



BY ALEXANDRIA CITY HIGH SCHOOL



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TOPIC

Traffic Congestion in Alexandria City

TOPIC DESCRIPTION

Traffic congestion is a prominent issue in Alexandria city because it affects everyone. This issue is caused by high commuter traffic, and cut through traffic, with very little lanes or infrastructure to compensate for the large amount of cars. The traffic congestion in Alexandria city peaks at 6:30 - 9:30 AM and 3:00 - 7:00 PM. Areas in Alexandria that experience traffic congestion the most are collector roads. This issue deeply affects local residents, local commuters, transit users, and children.

RESULT

- The purpose of this report/project is to create a safe and efficient roadway system, to reduce traffic congestion in the city of Alexandria so that residents and children feel safe in their community. According to [this article](#) 23% of Alexandria City lane miles are over capacity. Some of the roads that are over capacity are VanDorn street, Duke street, Eisenhower Avenue, and Braddock Road. Due to the full road capacity on collector roads, commuters have to resort to the residential roads which put children, residents, and cyclists at risk of being in a fatal accident. The intended result of this project is to lower the amount of congestion on collector roads by 10%, so that commuters will not have to use residential roads, which in return would decrease safety risks for all.

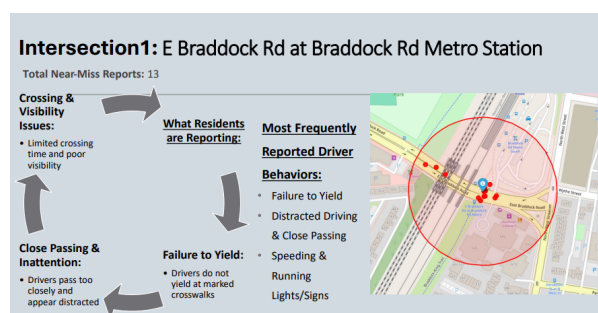


CYCP GOAL AND STRATEGIC AREA

- This project aligns with the Safe Environments Report Card which helps create safe environments for youth in Alexandria City. According to the report card, this goal falls under the Maintain School and Students Safety strategy by ensuring the safety of children as they walk to and from school.

SIGNIFICANCE

- Alexandria City is a large city with many residents, roads, intersections, recreational activities, families, and young children. It is important that we fix traffic congestion in Alexandria City because it can lead to dangerous driving behavior like road rage, which the driver could then fail to yield to the pedestrian crossing at the crosswalk. This can put children and families at risk of being hit. A dangerous intersection where many people have had near miss accidents is East Braddock Road at the Braddock Road Metro Station. This is a popular commuter road that faces bottleneck congestion. Below is data representing the cause of the near miss incidents.



Here are what residents are saying.....

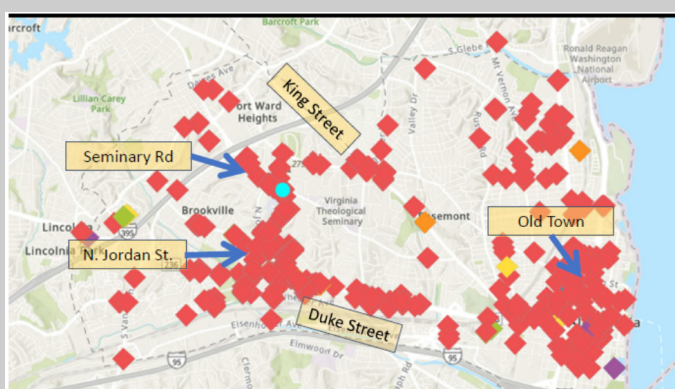
Resident-Reported Near-Miss Experiences

"The most recent time I was nearly run over, I was on the Metro station side of the intersection in the afternoon. I pushed the button to turn on the lights and started crossing. The first three lanes of traffic stopped, but a driver in the fourth lane sped up, nearly hitting me as I passed the third lane of stopped traffic. I had no way of seeing the driver in the fourth lane because the other cars blocked my view."

"It is the crosswalk with the flashing yellow lights near the Braddock Rd metro station. The crosswalk crosses Braddock and connects to the walking/cycling path. Drivers routinely do not stop even when the lights are flashing and there are pedestrians in the crosswalk."

HOW ARE WE DOING?

- In the city of Alexandria there have been many near miss accidents involving pedestrians and cyclists. Many of these accidents occurred where roads are at or less than 35 MPH, within near intersections, and typically occurred around pedestrian crosswalks or traffic signals. Some of the roads in Alexandria where these accidents occur the most are near king street, route 1, the old town area, duke street, and seminary road. These roads (collector roads) are used by drivers to avoid the rush hour traffic on the major nearby highways, which leads to more congestion on the smaller residential roads during rush hour. This could be the reason for the many almost fatal accidents on these roads. Below is data showing what roads and areas that have experienced near missed accidents and accidents that have occurred.



IMPLEMENTATION

- Some strategies we can use to reduce near miss accidents caused by traffic congestion would be to separate pedestrians from vehicles and encourage people to take public transportation.

Ways to separate pedestrians from vehicles



- Raised crosswalks act as a speed bump to slow traffic down and make the pedestrians stand out so that they will not get hit. It also acts as a speed bump to slow commuters down.



- Curb Extensions shorten the distance that pedestrians have to cross the road, which can naturally slow vehicles since they will have to take sharper turns, which reduces the risk of pedestrians being hit.



- By encouraging pedestrians to take public transportation, it reduces the amount of pedestrians on the road and reduces the amount of cars on the road to reduce traffic congestion.

PARTNERSHIPS

Below are private and public organizations that can help reduce traffic and make roads safer in Alexandria city.



- The Nova families for safe streets can help monitor near-miss accidents and collect data about accidents on roads in Alexandria. Collecting data on near-miss accidents can tell us if the traffic signals are helping with traffic congestion.



WELLS + ASSOCIATES

- Wells and Associates is a private organization that works with the city of Alexandria to help create sustainable systems to balance traffic demands and design transportation and parking networks. By collaborating with this organization, it will help create safer and sustainable roads to reduce traffic in Alexandria.



- Vision Zero is Alexandria City's data-driven plan to eliminate all fatal and near-fatal accidents involving pedestrians. This relates to the topic of traffic congestion because many of the fatal accidents are related to high amounts of congestion on the road.

PERFORMANCE EFFORT

- Currently, one of the most congested streets in Alexandria is Duke Street. This road is used by residents and by commuters to avoid backups on the nearby highways, which is why this area is so congested. One of the ways the city officials have tried to mitigate this problem is by using a technology platform to analyze traffic volume and patterns. Due to this new technology, city officials have proposed a pilot project that would decrease the amount of cut-through traffic. One of the methods used in this pilot project was to make the green signal stay longer on Quaker Lane, headed southbound onto Duke Street, and many more residential roads that lead into Duke Street. In return, city officials hope that this traffic encourages commuters to stay on Duke Street rather than go onto residential roads to avoid slowdowns.

FEEDBACK

- According to the data below, the feedback was positive. Cut through traffic on these residential roads decreased, by using the methods mentioned in the pilot program.

Street	Cut-Through Traffic Volumes		
	Before	After	% Change
Cambridge Road	328	136	-59%
Fort Williams Parkway	86	32	-63%
Quaker Lane	1,062	1,893	78%
West Taylor Run Parkway	698	617	-12%
Yale Drive	280	31	-89%
Telegraph Ramp from Eastbound Duke Street	2,463	2,709	10%

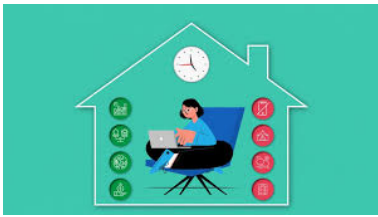
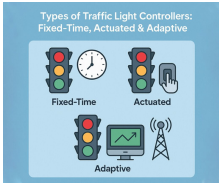
PERFORMANCE EFFECT

- Some barriers that can affect our goal of reducing traffic congestion are financial barriers, such as having enough funding for the infrastructure that would help reduce traffic congestion. Another barrier would be that building the infrastructure could cause more traffic delays. The last and final barrier could be the fear of change in traffic practices, meaning some residents could reject these new projects, like technology used for signals or recording certain streets for data. This could be seen as invasion of privacy by some residents.



RECOMMENDATIONS

- To reduce traffic congestion in Alexandria, at the local level, we could restrict street parking during rush hour to optimize the number of lanes active.
- Another way we could fix this issue at the local level would be to use traffic adaptive signals so that the signals could adapt to the traffic demand, which could eliminate the amount of stopped time at a light signal.
- At the state level, officials could encourage working remotely from home so that it would decrease the amount of cars on the road during rush hour.



ONLINE

- An online resource to better understand traffic congestion in Alexandria is the Alexandria smart mobility program. Alexandria Smart Mobility uses data and systems to come up with a report to help make travel in the city of Alexandria faster and safer. Below is the 2026 report.....



- Another online resource would be the Alexandria traffic flow and incidents map. this is an online interactive map that shows traffic on residential roads and collector roads and near miss accidents, in Alexandria city. Below is the map.....



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IN PERSON

- To learn more about traffic congestion in Alexandria City, people can attend the board meetings for the Traffic and Parking Board at the Department of Transportation and Environmental Services Building. During these meetings they make decisions on street and parking regulations to ease congestion.



- Another way to learn more about traffic congestion and transportation in Alexandria city is by attending meetings for the Transportation Commission. They advocate and make sure the transportation system in the city of Alexandria remains balanced.