

# Traffic Network Analysis

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Presentation

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# Background of the city

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- ✓ Atlanta is geographically located in Georgia (Wainscott-Sargent, 2016).
- ✓ The relative location of Atlanta is Northeast of Macon, Georgia.
- ✓ In 2016, the estimated population of city of Atlanta was 472, 522.
- ✓ According to Wainscott-Sargent (2016), Atlanta city hosts different races including the whites, African Americans, Alaska Natives and American Indians that have different preferences in modes of transportation.
- ✓ Therefore, the enormous population of the city of Atlanta is a major cause for traffic congestion.



# Modes of Public Transportation

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- ✓ Atlanta city has a favorable topography that allows different transportation networks including roads, railroads, and airports.
- ✓ However, the major public transportation networks are roads and railroads (Wainscott-Sargent, 2016).
- ✓ Thus, commuters in Atlanta city could use monorails, transits, and shuttles.
- ✓ The public transportation is facilitated by various agencies including Metro Atlanta Rapid Transit Authority (MARTA), Georgia Regional Transportation Authority, Amtrak, Xpress Bus, Atlanta Streetcar, Cobb Linc, and Buc Shuttle.

# Modes of Public Transportation

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- ✓ MARTA is a transit authority funded by the local government to run trains and buses in Atlanta city (Wainscott-Sargent, 2016).
- ✓ Amtrak provides private bus and train transportation services.
- ✓ Buc shuttle provides free and fast shuttle services.
- ✓ Fascinatingly, commuters are also provided with bicycling and pedestrian pavements in Atlanta city.
- ✓ Atlanta Bicycle Coalition provides the cyclists with helpful information such as the maps and Cycle Atlanta App to facilitate bicycling along the streets.



# Traffic Network Analysis

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- ✓ The traffic network analysis aims to select the most appropriate transportation network type that could assist the commuters to reduce the travel time and cost when travelling using the modes of transportation available in the city of Atlanta.
- ✓ The enhancement of road and railroad networks is the most appropriate strategy to improve the mobility of people within the city and reduce the congestion.

# Road Traffic – Safe Routes

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- ✓ As a traffic planner, I would advocate for establishment of safe routes to schools and hospitals.
- ✓ As the scholars enjoy safe routes to schools, non-scholars also deserve safe routes to hospitals and disaster management departments including the Atlanta Fire Rescue Department.
- ✓ Currently, scholars in grades K-8 are lucky to use safe routes to schools along which they walk and bicycle.
- ✓ Most departments involved in disaster management deserve dedicated safe routes to access the scenes of disaster punctually.



# Road Traffic – Synchronized Metro Lights

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- ✓ Road transportation is a momentous channel for commuters in the city of Atlanta.
- ✓ As a traffic planner, the traffic lights require to be synchronized to ease congestion on the road networks.
- ✓ I would endorse the idea of a Libertarian gubernatorial candidate, Andrew Hunt, who stated publicly in 2014, that he would hire a firm to synchronize the metro lights.
- ✓ Falcocchio and Levinson (2016) argue that synchronizing the metro lights reduces the awaiting time at junctions and roundabouts, making the traffic to move faster.

# Road Traffic – Technology

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- ✓ Information is power. As such, the commuters require information about the road conditions to make decisions and avoid congestion.
- ✓ As a traffic planner, I would organize forums to inform the motorists how they could rely on the traffic systems to acquire relevant information regarding the conditions of the roads in the city of Atlanta.
- ✓ For instance, the commuters require to know that they could dial Georgia 511 service to hear the latest traffic news over their phones.
- ✓ Hence, the traffic congestion could reduce if commuters are able to use the traffic systems and technology effectively.



# Road Traffic – Technology

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- ✓ Besides Georgia 511, the commuters deserve to know that the Navigator is also an indispensable website facilitated by Georgia DOT that provides up-to-date information on lane closures, accidents, and other traffic conditions.
- ✓ The technology is also helpful in managing the parking services in Atlanta city. Motorists should be encouraged to adopt technology when paying for parking services to save time.

# Railroads - Monorails

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- ✓ As a traffic planner, I would recommend the use of monorails in Atlanta because they have more seats than normal buses, and they travel fast.
- ✓ Increasing the number of monorails in Atlanta would cost the government enormous amounts, but reduce traffic congestion in the city tremendously.
- ✓ The adoption of monorails by commuters could be facilitated by charging little boarding fees and increasing the number of terminals.
- ✓ In particular, a monorail has a peak capacity of 1800 commuters per hour, while a modern streetcar and bus rapid transit have a peak capacity of 840 and 480 commuters per hour respectively (Falcocchio & Levinson, 2016).



# Alternative Commuter Options

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- ✓ As a traffic planner, I would also encourage commuters to adopt vanpooling, carpooling, and biking.
- ✓ According to Falcocchio and Levinson (2016), carpooling and vanpooling allows a group of commuters to share the same transit system. Hence, saving time and cost.
- ✓ Vanpooling and carpooling reduce congestion on roads because they discourage the commuters from riding on several different cars and vans toward the same destination.

# Conclusion

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- ✓ The traffic network analysis reveals that the major transportation networks in the city of Atlanta are roads and railroads.
- ✓ The establishment of safe routes to hospitals and schools, and synchronization of the Atlanta metro lights could reduce congestion.
- ✓ The motorists and commuters should rely heavily on the traffic systems including the Navigator and Georgia 511 to make decisions of the routes to take and those to avoid.
- ✓ As with railroads, the monorails are the most efficient means of transport because they are cheap to board and have more seats than normal vehicles.



# References

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Falcochio, J. C., & Levinson, H. S. (2016). *Road traffic congestion: A concise guide*.

Leonard, B. (2010). *Atlanta (GA) Regional On-Board Transit Surveys: Final Report*.

Wainscott-Sargent, A. (2016). *Moving to Atlanta: The un-tourist guide*. Place of publication not identified: Bookbaby.