

Metzgar Fields Transportation Study

EGRS 451

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Introduction

For our EGRS 451 capstone project, our group was tasked with conducting a sustainability study on the LCAT transportation system that shuttles students/faculty to and from Metzgar Fields Sports Complex. The LCAT is a free, safe and reliable bus service that connects Lafayette's main campus with the Downtown/ Williams Arts Campus, college athletic fields, and student parking areas. Each of these three locations has its own respective shuttle-bus and for the purpose of this study we will solely be focusing on the bus that travels to the college athletic fields (Metzgar). Metzgar Fields Sports Complex is located 3.5 miles from Lafayette's main campus, which creates transportation problems for our student-athletes. To combat these problems the college invested in the shuttle service that we now know as "The LCAT", but it has become evident that students do not use the shuttle regularly and prefer to drive themselves to Metzgar. The university has recognized this problem and they are currently searching for an affordable alternative that will increase utilization of the LCAT.

Our Team

Lafayette has recognized that students do not regularly use the LCAT and have started searching for a sustainable, affordable option to implement in the future. After communicating with Geoff Labe, Assistant Vice President of Lafayette's Finance & Administration, we discovered that the LCAT transportation system is primarily run by the college's Public Safety division. That being said, we will work mainly with the Public Safety team but will also be engaged with the college's athletic department and finance department. After reaching out to many Lafayette faculty, we have assembled a team to help us find a solution. Some of the faculty we have on board are: Jeff Troxell (Director of Public Safety), Sandra Rogers (Assistant Director of Public Safety), Geoff Labe (Assistant Vice President of Finance & Administration) and Andrew Foster (Senior Associate Athletic Director). We plan to work with these resourceful individuals closely as we conduct our study. This team will give us insight on the social, political, technical and economic contexts that are crucial to finding a sustainable, affordable and practical solution.

Our Goal

The goal of this study is to provide Lafayette College with two effective, potential solutions to better the LCAT shuttle. First, our group plans to develop an alternative, more efficient route for the shuttle to take to and from Metzgar. This also includes changing pick-up/ drop-off locations. Second, we plan to revamp the marketing of the system itself. Enhanced marketing of the LCAT shuttle will not only increase ridership, it will increase attendance at athletic events being played at Metzgar. These recommendations will be discussed further in the technical context section (Page 14). We would like to note that we chose to develop two independent solutions in hopes that they both can be adopted by the college. Through our study we will provide Lafayette College with an effective and sustainable transportation solution. Finally, we will provide the background information for a future group to build upon in an effort to implement a more efficient and user-friendly LCAT shuttle.

Challenges

When it comes to making improvements to the LCAT, the majority of the challenges will fall into the *political* and *economic contexts*. The political challenges stem from policies that are in place that could restrict certain improvements being made to the system. This will be further analyzed in the political context section (Page 9). The economic challenges stem from the risk that inherently comes with change, if there is a chance that the improvements we recommend do not bring the benefits we had anticipated, we could be wasting the schools money. This will be further discussed in the economic context section (Page 19). Alternatively, when we consider how these improvements will be adopted by the students, this leads to *social challenges*, which will be further analyzed in the social context section (Page 3).

Social Context

The social context of the current transportation system to Metzger Sports Complex is one with many different angles reflecting the creation of the system. Convenient transportation has been a struggle for not only the Lafayette community but the United States as a whole. We aim to provide historical context of public transportation to allow us to recognize previous issues and give us insight into how Lafayette ended up in its current state of public transportation. Currently, Lafayette is seeing low ridership for the LCAT system traveling to Metzger Sports Complex. We will look to analyze why this is happening from a social perspective. With Lafayette's push to be carbon neutral by 2035, we see why a public transportation system is an amazing option to ensure we are striving to that goal for the Lafayette and Easton Community. We intend to analyze cultural factors that play a role in public transportation at a national and local level.

Historical Context: The Origins of Public Transportation and Where We Are Now

Public Transportation started in the United States as early as the 1810s with steam ferry services in New York City. It then developed rapidly with electric street cars, subways, and buses as forms of public transportation. Places like New York City still have over 4 million subway users per day but the 1920s was the start of the decline of public transit (Young 2015). This decline came from the introduction of the automobile. This allowed Americans to gain more freedom and free time as they could travel to different areas regardless of where they lived. Henry Ford made the automobile more affordable to middle class Americans which really accelerated the boom of cars and the decline of public transit.

With environmental concerns on the rise today there has been a renewed interest in mass public transit (Bloom 2023). This renewed interest has been displayed by Lafayette College by putting more of a focus on increasing ridership for their public transit systems. In addition to the positive aspects environmentally, the college mainly wants to increase the system to limit the liability from students driving their personal vehicles to required events such as games or practice. This effort has been shown by putting a heavy emphasis on the topic during freshman orientation which unfortunately hasn't been effective. In some personal interviews, a student let us know that

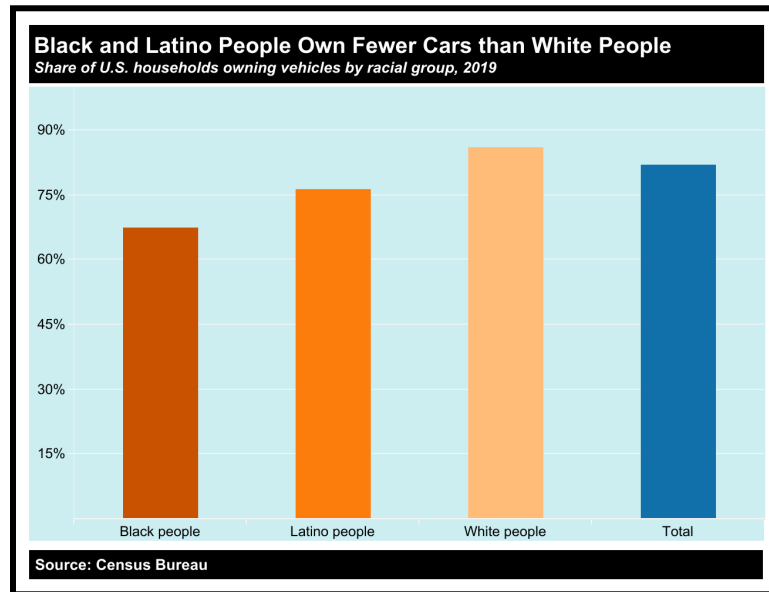
he had not even heard of the LCAT system till junior year. This will be a key element to our solutions proposed in later sections.

The LCAT system was implemented more than 30 years ago as head of Lafayette Public Safety Jeff Troxell told us it has been around longer than he has been here, which is 30 plus years. The system started out transporting football players to Metzger as they were the only team with practices out there. We had the opportunity to talk to some of the current football coaches who were players during this time. They gave us insight that the process for them involved taking yellow school buses that hauled the whole team and staff at three different times. They expressed to us that some students drove personal vehicles while some used the shuttle service. We were informed that it was almost a rite of passage for the freshman football players, as they were expected to take the shuttle. This was due to some of the negative aspects the shuttle presented. Things like having to rush to make the bus or wait for all the players to be ready to ride back to campus, where long showers and horsing around is prevalent. This made the overall experience not as enjoyable as taking a personal vehicle, hence why it was seen as a rite of passage. Even with this, many upperclassmen still used the shuttle as it was still seen as a convenient form of transportation, whether you had a vehicle or not.

Public Transportation has always been a relevant issue in the United States. It's something that affects so many people in their everyday lives. The US has put an influence on developing and expanding its road infrastructure over the last 30 years while public transportation hasn't received the same intent. This has been shown by urban roadways being overall expanded by almost 67 percent, and urban interstate highways by almost 73 percent (Sen 2022). With public transportation not receiving as much attention, this has facilitated an astronomical backlog of maintenance for the sector. It is estimated that the required backlog for maintenance and repairs is \$90 billion and \$176 billion (Mejia 2022). Unfortunately, “the \$39 billion in new transit funding provided by recent federal infrastructure legislation is less than half of the lower estimate of this maintenance backlog (and less than a quarter of the higher estimate)” (Page 12, Sen 2022). Infrastructure management in the United States is a complicated issue but the commitment to automobile systems indirectly has a negative impact on public transit. With a lack of maintenance and repairs, it makes public transit a non reliable form of transportation to

work, medical appointments, and anywhere else. People are then forced to use cars in order to do these everyday needs. Unfortunately this is where we see inequalities arise. According to the U.S. Census Bureau data, about two-thirds of Black households own vehicles, compared to about 82 percent of all households and 86 percent of white households (Sen 2019, 1).

Figure 1. *U.S. Census Bureau Displaying vehicle ownership by racial group (Sen, 2019)*



We see a similar correlation with lower household income and car ownership. With a system that is so reliant on mobility through cars, it limits those who don't have them. The transition to more emphasis on public transit in the US has been tough. The Bipartisan Infrastructure Bill was passed which covered a vast amount of infrastructure systems, including public rail, but has not followed through with providing the proper amount of funding for public transit as a whole (The White House, 2021). Due to our roads, highways, and bridges not being in great condition either, a substantial amount of funding was allocated for those aspects. Oil and gas companies lobbying politicians had a huge impact on what the bill actually produced. For instance, Senator Joe Manchin (D-WV) was a part of the group of senators who came up with the Bipartisan bill. While being one of the most vocal advocates for the bill, in typical Washington fashion it was no surprise that he had received “four times the contributions to the next highest recipient” from Oil

and Gas companies (Sen 2019, 3). So the bill is structured to benefit automobile infrastructure over public transportation. Although, this funding to automobile infrastructure is needed with the current state our nation's roads and bridges are in. The American Society of Civil Engineers rates bridges at a C and our road systems at a D while our public transportation grade is at a D minus (ASCE, 2021). Obviously, both of these systems are struggling and need vast improvements. The argument for better public transit in the US starts with that only 55% of Americans have access to public transit (APTA, 2023). In addition, public transit users are on the decline and this will only compound without addressing the cause of this. With a lack of demand, trip delays and reliability issues become more frequent as services have to be stopped or shortened. If this trend continues we can expect to see poorer air quality, increased traffic congestion, and a hampered economy. Cars will still be a great form of transportation in the US but with an added investment into public transit, it can seriously make both experiences more convenient, environmentally friendly, and help the economy.

Sustainability and Community Benefits

Public transportation provides huge sustainability benefits for the US and for a local region like a college. There are many benefits to public transportation but one of those is the amount of greenhouse gasses it can reduce. With more people using a shared source of transportation, it greatly reduces emissions when compared with people using their individual cars. We will provide more insight through data in the technical section. The reduction in emissions if there was a higher public transportation use is eye opening due to its large scale (Hodges, 2010). Communities receive direct benefits from aspects such as cleaner air quality, which leads to better health and safety of the community. Other positive aspects from a sustainability perspective include a reduction of harmful chemicals on the roads and in our drainage systems. Also, with a reduction in road expansion and construction, emissions from the building of these systems will be reduced. The benefits don't stop at just environmental aspects as public transportation improves communities mobility, economic benefits, and improved road congestion. Mobility means not being restricted to do important tasks due to a lack of transportation or means. More than 3.6 million people have delayed or missed medical care because of transportation barriers (National Academies of Sciences, Engineering, and Medicine workshop, 2016). This is where we start to see real equity issues in communities as people are

not being able to take care of serious needs due to a lack of a system in place. In addition, public transit can play a vital role in facilitating a well functioning economy. Through increased mobility to jobs, boost in productivity while commuting, and easier access to local businesses it can really help stem economic growth (Chen 2020). Another benefit would be road congestion becoming much less frequent for users who have to use their own vehicles.

Lafayette could experience similar benefits with a well functioning system. Right now, the system to succeed is in place but is limited by poor ridership by students. We think that better marketing and a better route can vastly improve student use. If the student use problem can be addressed, then we see these community benefits being very achievable for the Lafayette community.

The Sustainability Tracking and Rating System (STARS) provides a framework for higher education to compare their sustainability efforts to each other. Looking into a similar high education institution will allow us to determine where Lafayette is in regards to sustainability. Lafayette College last score audited in 2020 was a 52, giving the college a silver rating (Nahman, 2020). Silver is the third score out of five, gold and platinum being above. Bucknell University in 2022 was at a 67, receiving a gold rating (Udo 2022). Lafayette's mid range score is not directly from high greenhouse gas emissions from faculty or student transportation. Although, with a transportation system that is already funded and in place, it makes total sense to optimize it as much as possible. Lehigh University is rated at a 1/1 for their sustainable transportation efforts while Lafayette is rated at a .40/1 (McSain 2023, Nahman 2020). Further efforts to increase ridership with Lafayette's LCAT and implementations of other sustainable transportation systems like bike sharing would help the score tremendously. While optimizing the LCAT system might have a small increase in total sustainability metrics, the college can use this opportunity to set an example as a national sustainability leader.

Cultural Factors

Many cultural factors go into the lack of use of public transportation at a national and local level. In a UC Berkeley psychology study, Kehsun Lin informs us that countries such as Australia have raised ridership significantly through bus service reliability improvements and frequency

enhancements (Lin, 2010). An increased safety, comfort, and better amenities have shown to improve ridership as well. The study hypothesized that the top factor influencing frequent user willingness to ride is bus service reliability, while off-bus services, on-bus services, and safety and security measures influenced ridership less (Lin, 2010). It shows that people don't necessarily need anything flashy or high tech, just something reliable.

At Lafayette this system has not been shown to be reliable to the community. Specifically focusing on transportation from the campus to Metzger Sports Complex. Students, fans, coaches, faculty, and other members of the community primarily use their own car to get to the facility. We created a survey to dig into the reasons why the community does not use the shuttle. We received over 50 responses from Lafayette student athletes. Questions included whether they were student athletes, if they have heard of the shuttle, why they do or don't take the shuttle, their thoughts on improvements to the shuttle, and a few more. From a cultural perspective, we analyzed why they did or didn't use the shuttle, why their usage was the way it is, and their improvements recommended for the shuttle. Our data backed up our predictions. We found that 71% of student athletes have never used the LCAT, while 10% have never even heard of the LCAT. A student athlete recommended "Maybe have it go to Metzger if it does not already do that." This demonstrates a lack of knowledge of the system on campus. The data shows that even if they do know what the LCAT is, the lack of awareness of what the system actually does limits usage. This is why marketing of the shuttle will be an important solution discussed in later sections. It's a cultural norm to not take the LCAT but similarly to the UC Berkeley study (Lin 2010), reasoning came down to reliability and convenience. National trends have shown factors such as safety, comfort, amenities, societal factors, and bias affecting public transit ridership. This is not the case at Lafayette as reliability and convenience have displayed to be the most important factors. Many of the users were not even taking the shuttle to Metzger but rather a different LCAT shuttle around campus. Most of their responses indicated they were only a short term user while injured or due to their car being in the shop. The number one response for why they didn't use the shuttle was due to having their own personal vehicle. With this, responses let us know that the inconvenience of the shuttle pick up and drop off locations and times made their car a more reliable option.

Political Context

The political context of this project proved to be more complex than expected. This has to do with the unique relationship between stakeholders. While Public Safety oversees and controls the LCAT routes and pickup locations, the Athletic Department is responsible for paying for the expenses involved with the Metzgar route. The LCAT shuttle that transports students from campus to both Metzgar Fields and the Intramural Fields holds the potential to not only induce sustainable travel, but also facilitate participation from the student body in sporting events. These changes are influenced by specific policies and limitations that are in place within the LCAT system.

To Whom Is This a Concern?

As it stands right now, the way the LCAT is functioning now is not only wasting emissions, but money as well. Gas, outsourced drivers, and upkeep of the shuttle are just a few of the slots money is being poured into. Unfortunately, this route is not so easily thrown away as it is required for the college to offer transportation to off-campus facilities for its students, especially student athletes. Due to this conundrum, there must be some form of travel offered by the school for students who may not have the means of personal transportation. It is for this purpose that LCAT ridership must be increased so that the school no longer views it as throwing money out the window.

Another thing that the LCAT wastes is the potential for it to profit from athletics attendance by fans. More specifically, the Athletic Department would benefit significantly if ridership of the LCAT increased from student fans supporting college sporting events. Not only does the LCAT offer free transportation to sporting events for students who can't or rather not drive, but it would be a safe form of transportation for students who may be under the influence. Although it is not encouraged for students to 'pregame' athletic events, it is something that is likely and the school should have protective measures in place. Rather than paying for Ubers or Lyfts, the LCAT would provide safe transport. An increase in overall viewership at Metzgar Field competitions would bring in revenue from concessions which could prove quite fruitful for the Athletic

Department. Even aside from the money, more fans at school sporting events would strengthen the Lafayette student community and culture.

Policies and Limitation

The process in which changes are made to the route is rather simple. Sandra Rogers, assistant director of Public Safety at Lafayette, detailed to us that when she feels there is sentiment from the community that change is necessary, she holds a hearing surrounding the situation. If there is reasonable evidence that alterations to the system are needed along with a strong proposal of how it should be changed, Public Safety makes adjustments. Due to the fact that the changes we want to implement are within the Metzgar route, the Athletic Department will be involved in this hearing and decision. The addition of the Athletic Department might complicate the process as it adds an additional stakeholder that has to be satisfied with the route adjustment. Luckily, in our discussion with Andrew Foster, Senior Associate Director of Athletics, he was very open and supportive to the idea of a route modification.

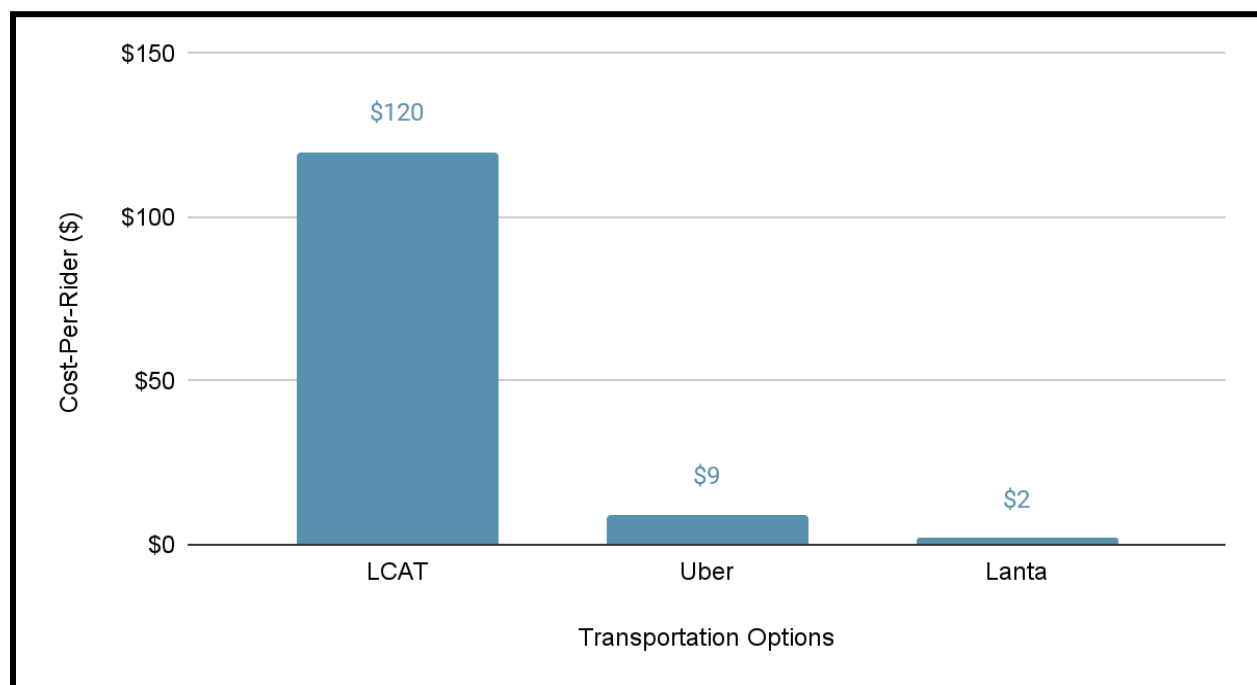
Economic Context

Financial Structure

The financial structure of the LCAT is quite complicated which has made it difficult for us to get our hands on concrete data. First, it is important to understand how the system works. Lafayette College has a contract with Easton Coach, who provides the drivers and the bus. Public Safety, specifically the public transportation division, is responsible for managing the three shuttles and drivers that Easton Coach provides. Public transportation has access to the finances of all three shuttles broken down to specific costs, including maintenance, gas, insurance, wages for drivers and more. The athletic department pays annually for only the LCAT shuttle to Metzgar because it is meant to be used by our student-athletes. That being said, the athletic department does not have access to the breakdown of these costs and is only given a total cost for the year, which according to Andrew Foster (Senior Athletic Director) is roughly between \$65,000 and \$75,000 a year. What makes this complicated is that Public Safety is reluctant to share these breakdowns of the costs with our group, or anyone for that matter, for a number of reasons. The most notable reason, according to Andrew Foster, is that they won't make this information public because other transportation companies looking to make a deal with Lafayette could use that information as leverage. All things considered, this puts our group in a position that requires us to get creative and use the minimal resources we have to make an argument.

Cost-Per-Rider

The major issue with the way the LCAT currently stands is the lack of utilization by student-athletes. From talking with Sandra Rogers (Assistant Director of Public Safety) we know that 297 students rode the LCAT shuttle to Metzgar this semester. If the athletic department pays about \$70,000 a year for the shuttle, that's roughly \$35,000 each semester. This means that for each student that took the shuttle to Metzgar this semester, the school pays \$117 ($\$35,000 / 297$). The "cost-per-rider" is nearly \$120 and considering that this is a 10-12 minute drive, that number is far too high. To put this into perspective, an uber from Lafayette's main campus to Metzgar is about \$9. To further show how ridiculous this number is, a ride on the public LANTA bus is \$2 from Lafayette's main campus to Metzgar. (see figure 7).

Figure 2. *Cost-Per-Rider*

The cost-per-rider for the LCAT shuttle is nearly 12 times more than Uber and 60 times more than LANTA public transportation. Assuming that there were only 297 times a student needed a ride to Metzgar this semester, it would be more cost efficient for Lafayette to have paid for their Ubers. If the school paid for 297 Uber rides to Metzgar it would cost them about \$2,700 total, ultimately saving the school \$32,000 this semester. Obviously, assuming that the school would pay for students' Uber rides is unrealistic, this highlights how economically inefficient the shuttle really is. Why is it that Lafayette is comfortable paying so much for a shuttle that is severely under-utilized? This leads us to the main obstacle, liability.

Challenges: Liability

Lafayette College is obligated to provide free-to-us public transportation for a number of reasons; these can be consolidated into one word “liability”. Lafayette has multiple locations that are outside of the school's main campus, such as Metzgar, the arts campus and LaFarm. If a student were to travel to one of these places and get injured in a car accident, Lafayette cannot be blamed for the situation because of the shuttle services they provide. Without getting too in depth on the logistics of the liability concerns for the school, the point is clear, the college needs to offer public transportation to serve as a “liability-based cushion”. From an economic standpoint,

the school does not mind paying \$70,000 annually for a single shuttle because it saves them from any liability concerns in the case of an accident. That being said, even if the school could save \$32,000 by simply paying for the 297 Ubers this semester, they wouldn't because of the risks associated with not having liability-control over students' travel.

Economic Outcomes

Due to the liability challenges we face, the best path forward to create an economically efficient LCAT is simple. The first thing to consider is that the LCAT is here to stay because the school is obligated to provide students with free-to-use transportation. That being said, if our proposed route changes and enhanced marketing of the shuttle can increase student-utilization, the cost-per-rider will decrease. Think about it like this, Monday through Friday the LCAT takes 12 trips to Metzgar each day, that's 60 trips per week and 900 trips a semester. If there were only about 300 times a student used the LCAT this semester that means that for every 3 trips the LCAT takes to Metzgar, there is 1 rider. If we were able to get 1 rider on each trip, the cost-per-rider would decrease from \$120 to \$40. The point is that even the slightest increase in ridership would create a significantly more economically efficient shuttle. We believe that a reasonable cost-per-rider goal would be around \$10 (roughly 4 riders per trip) and we similarly believe that our recommendations for the LCAT will land us in that range.

Technical Context

Data Collection:

As it stands now, a “heavy day” of passengers on the LCAT to Metzgar is about 12 students, per Keith Zweifel, Metzgar route driver for the past two years. (*Zweifel, 2023*) Considering this route runs from the hours 3pm to 9pm, that’s only 2 passengers an hour. The loop to Metzgar, the Intramural fields, and back to campus takes about 35 minutes round trip. With this in mind, that comes out to about one passenger per loop (LCAT, 2023). Not only is this unsustainable, but teeters the line of wasteful. Per Sandra Rogers, the riders along the Metzgar route totals to 297. Notably, the total ridership of the shuttle throughout campus is 2,450. The other three LCAT routes, Weekday Community Involvement shuttle, Saturday shuttle, and Arts Campus shuttle, account for 1,472 minutes of travel each week.

Figure 3.1. *Total Riders Fall 2023*

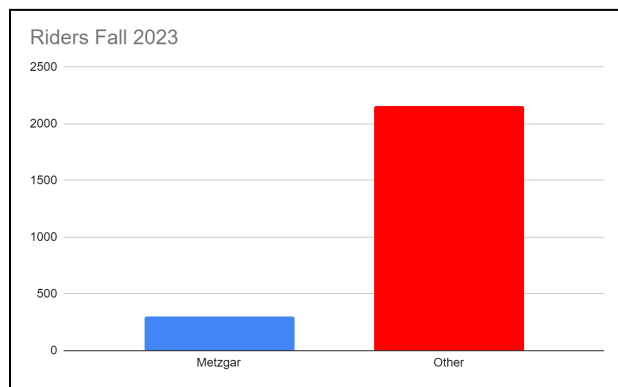
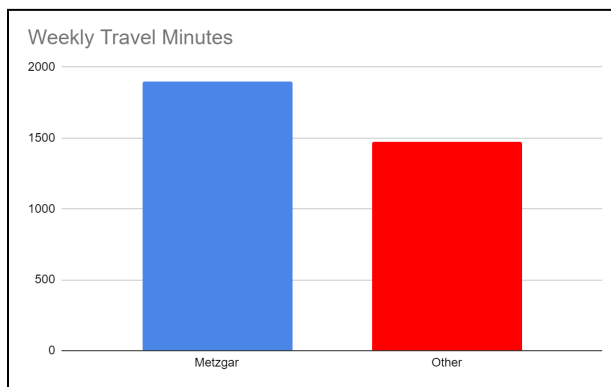


Figure 3.2. *Weekly Travel Minutes*



The Metzgar route accounts for 1,900 minutes of travel per week. Considering that the Metzgar route is responsible for over 56% of travel time per week, the fact that it only accounts for about 12% of the campus wide ridership is cause for concern. If the LCAT is proving to be unsustainable on its heaviest days, then changes are pertinent.

The Problem:

The disproportionate amount of riders compared to travel time leads us to the question of why don't students opt to use the LCAT when traveling to Metzgar. Based on our survey results, we came to the conclusion that not enough people are aware of the LCAT Metzgar route and that the current route doesn't serve the students conveniently enough. As it stands now, the pickup spot on campus is on the corner of Hamilton and Pierce. We see this as problematic because it is quite far from both classes and housing. The original thought behind designating this corner as the pick up spot was that it is right outside Kirby Sports Center. It was perceived that athletes would be around the building and could catch their ride to practice right outside. The reality is student-athletes within sports that travel to Metzgar are not commonly in Kirby Sports Center. In order to get more familiar with the system, we decided it was best to take the shuttle. Even on our first journey, it was apparent how "out of the way" the Hamilton and Pierce pick-up spot was. For an 'on-campus' pick-up location, it was more on the outskirts. Perhaps even worse, was the drop-off at the same location. After a long day of class and practice, student-athletes are likely reluctant to walk up the hill and across campus to get to their housing or even dining halls. In fact, the two dining halls open past 6 o'clock, Marquis and Farinon, are about a 2,600 and 1,600 foot walk, respectively (See Figures 3.1 & 3.2). That means that student athletes that are going to dinner after practice have to walk either half a mile or half a kilometer.

Figure 4.1. Drop-off to Marquis

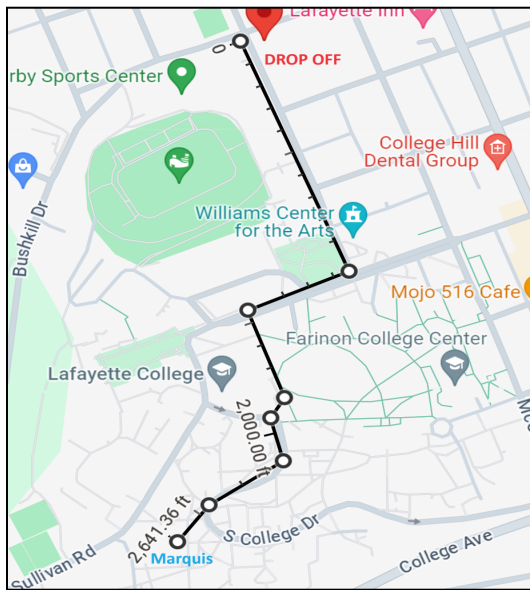
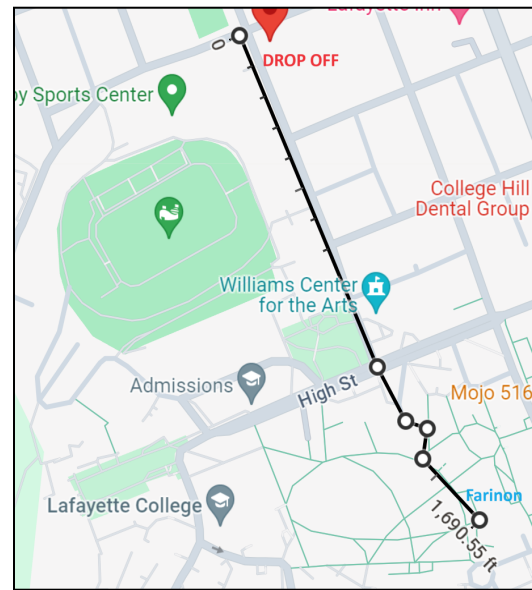


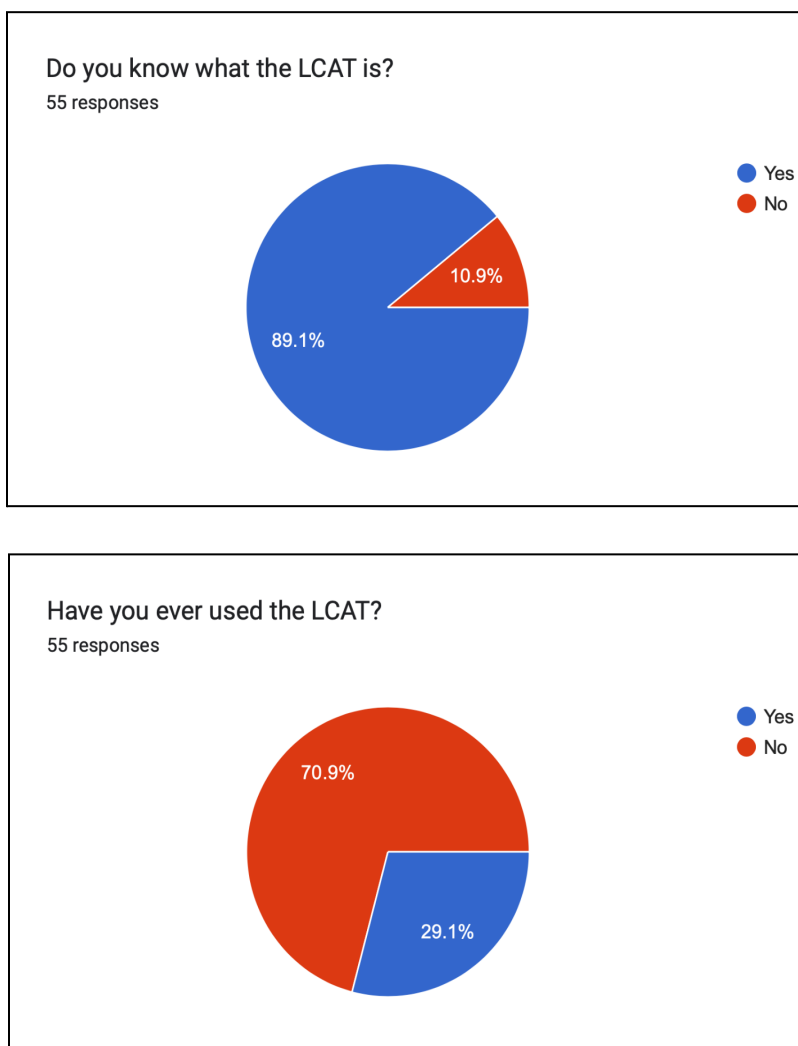
Figure 4.2. Drop-off to Farinon



Student Survey Results:

Following our own LCAT excursions, we sought feedback from other students. We, then, launched a survey where we recorded 55 responses from student-athletes. Our two initial questions were as follows in the charts below:

Figure 5. *Survey Results*

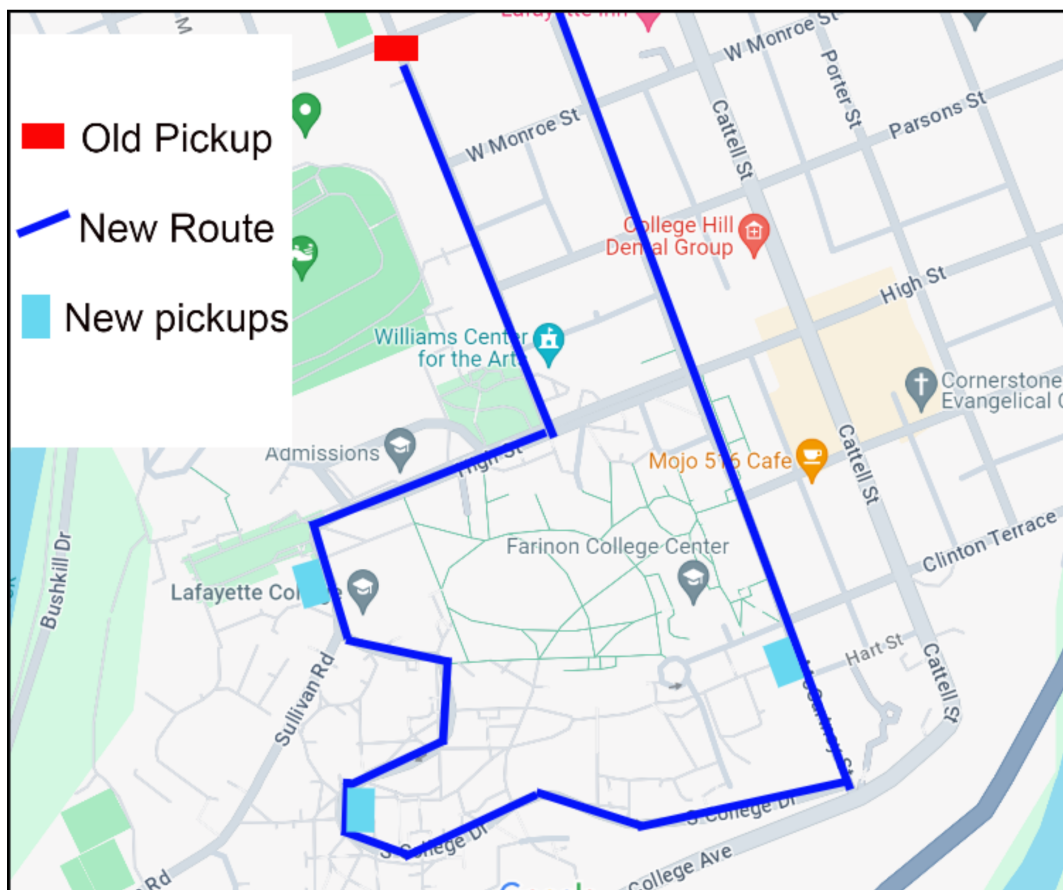


Although 90% of the surveyed students knew of the LCAT, only 30% had ever used the shuttle. Even of this 30% (19 students) only 6 of them used the shuttle to Metzgar. When asked what would make the LCAT more appealing to take, nearly half of the responses were concerning the schedule and route, with pick-up and drop-off locations being a main focus. Using this feedback, we began exploring options of an updated route, adjusted to meet the needs of student-athletes and the college community as a whole.

Solution #1: Change Route & Pick-up spots

When building towards a solution, we had to first establish a target audience. Through discussion with Andrew Foster of the Athletic Department, it was clear that the primary population this specific shuttle aims to serve is student athletes. More specifically, it was student athletes whose sport is located at Metzgar Fields. Understanding that Lafayette College has an academic time designation of 8am-4pm, practice and competitions are more than usually after 4pm. This is reflected in the shuttle's time table, where it begins at 3:30pm. With this in mind, it is common for student-athletes who travel to Metzgar stack their mornings and afternoons with classes in order to not interfere with practice times. From this, it is more likely that these student-athletes are going straight from their classes to Metzgar Fields. Considering this, we believe a route that runs through South College Drive and passes many of the class buildings and housing buildings would attract more riders. Our proposed route adjustments are shown in Figure 6.

Figure 6. *Proposed Shuttle Route*

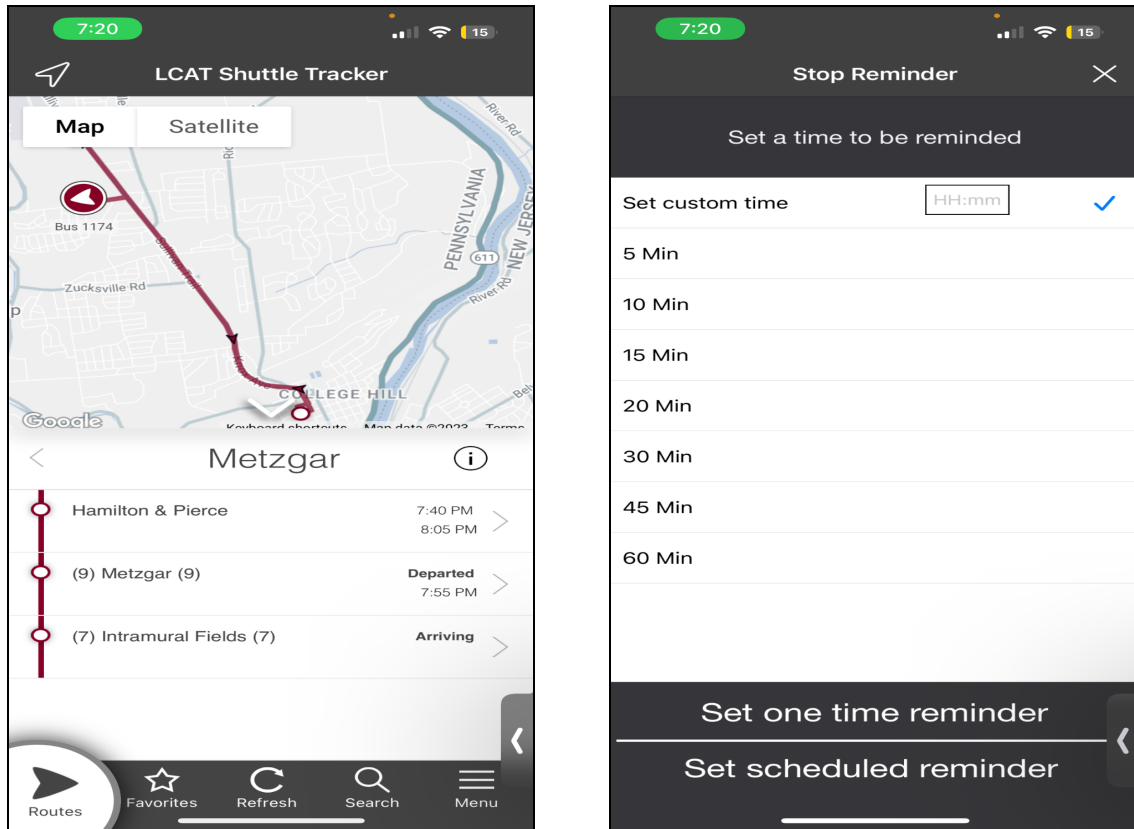


Solution #2: Enhanced Marketing of the LCAT and RideSystems App

On the other hand, we found many of the student-athletes who may benefit from the LCAT Metzger route are just simply not aware of it. When it comes to advertisements of the LCAT, we have not seen any in our own four years at Lafayette College. We knew this was an issue and we went through a long progression of solution ideas. With keeping better marketing at the forefront of our concept generation, we first came up with the idea of a new Lafayette College run app. We wanted this app to have the routes, pick up locations, live trackers of the shuttle, notifications and times incorporated in a way that makes the user experience very easy and accessible. We essentially envisioned students being able to access the app and go through a pain free process of catching a ride to Metzger. We also thought that the app could be a huge marketing tool for Metzger sporting events. We pictured all student athlete competitions being promoted through the app. For example, students could receive a notification saying that there is a women's soccer game happening at 6pm, they then would be promoted with pick up locations, times, and routes to make the trip to and back from Metzger. This aspect held true to our concept of better marketing for the LCAT itself and student athlete competitions. From discussions we've had with Public Safety and the Athletic Department, it was revealed that the only advertisement of the LCAT is done during Orientation. We envisioned the app being downloaded by all students at orientation would help this initial promotion not go to waste. The students could become aware of its benefits from the very start of their Lafayette College journey and would not have a simple word of mouth promotion go in one ear and out the other. With this, we recognized that marketing of the app and system itself would still need to take place past freshman orientation. The word of mouth presentation of the system has shown not to be effective as from our data we found that only 30% of student athletes surveyed have used the LCAT, with 10% not even knowing what it is.

As our concept generation progressed, we found that there is an existing national app called Ride Systems. The app is very popular among colleges, specifically ones similar in size to Lafayette. While the app doesn't have everything we envisioned, we found that it does have some great aspects (See figure 7).

Figure 7. Ride Systems Display Example



Not only does the app provide a live tracking visual of the bus with corresponding time estimations, but it allows the user to be reminded with a notification. The app could drastically change how students interact with the LCAT and the fact that the app isn't easily discoverable is problematic. Also, the app is not owned by Lafayette College and the LCAT is not a major focus within the app as it displays many bus routes. The app is a significantly attractive aspect to the LCAT, yet it's rendered almost useless because people are not aware of it.

After going through this progression, we realized that the root of the problem comes down to marketing of the current app and of the system itself. Our proposal is to increase LCAT advertisement within different avenues that would effectively connect students with the LCAT, essentially giving the system a marketing makeover. Of these avenues, we see three key implementations that are very attainable.

First off, coaching promotion. We see a lack of formal and informal promotion of the system through coaches of sports teams at Metzger. This has been shown by student athlete interviews and surveys. We propose coaches promoting the system in a formal way at the beginning of the year. This will have to be stressed from athletic administrators to make sure it gets done.

Through our experience, teams normally have a meeting at the beginning of the year that pertains to the logistics of the season. These meetings normally have many non sports related topics presented, such as tutoring resources and food options on campus. We believe that if the LCAT is promoted by coaches in this type of meeting, it could greatly help student athletes become more aware of the system. We also would like to see coaches promote the system in more informal methods throughout the year. We believe aspects as simple as reminding players this is a viable option would help ridership. Many student athletes get weekly practice and game schedules sent out to them every week. We envision that the LCAT schedules and times can easily be added to these schedules to further help promote the system.

Our second key aspect involves marketing through social media. Every team and GoLeopards social media account markets their games through social media. We believe if students were presented with the ease of transportation through these same posts, it could significantly increase attendance to Metzger sporting events. This would be done by simply adding pick up locations and times to the game promotion graphics. We envision students being presented with the ease of transportation to these events, making it worth it for them to attend. We hope to limit convenience issues such as not having a car, not wanting to drive, or unreliable pick up times. This solution works hand in hand with our adjusted pick up locations and times presented earlier. By adding flexibility for the shuttle service to travel to sporting competitions outside of its regular schedule, this marketing approach could be implemented.

Our final idea suggests more marketing and promotion from the college itself. We would like to see the existing app promoted in an informal and formal manner, starting from freshman orientation. Through survey results we found that many students have never heard of the existing app. We assume that better promotion of this app from the beginning of students' careers will vastly improve LCAT ridership, due to the positive user experience the app provides. During our meeting with Jeff Troxel and Sandra Rogers, they mentioned how years ago they attempted to

include the LCAT in their 'Stool Talks.' Stool Talks reference the info-boards that are on the inside of stall doors in college owned bathrooms. A short, informative message along with QR codes for the Ride Systems app and time table could have a modest impact for such a small solution. We think this being revitalized could greatly help the system's promotion, along with other forms of infographic marketing.

Conclusion

Summary

The LCAT shuttle that takes students to and from Metzgar Fields Sports Complex is severely underutilized and the college is in search of an affordable, yet efficient solution. Through our **social analysis** of the shuttle, it has become apparent that the majority of students are simply unaware of the LCAT and how the system works. Furthermore, the small portion of students that are aware of the LCAT find it to be inconvenient and would prefer to drive themselves to Metzgar. Our **political analysis** of the system taught us that in order for change to occur, the best way to do so is through Sandra Rogers (assistant director of public safety). Sandra told us that with reasonable evidence and a strong proposal, she will be able to set up a public hearing surrounding the LCAT's situation and a successful hearing will result in public safety making adjustments. The **economic analysis** of the shuttle highlights the complexity of the system's financial structure between the college, the athletic department, public safety and Easton Coach. Additionally this section shows the importance of the current \$120 cost-per-rider and how our recommendations can lower this number to a more economically reasonable and efficient range. The **technical analysis** explains our recommendations to the college: Adjusting the LCATs routes and pick-up spots aims to enhance student convenience and naturally boost shuttle ridership. Elevating the marketing and promotion of the LCAT alongside its free-to-use mobile app, 'Ride Systems,' will heighten awareness among students, leading to increased ridership.

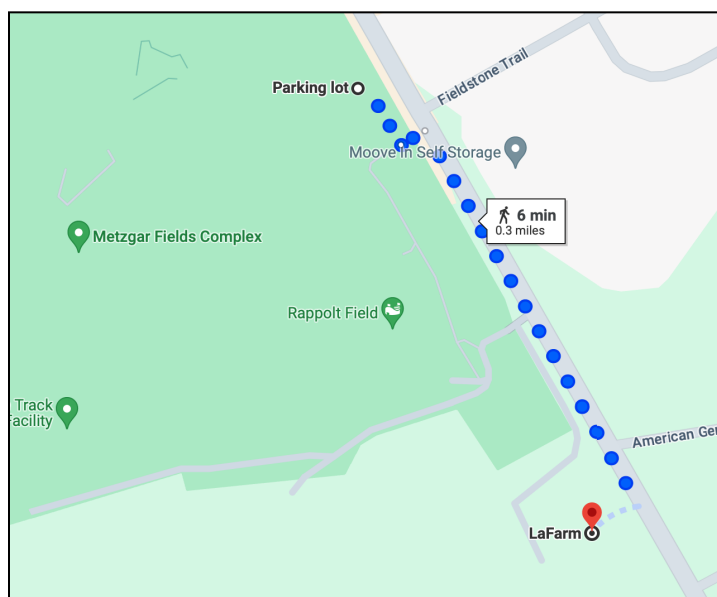
Looking Forward: Suggestions for Future Students

Initially our group had planned on setting up a public hearing with Sandra Rogers, but due to time constraints we were unable to do so. In the political analysis of our study, we have outlined how that process works and recommend that future-students can finish what we started. Sandra Rogers contact information, as well as other resourceful individuals, will be provided at the end of this paper for future groups to pick up where we left off. Additionally, the biggest challenge that we faced in this study was a lack of economic understanding. An obstacle that we were unable to overcome was the schools reluctance to share specific economic information regarding the shuttle. Before a future group considers a public hearing, it would be crucial to have a better understanding of the economic aspects surrounding the LCAT shuttle.

Something to Consider: Adding a Stop at LaFarm

There are multiple classes offered at Lafayette that take place at LaFarm and the transportation the school offers does not include drop-offs there. That being said, we would have implemented this into our proposed route changes, but we became aware of this additional problem late in the semester. We first thought that because we are suggesting eliminating the shuttles stop at the intramural fields, we could simply replace that stop with LaFarm. Since we had already decided that shortening the length of the shuttles round-trip would make for more frequent trips, we ultimately decided that we valued frequency over adding a stop at LaFarm. One last thing to consider is that LaFarm is certainly within walking distance of Metzgar (see figure 8), we leave it to future groups to decide if having 2 stops this close to each other would be efficient and essential or if it is simply unnecessary.

Figure 8. *Walk from Metzgar to LaFarm*



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