The Effects of Equity Focus Area Status on Transportation Outcomes

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About the Fellow

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Acknowledgements

RESJ Impact Statement

This report hopes to ensure that the County's equity tools are used to their fullest potential. The primary recommendation is to strengthen the use of Equity Focus Area designation in the planning and design process. This includes the creation and adoption of Master Plans, the formation of the Growth and Infrastructure Policy, and any other part of Montgomery County short- and long-term development.

Race is one of the three indicators used in assigning EFA status, and having required reviews based on EFA would also require racial considerations. EFA also uses English proficiency as an indicator for need. The County's cultural diversity also lends itself to cultural and language barriers for already disenfranchised communities. Taking the time to explicitly consider and address EFA impacts of previous, and new, developments will help to strive towards social justice beyond just a racial dimension.

Executive Summary

Montgomery County experiences stark inequities among its neighborhoods and regions Equity Focus Areas (EFAs) represent an atypically large portion of the County's crashes and injuries and thus demands a solution. The County made strides by improving its infrastructure in EFAs, but it is not clear whether these improvements are directly attributable to the EFA designation itself or if they arose from some other regional characteristics. While the EFA designation does provide a valuable framework for identifying the needs of marginalized populations and allowing people to speak on them this report questions the tool's use in actualizing change.

Ultimately, the report has numerous recommendations on future research, data collection, and the use of the EFA as a policy tool:

- Further integrate the EFA tool into the planning and design process. Require more frequent equity reviews and reports on various master plans with a focus on those approved prior to the adoption of EFA.

- Update the MC311 system to an app that tracks location data. This may allow a more uniform dataset to be created and work from.

- Support completion of the Sidewalk Condition Index and maintain both it and the Pavement Condition Index up to date by requiring index updates as part of the project construction process. This can be done in a similar method to required site and frontage improvements.

- Continue research in on potential disparities among capital project appropriations.

BACKGROUND

Historically, transportation infrastructure was used across the country to perpetuate the marginalization of disenfranchised communities. Rail and highways bisected communities, and in some cases even displaced families from their homes. Ironically, this was typically done in the name of better serving the community. While it is true that access to a thorough transportation network is necessary for a community to grow and its people to prosper, these

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networks have not always served everyone equally. Underserved communities can be left with lackluster amenities, and this only makes it harder for their residents to access the benefits that necessitated a healthy transportation network in the first place.

Today, areas across the country are making efforts to rectify past mistakes by modernizing their infrastructure to best serve all residents rather than a privileged few. There are a wide variety of ways governments have gone about this, but I want to take a closer look at a few specific measures to evaluate Montgomery County's existing and expanding transportation projects. I will compare Equity Focus Areas (EFA) to non-EFAs to highlight any disparities that may or may not exist. To keep the scope and analysis focused, I will use bikeway and pedestrian projects from previous master plans. These programs have numerous projects with varied scales each year, and this works best to establish a methodology to potentially apply to other programs in the future.

Why EFA?

The County has a diverse set of indicators to help identify areas that might warrant greater focus in the name of equity. I closely considered using Equity Emphasis Areas (EEA), which comes from the National Capital Region Transportation Planning Board (TPB).[1] The most noteworthy differences are that EFA considers the ability to speak English and includes a wider variety of races in its racial component. I also considered

using the Justice40 (J40) designations from the US Department of Energy, but it still used the 2010 census data as of the time of my research.[2] The data felt too dated to seriously consider when there were competitive alternatives that made use of more recent data. Ultimately, I chose to use EFA. The Planning Department created EFA, so it feels the most focused towards Montgomery County specifically. I felt that using an indicator that represents the Planning Department's equity priorities allows for the most compatible results with the county's equity goals.
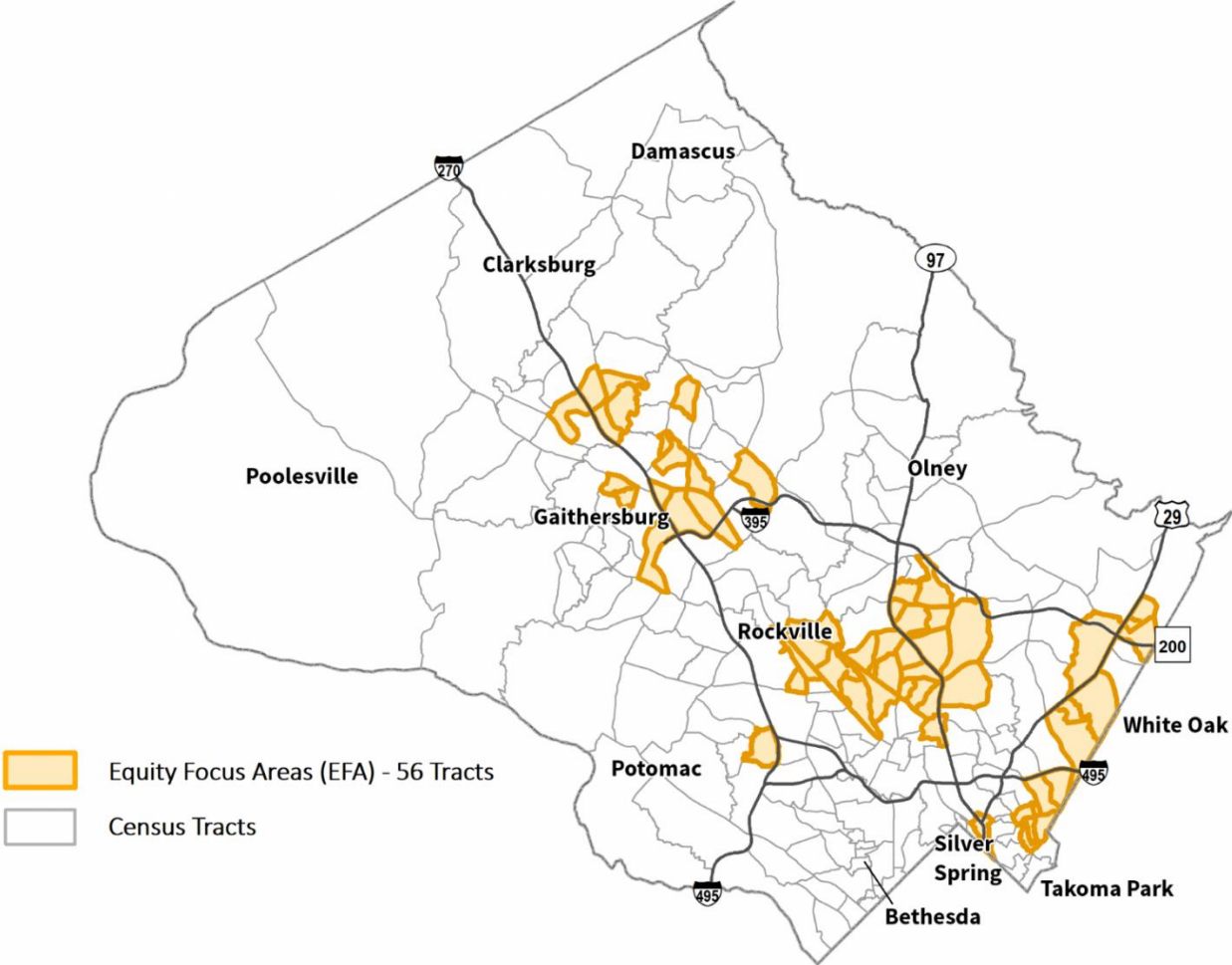

Figure 1: Map of Equity Focus Area Tracts

Research Questions

1. What does the County look like today along EFA and non-EFA lines?
2. How does EFA status impact project allocation in the County?
3. Is there a crowding out effect around capital projects?

WHERE ARE WE TODAY?

To understand the current state of transportation infrastructure and safety in Montgomery County, I analyzed crash data and Pavement Condition Index (PCI) scores. Over the past two fiscal years, Equity Focus Areas (EFAs) have accounted for approximately 41% of all reported pedestrian crashes (figure 3), and beyond that, they account for 45% of pedestrian severe injuries and fatalities even though they represent only about 14% of the County's lane miles (figure 2) and about one in four of residents. This disparity suggests that EFAs may face unique transportation challenges that require targeted interventions to ensure equitable safety and infrastructure quality.
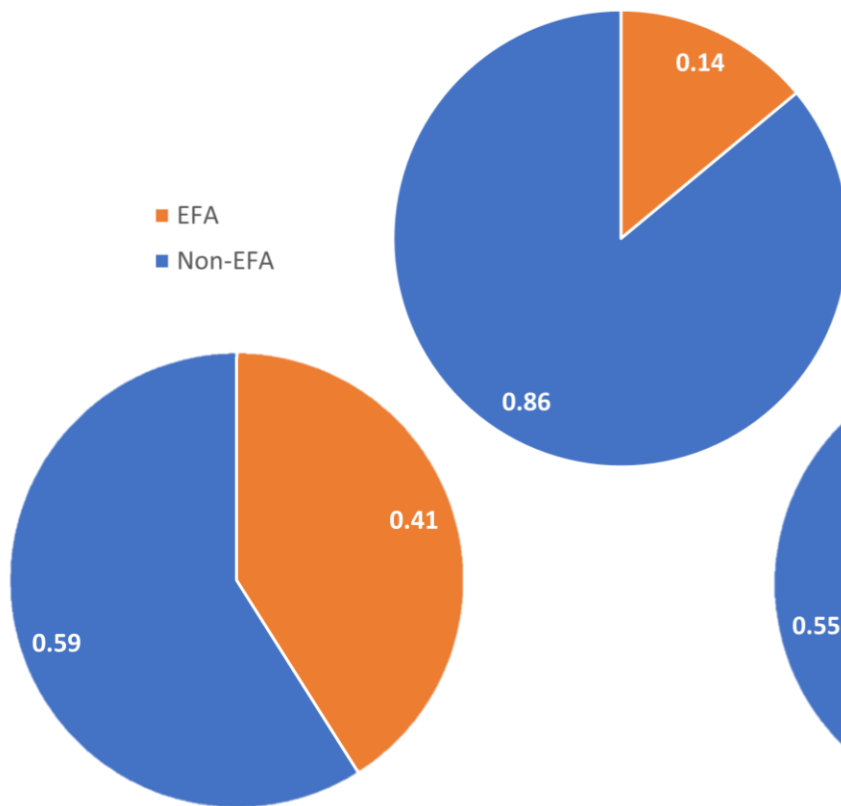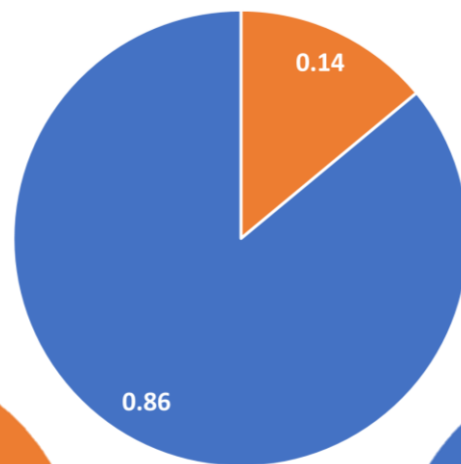
Figure 2: Share of Roadway Miles

EFA 0.14 · Non-EFA 0.86

Figure 3: Share of Pedestrian Crashes

EFA 0.41 · Non-EFA 0.59
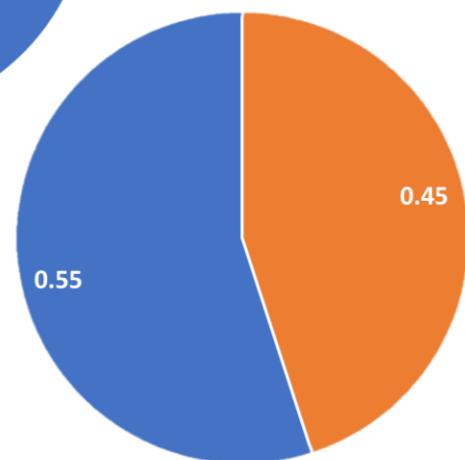
Figure 4: Share of Fatalities & Severe Injuries

EFA 0.45 · Non-EFA 0.55

The data indicates that EFAs experienced an average of 58.8 crashes in FY23 and 52.6 in FY24, while non-EFA tracts reported averages of 45.1 and 40.5, respectively. Although there was an overall decline in crash rates, the persistent gap between EFAs and non-EFAs remained relatively constant, highlighting ongoing issues that need to be addressed. Several factors could contribute to the higher incidence of crashes in EFAs. One plausible explanation is that EFAs include major traffic corridors with increased vehicle usage, leading to a higher probability of accidents. Alternatively, poorer road conditions could be a factor; however, an analysis of PCI scores indicates no significant variation in road quality between EFAs and non-EFAs, suggesting that other elements may be at play.

I examined population densities and their correlation with PCI scores to try to find some of the other potential explanations. The results, seen in Figure 5, showed that road quality appears consistent across census tracts with similar population densities, but also with a very slight trend of lower PCI scores at higher densities. EFAs generally exhibited slightly better PCI scores compared to non-EFAs until reaching a population density of around 10,000. This consistency suggests that road quality and EFA status are not directly related, and that population density might significantly influence both crash rates and PCI scores—likely resulting from differences in dense, urban settings and sparser rural ones.

Figure 5: Mean PCI vs. Population Density by EFA Status
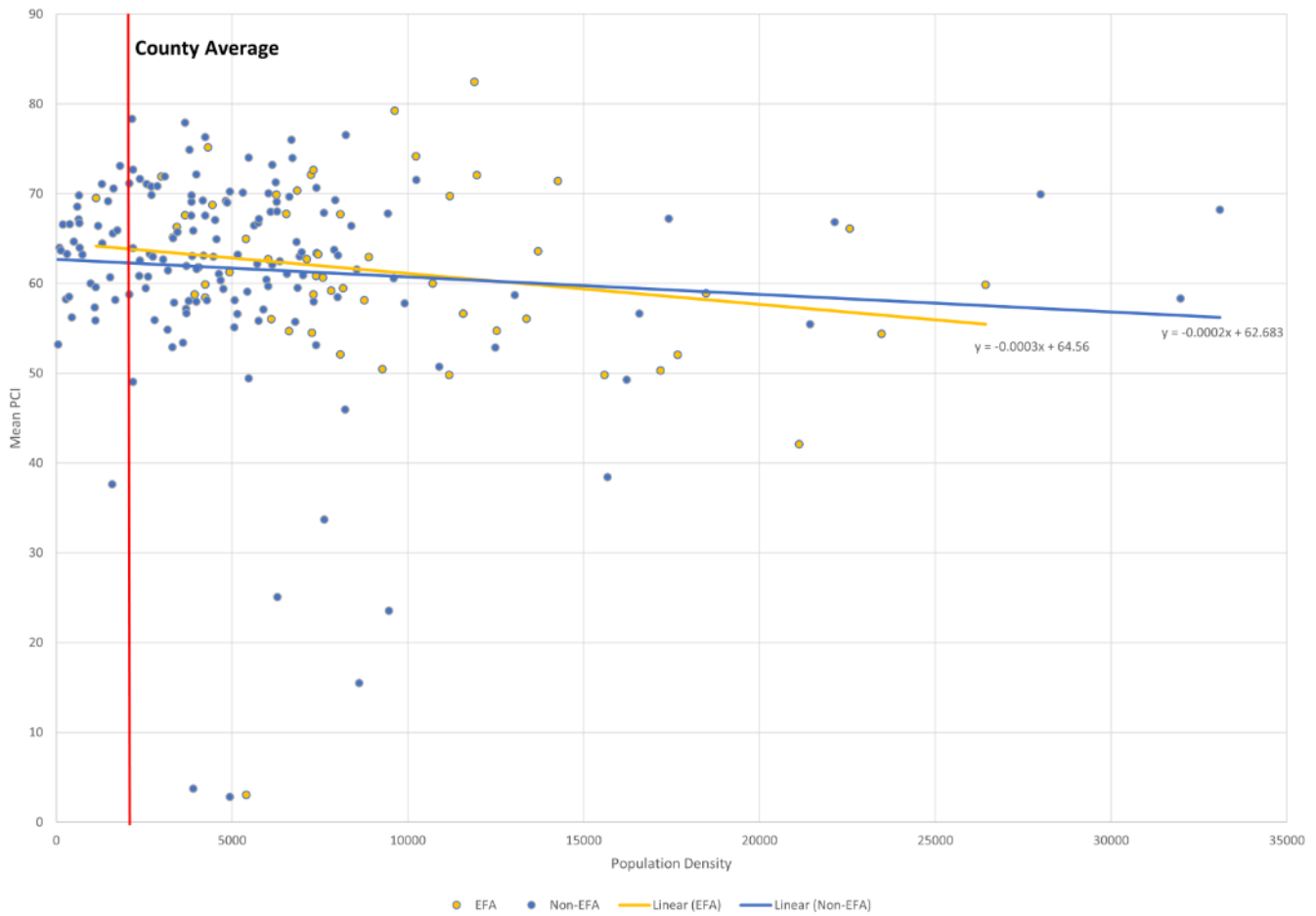
In all, existing data indicates that EFAs experience a higher incidence of crashes, which may not be directly related to road quality. Instead, these challenges could be tied to higher population densities and greater traffic volumes, as just a few of the possible explanations. This urban-rural and density explanation is further explored when looking at into the effects of EFA status in the next section.

HOW DOES EFA STATUS IMPACT PROJECT ALLOCATION?

In examining the influence of Equity Focus Areas (EFA) on bikeway and sidewalk construction, it is crucial to understand the context and evolution of planning within Montgomery County. The term "EFA" did not exist when the Bicycle Master Plan was adopted in 2018; it was only introduced in 2020. Despite this, my analysis reveals that EFAs have still seen infrastructure development. This raises important questions about the equity of the County's planning processes prior to, and since, the formal establishment of EFAs. In the appendix, there are figures and tables outlining a potential Difference-In-Difference analysis to bring out what a numerical impact of EFA status might be. This report does not carry the analysis out due to time restrictions and data barriers.

Projections from the Master Plans

The Bicycle Master Plan aimed to enhance the County's bikeway network with ambitious targets for protected bike lanes, shared-use paths, and neighborhood greenways. Although the plan scarcely mentioned equity-related terms, it set out to create a comprehensive and accessible bikeway system for all residents, indirectly promoting equitable access. Conversely, the Pedestrian Master Plan of 2023 explicitly focused on creating a comfortable, connected, and convenient pedestrian network with clear equity considerations. It aimed to improve pedestrian pathways, crossings, and overall pedestrian comfort, with a significant emphasis on EFAs to ensure balanced development across the County.

Outcomes from Monitoring Reports

Despite the absence of the EFA designation in the original Bicycle Master Plan, the 2021-2022 biennial monitoring report highlights substantial progress in bikeway construction within EFAs. This indicates that the areas now designated as EFAs were prioritized in practice, even without explicit labeling. EFAs saw a considerable share of new bikeways, often meeting or exceeding initial targets, suggesting that the County's planning was already aligned with equitable distribution goals without a tool to single out focus areas.

The Travel Monitoring Report seconds the insights into pedestrian infrastructure improvements, showing marked enhancements in EFAs. These areas reported higher satisfaction levels with pedestrian pathways than their non-EFA counterparts. The entire County saw significant safety improvements, aligning with the County's Vision Zero goals, but again EFA maintained consistent progress. The data demonstrates that EFAs have benefited from investments, leading to improved pedestrian experiences.

EFA is not the Key?

The notable progress in EFAs, despite their absence from the original Bicycle Master Plan, suggests that Montgomery County's planning might somehow inherently target EFAs. This observation raises a critical question: why do we observe progressive and equitable outcomes even when specific equity considerations, such as EFA status, were not part of the original planning framework?

One plausible theory is that EFA status may have only a minimal impact on changing outcomes. Instead, the County's planning focus may already be accurately targeting areas in need, even without explicitly considering EFA status. A potential explanation for this might be that EFAs simply look different than non-EFAs. Descriptively, they tend to be more urbanized, with higher population densities, shorter travel times, and closer proximity of amenities. These urban characteristics necessitate different kinds of

transit solutions, such as increased public transit, bikeways, and sidewalks, which have all been increasingly prioritized in County planning in recent years.

Furthermore, the factors that determine EFA status—minority population, income, and English-speakers—are more likely to be found in high concentrations in densely populated, urban areas. These areas are ripe for growth and infrastructure improvements, aligning them with the County's natural planning priorities. Therefore, it is possible that EFA status and resource allotment are both correlated with urbanization and density, rather than EFA status directly causing a place to receive more resources. It is likely that if we compared EFAs to their immediately surrounding non-EFA areas, we might find similar levels of growth and infrastructure development, suggesting that the observed patterns of EFAs doing better than non-EFAs in monitoring reports may be more about urbanization and density than the EFA designation itself. The relatively rural Up-County area does not need the same transportation solutions that compact urban area might.

While the introduction of EFAs has provided a valuable framework for promoting equity, it is essential to understand what the tool has helped us accomplish. It has certainly made articulating the needs of higher-need populations and regions easier, and it has provided an accessible way view growth through an equity lens. That said, it is not clear that an area is better off simply by being named a focus area. The actual benefits of EFA designations likely need further examination. Here, I investigated a few of the County's many master plans and reports, but these do suggest that EFA might be more of a tool to understand the County rather than a tool to improve it. A more nuanced understanding may help ensure that equity-focused planning truly benefits all residents of Montgomery County.

DO LARGE PROJECTS CROWD OUT SMALL ONES?

Initially, this question a potential crowding out effect was intended to have a significant role in this paper. I hoped to examine if and how major capital projects might impact the allocation and completion of operational projects within their vicinity. Understanding these dynamics is crucial, as it provides clearer insight into the opportunity costs associated with prioritizing certain types of projects. Unfortunately,

while I believe that the County does possess the necessary data, I faced challenges in obtaining that data in time for this paper. Therefore, I will outline my proposed methodology that I had planned to use and why the results would be helpful.

Ideally, the data to adequately address this question would include the location and funding details of capital projects—such as new road constructions, major renovations, and significant infrastructure enhancements. Along with that, it would include data on operational projects—such as streetlight replacements, storm drain maintenance, leaf collection, and road resurfacing—are crucial. While less crucial, the inclusion of 311 service request data, specifically the location and completion times of these requests, would help to create a more comprehensive understanding as they provide insight into resident-perceived maintenance needs and how promptly these needs are addressed.

The proposed methodology involves first mapping the location of capital projects and analyzing their funding levels. This data would be compared against the distribution and funding of operational projects within a set radius of each capital project. By examining the frequency and scope of operational projects near capital projects, we can assess whether the presence of significant capital investments impacts the maintenance activities in their vicinity. This comparison would be carried out separately for EFAs and non-EFAs to identify any disparities in how resources are allocated based on these designations.

Additionally, integrating 311 service request data may offer a more nuanced understanding of maintenance needs and County response times. This data could highlight areas where residents report frequent issues and track the County's responsiveness to these requests, again accounting for any potential variations between EFAs and non-EFAs. For instance, if areas near major capital projects show delayed responses to 311 requests, this could indicate a crowding-out effect where maintenance resources are diverted towards the capital project at the expense of smaller, yet essential, operational tasks.

This methodology would hope to reveal whether prioritizing large capital projects inadvertently leads to neglect in routine maintenance, particularly in the vicinity of these projects. Such insights are vital for informed short- and long-term planning and resource allocation, ensuring that infrastructure improvements do not come at the

expense of maintenance activities. Moreover, by comparing EFAs and non-EFAs, we could evaluate if there are any equity concerns that would require more explicit considerations in planning stages. While I was unable to perform this analysis within the timeframe of this paper, the proposed methodology may serve as the groundwork for a more refined study in the future. By examining any potential crowding-out effects of capital projects on operational maintenance and comparing these effects between EFAs and non-EFAs, Montgomery County can ensure that its infrastructure planning is efficient, effective, and equitable.

CONCLUSIONS

The data from RQ1 reveal significant differences in road quantity, safety, and population density between EFAs and non-EFAs. Montgomery County has a very diverse landscape, ranging from the more rural agricultural reserve to the highly urbanized downtowns. It seems that EFAs share many environmental similarities with those more urbanized centers, such as higher population densities and increased traffic volumes. These factors contribute to the shared transportation challenges faced by EFAs, evidenced by higher crash rates despite comparable road quality to non-EFA regions.

RQ2 examines the impact of EFA status on project allocation and suggests that the relative progress of EFAs in recent years may be attributed more to the inherent characteristics of urbanized and densely populated areas rather than the EFA designation itself. Urban areas naturally require more transportation infrastructure to support alternative modes of transportation like sidewalks and bikeways. Since EFAs are typically urbanized and densely populated, they inherently receive more infrastructure investment. This may imply that the County's planning processes might be driven by efficiency and practical needs, which coincidentally align with equity goals, rather than explicitly targeting EFAs for equitable outcomes.

RQ3 was intended to explore whether large projects crowd out smaller ones, particularly in EFAs versus non-EFAs. Although data access issues prevented a thorough analysis, the proposed methodology outlines a path for future research to understand the opportunity costs associated with prioritizing capital projects over operational ones. This is crucial for ensuring that infrastructure improvements do not come at the

expense of essential maintenance activities and that equity considerations exist at both macro and micro levels.

Montgomery County has made significant strides in improving infrastructure in EFAs, aligning with the County's goals of prioritizing equity. However, it is less clear whether these improvements are directly attributable to the EFA designation itself. The EFA designation provides a valuable framework for identifying and addressing the needs of marginalized populations, but it appears that the inherent characteristics of EFAs— such as higher population density and urbanization—may naturally attract more resources and infrastructure projects. This suggests that the observed equitable outcomes may be more related to these urban characteristics than to the EFA designation alone.

Ultimately, while the EFA designation provides a valuable framework for promoting equity, its actual benefits require further examination. A more nuanced understanding of how these designations influence planning and development may help ensure that Montgomery County's efforts towards equity are both meaningful and effective. Future research should continue to explore these dynamics to ensure that the County's planning processes truly promote equitable outcomes for all residents.

RECOMMENDATIONS

#1. Future Research on Crowding Out Effects

One of the primary areas for future research is assessing whether large capital projects crowd out smaller operational projects, particularly in EFAs versus non-EFAs. This analysis could help to understand the opportunity costs associated with prioritizing infrastructure projects and ensure that essential maintenance activities are not neglected. Such research would involve collecting location and funding data for both capital and operational projects, as well as integrating 311 service request data to gauge resident-perceived maintenance needs. Implementing this study would provide insights into the balance between capital investments and routine maintenance, ensuring that infrastructure improvements do not come at the expense of essential services.

#2. Enhancing the 311 Service Request System

To improve data accuracy and usability, Montgomery County should consider adopting a model similar to Washington, D.C.'s 311 system. The DC app allows users to submit service requests with pictures that natively have geospatial data attached, simplifying the process and ensuring precise location data. This app also offers the benefit of being more user-friendly, eliminating the need to visit a website or make a phone call. By encouraging the use of such an app while maintaining multiple methods for placing requests, the County can streamline and homogenize data collection, providing valuable insights for future analyses.
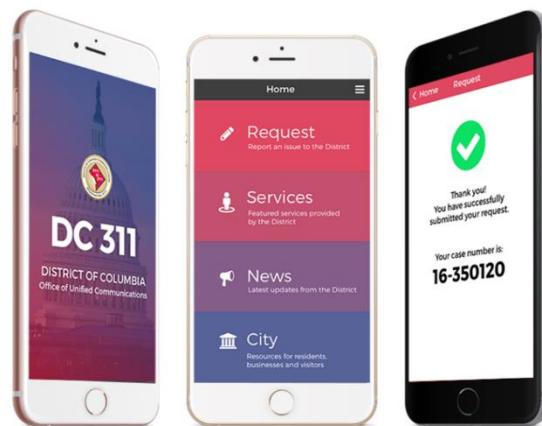
#3. Pavement and Sidewalk Indices

The success of the PCI highlights the potential for creating a similar index for sidewalks. Implementing a Sidewalk Condition Index (SCI) would provide a comprehensive inventory of the County's pedestrian infrastructure, facilitating better planning and maintenance.

Creating the SCI would take a lot of time, and keeping both it and the PCI up to date would prove to be very cumbersome and likely expensive. To help resolve this, I recommend integrating updates to the PCI and SCI with required frontage improvements for development projects. This would ensure that these indices remain current and useful. This change would likely cause increases in development costs for the County, but the County would have to incur the costs of updating PCI and SCI data regardless of whether it is through periodic surveys or integrating updates into the development process. That said, incorporating these updates into the frontage improvements process could balance the costs more efficiently. This approach would provide more frequent updates and expedite the creation of the SCI.

Realistically, the County would need specific parameters to determine when updates are required—such as setting a minimum number of years since the last update or requiring updates only for projects involving a minimum amount of pavement or sidewalk. Ultimately, by including pavement and sidewalk inventory updates in the development process, the County may be able to ensure that those inventories remain accurate and effective.

A Wider Examination

While this study primarily focuses on a small part of transportation, it points to the importance of an eventual, more comprehensive evaluation of EFA designations across multiple departments within the County. EFA designations were intended to identify marginalized populations and support equitable planning efforts; however, if these designations do not significantly impact the County's development, the County ought to reevaluate their use. A nuanced understanding of how these designations influence planning and development may help ensure that Montgomery County's efforts towards equity are both meaningful and effective. Further research and ongoing

evaluation will be crucial in refining these efforts and ensuring their effectiveness in promoting equity across the County.
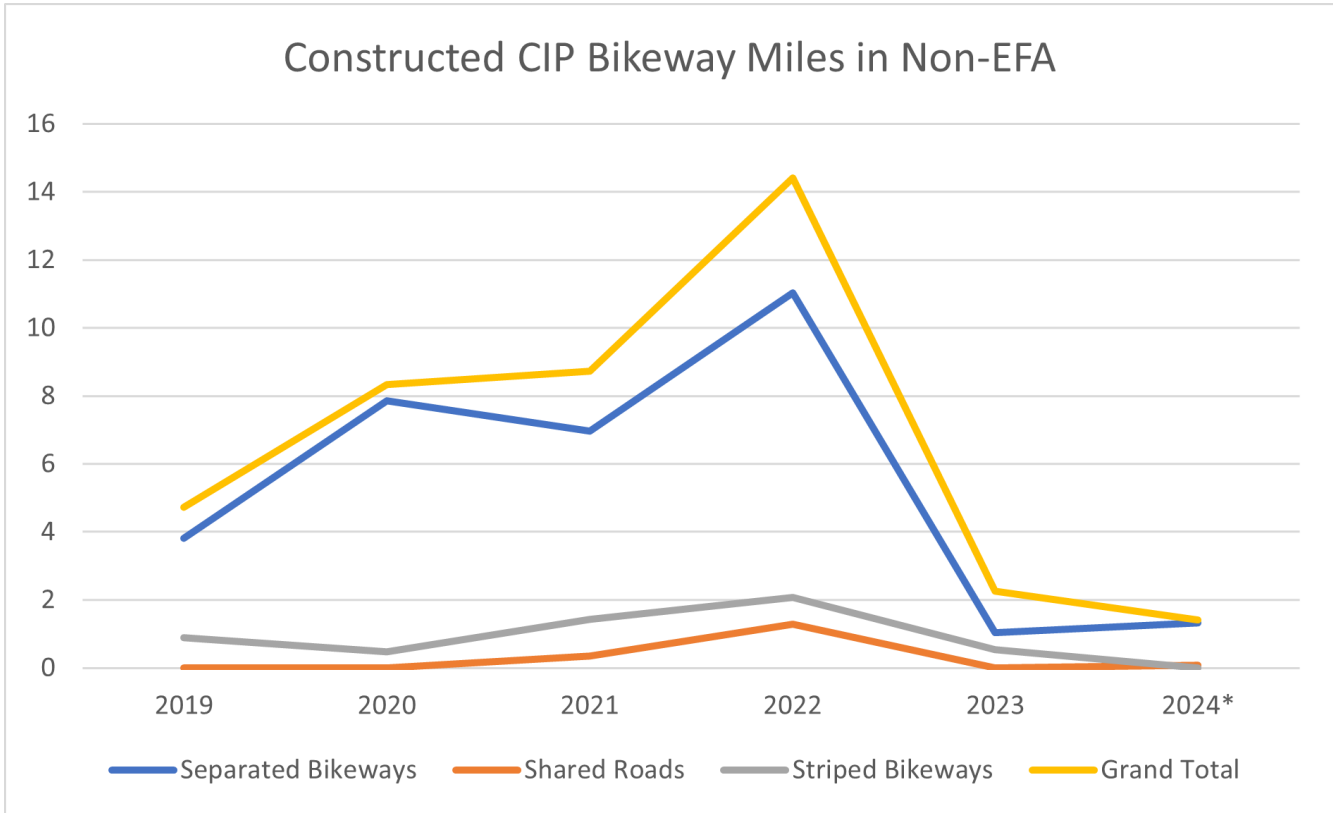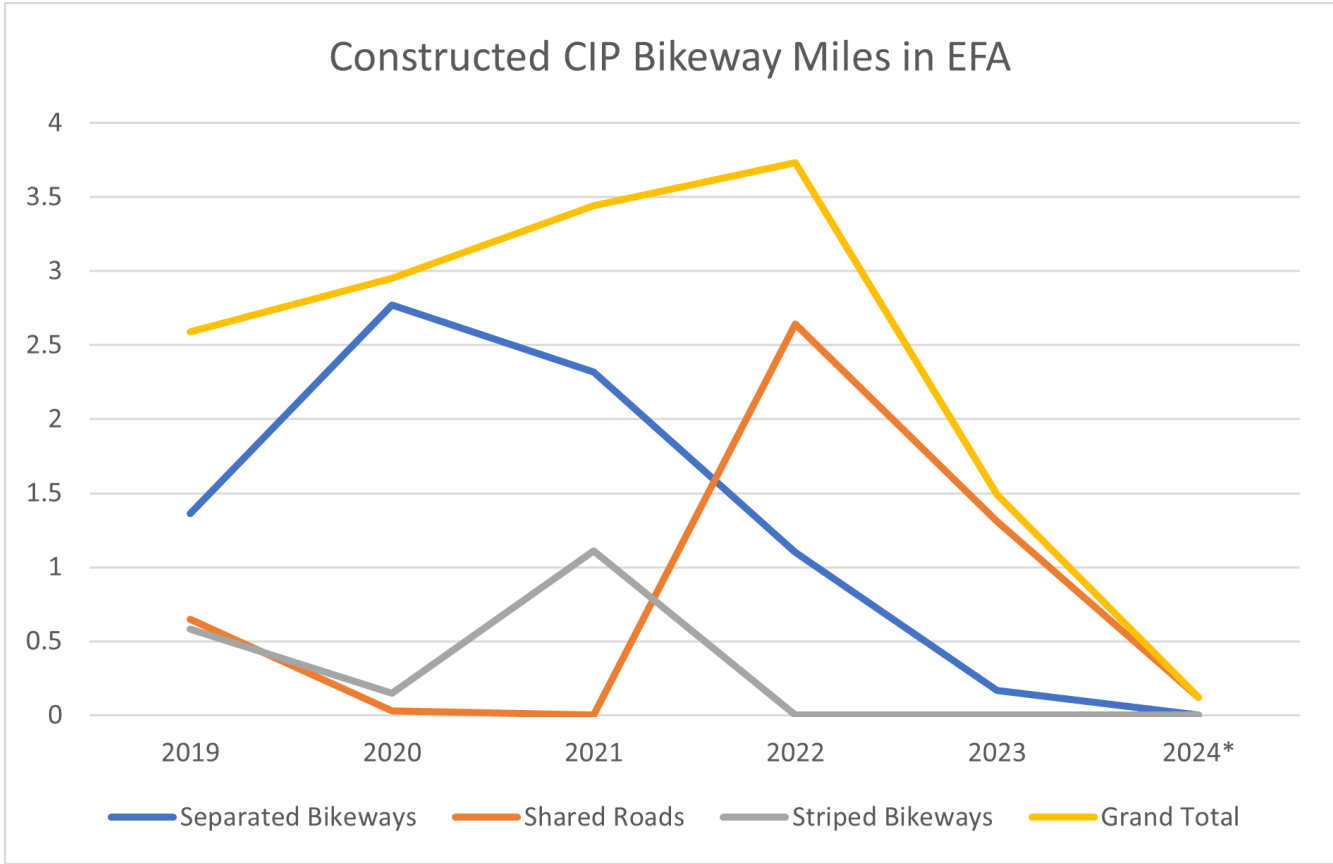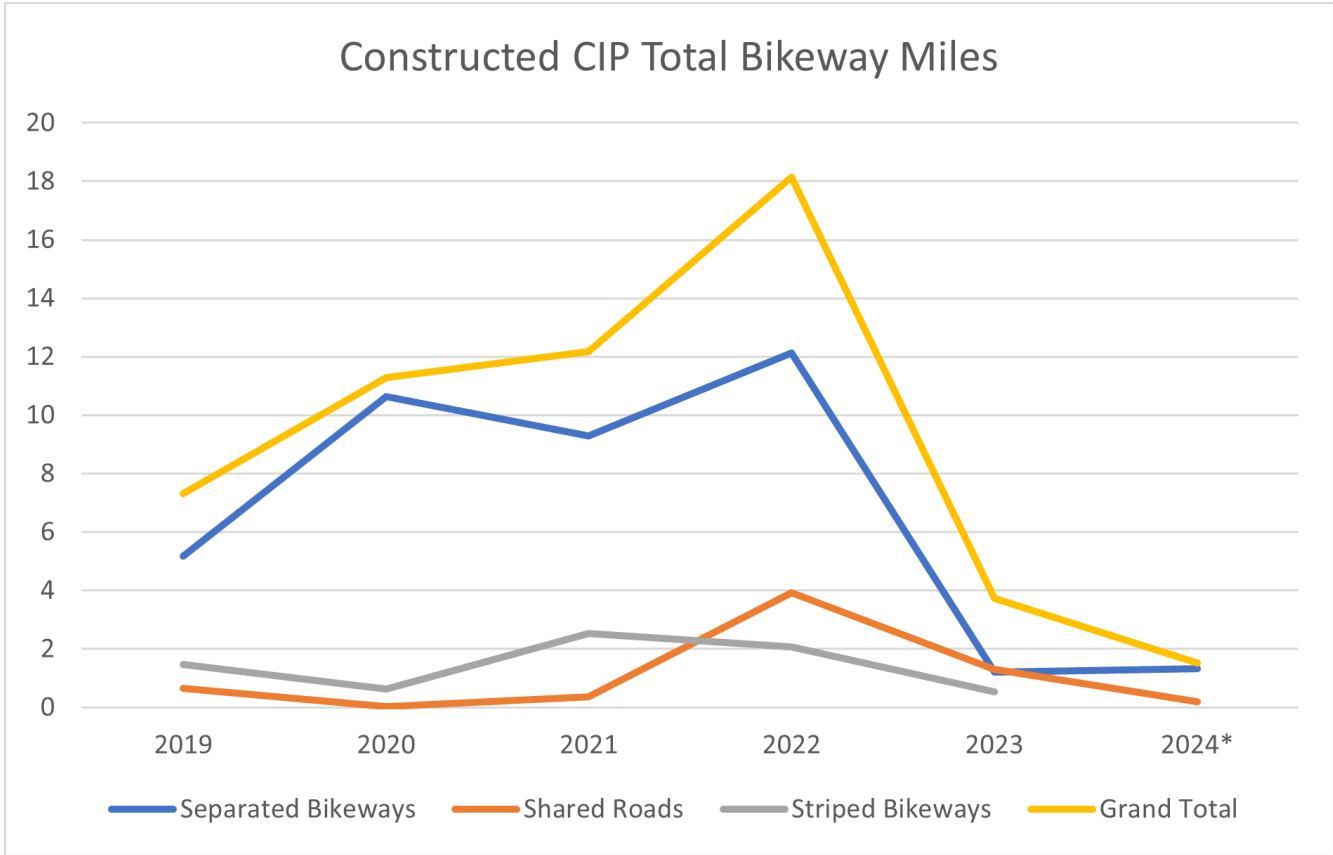
Greater Use of EFA

The introduction of EFAs has provided a valuable framework for speaking about equity, but it is important to understand what the tool has actually helped the County accomplish. It is not clear that an area is better off simply by being named an Equity Focus Area; any benefits we've seen so far seem like they might come from characteristics other than EFA status. If equity is to be a true goal for the County, then we need to ensure that decisions seriously consider EFA status.

I recommend that the Council make use of EFA status in more stages of the planning and development process on a more regular basis. This can be done through CIP development by requiring explicit EFA considerations. It can also appear in the master planning process by requiring scheduled reports to examine various Plans on their EFA impact. This would be especially useful for plans that were adopted prior to the establishment of EFAs. While identifying these high-need areas has been a great first step, it has not brought about the change that gave rise to the initial need for a focus on equity in the first place. EFA ought to be more than just a tool to describe the County; it ought to be used to bring about equitable improvements as well.

Appendix

Separated Bikeways			
Separated Bikeways	EFA	Non-EFA	Difference
2019-2020	4.13	11.68	-7.55
2021-2024*	3.59	20.36	-16.77
Total	-0.54	8.68	-9.22
Shared Roads			
	EFA	Non-EFA	Difference
2019-2020	0.68	0	.68
2021-2024*	4.07	1.73	2.34
Total	3.39	1.73	1.66
Striped Bikeways			
	EFA	Non-EFA	Difference
2019-2020	0.73	1.37	-0.64
2021-2024*	1.11	4.02	-2.91
Total	0.38	2.65	-2.27
Aggregated Bikeways			
	EFA	Non-EFA	Difference
2019-2020	5.54	13.05	-7.51
2021-2024*	8.78	26.8	-18.02
Total	3.24	13.75	-10.51

Constructed CIP Bikeway Miles in EFA

Legend: Separated Bikeways, Shared Roads, Striped Bikeways, Grand Total

Constructed CIP Bikeway Miles in Non-EFA

Legend: Separated Bikeways, Shared Roads, Striped Bikeways, Grand Total

Constructed CIP Total Bikeway Miles

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