Addressing the Effect of Housing Insecurity on Chronic Absenteeism at Richmond Public Schools

Prepared For Richmond Public School's Office of Engagement



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- Accreditation A process by which a school is reviewed and evaluated to ensure that it meets certain standards of quality and effectiveness as set by a specific agency. (RPS schools will lose accreditation if more than 25% of students are absent for more than 10% of the school year)
- **C-FIT** Richmond Public School's Center for Families in Transition
- **Chronically Absent** Missing more than 10% of days in a school year
- **Family Liaisons** -Staff on in RPS the Office of Community and Family Engagement that work to provide necessary resources to families and students
- **Gentrification** The Process by which economically disadvantaged individuals living in an urban area are displaced due to the establishment of new businesses and wealthier individuals establishing housing in the area
- **Housing Discrimination** Unfair treatment in terms of an individual being able to buy or rent a home due to bias from housing authority
- **Inclusionary Zoning** local zoning practices that drawn on the economic gains from rising real estate values to create affordable housing for lower-income families
- McKinney-Vento Federal Act provides rights and services to children and youth experiencing homelessness, this includes but isn't limited to; students who share housing of others due to loss of housing, economic misfortune, or a similar reason; staying in motels, shelters, transitional housing or public areas due to the lack of adequate housing
- **RPS** Richmond Public Schools
- RPS Office of Engagement Entity within Richmond Public Schools that focuses on engaging with students and providing resources to ensure the success and wellness of students
- **RRHA** Richmond Redevelopment and Housing Authority
- School Board Authority responsible for resource allocation and policy implementation of Richmond Public Schools
- **School Transportation** the organized system of transporting students to and from educational institutions, typically using buses or other designated vehicles

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The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

Acknowledgements and Dedication:

First and foremost, I would like to express my gratitude and appreciation to my family, especially my mother and grandmother, without their daily motivation and constant support I would not be in the position that I am in today. Additionally, I would also like to thank all my peers within the Batten community as well as all my friends outside of Batten who show me constant love and support. I'd also like to extend a huge thank you to Professor Andrew Pennock & Professor Gerard Robinson for their unparalleled guidance through the entire APP process, their vast knowledge and overall passion for their students, it is greatly appreciated. Lastly, I would like to thank Darryl Williams and all of Richmond Public Schools for giving me an uncanny number of resources and support to ensure my process in completing this project ran smoothly. From my time working with RPS over the summer to now I have gotten nothing but support from everyone on staff, I truly feel as though they are a second family to me. In my journey to and through higher education I have met a vast amount of wonderful people who have aided me in every capacity possible. I appreciate everyone who had a hand in getting me to this point in my academic career and will cherish their love and support forever!

Honor Pledge

On my honor as a student of the University of Virginia, I have neither given nor received unauthorized aid on this assignment.



Executive Summary

Richmond's housing crisis has made affordable living hard to come by which has resulted in negatively impacting students' ability to attend school consistently. This technical report addresses chronic absenteeism that is caused by housing insecurity faced by RPS students. The

report gives a brief background on how chronic absenteeism affects school systems across the United States then delves deeper into how the problem is affecting RPS. Political, geographic, and systemic factors deepen this issue, with rise in absentee rates linked to economic disparity, gentrification, and transportation challenges. High chronic absenteeism not only threatens students' academic achievement but also risks schools losing accreditation, highlighting the need for specially targeted solutions to address the interconnected issues of housing insecurity and educational access.

The literature review portion of the technical report explores evidence-based solutions to tackle chronic absenteeism, focusing on alternative transportation methods and community engagement strategies. Public transit partnerships, ridesharing programs, and optimized bus routing policies show promise in approaches to improve school attendance among transient students. Furthermore, strong community engagement efforts are essential for the effective implementation of federal policies like the McKinney-Vento Act, ensuring that housing-insecure students receive the necessary support they deserve. The literature highlights the importance of a multifaceted approach, combining transportation solutions with active community involvement to address the systemic barriers that hinder students' access to education.

Following the review of evidence-based approaches three policy alternatives are proposed to address chronic absenteeism due to housing insecurity; 1) Utilizing *HopSkipDrive*, a ridesharing service for safe and efficient student transportation; 2) Establishing a *Housing Stability Taskforce* within RPS to support McKinney-Vento students and 3) *Reconfiguring Bus Routing Technology* to enhance transportation reliability. Each alternative is evaluated based on political feasibility, administrative effectiveness, equity, and cost. After assessing these policy alternatives based on the following criteria the recommendation is to integrate HopSkipDrive, given its practicality, affordability, and potential to show quick results in improving school attendance among students facing housing insecurity. This recommendation includes a comprehensive implementation plan that provides detailed steps on how to ensure smooth roll out of this system.

Introduction:

This work product will provide an in-depth analysis of the problem of chronic absenteeism within Richmond Public Schools (RPS) and how housing insecurity in and around the city of Richmond has been a significant hurdle for families in terms of getting their students to school. In pinpointing the root causes of this issue, this product will analyze the current spike in the chronic absence rate of Richmond and provide background information on relevant systems and stakeholders that contribute to and are affected by this problem. In providing context and background of the problem at hand this work will utilize evidence from outside policies and

practices and analyze how such practices could be integrated with the current approach RPS is taking to help remedy chronic absenteeism that is a result of housing insecurity. Through the provided evidence and evaluation of current systems with RPS, I will provide solutions/policy recommendations that can be implemented by RPS. Through assessing these proposed solutions, this work will provide a recommendation of one of the proposed solutions followed by a plan for implementation of the proposed recommendation.

Problem Statement:

The current housing crisis in Richmond, VA is making affordable housing hard to come by for residents in the city. As a result of the challenges families face in dealing with housing insecurity, there has been a significant rise in chronic absentee rates within Richmond Public Schools.

Client Overview:

I am working with the Office of Community and Family Engagement for RPS and reporting specifically to Darryl Williams, Associate Director of Family and Community Engagement. The Office of Family and Community Engagement works to provide integral resources & information to families and students to ensure there is academic, social, and technical support throughout a student's time with RPS. The Office of engagement works directly with families and students to provide intentional, hands-on support for any problems that families may encounter both in and outside of the school setting. The Office of Engagement deals directly with the causes and issues that spark from chronic absenteeism. A lot of their work deals with developing strategic programming to engage families where they are, to make sure that their students are showing up to school. The Office of Engagement does a lot of work to aid families in what they may need and to help them get over the hurdles that may be hindering their child's school attendance. Honing more into the impact housing insecurity has on RPS attendance rates, The Office of Engagement is made up of three different community hubs that work with different schools across Richmond. The community hubs include the East End hub, Southside hub, and Northside/West End hub. Each of these community hubs consist of Family Liaisons that are assigned to certain schools and work directly with students and families.

The Office of Engagement contains the Center for Families in Transition(C-FIT). C-FIT deals directly with students who are experiencing housing instability & homelessness. C-FIT works to provide financial support for families in an effort to keep them in stable housing so that students are able to attend school and succeed. C-FIT aids families in paying rent and works with housing agencies to reduce the cost of living in specific units for families of RPS students. Problems that occur within The Office of Engagement and C-FIT, are associated with identifying which families need help, navigating the McKinney-Vento Process, and getting buy-in on the school level. These problems faced by my client are attributed to the internal processes within the system as well as the outward effect that housing insecurity is having on student attendance.

Problem Background

Political Salience

This policy problem is one that has constantly been on the radar of the Department of Education and is currently a significant issue that the Biden-Harris administration is looking to correct. All U.S. states have passed compulsory attendance laws, these laws have elements such as; mandated attendance by children of a certain age range, Definitions of chronic absenteeism, and penalties if students or parents do not comply with these laws (American Institutes for Research, 2022). The Biden-Harris administration has made plans to improve student achievement through addressing absence rates. This new push to address chronic absence rates will require states to accurately collect data on absence rates and ensure that their support funds are appropriately used to address chronic absence (Biden-Harris Administration, 2023). The Department of education will also work to keep families and students accountable through pushing better school district-family engagement practices to get students to attend schools.

Geographic Implications

According to the Department of education, in the 2015-2016 school year 800 school districts across the United States reported that over 30 percent of their students missed 3 weeks of school or more (Civil Rights Data Collection, 2019). Utilizing Data from the Civil Rights Data Collection (CRDC), the Hamilton project measured national chronic absenteeism rates in the 2017-2018 school year. Through their assessment they found that 11 states averaged chronic absentee rates of 20 percent or higher. They also found that 16 states averaged chronic absentee rates between 15 and 20 percent (Civil Rights Data Collection, 2019). This data shows us that high chronic absentee rates are a significant issue that plague different districts in different states across the nation. This problem is one that needs addressing on both the state and national level in order to properly address the problem and develop solutions for particular circumstances.

Virginia's Scope

A study that utilized kindergarten readiness data collected through Virginia's statewide readiness assessment found that on average the state of one's neighborhood was positively associated with one's readiness for Kindergarten (Lenahan et al., 2022). This study also found that a student in a higher-resourced SAB (School Attendance Boundary) was 8.4% more likely (p <0.001) to demonstrate school readiness skills than a similar student in a lower-resourced SAB (Lenahan et al., 2022) Race was a significant factor that is linked to these socio-economic implications. It was found that Black students overrepresented lower Resourced SAB's while the opposite was found for White and Asian students. Through this one can see that poverty and housing insecurity play significant roles at the beginning of a student's educational path and continue to have strong implications that lead to challenges down the road

RPS Context

Identifying Causes and Symptoms

The problem faced by RPS comes from a multitude of angles, these problems span from gentrification to systemic challenges RPS faces internally. Figure 1 Maps out the symptoms of each of the root causes that feed into the main problem of the impact housing insecurity has on student absentee rates. The root causes that RPS can have a direct impact on are the systemic challenges within and obstacles that come with student transportation. Other causes including housing discrimination, gentrification, and economic disparity are products of a larger systemic failure by the city of Richmond; however, RPS can certainly play a significant role in the mitigation of these root causes to the overall problem. This root cause analysis map outlines systemic challenges faced by RPS. The diagram is divided into different thematic areas including housing discrimination, gentrification, high absence rates due to housing insecurity, racial implications, economic disparity, and transportation issues. The diagram provides a visual representation of the interconnectedness of these systemic issues and how they affect one another. This root cause analysis emphasizes the problems that feed into the larger issue of high absence rates due to housing insecurity.

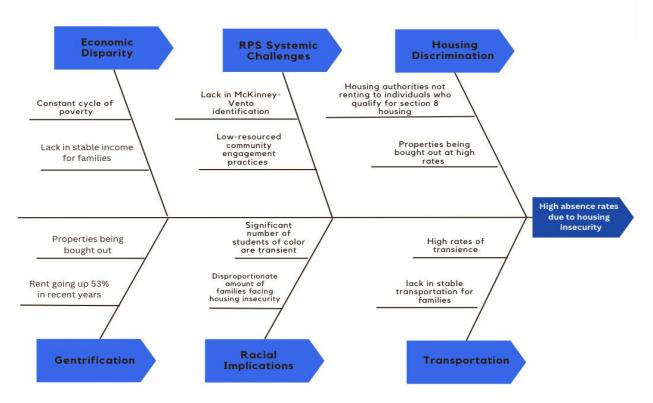


Figure 1. Root Cause Analysis

Analysis of the Problem Themes

Housing Discrimination:

 There have been trends of housing authorities not renting to individuals who qualify for Section 8 vouchers • Families of color are disproportionately affected by rental stipulations, indicating systemic biases in housing policies and practices that negatively impact these families.

Gentrification:

- There has been a significant increase in property values, Richmond has seen a rough 50% increase in rent over the last 5 years
- Families are being forced to move due to housing price increases, which further leads to Richmond's housing insecurity problem.

Racial Implications:

- There is a disproportionate number of students of color who are transient, which may be related to the broader systemic issues in housing and economic disparity.
- A disproportionate number of families of color are facing housing insecurity, further emphasizing the racial disparities within the community.

Economic Disparity:

- Economic disparity has been prevalent in Richmond and the gap in socioeconomic status is apparent
- This increases the number of individuals who have issues with stable housing.
- The cycle of poverty is present which highlights the systemic barriers preventing economic mobility for certain communities.
- The economic disparity in Richmond makes it seem as if there are two cities in one.

Transportation Issues:

- Lack of stable family transportation in accordance with lack of housing affordability, suggests that families may be facing a number of socio-economic hurdles,
- Families may also be having trouble in accessing reliable transportation, which can impact employment opportunities and school attendance.

High Absence Rates due to Housing Insecurity:

- This is the overarching problem that is the result of the root causes shown in the diagram
- This problem is leading to schools losing accreditation, and is ultimately a driver of learning loss for RPS

Analyzing Richmond's Housing Problem

In March of 2023 a housing crisis was declared in the city of Richmond (Murray, 2023). Families have struggled to pay rent as the 5 year change in home prices form 2017-2022 has gone up 52.6% (Freddie Mac, 2022). This has led to many families and individuals in Richmond unhoused or fighting to keep up with rental payments. In January of 2024, the winter point-in-time (PIT) snapshot reported that the count of individuals without shelter was up 9.6% compared

to this time last year (Gonzalez, 2024). This totals to roughly 600 people in and around Richmond living without a home, however, this number does not account for the number of transient individuals or individuals on the verge of eviction/foreclosure.

Highlighting Racial Economic Disparity

The housing crisis in Richmond has racial implications embedded within, as African American families bear the brunt of this issue due to them making up a large portion of low-income families in Richmond experiencing the highest rates of poverty at 31.6% (Office of Community Wealth building, 2020). Another contributing factor to housing loss is *gentrification*, new developments in the area are leading to the rise of the property value in different areas within the city of Richmond, this has led to a spike in Richmond's average rent. The price increase in wealthier housing has an effect on lower income communities as they are being priced out of gentrified areas and are being forced to move (Schmidt, 2022).

Economic Disparity is a significant factor when it comes to housing insecurity in Richmond. Economically, Richmond can be seen as two cities in that there is a large gap between incomes within the city. Richmond is plagued with economic disparity as The Urban Institute ranked Richmond 261 out of 274 cities on overall inclusion, 253 on economic inclusion, and 236 on racial inclusion (Cocoran, 2022). The challenges in Richmond are daunting as 35% of households make less than \$25,000 a year. This issue is coupled with the fact that 43% of residents spend 30% of their income on housing, which leads to high eviction rates (Cocoran, 2022).

The Effect of Housing Insecurity on Chronic Absenteeism at RPS

RPS absence rates witnessed a recent surge post-Covid, with a significant 12 percent increase in chronic absenteeism from the 2020-2021 school year to the 2021-2022 school year. It is evident that Covid increased economic hardships felt by families in Richmond, with lasting effects resonating throughout the city. In the fourth quarter of 2022, eviction rates surpassed prepandemic levels in Richmond by 6%, reaching a total of 9,434 eviction filings for the year (RVA Eviction Lab, 2022). This spike in absenteeism mirrors the narrative of Richmond's escalating eviction rates.

Currently, Richmond's poverty rate stands at 19.8%, reflecting a 5.33% decrease from the previous year (Data USA, 2023), which mirrors a slight decline in absentee rates from the 2021-2022 school year to the 2022-2023 school year. The trend of chronic absenteeism depicted in Figure 1 highlights the challenge RPS faces with chronic absentee rates, while also indicating the beginning of a downward trajectory that can be sustained through the implementation of effective solutions.

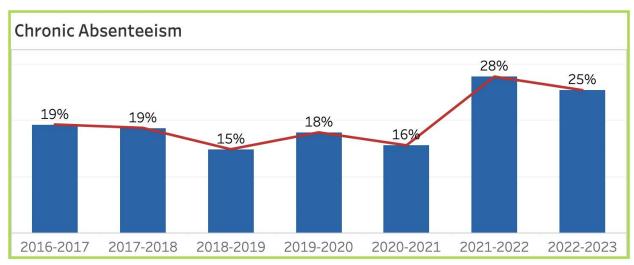


Figure 2. RPS absentee rates over the past 7 school years (RPS Attendance Dashboard)

The chronic absenteeism issue confronting RPS affects various student demographics in distinct ways. Figure 3 provides a breakdown of the average absentee rates across different demographics within RPS. When considering Black and Disadvantaged students collectively, they account for 60% of chronically absent students. This underscores the fact that students from less affluent backgrounds encounter greater obstacles in attending school on a consistent basis. This challenge can be attributed to a multitude of barriers experienced by students and their families.

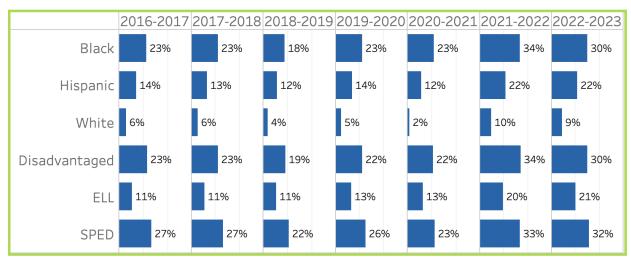


Figure 3. Demographic breakdown of RPS absentee rates (RPS Attendance Dashboard)

During the 2022-2023 academic year, an estimated 4,700 students enrolled in RPS were chronically absent, a notable portion of these students' reason for being chronically absent was attributed to housing insecurity issues (Lazarus, 2023). Addressing these challenges prove to be formidable, as the identification of students experiencing housing insecurity often encounters hurdles, delaying the provision of vital support services. Additionally, transportation emerged as another critical concern, especially for transient students. Traditional bus routes, designed around

fixed schedules, struggled to accommodate the fluid circumstances of students lacking stable living arrangements, leading to missed educational opportunities due to transportation barriers.

In order to remedy this issue, it is imperative to ensure the proper identification and support of McKinney-Vento students. The McKinney-Vento Act, a Federal Act, grants rights and services to children and youth experiencing homelessness, including those sharing housing due to housing loss, economic hardship, or similar circumstances, as well as those residing in motels, shelters, transitional housing, or public areas due to inadequate housing (Subtitle VII-B of the McKinney-Vento Homeless Assistance Act).

Problem Consequences

Inadequate identification and support for McKinney-Vento students have resulted in several challenging outcomes for Richmond Public Schools. Chronic absenteeism not only puts school accreditation in jeopardy, but it also contributes to significant learning loss among students. A student is deemed chronically absent when they miss more than 10% of school days within a year (RPS Attendance Dashboard, n.d.). If more than 25% of a school's student body is chronically absent, the school risks losing its accreditation. Currently, only 20 out of 43 K-12 schools in RPS are accredited. This is a critical issue given that accreditation can enhance a school's reputation, instill investment from stakeholders, and impact eligibility for certain funding programs. Schools that fail to attain and maintain accreditation miss out on essential resources, further increasing the negative impacts on disadvantaged students.

Literature Review (Evidence of Potential Solutions)

Intentions of Evidence Based Approach

The literature review aims to provide solutions to the chronic absenteeism rates among students facing housing insecurity. By exploring alternative transportation methods such as public transit partnerships, ridesharing programs, and optimized bus routing policies, the literature review seeks to address barriers to school attendance for transient students. Initiatives like public transit partnerships and ridesharing programs offer promising solutions. In addition to alternative transportation methods, optimizing bus routing policies can enhance route efficiency and accessibility for students. Furthermore, this literature review will highlight comprehensive community engagement efforts that are essential for effectively implementing federal policies like the McKinney-Vento Act to support housing insecure students in RPS.

Implementation of Alternative Transportation Methods

Finding alternative methods to transportation is a practice that RPS could strengthen their efforts to tackle chronic absenteeism that is caused by housing insecurity. Utilizing diverse transportation methods is essential when working to aid Mckinney-Vento students in getting to school. In case studies conducted by Vincent et al. it was determined that the most effective way for a school district to see success in student transit to school is for there to be a multifaceted approach. This approach should address concerns including but not limited to, safety, service quality, accessibility, cost, and affordability. The method of this study consisted of an initial scan of transportation methods implemented by school districts on a national scale. Through interviews with administrators, review of state and regional transportation authorities, and assessing student information the study was narrowed down to a select few states. Case studies

were conducted in Florida, California, Oregon, Washington D.C., Maryland, Massachusetts, and Virginia.

In Maryland, Baltimore City Schools were facing high chronic absentee rates in 2008. The Open Society Institute Baltimore found that One out of every six elementary school students in Baltimore was absent for at least 20 days during the 180-day school year, while the same was true for 34% of middle school students and 44% of high school students (Malone, 2012). In an effort to alleviate these attendance issues, OSI worked to improve public transit access to students. In this particular case study, the Maryland Transportation Alliance worked to collect data on students' satisfaction and their unmet needs when it came to public transit services (Vincent et al, 2014). Through improvements and coordination based on feedback given by students the public transit system was able to play a pivotal role in cutting Baltimore City Schools' middle school absences in half (Malone, 2012). Drawing on public transport may be a helpful alternative for RPS to consider when looking to alleviate barriers to transportation that lead to high absentee rates. In order for a practice like this to be successful it is important for RPS to consider cost for families and safety implications. When considering public transit affordability, it may be helpful for RPS to consider making a deal with public transit agencies in order to reduce the cost burden on families. Portland Public Schools in Oregon set up a system in which they provided the funding for all high school students within the school system to have free ridership access to select public transit services. From 1992 to 2008 PPS bought transit passes for low-income high school students residing more than 1.5 miles away from school. Middle-to-higher-income students within the same distance utilized passes at a discounted rate (Oregon Editorial Board, 2013).

While public transit may be a viable transportation option for RPS students, there are also other alternative modes of transportation that may prove to be impactful. One form of alternative transportation that may deliver positive results is the implementation of ridesharing practices. The community can take responsibility on ridesharing services in which families within the same schools and neighborhoods coordinate with each other, or the provision of these services may be outsourced to school ridesharing companies that work in unison with the school system. The efforts of The Thomas Jefferson Planning District Commission (TJPDC) of Charlottesville, VA stand out as proactive steps towards promoting ridesharing initiatives for improved transportation accessibility among students. TJPDC has been promoting ridesharing initiatives since 2003, including the school Pool program, which encourages parents who live close to each other and share similar schedules to coordinate rides for school transportation. Participation is open to any school within the planning district, including public, private, and charter schools, with enrollment initiated by contacting the TJPDC. At the time of the study (2011), 8 out of 38 public schools and 6 private/charter schools were enrolled (The Jefferson Planning District Commission, 2011). Once enrolled, parents were able to register online or by mail, they were then matched with others nearby to arrange ridesharing, with additional options for coordinating bike and walk pools. The program also offered support and resources, including best practices, to ensure a successful ridesharing experience.

Transitioning from community-driven ridesharing initiatives, lets now shift focus to the services provided by K-12 ridesharing companies. Los Angeles City Public Schools recently integrated HopSkipDrive, a k-12 ridesharing agency, into their network of transportation. Shortly after the

implementation of HopSkipDrive, Los Angeles City Public Schools saw positive effects as a result of the utilization of this mode of transportation. In the 2018-2019 school year sample data collected from high school students (ages 14-18). HopSkipDrive provided a total of 32,796 trips to school in Los Angeles County (Speroni, 2020). In Los Angeles HopSkipDrive demonstrated a great impact in terms of time saved. It was found that HopSkipDrive's trips average 28 minutes in duration, yet on transit only 30 percent would have taken less than 45 minutes (Speroni, 2020). Along with Los Angeles, multiple school districts in Metro Detroit also partnered with HopSkipDrive to provide rides to students who may be homeless, in foster care, or those with disabilities. This system is especially safe and efficient in these school districts as parents have complete autonomy when setting up pick-up and drop-off locations (Williams & Carr, 2022). The adoption of a ridesharing system facilitated by an external company alleviates the responsibility placed on parents. Addressing the burden experienced by parents of McKinney-Vento students is pivotal in tackling the issue of chronic absenteeism within RPS.

Solutions to Bus Routing Policy

Issues that spark from inconsistencies within bus routing practices and technology are major factors into student absenteeism, especially for transient students. Making bus routes more reliable and efficient are essential in working to remedy this issue.

In a case study conducted in Thessaloniki, Greece, it was found that geocoding students addresses was essential in curating efficient and reliable bus routes (Kotoul et al., 2017). The study utilizes an algorithm that starts by creating initial solutions, blending strategies like prioritizing nearby stops and applying the Clarke and Wright savings algorithm. It then cycles through, merging the best solutions until reaching desired efficiency or the maximum allowed attempts. For transient students enrolled in RPS, precise mapping and geocoding are essential for ensuring reliable and accessible transportation services. Transient students may have varying familiarity with the local area, making accurate mapping crucial for identifying optimal bus routes and minimizing travel distance. By leveraging precise mapping and geocoding techniques, RPS can provide transient students with reliable transportation options, reducing barriers to school attendance and promoting educational continuity. Geocoding may also be helpful for identifying hotspots where a significant number of transient students are known to reside.

The rigidity of traditional bus routes also provides hardships for transient RPS students. In a study done on implementing stop selection within school bus routes in the Flemish region of Belgium, this introduces a move type termed "replace," tailored to the SBRP context. This facilitates the removal and addition of stops within routes, optimizing route configurations while ensuring accessibility for all students (Schittekat et al., 2013). This study utilized the Variable Neighborhood Descent (VND) matheuristic to expedite the optimization process of bus routing. In experiments conducted in 112 artificially generated instances, it was demonstrated that the VND matheuristic significantly accelerates the discovery of optimal solutions, even for large-scale scenarios involving numerous stops and students. By facilitating the removal and addition of stops within routes, this approach enables dynamic adjustments to bus routing configurations, ensuring accessibility for transient students despite changes in residence. The inclusion of obligatory stops highlights the importance of accommodating diverse student requirements within the routing framework, particularly for those with unique transportation needs due to housing instability. This efficiency may prove to be advantageous for RPS, allowing for the

generation of high-quality bus routes within a reasonable timeframe, thereby enhancing the overall effectiveness of transportation planning.

Approaches Toward Community Engagement

Strong community engagement practices are imperative in order to aid students that are chronically absent. Being able to efficiently identify and provide aid to McKinney-Vento students is the first step in tackling the problem at hand.

In a study of the Los Angeles Unified School district, findings suggested that homeless liaisons should frequently and proactively confirm residency status, rather than waiting for families to provide this Information (Dhaliwal et. al, 2021). Due to results in the study suggesting higher mobility while homeless, districts should ask students to update their residency status each time a student moves schools or changes addresses. (Dhaliwal et. al, 2021). When school transfers do occur it is important that this occurrence is noted and that is essential to ensure the student is in a stable location. School transfers of homeless students should be flagged for district and school homeless liaisons so that they can follow-up with families to make sure they are aware of their rights. When school transfers are requested by families, district and school staff should work with families to make sure the move is in the best interest of the student (Dhaliwal et. al, 2021).

As the findings of the Los Angeles Unified School District study underscore the importance of proactive measures for homeless students, such as confirming residency status and flagging school transfers, it becomes evident that federal policies like the McKinney-Vento Homeless Education Assistance Act of 2001 play a pivotal role in ensuring educational stability and support for this vulnerable population. The McKinney-Vento Homeless Education Assistance act of 2001 is a major federal policy that was instilled with the goal of investing into homeless K-12 students (Hendricks & Barkley 2012). Policy under McKinney-Vento creates stipulations for who receives homeless services and requires schools to provide support and resources for these students (Miller, 2009). One of the stipulations that is mandated by McKinney-Vento is that of school choice. This idea essentially states that all students who are experiencing homelessness must be allotted opportunities to "attend school, no matter where they live or how long they have lived there" and to "continue in the school they went to before losing their housing or in the school in which they were enrolled last, even if they move out of the school district..." (Miller, 2009).

Ensuring full utilization of the McKinney-Vento policy is imperative to guaranteeing that students facing housing insecurity can still attend school. However, school districts like RPS encounter challenges that must be addressed to optimize McKinney-Vento implementation, many of which stem from identifying eligible students. For instance, in the 2022-2023 school year, 30% of disadvantaged students were chronically absent, posing barriers to their attendance and increasing dropout risks (Richmond Public Schools Attendance Dashboard, 2023). Achieving complete compliance with McKinney-Vento law is crucial, and thorough data on chronically absent or school-changing homeless students is essential for informing effective interventions by RPS.

As Richmond Public Schools strive to fully implement the McKinney-Vento policy to ensure that housing insecure students can attend school, addressing challenges in identifying these students becomes paramount, particularly given the significant percentage of chronically absent disadvantaged students in the 2022-2023 academic year. This highlights the critical need for robust data collection to inform targeted strategies. In terms of outreach, proactive engagement with the community engagement office staff is essential, in order to ensure consistent communication from higher entities within RPS that motivates the team and leverages positive reinforcement tools. Research conducted by Shepard et al. across 1,732 local education agencies in New Jersey, New Mexico, and New York revealed the effectiveness of increased email communication incorporating behavioral insights targeting homeless liaison staff to enhance homeless student identification (Shepard et al.). This low-cost strategy, drawing on insights from behavioral sciences, significantly improved identification rates, with districts that received such emails identifying 12% more homeless students (Shepard et al.). Additionally, establishing a process that enables staff to personally and temporarily support students in emergency situations, with assistance from the school, as suggested by (Wagaman et. al, 2022) proves beneficial. Drawing on practices such as this, RPS can feasibly implement top-down strategies in consolidated community engagement efforts to further enhance support for homeless students.

Assessing Policy Alternatives

Introduction

This section explores three alternative solutions for Richmond Public Schools to address the needs of students facing housing insecurity. The first alternative proposes utilizing HopSkipDrive, emphasizing its safety protocols and technology integration to provide efficient transportation. The second alternative suggests establishing a Housing Stability Task Force within the Office of Engagement to identify and support McKinney-Vento students to address potential current workload concerns. The third alternative recommends reconfiguring bus routing technology to include all students and enhance reliability but raises privacy and budgetary considerations. Each alternative presents a unique approach with political feasibility, administrative effectiveness, and equity implications to consider, highlighting the need for a comprehensive assessment before implementation.

Alternative 1: Utilizing HopSkipDrive

RPS has had a number of issues with transportation especially with students facing housing insecurity. Many of the bus routes do not consistently show up to certain neighborhoods, parents may not have access to vehicles, and family liaisons who give students rides are outnumbered at times. An alternative approach to getting students to school is drawing on an external transportation resource tailored for K-12 students. In fact, other school systems around the nation utilize systems like these in an effort to help low-income students who may be experiencing housing insecurity get to and from school safely.

As mentioned in the literature review, a prominent company that does this sort of work is HopSkipDrive. HopSkipDrive partners with school districts, counties, and non-profits in an effort to provide transportation for youth experiencing homelessness and or living in foster care. HopSkipDrive has partnerships with more than 150 school systems and has given 625,000 students rides since its founding. To ensure that this system is both safe and efficient Drivers within the platform are highly vetted Caregivers - parents, grandparents, former teachers and processes are implemented that allow school districts to schedule when an address may need to be changed. There is also a 15-point CareDriver certification process to the Safe Ride Support System (*School Transportation for McKinney-Vento and Youth in Foster Care*, n.d.).this alternative would prominently be focused to aid McKinney-Vento students. HopSkipDrive has partnered with a number of schools and has been used as a method to aid schools and give extra options in their transportation services. This alternative calls for investing more money into the RPS transportation as it is dedicated to making transportation more accessible to students facing housing insecurity. This alternative is intended to decrease absentee rates through the implementation of a controlled ridesharing system.

Evaluative Criteria

Political Feasibility

When measuring the political feasibility of this alternative, there are some imperative things to consider. The first measurable to consider is the *family and school board* response to the HopSkipDrive. The school boards review of adapting HopSkipDrive and configuring if it is conducive to transportation systems and the internal & external supports to aid this effort in maintaining a system such as this. RPS currently uses a ridesharing system comparable to HopSkipDrive, this company is called 'Everdriven'. Since the school board backed a program like HopSkipDrive, purely maintaining a rideshare company such as this is very feasible in terms of the school board to support. However, Everdriven has been inconsistent in terms of availability for rides and there haven't been significant results gained from its implementation. This makes the implementation of HopSkipDrive an option that has the potential to serve as an upgrade to the current alternative transportation system and has the potential to aid McKinney-Vento students in getting to and from school.

When considering safety and reliability it is important to consider the track record of HopSkipDrive. Founded in 2015, HopSkipDrive is a relatively new program. However, within this short time span HopSkipDrive has partnered with 400+ school districts, has aided over 16,000 schools and 99.699% of rides completed on the HopSkipDrive platform in 2021 ended without a safety-related issue of any kind (HopSkipDrive, 2023). Looking into HopSkipDrive's background and the statistics behind their services shows that this alternative method of transportation is one that has shown to have a concrete system of transporting students to and from school safely across multiple school districts in the United States.

Considering budget allocations is imperative for measuring the political feasibility of utilizing HopSkipDrive. I have drawn on different school districts that currently use HopSkipDrive and have assessed their dynamics to measure the level of political feasibility HopSkipDrive has for RPS. The school systems that will be assessed are Denver Public Schools (Denver, Colorado), Littleton Public Schools (Littleton Colorado), and Federal Way Public Schools (King County, Washington).

School District	Population	Transportation Budget (\$)
Richmond Public Schools	22,000	24,544,990
Federal Way Public Schools	21,000	18,928,704
Denver Public Schools	88,000	85,320,000
Littleton Public Schools	13,000	6,949,655

Figure 4. Comparison of RPS transportation budget to other school districts that use HopSkipDrive

In **figure 4** one can see that compared to other school districts that use HopSkipDrive, RPS does in fact have the budget capacity to utilize HopSkipDrive. When comparing RPS to Federal Way Public Schools, a school system that matches up to it in terms of size and has a lower transportation budget, it is apparent that RPS likely has the bandwidth to partner with HopSkipDrive, factoring how much HopSkipDrive may potentially cost RPS, I utilized the average cost of providing rides for clusters of 20 students Which is roughly \$500 (HopSkipDrive, 2023). When speaking to Joseph Brumfield, Vice President of Business Development for HopSkipDrive, he estimated that HopSkipDrive could provide roughly 130-150 daily rides to RPS students. When considering the amount of school days, and the scope in which HopSkipDrive can provide services, it was estimated that HopSkipDrive would cost RPS roughly \$675,000 annually, which is seemingly well within the scope of the RPS transportation budget.

Administrative Effectiveness

When looking into administrative effectiveness it is important to focus on how HopSkipDrive brands themselves and their practices to maintain their goals. In terms of services, HopSkipDrive brands themselves as a k-12 student ride-sharing service that ensures efficiency in rides while also maintaining a safe environment through the pick-up and drop-off process of students. In terms of acquiring drivers, HopSkipDrive has created a vetting system that is very intricate, to make certain that drivers are equipped to ensure that student safety comes first. HopSkipDrive

makes their drivers go through a 15-step vetting process to ensure safety. This process includes but is not limited to, Federal background checks, vehicle registration, vehicle safety, compliance with policies, and driver orientation. In addition to the several steps that drivers must complete, Drivers are required to have 4-5 years of experience in youth-centered care. These safety protocols start from a high-level lens and are scaled on a daily basis. Everyday drivers are required to complete a daily safety-check which requires drivers to take detailed precaution on a daily basis. The installment of these precautions makes supervision of drivers and safety straightforward for RPS. The requirements that are installed within HopSkipDrive will make the administrative process for RPS operate smoothly.

Focusing on efficiency and reliability, HopSkipDrive also utilizes a strategic routing platform based on bus routes that are available for school systems. This system utilizes AI technology to curate a routing system that is best tailored to the needs of RPS students. HopSkipDrive also utilizes an app that allows schools and families to request rides up to 8 hours in advance. With the utilization of this technology, RPS has the ability to work with HopSkipDrive to ensure that ride needs are accurate, and that students and families are being served in an efficient manner. This makes a strong case for the effectiveness at the administrative level, as there is very detailed organization of this system that comes with great technology implications.

Equity

When measuring the equity implications of HopSkipDrive as a policy alternative, the most important thing to consider is if this system will be helpful for students experiencing housing insecurity. HopSkipDrive's services are rooted in working to get McKinney-Vento students to and from school safely. With usage of AI technology, HopSkipDrive is well equipped to map out and create routes that may be needed for students who do not have stable homes. The front loading that HopSkipDrive has implemented within its infrastructure sets the process up to handle equitable concerns in terms of routing and ridership.

One challenge HopSkipDrive may face when it comes to providing equitable services to the students of RPS is the number of rides that it can provide to students in need. It is estimated that HopSkipDrive may be able to do 150-200 rides a day for RPS schools. While this seems like a significantly large number, this may not be enough to ensure that every student is getting access to these services. This is a problem that arises due to the vast estimate of students within RPS dealing with housing insecurity. Another factor into this issue is the fact that the total number of McKinney-Vento students haven't all been identified, if RPS can't pinpoint the exact students to extend these services to, this may lower the equitable allocation of the service.

Alternative 2: Establishing a Housing Stability Taskforce

This alternative deals with establishing a task force within the office of engagement that works solely to identify McKinney-Vento students. Right now, the Office of Engagement has family

liaisons that work on multiple tasks including identifying students that may be experiencing housing insecurity. These Liaisons have been stretched thin in their efforts and have found it challenging at times to make meaningful impact due to the sheer workload that they are faced with. In order to address chronic absenteeism that stems from housing insecurity, it is imperative that there is a group with focused efforts on identifying McKinney-Vento Students. The alternative suggests doubling the number of family liaisons and having half of them dedicate their efforts to identifying and resourcing students facing housing instability.

Evaluative Criteria

Political Feasibility

In order to measure the political feasibility of adding a housing stability task force to the Office of Engagement it is important to assess resources needed and estimated costs. Right now, there are roughly 30(10 for each regional Hub) family liaisons on staff, on average these liaisons receive \$48,000 - \$50,000 annually. This means that roughly \$1,440,000 is spent annually in compensation these staff members. Bringing in 30 extra liaisons to serve on the task force would roughly mirror the costs RPS already has to dedicate to staffing these individuals, which would double total cost to \$2,880,000. This taskforce amounts to roughly 34% of the budget for family outreach and Advocacy (RPS Adopted Budget, FY23). RPS may need to rely on grants and community partners to help fund this initiative. While this is a great amount of money, these investments into identifying and aiding McKinney-Vento students is a high priority for RPS and could lead to a significant increase in the amount of accredited schools RPS has.

Administrative Effectiveness

When assessing the administrative effectiveness of this taskforce, there must be an assessment of resource and organizational administration. This is a decent sized group of individuals and there needs to be leadership positions installed to aid the entire group in following the same goal. There also needs to be a standardized form of performance management that is utilized to aid staff on the taskforce in attaining established goals. In terms of this type of organizational administration, this front of the administrative effectiveness criteria has a high possibility of being attained as this is a systems challenge rather than one that is sparked from a financial need. To establish effective organizational administration, it is important to draw on these systems and for RPS to structure leadership and support in the correct manner. The organizational structure that RPS has currently with regional engagement hubs (East end, Northside, and Southside) is a great structure for this taskforce to follow suit in.

Another important implication of administrative effectiveness within this taskforce is to ensure that all of the RPS staff is briefed on McKinney-Vento requirements. Making sure that the taskforce gets proper training on how to best identify students facing housing insecurity is imperative to lessening the number of students that are chronically absent. The RPS engagement

office has access to several resources and strategies for identifying and aiding McKinney-Vento students. The challenge here lies in extending these practices and knowledge to 30 new individuals. Being that there will most likely be around 3 individuals (1 for each community hub) in leadership positions within this taskforce, there may be some breakages when putting this knowledge and certain strategies into practice.

Equity

Equity in this sense can best be measured by looking into how many students can be reached by each task force member and if members would be able to spread their efforts in a fair manner. In 2023 it was stated that 4,700 students missed 15 days or more due to housing insecurity (Lazarus, 2023). Working with the 30 individual task force model would mean that each member would have a caseload of roughly 150 students in which they are trying to aid and identify. 150 students is a large number of individuals for 1 person 1 to extend efforts to. This may lead to lack of follow through between the task force member and the families in which they are trying to help. Equity in the sense of the taskforce has the potential to be strong, however, resources may not be extended to everyone and there may be times where exact needs are not provided.

Alternative 3: Reconfiguring Bus Routing Technology

In terms of obtaining reliable and safe bus routing practices for students, especially those facing housing security, RPS is facing a problem that isn't only centered in Richmond, the school bus routing problem is one that impacts millions of families around the world on a daily basis(Ellegood et al., 2020). This last alternative involves upgrading the Bus routing technology that RPS uses in an effort to create a bus route system that utilizes information that incorporates every student's needs. It would be helpful for RPS to develop bus technology that not only displays routes for the city, but also takes into consideration areas such as Henrico and Chesterfield. As mentioned in the literature review, utilization of geocoding in multiple areas in and around the city is essential for bus routes to work best for transient students. It is also important that this technology creates routing systems that makes it easier for parents to track where the bus is going as well as making accessibility to bus stops easier. Through this RPS could make it so that the technology within the buses has GPS linked information to students and specific information about them (anund et al., 2010). This system would also allow for parents to contact bus drivers in case of need for emergency drop off in specific areas. These changes will help the buses become more reliable for all students, especially those experiencing housing insecurity and dealing with inconsistent bus routes.

Evaluative Criteria

Political Feasibility

When thinking of the political feasibility of this alternative, one must consider the privacy and use concerns. The aspect of this technology in which geocoding addresses and drivers getting information about every student at the stop may be helpful in the sense of identifying data on which students may need more assistance in getting to school; however, it may raise privacy concerns in parents. Parents may not want bus drivers having such easy access to their kids while on bus routes. There also may also be privacy concerns when it comes to parents being able to get buses to drop their children off at different locations. Dropping children off at a specific location may violate privacy rules when it comes to specific locations the bus travels to. All the technology within the bus may raise public safety concerns as well. There is a chance that updated GPS and informational technology within buses may distract bus drivers and lead to higher risks of accidents. When configuring costs, I consulted RPS transportation and found that they utilize a system called *Traversa* that is provided by *Tyler Technologies*. To gauge how much this technology costs RPS I investigated how much Dekalb County schools have invested into Tyler Technologies for their routing needs. Dekalb County Schools invested \$23 million to utilize Tyler Technologies this past year (Alexander, 2023). Dekalb county schools has a student population of 92,000 compared to RPS student population of 22,000. When considering the population difference of these two school systems I estimated that it costs RPS \$5.5 million to utilize the same system. Through this I configured that it may cost an extra \$1-2 million to extend this technology to cover Henrico and Chesterfield to encompass students that live outside the city.

Administrative Effectiveness

When measuring this alternative from an administrative effective lens it is important to install a system of performance monitoring when it comes to navigation of this new technology. This means that RPS needs to utilize regular data collection to create reports of the results of daily school bus routes. This entails running a management system that can track stops to ensure consistency. So far RPS has faced challenges on the administrative level in terms of ensuring that buses are consistent with their routing patterns. Managing a system with new components may pose more of a challenge being that the current system has several faults. However, installing new technology may make it easier to track needed data, keeping all stakeholders accountable within the system.

Adaptability is another key measurement that factors into the administrative effectiveness of an upgraded technology system for buses. RPS must ensure that the proper resources and systems are put into place in order for the transportation team to express the ability to react to change, especially when this change comes in the form of having to constantly update the system technology to meet the needs of students and families. This may entail staffing new members on the technological side to ensure flow. It is also imperative to ensure compliance, there must be buy in from all fronts for this technology to be beneficial. Bus Drivers are properly using the technology given to them to reduce burden on families. However, it is also important for parents

to do their part in knowing how, when, and where to contact transportation officials to express their needs. This may be a bit more challenging on RPS as they do not have much power over the actions of parents leaving little control over this area of compliance. This is where family engagement efforts from the Office of Engagement can be useful in ensuring parents do their part in utilizing this new technology.

Equity

Ensuring that this technology is equitable means that RPS must account for areas in which all students live when mapping bus routes through this new technology. Routes should consider students living within the city and outside suburban areas such as Henrico and Chesterfield, this new system proposes mapping that will consider every student which makes it strong in equity from that standpoint. This proposed new technology also infrastructure that allows for parents to buses of potential emergency situations in which a child may need to be dropped off at another nearby stop, this is equitable in these sense that it aids students who may be facing housing insecurity however, it may affect bus route timing and have an impact on the times that other students. Equity may pose a challenge to parents who may not have great technology access to assess the pick-up and drop-off times/areas of their child. Some parents may not have cellular service or access to a cellular device so using technology in this sense may not prove to be helpful for several individuals. It is important to consider the implications of technology in this sense.

Outcomes Matrix

	HopSkipDrive	Housing Stability Taskforce	Updated Bus Technology & Routing System
Political Feasibility	High(3)	High(3)	Low(1)
Administrative Effectiveness	High(3)	Medium(2)	Medium(2)

Equity	Medium(2)	Medium(2)	High(3)
Cost	\$675,000 (3)	\$1,440,000(2)	\$5,500,000(2)
Total Score	2.75	2.25	2

Recommendation

Based on the scoring in the outcomes matrix I recommend that RPS integrate *HopSkipDrive* into their transportation system. Utilizing HopSkipDrive will provide an affordable opportunity for RPS to extend school transportation services to McKinney-Vento and housing insecure students. The implementation of HopSkipDrive will also provide an opportunity for schools to obtain a better chance at obtaining accreditation. Once schools become accredited, they will have access to funding for the VSPA technology program which will allow these schools to purchase more technology under the SOL Technology Initiative. Another key benefit that will come from schools being accredited is schools getting access to a school security grant program that will offset the local cost that is associated with the purchase of local security equipment schools will be eligible for up to \$250,000 in grant money.

Implementation

Assessing Stakeholders

When considering the implementation of this policy alternative it is important to consider all of the stakeholders involved and how they may be affected by the implementation of a rideshare program. The *Managers* in the implementation of this alternative would take the form of RPS administration, who initially have to approve and continuously oversee HopSkipDrive. When looking into challenges that managers face, it is important to consider how RPS administration will maintain the fluidity of HopSkipDrive and to make sure that rides are reliable and consistent for McKinney-Vento students and all students facing housing insecurity. The *Doers* in the implementation process would be the HopSkipDrive Representatives as well as parents that are opting into utilizing the service. It is also important to receive buy-in from parents when utilizing a service such as this. Parent trust is a high concern when implementing a ride-sharing system such as HopSkipDrive and it is important that parents are comfortable with using this system. Consistency from drivers is needed for this policy to be effective as well as parents' utilization of the system. The *Fixers* in this sense would be RPS transportation services along with HopSkipDrive, in that they would be tasked with ensuring constant effectiveness of the system.

Addressing Barriers

There are a few barriers that may impact the implementation of a rideshare system such as HopSkipDrive. One barrier to address would be the potential resistance from traditional transportation providers. School Bus drivers may speak out against the idea of introducing a school ride-sharing system as this may threaten their job security. Another barrier to implementation is the safety concern that the community may express when it comes to outsourcing school transportation to a third-party such as HopSkipDrive. It is important to offer opportunities for community members to engage with HopSkipDrive representatives in order to establish trust and to express concerns. In addition to safety, reliability is also a concern for the utilization of HopSkipDrive. There may be inconsistencies with HopSkipDrive's, drivers and making sure that the amount of drivers available match the needs of students. In terms of parent utilization, technology may prove to be another barrier of implementation. Some families may lack the technology needed to schedule rides through the HopSkipDrive app, since this service is mainly targeted to aid McKinney-Vento Students, this problem may be prevalent for a significant number of parents. There may need to be some aid from RPS administration in terms of technological support or finding alternative ways to schedule rides for students.

Steps for Implementation

Before beginning the rollout process it is necessary to engage necessary stakeholders in order to make sure that HopSkipDrive is providing specific needs for families and students. This will provide insight on how to properly implement HopSkipDrive In order to ensure that RPS administration makes sure to curate a list of students who have been chronically absent and may be facing housing insecurity. When examining the list, the students who have expressed patterns of having issues with transportation must take prominence and have extra consideration when RPS administrations configure which students should have access to this service. Clear criteria must be established when configuring the eligibility of students who can use HopSkipDrive, especially in the preliminary phases of its rollout, this will better organize the steps of its implementation and ensure that the service reaches the students who need it most. In order to establish a set criterion for eligibility RPS must utilize their absentee data and identify significant clusters of students who have shown high patterns of absentee rates. These identified clusters will help to highlight hotspots in which there are high concentrations of students who are chronically absent and possibly transient.

After identifying these hotspots, it is necessary to implement a 6 month to 1 year pilot program in which HopSkipDrive is utilized in specific areas or for specific schools, that have high rates of chronic absence, in order to assess effectiveness at a smaller scale before providing services to RPS as a whole. During the pilot program it is important to assess the challenges and barriers to the program. In order to assess these barriers and to establish what practices work, it is necessary to establish a feedback system in which parents, students, and school administrators can assess

features of the program that work, and issues that may need to be addressed. RPS must develop solutions to these challenges during the pilot-program in order to ensure that rollout to all students runs smoothly.

If HopSkipDrive is a success in selected areas, RPS administration can start to roll out HopSkipDrive services to more areas in and around Richmond. When extending services there must be community outreach and engagement practices that spread awareness of HopSkipDrive's services to families so that they are aware of the resources that are provided. After expansion, it is important that proper maintenance of the system is upheld and that communication between RPS and HopSkipDrive is constant, in order to ensure efficiency. HopSkipDrive must be constantly monitored to meet the needs of students who need it the most and is a system that will be most effective when assessments of services and practices are constant.

Appendices

Appendix A: Cost Calculations for HopSkipDrive

Considerations:

- According to HopSkipDrive's Fare Estimator It costs \$500 to provide rides to provide rides to every 20 students (roughly 5 vehicles)
- It has been estimated that HopSkipDrive can provide rides to 150 RPS students daily
- 180-day school year

Calculation of Daily Cost

• Since it costs \$500 to provide rides for every 20 students the following proportion will calculate the cost of providing rides to 150 students:

$$\frac{\$500}{20 \text{ students}} = \frac{x}{150 \text{ students}}$$

When solving for *x* (the cost of 150 students) it is found that the daily cost to provide rides for 150 students is \$3750.

Calculation of Annual Cost

$$\$3750 \times 180 = \$675,000$$

Appendix B: Update Tyler Technologies Cost Calculation

Considerations:

- Dekalb County Schools student population: 92,000
- Richmond Public Schools student population 22,000
- Dekalb County Schools investment in Tyler Technologies: \$23,000,000

Method

• Scaled RPS population to the investment made by Dekalb County Schools to estimate cost at 22,000 students.

Calculation of Investment

$$\bullet \ \ \frac{\textit{RPS Tyler Technologies Investment}}{\textit{RPS Student Population}} \ \ = \ \frac{\textit{DCS Tyler Technologies Investment}}{\textit{DCS Student Population}}$$

$$\frac{x}{22,000} = \frac{23,000,000}{92,000}$$

RPS Tyler Technologies Investment(X) = \$5,5000,000

Appendix C: Housing Security Taskforce Cost Calculation

Considerations:

- Looking to add 30 family liaisons to work on the task force within the Office of Engagement
- Liaisons receive \$48,000 \$50,000 annually

Method

• Multiply the proposed addition to the Office of Engagement by the annual salary of current family liaisons

Calculation of Cost

$$$48,000 \times 30 = $1,440,000$$

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