Overview

• Stafford Count P&R Project Goals
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  • Current Stafford County Park and Ride Facilities
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• Stafford County Commuting Population
  • Stafford Commuting Population By P&R Cost Allocation
  • 2035 Projected Commuting Population
  • Residential Units to Be Built
• Recommendations and Future Work
Stafford Count P&R Project Goals

• Overview of the current P&R facilities and support the Stafford County commuting population
• Projecting needs in 2035
  • Will the four current P&R facilities support Stafford Counties growing population?
  • Will the four current P&R facilities need to be expanded to support Stafford Counties growing population?
  • Will Stafford County need an additional P&R facility to support the growing population?
  • If there is a need for an additional P&R facility, where will it be most effective?
Stafford County Commuting

- Interstate 95 between Springfield, VA and Fredericksburg, VA has the worst traffic in the country according to a 2017 study by INRIX
- Approximately 37,000 residents commute out of Stafford every day for work
- Over 71% commute alone in a vehicle with an average commute time of 39 minutes
- Over 9% of commuters in Stafford County, VA have "super commutes" in excess of 90 minutes.
Where do Stafford County Commuters work?

- Fairfax County, VA - 8,523
- Prince William County, VA - 5,753
- Fredericksburg city, VA - 3,463
- District of Columbia, DC - 3,306
- Spotsylvania County, VA - 3,252
- Arlington County, VA - 1,495
- Alexandria city, VA - 1,130
- Loudoun County, VA - 1,104
- Henrico County, VA - 696
- Prince George’s County, MD - 600
- Work Elsewhere - 8,388
- Total Out-Commuters - 37,710
OmniRide, Vanpools, Carpooling

- Two OmniRide routes available at the Staffordboro P&R
  - Route 543 (Washington D.C.) five M-F departures
  - Route 942 (Pentagon) six M-F departures
- Vanpools, Carpools and Sluggling available at all P&Rs
- Government employees eligible for paid public transit through the Mass Transportation Benefit Program
- GWRide Connect Program

<table>
<thead>
<tr>
<th>Park and Ride Facility</th>
<th>GWRide Daily Vanpools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffordboro Blvd.</td>
<td>21</td>
</tr>
<tr>
<td>South Commuter Lot (Mine Rd)</td>
<td>5</td>
</tr>
<tr>
<td>Courthouse Road/Rt. 630</td>
<td>12</td>
</tr>
<tr>
<td>Falmouth/Rt. 17</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bus Route</th>
<th>Departure Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 942 (Pentagon)</td>
<td>4:28, 5:23, 6:03, 6:23, 6:43, 7:03</td>
</tr>
</tbody>
</table>
Current Stafford County Park and Ride Facilities

<table>
<thead>
<tr>
<th>Park and Ride Facility</th>
<th>Parking Spaces</th>
<th>Physical Size</th>
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</thead>
<tbody>
<tr>
<td>Staffordboro Blvd.</td>
<td>1863</td>
<td>63,200 sq meters</td>
</tr>
<tr>
<td>South Commuter Lot (Mine Rd)</td>
<td>750</td>
<td>23,700 sq meters</td>
</tr>
<tr>
<td>Courthouse Road/Rt. 630</td>
<td>1100</td>
<td>36,600 sq meters</td>
</tr>
<tr>
<td>Falmouth/Rt. 17</td>
<td>1034</td>
<td>37,500 sq meters</td>
</tr>
</tbody>
</table>
Data

- **Stafford County Data**
  - Stafford County Boundary
  - Stafford County Roads
  - Stafford County Zoning Data
  - Stafford County Census Tracts
  - Comprehensive Plan Five-Year Update
- **Virginia Department of Transportation**
  - Traffic Volume Data
  - Virginia Park and Ride Facilities
  - Facility Size Information
- **Data USA, Stafford County, VA**
  - Commuter/Transportation data
- **US Census Data**
  - Commuter Data by Sex and Age
- **OmniRide**
  - Stafford Routes
  - Ridership Data
- **Weldon Cooper Center for Public Service, University of Virginia**
  - Population data
  - Population estimate data
- **Virginia Railway Express**
  - Train Utilization Trends
Data and Analysis

Limitations

- **Commuter data from U. S. Census Bureau reporting**
  - Dependent on voluntary input
  - Data has consistent error across commuting groups

- **Park and Ride Use data**
  - Limited information collected by VDOT on daily use
  - Limited formal tracking of van pools and car pooling

- **Population projection**
  - Utilized county wide population projection and applied it across the census tracts
  - Assumes the population will grow at the exact same rate across the Stafford County
  - Assumes consistent age distribution and number of workers in Stafford County
  - Assumption that commuting needs will remain consistent as remote work becomes more prevalent

- **Regional influences**
  - The study was conducted only considering Stafford County
  - Does not include commuters who may travel from outside the county to use P&Rs inside Stafford County
  - Assumes the Virginia Railway Express use will remain low in the future
Methodology

- Describe Existing Stafford Park and Ride Facilities
- Identify and collect necessary data
- Allocate commuters to each park and ride facility to estimate the number who may use the P&R currently
- Identify the drive time to the Staffordboro P&R for commuters who use the Omnibus service
- Traffic Density in Stafford County
- Identify locations where Stafford County commuters work
- Project commuting population through 2035
- Refine population projection using current residential units under construction in Stafford County
- Combine the data to make an assessment

*Methodology Continued in Appendix A*
Stafford County Traffic Volume

- Traffic Volume collected by VDOT
- Densest traffic along Interstate 95, Route 1, Route 17, and Route 610/Garrisonville
- Interstate 95 on/off ramps at Route 17 and Route 610/Garrisonville are extensively used, experiencing the heaviest traffic in Stafford County
Drive Time to the Staffordboro Park and Ride

- Approximate drive time to the Staffordboro, the only P&R with bus routes available
- Ridership data provided by Omnibus shows a consistent increase in ridership in 2022

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Quarterly Ridership</th>
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<tbody>
<tr>
<td>Nov-Dec 2019</td>
<td>4784</td>
</tr>
<tr>
<td>Jan-Mar 2020</td>
<td>20,983</td>
</tr>
<tr>
<td>Apr-Jun 2020</td>
<td>589</td>
</tr>
<tr>
<td>Jul-Sep 2020</td>
<td>7,451</td>
</tr>
<tr>
<td>Oct-Dec 2020</td>
<td>7,565</td>
</tr>
<tr>
<td>Jan-Mar 2021</td>
<td>8,220</td>
</tr>
<tr>
<td>Apr-Jun 2021</td>
<td>16,713</td>
</tr>
<tr>
<td>Jul-Sep 2021</td>
<td>22,120</td>
</tr>
<tr>
<td>Oct-Dec 2021</td>
<td>21,131</td>
</tr>
<tr>
<td>Jan-Mar 2022</td>
<td>21,839</td>
</tr>
<tr>
<td>Apr-Jun 2022</td>
<td>32,219</td>
</tr>
<tr>
<td>Jul-Sep 2022</td>
<td>35,663</td>
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Stafford County Commuting Population

- Commuting population by census tract
- Circle graph of Stafford County Commuters show the majority commute north and northeast to work

Stafford County Commuting Population by Census Tract

- Commute north and northeast to work

Staffordboro P&R
South Commuter Lot (Mine Rd) P&R
Courthouse Road/Rt. 630 P&R

Job Counts by Distance/Direction in 2019 All Workers

- NW
- NE
- W
- S
- SE
- Park and Ride

Commuting Population
- 871
- 1437
- 2212
- 2597
- 3273
- 4282
- 6127
Stafford Commuting Population By P&R Cost Allocation

- The underlying census tract layer identifies areas of dense population in each P&R allocation area
- Stafford County is divided into four areas based on cost distance analysis from each P&R Facility

<table>
<thead>
<tr>
<th>Park and Ride Facility</th>
<th>Number of Commuters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffordboro Blvd.</td>
<td>12,941</td>
</tr>
<tr>
<td>South Commuter Lot (Mine Rd)</td>
<td>16,099</td>
</tr>
<tr>
<td>Courthouse Road/Rt. 630</td>
<td>33,408</td>
</tr>
<tr>
<td>Falmouth/Rt. 17</td>
<td>13,310</td>
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</tbody>
</table>
2035 Projected Commuting Population

- The underlying census tract layer identifies areas of dense population in each P&R allocation area
- Cost allocation areas for Stafford County including prospective fifth P&R near Centerport Pkwy

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<th>Number of Commuters</th>
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</thead>
<tbody>
<tr>
<td>Staffordboro Blvd.</td>
<td>12,064</td>
</tr>
<tr>
<td>South Commuter Lot (Mine Rd)</td>
<td>14,156</td>
</tr>
<tr>
<td>Courthouse Road/Rt. 630</td>
<td>21,780</td>
</tr>
<tr>
<td>Falmouth/Rt. 17</td>
<td>9,890</td>
</tr>
<tr>
<td>Centerport Pkwy</td>
<td>14,318</td>
</tr>
</tbody>
</table>
Residential Units to Be Built

- New subdivisions that are currently under construction
- Available residential units include single family homes, townhomes, and apartments
- Stafford County residential units have an average of three residents

<table>
<thead>
<tr>
<th>Park and Ride Facility</th>
<th>Units to be Built</th>
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<tbody>
<tr>
<td>Staffordboro Blvd.</td>
<td>576</td>
</tr>
<tr>
<td>South Commuter Lot (Mine Rd)</td>
<td>1,098</td>
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<tr>
<td>Courthouse Road/Rt. 630</td>
<td>2,372</td>
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<tr>
<td>Falmouth/Rt. 17</td>
<td>2,079</td>
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<tr>
<td>Centerport Pkwy</td>
<td>1,035</td>
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</table>
Recommendations and Future Work

- **Recommendations**
  - Stafford County will likely benefit from an additional P&R by 2035
  - Access to Interstate 95 and projected growth identify Centerport Parkway as a favorable location

- **Stafford County Comprehensive Plan Five Year Update**
  - Identifies Centerport Parkway area as a possible location for expansion
  - Expansion of existing P&Rs may be challenging due to adjacent infrastructure and road volume capacity

- **Future Data Collection**
  - Identify daily average use of existing park and ride facilities
  - Offer electronic survey to commuters to gain more information on commuting preferences
  - Identify new locations for potential OmniRide bus routes

- **Understand Stafford County Working Trends**
  - Stafford County has committed to bringing workers into the county, how will this affect commuting?
  - Will expansion of remote work reduce the commuting needs in Stafford County?
  - Will the rising age of Stafford County residents remove enough residents from the workforce to change commuting needs?

- **Regional Impacts**
  - How will VDOT improvements on Interstate 95 affect Stafford County commuting?
  - How will adjacent cities and counties affect Stafford County Commuting?
  - Will rail become more prevalent in the future?
References


Appendix A (Continuation of Methodology)

- Describe Existing Stafford Park and Ride Facilities
  - Identify size and capacity of each facility
  - Identify commuting options at each facility
- Identify and collect necessary data
- Allocate commuters to each park and ride facility to estimate the number who may use the P&R currently
  - Identify commuters using commuting data from the U.S. Census ACS 5-year survey at the Census tract level
  - Euclidian Allocation
  - Cost Allocation
  - Summarize commuting population into P&R allocation areas
- Identify the drive time to the Staffordboro P&R for commuters who use the Omnibus service
  - Generate drive time areas at multiple intervals
  - Locate areas with longest drive time to reach the Staffordboro P&R
- Traffic Density in Stafford County
  - VDOT traffic data from 2018, 2019, 2020
  - Identify the Average Daily Traffic Volume
  - Locate the areas with significant volume, and areas with low traffic volume
- Identify locations where Stafford County commuters work
  - U.S. Census ACS data identifies the work areas with the highest concentration of Stafford County workers
  - Are all these areas currently served by bus, van pool, or carpool?
- Project commuting population through 2035
  - Weldon Cooper Center projected increase in population through by 2035 is 21%
  - Apply this growth across all census tracts
- Refine population projection using current residential units under construction in Stafford County
  - Identify the number of residential units currently under construction
  - Summarize them by the P&R Allocation areas
  - Identify the areas with the most growth, indicates need for expanded commuting options
- Combine the data to make an assessment
  - Maintain the current P&Rs with no improvements?
  - Improve the existing P&Rs
  - Construct a new P&R