Beginning on page 2 of this document is a paper that I, Django Szilagi, wrote as a graduate student of the University of New Orleans studying Transportation Planning.

**Historic Preservation discussion begins on Page 5. Spark Notes:**

* Motorized vehicles create consistent micro-vibrations that are absorbed in the

bricks, building foundations, and support structures

* + Micro-vibrations are created when vehicles travel over bumps and cracks in the pavement
	+ The micro-vibrations may be too subtle to be felt by humans, as they are absorbed in surrounding structures (buildings and foundations)
* Micro-vibrations can shake sediment loose over time resulting in a decrease in structural integrity
* Reminder that New Orleans is built on swamp land below sea level and building foundations already suffer from climate and age without assistance from motorized vehicles
* Historic buildings and properties have a high make-up of older materials
* In order to preserve historic buildings, we should decrease the amount of micro-vibrations buildings in the French Quarter receive
* Fewer cars, trucks, and SUV’s will lead to better historic preservation in historic districts
* Bicycles and pedestrians do not lead to the same levels of micro-vibrations

**Feel free to read the paper! Sources are cited at the end.**

Django Szilagi TRNS 6300

Final Paper April 9th, 2019

**The Effect of Possible Vehicle Limitations in New Orleans’ French Quarter Neighborhood**

This paper will outline possible effects regarding historic preservation, transportation, and economic opportunities if vehicular traffic were to be limited within the French Quarter neighborhood in New Orleans, Louisiana. For the purpose of this paper, the French Quarter is defined as the area limited by the bordering streets of Rampart street to the north west, Canal street to the south west, Decatur street to the south east, and Esplanade avenue to the north east. Under this paper’s proposal of traffic limitations within the French Quarter, vehicular traffic would be allowed on the bordering streets but not within the French Quarter itself. In order to bypass the French Quarter vehicular traffic could traverse Canal street, Decatur street, Esplanade avenue, or Rampart street.

Defining what it would mean to limit vehicular traffic within the French Quarter neighborhood, this paper looks at allowing admittance only to automobiles to those who own a home or business in the French Quarter, delivery vehicles allowed to enter the neighborhood during specific and predetermined delivery times, and taxicab, pedicab vehicles who hold valid city permits for operation, and musicians and artists for loading/unloading. Automobiles belonging to those who do not occupy residences within the French Quarter, including ride- share drivers but excluding delivery drivers, would be restricted from entering the neighborhood. All drivers with handicap plates and credentials would be permitted to drive and park within the confinements of the French Quarter without exception.

Under a policy encouraging traffic limitations, those who own a residence within the French Quarter will be distributed parking passes through the City of New Orleans government, in coordination with the appropriate matching documentation of correlating deeds and/or lease agreements, with vehicle registration documents. This paper does not seek a limitation of vehicles owned by a resident in the French Quarter, however the vehicle owner who seeks to be granted a French Quarter parking pass will be required to prove that the cars are registered in their name. Business owners would be given a parking pass for their private vehicles upon providing proper documentation verifying their ownership of a business within the French Quarter, and only vehicles registered in their business’ name, for business purposes, will be permitted to park within the French Quarter.

Delivery vehicles may be allowed to deliver to the restaurants, bars, and businesses located in the french Quarter in the hours before noon, prior to businesses’ opening hours and before French Quarter pedestrian traffic is at its height in the afternoons and evenings. By containing delivery hours to a set of daily hours a predictable system of traffic flow occurs, allowing drivers and business owners to anticipate their freight and transportation needs more effectively. If the French Quarter were to have limited vehicular access then traffic delivery trucks may have more parking opportunities, creating less distance from where drivers would need to park and the businesses they are servicing. This measure may decrease delivery times and increase productivity.. This paper defines delivery vehicles as those who regularly service businesses with scheduled shipments and does not count FedEx, USPS, UPS, or Amazon trucks within its definition because their package load and delivery demands vary day to day and require more flexibility. Therefore, FedEx, USPS, UPS, and/or Amazon delivery vehicles would be allowed within the French Quarter unrestricted from proposed traffic limitations.

Under the implementation of imposed vehicle limitations for the French Quarter,

drivers-for-hire via rideshare apps, such as Uber and Lyft, would not be allowed to pick up, drop off, of travel through the French Quarter. Beginning in September of 2014, rideshare apps came to New Orleans to fill a perceived lack of available taxi cabs around the city (Riess, 2014).

Rideshare apps made it easy for travelers to call on a car for transportation with the added convenience of GPS tracking their ride while they wait to be picked up; an amenity that the New Orleans taxicab industry lacked. In the years since the rideshare apps were permitted to operate within Orleans Parish, the New Orleans taxicab industry has suffered, losing ridership and fares as their market audience grows more comfortable with app-based mobility; a trend that exists around the country showing a shift away from traditional taxis and towards rideshare apps for transportation (Contreras, 2019). Taxicabs are registered and permitted by the City of New Orleans. Taxicab drivers need to pass a city test and clear background checks in order to operate a taxi within Orleans Parish, unlike drivers for rideshare apps, who undergo a minimal background check and insurance verification. If the City of New Orleans were to limit vehicular traffic to French Quarter, they could give a boost to the taxicab industry by allowing taxis to pick up, drop off, and travel through the French Quarter. The City of New Orleans may want to give such a boost to the taxicab industry because these drivers are licensed and registered in a way that complies with Orleans Parish ordinances and practices, and pay registration fees to the city in order to legally operate. This is something that rideshare drivers do not do outside of the vehicle registration fees that any private automobile owner pays annually. This paper recognizes the existence of a free-market at hand within the transportation economy of New Orleans, and one could make the argument that rideshares came to the city to challenge the lack of reliable taxicabs for travelers, and now that the market has decided that it prefers to operate with reliance on rideshare apps why should the City of New Orleans make moves to increase business for taxicabs while shutting out business for rideshare drivers? The City of New Orleans can regulate how many taxicabs are in operation by way of taxi permit allotment. Certificate of Public Necessity and Convenience (CPNC) are the permits given to taxicabs in New Orleans and this registration must be renewed and available for view on all cabs operating in Orleans Parish (Ground Transportation Bureau, 2019). The New Orleans Ground Transportation Bureau has the power to limit the number of taxis that are operating in the city, and they have the ability to determine how many taxis should be able to operate in the French Quarter, whereas there are no limitations currently in New Orleans on the number of drivers who can drive for rideshares at any given time. When big events are going on in the city, as is common occurrence in the City of New Orleans, rideshare drivers hit the road in anticipation of big paydays, the problem is that more cars on the roads leads to higher rates of vehicular congestion. If the City of New Orleans can take steps to limit the number of cars that are traversing the French Quarter, by restricting the admittance of rideshare cars into the neighborhood, then the city can make efforts towards lowering congestion in the neighborhoods, creating a more walkable community, and taking steps towards greater historic preservation.

The French Quarter is the oldest neighborhood in New Orleans. Founded in 1718 by

French explorers who aimed to establish a trading post in the Southern region of North America, the French Quarter was the first settlement to which all neighboring developments arose around (History.com Editors, 2019). The French Quarter is older than the United States, and is among the oldest settlements within the country, making it architecturally and culturally significant.

With many of the buildings within the French Quarter dating back to the 1800’s, the City of New Orleans surmounts a great deal of effort to maintain the historic preservation and structural integrity of the buildings within the neighborhood. The creation of the Vieux Carre Commission, a governing body that is to act on behalf of the preservation of the French Quarter, in written into the Louisiana state constitution. The Vieux Carre Commission is charged with creating and monitoring guidelines and codes under which buildings within the French Quarter must adhere to or else the property owners may face fines.

One possible threat to the historic preservation of the buildings within the French Quarter

is traffic-induced vibrations that travel through the roads and sediment and affect the structural integrity of the buildings. In a 1971 study, *A Survey of Traffic Induced Vibrations,* A.C. Whiffin

and D.R. Leonard assert that ground vibrations, originating from movement of vehicular traffic, can have damaging effects to sites of historic preservation (Whiffin, Leonard; 1972). Their study concluded that vehicular traffic can cause damage to the sediment within bricks and concrete used to construct buildings, and can lead to destruction of materials over time. In their study, Whiffin and Leonard found that the possibility of vibration-induced damage to buildings may be magnified when the close-by street traffic is traversing on roads that are misshapen and irregular, creating more vibration and and a higher possibility for subsequent damage. Notably, many of the streets in the French Quarter are cracked and swelled with potholes and bumps, with layers of roads that have been repaved many time displayed over ever older bricks that made up some of the French Quarter’s first roads. A 1996 survey of the effects that traffic induced vibrations had

on historic buildings in Montreal, Canada, conducted by Canada’s National Research Council, corroborated Whiffin and Leonard’s findings. In the report, *Traffic-Induced Vibrations in Montreal* , Hunaidi and Tremblay outline that when vehicular traffic is a steady constant on

streets adjacent and surrounding to historic buildings, which they note as buildings that are older than 50 years, the vibrations that traverse through the streets and sediment can rise through buildings and pose a very real threat for major structural damage. Hunaidi and Tremblay explain that traffic-induced vibrations can cause buildings’ materials, such as bricks, stones, timbre, and plaster, to shift and crack. Just as Whiffin and Leonard concluded in their 1971 study, Hunaidi and Tremblay found that when streets are not smoothly paved and consist of cracks and potholes, traffic-induced vibrations occur to a higher scale and pose the possibility to inflict a greater deal of damage to the structural integrity of historic buildings. Systematically, the process of repaving and repairing roadways may greatly impact adjacent buildings as the machinery used in road repaid often involves heavy machinery and heavy trucks that produce stronger vibrations compared to the average sedan or SUV. Additionally, Hunaidi and Tremblay concluded that because humans have differing levels of vibration detection and tolerance, there may be damaging vibrations caused by vehicular traffic that goes undetected day-to-day without the proper scientific tools for vibration measurement (Hunaidi and Tremblay, 1996). The French Quarter is integral to the City of New Orleans’ tourism economy and should be preserved to the best of the Vieux Carre Commission’s ability. By limiting vehicular traffic into the French Quarter there is an opportunity to limit the level of traffic-induced vibrations felt by the surrounding buildings. Limiting the vehicular through traffic in the French Quarter, the Vieux Carre Commission could prolong the life of historic buildings, decrease the rate at which buildings need restoration, and decrease the rate at which the roads would need repaving.

If the City of New Orleans were to limit vehicular traffic to the French Quarter there may be an increase in bicycle ridership in the area. When cars are limited, cyclists may feel more comfortable on the road, fearing less that they may collide with a motorized vehicle. With fewer cars in the French Quarter, cyclists may feel safer traversing the neighborhood and may opt to use this part of the city as a bicycle-path, or as a bicycle-friendly destination. By limiting vehicular traffic inside and through the French Quarter the City of New Orleans may encourage recreational and commuter cycling, which enhances public, personal, and overall environmental health of the city (Walker, 2017). When bicycle infrastructure is implemented within urban areas, here noted as limiting automobile traffic in the French Quarter, the number of consistent bicycle riders may significantly increase as the general public's perception of bicycle safety also increases (Sadik-Khan, 2016) (Schmitt, 2018).

In addition to the possibility of increased cycling within the French Quarter, limiting vehicular traffic in the French Quarter may encourage more people to utilize public transportation. When drivers know that they will not be able to access parts of the French Quarter with ease, and faced with the possibility of having an increased chance of parking difficulties, travelers may choose to take the bus, streetcar, or bikeshare in order to reach their destination downtown. With more people using public transportation the city may be able to invest further in the local public transportation system, increasing the number of buses, the number of transit lines, and the frequency of buses and streetcars available around the clock. The public transportation authority for New Orleans could see increased ridership and reinvest in their greater goal of improving a connective transit network within New Orleans. There has been a documented link between early exposure to public transportation to a greater chance of sustainable transportation habits in adulthood, creating a more sustainable future generation of travelers (Smart and Klein, 2017).

The City of Barcelona, Spain, is currently experimenting with converting nine-block areas, three blocks by three blocks, into “Superblocks.” Within the superblocks, the inner streets are restricted from automobile access and are returned for public use. Bicycles and pedestrians take ownership over the inner streets within the superblocks, as well as recreation activities, outdoor seating for restaurants, small playgrounds have been built, and social events can be hosted (Schmitt, 2017). Barcelona’s superblocks redesign the streets that have been dominated by vehicular traffic since the popularization of private ownership of automobiles and gives the space back to the people of Catalonia. Businesses have benefited economically, there is an increased number of bicycle and pedestrian trips, and public transportation ridership has increase. Better still, vehicular traffic operating along the perimeter of the superblocks has not worsened negating fears of increasing congestion with the introduction of the no-car-zones (Velario, 2016). We can look to Barcelona’s example of creating superblocks for how a similar transportation initiative would affect current traffic in New Orleans. Perhaps the lesson of Barcelona is that the City of New Orleans should not limit vehicular access to all of the French Quarter, but rather break up the French Quarter with arterial access at designated streets throughout the neighborhood, but still limiting vehicles to clusters of blocks linked together. Studies may explain that when traffic is recirculated to specific routes in effort to establish

no-car zones, there may be an improvement in average travel times and a decrease in congestion; this results in what is referred to as the Braess Paradox (Bagolee, 2019) (Sadik-Khan, 2016).

In order to ensure that only approved vehicles would have access to the French Quarter,

vehicles that meet the proposed requirements will need to have a permit displayed on their vehicle at all times, similar to a handicap placard. Police and parking enforcement could enforce vehicle limitations at their own discretion, similar to existing enforcement regarding parking within the French Quarter.

Opponents to traffic limiting measures within the French Quarter may feel that restrictions on accessibility may affect their travel patterns negatively, adding more time or more stresses onto their daily commute times. Business owners may fear that by limiting vehicular access to their store fronts they may receive less business. Perhaps the biggest opponent to traffic limiting measures may be the hospitality industry, especially hoteliers who are located within the French Quarter. They may argue that imposing traffic limitations may create difficulties for their guests to access their hotels. Restaurants may oppose vehicle restrictions with similar complaints regarding the possibility of parking difficulties for their customers. Residents of surrounding neighborhoods, such as the Central Business District, the Marigny, the Treme, and the Bywater, may oppose traffic limitations in the French Quarter out of a fear of increased congestion in their neighborhoods as well as the chance of people parking on their blocks in order to walk into the French Quarter. The City of New Orleans also may oppose vehicle limitations as they would lose the income generated from street parking within the tourism epicenter of the city. Additionally, rideshare apps such as Uber and Lyft may oppose their exclusion to access the French Quarter and may push city officials on the appropriateness of discouraging equitable access to portions of the city.

In summary, this paper has looked at the possible effects that may occur if the City of New Orleans were to limit vehicular access to the French Quarter neighborhood. The vibrations caused by vehicles that are transferred through the streets and soil is absorbed by the buildings in the French Quarter and can cause sediment within building materials to shift and deteriorate.

These vibrations are magnified when automobiles drive over pavement that is not smooth, which is a consistent characteristic of roads throughout the French Quarter. As an effort to reduce demand and need for restorative work performed on historic buildings in the French Quarter, the neighborhood’s governing council, the Vieux Carre Commission may move to encourage vehicular limitations. Within the proposal for a renewed sense of use and purpose regarding the streets of the French Quarter, there is a regained availability and ownership of the neighborhood assigned to walkers and bicyclists. Through vehicular limitations the city may be able to encourage the revitalization of the city’s taxicab industry, which has been losing ridership in the post rideshare-app era. The City of New Orleans may pursue encouraging the taxicab industry because taxi drivers are vetted and permitted through the city, unlike drivers for rideshare apps. Imposing vehicle limitations in the French Quarter may cause an increase in bicycle ridership as cars become less frequent and cyclists feel safer on the streets. Travelers may also be more likely to utilize public transportation in order to reach destinations within the French Quarter as has happened in Barcelona, Spain when their city government created superblocks, limiting cars inside nine-block square areas. Opponents of vehicle limitations in the French Quarter may cite fears of lower business sales as a result. Hotels located in and around the French Quarter may fear that their guests will have difficulty accessing their establishments if vehicle limitations were to be imposed. Additionally, the City of New Orleans may oppose such a plan to limit visitor traffic throughout the French Quarter on the basis of missing out on parking profits.

Cited Sources:

Riess, Jeanie. "Uber's Bumpy Start in New Orleans." TheAdvocate.com. Last modified September 29, 2014. Accessed April 6, 2019. ht[tps://www.theadvocate.com/gambit/new\_orleans/news/](http://www.theadvocate.com/gambit/new_orleans/news/) article\_fd29348c-1f2e-504d-97ff-d90ff67ff560.html.

Ground Transportation Bureau. "Ground Transportation Bureau." NOLA.gov. Last modified April 1, 2019. Accessed April 6, 2019. ht[tps://www.nola.gov/ground-transportation-bureau/.](http://www.nola.gov/ground-transportation-bureau/)

History.com Editors. "New Orleans." History.com. Last modified March 13, 2019. Accessed April 6, 2019. ht[tps://www.history.com/topics/us-states/new-orleans.](http://www.history.com/topics/us-states/new-orleans)

Whiffin, A.C., and D.R. Leonard. "A Survey of Traffic Induced Vibrations." *Transport and Road Research Laboratory (TRRL)* No Lr 418 (January 1972): 1-57.

Hunaidi, Osama, and Martin Tremblay. "Traffic-induced Building Vibrations in Montréal." *National Research Council Canada*, October 18, 1996, 736-53.

Schmitt, Angie. "Get a Glimpse of Barcelona's 'Superblocks' in Action." Streetsblog.com. Last modified February 13, 2017. Accessed April 7, 2019. https://usa.streetsblog.org/2017/02/13/ get-a-glimpse-of-barcelonas-superblocks-in-action/.

Schmitt, Angie. "Want Cyclists To Feel Protected? Then Protect Them!" Streetsblog.com. Last modified September 18, 2018. Accessed April 7, 2019. https://usa.streetsblog.org/2018/09/18/

study-protected-bike-lanes-are-the-answer-to-unsafe-passing/.

Valerio, Pablo. "Superblocks, Barcelona Answer to Car-Centric City." *BCN Ecologia*, July 21, 2016. Smart, Michael, and Nicholas Klein. "Early Exposure to Public Transportation Can Lead to More

Sustainable Travel Later in Life." *Journal of Planning Education and Research*, March 8, 2017.

Bagloee, Saeed Asadi. "Is it Time to Go For No-Car Zone Policies? Braess Paradox Detection."

*Transportation Research Part A: Policy and Practice* 121, no. 0.

Walker, Peter. *How Cycling Can Save the World*. New York, NY: Penguin Random House, 2017. Sadik- Khan, Janette, and Seth Solomonow. *Streetfight: Handbook for an Urban Revolution*. New York,

NY: Penguin Books, 2016.

Contreras, Seth D., and Alexander Paz. "The Effects of Ride-Hailing Companies on the Taxicab Industry in Las Vegas, Nevada." *Transportation Research Part A: Policy and Practice* 115 (September 2019).