Achieving Vision Zero means focusing on people, not just lowering statistics.

In May 2021, the Arlington County Board adopted the Vision Zero Action Plan, which details a comprehensive, interdisciplinary, and holistic approach to eliminating traffic fatalities and serious injuries in the County.

Maintaining an equitable transportation network is one of the six core goals of Arlington’s Vision Zero program: to prioritize transportation safety investments equitably in the most vulnerable communities. All people have the right to move about our community safely. People of color, low-income households, people with disabilities, older adults and youth, people with limited English proficiency, and households with limited vehicle access often face more challenges and barriers to safe transportation. Vision Zero aims to learn more about these disparities and close the gaps to safe transportation.

During the development of the Vision Zero Action Plan, we compared equity indicator data (available from the Northern Virginia Health Foundation) to Arlington County’s high-injury crashes to better understand how imbalances in social opportunity relate to transportation safety. Our initial findings showed a clear geographic relationship between concentrations of high-injury crashes and racially diverse and lower-income Block Groups.

An interdisciplinary team of County staff started working on the first equity analysis action item in Summer 2021. The group collectively expanded upon the brief scope set forth in the Vision Zero Action Plan to best learn about and improve equity issues relating to transportation safety and access. This report summarizes the:

- Equity analysis study methodology
- Findings from data analyses, which identify Arlington’s primary transportation-safety equity challenges
- Findings from subsequent literature and community research, which affirm and explain findings from the data analysis stages of the study
- Actions and recommendations to address transportation safety inequities through both engineering and engagement strategies
- An implementation plan and timeline for the actions and recommendations
- A strategy to assess and monitor the impact of our actions over the next several years to confirm that the Vision Zero program work is successfully reducing imbalances in crashes in certain communities and neighborhoods

Thank you to our interdepartmental steering team:

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Andy Wexler
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Consultant Team
Fehr & Peers
Toole Design
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6. Hospital data findings
7. Next steps
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## ARLINGTON EQUITY ACTION ITEMS

| ACTION ITEM 1 | Update and quality check Equity Emphasis Areas as new data becomes available. |
| ACTION ITEM 2 | Prioritize safety analysis and safety improvement projects in Equity Emphasis Areas. |
| ACTION ITEM 3 | Improve safety at intersections within Equity Emphasis Areas. |
| ACTION ITEM 4 | Deploy engineering tools to reduce driver speeds in Equity Emphasis Areas. |
| ACTION ITEM 5 | Enhance pedestrian infrastructure within Equity Emphasis Areas. |
| ACTION ITEM 6 | Host public safety campaign and build relationships in Equity Emphasis Areas. |
| ACTION ITEM 7 | Evaluate recent safety improvements on corridors in Equity Emphasis Areas. |
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## EXECUTIVE SUMMARY

### EQUITY IS A PILLAR OF VISION ZERO

Vision Zero prioritizes transportation safety investments in the most vulnerable communities. While developing the Vision Zero Action Plan, we compared equity indicators to crash data to determine how imbalances in social opportunity relate to transportation safety. We found a rough relationship between crashes, racial diversity, and lower-income Block Groups. To learn more, the Action Plan prescribed Item A4: Equity Analysis to identify the inequitable impacts of transportation on safety in Arlington County communities and integrate this work with countywide efforts in furtherance of the County’s Equity Resolution.

### SYSTEMIC SAFETY

- The top ten crash patterns in Equity Emphasis Areas more often involve pedestrians, left turn conflicts, and specific land uses like schools.

### CRASH ORIGIN

- Crashes occur disproportionately in ZIP Code 22204, and crashes occur twice as often in Equity Emphasis Areas.

### COMMUNITY REPORTING

- Community requests are under-represented in Equity Emphasis Areas.

### HOSPITAL DATA

- People who identify as Black or African American are overrepresented in vehicle crash hospitalizations.

### EQUITY EMPHASIS AREAS

Throughout this report, we reference the County’s Equity Emphasis Areas, which were identified as part of Arlington Transit’s Title VI Requirements and Guidelines for Federal Transit Administration Recipients. Title VI identified Block Groups with a Black, Indigenous, or people of color (BIPOC) population of 38.5% or more. Title VI also identified Block Groups where 17.5% or more of households have a median income of $50,000 or less. We refined the income threshold to 50% or more of households in a Block Group with a median income of $50,000 or less to effectively prioritize neighborhoods with lower incomes.

### EQUITY EMPHASIS AREAS

Some neighborhoods are overrepresented in crashes and underrepresented in responses to safety requests.

We drew key findings by analyzing data and reviewing literature related to the four areas below. The project steering team further reviewed and contributed feedback throughout the process.

- The County defined tracking metrics for each action item and will continue to assess our progress toward reducing disproportional outcomes in safety. We will report our progress toward these actions and use outcomes to inform the Arlington County Vision Action Plan update in 2025.

- The Vision Zero program will continue to prioritize safety projects that reduce fatal and severe crashes. This analysis integrates equity into that prioritization process to ensure there is no undue burden (less access to safe infrastructure) on any of Arlington’s community members.
We analyzed four key areas to develop equity-focused action items.

1. SYSTEMIC SAFETY

WHY WE STUDIED THIS
Systemic analysis examines how roadway characteristics influence crash patterns. Understanding how the presence or absence of certain factors influences crashes helps us make proactive safety improvements, particularly in Equity Emphasis Areas.

WHAT WE DID
We analyzed the intersection of crash factors with socioeconomic, roadway, and built environment variables to identify crash patterns and at-risk locations in Equity Emphasis Areas.

PUTTING IT INTO CONTEXT
Commercial centers, low-vehicle ownership neighborhoods, and areas near transit hubs, schools, and community centers tend to have higher pedestrian volumes. Areas with higher pedestrian volumes have a statistically higher likelihood of pedestrian-involved crashes. Particularly a concern around schools, children are overrepresented in pedestrian and bicycle crashes, which is reflected in the findings for Arlington County.

2. CRASH ORIGIN

WHY WE STUDIED THIS
Knowing where people involved in crashes are coming from helps us better direct resources to preventing crashes from happening. It also helps us understand how far our efforts need to reach and which agencies we need to partner with outside Arlington County.

WHAT WE DID
We assessed the origin ZIP Codes of people involved in Arlington crashes to determine how local and regional trips impact crashes. We explored data at the ZIP Code level as this is how it is reported in police crash data.

PUTTING IT INTO CONTEXT
Past policies and histories of underinvestment or disinvestment mean lower-income neighborhoods tend to have higher traffic volumes, an increased number of arterials and roads with larger footprints, fewer pedestrian and bicycle amenities, and greater population density. This increases exposure to conditions with a higher risk for traffic crashes with greater severity. The intensity of crashes along arterials in ZIP Code 22204 exemplifies this pattern.

3. COMMUNITY REPORTING

WHY WE STUDIED THIS
Knowing where people involved in crashes are coming from helps us better direct resources to preventing crashes from happening. It also helps us understand how far our efforts need to reach and which agencies we need to partner with outside Arlington County.

WHAT WE DID
We examined locations of community-reported safety concerns and engagement to determine if Equity Emphasis Areas had proportional representation in comparison to the County.

PUTTING IT INTO CONTEXT
Submitting community requests is a high-cost civic engagement, meaning it can be deceptively more time-intensive than anticipated, and people with more time resources might more easily submit a request. Community requests are underrepresented in Arlington County’s Equity Emphasis Areas, therefore neighborhood variation and demand for public services should be considered when responding to community reports.

4. HOSPITAL DATA

WHY WE STUDIED THIS
Crash reports do not include race or ethnicity data, which makes it difficult to understand the races or ethnicities of people involved in crashes. Analyzing crash-related injuries treated at Virginia Hospital Center’s trauma center attempts to fill this research gap.

WHAT WE DID
We analyzed transportation-related injury records by demographic characteristics to assess imbalances in crash hospitalizations by race in comparison to countywide Census data.

PUTTING IT INTO CONTEXT
Cultural factors and unsafe conditions may discourage walking and biking and encourage driving in more diverse neighborhoods. Individuals who identified as Black or African American are overrepresented in vehicle-only crashes, and individuals who identified as White are slightly overrepresented in bicycle and scooter crashes.

A note on COVID-19: Data used for this analysis spanned varying years, including the COVID-19 pandemic. Due to data availability, certain periods and analyses are more or less complete, and comparisons should account for potential variation in crash data during pandemic-affected years.
We defined Equity Emphasis Areas in Arlington County.

Defining Equity Emphasis Areas let us explore the disproportionate impacts of traffic crashes on neighborhoods with lower incomes or higher Black, Indigenous, and people of color (BIPOC) populations.

DEFINITION PROCESS

Arlington Equity Emphasis Areas were identified based on Arlington Transit’s Title VI Requirements and Guidelines for Federal Transit Administration Recipients. Title VI identified Block Groups with a Black, Indigenous, or people of color (BIPOC) population of 38.5% or more. Equity Emphasis Areas are 51% non-White, while Arlington County as a whole is 29% non-White.

Title VI also identified Block Groups where 17.5% or more of households have a median income of $50,000 or less. We refined the income threshold to 50% or more of households in a Block Group with a median income of $50,000 or less to effectively prioritize neighborhoods with lower incomes.

ACTION ITEM FOR ARLINGTON

Update and quality check Equity Emphasis Areas as new data becomes available.

As future data becomes available and other indicators are identified, Arlington County will update Equity Emphasis Areas to ensure they continue to accurately identify disadvantaged communities. The next update is scheduled for late 2023.
Crashes occur twice as often in Equity Emphasis Areas.

From 2016 to 2020, Census Block Groups with either a lower-income or higher-BIPOC population experienced almost twice as many crashes per square mile when compared to the County as a whole.

<table>
<thead>
<tr>
<th>CRASH LOCATION</th>
<th>CRASHES</th>
<th>SQUARE MILES</th>
<th>CRASHES PER SQUARE MILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTIRE COUNTY</td>
<td>8,577</td>
<td>26.1</td>
<td>329</td>
</tr>
<tr>
<td>LOWER-INCOME AREA</td>
<td>458</td>
<td>0.75</td>
<td>611</td>
</tr>
<tr>
<td>HIGHER-BIPOC AREA</td>
<td>2,003</td>
<td>3.0</td>
<td>668</td>
</tr>
</tbody>
</table>

**WHY WE STUDIED THIS**

Achieving Vision Zero means focusing on people and not just lowering the number of traffic deaths and serious injuries. Arlington County residents, visitors, and employees are the focus of this work, but systemic transportation and socioeconomic issues impact these people. Systemic factors such as wide roads and higher speeds cause more fatal and severe injury crashes; lower-income or lower vehicle ownership leads to more walking, biking, and transit use, meaning increased exposure as a vulnerable road user; and more arterial roads lead to more traffic and higher crash rates.

To set the stage for this analysis, we wanted to understand whether crashes are happening disproportionately in neighborhoods with lower-income or higher-BIPOC population. We mapped and compared crashes within Equity Emphasis Areas with crashes countywide.

**PUTTING IT INTO CONTEXT**

The literature review found that lower-income and higher-BIPOC neighborhoods tend to have an increased number of arterials and roads with higher traffic volumes (Morency, et al., 2012). In Arlington, many of the highest volume roads in the county travel through or touch an Equity Emphasis Area. The increased exposure to traffic and higher speeds on these roads may lead to more vehicle crashes with greater severity.
We examined locations with a crash history and locations at risk for crashes.

Systemic Safety uses historical crash factors to identify locations at risk for crashes. We first looked countywide and narrowed to focus on Equity Emphasis Areas.

**WHAT IS SYSTEMIC SAFETY**

Systemic Safety uses the Federal Highway Administration’s Safe System approach, which aims to eliminate fatal and serious injuries for all road users. It does so through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. This human-centered, proactive approach differs from previous approaches, which primarily reacted to safety issues by focusing on historical crash patterns. The graphic below shows the six principles and five elements that guide the Safe System approach.

**WHY WE STUDIED THIS**

Systemic analysis combines crash and road data to identify high-risk road factors that correlate with certain crash types. Crashes occur twice as often in Equity Emphasis Areas in comparison to the entire county. Understanding how the existence or absence of certain factors influences crashes helps us make proactive safety improvements, particularly in Equity Emphasis Areas.

**ARLINGTON SYSTEMIC SAFETY ANALYSIS**

We began the systemic analysis by looking at all crashes from 2016 to 2020. We identified top crash patterns by analyzing historical crashes and the factors that led to the crash happening. We focused on patterns involving people walking and biking—who tend to be more vulnerable than people driving—and fatal or severe injury crashes.

For each pattern, we identified similar relevant crash factors (e.g. nearby infrastructure, land use context, and road characteristics) throughout all Equity Emphasis Areas to pinpoint locations that are at risk for future crashes. Page 11 shows a map of the resulting at-risk locations within Equity Emphasis Areas, and Appendix A details each Equity Emphasis Area systemic crash profile.

**PUTTING IT INTO CONTEXT**

The literature review noted similar findings to the top ten Equity Emphasis Area crash patterns. Areas with high pedestrian volumes, such as commercial centers, near transit hubs, near schools and community centers, or in low-vehicle ownership neighborhoods, have a statistically higher likelihood of pedestrian-involved crashes.

Census Tracts with a greater number of schools and transit stops, where people are likely to start or end a trip segment on foot or by bike, are more likely to have a greater number of crashes (Ukkusuri, et al., 2011).

This is in alignment with the findings in Arlington County. Wheeler-Martin, et al. (2020) showed that school-aged children, 5-19 years of age, are overrepresented in pedestrian (29%) and bicycle (44%) crashes relative to their population share (20%). Fortunately, at the national level the number of crashes for school-aged children has steadily declined in the most recent decades; however, children continue to have increased risk relative to adults in part due to their limited transportation choices and varying levels of education on the rules of the road.

### TABLE: CRASH PATTERNS OCCURRING WITHIN EQUITY EMPHASIS AREAS

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>CRASH PATTERNS OCCURRING WITHIN EQUITY EMPHASIS AREAS</th>
<th>TOTAL CRASHES</th>
<th>FATAL/SEVERE CRASHES</th>
<th>FATAL/SEVERE AS PERCENT OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedestrian-involved crashes within one quarter-mile of a community facility</td>
<td>68</td>
<td>12</td>
<td>18%</td>
</tr>
<tr>
<td>2</td>
<td>Pedestrian-involved crashes with motor vehicle proceeding straight in low-vehicle ownership areas</td>
<td>30</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>3</td>
<td>Pedestrian-involved crashes within residential areas</td>
<td>43</td>
<td>5</td>
<td>12%</td>
</tr>
<tr>
<td>4</td>
<td>Senior-involved (60+) crashes within 50 feet of a bus stop or Metrorail station entrance</td>
<td>40</td>
<td>4</td>
<td>10%</td>
</tr>
<tr>
<td>5</td>
<td>Pedestrian-involved crashes with motor vehicle turning left in low-vehicle ownership areas</td>
<td>26</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>6</td>
<td>Left-turn in commercial areas</td>
<td>60</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>7</td>
<td>Under-19-involved crashes in residential areas</td>
<td>30</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>8</td>
<td>Alcohol-involved crashes within one quarter-mile of a school</td>
<td>30</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>9</td>
<td>Alcohol-involved crashes in residential areas</td>
<td>76</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>10</td>
<td>Left-turns within one quarter-mile of a school</td>
<td>57</td>
<td>3</td>
<td>5%</td>
</tr>
</tbody>
</table>

**SAFE SAVES**

- REDUNDANCY IS CRUCIAL
- SAFETY IS PROACTIVE
- RESPONSIBILITY IS SHARED
- HUMANS ARE VULNERABLE
- HUMANS MAKE MISTAKES
- DEATH/SERIOUS INJURY IS UNACCEPTABLE

**SAFE VEHICLES**

- SAFE ROADS
- POST-CRASH CARE
- SAFE SPEEDS
- SAFE ROADS
- RESPONSIBILITY IS SHARED

**SAFE ROADS**

- The Safe System Approach
- DEATH/SERIOUS INJURY IS UNACCEPTABLE
- HUMANS MAKE MISTAKES
- RESPONSIBILITY IS SHARED
- HUMANS ARE VULNERABLE

**SAFE VEHICLES**

- SAFE ROADS
- POST-CRASH CARE
- SAFE SPEEDS
- SAFE ROADS
- RESPONSIBILITY IS SHARED
**ACTION ITEMS FOR ARLINGTON**

**ACTION ITEM 2**
Prioritize safety analysis and safety improvement in Equity Emphasis Areas.

Parallel to this equity analysis, Arlington County began incorporating Equity Emphasis Areas as a criterion in crash hot spot identification and as criteria in internal capital project and quick build project prioritization tools. Arlington should continue to use Equity Emphasis Area geographies, safety analyses, and prioritization methods.

**ACTION ITEM 3**
Improve safety at intersections within Equity Emphasis Areas.

Arlington will begin a comprehensive effort to reduce intersection conflicts within Equity Emphasis Areas to address systemic safety risks. More information about the systemic safety analysis and tracking next steps is available on the County’s [Systemic Safety Analysis](#) page.

**ACTION ITEM 4**
Deploy engineering tools to reduce driver speeds in Equity Emphasis Areas.

Speeding is an issue at intersections, along neighborhood streets, and near schools in Equity Emphasis Areas. Crashes involving speeding often involved pedestrians, people under 19 years old, and alcohol, or occurred within one-quarter mile of a school. Arlington will deploy engineering tools to reduce driver speeds at intersections, along neighborhood roads, and near schools.

**ACTION ITEM 5**
Enhance pedestrian infrastructure within Equity Emphasis Areas.

Pedestrian-involved crashes often occurred in low-vehicle ownership areas, in residential areas, within one-quarter mile of a community center or school, within 50 feet of a bus stop or Metro entrance, or where vehicles make left turns. Improving pedestrian crossing infrastructure within Equity Emphasis Areas will improve safety for pedestrians and bicyclists and reduce driver speeds at intersections, along neighborhood roads, and near schools.

**ACTION ITEM 6**
Host public safety campaign and build relationships in Equity Emphasis Areas.

The systemic analysis indicate a need for behavior change to reduce crash risks. The County will host a safety campaign to address behavioral factors such as alcohol or speeding near schools. The campaign will focus efforts within Equity Emphasis Areas.
Most people involved in Arlington County crashes live outside the county.

About 40 percent of people involved in Arlington County Crashes are from Arlington County, while nearly 60 percent are from surrounding communities. This makes it important to work with our regional partners on safety and equity.

Still, Arlington County residents are the largest single group of people involved in crashes in the County.

WHY WE STUDIED THIS

Knowing where people involved in crashes are coming from helps us better direct resources to preventing crashes from happening. We explored data at the ZIP Code level because this information was readily available in the police crash report dataset.

Sources: this page and next; Arlington County (2017-2021).
Crashes and Equity Emphasis Areas are concentrated in ZIP Code 22204.

ZIP Code 22204 stands out with nearly a quarter of the County’s crashes and almost half of the County’s Equity Emphasis Areas. It tops the chart with other metrics, except jobs.

Arlington Blvd bounds ZIP Code 22204, and has a high annual rate of crashes, creating a safety barrier for those living, working, and visiting 22204. Columbia Pike runs through 22204 and also has a high annual crash rate.
Evaluation, monitoring, and education can offset inequitable crash trends.

PUTTING IT INTO CONTEXT

The literature review found that low-income, typically more diverse neighborhoods, such as the Equity Emphasis Areas in ZIP Code 22204, have an increased risk for crashes and fatalities due to previous land use and transportation decisions. Lower-income neighborhoods tend to have higher traffic volumes, an increased number of arterials and roads with larger footprints, less investment in pedestrian and bicycling infrastructure, and greater population density (Morency, et al., 2012). This trend plays out in ZIP Code 22204, where most fatal and serious injury crashes are along major roads and highways, including Arlington Boulevard and Columbia Pike.

Lower-income communities may also face compounded safety challenges because they are more likely to have older vehicles operating or traveling in their neighborhoods with fewer safety features. Under-invested areas may have fewer programs that emphasize preventative behavior, such as buckling up or wearing a helmet, that make significant differences in safety outcomes, and less access to high quality trauma centers in the event of a crash (Harper, Charters, and Strumpf, 2015). Additionally, communities that have historically faced underinvestment or disinvestment are left with insufficient, ill-maintained, or failing infrastructure.

ACTION ITEMS FOR ARLINGTON

ACTION ITEM 7
Evaluate safety improvements on corridors in Equity Emphasis Areas.

The County has built multimodal improvements on Columbia Pike. The Virginia Department of Transportation (VDOT) and Arlington County are coordinating plans to improve conditions on Arlington Boulevard. The County will apply before/after evaluations to understand how these projects affect safety on the corridors, adjusting project designs based on the findings.

ACTION ITEM 8
Promote consistent safety messaging, infrastructure, and policies with regional partners.

Since most crashes involve people from outside Arlington, the County will continue to enhance partnerships with the Metropolitan Washington Council of Governments (MWCOG), nearby counties, and other jurisdictions to promote consistent safety messaging, infrastructure, and policies across jurisdictions to reduce confusion for road users as they travel around the region.
Community requests are underrepresented in Equity Emphasis Areas.

Most community requests came from densely populated areas, which corresponds with community requests per capita. Still, Equity Emphasis Areas are underrepresented.

WHAT IS A REQUEST?

Any community member can submit a request to Arlington County, regardless of whether they live in the County, come to work or visit, or are passing through. A request can be formal, like an online submission through the Request for Service Portal. It can also be informal through an email or conversation. These requests allow people to report traffic, safety, and infrastructure concerns or needs directly to the County.

WHY WE STUDIED THIS

Community requests inform County decisions about road changes, the timing of those changes, and how to prioritize changes, so it’s important that requests accurately reflect the County’s demographics. The primary channels we analyzed in this report were Request for Service Portal, direct inquiries to the County Board, ART and WMATA Service portals (filtered for safety-related), Arlington Neighborhoods Program applications (filtered for transportation-related) and Neighborhood Complete Streets Program* applications.

WHERE ARE REQUESTS COMING FROM?

Community requests are typically concentrated in areas with higher population density, and most comments were located near major transit corridors and hubs. Areas with lower-income residents; higher Black, Indigenous, and people of color populations; or residential apartment communities had fewer community requests. West Columbia Pike, South Four Mile Run, and some smaller pockets in the County have higher population densities but show fewer community reports.

PUTTING IT INTO CONTEXT

The literature review found correlations between community reporting and demographic factors. Submitting community requests is similar to high-cost civic engagement activities, like contributing to political campaigns, and less similar to low-cost activities, like turning out to vote or returning the Census (White and Trump, 2016). Submitting a community request can be deceptively more time intensive than anticipated, and people with more time resources might more easily submit a request.

Understanding neighborhood variation and individual-level use of community reporting services, especially high-frequency users, can shed light on community reporting participation rates across the County.

Underrepresentation of community requests in Equity Emphasis Areas, which include and overlap with low-income neighborhoods, align with community reporting participation patterns found in the literature review.

*Neighborhood Complete Streets and Arlington Neighborhoods programs address connectivity and access, as well as safety.
Neighborhood Complete Street requests are less common in Equity Emphasis Areas.

**WHAT ARE COMPLETE STREETS?**

Complete Streets are designed and operated to allow safe and comfortable use by all users. People walking, biking, riding transit, and driving are all accommodated in the available infrastructure, and the street design is compatible scale and character of the street’s setting and with surrounding land uses. Arlington’s Neighborhood Complete Streets Program focuses on local, non-arterial streets.

**NEIGHBORHOOD COMPLETE STREETS REQUESTS**

The Neighborhood Complete Streets Program allows community members to submit a project application for safety and access improvements on local streets. The Neighborhood Complete Streets requests are a subset of all community requests. Neighborhood Complete Streets Program applications are fairly spread out in non-commercial corridors; however, fewer are submitted within Equity Emphasis Areas. Arlington could be missing out on the most needed and justified safety improvements.

**ACTION ITEMS FOR ARLINGTON**

**ACTION ITEM 9**

Focus traffic safety and Vision Zero outreach in Equity Emphasis Areas.

Arlington will proactively advertise safety request channels and programs in Equity Emphasis Areas. This includes promotion of the Request for Service portal to report safety concerns and neighborhood funding opportunities such as the Neighborhood Complete Streets and Arlington Neighborhoods programs. These channels should include opportunities for two-way dialogue with the community.

**ACTION ITEM 10**

Apply an Equitable Engagement Checklist to Vision Zero and other transportation outreach.

Appendix B includes an Equitable Engagement Checklist that outlines strategies to broaden access to information that the County shares. This includes recommendations for accessible communication channels, translation needs, in-person or online event considerations, and methods to provide feedback when digital access is not possible.
People who identify as Black or African American are overrepresented in vehicle crash hospitalizations.

**HOSPITAL DATA FINDINGS**

A total of 473 patients were treated at the Virginia Hospital Center (VHC) trauma center for transportation-related injuries between 2020 and 2021. In comparison to countywide demographics and all patients treated at the VHC trauma center for any injury, individuals who identified as Black or African American are overrepresented in vehicle-only crashes, and individuals who identified as White are slightly overrepresented in bicycle and scooter crashes. These findings were informative, but they do not explain the entire story of inequitable crash outcomes.

**WHY WE STUDIED THIS**

Knowing who is involved in crashes helps us better direct resources to protect overexposed communities. Crash reports do not include race or ethnicity data, which makes it difficult to understand the races or ethnicities of people involved in crashes. Analyzing crash-related injuries treated at VHC attempts to fill this research gap. We were not able to obtain data from other area hospitals. The County considered an action item to advocate for inclusion of race/ethnicity in crash reporting—at the discretion of the individual involved in the crash—but ultimately could not determine if the benefits of capturing the data outweigh potential biases.

**PUTTING IT INTO CONTEXT**

The literature review sources highlighted that cultural factors and unsafe conditions may discourage the use of active modes and encourage car use in more diverse neighborhoods. In 2021, Black or African American residents had the highest proportion of driving alone to work (45.65%), in comparison to other races in Arlington County.

In Arlington County, more diverse neighborhoods can coincide with lower-income neighborhoods, and Morency, et al. (2012) showed that lower-income neighborhoods tend to have higher vehicle traffic volumes and an increased number of arterials and roads with larger footprints. The increased exposure and faster speeds on these roads may lead to more vehicle crashes with greater severity. The systemic safety action items aim to improve safety and reduce speeds in Equity Emphasis Areas.

According to a local study of low-income commuters who identified as African American (Bratman and Jadhav, 2014), respondents were less likely to include biking in their ideal mode of transportation. A 2020 study by The League of American Bicyclists found that commuters who identified as Black are less likely to bike compared to other races but walk to work at similar rates as self identifying White and Latino/Hispanic commuters. Nationally, people who identify as Black disproportionately experience bicycle traffic violence relative to their population size (The League of American Bicyclists, 2021).

Although scooter use by White-identifying residents is consistent with the demographics of the DC metropolitan region (National Association of City Transportation, 2020), in Arlington County there are disproportionally more shared micromobility corrals and devices in non-Equity Emphasis Areas (Arlington County, n.d.).

**ACTION ITEM FOR ARLINGTON**

**ACTION ITEMS 2, 3, 4, 5 & 6**

Prioritize safety outreach, analysis, and investments to reduce speeds and enhance pedestrian infrastructure, particularly at intersections, in Equity Emphasis Areas.

Many of these disproportionalities likely stem from inequities in transportation infrastructure and modal options. The action items listed on page 12 to improve intersections and pedestrian infrastructure, as well as reduce vehicle speeds in Equity Emphasis Areas, will serve to reduce the disproportions in injuries across race and ethnicity.
**We will monitor progress on our equity actions.**

The County defined tracking metrics for each action item and will continue to assess our progress toward reducing disproportionalities in safety. We will report our progress toward these actions and use outcomes to inform the Arlington County Vision Action Plan update in 2025.

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>ACTION ITEM</th>
<th>TIMELINE</th>
<th>TRACKING METRICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Reassess proportionalities of crashes in Equity Emphasis Areas versus not</td>
<td>2023 - 2025</td>
<td>Reassess hospitalization metrics</td>
</tr>
<tr>
<td>1</td>
<td>Update and quality check Equity Emphasis Areas as new data becomes available</td>
<td>Coordinate with Arlington Transit FTA Title VI updates</td>
<td>Periodic check-ins with Arlington Transit on updates to Title VI area definition, which are used as a basis for the Equity Emphasis Areas</td>
</tr>
<tr>
<td>2</td>
<td>Prioritize safety analysis and safety improvement projects in Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Percentage of projects completed in Equity Emphasis Areas; percentage of community requests for projects in Equity Emphasis Areas</td>
</tr>
<tr>
<td>3</td>
<td>Improve safety at intersections within Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Percentage of projects completed in Equity Emphasis Areas; percentage of community requests for projects in Equity Emphasis Areas</td>
</tr>
<tr>
<td>4</td>
<td>Deploy engineering tools to reduce driver speeds in Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Percentage of projects completed in Equity Emphasis Areas; reduction in driver speeds in Equity Emphasis Areas</td>
</tr>
<tr>
<td>5</td>
<td>Enhance pedestrian infrastructure within Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Percentage of projects completed in Equity Emphasis Areas; percentage of community requests for projects in Equity Emphasis Areas</td>
</tr>
<tr>
<td>6</td>
<td>Host public safety campaign and build relationships in Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Estimated reach of campaigns in Equity Emphasis Areas; reduction in serious or fatal crashes in Equity Emphasis Areas</td>
</tr>
<tr>
<td>7</td>
<td>Evaluate safety improvements on corridors in Equity Emphasis Areas</td>
<td>2023</td>
<td>Reduction in speeds and serious or fatal crashes as determined through before/after study</td>
</tr>
<tr>
<td>8</td>
<td>Promote consistent safety messaging, infrastructure, and policies with regional partners</td>
<td>2023 - 2025</td>
<td>Regular check-ins with regional Vision Zero partners</td>
</tr>
<tr>
<td>9</td>
<td>Focus traffic safety and Vision Zero outreach in Equity Emphasis Areas</td>
<td>2023 - 2025</td>
<td>Percentage of outreach events held in Equity Emphasis Areas</td>
</tr>
<tr>
<td>10</td>
<td>Apply an Equitable Engagement Checklist to Vision Zero and other transportation outreach</td>
<td>Ongoing</td>
<td>Increase in engagement with historically underrepresented groups</td>
</tr>
</tbody>
</table>
This research supports the County's Equity Resolution.

Arlington County’s Equity Resolution, adopted on September 21, 2019, outlines five questions to assess a program’s equitable impact. This Vision Zero equity analysis addresses the questions as shown below.

**APPLYING THE LENS TO TRANSPORTATION SAFETY**

**WHO BENEFITS FROM THE COUNTY’S PREVIOUSLY EMPLOYED REACTIVE SAFETY APPROACH?**

Communities who actively report their concerns and engage with County reporting channels benefit from responses to safety inquiries and requests.

**WHO IS BURDENED BY THE COUNTY’S PREVIOUSLY EMPLOYED REACTIVE SAFETY APPROACH?**

Equity Emphasis Areas represent neighborhoods in Arlington that have historically been overrepresented in crash data and underrepresented in responses to transportation-related safety requests.

**WHO IS MISSING FROM CURRENT PROGRAMS AND INITIATIVES?**

Equity Emphasis Areas are underrepresented in community reporting channels.

**HOW DO WE KNOW WHO BENEFITS, WHO IS BURDENED, AND WHO IS MISSING?**

Analysis of crash data, community reporting, and hospital data supports these findings.

**WHAT DO WE DO TO ADDRESS THE PREVIOUS QUESTIONS?**

Arlington County will implement and monitor the 10 action items in the report, shown on pages 25-26.

**KEY TAKEAWAYS**

This analysis confirmed that there are neighborhoods in Arlington that have historically been overrepresented in crash data and underrepresented in responses to transportation-related safety requests.

The recommendations create a path forward for Arlington to:

- Be proactive in addressing infrastructure needs with an equity lens
- Create a platform to prioritize safety projects in underserved neighborhoods
- Ensure that reporting channels are clear and accessible to all community members

By tracking progress over time, we commit to reduce and rectify these disproportionalities over time.

The Vision Zero program will continue to prioritize safety projects that reduce fatal and severe crashes.

This analysis integrates equity into that prioritization process to ensure there is no undue burden (less access to safe infrastructure) on any of Arlington’s community members.
Appendix A: Equity Emphasis Area Systemic Crash Profiles
Pedestrian-Involved Crashes within One Quarter-Mile of a Community Facility

HISTORICAL CRASHES (2016 – 2020)
- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

68 Total crashes
12 KSI crashes

EQUITY EMPHASIS AREAS
Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

POTENTIALLY AT-RISK LOCATIONS
- At-risk locations from this crash profile

1 2 3 4 5 6 7 8 9 10
Number of at-risk locations from all Equity Emphasis Area crash profiles

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50’ of an existing crash have been removed.

1 INCH EQUALS 1 MILE

Pedestrian-Involved Crashes with Motor Vehicle Proceeding Straight in Low Vehicle Access Areas

HISTORICAL CRASHES (2016 – 2020)
- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

30 Total crashes
5 KSI crashes

EQUITY EMPHASIS AREAS
Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

POTENTIALLY AT-RISK LOCATIONS
- At-risk locations from this crash profile

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1 INCH EQUALS 1 MILE

N. TINCH EQUSALIST MILE
Pedestrian-Involved Crashes within Residential Areas

EQUITY EMPHASIS AREA CRASH PROFILE 3

43 Total crashes
5 KSI crashes
30 Users involved

HISTORICAL CRASHES (2016 – 2020)
- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

POTENTIALLY AT-RISK LOCATIONS
- Number of at-risk locations:

EQUITY EMPHASIS AREAS
- Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50’ of an existing crash have been removed.

Senior-Involved (60+) Crashes within 50 Feet of a Bus Stop or Metrorail Station Entrance

EQUITY EMPHASIS AREA CRASH PROFILE 4

40 Total crashes
4 KSI crashes
30 Users involved

HISTORICAL CRASHES (2016 – 2020)
- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

POTENTIALLY AT-RISK LOCATIONS
- Number of at-risk locations:

EQUITY EMPHASIS AREAS
- Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50’ of an existing crash have been removed.

1 INCH EQUALS 1 MILEN
Pedestrian-Involved Crashes with Motor Vehicle Turning Left in Low Vehicle Access Areas

**EQUITY EMPHASIS AREA CRASH PROFILE 5**

- Total crashes: 26
- KSI crashes: 2
- Users involved: 

2016 – 2020

- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

**HISTORICAL CRASHES**

Number of at-risk locations from all Equity Emphasis Area crash profiles

1 2 3 4 5 6 7 8 9 10

**POTENTIALLY AT-RISK LOCATIONS**

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50' of an existing crash have been removed.

1 INCH EQUALS 1 MILE

**EQUITY EMPHASIS AREAS**

Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

**Left-Turns in Commercial Areas**

**EQUITY EMPHASIS AREA CRASH PROFILE 6**

- Total crashes: 60
- KSI crashes: 4
- Users involved: 

2016 – 2020

- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

**HISTORICAL CRASHES**

Number of at-risk locations from all Equity Emphasis Area crash profiles

1 2 3 4 5 6 7 8 9 10

**POTENTIALLY AT-RISK LOCATIONS**

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50' of an existing crash have been removed.

1 INCH EQUALS 1 MILE

**EQUITY EMPHASIS AREAS**

Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population
Under-19-Involved Crashes in Residential Areas

Alcohol-Involved Crashes within One Quarter-Mile of a School
Alcohol-Involved Crashes in Residential Areas

HISTORICAL CRASHES (2016 – 2020)

- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

POTENTIALLY AT-RISK LOCATIONS

- At-risk locations from this crash profile
- Number of at-risk locations from all Equity Emphasis Area crash profiles

EQUITY EMPHASIS AREAS

- Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50’ of an existing crash have been removed.

Total crashes: 76
KSI crashes: 4

At-risk locations from this crash profile: 1 2 3 4 5 6 7 8 9 10

Left Turns within One Quarter-Mile of a School

HISTORICAL CRASHES (2016 – 2020)

- Fatal injury
- Severe injury
- Visible injury
- Non-visible injury
- Property damage only

POTENTIALLY AT-RISK LOCATIONS

- At-risk locations from this crash profile
- Number of at-risk locations from all Equity Emphasis Area crash profiles

EQUITY EMPHASIS AREAS

- Census block groups with 50%+ households with median income below $50,000 or 38.5%+ BIPOC population

This map shows where crashes of this profile have happened. It also shows locations with similar characteristics that are potentially at-risk for crashes of this profile. Potentially at-risk locations for all 10 Equity Emphasis Area crash profiles are overlaid to show road segments with the most potential risk exposure. Road segments within 50’ of an existing crash have been removed.

Total crashes: 57
KSI crashes: 3

At-risk locations from this crash profile: 1 2 3 4 5 6 7 8 9 10

FAIRFAX COUNTY ALEXANDRIA WASHINGTON, DC

FAIRFAX COUNTY ALEXANDRIA WASHINGTON, DC
Appendix B: Equitable Engagement Checklist

This appendix is coming soon.
Appendix C: Literature Review References


