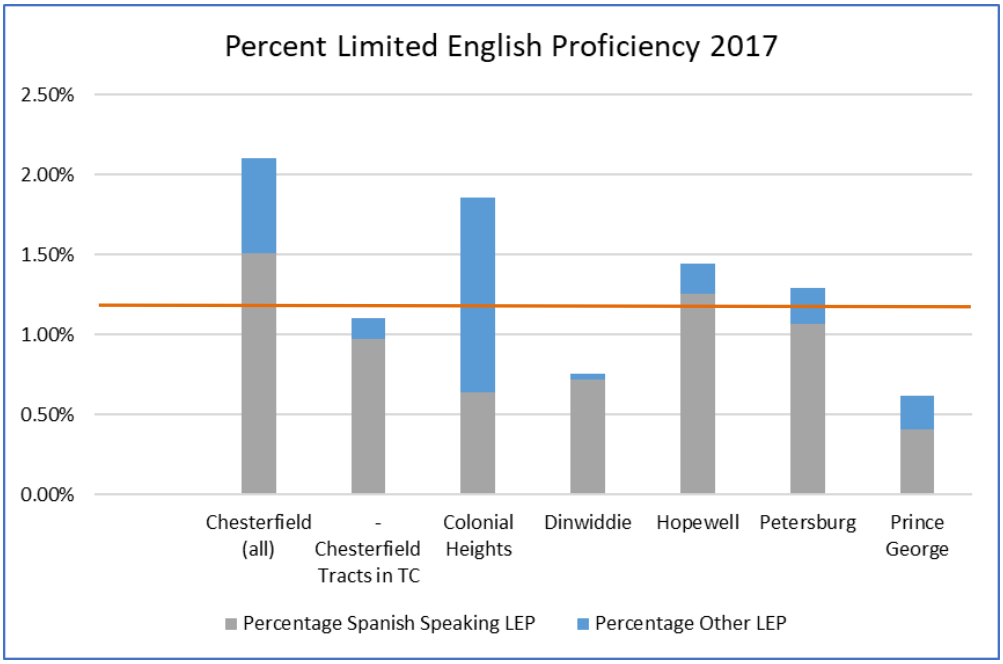
Exhibit EJ21: Tri-Cities Area Population with Limited English Proficiency (LEP) by Locality 2017

Jurisdiction	Total Population	Spanish-Speaking Limited English Proficiency (LEP) Population	Percentage Spanish Speaking LEP	Other Limited English Speaking (LEP) Population	Percentage Other LEP	Total Limited English Speaking (LEP)	Percentage LEP
Chesterfield (all)	315,603	4,757	1.51%	1,877	0.59%	6,634	2.10%
- Chesterfield Tracts in TC	45,168	438	0.97%	60	0.13%	498	1.10%
Colonial Heights	16,456	105	0.64%	200	1.22%	305	1.85%
Dinwiddie	26,475	191	0.72%	9	0.03%	200	0.76%
Hopewell	20,693	259	1.25%	40	0.19%	299	1.44%
Petersburg	29,673	317	1.07%	65	0.22%	382	1.29%
Prince George	35,640	146	0.41%	73	0.20%	219	0.61%
Total localities	**444,540**	**5,775**	**1.30%**	**2,264**	**0.51%**	**8,039**	**1.81%**
TCAMPO (approx.)	174,105	1,456	0.84%	447	0.26%	1,903	1.09%

1. Population for whom limited English speaking status is determined (answered either "do not speak English well" or "do not speak English at all")

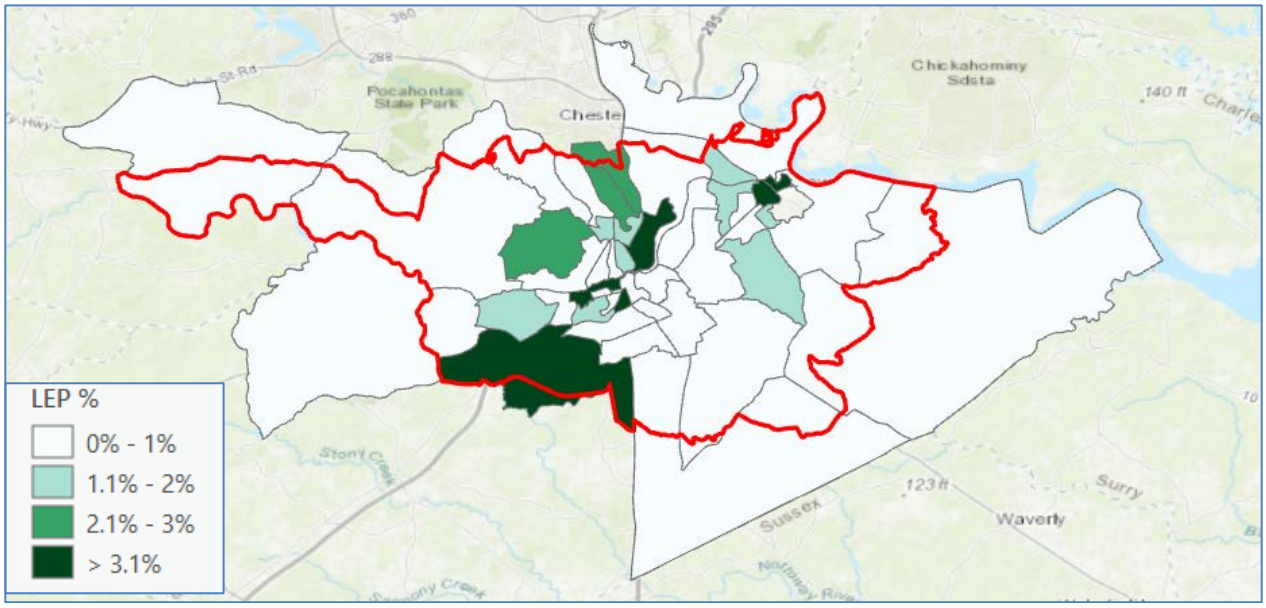
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table B16005

Exhibit EJ22: Tri-Cities Area Limited English Proficiency (LEP) Population by Locality 2017



Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table B16005

Exhibit EJ23: Map of Tri-Cities Area Limited English Proficiency (LEP) Population at Census Tract Level 2017



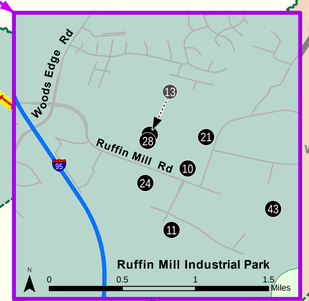
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table B16005

Conclusion

These EJ factors are independently displayed, but together will represent a major consideration for future transportation investments that effectively address inequitable access to jobs, community services, and other destinations throughout the Area. Equity-based project evaluation criterion is being developed as part of the long-range transportation planning process *(Plan2045*) carefully considering all six (6) EJ factors as they relate to each other and provide indications of the degree of impact on potential to benefit specific marginalized populations.

Regional Logistics Assets in Richmond MSA

TECHNICAL APPENDIX E



Distribution Sites

1. Aldi
2. Amazon Fulfillment Center RIC 1
3. Amazon Fulfillment Center RIC 2
4. Amazon Sort Center RIC 5
5. Amsoil
6. Ashland Chemical
7. Bissell Plant
8. Boar's Head 1
9. Boar's Head 2
10. Campfrio Food Group America
11. Church & Dwight
12. US Defense Supply Center Richmond
13. Emerson Ecologics
14. ERNI Industries
15. Evergreen Enterprises
16. Federal Express Ground
17. Federal Express Home Delivery
18. Federal Express Ship Center
19. Food Lion Distribution Center
20. Gerdau Ameristeel
21. GlaxoSmithKline
22. Goya Foods
23. Hewlett Packard
24. Hillphoenix
25. Lumber Liquidators
26. Maruchan Virginia
27. Mavalerio USA
28. Mazda
29. McKesson Corporation
30. Medline
31. Mondelez Global, LLC
32. Moss Motors
33. Niagara Bottling , LLC
34. Owens & Minor Distribution Center
35. PepsiCo
36. Perdue Farms, Inc.
37. Performance Foodservice
38. Phillip Morris
39. Republic National Distribution Center
40. Reynolds Packaging Group
41. Richmond Distribution Center
42. Rolls-Royce
43. Sabra Dipping LLC
44. San-J
45. Stone Brewing
46. Supervalu Distribution Center
47. Taylor Made Chocolates, Inc.
48. Tyson's Food, Inc.
49. U Quality Auto Parts Corporation
50. Ukrop's Threads
51. United States Postal Services
52. UPS
53. Value City Distribution Center
54. Vitamin Shoppe Distribution Center
55. Walmart Distribution Center 1
56. Walmart Distribution Center 2
57. Weyerhaeuser Distribution
58. Winebow

Richmond MSA

- City
- County
- Connecting MSA
- Virginia Ports
- Planned VPA Facility
- Port Hopewell
- Port Tobacco
- Selected Distribution Site
- M64 - Marine Highway
- CSX RR
- Norfolk Southern RR
- Buckingham Branch RR
- Military Facility

Prepared by: PlanRVA, September 2019
U. S. Census Bureau, February 2013,
Metropolitan & Micropolitan Statistical Areas (CBSAs)

PlanRVA THE REGIONAL COMMISSION

Technical Appendix E: Human Services Transportation Providers

Table 1: Human Services Transportation Providers

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
As arranged	Senior Bridge	Provides escort and errand services in association with their home health		Rides arranged on a per case basis; contact provider for more information.			Phone: (804) 282-0753 Website: www.matureoptions.com
Chesterfield County. ***Trips outside Chesterfield County will be available for medical purposes only; with the exception of or passengers living in Southeastern Chesterfield County where limited***	Access Chesterfield	Available to people with disabilities, people age 60+, or households living at 200% of federal poverty level. Must be a resident of Chesterfield and registered for the service.	15 Vehicles	Monday – Friday 5:30am to 7:30pm and Saturday 5:30am to 5:30pm. $30 for five vouchers; voucher good for one way trip.	50,000 annually	Yes	Phone: (804) 279-8489 (registration) (804) 955-4172 (ride requests) Website: www.chesterfield.gov/accesschesterfield
Chesterfield County	Chesterfield Community Services Board (CSB)	Members of CSB programs	30 Vehicles	Service is associated with CSB services. Transportation includes trips for employment, day services, mental	77,000 in FY14	Yes	Phone: (804) 748-1227 Website: www.chesterfield.gov/csb
Chesterfield, Goochland, Hanover,	Acti-Kare in Home Care			Monday – Sunday 6:00am to 9:00pm. $16 to $18 per hour.			Phone: (804) 264-2829 Website: www.actikarerichmondva.com
Chesterfield, Henrico, Richmond; ***additional fees apply in***	Alliance Specialty Transport			Transportation provided 24/7. Office hours are Monday – Friday 9:00am to 5:00pm.		Yes	Phone: (804) 225-8599 Website: Alliancespecialtytransport.com
Chesterfield, Henrico and Richmond	American Cancer Society (Road to Recovery)	Transportation to and from cancer treatment for those without rides.		Monday – Friday 8:00am to 5:00pm. Rides are free.			Phone: (804) 527-3700 Website: www.cancer.org

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Chesterfield, Henrico, Richmond	Mobility Transportation, LLC	General public		Monday – Friday 6:00am to 6:00pm and Saturday 6:00am to 1:00pm.		Yes	Phone: (804) 687-6590 Website: www.mobility-transportation.com
Chesterfield, Glen Allen, Hanover, Henrico, Mechanicsville, Midlothian, Richmond	Home Helpers	General public; intended for seniors and lower income persons		Provide trips for grocery shopping, prescription pick-up, errand services and doctor visits.			Phone: (804) 864-4258 Website: Homecarerichmond.com
Colonial Heights, Hopewell, Petersburg	Petersburg Area Transit	General public	14 Buses 6 Demand Response Vehicles	Monday – Thursday 5:45am to 7:00pm, Friday 5:45am to 8:00pm and Saturday 6:45am to 8:00pm	664,701 in FY12	Yes	Phone: (804) 733-2450 Website: www.petersburg-va.org/transit/
Colonial Heights, Hopewell, Petersburg; *service in other*	Pink Transportation			Service provided 24 hours a day, 7 days a week.			Phone: (804) 894-8646 Website: www.pink804.com
Goochland, Hanover and Powhatan	Capital Area Partnership Uplifting People (CAP-UP)	Intended for Seniors	8 Vehicles		7,716 in FY10		Phone: (804) 598-3351
New Kent and Charles City Counties to Richmond	Bay Transit	General public	48 Vehicles (35 are wheelchair accessible)	Call Monday – Friday 6:00am to 6:00pm to schedule a ride. $2.00 per trip; $12.00 for booklet of 10 trips.	11,453 in FY13	Yes	Phone: (804) 966-8743 Website: www.baytransit.org
Goochland	Goochland Free Clinic and Family Services	Must be at or below the 200% of the federal poverty level; eligibility screening	3 Vehicles	Monday 12:00pm to 3:00pm in Richmond; Tuesday – Thursday 9:00am to 3:00pm in Goochland; and Friday 9:00am to	3,246 in FY13		Phone: (804) 556-6260 Website: Goochlandfreeclinicandfamilyservices.org
Greater Richmond area	Comfort Keepers	Disabled adults, seniors aging in place and persons recovering from surgery.		Provides transportation incidental to other care services.	24,781 in FY13		Phone: (804) 750-1123 Website: www.comfortkeepers.com

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Greater Richmond area	Greater Richmond ARC	People with developmental disabled and their	9 Vehicles	Provides transportation for ARC services. Contact provider for more information.	82,873 in FY13	Yes	Phone: (804) 358-1874 Website: www.richmondarc.org
Greater Richmond area	Heart Havens, Inc.	Persons with intellectual disabilities hat are enrolled in the	2 Vehicles	Trips are available by appointment for community outings, medical appointments			Phone: (804) 237-6097 Website: www.hearthavens.org
Richmond, Goochland and Petersburg	Brooks LLC			Monday – Friday 7:00am to 7:00pm, Saturday 7:00am to 5:00pm and Sunday			Phone: (804) 276-3401
Richmond and surrounding areas	Bowman Transportation Service			Office Hours Monday – Friday 8:00am to 5:00pm.		Yes	Phone: (804) 745-0046 Website: www.ridewithlarry.com
Richmond and surrounding areas	Dependacare Transportation	General public		Provide pre-scheduled and same day appointments for door-to-door, curb-to- curb, or door-through-door		Yes	Phone: (804) 745-1818 Website: www.dependacareva.com
Petersburg, Colonial Heights, Dinwiddie, Greensville, Hopewell, Prince George, Surry, Sussex	Crater District AAA	General public, elderly, disabled and Medicare	22 Vehicles	Monday – Friday 8:00am to 4:30pm. Volunteer based; must schedule ride at least 48 business hours before appointment.		Yes	Phone: (804) 732-7020 Website: www.cdaaa.org
	Flagship Transportation			Monday – Friday 6:00am to 6:00pm and Saturday 6:00am to			Phone: (434)265-6781 Website: www.flagshiptransport.com
Richmond, Chesterfield, Hanover, Henrico	Greater Richmond Transit Company (GRTC)	General public	135 Vehicles	Fixed route service available daily from 5:00am to 1:00am. Fare is $1.50, $0.75 reduced fare is	8,845,810 in FY13	Yes	Phone: (804) 358-4782 Website: www.ridegrtc.com
Richmond, Henrico and portions of Chesterfield	GRTC's CARE	ADA paratransit eligibility process is	70 Vehicles	Richmond: 4:30am to 12:30am and Henrico: 6:00am	345,358 in FY13	Yes	Phone: (804) 782-2273 Website: www.ridegrtc.com

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Richmond area	Home Instead Senior Care	Home Instead provides transportation incidental to their companionship		As scheduled; there is a three hour minimum per visit and we prefer at least a 24 hour notice. Provide service			Phone: (804) 527-1100 Website: www.homeinstead.com
Within six miles of clinic locations	Jen Care	Healthcare delivery system for seniors eligible for Medicare		Trips are designated for clinic patients.			Phone: (804) 344-9848 Website: www.jencaremed.com
South-central Hanover County (zip codes: 23111, 23116 and a portion of 23059	Mechanicsville Churches Emergency Function Senior Rides	Seniors		Rides arranged on a per case basis; contracts with transit agencies and taxicab companies. Contact provider for more information.			Phone: (804) 334-6590 Website: www.mcef.co
Richmond area	New Freedom Transportation, LLC	General Public, Medicaid	7 Fifteen Passenger Vans 7 Minivans	Rides arranged on a per case basis; contact provider for more information.			Phone: (804) 288-1248 Website: www.newfreedomtransportation.com
Richmond area	Save Our Seniors			Rides arranged on a per case basis; contact provider for more information.			Phone: (804) 559-4480
Chesterfield, Henrico and Richmond	Presbyterian Homes and Family Services and the Family Alliance/Ways to	This program is geared towards families in helping them retain employment	1 Vehicle	The Ways to Work Program has approved 103 families with small-interest loans to meet their transportation needs.			Phone: (804) 888-8226 Website: www.phfs.org www.waystowork.org
Richmond (Shelia Lane Wal-Mart; service from Hillside Court,	RVA Shoppers' Shuttle			Operates on the second and ninth day of each month and the third Saturday of each		No	Phone: (804) 646-7985 Website: Richmondvacitynews.blogspot.com /2012/02/rva-shoppers-
Charles City, Chesterfield, Goochland, Hanover,	Senior Connections	General public, elderly and disabled		Contact provider for more information.		Yes	Phone: (804) 343-3000 Website: www.seniorconnections-va.org

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Henrico, New Kent, Powhatan and Richmond							
Charles City Chesterfield, Colonial Heights, Goochland, Hanover, Henrico, Hopewell, New Kent, Petersburg, Powhatan and Richmond,	VIP & Associates			Monday – Friday 8:00am to 4:00pm.		Yes	Phone: (804) 329-2500
Chester, Chesterfield, Colonial Heights, Dinwiddie, Hopewell, Midlothian, Prince George, South Richmond	Shepherd's Center of Chesterfield	Must be over 50 years of age without serious cognitive impairment		Office hours are Monday – Friday 9:00am to 1:00pm. Fare free, donations accepted.		No	Phone: (804) 706-6689 Website: www.shepctrchesterfield.org
Greater Richmond and Petersburg areas	Senior Express Enterprise			Monday – Friday 7:00am to 6:00pm.			Phone: (804) 402-6457
Greater Richmond and Petersburg areas including Hanover, Williamsburg, Louisa and Powhatan	St. Joseph's Villa	Children and families with special needs	6 Vehicles	Transportation is provided as needed to participants in St. Joseph's programs. Contact the provider for more information.		Yes	Phone: (804) 553-3200 Website: www.neverstopbelieving.org

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Richmond, eastern Henrico	Seniors Helping Seniors			Rides arranged on a per case basis; contact provider for more information.			Phone: (804) 553-0526 Website: www.seniorshelpingseniors.com/RVA
Goochland, Hanover, Henrico, Louisa and Richmond	Tendercare Transport			Monday – Friday 8:00am to 5:00pm.		Yes	Phone: (804) 288-8763 Website: www.tendercareofva.com
Petersburg	We Care Transportation			Rides arranged on a per case basis; contact provider for more information.			Phone: (804) 7333-2450
Powhatan, Colonial Heights, Hopewell, Petersburg, Chesterfield, Hanover, Henrico, Richmond and Goochland	Van Go			Monday – Friday 5:30am to 8:30pm; service available 24 hours a day with advance notice.		Yes	Phone: (804) 261-7388 Website: www.vangorichmond.com
Richmond area based ; *will provide transport to anywhere in Virginia and some out of state trips*	TNT Transportation Services	Non-Emergency Medical Transportation	11 Vehicles	Available 24/7. Fees based per trip. Authorized for intrastate and interstate transportation.	300 per month	Yes	Phone: (804) 270-3258 Website: www.tntvans.com
Richmond, Hanover and Henrico	Sunrise Transportation			Monday – Friday 7:00am to 7:00pm.			Phone: (804)559-6083

Service Area	Agency/ Provider	Client Type	# of Vehicles	Trip Characteristics (Times, Fees, etc.)	# of Trips	Wheelchair Accessible	Contact Information
Statewide	Logisticare – Virginia Non- Emergency Medical Transportation System	Medicaid recipients only	None	Can be contacted 24 hours a day to arrange transportation. Fares are arranged through Medicaid.	800,000 registered members	Yes	Phone: (866) 810-8305 Website: www.logisticare.com
Western Richmond, western Henrico, northern Chesterfield; additional fee for pickup in other areas.	Angels for Hire/Angel Ride			Monday – Friday 8:30am to 6:00pm.		Yes	Phone: (804) 423-9200 Website: www.angelride.net
Zip codes: 23059, 23060, 23113, 23114, 23219, 23220, 23221, 23222, 23224, 23225, 23226, 23227, 23228, 23229, 23230, 23233, 23235, 23236, 23238, 23294	Shepherd's Center of Richmond	Must be over 60 years of age without serious cognitive impairment		Transportation is provided for medical appointments and grocery shopping. Office hours are Monday – Friday 8:30am to 4:30pmFare free.		No	Phone: (804) 355-7282 Website: www.tscor.wordpress.com
	CareMore	Must be an Anthem Blue Cross Blue Shield Medicare patient to use services		Service is associated with individual facilities.			Phone: (855) 242-9606 Website: www.caremore.com
	Capital Area Health Network (CAHN)	Members of the CAHN		Transportation services are associated with CAHN medical services.			Phone: (804) 253-1969 Website: Cahealthnet.com

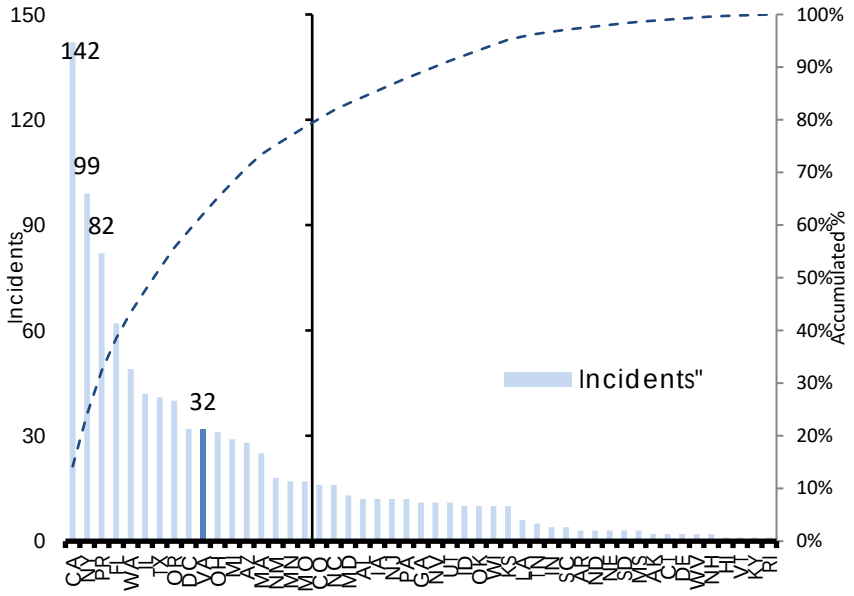
Technical Appendix G: Analysis Security Incidents

The Federal Bureau of Investigation defines terrorism *as the unlawful threat of or use of force of violence against people or property with the intention of coercing society or government* (Terrorism). To help assess the threat to transportation from terrorism the MPO analyzed terrorist incidents in the United States that occurred between 1982 and 2014 (Global Terrorism Database). Figures 92, 93 and 94 present that information graphically.

Terrorist incidents have occurred in almost every state; however, most terrorist incidents, in the United States, happen in more populous areas. Almost 1/3 of terrorist incidents in the United States happen in California, Puerto Rico or New York.

Considering transportation system security in the context of intentional incident was added to the transportation portfolio after 2001. Based upon events of the last decade it seems prudent for the MPO to evaluate the risk of a terror attack upon the transportation planning system in the Tri-Cities area to assess the level of effort needed to provide security for transportation system users and to determine its proper role in security.

Figure 38 shows where, in the United States, terrorist incidents are most likely. The blue bars show the number of incidents in each state. Virginia is highlighted in dark blue to show how it compares with the rest of the United States.



Source: Global Terrorism Database

Figure 1: Terrorist Incidents by State

Terrorists choose targets using five general criteria (Terrorism):

- Minimal danger to themselves;
- Ease of access;
- Visibility (*e.g.,* international airports, landmarks, large cities, or major special events);
- Avoiding detection before the attack; and
- Easy escape from the site.

However, many targets meet these criteria. Figure 39 looks at the U.S. targets of terrorists. *Despite high profile incidents outside the U.S., only five of the 1000 incidents recorded since 1982 have been directed at transportation targets.* However, 51 of the 1000 incidents have targeted military facilities and Fort Lee, home of the US Army Logistics Command, is in the Tri-Cities MPO's service area.

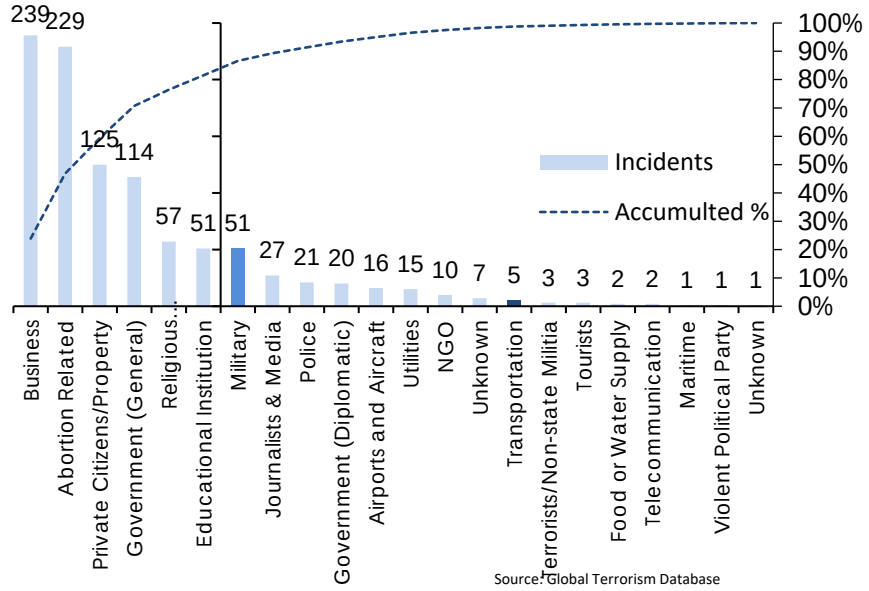
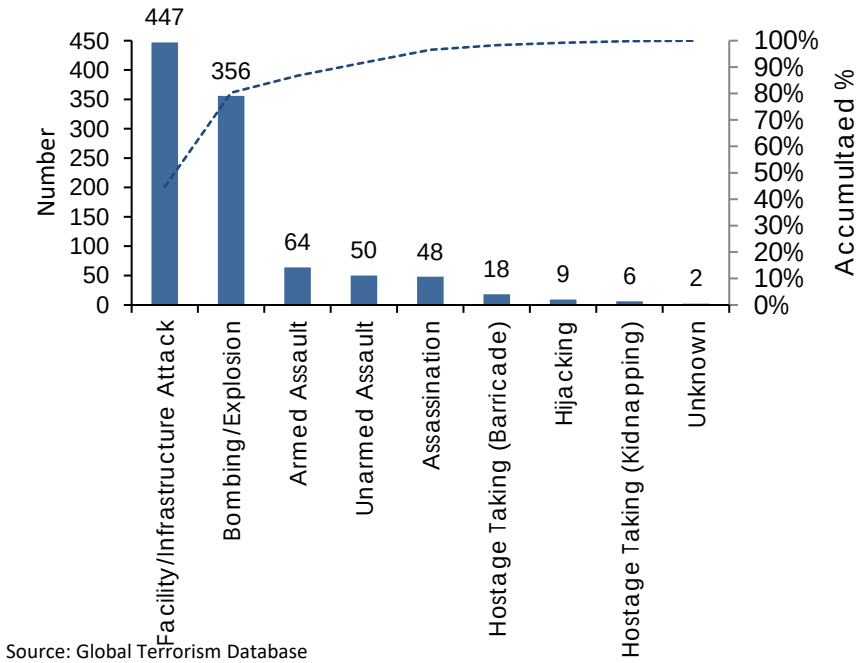


Figure 2: Terrorist Incidents by Target Type

Figure 40 shows the types of terrorist incidents that have occurred in the U.S. Over eighty percent of the attacks in the U.S have been attacks on facilities.



Source: Global Terrorism Database

Figure 3: Terrorist Incident by Type

TECHNICAL APPENDIX H

Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Threatened and Endangered Faunal Species

Common Name	Scientific Name	Federal[1]	State[1]	WAP[1] Tier	WAP[1] Rank
FRESHWATER FISHES					
Atlantic sturgeon	*Acipenser oxyrinchus*	FE	SE	I	b
Blackbanded sunfish	*Enneacanthus chaetodon*		SE	I	a
Blackside dace	*Chrosomus cumberlandensis*	FT	ST		
Candy darter	*Etheostoma osburni*	FE	SE	I	b
Carolina darter	*Etheostoma collis*		ST	II	c
Duskytail darter	*Etheostoma percnurum*	FE	SE	I	a
Emerald shiner	*Notropis atherinoides*		ST	IV	c
Golden darter	*Etheostoma denoncourti*		ST	II	b
Greenfin darter	*Etheostoma chlorobranchium*		ST	I	b
Orangefin madtom	*Noturus gilberti*		ST	II	b
Paddlefish	*Polyodon spathula*		ST	IV	c
Roanoke logperch	*Percina rex*	FE	SE	II	a
Sharphead darter	*Etheostoma acuticeps*		SE	I	c
Shortnose sturgeon	*Acipenser brevirostrum*	FE	SE	I	a
Sickle darter	*Percina williamsi*		ST	I	c
Slender chub	*Erimystax cahni*	FT	ST	I	c
Spotfin chub	*Erimonax monachus*	FT	ST	I	b
Steelcolor shiner	*Cyprinella whipplei*		ST	III	c
Tennessee dace	*Chrosomus (=Phoxinus) tennesseensis*		SE	I	b
Variegate darter	*Etheostoma variatum*		SE	I	a
Western sand darter	*Ammocrypta clara*		ST	IV	c
Whitemouth shiner	*Notropis alborus*		ST	II	c
Yellowfin madtom	*Noturus flavipinnis*	FT	ST	I	a
AMPHIBIANS					
Barking treefrog	*Hyla gratiosa*		ST	II	a
Eastern tiger salamander	*Ambystoma tigrinum*		SE	II	a
Mabee's salamander	*Ambystoma mabeei*		ST	II	a
Shenandoah salamander	*Plethodon shenandoah*	FE	SE	I	c
REPTILES					
Bog (= Muhlenberg) turtle	*Glyptemys (=Clemmys) muhlenbergii*	FT(S/A)	SE	I	a
Canebrake rattlesnake (Coastal Plain population of timber rattlesnake)	*Crotalus horridus*		SE	II	a
Eastern chicken turtle	*Deirochelys reticularia reticularia*		SE	I	a
Eastern glass lizard	*Ophisaurus ventralis*		ST	II	a

[1] FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan (WAP) Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in WAP); WAP Rank = Conservation Opportunity Rankings assigned to each Tiered Species, Ranks a-b (not a legal status, Ranks defined in WAP).

Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Threatened and Endangered Faunal Species

Common Name	Scientific Name	Federal[1]	State[1]	WAP[1] Tier	WAP[1] Rank
Green sea turtle	*Chelonia mydas*	FT	ST	I	b
Hawksbill sea turtle	*Eretmochelys imbricata*	FE	SE		
Kemp's ridley sea turtle	*Lepidochelys kempii*	FE	SE	I	a
Leatherback sea turtle	*Dermochelys coriacea*	FE	SE	I	c
Loggerhead sea turtle	*Caretta caretta*	FT	ST	I	a
Wood turtle	*Glyptemys insculpta*		ST	I	a
BIRDS					
Bachman's sparrow	*Aimophila aestivalis*		ST	I	a
Bachman's warbler (=wood)	*Vermivora bachmanii*	FE	SE		
Bewick's wren	*Thryomanes bewickii*		SE		
Eastern black rail	*Laterallus jamaicensis jamaicensis*	FP	SE	I	a
Gull-billed tern	*Sterna nilotica*		ST	I	a
Henslow's sparrow	*Ammodramus henslowii*		ST	I	a
Kirtland's warbler	*Setophaga kirtlandii (=Dendroica kirtlandii)*		SE		
Loggerhead shrike	*Lanius ludovicianus*		ST	I	a
Peregrine falcon	*Falco peregrinus*		ST	I	a
Piping plover	*Charadrius melodus*	FT	ST	II	a
Red knot	*Calidris canutus rufa*	FT	ST	I	a
Red-cockaded woodpecker	*Picoides borealis*	FE	SE	I	a
Roseate tern	*Sterna dougallii dougallii*	FE	SE		
Wilson's plover	*Charadrius wilsonia*		SE	I	a
MAMMALS					
American water shrew	*Sorex palustris*		SE	II	a
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	FE	SE	I	c
Eastern puma (=cougar)	*Puma (=Felis) concolor couguar*	FE	SE		
Gray bat	*Myotis grisescens*	FE	SE	II	a
Gray wolf	*Canis lupus*	FE	SE		
Indiana bat	*Myotis sodalis*	FE	SE	I	a
Little brown bat	*Myotis lucifugus*		SE	I	a
Northern long-eared bat	*Myotis septentrionalis*	FT	ST	I	a
Rafinesque's eastern big-eared bat	*Corynorhinus rafinesquii macrotis*		SE	I	a
Rock vole	*Microtus chrotorrhinus*		SE	II	a
Snowshoe hare	*Lepus americanus*		SE	I	c
Tri-colored bat	*Perimyotis subflavus*		SE	I	a
Virginia big-eared bat	*Corynorhinus (=Plecotus) townsendii virginianus*	FE	SE	II	a

[1] FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan (WAP) Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in WAP); WAP Rank = Conservation Opportunity Rankings assigned to each Tiered Species, Ranks a-b (not a legal status, Ranks defined in WAP).

Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Threatened and Endangered Faunal Species

Common Name	Scientific Name	Federal[1]	State[1]	WAP[1] Tier	WAP[1] Rank
MOLLUSKS					
	Freshwater Mussels				
Appalachian monkeyface (pearlymussel)	*Quadrula sparsa*	FE	SE	I	a
Atlantic pigtoe	*Fusconaia masoni*	FP	ST	I	a
Birdwing pearlymussel	*Lemiox rimosus*	FE	SE	I	a
Black sandshell	*Ligumia recta*		ST	III	a
Brook floater	*Alasmidonta varicosa*		SE	I	b
Cracking pearlymussel	*Hemistena lata*	FE	SE	I	b
Cumberland bean (pearlymussel)	*Villosa trabalis*	FE	SE	I	a
Cumberland monkeyface (pearlymussel)	*Quadrula intermedia*	FE	SE	I	a
Cumberlandian combshell	*Epioblasma brevidens*	FE	SE	I	a
Deertoe	*Truncilla truncata*		SE	III	b
Dromedary pearlymussel	*Dromus dromas*	FE	SE	I	a
Dwarf wedgemussel	*Alasmidonta heterodon*	FE	SE	I	a
Elephantear	*Elliptio crassidens*		SE	III	a
Fanshell	*Cyprogenia stegaria*	FE	SE	I	a
Finerayed pigtoe	*Fusconaia cuneolus*	FE	SE	I	a
Fluted kidneyshell	*Ptychobranchus subtentum*	FE	SE	II	a
Fragile papershell	*Leptodea fragilis*		ST	IV	c
Green blossom (pearlymussel)	*Epioblasma torulosa gubernaculum*	FE	SE		
Green floater	*Lasmigona subviridis*		ST	II	a
James spinymussel	*Pleurobema collina*	FE	SE	I	a
Littlewing pearlymussel	*Pegias fabula*	FE	SE	I	c
Ohio pigtoe	*Pleurobema cordatum*		SE	III	c
Oyster mussel	*Epioblasma capsaeformis*	FE	SE	I	a
Pimpleback	*Quadrula pustulosa pustulosa*		ST	IV	b
Pink mucket (pearlymussel)	*Lampsilis abrupta*	FE	SE	I	a
Pistolgrip	*Tritogonia verrucosa*		ST	III	b
Purple bean	*Villosa perpurpurea*	FE	SE	I	a
Purple lilliput	*Toxolasma lividus*		SE	II	c
Pyramid pigtoe	*Pleurobema rubrum*		SE	II	a
Rayed bean	*Villosa fabalis*	FE	SE	II	a
Rough pigtoe	*Pleurobema plenum*	FE	SE	I	a
Rough rabbitsfoot	*Quadrula cylindrica strigillata*	FE	SE	I	a
Sheepnose	*Plethobasus cyphyus*	FE	SE	II	a
Shiny pigtoe	*Fusconaia cor*	FE	SE	I	a
Slabside pearlymussel	*Lexingtonia dolabelloides*	FE	SE	II	a
Slippershell mussel	*Alasmidonta viridis*		SE	I	b
Snuffbox mussel	*Epioblasma triquetra*	FE	SE	I	a
Spectaclecase	*Cumberlandia monodonta*	FE	SE	I	b

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Threatened and Endangered Faunal Species

Common Name	Scientific Name	Federal[1]	State[1]	WAP[1] Tier	WAP[1] Rank
Tan riffleshell	*Epioblasma florentina walkeri (=E. walkeri)*	FE	SE		
Tennessee heelsplitter	*Lasmigona holstonia*		SE	II	a
Yellow lance	*Elliptio lanceolata*	FT	ST	II	a
	Freshwater & Land Snails				
Appalachian springsnail	*Fontigens bottimeri*		SE	II	c
Brown supercoil	*Paravitrea septadens*		ST	I	c
Rubble coil	*Helicodiscus lirellus*		SE	I	a
Shaggy coil	*Helicodiscus diadema*		SE	I	c
Spider elimia	*Elimia arachnoidea*		SE	II	c
Spiny riversnail	*Io fluvialis*		ST	III	a
Spirit supercoil	*Paravitrea hera*		SE	I	a
Thankless ghostsnail	*Holsingeria unthanksensis*		SE	I	a
Virginia fringed mountain snail	*Polygyriscus virginianus*	FE	SE	I	a
Virginia springsnail	*Fontigens morrisoni*		SE	I	a
FRESHWATER CRUSTACEANS					
Big Sandy crayfish	*Cambarus callainus (formerly C. veteranus)*	FT	ST	I	c
Lee County Cave isopod	*Lirceus usdagalun*	FE	SE	III	c
Madison Cave amphipod	*Stygobromus stegerorum*		ST	I	b
Madison Cave isopod	*Antrolana lira*	FT	ST	II	c
MILLIPEDES					
Ellett Valley pseudotremia	*Pseudotremia cavernarum*		ST	I	c
Laurel Creek xystodesmid	*Sigmoria whiteheadi*		ST	I	c
ARACHNIDS					
Spruce-fir moss spider	*Microhexura montivaga*	FE	SE		
INSECTS[2]					
American burying beetle	*Nicrophorus americanus*	FE		I	c
Appalachian grizzled skipper	*Pyrgus wyandot (=Pyrgus centaureae wyandot)*		ST	I	a
Buffalo Mountain mealybug	*Puto kosztarabi*		SE	I	c
Holsinger's cave beetle	*Pseudanophthalmus holsingeri*		SE	I	c
Mitchell's satyr butterfly	*Neonympha mitchellii*	FE	SE	I	a
Northeastern beach tiger beetle	*Cicindela dorsalis dorsalis*	FT	ST	II	a

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Threatened and Endangered Faunal Species

Common Name	Scientific Name	Federal[1]	State[1]	WAP[1] Tier	WAP[1] Rank
Rusty patched bumble bee	*Bombus affinis*	FE		I	a
Thomas' cave beetle	*Pseudanophthalmus thomasi*		SE	II	c
Virginia Piedmont water boatman	*Sigara depressa*		SE	I	c

[2] all insects listed as federal or state endangered or threatened are protected by regulations that fall under the Virginia Department of Agriculture and Consumer Services' jurisdiction

MARINE MAMMALS

Blue whale	*Balaenoptera musculus*	FE	SE		
Finback whale	*Balaenoptera physalus*	FE	SE	IV	b
Humpback whale	*Megaptera novaeangliae*	FE	SE	I	b
North Atlantic Right whale	*Eubalaena glacialis*	FE	SE	I	b
Sei whale	*Balaenoptera borealis*	FE	SE		
Sperm whale	*Physeter catodon (= macrocephalus)*	FE	SE		
West Indian manatee	*Trichechus manatus*	FE	SE	IV	b

For further information or details regarding this list or any species listed herein, please contact:

Aquatic Wildlife Resources Division
Virginia Department of Wildlife Resources
Physical Address: 7870 Villa Park Dr, Suite 400
Mailing Address: P. O. Box 90778
Henrico, VA 23228
(804) 367-4335

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
FRESHWATER FISHES			
Alewife	*Alosa pseudoharengus*	IV	a
Allegheny pearl dace	*Margariscus margarita*	IV	b
American brook lamprey	*Lampetra appendix*	IV	c
American eel	*Anguilla rostrata*	III	a
American shad	*Alosa sapidissima*	IV	a
Appalachia darter	*Percina gymnocephala*	IV	c
Ashy darter	*Etheostoma cinereum*	I	b
Banded sunfish	*Enneacanthus obesus*	IV	c
Bigeye jumprock	*Moxostoma ariommum*	III	c
Black sculpin	*Cottus baileyi*	IV	c
Blackside darter	*Percina maculata*	IV	c
Blotched chub	*Erimystax insignis*	IV	c
Blotchside logperch	*Percina burtoni*	II	a
Blueback herring	*Alosa aestivalis*	IV	a
Bluebreast darter	*Etheostoma camurum*	IV	c
Blueside darter	*Etheostoma jessiae*	IV	c
Bluestone sculpin	*Cottus sp. 1*	III	c
Brassy jumprock	*Moxostoma sp.*	IV	c
Bridle shiner	*Notropis bifrenatus*	I	a
Brook silverside	*Labidesthes sicculus*	IV	c
Brook trout	*Salvelinus fontinalis*	IV	a
Bullhead minnow	*Pimephales vigilax*	IV	c
Carolina fantail darter	*Etheostoma brevispinum*	IV	c
Channel darter	*Percina copelandi*	III	c
Clinch dace	*Chrosomus sp. cf. saylori*	I	a
Clinch sculpin	*Cottus sp. 4*	III	c
Dusky darter	*Percina sciera*	IV	c
Fatlips minnow	*Phenacobius crassilabrum*	II	c
Freshwater drum	*Aplodinotus grunniens*	III	c
Highback chub	*Hybopsis hypsinotus*	IV	c
Highfin shiner	*Notropis altipinnis*	IV	c
Holston sculpin	*Cottus sp. 5*	III	c
Ironcolor shiner	*Notropis chalybaeus*	III	c
Kanawha darter	*Etheostoma kanawhae*	III	c
Kanawha minnow	*Phenacobius teretulus*	III	c
Lake Chubsucker	*Erimyzon sucetta*	IV	c
Least brook lamprey	*Lampreta aepyptera*	IV	c
Lined topminnow	*Fundulus lineolatus*	IV	c
Logperch	*Percina caprodes*	IV	c
Longear sunfish	*Lepomis megalotis*	IV	b
Mirror shiner	*Notropis spectrunculus*	III	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Mountain brook lamprey	*Ichthyomyzon greeleyi*	III	c
Mountain madtom	*Noturus eleutherus*	IV	c
Mountain shiner	*Lythroughrus lirus*	IV	c
Mud sunfish	*Acantharchus pomotis*	IV	c
New River shiner	*Notropis scabriceps*	IV	c
Northern studfish	*Fundulus catenatus*	IV	c
Notchlip redhorse	*Moxostoma collapsum*	IV	c
Ohio lamprey	*Ichthyomyzon bdellium*	IV	c
Piedmont darter	*Percina crassa*	IV	c
Popeye shiner	*Notropis ariommus*	II	c
Redlip shiner	*Notropis chiliticus*	IV	c
River redhorse	*Moxostoma carinatum*	III	b
Roanoke bass	*Ambloplites cavifrons*	I	a
Roanoke hog sucker	*Hypentelium roanokense*	IV	c
Roughhead shiner	*Notropis semperasper*	I	b
Rustyside sucker	*Thoburnia hamiltoni*	III	c
Sand shiner	*Notropis stramineus*	IV	c
Sauger	*Sander canadensis*	III	b
Sharpnose darter	*Percina oxyrhynchus*	IV	c
Silver redhorse	*Moxostoma anisurum*	III	c
Slimy sculpin	*Cottus cognatus*	IV	c
Smallmouth redhorse	*Moxostoma breviceps*	IV	b
Snail bullhead	*Ameiurus brunneus*	III	c
Speckled darter	*Etheostoma stigmaeum*	IV	c
Speckled killifish	*Fundulus rathbuni*	IV	c
Stonecat	*Noturus flavus*	IV	c
Suckermouth minnow	*Phenacobius mirabilis*	IV	c
Swannanoa darter	*Etheostoma swannanoa*	IV	b
Tadpole madtom	*Noturus gyrinus*	IV	c
Tangerine darter	*Percina aurantiaca*	IV	c
Tonguetied minnow	*Exoglossum laurae*	IV	c
Wounded darter	*Etheostoma vulneratum*	III	c
AMPHIBIANS			
Blue Ridge dusky salamander	*Desmognathus orestes*	IV	c
Blue Ridge two-lined salamander	*Eurycea wilderae*	III	a
Carpenter frog	*Lithobates virgatipes*	III	a
Common mudpuppy	*Necturus maculosus maculosus*	III	a
Cow Knob salamander	*Plethodon punctatus*	I	c
Cumberland Plateau salamander	*Plethodon kentucki*	IV	c
Dwarf waterdog	*Necturus punctatus*	III	a
Eastern hellbender	*Cryptobranchus alleganiensis alleganiensis*	I	a

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Eastern lesser siren	*Siren intermedia intermedia*	III	a
Eastern mud salamander	*Pseudotriton montanus montanus*	IV	a
Eastern spadefoot	*Scaphiophus holbrookii*	IV	c
Greater siren	*Siren lacertina*	IV	a
Green salamander	*Aneides aeneus*	II	b
Jefferson salamander	*Ambystoma jeffersonianum*	IV	a
Little grass frog	*Pseudacris ocularis*	IV	a
Many-lined salamander	*Stereochilus marginatus*	IV	a
Mole salamander	*Ambystoma talpoideum*	II	a
Mountain chorus frog	*Pseudacris brachyphona*	II	a
New Jersey chorus frog	Pseudacris kalmi	IV	c
Northern pygmy salamander	*Desmognathus organi*	III	c
Oak toad	*Anaxyrus quercicus*	II	a
Peaks of Otter salamander	*Plethodon hubrichti*	I	c
Shenandoah Mountain salamander	*Plethodon virginia*	III	c
Shovel-nosed salamander	*Desmognathus marmoratus*	III	a
Southern chorus frog	*Pseudacris nigrita*	IV	c
Southern zigzag salamander	*Plethodon ventralis*	II	c
Weller's salamander	*Plethodon welleri*	I	b
Yonahlossee salamander	*Plethodon yohahlossee*	IV	c
REPTILES			
Common rainbow snake	*Farancia erytrogramma erytrogramma*	IV	a
Common ribbonsnake	*Thamnophis sauritus sauritus*	IV	a
Cumberland slider	*Trachemys scripta troostii*	III	c
Eastern black kingsnake	*Lampropeltis nigra*	III	c
Eastern glossy swampsnake (formerly Glossy crayfish snake)	*Liodytes (formerly Regina) rigida rigida*	III	c
Eastern hog-nosed snake	*Heterodon platirhinos*	IV	c
Eastern mudsnake	*Farancia abacura abacura*	IV	a
Eastern slender glass lizard	*Ophisaurus attenuatus longicaudus*	IV	a
Mountain earthsnake	*Virginia valeriae pulchra*	II	c
Northern diamond-backed terrapin	*Malaclemys terrapin terrapin*	II	a
Northern map turtle	*Graptemys geographica*	IV	a
Northern pinesnake	*Pituophis melanoleucus melanoleucus*	I	a
Northern scarletsnake	*Cemophora coccinea copei*	IV	a
Queensnake	*Regina septemvittata*	IV	a
Scarlet kingsnake	*Lampropeltis elapsoides*	III	c
Smooth greensnake	*Opheodrys vernalis*	III	a
Southeastern crowned snake	*Tantilla coronata*	IV	c
Snapping turtle	*Chelydra serpentina*	IV	b
Spiny softshell	*Apalone spinifera spinifera*	IV	a
Spotted turtle	*Clemmys guttata*	III	a

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Stripe-necked musk turtle	*Sternotherus minor peltifer*	IV	a
Timber rattlesnake (western Virginia population)	*Crotalus horridus*	IV	a
Woodland (formerly Eastern) box turtle	*Terrapene carolina carolina*	III	a
Yellow-bellied slider	*Trachemys scripta scripta*	IV	b
BIRDS			
American black duck	*Anas rubripes*	II	a
American oystercatcher	*Haematopus palliates*	II	a
American woodcock	*Scolopax minor*	II	a
Bank swallow	*Riparia riparia*	III	c
Barn owl	*Tyto alba*	III	a
Belted kingfisher	*Megaceryle lcyon*	III	b
Bicknell's thrush	*Catharus bicknelli*	IV	a
Black skimmer	*Rynchops niger*	II	a
Black-and-white warbler	*Mniotilta varia*	IV	a
Black-bellied plover (winter)	*Pluvialis squatarola*	IV	a
Black-billed cuckoo	*Coccyzus erythropthalmus*	II	b
Black-crowned night-heron	*Nycticorax nycticorax*	III	a
Brown thrasher	*Toxostoma rufum*	IV	a
Brant	*Branta bernicla*	III	a
Canada warbler	*Cardellina canadensis*	IV	b
Cerulean warbler	*Setophaga cerulea*	II	a
Chimney swift	*Chaetura pelagica*	IV	b
Clapper rail	*Rallus longirostris*	IV	a
Common tern	*Sterna hirundo*	II	a
Dunlin	*Calidris alpina hudsonia*	IV	a
Eastern kingbird	*Tyrannus tyrannus*	IV	a
Eastern meadowlark	*Sturnella magna*	IV	a
Eastern towhee	*Pipilo erythrophthalmus*	IV	a
Eastern Whip-poor-will	*Antrostomus vociferus*	III	a
Eastern wood-pewee	*Contopus virens*	IV	b
Field sparrow	*Spizella pusilla*	IV	a
Forster's tern	*Sterna forsteri*	III	a
Glossy ibis	*Plegadis falcinellus*	I	a
Golden eagle	*Aquila chrysaetos*	I	a
Golden-winged warbler	*Vermivora chrysoptera*	I	a
Grasshopper sparrow	*Ammodramus savannarum*	IV	a
Gray catbird	*Dumetella carolinensis*	IV	a
Greater scaup	*Aythya marila*	IV	a
Green heron	*Butorides virescens*	IV	b
Kentucky warbler	*Geothlypis formosa*	III	a
King rail	*Rallus elegans*	II	b

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Laughing gull	*Leucophaeus atricilla*	IV	a
Least bittern	*Ixobrychus exilis*	III	a
Least tern	*Sterna antillarum*	III	a
Little blue heron	*Egretta caerulea*	II	a
Marbled godwit	*Limosa fedoa*	IV	a
Marsh wren	*Cistothorus palustris*	IV	a
Nelson's sparrow (winter)	*Ammodramus nelsoni*	III	a
Northern bobwhite	*Bolinus virginianus*	III	a
Northern flicker	*Colaptes auratus*	IV	b
Northern harrier	*Circus cyaneus*	III	a
Northern gannet	*Morus bassanus*	IV	a
Northern pintail	*Anas acuta*	IV	a
Northern rough-winged swallow	*Stelgidopteryx serripennis*	IV	c
Northern saw-whet owl	*Aegolius acadicus*	I	c
Purple sandpiper	*Calidris maritima*	IV	c
Red crossbill (Type I)	*Loxia curvirostra*	III	c
Red-throated loon	*Gavia stellate*	IV	a
Royal tern	*Thalasseus maxima*	IV	a
Ruffed grouse	*Bonasa umbellus*	III	a
Rusty blackbird	*Euphagus carolinus*	IV	b
Saltmarsh sparrow	*Ammodramus caudacutus*	III	a
Sanderling	*Calidris alba*	IV	a
Seaside sparrow	*Ammodramus maritimus*	IV	a
Short-billed dowitcher	*Limnodromus griseus*	IV	a
Snowy egret	*Egretta thula*	II	a
Swainson's warbler	*Limnotlypis swainsonii*	II	c
Virginia rail	*Rallus limicola*	IV	a
Wayne's black-throated green warbler	*Setophaga virens waynei*	I	c
Whimbrel	*Numenius phaeopus*	IV	a
Willet	*Tringa semipalmata*	III	a
Wood thrush	*Hylocichla mustelina*	IV	b
Yellow-billed cuckoo	*Coccyzus americanus*	III	a
Yellow-breasted chat	*Icteria virens*	IV	a
Yellow-crowned night-heron	*Nyctanassa violacea*	II	a
MAMMALS			
Allegheny woodrat	*Neotoma magister*	IV	a
Appalachian cottontail	*Sylvilagus obscurus*	IV	a
Cotton mouse	*Peromyscus gossypinus gossypinus*	IV	a
Delmarva Peninsula fox squirrel	*Sciurus niger cinereus*	II	c
Eastern red bat (proposed for inclusion)	*Lasiurus borealis*	IV	a
Eastern small-footed myotis	*Myotis leibii*	I	a
Eastern spotted skunk	*Spilogale putorius putorius*	IV	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Fisher	*Martes pennanti pennanti*	IV	c
Hoary bat	*Lasiurus cinereus*	IV	a
Long-tailed shrew	*Sorex dispar dispar*	IV	c
Marsh rabbit	*Sylvilagus palustris palustris*	IV	a
Pungo white-footed mouse	*Peromyscus leucopus easti*	III	c
Silver-haired bat (proposed for inclusion)	*Lasionycteris noctivagans*	IV	a
Southeastern fox squirrel	*Sciurus niger niger*	III	a
Southeastern myotis	*Myotis austroriparius*	IV	a
Virginia northern flying squirrel	*Glaucomys sabrinus fuscus*	I	a
MARINE MAMMALS			
Atlantic bottlenose dolphin	*Tursiops truncates*	III	b
Harbor porpoise	*Phocoena phocoena*	IV	c
MOLLUSKS			
	Freshwater Mussels & Peaclams		
Alewife floater	*Anodonta implicata*	IV	a
Atlantic spike	*Elliptio producta*	IV	c
Carolina lance mussel	*Elliptio angustata*	IV	c
Carolina slabshell mussel	*Elliptio congaraea*	IV	a
Creeper	*Strophitus undulatus*	IV	a
Cumberland moccasinshell	*Medionidus conradicus*	IV	a
Eastern lampmussel	*Lampsilis radiata*	IV	a
Eastern pondmussel	*Ligumia nasuta*	IV	a
Elktoe	*Alasmidonta marginata*	II	c
Florida pondhorn	*Uniomerus caroliniana*	IV	c
Golden riffleshell	*Epioblasma florentina aureola*	I	a
Longsolid	*Fusconaia subrotunda*	III	a
Mountain creekshell mussel	*Villosa vanuxemensis vanuxemensis*	IV	a
Northern lance mussel	*Elliptio fisheriana*	IV	b
Notched rainbow	*Villosa constricta*	III	a
Pink heelsplitter	*Potamilus alatus*	III	b
Pocketbook mussel	*Lampsilis ovata*	IV	a
Roanoke slabshell	*Elliptio roanokensis*	II	b
Round peaclam	*Pisidium equilaterale*	IV	c
Tennessee clubshell	*Pleurobema oviforme*	III	a
Tennessee pigtoe	*Fusconaia barnesiana*	II	a
Tidewater mucket	*Leptodea ochracea*	IV	a
Triangle floater	*Alasmidonta undulata*	IV	a
Virginia pigtoe	*Lexingtonia subplana*	I	b
Yellow lampmussel	*Lampsilis cariosa*	II	a

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Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
	Freshwater & Land Snails		
Appalachia bellytooth	*Gastrodonta fonticula*	III	c
Baffled three-tooth	*Triodopsis fradulenta*	IV	c
Balsam globe	*Mesodon andrewsae*	II	c
Barred supercoil	*Paravitrea seradens*	II	c
Bidentate dome	*Ventridens coelaxis*	III	c
Black mantleslug	*Pallifera hemphillii*	II	c
Black Mountain disc	*Discus nigrimontanus*	IV	c
Blotchy mantleslug	*Megapallifera wetherbyi*	II	c
Blue Ridge springsnail	*Fontigens orolibas*	III	c
Bluegrass snaggletooth	*Gastrocopta clappi*	III	c
Bottle hornsnail	*Pleurocera gradate*	I	c
Brilliant glyph	*Glyphyalinia praecox*	IV	c
Brown globelet	*Inflectarius kalmianus*	II	c
Brown walker	*Pomatiopsis cincinnatiensis*	III	c
Budded three-tooth	*Triodopsis tennesseensis*	IV	c
Buttressed threetooth	*Triodopsis rugosa*	IV	c
Carinate slitmouth	*Stenotrema spinosum*	III	c
Carter threetooth	*Triodopsis anteridon*	III	c
Cherrystone drop	*Hendersonia occulta*	IV	c
Chesapeake ambersnail	*Oxyloma subeffusum*	III	c
Clingman covert	*Fumonelix wheatleyi*	III	c
Coal elimia	*Elimia aterina*	II	c
Comb supercoil	*Paravitrea dentilla*	II	c
Crossed dome	*Ventridens descussatus*	III	c
Cumberland liptooth	*Millerelix plicata*	III	c
Cupped vertigo	*Vertigo clappi*	III	c
Delicate vertigo	*Vertigo bollesiana*	II	c
Depressed glyph	*Glyphyalinia virginica*	III	c
Dusky fossaria	*Fossaria dalli*	IV	c
Fine-ribbed striate	*Striatura milium*	IV	c
Five-tooth vertigo	*Vertigo ventricosa*	III	c
Flat button	*Mesomphix subplanus*	III	c
Funnel supercoil	*Paravitrea mira*	II	c
Glassy grapeskin	*Vitrinizonites latissimus*	IV	c
Glossy covert	*Fumonelix christyi*	III	c
Glossy supercoil	*Paravitrea placentula*	II	c
Golden dome	*Ventridens arcellus*	IV	c
Gravel elimia	*Elimia catenaria*	IV	c
Hanging Rock threetooth	*Triodopsis pendula*	II	c
Highland slitmouth	*Stenotrema altispira*	II	c
Hollow dome	*Ventridens lasmodon*	IV	c
Lowland pillsnail	*Euchemotrema leai*	IV	c

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Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Maryland glyph	*Glyphyalinia raderi*	II	c
Mountain disc	*Anguispira jessica*	III	c
Natural Bridge supercoil	*Paravitrea pontis*	III	c
Oblong ancylid	*Ferrissia parallelus*	IV	c
Ovate vertigo snail	*Vertigo ovata*	IV	c
Palmetto vertigo	*Vertigo oralis*	IV	c
Panhandle pebblesnail	*Somatogyrus virginicus*	II	c
Pearl supercoil	*Paravitrea calcicola*	IV	c
Piedmont pondsnail	*Stagnicola neopalustris*	I	c
Pinhole threetooth	*Triodopsis messana*	IV	c
Pittsylvania three-tooth	*Triodopsis burchi*	IV	c
Proud globe snail	*Mesodon elevatus*	IV	c
Pygmy slitmouth	*Stenotrema pilula*	III	c
Ribbed striate	*Striatura exigua*	IV	c
Ridged lioplax	*Lioplax subcarinata*	IV	c
Round supercoil	*Paravitrea reesei*	II	c
Rounded dome	*Ventridens lawae*	III	c
Rust glyph	*Glyphyalinia picea*	II	c
Seep mudalia	*Leptoxis dilatata*	IV	c
Sharp sprite	*Promenetus exacuous*	IV	c
Shrew supercoil	*Paravitrea blarina*	II	c
Slender supercoil	*Paravitrea subtilis*	II	c
Slim snaggletooth	*Gastrocopta pellucida*	IV	c
Smallmouth vertigo	*Vertigo parvula*	III	c
Smooth bladetooth	*Patera laevior*	IV	c
Snowhill ambersnail	*Catinella hubrichti*	II	c
Spruce Knob threetooth	*Triodopsis picea*	II	c
Suborb glyph	*Glyphyalinia sculptilis*	IV	c
Swamp vertigo	*Vertigo teskeyae*	IV	c
Talus coil	*Helicodiscus triodus*	II	c
Temperate coil	*Helicodiscus shimeki*	IV	c
Threeridge	*Amblema plicata*	III	b
Three-ridge valvata	*Valvata tricarinata*	IV	c
Tiny liptooth	*Lobosculum pustuloides*	III	c
Trumpet vallonia	*Vallonia parvula*	IV	c
Twilight coil	*Helicodiscus multidens*	IV	c
Variable mantleslug	*Pallifera varia*	III	c
Virginia bladetooth	*Patera panselenus*	III	c
Virginia mantleslug	*Philomycus virginicus*	III	c
Widespread column	*Pupilla muscorum*	IV	c
Wrinkled button	*Mesomphix rugeli*	IV	c
Yellow dome	*Ventridens pilsbryi*	IV	c
Yellow globelet snail	*Mesodon clausus*	IV	c

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CRUSTACEANS			
Alleghany County cave amphipod	*Stygobromus hoffmani*	II	c
Allegheny crayfish	*Orconectes obscurus*	IV	c
Amphipod (no common name)	*Crangonyx acicularis*	III	c
Amphipod (no common name)	*Crangonyx montanus*	III	c
Appalachian Valley cave amphipod	*Crangonyx antennatus*	III	c
Bath County cave amphipod	*Stygobromus mundus*	II	c
Big Stone crayfish	*Cambarus sp. 1*	I	c
Bland County amphipod	*Crangonyx fontinalis*	II	c
Blue crayfish	*Cambarus monongalensis*	II	a
Blue Ridge spring amphipod	*Stygobromus spinosus*	III	c
Burnsville Cove cave amphipod	*Stygobromus conradi*	II	c
Chowanoke crayfish	*Orconectes virginiensis*	III	a
Coalfields crayfish	*Cambarus theepiensis*	II	c
Craig County cave amphipod	*Stygobromus estesi*	II	c
Cumberland Gap cave amphipod	*Bactrurus angulus*	I	c
Cumberland Gap cave isopod	*Caecidotea cumberlandensis*	II	c
Cumberland cave amphipod	*Stygobromus cumberlandus*	II	c
Dismal Swamp isopod	*Caecidotea attenuatus*	II	c
Ephemeral cave amphipod	*Stygobromus ephemerus*	I	a
Finley's cave amphipod	*Stygobromus finleyi*	II	c
Henrot's cave isopod	*Caecidotea henroti*	II	c
Incurved cave isopod	*Caecidotea incurva*	II	c
Kenk's amphipod (also known as Rock Creek groundwater amphipod	*Stygobromus kenki*	II	c
Lancaster County amphipod	*Crangonyx baculispina*	I	c
Lee County cave amphipod	*Stygobromus leensis*	II	c
Lee County terrestrial cave isopod	*Ligidium elrodii leensis*	III	c
Longclaw crayfish	*Cambarus buntingi*	III	a
Luray Caverns amphipod	*Stygobromus pseudospienosus*	II	c
Montgomery County cave amphipod	*Stygobromus fergusoni*	II	c
Morrison's cave amphipod	*Stygobromus morrisoni*	II	c
Natural Bridge cave isopod	*Caecidotea bowmani*	III	c
New Castle Murder Hole amphipod	*Stygobromus interitus*	II	c
Northern spring amphipod	*Gammarus pseudolimnaeus*	IV	c
Northern Virginia well amphipod	*Stygobromus phreaticus*	I	c
Ohio River shrimp	*Macrobrachium ohione*	IV	c
Phreatic isopod	*Caecidotea phreatica*	I	c
Pittsylvania well amphipod	*Stygobromus obrutus*	II	c
Pizzini's amphipod	*Stygobromus pizzinii*	II	c
Powell Valley terrestrial isopod	*Amerigoniscus henroti*	II	c
Racovitza's terrestrial cave isopod	*Miktoniscus racovitzai*	III	c
Reticulate crayfish	*Orconectes erichsonianus*	III	c

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Rock Creek groundwater amphipod	*Stygobromus kenki*	II	c
Rockbridge County cave amphipod	*Stygobromus baroodyi*	II	c
Rye Cove isopod	*Lirceus culveri*	I	a
Scott County terrestrial cave isopod	*Ligidium elrodii scottensis*	III	c
Spiny scale crayfish	*Cambarus jezerinaci*	II	a
Surgeon crayfish	*Orconectes forceps*	IV	c
Tidewater interstitial amphipod	*Stygobromus araeus*	III	c
Tidewater ampipod	*Stygobromus indentatus*	III	c
Tug Valley crayfish	*Cambarus hatfieldi*	II	c
WORMS & PLANARIANS			
A branchiobdelid worm	*Ankyrodrilus legacus*	IV	c
A cave lumbriculid worm	*Spelaedrilus multiporus*	II	c
A cave lumbriculid worm	*Stylodrilus beattiei*	I	c
A cave obligate worm	*Cambarincola fallax*	IV	c
A cave planarian	*Geocentrophora cavernicola*	III	c
A groundwater planarian	*Procotyla typhlops*	I	c
A groundwater planarian	*Sphalloplana hypogea*	II	c
Bigger's groundwater planarian	*Sphalloplana subtilis*	II	c
Chandler's planarian	*Sphalloplana chandleri*	I	c
Holsinger's groundwater planarian	*Sphalloplana holsingeri*	II	c
Powell Valley planarian	*Sphalloplana consimilis*	I	c
Rockbridge County cave planarian	*Sphalloplana virginiana*	I	c
MILLIPEDES & CENTIPEDES			
A cave centipede	*Nampabius turbator*	III	c
A centipede	*Escaryus ethopus*	IV	c
A millipede	*Pseudotremia sublevis*	II	c
A millipede	*Abacion tessalatum*	IV	c
A millipede	*Aniulus orientalis*	II	c
A millipede	*Apheloria virginiensis*	IV	c
A millipede	*Auturus erythropygos*	II	c
A millipede	*Boraria infesta*	IV	c
A millipede	*Brachoria dentata*	II	c
A millipede	*Brachoria insolita*	II	c
A millipede	*Brachoria separanda*	IV	c
A millipede	*Brachoria separanda calcaria*	III	c
A millipede	*Brachoria separanda hamata*	III	c
A millipede	*Brachoria separanda versicolor*	III	c
A millipede	*Buotus carolinus*	II	c
A millipede	*Chaetaspis albus*	IV	c
A millipede	*Cherokia georgiana latassa*	IV	c

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A millipede	*Cleidogona lachesis*	II	c
A millipede	*Desmonus earlei*	IV	c
A millipede	*Dixioria coronata*	III	c
A millipede	*Dixioria fowleri*	II	c
A millipede	*Euryurus leachi fraternus*	IV	c
A millipede	*Gyalostethus monticolens*	IV	c
A millipede	*Nannaria simplex*	II	c
A millipede	*Nannaria wilsoni*	IV	c
A millipede	*Okeanobates americanus*	IV	c
A millipede	*Onomeris underwoodi*	IV	c
A millipede	*Orinisobates nigrior*	IV	c
A millipede	*Petaserpes rosalbus*	IV	c
A millipede	*Petaserpes strictus*	IV	c
A millipede	*Pseudopolydesmus paludicolous*	III	c
A millipede	*Pseudotremia alecto*	II	c
A millipede	*Pseudotremia armesi*	II	c
A millipede	*Pseudotremia momus*	II	c
A millipede	*Pseudotremia sublevis*	II	c
A millipede	*Pseudotremia tuberculata*	II	c
A millipede	*Pseudotremia valga*	IV	c
A millipede	*Rudiloria kleinpeteri*	IV	c
A millipede	*Rudiloria trimaculata tortua*	IV	c
A millipede	*Scytonotus virginicus*	IV	c
A millipede	*Semionellus placidus*	III	c
A millipede	*Striaria causeyae*	II	c
A millipede	*Striaria columbiana*	II	c
A millipede	*Striaria granulosa*	II	c
A millipede	*Thalassisobates littoralis*	IV	c
A millipede	*Trichomeris sinuata*	IV	c
A millipede	*Trichopetalum dux*	II	c
A millipede	*Trichopetalum lunatum*	IV	c
A millipede	*Uroblaniulus canadensis*	IV	c
A millipede	*Uroblaniulus jerseyi*	III	c
A millipede	*Virgoiulus minutus*	IV	c
Aeto millipede	*Conotyla aeto*	II	c
Big Cedar Creek millipede	*Brachoria falcifera*	II	c
Blowing Rock millipede	*Cleidogona medialis*	II	c
Brooks millipede	*Dixioria brooksi*	II	c
Cedar millipede	*Brachoria cedra*	II	c
Celeno millipede	*Conotyla celeno*	II	c
Collinwood millipede	*Brachoria mendota*	II	c
Duke Forest xystodesmid millipede	*Nannaria conservata*	II	c
Faithful millipede	*Cleidogona fidelitor*	II	c
Hoffman's cleidogonid millipede	*Cleidogona hoffmani*	II	c

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Hoffman's xystodesmid millipede	*Brachoria hoffmani*	II	c
Hungry Mother millipede	*Brachoria ethotela*	IV	c
Keeton's millipede	*Brachoria laminata*	II	c
McGraw Gap xystodesmid millipede	*Nannaria ericaea*	III	c
Melinda millipede	*Conotyla melinda*	II	c
Montane centipede	*Escaryus cryptorobius*	II	c
Shenandoah Mountain xystodesmid millipede	*Nannaria shenandoah*	II	c
Smith Creek xystodesmid millipede	*Nannaria laminata*	II	c
South Branch Valley cave millipede	*Pseudotremia princeps*	II	c
Turner's millipede	*Brachoria turneri*	II	c
Venetia millipede	*Conotyla venetia*	II	c
Whitetop Mountain centipede	*Escaryus orestes*	II	c
ARACHNIDS			
A cave pseudoscorpion	*Apochthonius coecus*	II	b
A cave pseudoscorpion	*Apochthonius holsingeri*	II	b
A cave pseudoscorpion	*Chitrella cavicola*	III	b
A cave pseudoscorpion	*Chitrella superba*	II	b
A cave pseudoscorpion	*Kleptochthonius anophthalmus*	II	b
A cave pseudoscorpian	*Kleptochthonius binoculatus*	II	b
A cave pseudoscorpion	*Kleptochthonius proximosetus*	II	b
A cave pseudoscorpion	*Kleptochthonius regulus*	II	b
A cave pseudoscorpion	*Kleptochthonius similis*	II	b
A cave pseudoscorpion	*Mundochthonius holsingeri*	II	b
A cave spider	*Anthrobia mammouthia*	III	c
A cave spider	*Bathyphantes weyeri*	III	c
A cave spider	*Islandiana muma*	II	c
A funnel-web spider	*Barronopsis jeffersi*	II	c
A gnaphosid spider	*Drassyllus louisianus*	IV	c
A gnaphosid spider	*Gnaphosa fontinalis*	IV	c
A nursery-web spider	*Pisaurina dubia*	IV	c
A two-clawed hunting spider	*Castianeira trilineata*	IV	c
A two-clawed hunting spider	*Clubiona spiralis*	IV	c
A wolf spider	*Lycosa lenta*	IV	c
An amaurobiid spider	*Amaurobius borealis*	IV	c
Atlantic purse-web spider	*Sphodros atlanticus*	IV	c
Black purse-web spider	*Sphodros niger*	IV	c
Carolina scorpion	*Vaejovis carolinianus*	IV	c
Coyle's purse-web spider	*Sphodros coylei*	IV	c
Crablike spiny orb weaver	*Gasteracantha cancriformis*	IV	c
Emerton's crab spider	*Xysticus emertoni*	IV	c
Gertsch's lampshade-web spider	*Hypochilus gertschi*	III	c

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Gertsch's cave pseudoscorpion	*Kleptochthonius gertschi*	II	b
Lutz's cave pseudoscorpion	*Kleptochthonius lutzi*	II	b
Pocock's lampshade-web spider	*Hypochilus pococki*	IV	c
Red-legged purse-web spider	*Sphodros rufipes*	IV	c
Robust trapdoor spider	*Antrodiaetus robustus*	III	c
Shenandoah pseudoscorpion	*Kleptochthonius polychaetus*	III	b
Southeastern wandering spider	*Anahita punctulata*	IV	c
Thorell's lampshade-web spider	*Hypochilus thorelli*	IV	c
Valentine's cave pseudoscorpion	*Microcreagris valentinei*	II	b
INSECTS			
A cane moth	*Argillophora furcilla*	IV	c
A cane moth	*Franclemontia interrogans*	IV	c
A cave beetle	*Pseudanophthalmus gracilis*	II	c
A cave beetle	*Pseudanophthalmus pusio*	III	c
A cave beetle	*Pseudanophthalmus seclusus*	II	c
A geometrid moth	*Lophosis labeculata*	IV	c
A geometrid moth	*Lytrosis permagnaria*	IV	c
A ground beetle	*Cyclotrachelus incisus*	III	c
A ground beetle	*Phloeoxena signata*	IV	c
A ground beetle	*Rhadine caudata*	IV	c
A leaf beetle	*Calligrapha pnirsa*	IV	c
A limnephilid caddisfly	*Anabolia apora*	II	c
A limnephilid caddisfly	*Nemotaulius hostilis*	IV	c
A mayfly	*Baetisca rubescens*	III	c
A mayfly	*Ephemerella inconstans*	III	c
A mayfly	*Habrophlebiodes celeteria*	III	c
A mayfly	*Isonychia arida*	IV	c
A mayfly	*Isonychia serrata*	IV	c
A mayfly	*Isonychia tusculanensis*	II	c
A mayfly	*Paraleptophlebia assimilis*	III	c
A mayfly	*Paraleptophlebia jeanae*	III	c
A mayfly	*Rhithrogena anomala*	III	c
A mirid bug	*Bothynotus johnstoni*	IV	c
A noctuid moth	*Hadena ectypa*	IV	c
A noctuid moth	*Meropleon titan*	IV	c
A noctuid moth	*Oxycilla mitographa*	IV	c
A noctuid moth	*Zale curema*	IV	c
A philopotamid caddisfly	*Wormaldia thyria*	III	c
A rhyacophilid caddisfly	*Rhyacophila tricornuta*	II	c
A shield bug	*Galgupha denudata*	IV	c
A spur-throat grasshopper	*Melanoplus pachycercus*	IV	c
A tiger beetle	*Cicindela formosa generosa*	IV	c

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A tiger beetle	*Cicindela gratiosa*	IV	c
A tiger beetle	*Cicindela limbalis*	IV	c
A turtle bug	*Oncozygia clavicornis*	IV	c
A water scorpion	*Nepa apiculata*	IV	c
A water strider	*Limnoporus dissortis*	IV	c
Acuminate water boatman	*Ramphocorixa acuminata*	IV	c
Allegheny mayfly	*Ameletus cryptostimulus*	IV	c
Allegheny river cruiser	*Macromia alleghaniensis*	IV	c
Allegheny snaketail	*Ophiogomphus allegheniensis*	III	c
American Bumble Bee	*Bombus pensylvanicus*	IV	a
American emerald	*Cordulia shurtleffi*	IV	c
An assassin bug	*Ploiaria hirticornis*	IV	c
Appalachian grasshopper	*Appalachia hebardi*	III	c
Appalachian jewelwing	*Calopteryx angustipennis*	III	c
Appalachian rhyacophilid caddisfly	*Rhyacophila appalachia*	III	c
Appalachian snaketail	*Ophiogomphus incurvatus alleghaniensis*	II	c
Appalachian stonefly	*Hansonoperla appalachia*	II	c
Arogos skipper	*Atrytone arogos arogos*	I	c
Ashton Cuckoo Bumble Bee	*Bombus bohemicus*	I	a
Avernus cave beetle	*Pseudanophthalmus avernus*	II	c
Banner clubtail	*Gomphus apomyius*	IV	c
Barrens dagger moth	*Acronicta albarufa*	IV	c
Barrens tiger beetle	*Cicindela patruela*	III	c
Beaverpond baskettail	*Epitheca canis*	IV	c
Beaverpond clubtail	*Gomphus borealis*	IV	c
Benfield's bearded small minnow mayfly	*Barbaetis benfieldi*	II	c
Bent forestfly	*Ostrocerca prolongata*	III	c
Berner's Ephemerella mayfly	*Ephemerella berneri*	III	c
Big stripetail stonefly	*Isoperla major*	I	a
Black dash	*Euphyes conspicua*	IV	c
Black lordithon rove beetle	*Lordithon niger*	III	c
Black-tipped darner	*Aeshna tuberculifera*	IV	c
Blackwater bluet	*Enallagma weewa*	IV	c
Blue Ridge snowfly	*Allocapnia stannardi*	III	c
Blue Ridge springfly	*Remenus kirchneri*	III	c
Blue Ridge stonefly	*Perlesta frisoni*	III	c
Brimley's assassin bug	*Pnirontis brimleyi*	III	c
Bronze copper	*Lycaena hyllus*	IV	c
Brook snaketail	*Ophiogomphus aspersus*	III	c
Buchholz's gray moth	*Hypomecis buchholzaria*	IV	c
Burgundy bluet	*Enallagma dubium*	IV	c
Burkes Garden cave beetle	*Pseudanophthalmus hortulanus*	II	c
Canada darner	*Aeshna canadensis*	IV	c

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Carolina salmonfly	*Pteronarcys scotti*	IV	c
Carolina spreadwing	*Lestes vidua*	IV	c
Chalk-fronted corporal skimmer	*Ladona julia*	IV	c
Cherokee clubtail	*Gomphus consanguis*	II	c
Chestnut clearwing moth	*Synanthedon castaneae*	IV	c
Chestnut leaf-mining moth	*Tischeria perplexa*	III	c
Cinnamon shadowdragon	*Neurocordulia virginiensis*	IV	c
Combneck assassin bug	*Ctenotrachelus shermani*	IV	c
Consort underwing	*Catocala consors sorsconi*	IV	c
Coppery emerald	*Somatochlora georgiana*	III	c
Crossroads Cave beetle	*Pseudanophthalmus intersectus*	II	c
Cryptic willowfly	*Taeniopteryx nelsoni*	I	b
Cumberland Gap cave beetle	*Pseudanophthalmus hirsutus*	II	c
Dark stoneroot borer moth	*Papaipema duplicata*	IV	c
Deceptive cave beetle	*Pseudanophthalmus deceptivus*	II	c
Delicate cave beetle	*Pseudanophthalmus delicatus*	III	c
Delta-spotted spiketail	*Cordulegaster diastatops*	IV	c
Diana fritillary	*Speyeria diana*	IV	c
Dismal Swamp green stink bug	*Chlorochroa dismalia*	III	c
Doll's Merolonch moth	*Merolonche dolli*	III	c
Dot-tailed whiteface	*Leucorrhinia intacta*	IV	c
Dotted skipper	*Hesperia attalus slossonae*	II	c
Drake's water scorpion	*Ranatra drakei*	IV	c
Dukes' skipper	*Euphyes dukesi*	III	c
Dusky roadside-skipper	*Amblyscirtes alternata*	III	c
Dusky sallfly	*Alloperla biserrata*	III	c
Early hairstreak	*Erora laeta*	IV	c
Elfin skimmer	*Nannothemis bella*	IV	c
Elusive clubtail	*Stylurus notatus*	II	c
Emerald spreadwing	*Lestes dryas*	IV	c
Faded pennant	*Celithemis ornata*	IV	c
Fine-lined emerald	*Somatochlora filosa*	IV	c
Frosted elfin	*Callophrys irus*	IV	c
Frosted whiteface	*Leucorrhinia frigida*	IV	c
Gammon's riffle beetle	*Stenelmis gammoni*	II	c
Georgia Isonychia mayfly	*Isonychia georgiae*	III	c
Georgia satyr	*Neonympha areolata*	IV	c
Gray petaltail	*Tachopteryx thoreyi*	IV	c
Green-faced clubtail	*Gomphus viridifrons*	II	c
Green-striped darner	*Aeshna verticalis*	IV	c
Hagen's bluet	*Enallagma hageni*	IV	c
Harpoon clubtail	*Gomphus descriptus*	IV	c
Hebard's noctuid moth	*Erythroecia hebardi*	III	c
Hercules club stink bug	*Elasmostethus atricornis*	IV	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Hessel's hairstreak	*Callophrys hesseli*	III	c
Highlands springfly	*Yugus arinus*	III	c
Hoary elfin	*Callophrys polios*	IV	c
Hoffman's Isonychia mayfly	*Isonychia hoffmani*	II	c
Holston sallfly	*Sweltsa holstonensis*	II	c
Hubbard's cave beetle	*Pseudanophthalmus hubbardi*	II	c
Hubricht's cave beetle	*Pseudanophthalmus hubrichti*	II	c
Hudsonian whiteface	*Leucorrhinia hudsonica*	IV	c
Illinois snowfly	*Allocapnia illinoensis*	III	c
Jane's meadowhawk	*Sympetrum janeae*	IV	c
Jefferson's short-nosed scorpionfly	*Brachypanorpa jeffersoni*	III	c
Johnson's pronggill mayfly	*Leptophlebia johnsoni*	IV	c
Kanawhole springfly	*Diploperla kanawholensis*	II	c
King's hairstreak	*Satyrium kingi*	IV	c
Kosztarab's common stonefly	*Acroneuria kosztarabi*	I	c
Lance-tipped darner	*Aeshna constricta*	IV	c
Laura's clubtail	*Stylurus laurae*	IV	c
Lemmer's pinion moth	*Lithophane lemmeri*	IV	c
Lilypad clubtail	*Arigomphus furcifer*	IV	c
Little Kennedy Cave beetle	*Pseudanophthalmus cordicollis*	II	c
Little metalmark	*Calephelis virginiensis*	III	c
Lobed roachfly	*Tallaperla lobata*	II	c
Long dash	*Polites mystic*	IV	c
Long-headed cave beetle	*Pseudanophthalmus longiceps*	II	c
Maiden Spring cave beetle	*Pseudanophthalmus virginicus*	II	c
Maine snaketail	*Ophiogomphus mainensis*	IV	c
Manassas stonefly	*Acroneuria flinti*	I	c
Mantled baskettail	*Epitheca semiaquea*	IV	c
Marbled underwing	*Catocala marmorata*	IV	c
Marsh bluet	*Enallagma ebrium*	IV	c
Martha's pennant	*Celithemis martha*	IV	c
Maureen's shale stream beetle	*Hydraena maureenae*	II	c
Midland clubtail	*Gomphus fraternus*	IV	c
Milne's Euchlaena moth	*Euchlaena milnei*	IV	c
Mississippi turtle bug	*Allopodops mississippiensis*	IV	c
Mitchell needlefly	*Leuctra mitchellensis*	III	c
Mixed dart moth	*Euxoa immixta*	IV	c
Monarch Butterfly	*Danaus plexippus plexippus*	III	a
Montane needlefly	*Leuctra monticola*	II	c
Mottled duskywing	*Erynnis martialis*	III	c
Mountain river cruiser	*Macromia margarita*	II	c
Moustached clubtail	*Gomphus adelphus*	IV	c
Mud-dwelling cave beetle	*Pseudanophthalmus limicola*	II	c
Natural Bridge cave beetle	*Pseudanophthalmus pontis*	II	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Nelson's cave beetle	*Pseudanophthalmus nelsoni*	II	c
New River Valley cave beetle	*Pseudanophthalmus egberti*	II	c
Newfound willowfly	*Strophopteryx limata*	III	c
Northern bluet	*Enallagma cyathigerum*	IV	c
Northern bush katydid	*Scudderia septentrionalis*	IV	c
Northern common spreadwing	*Lestes disjunctus*	IV	c
Northern metalmark	*Calephelis borealis*	IV	c
Northern pygmy clubtail	*Lanthus parvulus*	IV	c
Notched forestfly	*Ostrocerca complexa*	IV	c
Orange-bellied tiger beetle	*Cicindela abdominalis*	IV	c
Overlooked cave beetle	*Pseudanophthalmus praetermissus*	II	c
Palatka skipper	*Euphyes pilatka*	III	c
Pale bluet	*Enallagma pallidum*	IV	c
Persius duskywing	*Erynnis persius persius*	II	c
Petrunkevitch's cave beetle	*Pseudanophthalmus petrunkevitchi*	II	c
Piedmont clubtail	*Gomphus parvidens*	IV	c
Pine barrens underwing	*Catocala herodias*	III	c
Pink-edged sulphur	*Colias interior*	IV	c
Pink-streak moth	*Faronta rubripennis*	IV	c
Pitcher plant midge	*Metriocnemus knabi*	IV	c
Precious underwing	*Catocala pretiosa pretiosa*	II	c
Pygmy snaketail	*Ophiogomphus howei*	II	c
Rapids clubtail	*Gomphus quadricolor*	III	c
Rare skipper	*Problema bulenta*	II	c
Rare spring moth	*Heliomata infulata*	IV	c
Red-waisted whiteface	*Leucorrhinia proxima*	IV	c
Regal darner	*Coryphaeschna ingens*	IV	c
Regal fritillary	*Speyeria idalia idalia*	I	a
Riffle snaketail	*Ophiogomphus carolus*	IV	c
River jewelwing	*Calopteryx aequabilis*	IV	c
Riverbank tiger beetle	*Cicindela ancocisconensis*	III	c
Riverine clubtail	*Stylurus amnicola*	IV	c
Robust baskettail	*Epitheca spinosa*	IV	c
Rock Island springfly	*Isogenoides varians*	III	c
Rotund cave beetle	*Pseudanophthalmus rotundatus*	II	c
Rusty-patched bumble bee	*Bombus affinis*	I	a
Sable clubtail	*Gomphus rogersi*	IV	c
Saint Paul cave beetle	*Pseudanophthalmus sanctipauli*	II	c
Sandpit alydid bug	*Stachyocnemus apicalis*	III	c
Schaum's ground beetle	*Sphaeroderus schaumi*	IV	c
Schwarz' diving beetle	*Laccophilus schwarzi*	IV	c
Sedge sprite	*Nehalennia irene*	IV	c
Selys' sundragon	*Helocordulia selysii*	IV	c
Septima's clubtail	*Gomphus septima*	II	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Shenandoah needlefly	*Megaleuctra flinti*	III	c
Shenandoah rhyacophilid caddisfly	*Rhyacophila shenandoahensis*	III	c
Silken cave beetle	*Pseudanophthalmus sericus*	II	c
Six-banded longhorn beetle	*Dryobius sexnotatus*	IV	c
Skillet clubtail	*Gomphus ventricosus*	II	c
Ski-tailed emerald	*Somatochlora elongata*	IV	c
Smokies needlefly	*Megaleuctra williamsae*	II	c
Smokies snowfly	*Allocapnia fumosa*	III	c
Smoky willowfly	*Bolotoperla rossi*	IV	c
Smyth's Apamea moth	*Apamea smythi*	II	c
South Branch Valley cave beetle	*Pseudanophthalmus potomaca potomaca*	II	c
Southeastern myotis bat fly	*Basilia boardmani*	III	c
Southeastern roachfly	*Tallaperla cornelia*	IV	c
Southern pitcher plant mosquito	*Wyeomyia haynei*	IV	c
Southern Plains Bumble Bee	*Bombus fraternus*	II	a
Southern Ptichodis moth	*Ptichodis bistrigata*	IV	c
Southern springfly	*Cultus decisus isolatus*	III	c
Southern sprite	*Nehalennia integricollis*	IV	c
Spatterdock darner	*Aeshna mutata*	III	c
Spatulate snowfly	*Allocapnia simmonsi*	II	c
Spectral tiger beetle	*Cicindela lepida*	IV	c
Sphagnum sprite	*Nehalennia gracilis*	IV	c
Spieth's great speckled olive mayfly	*Siphloplecton costalense*	II	c
Spine-crowned clubtail	*Gomphus abbreviatus*	III	c
Spiny salmonfly	*Pteronarcys comstocki*	III	c
Spotted cave beetle	*Pseudanophthalmus punctatus*	II	c
Straley's Cave beetle	*Pseudanophthalmus quadratus*	II	c
Stripe-winged baskettail	*Epitheca costalis*	IV	c
Stygian shadowdragon	*Neurocordulia yamaskanensis*	IV	c
Superb jewelwing	*Calopteryx amata*	IV	c
Swamp forestfly	*Prostoia hallasi*	III	c
Swannanoa sallfly	*Alloperla nanina*	IV	c
Sweet underwing	*Catocala dulciola*	III	c
Tarter's Ameletus mayfly	*Ameletus tarteri*	II	c
Tawny crescent	*Phyciodes batesii batesii*	II	c
Teays stonefly	*Perlesta teaysia*	III	c
Tennessee sallfly	*Alloperla neglecta*	III	c
Thin-neck cave beetle	*Pseudanophthalmus parvicollis*	II	c
Treetop emerald	*Somatochlora provocans*	IV	c
Tufted sallfly	*Alloperla banksi*	IV	c
Tuscarora emerald	*Nemoria tuscarora*	IV	c
Two-spotted skipper	*Euphyes bimacula*	IV	c
Two-striped forceptail	*Aphylla williamsoni*	IV	c

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Virginia Department of Wildilfe Resources

Special Status Faunal Species in Virginia

Virginia Wildlife Action Plan, Species of Greatest Conservation Need, Tiered Faunal Species

Common Name	Scientific Name	WAP[1] Tier	WAP[1] Rank
Variable Cuckoo Bumble Bee	*Bombus variabilis*	I	a
Variegated meadowhawk	*Sympetrum corruptum*	IV	c
Vernal sallfly	*Alloperla idei*	III	c
Vicariant cave beetle	*Pseudanophthalmus vicarius*	II	c
Virginia sallfly	*Sweltsa voshelli*	III	c
Virginia springfly	*Diploperla morgani*	III	c
White corporal skimmer	*Ladona exusta*	IV	c
White sand-river mayfly	*Pseudiron centralis*	IV	c
White-faced meadowhawk	*Sympetrum obtrusum*	IV	c
Widecollar stonefly	*Paragnetina ichusa*	III	c
Williamson's emerald	*Somatochlora williamsoni*	IV	c
Yellow Bumble Bee	*Bombus fervidus*	IV	a
Yellow stoneroot borer moth	*Papaipema astuta*	IV	c
Yellow-banded Bumble Bee	*Bombus terricola*	III	a
Yellow-edged Pygarctia moth	*Pygarctia abdominalis*	IV	c
Yucca giant-skipper	*Megathymus yuccae*	IV	c
Zebra clubtail	*Stylurus scudderi*	IV	c

For further information or details regarding this list or any species listed herein, please contact:

Aquatic Wildlife Resources Division
Virginia Department of Wildlife Resources
Physical Address: 7870 Villa Park Dr, Suite 400
Mailing Address: P. O. Box 90778
Henrico, VA 23228
(804) 367-4335

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VaFWIS Search Report Compiled on 10/8/2020, 1:12:29 PM

Help

Known or likely to occur within a **10 mile radius around point 37.2234444 -77.3801389** in **036 Charles City County, 041 Chesterfield County, 053 Dinwiddie County, 149 Prince George County, 570 Colonial Heights City, 670 Hopewell City, 730 Petersburg City, VA**

View Map of Site Location

609 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 36) (36 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name
040228	FESE	Ia	Woodpecker, red-cockaded	Picoides borealis
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus
010214	FESE	IIa	Logperch, Roanoke	Percina rex
040144	FTST	Ia	Knot, red	Calidris canutus rufa
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata
010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon
040110	FPSE	Ia	Rail, eastern black	Laterallus jamaicensis jamaicensis
050020	SE	Ia	Bat, little brown	Myotis lucifugus
050034	SE	Ia	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus
040096	ST	Ia	Falcon, peregrine	Falco peregrinus
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus
040385	ST	Ia	Sparrow, Bachman's	Peucaea aestivalis
060173	FPST	Ia	Pigtoe, Atlantic	Fusconaia masoni
020002	ST	IIa	Treefrog, barking	Hyla gratiosa
060081	ST	IIa	Floater, green	Lasmigona subviridis
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
030067	CC	IIa	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin
030063	CC	IIIa	Turtle, spotted	Clemmys guttata
030031	CC	IIIc	Kingsnake, scarlet	Lampropeltis elapsoides
010174		Ia	Bass, Roanoke	Ambloplites cavifrons
010077		Ia	Shiner, bridle	Notropis bifrenatus
040040		Ia	Ibis, glossy	Plegadis falcinellus
040213		Ic	Owl, northern saw-whet	Aegolius acadicus
020063		IIa	Toad, oak	Anaxyrus quercicus
040052		IIa	Duck, American black	Anas rubripes
040029		IIa	Heron, little blue	Egretta caerulea caerulea

040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea
040181		IIa	Tern, common	Sterna hirundo
040320		IIa	Warbler, cerulean	Setophaga cerulea
040140		IIa	Woodcock, American	Scolopax minor
060071		IIa	Lampmussel, yellow	Lampsilis cariosa
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus
040105		IIb	Rail, king	Rallus elegans

To view **All 609 species** View 609

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Anadromous Fish Use Streams (8 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
C104	Appomattox River 2	Confirmed	5		IV	Yes
C36	Johnson Creek	Confirmed	1			Yes
C7	Bailey Creek	Confirmed	1			Yes
C73	Swift Creek	Confirmed	6		IV	Yes
C86	Appomattox River 2	Confirmed	2		IV	Yes
C89	Appomattox River 1	Confirmed	6		IV	Yes
C92	James River 1	Confirmed	6		IV	Yes
P4	Appomattox River 3	Potential	0			Yes

Impediments to Fish Passage (34 records - displaying first 20)

View Map of All Fish Impediments

ID	Name	River	View Map
808	ABUTMENT DAM	APPOMATTOX RIVER	Yes
1009	ANDREWS DAM	LONG SWAMP	Yes
1042	ARWA SLUDGE LAGOON DAM	TR-APPOMATTOX RIVER	Yes
236	BAKERS DAM	TR-SECOND SWAMP	Yes
809	BATTERSEA DAM	APPOMATTOX RIVER	Yes

713	BRAGAN DAM	TR-CATTAIL RUN	Yes
800	BRASFIELD (APPOMATTOX)	APPOMATTOX	Yes
234	BUTTERWORTH DAM	JONES HOLE SWAMP	Yes
192	CERNYS DAM	TR-ARTHUR SWAMP	Yes
185	CLARKES DAM	TR-HATCHER RUN	Yes
712	CLAYTONS DAM	CATTAIL RUN	Yes
811	FIVE-CELL BOX CULVERT	POOR CREEK	Yes
233	HAMLINS DAM	SECOND SWAMP	Yes
239	HANZLIKS DAM	BLACK WATER SWAMP	Yes
810	HARVELL DAM	APPOMATTOX RIVER	Yes
237	ISSAC WALTON DAM	SECOND SWAMP	Yes
244	JANDLS DAM	TR-SECOND SWAMP	Yes
182	JORDON DAM	HATCHERS RUN	Yes
243	KINGS DAM	TR-SECOND SWAMP	Yes
1018	LAKEVIEW DAM	SWIFT CREEK	Yes

To view **All 34 Fish Impediment records** View 34

Threatened and Endangered Waters (119 Reaches - displaying first 20) **View Map of All Threatened and Endangered Waters**

Stream Name	T&E Waters Species							View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name						
(07000018)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0230458)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0232954)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0233574)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0234491)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0234868)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0235220)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0235876)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes
Appomattox River (0236111)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		Yes

Appomattox River (0237913)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0238196)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0238493)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0238917)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0239948)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0240451)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0240873)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0242670)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0242811)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0243775)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0244017)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0244018)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0246252)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Appomattox River (0248402)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes

To view **All 119 Threatened and Endangered Waters records** View 119

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

are present. **View Map of Bald Eagle Concentration Areas and Roosts**

(7 records)

BECAR ID	Observation Year	Authority	Type	Comments	View Map

6		Bryan Watts (Center for Conservation Biology)	Roost	Count 20	Yes
40	2009	Jeannette Parker (VDGIF)	Roost	Count 0	Yes
47	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Summer Concentration Area	Eagle_use High	Yes
48	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Summer Concentration Area	Eagle_use Low	Yes
49	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Summer Concentration Area	Eagle_use Moderate	Yes
50	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Winter Concentration Area	Eagle_use High	Yes
52	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Winter Concentration Area	Eagle_use Moderate	Yes

Bald Eagle Nests (31 records)

View Map of All Query Results
Bald Eagle Nests

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
CC0501	6	Apr 26 2007	Unknown	Yes
CC0505	6	Mar 9 2008	HISTORIC	Yes
CC0601	7	Apr 23 2008	Unknown	Yes
CC0701	3	Mar 9 2008	HISTORIC	Yes
CC0702	4	Apr 23 2008	UNKNOWN	Yes
CC9401	25	Mar 9 2008	UNKNOWN	Yes
CD0201	2	May 1 2002	HISTORIC	Yes
CD0601	6	Mar 9 2008	UNKNOWN	Yes
CD0602	7	Apr 23 2008	Unknown	Yes
CD0603	6	Mar 9 2008	HISTORIC	Yes
CD0801	2	Apr 23 2008	HISTORIC	Yes
CD0802	2	Apr 23 2008	Unknown	Yes
CD0803	2	Apr 23 2008	UNKNOWN	Yes
CD0804	2	Apr 23 2008	Unknown	Yes
CD9603	12	Apr 24 2000	HISTORIC	Yes
CD9604	7	May 10 1999	HISTORIC	Yes
CD9801	17	Apr 25 2007	HISTORIC	Yes
CD9901	16	Apr 23 2008	UNKNOWN	Yes
HO0001	8	Jan 1 2003	HISTORIC	Yes

HO0401	7	Apr 25 2007	Unknown	Yes
PB0401	9	Apr 23 2008	Unknown	Yes
PG0201	6	Apr 26 2006	HISTORIC	Yes
PG0402	9	Apr 23 2008	UNKNOWN	Yes
PG0503	7	Mar 9 2008	HISTORIC	Yes
PG0607	1	Apr 22 2009	UNKNOWN	Yes
PG0705	4	Apr 23 2008	HISTORIC	Yes
PG0706	2	Apr 25 2007	HISTORIC	Yes
PG0802	2	Apr 23 2008	Unknown	Yes
PG8702	22	Jan 1 2001	HISTORIC	Yes
PG9604	14	Jan 1 2003	HISTORIC	Yes
PG9803	7	Apr 24 2000	HISTORIC	Yes

Displayed 31 Bald Eagle Nests

Habitat Predicted for Aquatic WAP Tier I & II Species (28 Reaches - displaying first 20)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species					View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name				
Appomattox River (20802071)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
		060081	ST	IIa	Floater, green	Lasmigona subviridis	
Appomattox River (20802071)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Appomattox River (20802072)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
		060081	ST	IIa	Floater, green	Lasmigona subviridis	
Appomattox River (20802072)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Arthur Swamp (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Arthur Swamp (03010201)	FESE	010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes
		010347	SE	Ia	Sunfish,	Enneacanthus	

					blackbanded	chaetodon	
Arthur Swamp (03010201)	FESE	010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes
Blackwater River (03010202)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Blackwater Swamp (03010202)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
James River (20802061)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (20802062)	FESE	010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
Jones Hole Swamp (03010201)	FESE	010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Jones Hole Swamp (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
North Fork Blackwater Swamp (03010202)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Picture Branch (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Reedy Branch (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Rowanty Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
Rowanty Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Rowanty Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch,	Percina rex	

					Roanoke		
Rowanty Creek (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Swift Creek (20802071)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Swift Creek (20802072)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Swift Creek (20802072)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes

To view **All 28 Tier Reaches records records** View 28

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040105		IIb	Rail, king	Rallus elegans	Yes
040093			Eagle, bald	Haliaeetus leucocephalus	Yes

Virginia Breeding Bird Atlas Blocks (19 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
50074	Beach, CE	1			Yes
50076	Beach, SE	61		III	Yes
51072	Chester, NE	28		III	Yes
51071	Chester, NW	61		III	Yes
51076	Chester, SE	56		III	Yes
52074	Hopewell, CE	7		III	Yes
52073	Hopewell, CW	62	ST	I	Yes
52072	Hopewell, NE	10		III	Yes
52071	Hopewell, NW	1			Yes
52076	Hopewell, SE	67		III	Yes
52075	Hopewell, SW	1			Yes
51062	Petersburg, NE	1		III	Yes
51061	Petersburg, NW	3			Yes
51066	Petersburg, SE	78		II	Yes
51065	Petersburg, SW	47		III	Yes
52066	Prince George, SE	65		III	Yes
50062	Sutherland, NE	1			Yes

50066	Sutherland, SE	65		III	Yes
53073	Westover, CW	15		III	Yes

Public Holdings: (4 names)

Name	Agency	Level
Petersburg National Battlefield	National Park Service	Federal
Richmond National Battlefield Park	National Park Service	Federal
Fort Lee Military Reservation	U.S. Dept. of Army	Federal
Fort Lee Recreation Area	U.S. Dept. of Army	Federal

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
036	Charles City	394	FTSE	I
041	Chesterfield	397	FESE	I
053	Dinwiddie	385	FESE	I
149	Prince George	385	FESE	I
570	Colonial Heights City	324	FTSE	I
670	Hopewell City	335	FESE	I
730	Petersburg City	332	FTSE	I

USGS 7.5' Quadrangles:
Dinwiddie
Sutherland
Beach
Carson
Petersburg
Chester
Templeton
Prince George
Hopewell
Disputanta South
Disputanta North
Westover

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
CU26	Hatcher Run	60	FESE	I
CU27	Gravelly Run	57	FESE	I
CU28	Rowanty Creek	76	FESE	I

CU29	Moores Swamp-Jones Hole Swamp	69	FESE	I
CU31	Nebletts Mill Run-Joseph Swamp	72	FESE	I
CU52	Second Swamp	63	SE	I
CU53	Blackwater Swamp	83	FTSE	I
CU54	Warwick Swamp	70	SE	I
JA39	Appomattox River/Lake Chesdin-Cattle Creek	57	ST	I
JA40	Appomattox River-Oldtown Creek	67	ST	I
JA42	Swift Creek-Third Branch	63	FTSE	I
JA43	Licking Creek-Second Branch	52	ST	II
JA44	Swift Creek-Franks Branch	60	FTST	II
JA45	Appomattox River-Ashton Creek	72	FESE	I
JL03	James River-Proctors Creek	64	ST	II
JL06	James River-Curles Creek	70	SE	I
JL07	James River-Bailey Creek	80	FESE	I
JL08	Powell Creek	62	SS	II

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Technical Appendix I: Environmental Mitigation Strategies

Resource	*Key Applicable Requirements*	*Potential mitigation strategies*	*Potential mitigation areas for project implementation*
Air Quality	***Clean Air Act at 42 USC 7401-7671, and Conformity regulations at 40 CFR 93***	• *Avoid*	• ***Voluntary shifts to other modes*** • ***Clean Fuel & Alternative Fuel Vehicles***
		• *Minimize*	• ***Alternative Fuel program*** • ***transportation emission reduction measures***
		• *Mitigate*	• ***Transportation control measures***
Cultural resources	***National Historic Preservation Act at 16 USC 470***	• *Avoid*	• ***Choose an alternative that avoids the site, district or resource***
		• *Minimize*	• ***Landscaping for historic properties;*** • ***In place preservation for Archaeological Sites*** • ***Minimize the project footprint***
		• *Mitigate*	• ***Excavation and recording for archaeological sites*** • ***Use design features (e.g., weathered guardrail, stamped pavement, or street furniture to maintain context)*** • ***Relocate or reuse transportation infrastructure for other purposes*** • ***Re-purpose rights-of-way (e.g., rails trails)***
Forested and other natural areas	***Agricultural and Forest District Act (Code of VA Sections 15.2-4305; 15.2-439; 15.2-4313); Open Space Land Act (Section 10.1-1700-1705, 1800-1804)***	• *Avoid*	• ***Choose an alternative that avoids the site, district or resource***
		• *Minimize* •	• ***Use a context sensitive design approach to minimize the project footprint*** • ***Use design exceptions and variances***
		• *Mitigate*	• ***Replace the property in kind and nearby*** • ***Replace the property in kind and offsite*** • ***Use mitigation banks to replace the property***
Floodplains		• *Avoid*	• ***Choose an alternative that avoids the site, district or resource*** • ***Choose an alignment that avoids the site, district or resource*** • ***Encourage development in growth areas outside of the special flood hazard area***
		• *Minimize*	• ***Choose designs that limit the extent of encroachment into the special flood hazard areas*** o ***Cross special flood hazard areas at their narrowest point*** o ***Use bridging to minimize encroachments*** o ***Reduce median and lane widths where needed and practical***

Resource	*Key Applicable Requirements*	*Potential mitigation strategies*	*Potential mitigation areas for project implementation*
			○ ***Use asymmetrical widening (i.e., widen on the side away from the special flood hazard area)*** • ***Locate stormwater management structures outside special flood hazard areas***
		• Mitigate	• ***Ensure that development in the special flood hazard area complies with the locality's floodplain ordinance.*** • ***Encourage development in the special flood hazard area to exceed the minimum standards of the locality's floodplain ordinances.*** • ***Identify projects to mitigate repetitive loss and severe repetitive loss structures in the community's hazard mitigation plan, so that the community can apply for funding for these projects when FEMA grants become available.***
Neighborhoods and communities, and homes and businesses	**Uniform Relocation Assistance and Real Property Acquisition Policy Act at 42 USC 4601 et seq.** **Executive Order 12898 (Environmental Justice)**	• Avoid	• **Choose an alternative that minimizes property takings/relocation**
		• Minimize	• **Minimize the project's footprint** • **Select lower design criteria** • **Use Context sensitive designs solutions for communities (appropriate functional and/or esthetic design features)**
		• Mitigate (for homes and businesses in accord with 49 CFR 24)	• **Mitigation on-site or in the community** • **Sound barriers or visual screening**
Parks and recreation areas	**Section 4(f) of the U.S. Department of Transportation Act at 49 USC 303**	• Avoid	• **Cooperative Planning (*i.e.*, ensuring that park master plans include future transportation facilities)** • **Choose an alternative that avoids the site, district or resource**
		• Minimize	• **On site screening or on-site replacement of facilities**
		• Mitigate	• **Replace the affected property** • **Improve the affected property by adding facilities**
	Section 6f of the Land and Water Conservation Act	• Avoid	• **Cooperative Planning (*e.g.*, ensuring that park master plans include future transportation facilities)** • **Choose an alternative that avoids the site, district or resource**
		• Minimize	• **Minimization the project footprint before required mitigation.**
		• Mitigate	• **Replace the affected property adjacent to existing (requires replacement with a property with at least the same area and of equivalent use)**
	Farmland Protection Policy	• Avoid	• **Choose alignments that avoid the impact**

Resource	*Key Applicable Requirements*	*Potential mitigation strategies*	*Potential mitigation areas for project implementation*
Prime and Unique Farmland	**Act of 1981 at 7 USC 4201-4209, Agricultural and Forest District Act (Code of VA Sections 15.2-4305; 15.2-4307 – 4309; 15.2-4313)**	• Minimize	• **Use a context sensitive design approach to minimize the project footprint** • **Use design exceptions and variances**
		• Mitigate	• **Replace the forestry operation within existing agricultural/forestal district replacement property for open spaces easements to be contiguous with easement** • **Landscaping within existing rights of way;** • **Environmental compliance monitoring**
Threatened and Endangered Species	**Endangered Species Act at 16 USC 1531-1544**	• Avoid	• **Choose alignments that avoid the impact** • **Memoranda of Agreements for species management;**
		• Minimize	• **Time of year restrictions; construction sequencing** • **Minimize footprint using design exceptions and variances.** • **Environmental compliance monitoring**
		• Mitigate	• **Relocation of species to suitable habitat adjacent to project limits** • **Develop habit(s) on transportation right-of-way and structures (e.g., nesting sites on bridge structures)**
Wetlands and water resources	**Clean Water Act at 33 USC 1251-1376; Rivers and Harbors Act at 33 USC 403** **Chesapeake Bay Act, VA.**	• Avoid	• **Choose an alternative that avoids the site, district or resource** • **Choose an alignment that avoids the site, district or resource**
		• Minimize •	• **Choose designs that limit the encroachment into wetlands and riparian buffers** o **Cross jurisdictional wetlands a their narrowest point** o **Use bridging to minimize takings of jurisdictional wetlands** o **Reduce median and lane widths where needed and practical** o **Use asymmetrical widening (i.e., widen on the side away from jurisdictional wetlands)** o **Avoid stream relocations** • **Design outfalls and filters to comply with NPDES requirements** • **Locate stormwater management structures outside jurisdictional wetlands**
		• **Mitigate**	• **In kind replacement at ratios greater than 1:1** • **Restoration of damaged wetlands** • **Recreation of destroyed wetlands** • **Creation of artificial wetlands** • **Replace the property in kind and nearby** • **Replace the property in kind and offsite** • **Use mitigation banks to replace the property**

Appendix J Bicycle and Pedestrian Goals, Objectives, and Policies (originally from the 2040 Plan)

Goal	Objective	Policy
Launch a Bikeway System in Tri-Cities Area	Improve and update Bikeway Plan for the Tri-Cities Urban Area	• Coordinate with local jurisdictions and interesting groups for their awareness, interest and ideas. • Use the MPO's Policy and Technical Committees to evaluate non-motorized issues. • Create a Bikeway committee to address bicycle needs. • Follow VDOT's recommended guidelines to establish and implement the bikeway system. • Mainstream, bikeway planning and greenway planning into transportation planning.
	Develop bicycle routes, lanes, and paths/trails throughout the Tri-Cities Urban Area.	• Develop a bikeway system that provides access to and among major activity centers, public transportation routes and recreation facilities. • Give high priority to projects that close gaps in Tri-Cities Area Bikeway Network (especially projects that cross jurisdictional boundaries. • Encourage bikeways through scenic areas. • Encourage maintenance and monitoring efforts that support implementation and operation of the Tri-Cities Area Bikeway Network. • Request VDOT to include bicycle features on all highway construction, where there is support from the locality and the public.
	Develop direct, convenient, safe and easy to use bikeways	• Develop bikeway information graphics that clearly identify bikeways. • Encourage local jurisdictions to maintain and provide interested citizen with maps of the bikeway system. • Encourage using roadway-maintenance funds to make routes safer for bicyclists by realigning grates, repairing potholes, and making traffic signals more responsive to bicycles, *etc*. • Develop an off-street bike network integrated with the on-street system. • Support local government efforts to improve bicyclist safety by encouraging enforcement of the Virginia Vehicle Code for motorists and cyclist alike. • Encourage investment choices that help achieve the 2040 Long Rang Plan goals of

Goal	Objective	Policy
		reducing bicyclist fatalities, injuries and crashes by 5 percent from 2000 to 2040. • Encourage and support the creation comprehensive safety awareness, driver education, cyclist education and diversion training programs for cyclists and motorists.
Encourage using the bicycle as an alternate means of everyday transportation	Provide bikeway access to and within major trip generators	• Encourage bicycle connectivity to school and recreational sites. • Encourage bicycle paths or trails within parks, recreational areas and school sites. • Connect commercial/educational areas (shopping center, central business district, universities) with nearby residential areas along safe transportation routes • Encourage localities to establish bikeways that link with major roadways.
	Plan support facilities and service for bicyclists	• Encourage bicycle-parking facilities in all new employment and commercial developments. • Encourage bicycle-parking facilities at new apartment complexes, schools, parks, churches, hospitals, public buildings, and other areas of large gatherings. • Encourage the installation of bicycle-parking in the public right-of-way • Work with Virginia State University, Richard Bland College and area schools to promote bicycle commuting and assist in siting bicycle parking areas. • Encourage localities adopting zoning requirements for lockers and showers to be added to new buildings • Consider requiring bicycle parking at major public events
Make bicycling and walking safer	Develop a public-awareness program involving bicyclist, motorist and pedestrians on the use and safety bikeways.	• Expand the bicycle-safety education program in public schools. • Use civic clubs and associations, as well as local police and sheriff's departments, for the continuation of bicycle-safety clinics. • Use mass media (e.g., television, radio and newspapers) to promote a bicycle safety public-awareness program.
	Increase enforcement of traffic laws for the protection and safety of bicyclists and pedestrians	• Apply the bicycle safety-enforcement program to children as well as to adults. • Promote citizen participation in planning, encouraging bicycle and pedestrian safety education and public awareness programs
	Increase awareness of the benefits of bicycling and walking and of available resources and facilities	• Market the health benefits of walking and bicycling.
	Complete a network of sidewalks and trails that serve short trips to employment centers, school, commercial districts, bus stops, and institutions.	• Complete missing sidewalk connections wherever possible to make direct route for walking. • Identify obstacles to walking to schools.

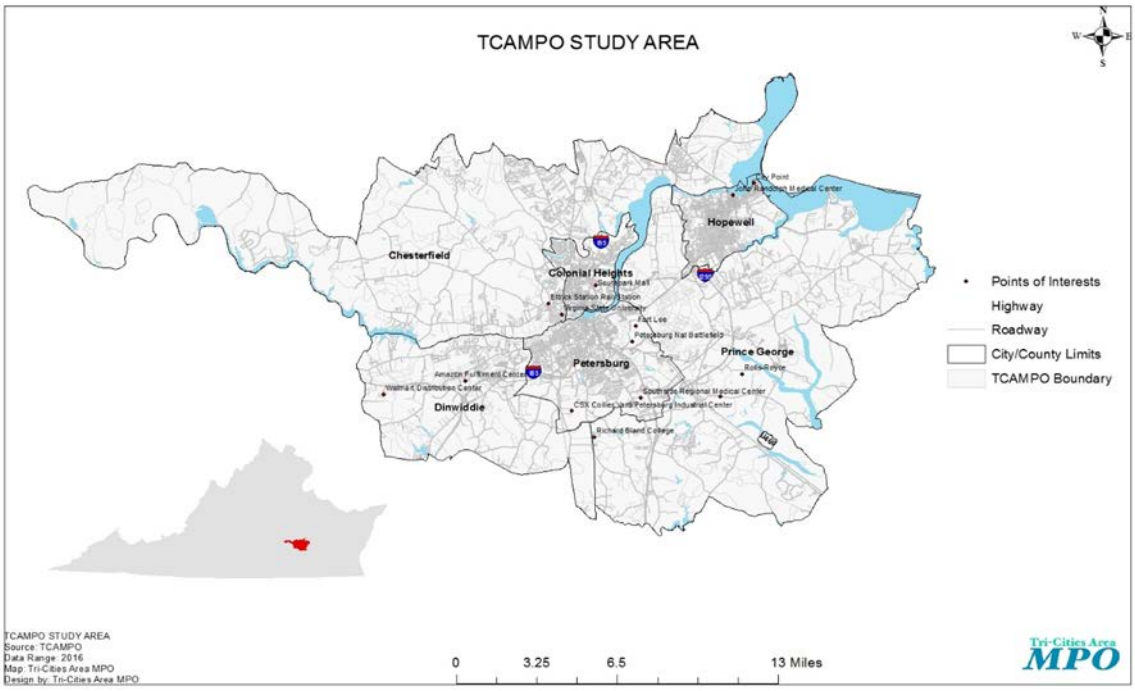
Goal	Objective	Policy
		• Consider the installation of sidewalks, as part of all transportation improvements.
Funding	Develop an equitable and effective regional funding and implementation process.	• Fund bicycle projects to complete the Tri-Cities Area Network • Consider the benefits of bicycling improvements in the allocation of transportation funding and in developing performance measures including vehicle trip community livability and public health. • Use Congestion Mitigation and Air Quality (CMAQ) funding for bikeway projects such as bicycle and pedestrian facilities (paths, bike rack, support facilities, etc.) • Identify new funding sources to support operation and maintenance of bicycle and pedestrian facilities. • Help local jurisdictions identify research state and federal funding source to help fund bikeways.
Multimodal integration	Develop seamless transfers between bicycling and public transportation	• Encourage transit agencies to provide, maintain and promote convenient, secure bicycle parking at transit stops and stations. • Ensure that bicycles are accommodated on all forms of public transit. Foster collaboration between local jurisdictions and regional transit agencies to improve bicycle access to transit station in the last mile surrounding each station.
Enhance local and regional transit connectivity	Connectivity	• Shorten bus headways (the time between buses) on routes with strong ridership. • Install passenger information systems and other passenger support infrastructure at bus stops (*e.g.,* hardstands, shelter, lighting, seating bus schedules, routes connectivity maps etc.) • Maintain schedule adherence through operational improvements along arterials that are planned for transit improvements. • Encourage the PAT riders to use the PAT route schedule app, Route Shout (mobile app). • Develop or integrate Bicycle and Pedestrian Trails into the mobile app.

Technical Appendix K: PLAN2045 Project Evaluation and Scoring Process (12/28/21)

1.0 Introduction

The purpose of this report is to describe the methodology which TCAMPO staff used in the evaluation of the universe of transportation projects as vetted and approved by the TAC/PLAN2045 Committee for consideration and inclusion in the fiscally constrained 2045 Long Range Transportation Plan, also known as *PLAN2045* or simply the plan. The scale and type of projects to be specifically listed in the plan are described as Regionally Significant for Air Quality, which are required to be listed separately in a Metropolitan Transportation Plan (MTP) and Metropolitan Transportation Improvement Program (MTIP).

Figure 1: TCAMPO Study Area



An overall objective of the project evaluation process is to fully comply the TCAMPO transportation planning process in the direction of a 'Performance-Based Planning and Programming (PBPP)' as directed by the federal transportation authorization bill 'Moving Ahead with Progress in the 21st Century Act' (MAP-21)' of 2012, which calls on metropolitan planning organizations, like the TCAMPO, to establish a performance and outcome-based program for federal funding sources, and to invest resources in projects that collectively addresses the ten federal planning factors and make progress towards seven national goals. The 'Fixing America's Surface Transportation Act (FAST Act) of 2015

continued the performance-based planning and programming requirements of MAP-21.

A first step in applying PBPP principles was taken by the TCAMPO staff by developing vision, guiding principles, goals, and objectives for the plan. TCAMPO conducted an online Metroquest public survey in January 2021 targeted for public input in defining what vision, goals, and objectives should be for the plan. The survey resulted in around 85 completed surveys. A second online Metroquest survey (Problems, Needs, and Issues survey) was conducted in July-August 2021, which resulted in 125 surveys and various social media comments. Based on the results of these surveys, staff synthesized the responses, closely aligned them with federal and state transportation goals and presented them to the TAC/*PLAN2045* Advisory Committee for their input. The Vision, Guiding Principles, Goals and Objectives for the plan was then endorsed by the TAC/PLAN2045 Committee and TCAMPO Policy Committee in October 2021.

TCAMPO staff (with the technical assistance by an OIPI-funded consultant under the GAP program) have developed a performance-based evaluation method in which staff will be assessing the degree to which any given project will advance the region toward achieving one or multiple transportation goals and objectives and would be evaluated by a set of performance measures. This will be done through quantitative evaluation of project benefits to the extent possible given data and staff capacity constraints, in a way that is logically considered, uniform and consistent. Staff have tried to align some of the performance measures to the those used in the **Commonwealth's SMART SCALE** project evaluation process.

TCAMPO staff's intention is to assist *PLAN2045* TAC Members/Project Champions by providing full transparency prior to the project evaluation process and to come up with a **Needs-Based, Goal-Based** and **Performance-Based** fiscally constrained transportation project list for the Tri-Cities Area.

Any project not specifically listed in the plan, but which has a logical connection or potential impact on advancing one or multiple Plan2045 goals and objectives will be considered as Local/Programmatic Projects and will be "Consistent with *PLAN2045*" in the future.

2.1 Project Evaluation Goals and Performance Measures

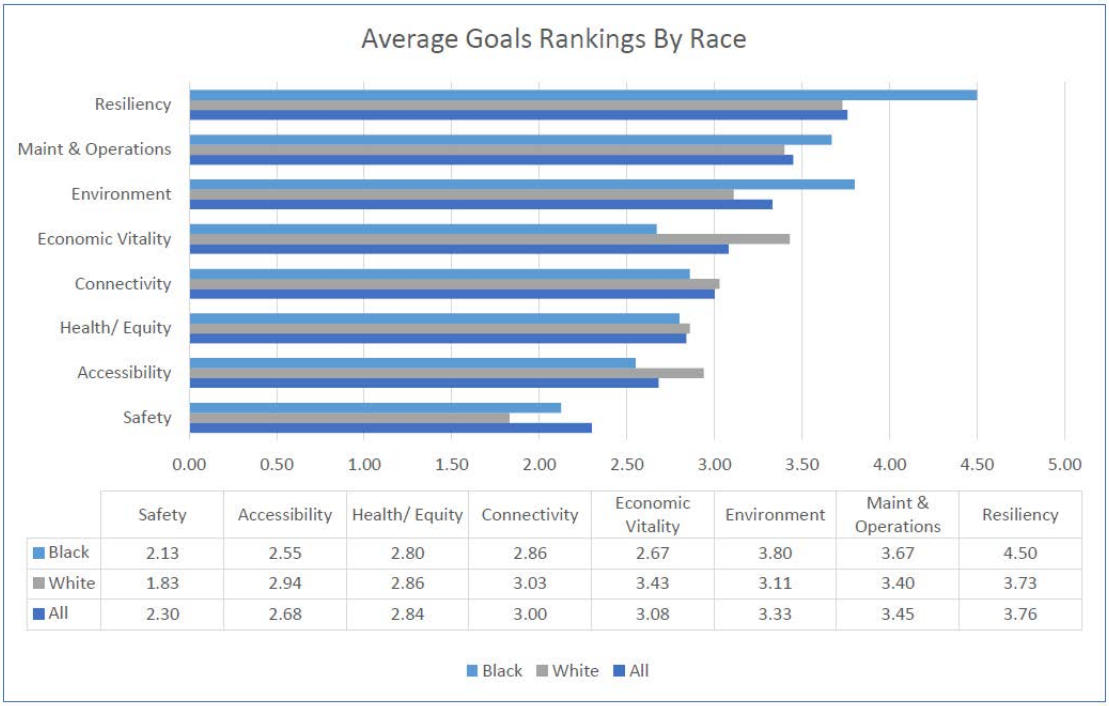
Each project in the 'Universe of Regionally Significant Projects' will be evaluated based on the five PLAN2045 goals as established below:

- Safety
- Mobility/Congestion
- Equity, Accessibility, and Multimodal Connectivity

- Environment
- Economic Development

TCAMPO conducted a public on-line survey in January 2021 to gain an understanding of the public opinions on the of transportation goals and priorities in the region. Exhibit 1 displays the survey results.

Exhibit 1: Survey Results - Transportation Priorities



	Safety	Accessibility	Health/ Equity	Connectivity	Economic Vitality	Environment	Maint & Operations	Resiliency
Black	2.13	2.55	2.80	2.86	2.67	3.80	3.67	4.50
White	1.83	2.94	2.86	3.03	3.43	3.11	3.40	3.73
All	2.30	2.68	2.84	3.00	3.08	3.33	3.45	3.76

Guided by the survey inputs and TAC/*Plan2045* Committee recommendations, TCAMPO staff recommend the following goal weights for project scoring in PLAN2045 (Exhibit 2). Performance Measures within each goal area would have different weights as well.

Exhibit 2: PLAN2045 Goal Weights for Project Scoring

PLAN2045 Goal	Goal Weight
Safety	25%
Mobility/Congestion	15%
Equity/Accessibility/Multimodal	25%
Environment	10%
Economic Development	25%
Total	100%

2.1 Safety

Safety is weighted at **25%** of the total project score. Safety will be evaluated based on two performance measures weighted as shown in Exhibit 3. These performance measures are

based on Smart Scale Project Evaluation Measures and are modified and customized to suit TCAMPO needs.

Exhibit 3: Safety Performance Measure Weights

Performance Measure (PM)	PM Weight
Sl. Crash Frequency	50%
S2. Crash Rate	50%
Total	100%

For roadway (including bike/ped) projects both of the measures would be used. For transit and freight projects only the first measure is used.

S.1. Crash Frequency

Description:

Reduction in Equivalent Property Damage Only (EPDO) of Fatal and Injury Crashes due to project implementation.

Explanation of Measure:

Equivalent Property Damage Only (EPDO) is a method used to standardize crashes based on severity. Virginia has adopted a statewide weighting for use in the Smart Scale program. For example, a crash resulting in a fatality or severe injury is weighted as heavily as 85 times that of a crash with only property damage. The full crash severity is listed below in Exhibit 5.

Exhibit 4: Crash Severity

Crash Severity	Rounded Value	Weighting
Fatality/Severe Injury (K)	$850,000	85
Moderate Injury (A)	$100,000	10
Mild Injury (B)	$50,000	5

This measure looks at the average number of fatal and injury crashes over a five-year period before and after the proposed improvement, weighted by severity. The expected change in crashes is calculated using a crash modification factor (CMF). Virginia has adopted standardized CMFs for most project types based on research compiled by the Federal Highway Administration (FHWA) and state agencies.

Outcome Measured:

The change in the annual expected number of fatal and injury crashes weighted by severity (equivalent property damage only)

Data Requirements/Analytical Tools:

- Most recent five years of crashes from VDOT Roadway Network System (RNS) geospatial (GIS) data prepared by Traffic Engineering Division using the Microsoft Power BI tool.
- SYIP to determine if and when improvements have been implemented in proximity to the project (250 feet) in the last five years
- PLAN2045 simplified Planning Level Crash Modification Factors (CMF) drawn from Virginia SMART Scale Planning Level Crash Modification Factors.

Methodology:

1. Compile five years of fatal and injury crashes within project limits. Project limits are defined as the 250 feet buffer area around the project. For roadway segments, include the intersection(s).
2. Review the SYIP to determine if any improvements have been made within the project limits. If so, shorten analysis period to the post-improvement period only.
3. Weight the severity of each crash by EPDO using the statewide Smart Scale weighting and calculate the average annual EPDO.
4. For roadway and bike/ped projects, find the appropriate crash modification factor (CMF) for the project improvements. The percent expected crash reduction (PECR) is calculated as follows: PECR = 1 - CMF. Most improvements have been standardized for statewide usage. For transit, passenger rail, and park and ride lots, the expected reduction in VMT will be used to calculate crash reduction. For freight rail, the expected reduction in truck traffic (and corresponding truck crashes) will be used.
5. Multiply the PECR by the annual average EPDO of fatal and injury crashes to determine the expected reduction

S.2. **Crash Rate**

Description:

Reduction in Equivalent Property Damage Only (EPDO) of Fatal and Injury Crashes per Vehicles Miles Travelled (VMT).

Explanation of Measure:

This measure builds on the data and expected crash reductions in Measure S.1. Whereas Measure S.1. is focused on the overall number of fatal and injury crashes, this measure is focused on the rate of fatal and injury crashes per million vehicle miles (segments) or million entering vehicles (intersections). This measure allows for better comparison between projects on routes with different traffic volumes.

Outcome Measured:

The change in the annual rate of fatal and injury crashes weighted by severity (equivalent property damage only) per 1 million vehicle miles (segments) or 1 million entering vehicles (intersections)

Data Requirements/Analytical Tools:

- All data used in S.1.
- Latest available VDOT Annual Average Daily Traffic (AADT) data

Methodology:

1. Determine the project limits as defined in S1. For segments calculate the annual traffic volume for the base year in vehicle miles (VM = Length * ADT). For projects that cross multiple segments, the annual traffic volume is calculated as the average volume for all segments. For intersections the measure is entering vehicle (EV = ½ * sum of ADT on all approaches).
2. Calculate annual EPDO of fatal + injury crashes avoided (S1.). Convert into crash rate using the following formula: Crash Rate Reduction = EPDO of fatal + injury crashes avoided /VM or EV as appropriate.

2.2 Mobility/Congestion

Mobility is weighted at **15%** of the total project score. Mobility will be evaluated based on two performance measures weighted as shown in Exhibit 5. These performance measures are similar to Smart Scale Project Evaluation Measures and are modified and customized to suit TCAMPO needs.

Exhibit 5: Mobility Performance Measure Weights

Performance Measure (PM)	PM Weight
Ml. Throughput/Congestion Reduction	66%
M2. Delay Reduction	34%
Total	100%

M1. Person Throughput

Description:

Improvement in auto travel speed in corridor total (multimodal) person attributed to the project (build versus no-build).

Explanation of Measure:

The number of vehicles successfully entering the system (project limit) during the analysis period (peak period) is defined as vehicle throughput. By multiplying the vehicle throughput by the average vehicle occupancy rate person throughput can be determined. Peak period for the analysis is defined as AM Peak Period (6:30 AM-8 :30 AM) or PM Peak Period (4:30 PM-6:30 PM) as identified in SPS.

Outcome Measured:

The potential benefit of the project in increasing the number of users (persons) served within the peak-period.

Data Requirements/Analytical Tools:

- Florida DOT LOSPLAN Tool for Regionally Significant highway projects
- HCS-based tools for smaller highway projects, etc.
- SPS data
- 2045 AADT
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway Projects

   This analysis requires the use of the Statewide Planning System (SPS) to estimate of future no- build (without project) and build (with project) person throughput.

   - Take the SPS data and code into LOSPLAN (or another tool). Code the new facility into the same tool with assumed posted speed limit, facility type, and number of lanes.
   - Calculate total difference in Vehicles Hours Travelled (VHT) between the no-build and the build conditions.

2. Transit/Active Transportation/Freight Projects

   For trips on other modes, estimate total person throughput for existing and new users in the peak period. For transit projects, compute the number of equivalent vehicles on roadway(s) within the impacted area using a forecasted ridership per hour and an assumed transit occupancy. Once the number of vehicles on impacted roadway(s) is computed, determine the peak period person throughput for no-build and build conditions by multiplying an average vehicle occupancy rate by the vehicle throughput.

M2. Person Hours of Delay

Description:

Decrease in the number of person hours of delay (Speed minus Free Flow Speed) in the corridor attributed to the project.

Explanation of Measure:

The travel time (for all vehicles entering and attempting to enter the system during the analysis period) minus the theoretical travel time at the free-flow speed. This difference is divided by the number of vehicle trips to obtain mean delay per trip. The free-flow speed is defined as the minimum of the maximum safe speed.

Outcome Measured:

The potential benefit of the project in reducing peak-period person hours of delay.

Data Requirements/Analytical Tools:

- 2017 -2045 Richmond-Tri-Cities (RTC) Travel Demand Model
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology:

1. Highway Projects

   This analysis requires the use of the LOSPLAN tool (or other HCM-based tool) to estimate future no-build (without project) and build (with project) person throughput and congested travel speeds.

2. Transit/Active Transportation/Freight Projects

   For trips from other modes, estimate total person travel time savings for existing and new users in the peak hour. The person travel time savings for existing users is associated with any improvement in frequency or travel time associated with the project. For active transportation projects the mode shift from vehicles to active transportation projects will be used to calculate the overall reduction in person hours of delay.

2.3 Equity/Accessibility (to Jobs and Non-Work Destinations)/Multimodal

Equity and Accessibility is weighted at **25%** of the total project score. Equity and Accessibility will be evaluated based on four performance measures weighted as shown in Exhibit 6. Fifty percent of the project score for this goal measure is only applicable to Environmental Justice Areas (EJ Areas) to make the project scoring process equitable. Overall, **Equity** is weighted as **10%** of the total project score.

Exhibit 6: Equity/Accessibility/Multimodal Performance Measure Weights

Performance Measure (PM)	PM
EA1. Access to Jobs	20%
EA2. Access to Jobs (EJ Areas)	20%
EA3. Access to Non-Work Destinations	20%
EA4.Access to EJ Non-Work Destinations	20%

EA5. Increase Access to Multimodal	20%
Total	100%

EA1. Access to Jobs

Description:

Increase in average job access (Distance of ten miles by auto; three miles by bicycle; and one mile by walking or transit) for all populations.

Explanation of Measure:

Note: The first four Accessibility performance measures are essentially calculating the access to jobs or destinations as a result of planned project improvements.

Access to jobs is calculated for all areas within the TCAMPO Metropolitan Planning Area (MPA) boundary and if needed for all populations residing within the southern RRTPO MPA boundary.

Outcome Measured:

The average access to employment opportunities because of project implementation for all populations.

Data Requirements/Analytical Tools:

- 2045 Horizon Year total employment (RRTPO and TCAMPO SE data)
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)
- Bicycle or pedestrian system connectivity changes for active transportation projects (as it relates to filling gaps in existing bike/ped network or the last mile connection to transit service) .

Methodology:

1. For all Highway, Transit and Active Transportation Projects:

    - Use the appropriate distance for each mode (ten miles by auto; three miles by bicycle; and one mile by walking or transit calculates the improvement in number of jobs reachable within that distance resulting from a proposed

transportation improvement and generates job accessibility scores for each project. The average number of jobs reachable represents the total jobs accessible from each TAZ to every other TAZ.

2. For all other projects:

    - The job accessibility is not measured for freight and rail projects.

EA2. Access to Jobs (EJ Areas)

Description:

Increase in average job access (Distance of ten miles by auto, three miles by bicycle; and one mile by walking or transit) for Environmental Justice (EJ) populations.

Explanation of Measure:

This measure is similar to the previous measure (EA2) except the fact that Access to Jobs (EJ areas) is calculated only for Environmental Justice Areas (as defined above) within the TCAMPO Metropolitan Planning Area (MPA) boundary (and southern RRTPO MPA) and for the respective EJ population residing within EJ Areas. Exhibit 8 shows the EJ Areas in the Tri-Cities region.

Outcome Measured:

The change in average access to employment opportunities as a result of project implementation for the Environmental Justice (EJ) population.

Data Requirements/Analytical Tools:

- All Data/Analytical tools required for EA1.
- EJ areas in the Tri-Cities Region and southern Richmond Region (EJ Flagged TAZs)
- EJ Population (Minority, Low Income, Limited English Proficiency (LEP) population) for 2017 and 2045.

Methodology:

For all Highway, Transit and Active Transportation Projects

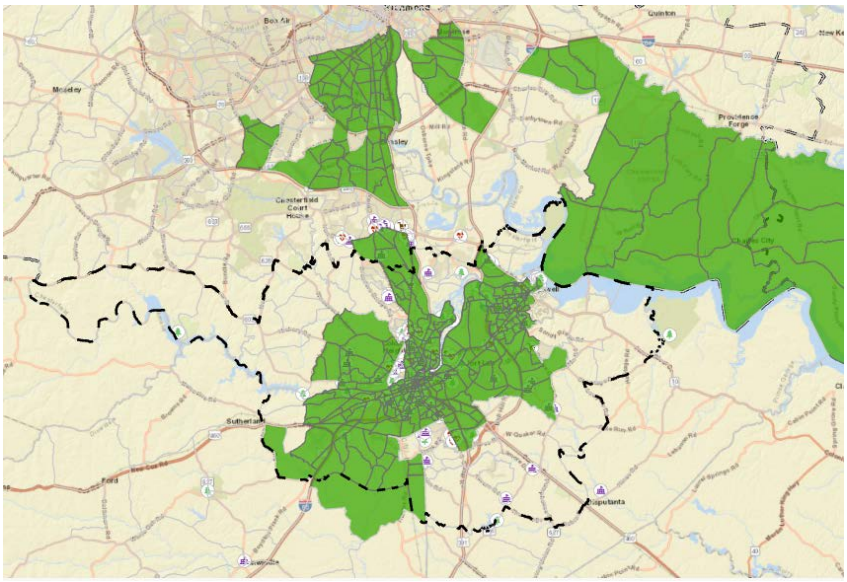
- The methodology is identical to EA2 with the following differences:
    - The number of jobs reachable represents the total jobs accessible from EJ flagged TAZ to every other TAZ

- To get the job accessibility only EJ population residing within the EJ areas are considered.

For all other projects:

- The job accessibility for Environmental Justice (EJ) populations is not measured for freight and rail projects.

Exhibit 8: EJ Areas in the Tri-Cities and Southern RRTPO Planning Areas (Minority, Low Income, and/or LEP)



EA3. Access to Non-Work Destinations

Description:

Access to non-work destinations (similar to SMART SCALE's walking distance methodology) for all populations.

Explanation of Measure:

This measure is similar to EA1 but instead of jobs it measures the access to destinations as a result of planned project improvements. For this analysis - grocery stores, pharmacies, schools, colleges, health care facilities, parks, libraries, and government centers are considered as non-work destinations.

Outcome Measured:

The change in average access to weighted destinations as a result of project

implementation for all populations.

Data Requirements/Analytical Tools:

- Bicycle or pedestrian system connectivity changes for active transportation projects (as it relates to filling gaps in existing bike/ped network or the last mile connection to transit service).
- Destinations (Grocery Stores, Pharmacies, Schools, Colleges, Health Care Facilities, Parks, Libraries and Government Centers) location by TAZs.
- Number of persons and jobs in 1-mile radius
- Existing and Committed Highway and Transit Networks (E+C)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)

Methodology

1. For all Highway, Transit and Active Transportation Projects

   The total reachable destinations within one mile multiplied by population plus employment divided by the TAZ population gives the total non-work destination score.

2. For all other projects

   The access to non-work destinations is not measured for freight and rail projects.

EA4. Access to Non-Work Destinations (El Areas)

Description:

Access to non-work destinations within one mile (similar to SMART SCALE's walking distance methodology for all population for all modes) for Environmental Justice (EJ) TAZes.

Explanation of Measure:

This measure is similar to the previous measure (EA3) except the fact that Access to Destinations (EJ areas) is calculated only for the EJ populations and/or jobs within EJ Areas.

Outcome Measured:

The access to weighted destinations as a result of project implementation for the Environmental Justice (EJ) population.

Data Requirements/Analytical Tools:

- All Data/Analytical tools required for EA3.
- EJ areas in the Tri-Cities Area and southern RRTPO Area (EJ Flagged TAZs)
- EJ Population (Minority, Low Income, Elderly, Disabled, Limited English Proficiency (LEP) and Zero-Car Household population) for 2017 and 2045.

Methodology:

1. For all Highway, Transit and Active Transportation Projects

   The methodology is identical to EA3 with the following differences.

   - The number of non-destinations reachable represents the total non-destinations accessible from EJ flagged TAZ to every other TAZ.

2. For all other projects

   - The access to non-work destinations for Environmental Justice (EJ) populations is not measured for freight and rail projects.

2.4 Environment

Environment is weighted at **10%** of the total project score. Environment will be evaluated based on two performance measures weighted as shown in Exhibit 12.

Exhibit 12: Environment Performance Measure Weights

Performance Measure (PM)	**PM**
E1. Air Quality Impact	50%
E2. Sensitive Features	50%
Total	100%

E1. Air Quality Impact

Description:

Reduction of annual VOC and NOx emissions in metric tons attributed to the project.

Explanation of Measure:

Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for six common air pollutants (also known as "criteria air pollutants"). These pollutants can harm our health and the environment, and cause property damage. Some of these pollutants are emitted to the atmosphere through passenger vehicle transportation . The pollutant emissions from passenger vehicle transportation includes ozone precursors-volatile organic compounds (VOC) and nitrogen oxides (NOx), and other pollutants particulate matter (PM2.5 and PMlO), sulfur oxides (SOx) and carbon monoxide (CO). Since the Richmond/Tri-Cities region historically had issues meeting the ozone standard, the current Air Pollution measure analysis has been streamlined to limit to ozone precursors only i.e. VOC and NOx. Transportation- related SOx, CO, and PM2.5, PMlO are not a concern in the Richmond/Tri-Cities region. These emissions can be calculated at the project scale on the basis of per-mile factors. This measure seeks to weigh the potential emission reduction due to the change in travel characteristics attributed to the project. If there is reduction in pollutant emission attributed to the project, then the project will be given a score.

Outcome Measured:

Annual reduction of the pollutant emissions in metric ton.

Data Requirements/Analytical Tools:

- LOS Plan Tool by Florida DOT (for Regionally Significant Projects)
- CMAQ Tool (for other projects)
- Project Limit Shapefile
- Project Conceptual Sketches (for complex projects like interchanges)
- National average on-road passenger vehicle fuel economy from Environmental Protection Agency (EPA) data i.e. 22 miles/gallon of gasoline.

- EPA Motor Vehicle Emission Simulator (MOVES2014a) Emission Factors for Richmond/Tri-Cities Area CMAQ Analyses {2016 Update) (Exhibit 15)
- National average criteria pollutant emissions rates from the EPA MOVES2014a (Exhibit 16)

Exhibit 15: MOVES2014a Emissions Factors for Tri-Cities Area

Speed1	Speed2	NOX Factor	VOC Factor
0	2.5	0.6108	0.6967
2.5	7.5	0.2552	0.1659
7.5	12.5	0.1699	0.0908
12.5	17.5	0.1424	0.0652
17.5	22.5	0.1271	0.0521
22.5	27.5	0.1166	0.0434
27.5	32.5	O.lll8	0.0382
32.5	37.5	0.1051	0.0341
37.5	42.5	0.1038	0.031
42.5	47.5	0.1033	0.0287
47.5	52.5	0.1038	0.0272
52.5	57.5	0.1055	0.0263
57.5	62.5	0.1091	0.0259
62.5	67.5	0.119	0.0266
67.5	72.5	0.1373	0.0296

Exhibit 16: National <u>average</u> criteria <u>p</u>ollutant <u>emissions rates</u>

§

Pollutant	Average Emission Rates	Emission Calculation
NOx	0.9018 grams/mile	(VMT (miles) * NOx Emission Rate (grams/mile)
VOC	0.686 grams/mile	(VMT (miles)* VOC Emission Rate (grams/mile)

<u>Methodology:</u>

1. Highway, Transit, and Active transportation projects:

    - Look up the 2045 build and 2045 no-build speeds and compare the NOX and VOC values in Exhibit 15.

2. For all other projects:

    - The NOX and VOC are not measured for freight and rail projects.

E2. Sensitive Features

Description:

Percentage of Wetlands, Resiliency Water Hazard Zones, Conserved Land, Habitat, and Cultural Resources, etc. in 1/4 mile of the project limit (as per CDR map of Conservation Lands Database (ConserveVirginia V3.0).

Explanation of Measure:

Infrastructure projects have impacts on watersheds, wetlands, and habitats among many other aspects of the natural environment. Additionally, building in environmentally sensitive areas such as floodplains or storm surge areas can result in reduced functionality during storms. Beyond the natural areas, lands are sometimes set aside for public use or conserved from development due to natural, agricultural, or historic value - a value that can be impaired by adjacent development. This measure seeks to weigh the potential for negative impacts on the environment and conserved lands from a project. Exhibit 13 shows the environmentally sensitive and conservation lands in the Tri-Cities Area from the DCR map).

Outcome Measured:

Percentage of environmentally sensitive and conservation lands within 1/4 mile of the project. This measure is an inverse measure meaning that a project with no impacts will receive the highest score.

Data Requirements/Analytical Tools:

Following geographic features datasets in a spatial format like shapefile:

- Conservation Lands Database (by CDR)
- Project limits shapefile

Methodology:

1. Dissolve all environmentally sensitive and conservation areas into one feature.

2. Create a 1/4 mile buffer around each project.
3. Run the union tool to determine the areas of overlap between the buffer and the environmental and conservation areas feature.
4. For each project, reduce the overlap area based on the project tier shown in Exhibit 14 and formula: Overlap Area * Adjustment Factor = Impact Area
5. Calculate the impact percentage by dividing the impact area by the total area of the buffer

Exhibit 13: Environmentally Sensitive and Conservation Lands in the Tri-Cities Area

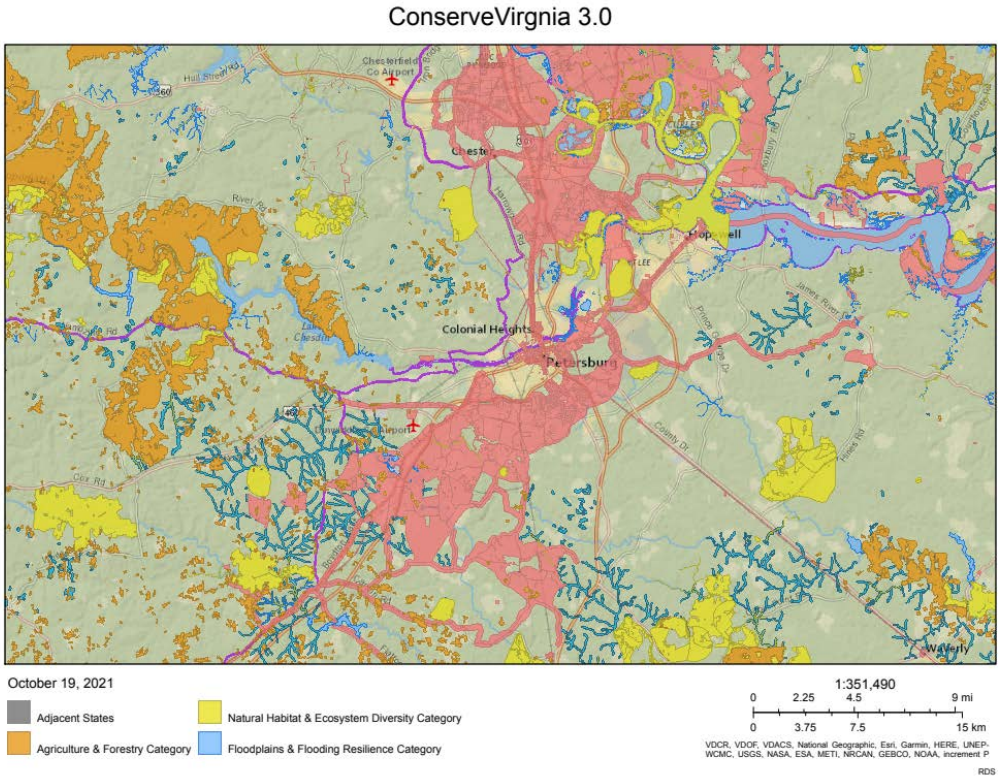


Exhibit 14: Adjustment Factor for Projects

Project Tier	Adjustment Factor
Tier I	10%
Tier 2	30%
Tier 3	50%

2.5 Economic Development

Economic Development is weighted at **25%** of the total project score. Economic Development will be evaluated based on four performance measures weighted as

shown in Exhibit 8.

Exhibit 9: Economic Development Performance Measure Weights

Performance Measure (PM)	PM Weight
ED1. Job Growth (2017-2045)	60%
ED2. Freight Jobs	20%
ED3. Activity Centers	20%
Total	100%

ED1. Job Growth

Description:

Increase in the decay weighted quantity of 2017-2045 job growth adjacent to the project.

Explanation of Measure:

This measure is focused on the relation between job growth and proposed improvements. The approach is adapted from Smart Scale Project Evaluation Measures following an approach proposed for the Harrisonburg MPO. The TCAMPO has adopted standardized buffers for each project tier as shown below in Exhibit 9. This measure looks at the change in jobs by TAZ from 2017 to 2045. Projects are given credit based on the percentage of the TAZ within the buffer.

Outcome Measured:

Total number of expected new jobs served by the project.

Data Requirements/Analytical Tools:

- 2017 Base Year and 2045 Horizon Year employment data by Traffic Analysis Zones (TAZs)
- Tri-Cities Area's TAZs boundary shapefile
- Project limits shapefile

Methodology:

1. Add the project to the GIS map. For each project, create a multiple ring buffer at 1/4 mile increments up to the influence buffer distance based on the project type. The dissolve option should be left at the default when creating the multiple ring

buffer to create distinctive rings.

2. Use the intersect tool to calculate the overlap between each project ring and each TAZ. Filter results to remove features with no overlap.
3. Calculate job increases credited to project for each overlap area using the following formula: Jobs Served = (Future Year Employment - Base Year Employment) * (Overlap Area / Total TAZ Area) * (l - ((Buffer Ring Distance - 0.25) / 0.25) * Depreciation Rate))
4. Sum jobs served in all overlaps to get the total number of new jobs served by the project.

ED2. Access to Freight Jobs

Description:

Proximity to freight jobs.

Explanation of Measure:

This measure calculates the number of freight jobs within proximity of the transportation project.

Outcome Measured:

Improvement's proximity to industrial and economic development areas.

Data Requirements/Analytical Tools:

- Freight employment shapefile as created by GAP consultant
- ArcGIS Pro
- Project limit shapefile

ED3. Proximity to Activity Centers

Description:

Number of Activity Centers within a mile of the project.

Explanation of Measure:

This measure calculates the proximity to VTrans Activity Centers (plus Walthall). Exhibit 12 shows the VTrans Activity Centers in the Tri-Cities Area.

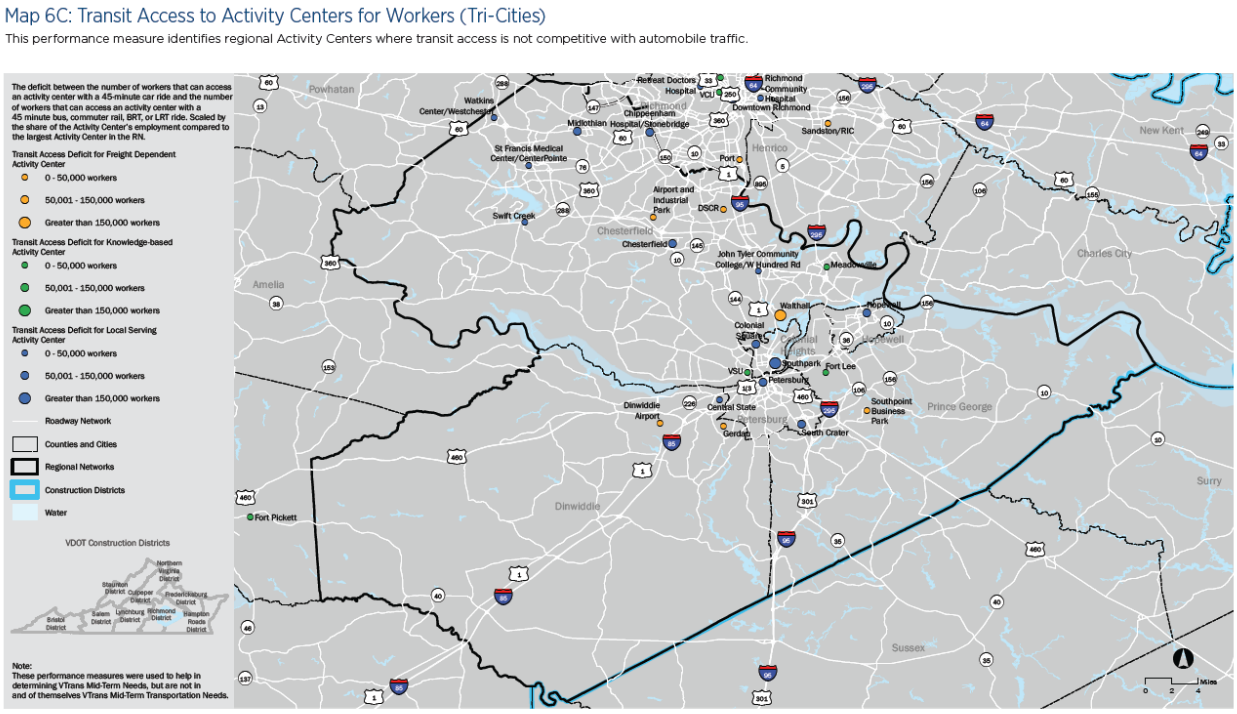
Outcome Measured:

Number of Activity Centers served within one mile of the project.

Data Requirements/Analytical Tools:

- VTrans Activity Centers geographical dataset (plus Walthall)
- Project limit shapefile

Exhibit 12: VTrans Activity Centers in the Tri-Cities Area



3.0 Project Scoring

The following steps will be used to score all the projects:

1. Calculate raw value for all the 14 Performance measures within the Five Goal categories for each project.
2. For each performance measure the highest value is determined after calculating the raw values for all the projects. The highest value is given a normalized value of100. Other values are normalized by providing the percentage value of the

highest value. This process is repeated for all projects.

3. Once the normalized value has been assigned for all the performance measures within the goal categories, they will be applied the performance measure weights.
4. Once the performance measure weights are applied, the sum of the normalized performance measure value will produce the Goal value.
5. The goal weight is then applied to the goal value. This is repeated for all the goal categories.
6. This gives us the Weighted Goal value
7. Summing all the weighted goal value gives the project Benefit Score
8. The total project cost of the project is recorded.
9. The project Benefit Score is then divided by the total project Cost (in $10 million) to determine the PLAN2045 Project Score.

All the projects in the 'Universe of Projects' will be ranked based on the PLAN2045 Project Score. The project getting the highest score will be ranked first, followed by the project ranking second and so on.
The PLAN2045 project Scoring Sheet is provided in the appendices.

Project Readiness

The Project Readiness component is intended to provide an additional criterion to evaluate the relative merits of similar scoring projects and be used to determine which Timeband a project falls into. Project Readiness will not directly factor into the PLAN2045 Project Score.

Projects which have completed EA (Environment Assessment) or EIS (Environment Impact Statement) as required by the National Environmental Policy Act (NEPA); completed IMR (Interchange Modification Report) or IJR (Interchange Justification Report) or conducted any public outreach (public meeting, survey, etc.) will be eligible for Project Readiness.

4.0 Appendices

Appendix 1. PLAN2045 Project Scoring Sheet

Technical Appendix L: Plan2045 CVTA Revenues Computation

As noted in Section 1, the Central Virginia Transportation Authority was created in 2020 and collects a sales tax supplement and fuels tax for transportation projects. These taxes are collected in the entirety of the PlanRVA localities (including all of Chesterfield County). The southern portion of Chesterfield County is part of the TCAMPO Planning Area; and like the rest of the Chesterfield County and the CVTA area, its businesses pay these taxes to CVTA. Revenue is therefore available to fund projects to address the needs of the TCAMPO portion of Chesterfield County.

As the "CVTA" taxes are collected by each locality, 50% is returned back to the locality, 15% is allocated to GRTC, and 35% is selected regionally by a prioritization process.

ConnectRVA 2045 assumed of the 50% of CVTA funding (1/2 of $7.2B, or $3.6B) which is returned to the localities, it was assumed that half would be used for local projects and half for projects RRTPO defined as regionally significant (which is not the same as air quality regional significance, which TCAMPO is using).

Taking *ConnectRVA 2045's* above $3.6B CVTA revenues to 2045, then dividing it by the assumed Chesterfield County's 30.2% CVTA revenues proportion, results in **$1.09B** for all of Chesterfield County (1/2 is "regional pot" projects, and 1/2 is "local pot" projects).

The 2017 population of the TCAMPO portion of Chesterfield County was **43,683**. The total population of all of Chesterfield County was **340,848**, which means the population of the TCAMPO portion of Chesterfield County was **12.8%** of Chesterfield County in 2017.

Assuming over the life of *Plan2045* that the TCAMPO portion of Chesterfield County may receive 12.8% of the County's portion of CVTA funding, *Plan2045* assumes that **$140M** ($1.09B x 12.8%) would be reasonably expected to be used in the TCAMPO portion of Chesterfield County for *Plan2045.* Of this approximately **$90 million** is assumed for the East-West Freeway project.

Please note that Plan2045 does not assume any of these CVTA funds will be used for projects outside of Chesterfield County.

This "funds division by population" methodology is the same as was used by VDOT for estimating RSTP, CMAQ, TAP and SMART SCALE revenues for *ConnectRVA 2045* and *Plan2045*.

TECHNICAL APPENDIX M:
INFLOW-OUTFLOW DIAGRAMS ETC.

OnTheMap

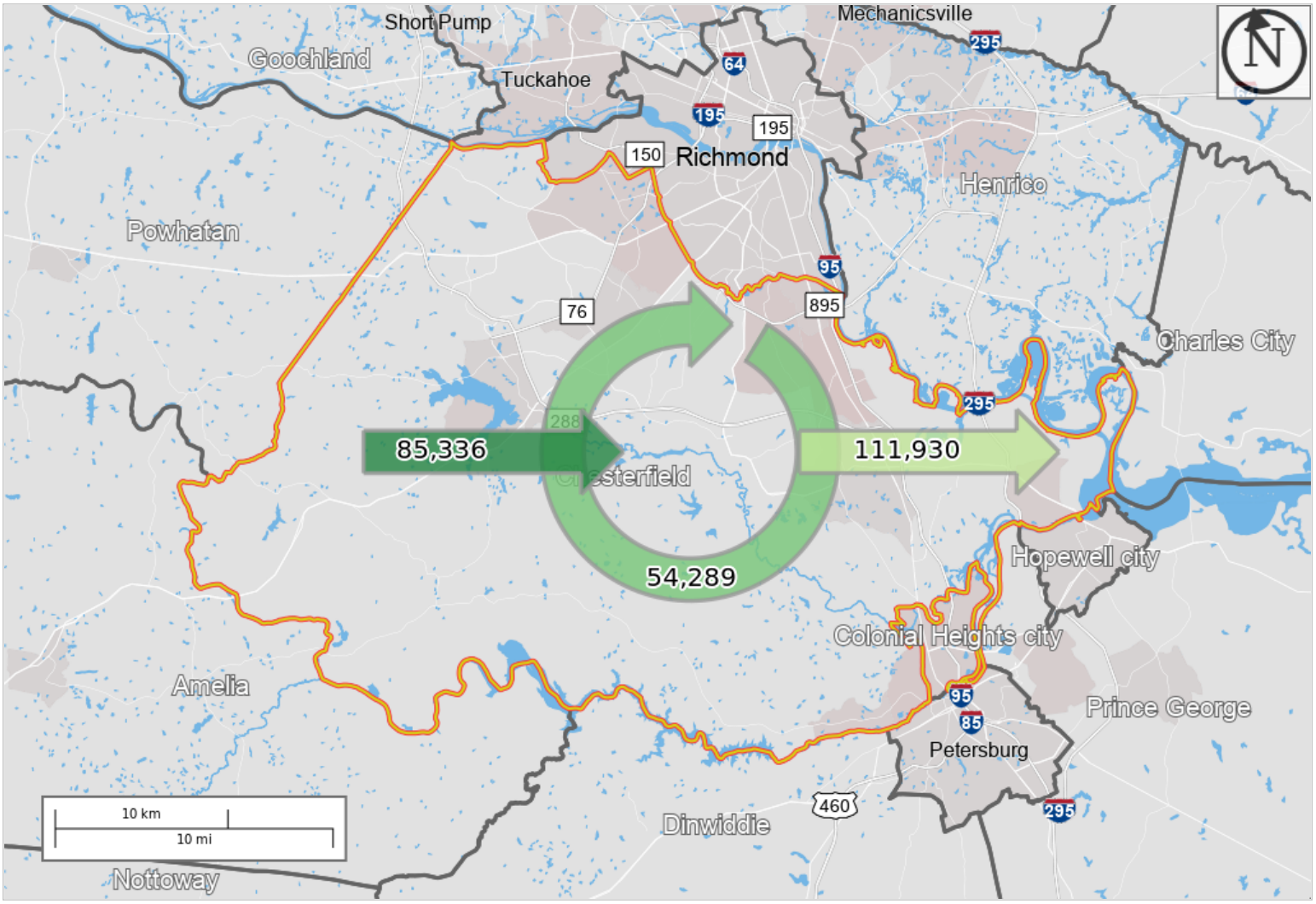
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap https://onthemap.ces.census.gov on 10/21/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

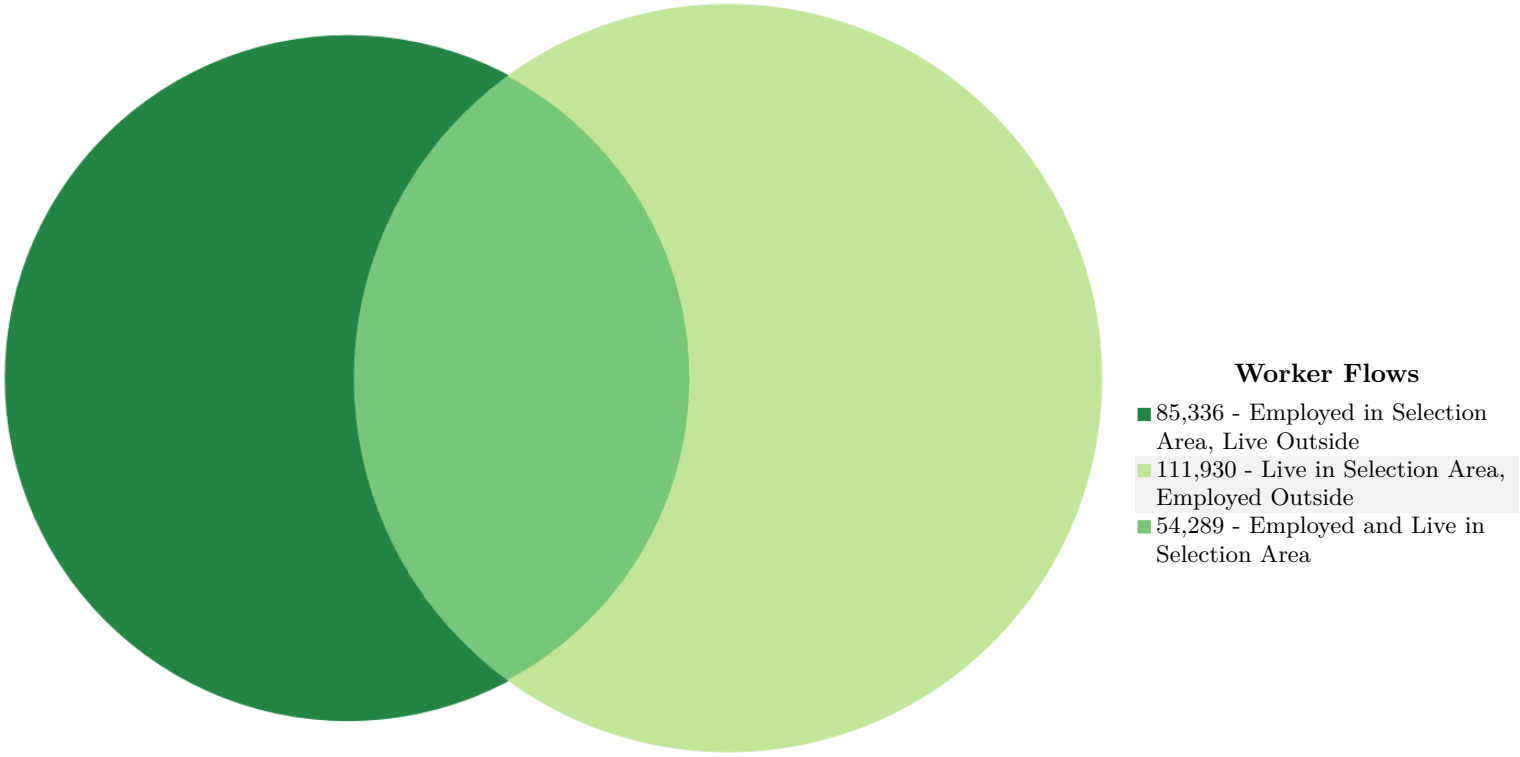
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	139,625	100.0
Employed in the Selection Area but Living Outside	85,336	61.1
Employed and Living in the Selection Area	54,289	38.9
Living in the Selection Area	166,219	100.0
Living in the Selection Area but Employed Outside	111,930	67.3
Living and Employed in the Selection Area	54,289	32.7

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Chesterfield County, VA from Counties
Selected Census Blocks	6,478
Analysis Generation Date	10/21/2020 15:20 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

OnTheMap

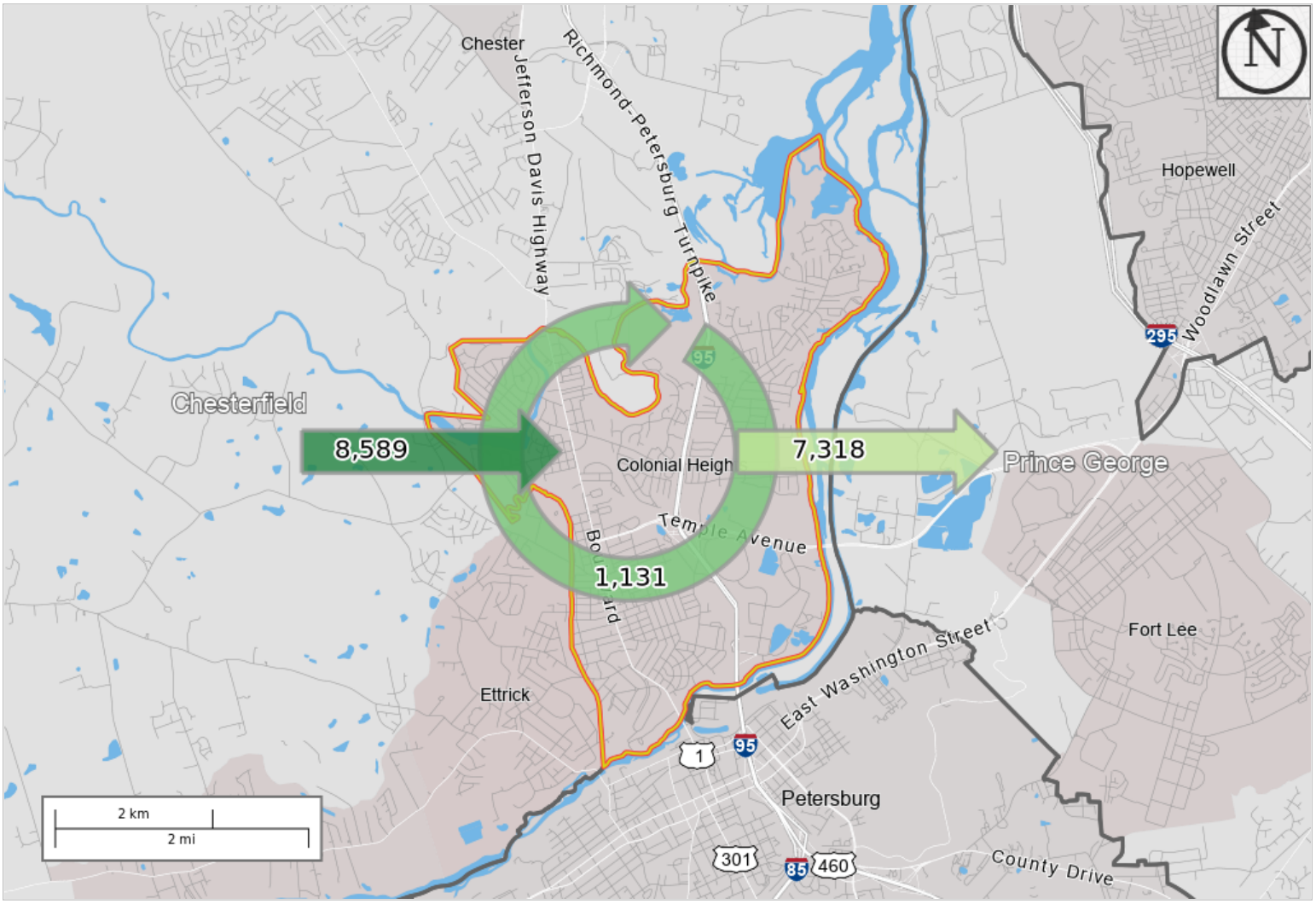
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 10/06/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

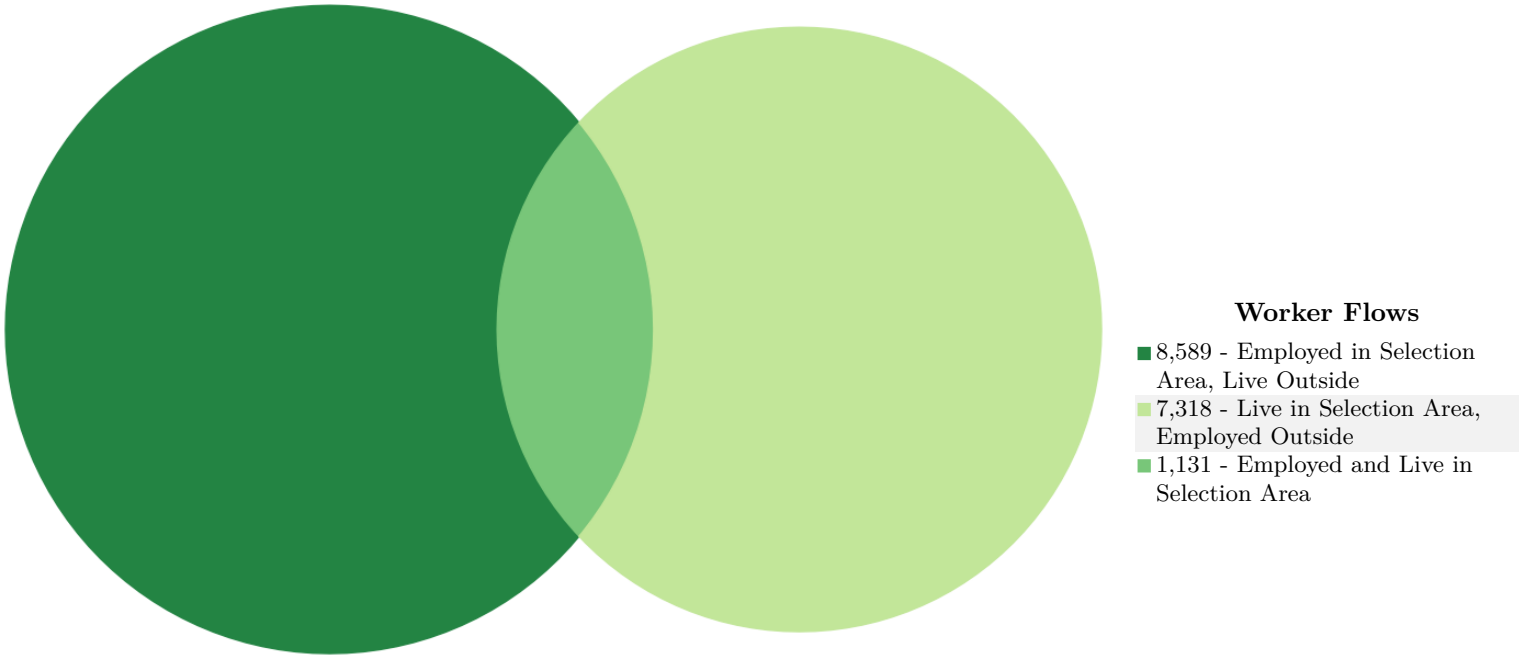
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	9,720	100.0
Employed in the Selection Area but Living Outside	8,589	88.4
Employed and Living in the Selection Area	1,131	11.6
Living in the Selection Area	8,449	100.0
Living in the Selection Area but Employed Outside	7,318	86.6
Living and Employed in the Selection Area	1,131	13.4

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Colonial Heights city, VA from Counties
Selected Census Blocks	523
Analysis Generation Date	10/06/2020 11:41 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

OnTheMap

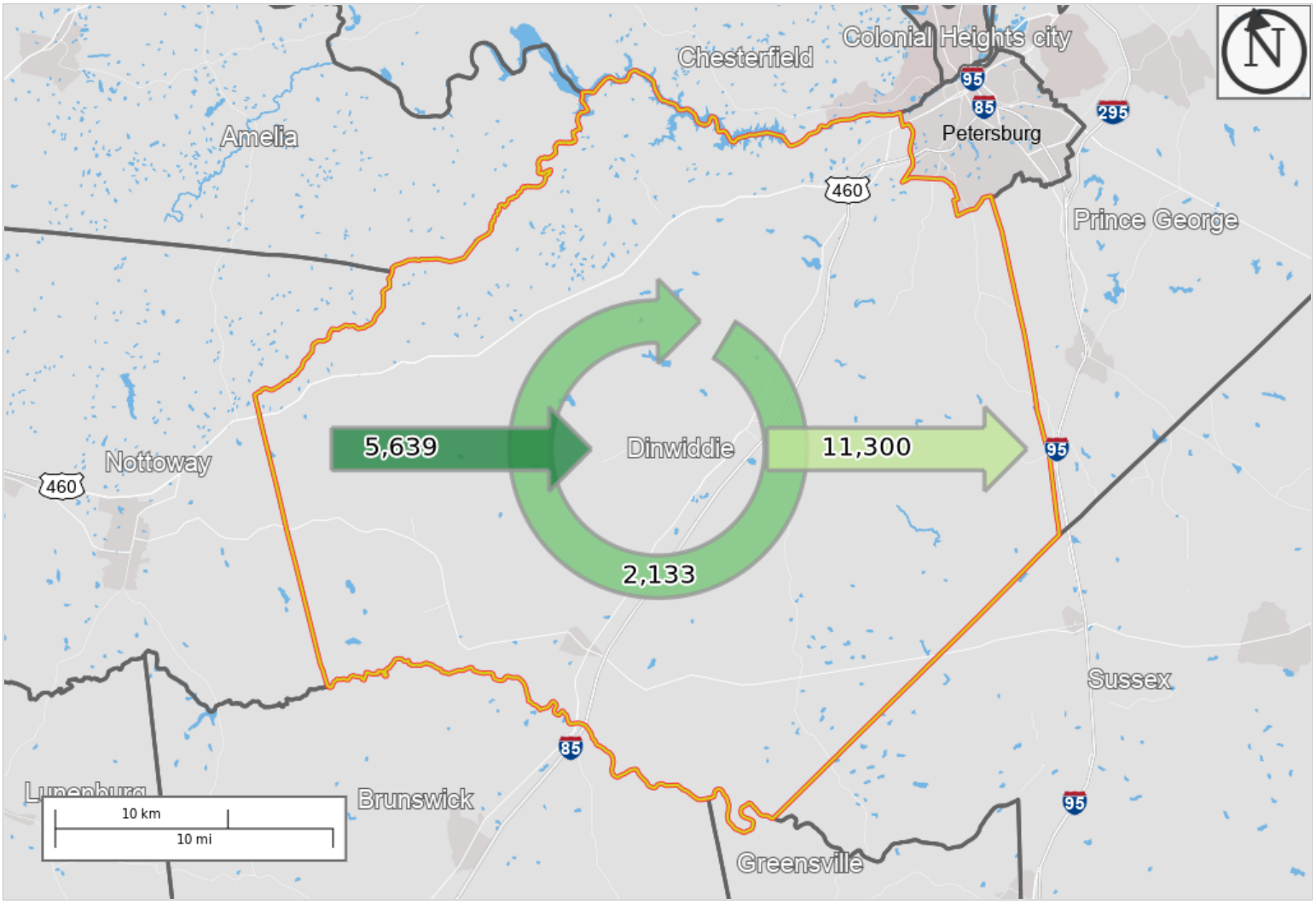
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 10/21/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

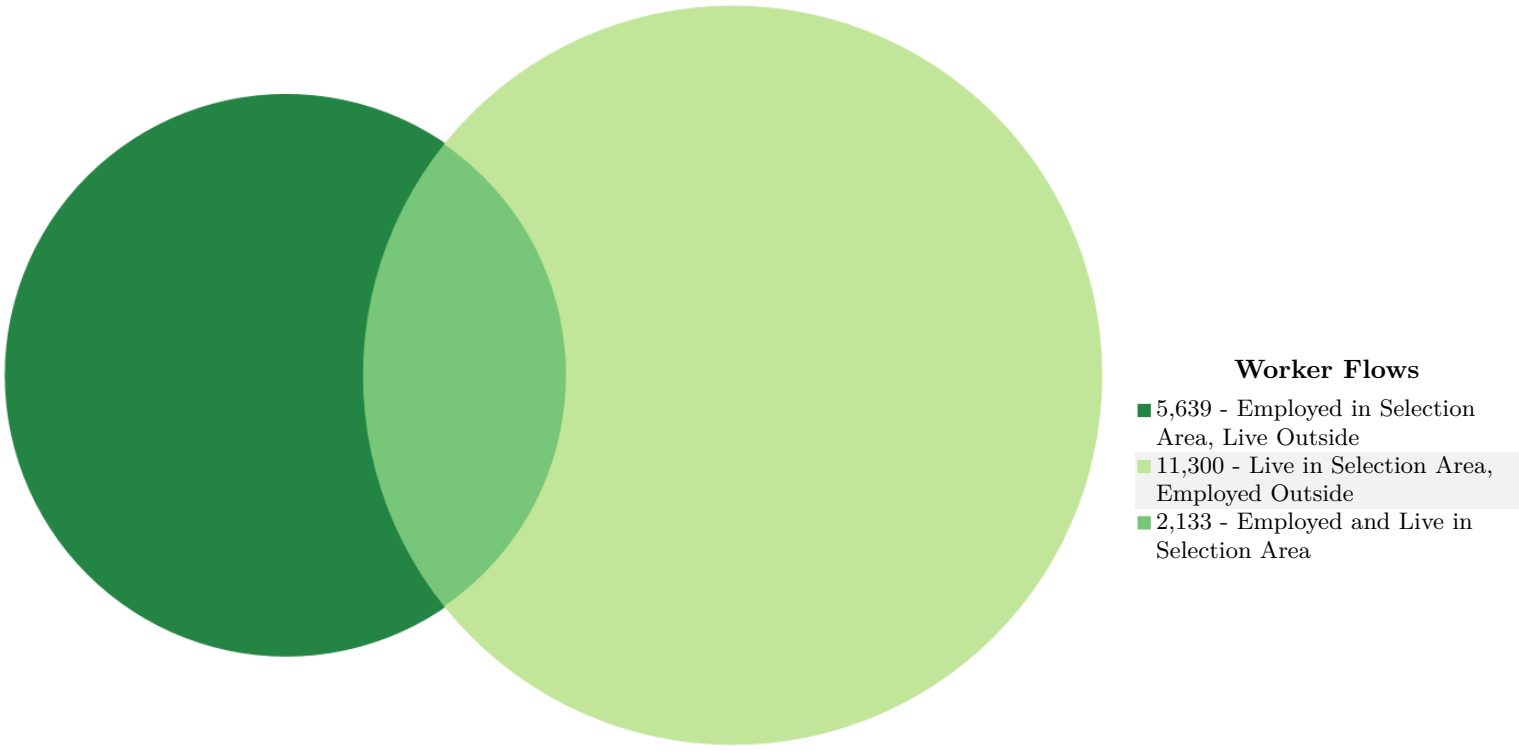
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	7,772	100.0
Employed in the Selection Area but Living Outside	5,639	72.6
Employed and Living in the Selection Area	2,133	27.4
Living in the Selection Area	13,433	100.0
Living in the Selection Area but Employed Outside	11,300	84.1
Living and Employed in the Selection Area	2,133	15.9

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Dinwiddie County, VA from Counties
Selected Census Blocks	2,995
Analysis Generation Date	10/21/2020 15:18 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

OnTheMap

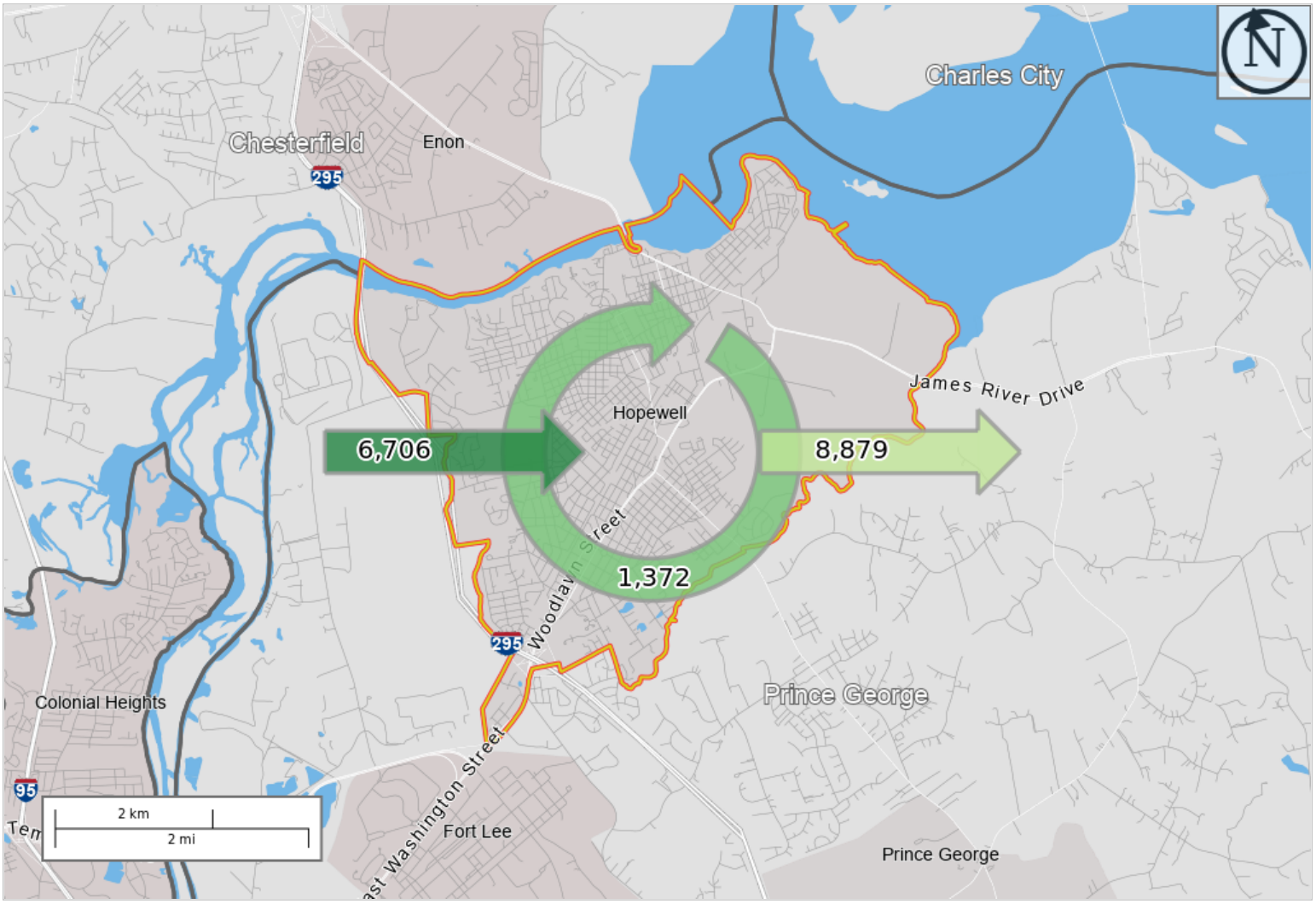
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 10/06/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

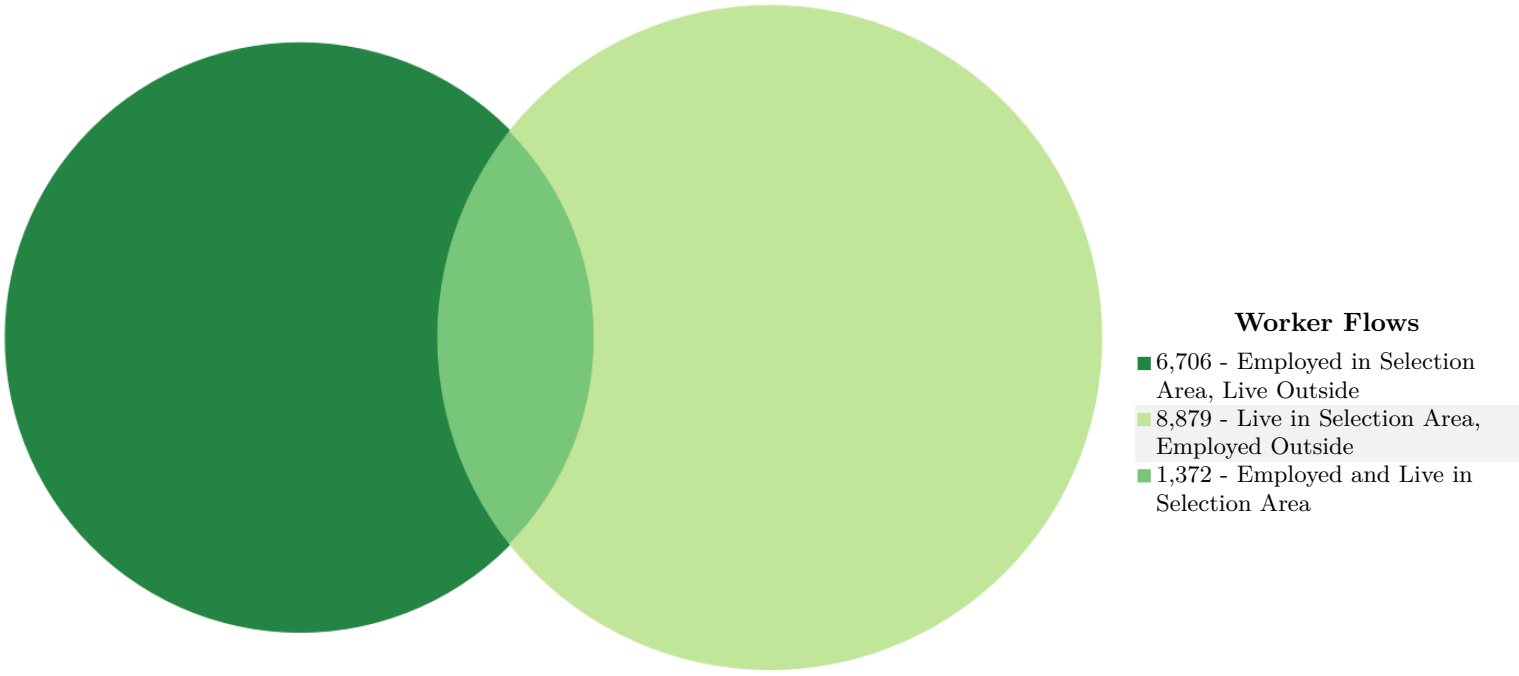
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	8,078	100.0
Employed in the Selection Area but Living Outside	6,706	83.0
Employed and Living in the Selection Area	1,372	17.0
Living in the Selection Area	10,251	100.0
Living in the Selection Area but Employed Outside	8,879	86.6
Living and Employed in the Selection Area	1,372	13.4

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Hopewell city, VA from Counties
Selected Census Blocks	1,024
Analysis Generation Date	10/06/2020 11:45 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

OnTheMap

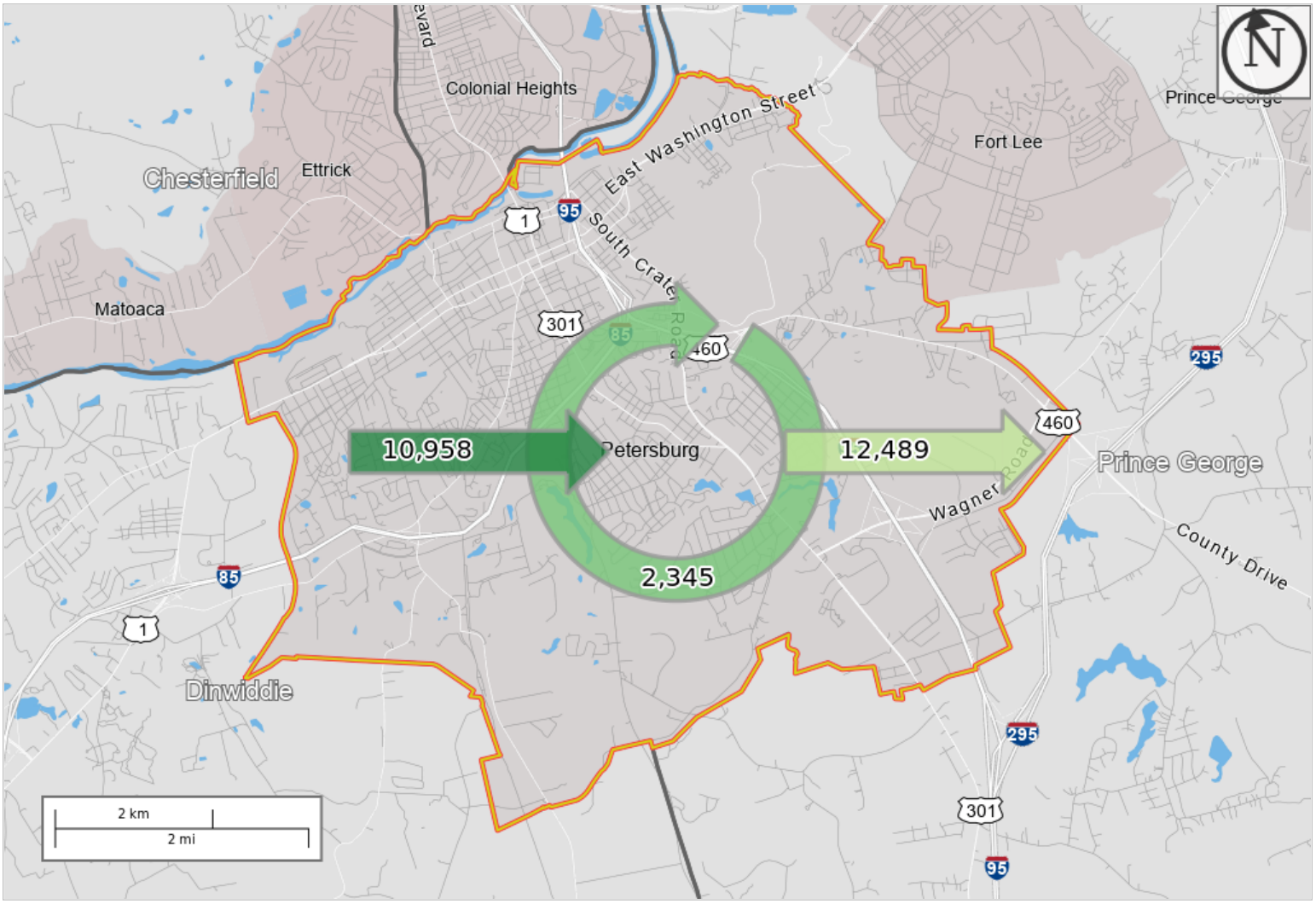
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 10/06/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

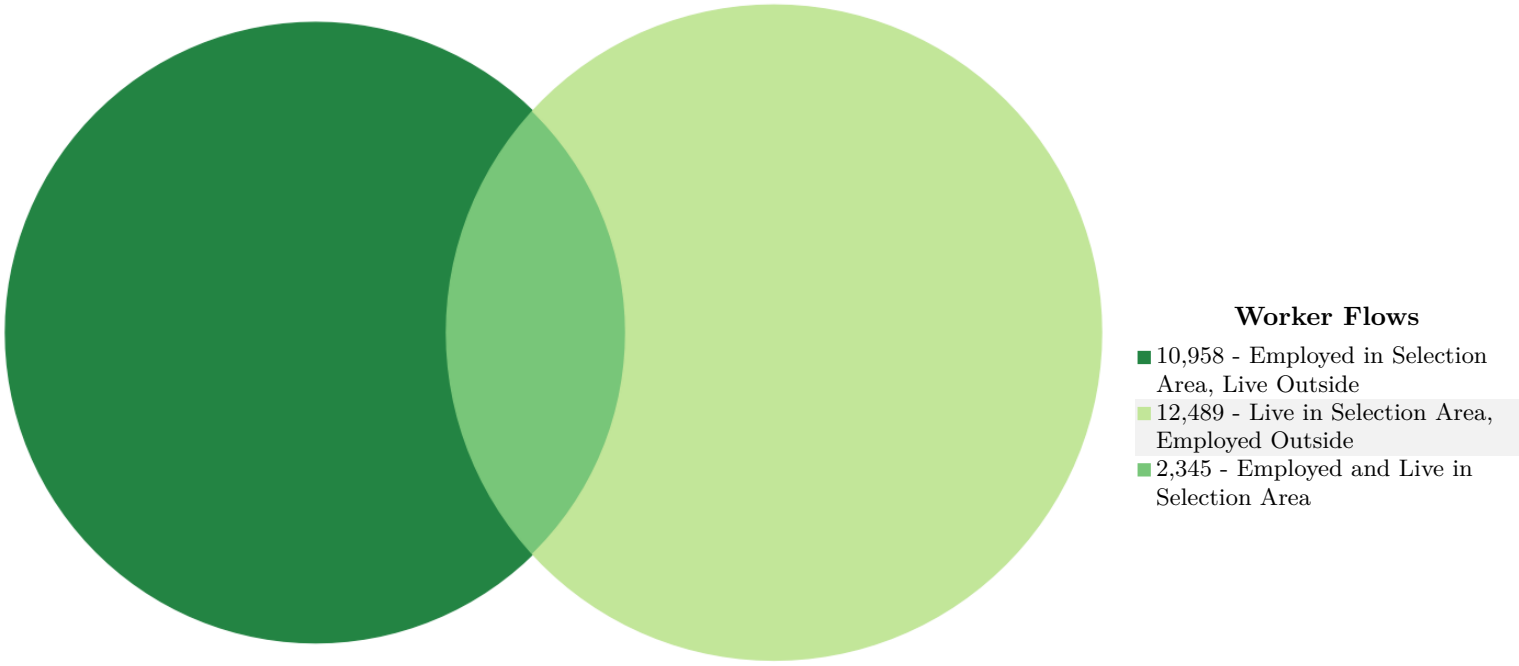
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	13,303	100.0
Employed in the Selection Area but Living Outside	10,958	82.4
Employed and Living in the Selection Area	2,345	17.6
Living in the Selection Area	14,834	100.0
Living in the Selection Area but Employed Outside	12,489	84.2
Living and Employed in the Selection Area	2,345	15.8

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Petersburg city, VA from Counties
Selected Census Blocks	1,427
Analysis Generation Date	10/06/2020 11:10 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

OnTheMap

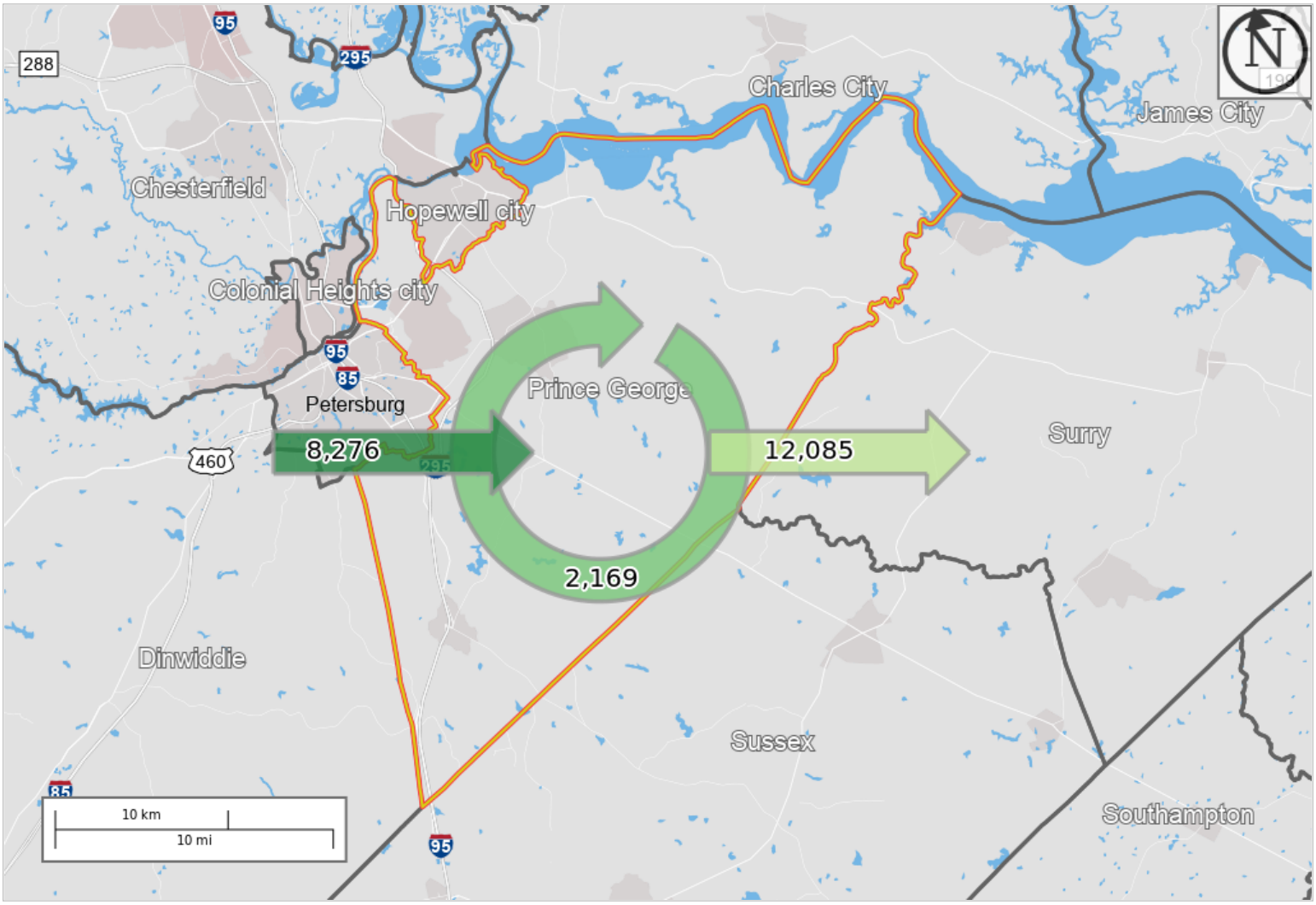
Inflow/Outflow Report

All Jobs for All Workers in 2017

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 10/21/2020

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Map Legend

Selection Areas

- Analysis Selection

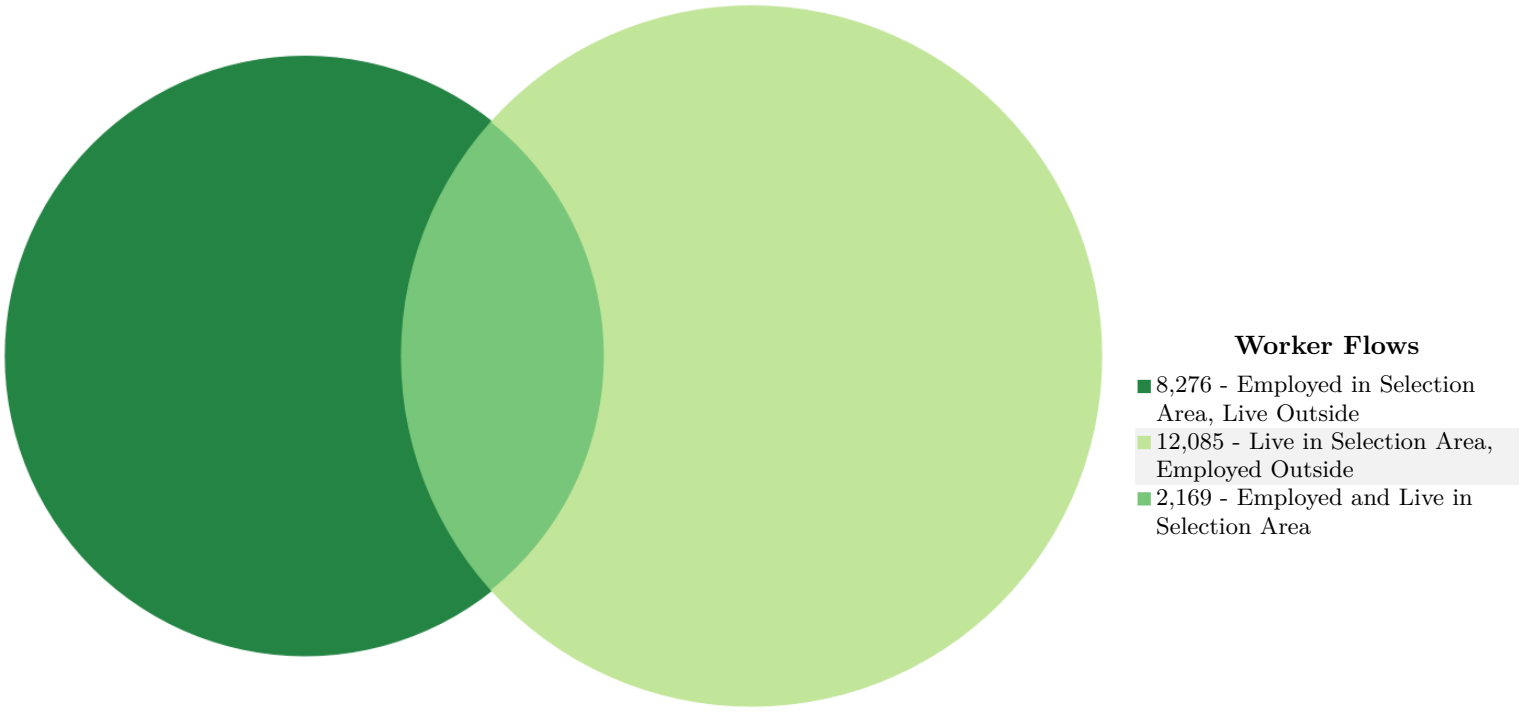
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers



Inflow/Outflow Counts of All Jobs for Selection Area in 2017

All Workers

Worker Totals and Flows	2017 Count	Share
Employed in the Selection Area	10,445	100.0
Employed in the Selection Area but Living Outside	8,276	79.2
Employed and Living in the Selection Area	2,169	20.8
Living in the Selection Area	14,254	100.0
Living in the Selection Area but Employed Outside	12,085	84.8
Living and Employed in the Selection Area	2,169	15.2

Additional Information

Analysis Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Prince George County, VA from Counties
Selected Census Blocks	1,782
Analysis Generation Date	10/21/2020 15:19 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

Inflow/Outflow Report

Selection Area Labor Market Size (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	9,720	100.0%
Living in the Selection Area	8,449	86.9%
Net Job Inflow (+) or Outflow (-)	1,271	-

In-Area Labor Force Efficiency (All Jobs)

	2017	
	Count	Share
Living in the Selection Area	8,449	100.0%
Living and Employed in the Selection Area	1,131	13.4%
Living in the Selection Area but Employed Outside	7,318	86.6%

In-Area Employment Efficiency (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	9,720	100.0%
Employed and Living in the Selection Area	1,131	11.6%
Employed in the Selection Area but Living Outside	8,589	88.4%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Outflow Job Characteristics (All Jobs)

	2017	
	Count	Share
External Jobs Filled by Residents	7,318	100.0%
Workers Aged 29 or younger	1,762	24.1%
Workers Aged 30 to 54	3,813	52.1%
Workers Aged 55 or older	1,743	23.8%
Workers Earning $1,250 per month or less	1,661	22.7%
Workers Earning $1,251 to $3,333 per month	2,674	36.5%
Workers Earning More than $3,333 per month	2,983	40.8%
Workers in the "Goods Producing" Industry Class	1,138	15.6%
Workers in the "Trade, Transportation, and Utilities" Industry Class	1,765	24.1%
Workers in the "All Other Services" Industry Class	4,415	60.3%

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Outside Workers	8,589	100.0%
Workers Aged 29 or younger	3,021	35.2%
Workers Aged 30 to 54	3,890	45.3%
Workers Aged 55 or older	1,678	19.5%
Workers Earning $1,250 per month or less	3,498	40.7%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers Earning $1,251 to $3,333 per month	3,283	38.2%
Workers Earning More than $3,333 per month	1,808	21.1%
Workers in the "Goods Producing" Industry Class	277	3.2%
Workers in the "Trade, Transportation, and Utilities" Industry Class	3,306	38.5%
Workers in the "All Other Services" Industry Class	5,006	58.3%

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Residents	1,131	100.0%
Workers Aged 29 or younger	262	23.2%
Workers Aged 30 to 54	535	47.3%
Workers Aged 55 or older	334	29.5%
Workers Earning $1,250 per month or less	395	34.9%
Workers Earning $1,251 to $3,333 per month	425	37.6%
Workers Earning More than $3,333 per month	311	27.5%
Workers in the "Goods Producing" Industry Class	61	5.4%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers in the "Trade, Transportation, and Utilities" Industry Class	159	14.1%
Workers in the "All Other Services" Industry Class	911	80.5%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Report Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Colonial Heights city, VA from Counties
Selected Census Blocks	523
Analysis Generation Date	10/06/2020 11:41 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).
Notes:

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

Inflow/Outflow Report

Selection Area Labor Market Size (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	8,078	100.0%
Living in the Selection Area	10,251	126.9%
Net Job Inflow (+) or Outflow (-)	-2,173	-

In-Area Labor Force Efficiency (All Jobs)

	2017	
	Count	Share
Living in the Selection Area	10,251	100.0%
Living and Employed in the Selection Area	1,372	13.4%
Living in the Selection Area but Employed Outside	8,879	86.6%

In-Area Employment Efficiency (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	8,078	100.0%
Employed and Living in the Selection Area	1,372	17.0%
Employed in the Selection Area but Living Outside	6,706	83.0%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Outflow Job Characteristics (All Jobs)

	2017	
	Count	Share
External Jobs Filled by Residents	8,879	100.0%
Workers Aged 29 or younger	2,385	26.9%
Workers Aged 30 to 54	4,732	53.3%
Workers Aged 55 or older	1,762	19.8%
Workers Earning $1,250 per month or less	2,360	26.6%
Workers Earning $1,251 to $3,333 per month	3,792	42.7%
Workers Earning More than $3,333 per month	2,727	30.7%
Workers in the "Goods Producing" Industry Class	1,272	14.3%
Workers in the "Trade, Transportation, and Utilities" Industry Class	2,348	26.4%
Workers in the "All Other Services" Industry Class	5,259	59.2%

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Outside Workers	6,706	100.0%
Workers Aged 29 or younger	1,264	18.8%
Workers Aged 30 to 54	3,673	54.8%
Workers Aged 55 or older	1,769	26.4%
Workers Earning $1,250 per month or less	1,580	23.6%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers Earning $1,251 to $3,333 per month	1,472	22.0%
Workers Earning More than $3,333 per month	3,654	54.5%
Workers in the "Goods Producing" Industry Class	2,334	34.8%
Workers in the "Trade, Transportation, and Utilities" Industry Class	887	13.2%
Workers in the "All Other Services" Industry Class	3,485	52.0%

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Residents	1,372	100.0%
Workers Aged 29 or younger	277	20.2%
Workers Aged 30 to 54	683	49.8%
Workers Aged 55 or older	412	30.0%
Workers Earning $1,250 per month or less	520	37.9%
Workers Earning $1,251 to $3,333 per month	515	37.5%
Workers Earning More than $3,333 per month	337	24.6%
Workers in the "Goods Producing" Industry Class	228	16.6%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers in the "Trade, Transportation, and Utilities" Industry Class	179	13.0%
Workers in the "All Other Services" Industry Class	965	70.3%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Report Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Hopewell city, VA from Counties
Selected Census Blocks	1,024
Analysis Generation Date	10/06/2020 11:45 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).
Notes:

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

Inflow/Outflow Report

Selection Area Labor Market Size (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	13,303	100.0%
Living in the Selection Area	14,834	111.5%
Net Job Inflow (+) or Outflow (-)	-1,531	-

In-Area Labor Force Efficiency (All Jobs)

	2017	
	Count	Share
Living in the Selection Area	14,834	100.0%
Living and Employed in the Selection Area	2,345	15.8%
Living in the Selection Area but Employed Outside	12,489	84.2%

In-Area Employment Efficiency (All Jobs)

	2017	
	Count	Share
Employed in the Selection Area	13,303	100.0%
Employed and Living in the Selection Area	2,345	17.6%
Employed in the Selection Area but Living Outside	10,958	82.4%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Outflow Job Characteristics (All Jobs)

	2017	
	Count	Share
External Jobs Filled by Residents	12,489	100.0%
Workers Aged 29 or younger	3,625	29.0%
Workers Aged 30 to 54	6,325	50.6%
Workers Aged 55 or older	2,539	20.3%
Workers Earning $1,250 per month or less	3,662	29.3%
Workers Earning $1,251 to $3,333 per month	5,545	44.4%
Workers Earning More than $3,333 per month	3,282	26.3%
Workers in the "Goods Producing" Industry Class	1,446	11.6%
Workers in the "Trade, Transportation, and Utilities" Industry Class	3,344	26.8%
Workers in the "All Other Services" Industry Class	7,699	61.6%

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Outside Workers	10,958	100.0%
Workers Aged 29 or younger	2,222	20.3%
Workers Aged 30 to 54	6,091	55.6%
Workers Aged 55 or older	2,645	24.1%
Workers Earning $1,250 per month or less	2,611	23.8%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Inflow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers Earning $1,251 to $3,333 per month	4,084	37.3%
Workers Earning More than $3,333 per month	4,263	38.9%
Workers in the "Goods Producing" Industry Class	1,586	14.5%
Workers in the "Trade, Transportation, and Utilities" Industry Class	2,054	18.7%
Workers in the "All Other Services" Industry Class	7,318	66.8%

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Internal Jobs Filled by Residents	2,345	100.0%
Workers Aged 29 or younger	388	16.5%
Workers Aged 30 to 54	1,133	48.3%
Workers Aged 55 or older	824	35.1%
Workers Earning $1,250 per month or less	846	36.1%
Workers Earning $1,251 to $3,333 per month	1,084	46.2%
Workers Earning More than $3,333 per month	415	17.7%
Workers in the "Goods Producing" Industry Class	207	8.8%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Interior Flow Job Characteristics (All Jobs)

	2017	
	Count	Share
Workers in the "Trade, Transportation, and Utilities" Industry Class	227	9.7%
Workers in the "All Other Services" Industry Class	1,911	81.5%

Source: U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov

Report Settings

Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2017
Job Type	All Jobs
Selection Area	Petersburg city, VA from Counties
Selected Census Blocks	1,427
Analysis Generation Date	10/06/2020 11:10 - OnTheMap 6.6
Code Revision	d7f8a300c9f4e458f61bc73d3099ca2cb8f8feaa
LODES Data Version	20170818

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2017).
Notes:

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.
4. Data on Federal employment are not available after 2015.

Technical Appendix N: The Scope of Transportation Planning and Compliance with the Planning Regulations

This Technical Appendix shows the MPO's compliance with the requirements of transportation Planning. Paragraph §450.306 (b) of the Code of Federal Regulations lists eight factors that MPOs must consider when developing transportation plans. Each of the planning factors is discussed below. The Federal Register citation for each factor is included as a subheading for its section.

§450.306(b) (1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

The cities and counties of the Tri-Cities MPO have benefited from strong transportation infrastructure since their founding[1]. Historically, in south central Virginia, transportation supported agriculture, textiles, and tobacco. Our economy has changed significantly since 1990. As the regional economy changes this region is well placed to become part of the Atlantic logistics gateway into the mid-Atlantic and the Midwest. The drivers for this shift are:

- Changes in shipping patterns caused by the Panama Canal third set of locks;
- Proximity to the Port of Hampton Roads and the Port of Richmond;
- Our location on the I-85/I-95 corridor (significant commuter and freight corridors on the Atlantic Seaboard);
- Our location within the CSX National Gateway to the Tri-Cities MPO (including Collier Intermodal Yard);
- The human capital at the US Army's Logistics Command at Fort Lee and the Commonwealth Center for Advanced Logistics Systems(CCALS);
- The human capital at the advanced manufacturing cluster and the Commonwealth Center for Advanced Manufacturing (CCAM); and
- Logistics/distribution centers for Ace Hardware, Amazon, and Walmart.

Figures 52, 53 and 60 show how well placed the Tri-Cities area is to develop a logistics based economy

[1] Petersburg is at the head of navigation on the Appomattox River. The Upper Appomattox River canal system operated from 1745 until 1891 and allowed shipping from Farmville to Petersburg (100 miles). There was an active port at Petersburg until the end of sail powered coasting vessels. The Petersburg port and canal created the need for warehouses, exchange houses, and banks. These in attracted the railroad and Interstate Highway and made Petersburg a wealthy city with significant transatlantic trade.

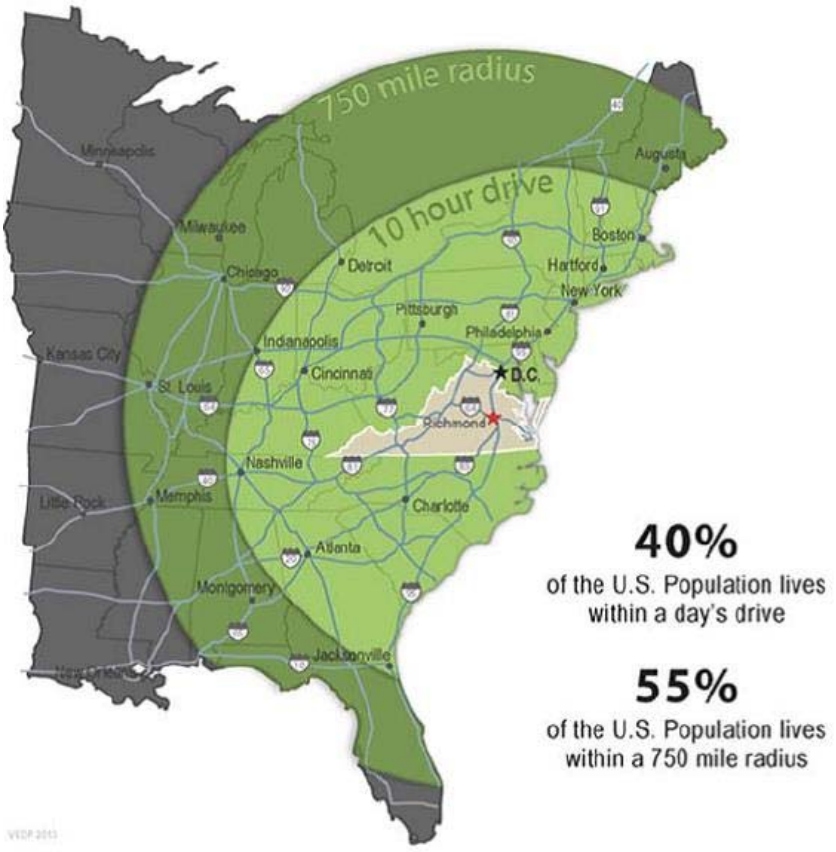


Figure 1: Driving Times from VA.

The Port of Virginia complex at Norfolk and Hampton Roads is a driver of Virginia's economy. Figure 53 shows east coast port tonnages for 2009 (Bureau of Transportation Stastics, 2010). By 2015 tonnage at Norfolk had risen from 29.1 million tons per year to almost 71 million tons per year. Fifty-seven percent (57%) of the cargo at Norfolk is exports. *Improving access to the Port of Virginia is important for the economy the Tri-Cities and Virginia.*

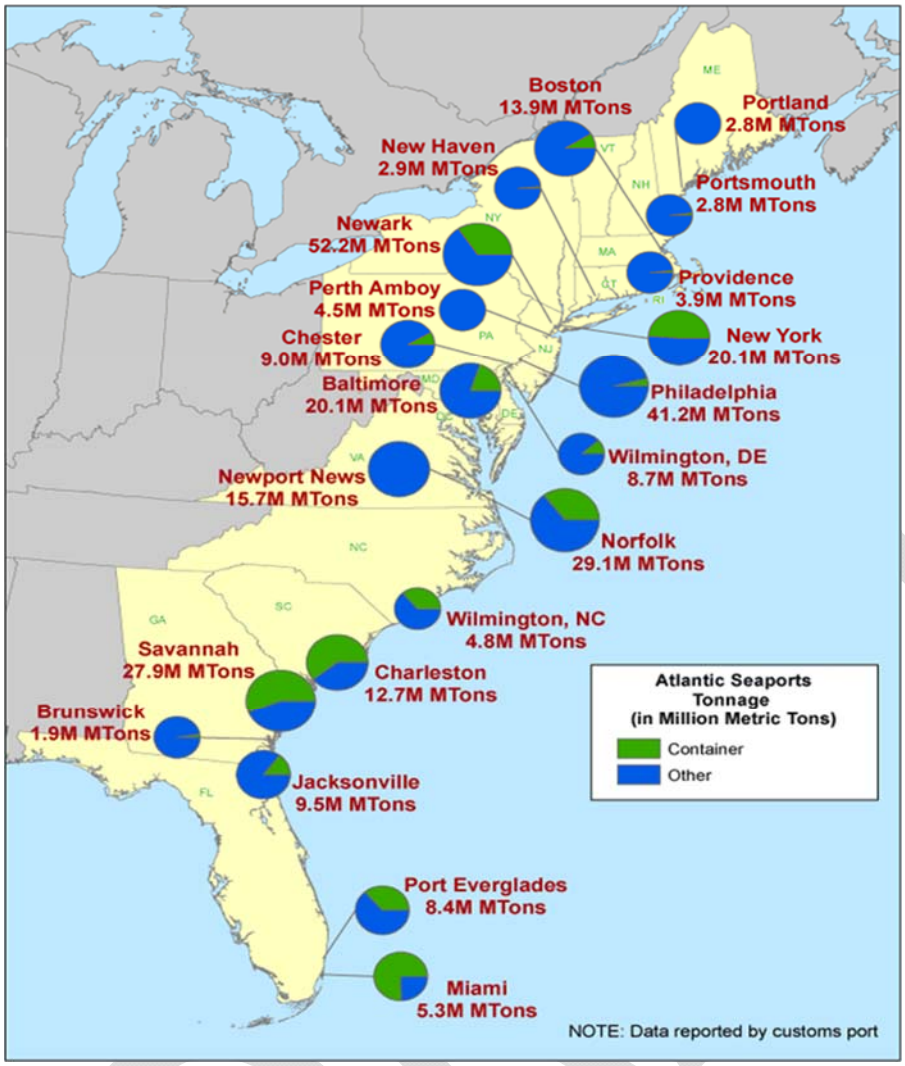


Figure 2: US Atlantic Port Tonnages-2009

§450.306 (b) (2) Increase the safety of the transportation system for motorized and non-motorized users

Transportation related incidents cause pain, suffering, and loss. In 2010 the National Highway Traffic Safety Administration estimated the total quality of life cost, lost household income, productivity, property damage and environmental consequences of traffic accidents at $836 billion.

MPO staff reviewed the National Highway Traffic Safety Administration's information for the MPO planning area. This information allowed the MPO staff:

- Identify transportation fatality trends;
- Compare the MPO with Virginia and the United States; and
- Identify factors contributing to traffic fatalities.

Figure 54 shows highway fatalities in the Tri-Cities MPO from 2010 to 2014; the MPO averaged 40 traffic fatalities per year over the period. The bars show the fatalities during

each year. *Based upon Figure 54 traffic fatalities in the Tri-Cities MPO will likely continue at the same level for the foreseeable future.*

The Commonwealth's 2011Strategic Highway Safety plan The Strategic Highway Safety Plan identifies six emphasis areas:

- Alcohol-related;
- Intersections;
- Speeding;
- Unrestrained occupants and
- Young drivers (Virginia 2012-2016 Strategic Highway Safety Plan, 2012).

The *Virginia's Strategic Highway Safety Plan* lists strategies and actions by emphasis area. The strategies are summarized below.

- Roadway Departure
  - Systematically review roadway departure crashes,
  - Make systemic improve inadequate or unsafe roadway shoulders,
  - Include safety in resurfacing projects.
- Speeding

Review roadway design and geometry to determine

TECHNICAL APPENDIX O

Federal Register /Vol. 81, No. 103 / Friday, May 27, 2016 /Rules and Regulations

§ 450.324 Development and content of the metropolitan transportation plan.

(a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In formulating the transportation plan, the MPO shall consider factors described in § 450.306 as the factors relate to a minimum 20-year forecast period. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.

(b) The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

(c) The MPO shall review and update the transportation plan at least every 4 years in air quality nonattainment and maintenance areas and at least every 5 years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The MPO shall approve the transportation plan (and any revisions) and submit it for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.

(d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for measures (TCMs) in a State Implementation Plan (SIP).

(e) The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

(f) The metropolitan transportation plan shall, at a minimum, include:

> (1) The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;
>
> (2) Existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities (e.g., pedestrian walkways and bicycle facilities), and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan.
>
> (3) A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with § 450.306(d).

(4) A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in § 450.306(d), including—

(i) Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and

(ii) For metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

(5) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;

(6) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide.

(7) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system.

(8) Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a), as appropriate;

(9) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA's transportation conformity regulations (40 CFR part 93, subpart A). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates;

(10) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The

MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation;

(11) A financial plan that demonstrates how the adopted transportation plan can be implemented.

(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

(ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.

(iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.

(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect ‘‘year of expenditure dollars,’’ based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

(v) For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

(vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.

(vii) For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.

(viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

(12) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).

(g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:

(1) Comparison of transportation plans with State conservation plans or maps, if available; or

(2) Comparison of transportation plans to inventories of natural or historic resources, if available.

(h) The metropolitan transportation plan should integrate the priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the HSIP, including the SHSP required under 23 U.S.C. 148, the Public Transportation Agency Safety Plan required under 49 U.S.C. 5329(d), or an Interim Agency Safety Plan in accordance with 49 CFR part 659, as in effect until completion of the Public Transportation Agency Safety Plan, and may incorporate or reference applicable emergency relief and disaster preparedness plans and strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and nonmotorized users.

(i) An MPO may, while fitting the needs and complexity of its community, voluntarily elect to develop multiple scenarios for consideration as part of the development of the metropolitan transportation plan.

(1) An MPO that chooses to develop multiple scenarios under this paragraph (i) is encouraged to consider:

(i) Potential regional investment strategies for the planning horizon;

(ii) Assumed distribution of population and employment;

(iii) A scenario that, to the maximum extent practicable, maintains baseline conditions for the performance areas identified in § 450.306(d) and measures established under 23 CFR part 490;

(iv) A scenario that improves the baseline conditions for as many of the performance measures identified in § 450.306(d) as possible;

(v) Revenue constrained scenarios based on the total revenues expected to be available over the forecast period of the plan; and

(vi) Estimated costs and potential revenues available to support each scenario.

(2) In addition to the performance areas identified in 23 U.S.C. 150(c), 49 U.S.C. 5326(c), and 5329(d), and the measures established under 23 CFR part 490, MPOs may evaluate scenarios developed under this paragraph using locally developed measures.

(j) The MPO shall provide individuals, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool program, vanpool program, transit benefit program, parking cashout program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a).

(k) The MPO shall publish or otherwise make readily available the metropolitan transportation plan for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.

(l) A State or MPO is not required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(11) of this section.

(m) In nonattainment and maintenance areas for transportation related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93, subpart A). A 12-month conformity lapse grace period will be implemented when an area misses an applicable deadline, in accordance with the Clean Air Act and the transportation conformity regulations (40 CFR part 93, subpart A). At the end of this 12-month grace period, the existing conformity determination will lapse. During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93, subpart A. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.

Technical Appendix P:– Plans, Studies, and Data Sources Accessed for *Plan2045*

Plan2045 accessed these plans and studies:

1. TCAMPO *Transportation Plan 2040*
2. I-95 Corridor Improvement Plan (2020)
3. I-85 Technical Memorandum (2021)
4. I-295 Technical Memorandum (2021)
5. VTrans Mid-Term Needs (2019)
6. VTrans Vulnerability Assessment (2021)
7. VTrans Freight Assessment (2021)
8. Richmond-Tri-Cities Travel Demand Model (2017 and 2045)
9. Commerce Corridor Study (2020)
10. TCAMPO Congestion Management Process (2016)
11. State Rail Plan (2017)
12. I-95/85 Roadway Safety Assessment (RSA; 2013)
13. I-95/85 Interchange Feasibility Study (2016)
14. VDOT Statewide Planning System (SPS)
15. VDOT STARS ArcGIS Pro map (2019)
16. RRTPO *ConnectRVA 2045* (for coordination)
17. VDOT's Pedestrian Safety Action Plan 1.0 and PSAP 2.0 (2018+)
18. VDOT Crash Data (various sources)
19. Route 36 STARS Study (2020)
20. VDOT State Highway Safety Plan (2017, being updated)
21. VDOT Park and Ride Plan Update (2020)
22. FOLAR Master Plan
23. Ashland to Petersburg Trail Study (2020)
24. City of Petersburg Comprehensive Plan (Draft)
25. City of Colonial Heights Comprehensive Plan
26. City of Hopewell Comprehensive Plan
27. Fort Lee Expansion Traffic Study (2007)
28. American Community Survey (2013-2017)
29. VEC Community Profiles
30. Crater PDC CEDS (2021)

TECHNICAL APPENDIX Q

Company	Department	E-Mail Address	First Name	Last Name	Job Title	Work Address Street	Work Address Building	Work Address City	Work Address PO Box	Work Address State	Work Address Suite	Work Address Zip	New MPO Group
Federal Highway Administration	Eastern Federal Lands Highway Division	monique.evans@dot.gov	Monique	Evans	Division Director	21400 Ridgetop Circle	Loudon Tech Center	Sterling		VA		20166-6511	Resource Agencies
Maritime Administration	Mid-Atlantic Gateway	amanda.rutherford@dot.gov	Amanda	Rutherford	Director	1200 New Jersey Ave. SE		SE Washington		DC	Rm W23-323	20590	Resource Agencies
United States Army Engineer District, Norfolk		patrick.v.kinsman@usace.army.mil	Patrick	Kinsman	District Commander	803 Front Street		Norfolk		VA		23510-1096	Resource Agencies
United States Environmental Protection Agency	Region III	R3_RA@epa.gov	Adam	Ortiz	Regional Administrator	1650 Arch Street	Region III	Philadelphia		PA	Mail Code: 3RA00	19103-2029	Resource Agencies
United States Environmental Protection Agency	Chesapeake Bay Program Office	price-fay.michelle@epa.gov	Michelle	Price-Fay									Resource Agencies
United States Fish and Wildlife Service	Virginia Field Office	cindy_schulz@fws.gov	Cindy	Schulz	Supervisor	6669 Short Lane		Gloucester		VA		23061-4410	Resource Agencies
USDA Forest Service	George Washington/Jefferson National Forests	jtimm@fs.fed.us	Joby	Timm	Forest Supervisor	5162 Valleypoint Pkwy.	Attn: Kim Stadtmueller	Roanoke		VA		24019-3050	Resource Agencies
USDA Natural Resources Conservation Service	Virginia Region	jack.bricker@va.usda.gov	John	Bricker	State Conservationist	1606 Santa Rosa Road		Richmond		VA	Suite 209	23229-5014	Resource Agencies
USDA Rural	Virginia Region	terry.rosta@va.usda.gov	Terry	Rosta									Resource Agencies
USGS Region 1		mtupper@usgs.gov	Mike	Tupper	Regional Director	12201 Sunrise Valley Drive	John W. Powell Building	Reston		VA		20192	Resource Agencies
USGS Virginia Water Science Center		mrbennett@usgs.gov	Mark	Bennett	Director	1730 East Parham Road		Richmond		VA		23228	Resource Agencies
Virginia Department of Conservation and Recreation		tom.smith@dcr.virginia.gov	Tom	Smith									Resource Agencies
Virginia Department of Emergency Management	Emergency Services	jeffrey.stern@vdem.virginia.gov	Jeffrey	Stern	State Coordinator	10501 Trade Court		Richmond		VA		23236-3713	Resource Agencies
Virginia Department of Environmental Quality		michael.dowd@deq.virginia.gov	Michael	Dowd									Resource Agencies
Virginia Department of Forestry Central Office		rob.farrell@dof.virginia.gov	Farrell	Rob	State Forester	900 Natural Resources Drive	Fontaine Research Park	Charlottesville		VA	Suite 800	22903	Resource Agencies
Virginia Department of Historc Resources	Eastern Region	marc.wagner@dhr.virginia.gov	Marc	Wagner									Resource Agencies
Virginia Department of Wildlife Resources	Bureau of Wildlife Resources	ryan.brown@dwr.virginia.gov	Ryan	Brown	Executive Director	4010 West Broad Street		Richmond	PO Box 11104	VA		23230	Resource Agencies
Virginia Economic Development Partnership	Business Investment	vbarnett@vedp.org	Vincent	Barnett	Vice President			Richmond	PO Box 798	VA		23206	Resource Agencies
Virginia Geographic Information Network		steve.marzolf@vita.virginia.gov	Steve	Marzolf	ISP Director	11751 Meadowville Lane		Chester		VA	Suite 500	23836	Resource Agencies
Virginia Port Authority		jjkeever@portofvirginia.com	Cathie	Vick	Chief Public Affairs Officer	600 World Trade Center		Norfolk		VA		23510-1679	Resource Agencies
Virginia Tourism Corporation		rmclenny@virginia.org	Rita	McClenny	President and CEO	901 East Byrd St.	West Tower	Richmond		VA	19th Floor	23219-4074	Resource Agencies

Technical Appendix R

Major Comments and Responses to Initial Draft and Public Draft Plan2045

Date	Commenter	Comment	TCAMPO Staff reponse
4/18/2022	Alexis Morris, National Park Service	Change Petersburg National Battlefield Visitors Center location from "the Southside Depot" to "a location in downtown Petersburg"	Change made
4/20/2022	Brianne Fisher	Excited to see references to natural envirnment and racial equity. Can their weights be increased?	They have higher weights than other programs and plans in Virginia that we reviewed in developing Plan2045. We are a diverse area.
4/20/2022	Brianne Fisher	How will the plan address climate change?	Plan will address it in relationship to resilency (particularly with sea level rise). Only recently has there been GHG tools to evaluate projects and programs (VOC and NOx currently being used) and hope to use them in the future.
4/20/2022	Brianne Fisher	We should encourage employers and residents to walk, bicycle, and use public transportation	The plan encourages walking, bicycleing, and public transportaiton, and we will begin a Multimodal lan in FY23
4/26/2022	Heather Barrar, FOLAR	Various minor corrections, plus reminder to add the Lower Appomattox River Trail to Capital Trail Study to the document	Minor edits made, reference to the Study added.
4/29/2022	Champe Burnley	Connect the Capital Trail to the Appomattox River Trail to create a loop.	The L*ower Appomattox River Trail to Capital Trail Study* (funded by VDOT and TCAMPO) evaluated ways to meet this need.
5/4/2022	Becky McDonough, HPG Chamber	Interested in walkable and bikeable trails, including for electric bikes.	There are planned and being built in the Tri-Cities area.

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Re: [EXTERNAL] Re: Ad for Draft Plan2045

1 message

Ron Svejkovsky <rsvejkovsky@craterpdc.org> Mon, May 2, 2022 at 8:48 AM
To: "Morris, Alexis E" <Alexis_Morris@nps.gov>

Alexis,

Thank you for your comments. I will make the change to the final Plan2045 document.

Ron Svejkovsky
Director, Tri-Cities Area MPO
phone: 804-861-1666
email: rsvejkovsky@craterpdc.org

Tri-Cities Area MPO

On Mon, Apr 18, 2022 at 12:12 PM Morris, Alexis E <Alexis_Morris@nps.gov> wrote:

> Hi Ron,
>
> Petersburg National Battlefield appreciates the opportunity to comment on this draft plan.
>
> We have a suggestion for language change on page 24. The language currently reads, "Renovate the historic Southside Depot as a visitors center for the Petersburg National Battlefield".
>
> The Park has no formal agreement with the City to utilized Southside Depot as a Visitor Center. While this is an attractive opportunity, the Park has made no commitment and would like the language to reflect that the Park is interested in having a presence downtown.
>
> Thank you for your consideration.
>
> Best,
> Alexis

"For every right, with all thy might". W.M. Trotter
"Oftentimes your authenticity is your activism and being as true to yourself as possible is the first step to revolution". Amandla Stenberg
"For, while the tale of how we suffer, and how are delighted, and how we may triumph is never new, it must always be heard. There isn't any other tale to tell, it's the only light we've got in all this darkness". James Baldwin
"I will always be on the side of those who have nothing and who are not even allowed to enjoy the nothing they have in peace". Federico Garcia Lorca
"I prefer to be true to myself, even at the hazard of incurring the ridicule of others rather than to be false, and to incur my own abhorrence". Frederick Douglass

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Re: Draft Plan2045 Comment Submission

1 message

Ron Svejkovsky <rsvejkovsky@craterpdc.org> Fri, Apr 22, 2022 at 9:37 AM
To: Brianne Fisher <briannefisher0201@gmail.com>

Dear Brianne,

Thank you for your comments and recommendations regarding Draft Plan2045.

We are taking action this upcoming year regarding the issues you noted. Below is a short list of how we will address them.

First, as noted on page 29 of the Draft Plan, we are starting our Tri-Cities Multimodal Study (bicycle, pedestrian, and transit) in 2022. This major effort is intended to provide more Transportation Equity, reduce GHGs, and have better and safer communities in our area.

Second, there are two ways regions and States can address climate change (in our region, we expect sea level rise from climate change to be the major issue):

- The first is making the transportation system more resilient to the changes. The Commonwealth has been very busy in detailed studies regarding how to make the transportation system more resilient. PlanRVA and the Crater PDC have been working together on a Hazard Mitigation Plan to address the expected effects of current and future hazards (Chapter 5).
- The second is taking steps to address the GHGs produced from transportation. As you noticed from how we scored major transportation projects in Chapter 8, Air Quality and Equity are important factors in selecting projects for funding and advocating. We are currently working on ways to measure and select the smaller scale projects and programs in our area (for example, we fund projects under three federal programs) and hope to complete it this summer. Our Air Quality Factor (according to federal requirements) for Plan2045 (and our funding programs) has been focused on evaluating how well a project or program helps us meet the EPA's ozone standards (hence the focus on VOC and NOx). Also, there have been limited ways to measure the GHG impacts of transportation projects, and the recently signed Infrastructure Bill provides new assistance and guidance to States and regions in how to measure and address GHG in our infrastructure. Some larger Regions (like DC) are currently updating their transportation plans to include GHGs, and new tools are now being released (unfortunately after our development of our Plan2045 project scoring system in 2021) to conceptually measure the GHG effects of the projects and programs. For example, in 2022, the Commonwealth of Virginia included a simple GHG calculation tool in their SMART SCALE program Technical Guide. It is our hope that we can include GHG using simple tools in these smaller projects for future project and program selections and evaluations (we believe most transportation-related GHG reductions in our area will come from bicycle, pedestrian, and transit projects and programs).

Third, as you noticed, on page 83 there are only 5 proposed new major projects (not actively under design or construction) in this 20-year plan. We are fortunate to have only a handful of locations with current or future congestion needs. Those proposed major projects will need to meet various requirements such as pedestrian and bicycle access, flooding (from sea level rise and intermittent storms), and equity. We believe most new projects over the next 20 years in our area will be small and multimodal.

Fourth, it should also be noted that we made Equity a higher percent factor in Plan2045 (Chapter 8) than many of the other comparable plans and programs in Virginia that we reviewed in developing Plan2045. This is a diverse area, with diverse needs.

Thank you again for your comments and recommendations. I believe you will find that as we carry out this Plan, these issues will be addressed and we will have a safer, equitable, economically vibrant, and environmentally friendly region.

Ron Svejkovsky
Director, Tri-Cities Area MPO
phone: 804-861-1666
email: rsvejkovsky@craterpdc.org

Tri-Cities Area MPO

On Wed, Apr 20, 2022 at 1:17 PM Brianne Fisher <briannefisher0201@gmail.com> wrote:

> Good afternoon Director Svejkovsky,
>
> I live in Colonial Heights with my husband and young son. I was excited to review the draft Plan2045 Long-Range Transportation Plan and would like to submit my comments on the plan (below).

Thank you to you and your team for all your hard work on this project and for the consideration of my comments.

Brianne Fisher
137 Waterfront Dr, Colonial Heights, VA 23834

General comments:

- As a newer resident of the area, I am very excited to see references and priorities related to the natural environment and racial equity.
- One of the most important issues facing us in the timeframe of this plan is climate change. I would encourage you to add more emphasis to considerations of the potential threats this will bring. For example, in the resiliency recommendations listed on p. 61 there could be an additional item to incorporate climate projections into all planning documents and policies. Floodplains and precipitation projections from federal agencies do not yet incorporate the exponential increase in dangerous weather we will see over the coming decades, and it is important to not base future actions on historical data.
- On the other side of climate change, we must do our parts to mitigate these impacts by reducing greenhouse gas emissions. I am pleased to see this called out on p. 54 and in the goals and objectives, but feel there could be much more emphasis on transitioning from fossil fuel-powered and single/low-occupancy transportation modes such as driving gas vehicles in the recommendations.
- One of the assumptions of this plan is that traffic volume will "rebound" after the COVID-19 pandemic subsides (p. 16). Although I see from various sources that this is indeed the case, I believe we have an important opportunity in the near future to encourage employers, residents, and visitors to promote and utilize healthier and more sustainable modes of transportation than they did pre-pandemic, including walking, biking, and using public transportation. This will better support the TCAMPO Vision of a transportation system that improves quality of life.

Specific recommendations:

- **Add CO2 emissions to the air quality impact scoring factor on p. 77. This is the driving cause of climate change from transportation.**
- **Increase total weighting of Equity/Accessibility and Environment scoring factors to better reflect the priorities of the public survey results. Increase weighting of the access to multimodal factor.**
- **The cost of a project for purposes of calculating the scoring/benefit points should include lifecycle costs.**
- **P. 83: remove the project to widen Temple Ave. from 4 lands to 6. This is already an incredibly dangerous area for pedestrians and widening the road would decrease safety, increase traffic, and increase pollution. What is needed here are traffic-calming measures instead.**

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Your Comments re: Draft Plan2045

1 message

Ron Svejkovsky <rsvejkovsky@craterpdc.org> Tue, May 3, 2022 at 10:30 AM
To: Heather Barrar <hbarrar@folar-va.org>, Wendy Austin <waustin@folar-va.org>

Heather,

Thank you for the comment sheet you provided at the April 26 Draft Plan2045 Public Meeting.

I will take your recommended changes and make them to the Final document.

Thank you again for your comments.

Ron Svejkovsky
Director, Tri-Cities Area MPO
phone: 804-861-1666
email: rsvejkovsky@craterpdc.org

Tri-Cities Area MPO

Plan 2045

COMMENT SHEET

Name	Address	Email
Heather Barrar	1964 Wakefield Pburg, VA 23803	hbarrar@folar-va.org

My comment is:

- Pg 24 – ART not just in floodplain – in Prince George + Hopewell it's along road,
- Pg 28 – Chesterfield plan adopted in 2015, with implementing ordinance in 2016
- Pg 29 – Not Lower, just Appomattox River Trail, has a master plan completed in 2017, with resolution passed by all localities + major stakeholders (Ft Lee, VSU, NPS)
- Pg 29 – add localities to Fall Line section. Add funding updates?
- Pg 61 – Good resiliency recommendations
- Pg 64 to 65 – Any Vision Zero recommendations?
- Pg 66 / 67 – add something about PHOPS work in this space for Pburg?
- Pg 71 – Benjamin Harris Bridge – add recommendations from Fall Line / ART study
- Pg 24 – Tourism – add route of East Coast Greenway

Leave in comment box or send to:

Ron Svejkovsky, MPO Director
1964 Wakefield St.
Petersburg, VA 13805
rsvejkovsky@gmail.com
804-861-1666

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Re: Draft 2045 Plan Comments - Benjamin Harrison Bridge

1 message

Ron Svejkovsky <rsvejkovsky@craterpdc.org> Mon, May 2, 2022 at 8:18 AM
To: Champe Burnley <champe_burnley@hotmail.com>

Champe,

Thank you for your comments regarding the Benjamin Harrison Bridge and the need for it to connect the Capital Trail to the Appomattox River Trail network. In Chapter 3 of Draft *Plan2045*, I inadvertently did not include noting the *Appomattox River Trail to Capital Trail Study*, which was funded by VDOT and TCAMPO and was completed in 2018. Text regarding the Plan's Story Map and Technical Report (both are currently on our webpage) will be included in the Final Plan2045. On page 2 of the Technical Report it notes:

> While various alternatives were considered as part of this planning process, this study recommends connecting the two trails using a conventional bus/van shuttle service or a bicycle/pedestrian ferry. These options are recommended because they are financially feasible in the short-term and have the potential to provide a near-immediate benefit for the region.
>
> In addition, it is strongly recommended that the Benjamin Harrison Bridge, when replaced, include a shared-use path like that found on the Judith Stewart Dresser Memorial Bridge, which carries Route 5 and the Virginia Capital Trail across the Chickahominy River. Stakeholders and members of the public reiterated this need throughout the planning process.

It should also be noted that Prince George County received a SMART SCALE grant for a shuttle to provide a short term connection, but it has not yet begun service.

I will add the above to the Final plan2045 document.

Thank you again for your comments and we appreciate your support for connecting the Capital Trail and the Appomattox River Trail to promote active transportation in our region.

Ron Svejkovsky
Director, Tri-Cities Area MPO
phone: 804-861-1666
email: rsvejkovsky@craterpdc.org

Tri-Cities Area MPO

On Fri, Apr 29, 2022 at 6:09 PM Champe Burnley <champe_burnley@hotmail.com> wrote:

> Mr. Svejkovsky:
>
> I wholeheartedly support efforts to add safe. separated bike and pedestrian facilities to the existing Benjamin Harrison Bridge (or any replacement bridge) to facilitate the connection of the impressive Appomattox Trail network the Virginia Capital Trail, North of the River.
>
> The Capital Trail has become a top tourist attraction in Central Virginia and creating a safe connection to the Appomattox Trail would spread the benefits with residents and businesses in the Hopewell area.

As you know, have also seen great interest in the newly created Fall Line Trail, with over $100 M being committed by CVTA to build this trail. Overcoming the Harrison barrier would now give us the missing link needed to create a *regional loop trail network* and would really be attractive for cyclists across the Mid-Atlantic who want to spend a weekend (or longer) seeing the sights we have to offer between Richmond, Petersburg, and Hopewell. What an opportunity.

I hope the Crater PDC will make this a top transportation priority.

Thanking you for your consideration, I am,

Champe Burnley
Past President
Virginia Bicycling Federation
Past President,
Richmond Area Bicycling Association

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Re: New Message From Crater Planning District Commission

1 message

Becky McDonough <becky@hpgchamber.org> Wed, May 4, 2022 at 8:28 AM
To: Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Ron,
At the Visitor Center we have folks who ask about places to ride electric bikes. Apparently, this is a growing thing.

Routes that are practical are the most important ones in my mind:

1. Neighborhoods to schools
2. Tourable park
3. Scenic route

Good signage directly people to Route and bike racks. Thanks for all you do!

Carpooling is also important and public transportation. The PAT bus is underutilized.

Becky McDonough, CEO
Hopewell/Prince George Chamber
Office: 804.541.2461
Cell: 804.731.0902
www.visithpg.com
www.hpgchamber.org

> On May 4, 2022, at 8:12 AM, Ron Svejkovsky <rsvejkovsky@craterpdc.org> wrote:
>
> Dear Becky,
>
> Thank you for your comments regarding our Draft *Plan2045*.
>
> You will be pleased to know that walkable and bikeable trails are being built in the Tri-Cities area. The Tri-Cities Area MPO has participated in, promoted, applied for, and funded projects along the Appomattox River Trail, Fall Line Trail, and other initiatives. We expect loops to be part of these trails as they come fully into fruition.
>
> There are many opportunities to get involved in these initiatives, including a Fall Line Trail Location Public Hearing that is being held tomorrow by VDOT at the Hilton Garden Inn in Colonial Heights from 5-7 p.m.
>
> Thank you again for your comments. If you have any other comments or wish to discuss *Plan2045* or other MPO plans and programs, do not hesitate to contact me.
>
> **Ron Svejkovsky**
> **Director, Tri-Cities Area MPO**
> **phone: 804-861-1666**
> **email: rsvejkovsky@craterpdc.org**
>
> Tri-Cities Area MPO

On Tue, May 3, 2022 at 7:53 PM <mail@craterpdc.org> wrote:

> Hello Ron,
>
> In regards to: Walkable
>
> Becky has completed a contact request from the Plan 2045 website.
> They left this message:
> I am more interested in walkable, hikeable trails because I think these are more useful to a variety of individuals. I would like for us to have a scenic loop for bikes somewhere safe so people with pedal bikes and electric bikes can ride.
>
> Contact information:
> Name: Becky McDonough
> Phone#: 8047310902
> Email: becky@hpgchamber.org
>
> Pleas reach back out to them at your earliest convince.
>
> Thanks
> Jay

Ron Svejkovsky <rsvejkovsky@craterpdc.org>

Re: New Message From Crater Planning District Commission

1 message

Ron Svejkovsky <rsvejkovsky@craterpdc.org> Wed, May 4, 2022 at 8:12 AM
To: "becky@hpgchamber.org" <becky@hpgchamber.org>

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Ron Svejkovsky
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