

Spring 5-17-2013

Uses and Perceptions of the Neighborhood Open Space

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Uses and Perceptions of the Neighborhood Open Space
A Case Study of the New Orleans East Carrollton Area

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Science
In
Urban Studies

By

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May, 2013

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Abstract

This research investigates the uses and perceptions of the population of the East Carrollton Area in New Orleans so as to evaluate the possible outcomes of urban design intervention and policy changes. Using GIS, field notes, structured interviews and a population survey, this research evaluates how much the built environment influences the uses of the neighborhood open space. Subsequently, it evaluates how the neighborhood open space is perceived as a place as opposed to a transportation infrastructure.

Overall, the built environment affects the experience of the residents when they perform leisure activities in the neighborhood open space. Major deterrents to functional use and active transportation are related to social factors and the social environment. The neighborhood open space is largely perceived as an asset by the residents. It can be a valid replacement for urban parks when the population cannot access them.

Keywords: Access, Open Space, Active Transportation, Common Place, Perception of the Built Environment, Neighborhood Enhancement

Introduction

The never-ending success of street festivals in New Orleans is a live testimony of the attachment of the population to the public urban space. New Orleanians are known to enjoy and invest their city outdoors spaces for special occasions all year long. This phenomenon comes at odds with the well-researched fact that urban form can have a negative impact on city dwellers. Indeed, critics of the modern city are numerous. Among them, Jackson (2003) and Lopez (2004) point at its effect on people's health. Putman (1995) argues that modern urban spaces reduce the social capital of the city while Cervero & Radisch (1996) point that they decrease the possibility to choose alternative, non-motorized modes of transportation.

Urban parks and greenways can be a way to mitigate the ills of the modern city. Because they offer opportunities to go out, walk and practice sports activities, living close to urban parks can reduce health problems, both physiological and psychological (Maller, 2002). Urban parks can also enhance social capital: they are a place open to the public where people can practice structured or unstructured activities such as playing, debating, reading, playing music (Maller, id.). Finally, urban parks allow different forms of non-motorized urban transportation, which can help reduce traffic congestion and air pollution (Eysenbach, 2008).

However, some urban residents have limited access to urban parks; either because they live far away or because some infrastructure creates a barrier between the population and the park (Hsueh-Sheng & Chin-Hsien, 2011). This problem of access is even more acute for poor households who do not own a car and must rely on public transportation to access remote public parks (Devajyoti, 2004), as well as senior citizens who do not drive anymore (Oxley et al., 2004).

In all parts of the city, people do have access to the neighborhood open space. The purpose of this study is to examine if the neighborhood open space can be a substitute for urban parks when urban residents cannot access them. The neighborhood open space as defined in this research consists of streets, sidewalks, medians and sometimes front yards. This space between buildings shares several attributes with urban parks. It is open to anyone, it often has trees that bring shade and a greener environment, it can have benches and other amenities that allow people to get out and interact (Eysenbach, 2008). However, unlike urban parks, the neighborhood open space includes both public and private properties because some outdoor activities such as children play take place on streets and front yards alike. The separation between private and private property porous. Furthermore, unlike remote urban parks, the neighborhood open space is directly accessible to almost all residents. Indeed, neighborhood associations often ask for improvements such as better streets and sidewalks. These improvements would have the potential to allow people to spend more time outside, either to go places by walking and cycling, or simply to enjoy the outdoors for leisure. Nevertheless, whether these improved public spaces will have a positive impact on the life of the residents depends on their uses and perceptions, which are not well understood. Before any policy change or streetscape enhancement is proposed, it is necessary to gather more information about the uses and perceptions of the neighborhood open space.

The main question this thesis research project examined is how the built environment influences the uses of the neighborhood open space. The built environment is a collection of physical characteristics specific to each neighborhood. It includes household density, block length, street, sidewalk and crosswalk conditions, street lighting and signage, as well as any amenity present in a neighborhood such as trees and benches. The amount of possible destinations and the quality of the transit service inside a residential neighborhood can also be

included in the built environment. Uses of the neighborhood open space can either be functional transportation or leisure activities. Functional transportation includes work commuting and school transportation. Leisure activities are any type of activity that residents decide to perform in the neighborhood open space such as walking, bicycle riding, exercise, play or socializing. If any of these activities is influenced by the built environment, planning decisions should include physical improvements that can enhance those uses.

Data were gathered through document analysis, geographic information system, participant observation, interviews and a neighborhood survey. Using this methodology helped assess the quantitative and qualitative use of the neighborhood open space. It also helped uncover the reasons why people chose motorized transportation modes rather than active transportation for their daily trips. In addition, this research investigated which factors influence the leisure activities that take place in the neighborhood open space.

The results showed that the built environment has a marginal impact on the functional use of the neighborhood open space. Activities such as transportation to school or work are much more influenced by social factors and the social environment than by the built environment. Social factors include the organization of elementary and secondary education in New Orleans as well as travel time between workplace and residence. Issues of practicality and personal comfort, the perception of danger and of the pedestrians' right of way are part of the social environment. All these conditions affect negatively the use of the built environment for active transportation.

Nevertheless, this research also showed that the residents love to spend leisure time outside. When they do so, their experience is greatly affected by the shape of their neighborhood open space. The built environment does affect the residents' experience and they said that they want neighborhood improvements. Walking and bicycle riding are more leisure activities than transportation modes. The decision to walk or cycle is weakly influenced by the built

environment but the experience of the residents while performing these activities is greatly influenced by the shape of the neighborhood open space. Likewise, some front yard activities develop independently from the built environment. Some blocks where residents have developed strong bonds over a long period of time show an important use of neighborhood open space, regardless of the quality of the built environment. Improving the built environment there could enhance the experience of the residents.

Finally, this research has shown that residents care about their neighborhood open space and they have high expectations for it. They would like to see better sidewalks, streets and lighting. They would like to have access to neighborhood school yards for their children, more neighborhood businesses and a community garden. All these improvements would have a positive impact on the perception of the neighborhood open space and the attachment of the residents to it. These findings suggest that the neighborhood open space might be a valid replacement for parks when residents do not have access to them. However, more research is needed to confirm these findings. Particularly, researchers and planners should investigate new street designs to determine which are the most efficient to make the neighborhood open space a more park-like place for the residents.

The thesis is organized as follows. First, it compares the current state of the research on the factors that influence the uses of urban open space. It then draws research questions from the literature review. Next, it describes the research design, including the description of the focus area and the methodology used to build the data. The results are presented in two chapters, one describing the factors affecting active transportation, the other describing the factors affecting leisure activities and the perception of the neighborhood open space as a place to live. The thesis concludes with a discussion of the findings and of possible improvements in the neighborhood open space.

1 The State of the Research: Factors Affecting the Uses of Neighborhood Open Space

The influence of the built and social environments on the uses of the public open space is a well researched field of study. Because the quality of the built and social environments can affect the residents' minds and bodies as well as the social relationships in the city, it interests both public health and sociology specialists. Contemporary critics of the ills of the modern city have made more pressing the study of the relationships between urban form and the physical, psychological and social health of urban dwellers. The literature is divided on the question of the effect of the built environment on the uses of the neighborhood open space. While some authors demonstrate a strong relationship between the built environment and the uses of neighborhood open space, other researchers claim that social conditions are the main factor affecting those uses.

The Part of the Built Environment

A large body of literature on urban design has demonstrated the positive relationship between the quality of the built environment and health and social benefits (Jacobs, 1961, Gehl, 1987, Ewing, & Cervero, 2010, Heath et al., 2006). In *The Death and Life of Great American Cities*, Jacobs (1961) argues that neighborhood sidewalks are the best place for children to play because neighbors keep an eye on them. Gehl (1987) defines *Life Between Buildings* as a form of low-intensity contact with others, the first prerequisite of which is being in the same space. As examples of such spaces, Gehl cites benches, sidewalk cafés and bus seats. Gehl also cites several studies in Europe, Australia and the USA that have linked the reduction of automobile traffic to a sensible increase of the number of people staying outside. In 2010, Ewing and Cervero produced a meta-analysis of the literature investigating the relations between travel and the built environment. They list 7 “D-variables” associated with walkability: density, diversity, design,

destination accessibility, distance to transit, demand management and demographics. Although none of these variables is sufficient to affect significantly travel patterns, an association of several variables has a measurable impact on the number and length of pedestrian trips. For instance, they note that “Walking is most strongly related to measures of land use diversity, intersection density, and the number of destinations within walking distance”. In their systematic review of *The Effectiveness of Urban Design and Land Use and Transport Policies and Practices to Increase Physical Activity*, Heath and his colleagues (2006) found that interventions on community-scale and street-scale urban design and changes in land use policies and practices were effective in promoting physical activity.

The theory beneath this literature is that appropriate urban design and policy give more opportunities to the population to use their neighborhood open space by walking, biking and staying out. This diverse use of the neighborhood open space enhances the population’s health. This literature is at the origin of many design guides, policy recommendations and toolboxes for building healthy neighborhoods. Common recommendations are mixed-use zoning, city code changes, medium density housing, the creation of biking lanes and traffic-calming infrastructures (Boroski, Seskin & Sweeney, 2005, Girling & Kellett, 2005, Marlon & al., 2005).

Social Factors and the Social Environment

It is undeniable that physical factors do affect the use of the neighborhood open space. However, other factors influence that use too. Many researchers stress the importance of sociological and psychological factors in the use of neighborhood open space (Faulkner et al., 2010, Forsyth, 2008, Middleton, 2011, Pooley, 2011). Faulkner and his colleagues (2010) use qualitative research to investigate the complex decision-making process that determines children’s school travel modes in Toronto, Canada. In order to control the decision-making

process for built environment, they select four schools in neighborhoods with various levels of walkability. The study finds that parents make the decision for their children in two steps. They first decide whether or not to escort the child. This decision is influenced by concerns about the child's safety. Traffic, maturity and ability to navigate alone are the most important variables for letting the child use active school travel. Following the issue of escorting the child, parents base their transportation choice on practicality and time management. This practicality variable becomes determinant for multi-activity trip chains where parents have to bring their children to school, then go to work, then pick up the children and finally come back home, sometimes with a stop at a store on the way. The automobile has the advantage of allowing multiple stops with easy loading and unloading of passengers and cargo. Middleton (2011) explores the habits, routines, and decision-making practices of everyday urban mobilities in London, UK. She investigates particularly the experimental dimensions of walking through in-depth interviews and walking diaries. She challenges the assumption that walking decisions are only based on the quality of the built environment and individual rational time management. She defines the decision to walk as a household habitual behavior "that is intimately bound up with people's everyday routines" (Middleton, 2011, p4). Pooley and his colleagues (2011) investigate the household decision-making for everyday travel in Lancaster, UK. Using qualitative and quantitative data, the authors find that people in Lancaster have a positive image of walking and cycling. However, walking and cycling for transportation is often seen as problematic because it is unpractical or dangerous. For households with children in particular, walking or cycling with children is perceived as dangerous and time consuming. Finally, they find that peer pressure inside and outside the family has the potential to influence transportation decisions. They conclude that attempts to increase the use of non motorized transportation modes can not only rely on transportation policy. They encourage decision-makers to carry on a reflection on how to make biking and cycling easier and

more “normal so that it can be more conveniently fitted in with necessarily complex household routines.” (Pooley et al., 2011, p6) As examples of necessary broad societal changes, they cite flexible working hours and the provision of neighborhood schools. In their study on Design and Destination, Forsyth and her colleagues (2008) do not only investigate the factors which influence walking. They also compare walking to total physical activity. From this comparison, they conclude that people have a “physical activity budget” (Forsyth et al., 2008, p4). People who have an active mode of transportation do less leisure time physical activity and vice versa. Finally, they find that “there is no strong positive correlation between the built environment measures and overall physical activity.” (Forsyth et al., 2008 p19), which means that social characteristics affect the total amount of physical activity more than the characteristics of the neighborhood built environment. They join Pooley and his colleague in their statement that interventions on the built environment have a necessary limited impact if they are not reinforced by intervention on the social environment.

2. Research Questions and Design

Changing the built environment is expensive and difficult because there are a limited number of features that can be altered and alterations are often costly. Thus, any urban project should be well researched in order to invest tax-money in the most efficient way. Many areas in New Orleans are desperate for public intervention, among them very poor neighborhoods plagued with violence and unemployment, failing schools and out-of-date infrastructures. Scientific research is critical to justify the use of public money that could be allocated to other projects than neighborhood open space improvement. If familial, organizational and sociological reasons explain the limited use of neighborhood open space, then regulatory and streetscape intervention alone is not relevant because it will not lead to different use patterns. If, on the contrary, urban design and policy prove to be the main reasons why people have a limited use of their neighborhood open space, then there will be sufficient ground for public investment in those areas.

This research answers the following questions:

- How much do residents of the focus area use the neighborhood open space?
- How do they use the neighborhood open space?
- What features in the built environment affect the use of the neighborhood open space?
- What political, social, familial and personal conditions affect the use of the neighborhood open space?

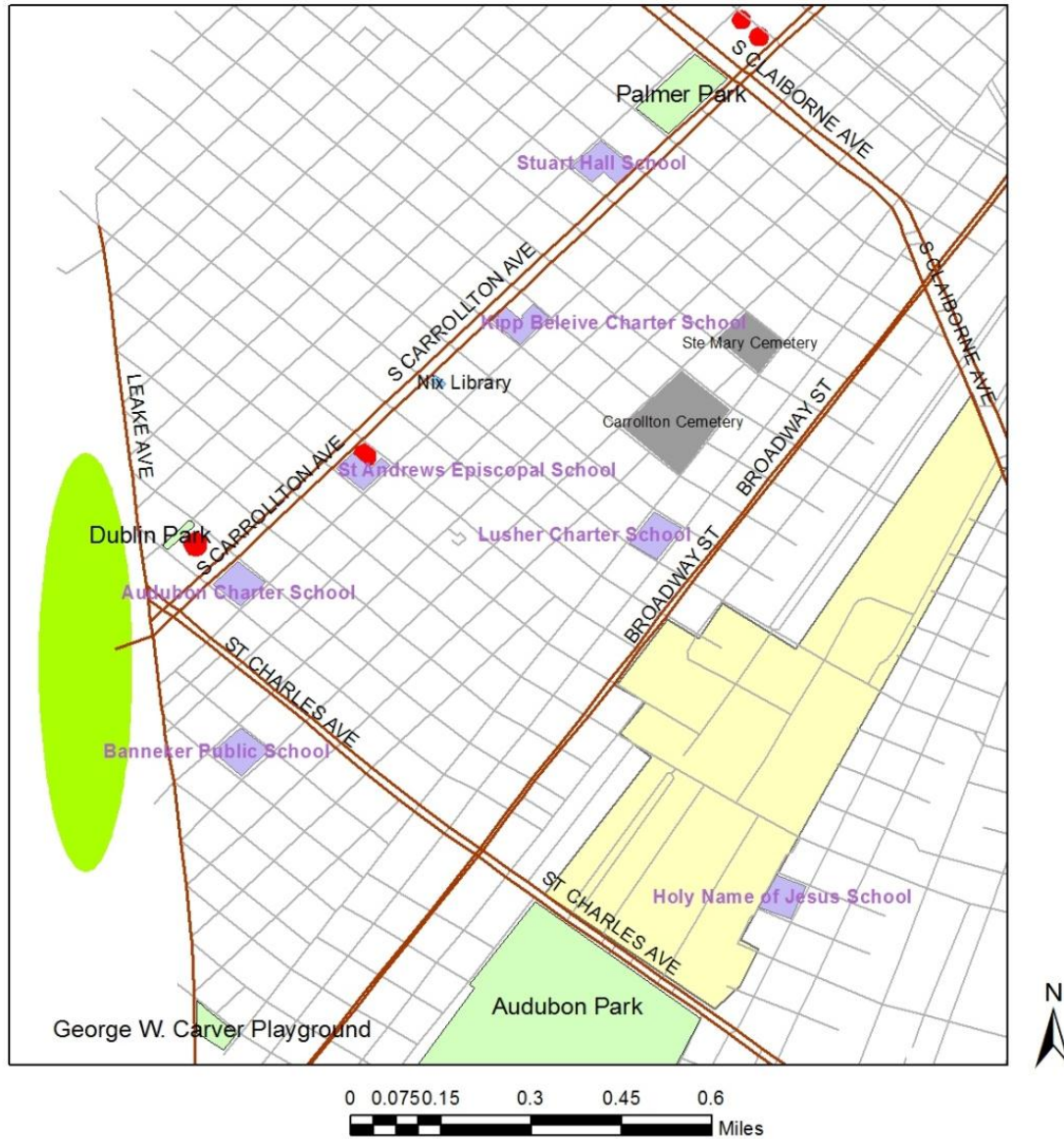
By answering these questions, this research project described the neighborhood design, neighborhood open space use patterns, the organization and the management of the neighborhood open space. It also uncovered the perceptions of the neighborhood open space by the population.

Particularly, it attempted to determine how much of a place it is perceived as opposed to a transportation infrastructure.

2.1. Characteristics of the East Carrollton Area

In order to carry on an effective research, I selected a meaningful focus area along with specific methods. The East Carrollton area, a portion of Uptown New Orleans, is interesting because of its urban characteristics. As shown in figure 1, it forms a quadrangle comprised between South Carrollton Avenue, St Charles Avenue, Claiborne Avenue and Broadway Street. It presents a wide array of possible destinations such as schools, a public library and nearby parks. The three main arterials of the neighborhood are South Carrollton Avenue, St Charles Avenue and Claiborne Avenue. Broadway Street, with its separate roadway, forms a fourth arterial parallel to South Carrollton. South Carrollton Avenue is the principal avenue of the neighborhood and offers several aspects of a main street: one can find many businesses and use at least four transportation modes – sidewalk, streetcar, paved road and bicycle lane. However, businesses are less and less present in the upper section of the avenue close to Claiborne Avenue. The other side of Claiborne Avenue has two major retailers with the Walgreens pharmacy and the Robert's fresh market. One specific feature of the area is the presence of two cemeteries in the center of the quadrangle. Those cemeteries create an open space between the built blocks of detached houses.

Figure 1: Landmarks of the East Carrollton Area



Legend

- Public Parks
- Levee
- Schools
- Universities
- Public library
- Large stores offering off-street parking
- Cemeteries
- Major roads (35mp/h)

Two urban parks are located close to the area. Palmer Park is a neighborhood park offering mostly non-structured leisure opportunities on 5 acres of lawn. A Kaboom park was added in 2012 after a joint effort from several neighborhood organizations. It is accessible by foot

and bicycle with the bicycle lane in South Carrollton Avenue. It is served by the streetcar as well as several bus lines. The park accommodates for curb parking on its four sides. Audubon Park is a major urban park with a zoo, a pool, a golf course, walking and biking trails and a large sport-oriented area close to the river. It offers parking spaces on St Charles Avenue, Magazine Street and Walnut Street, as well as two large parking areas in front of the zoo and on the levee. It is served by the streetcar on St Charles Avenue and the bus line on Magazine Street. Two other park-like areas are located close to the focus area: the levee and the Tulane campus. Although not officially a park, the levee offers a widely open space with a bicycle trail along the river. It attracts activities such as dog walking and sports practice. The Tulane campus is a private site that creates a very convenient greenway to Audubon Park: its paths accommodate both for walking and biking in a safe and pleasing environment. Despite this broad offer of businesses and open space, many residents of the focus area do not have easy access to those facilities because they live more than 1/3 mile from them and because the major arterials, while providing transportation and activities, create a barrier effect for pedestrians and bicycle riders. The 1/3 mile threshold is the measure used by the city of New Orleans to determine easy access to urban parks¹.

2.2. Characteristics of the residents of the East Carrollton Area

The focus area presents several interesting features that can create opportunities for the population to go outside. The characteristics of the population itself reflect several successive periods in the history of the population of the East Carrollton area. Historically, wealthier white families lived in mansions and bigger houses along the major avenues as well as close parallel

¹ City of New Orleans Master Plan Draft, Volume 3, Chapter 7 (2009)

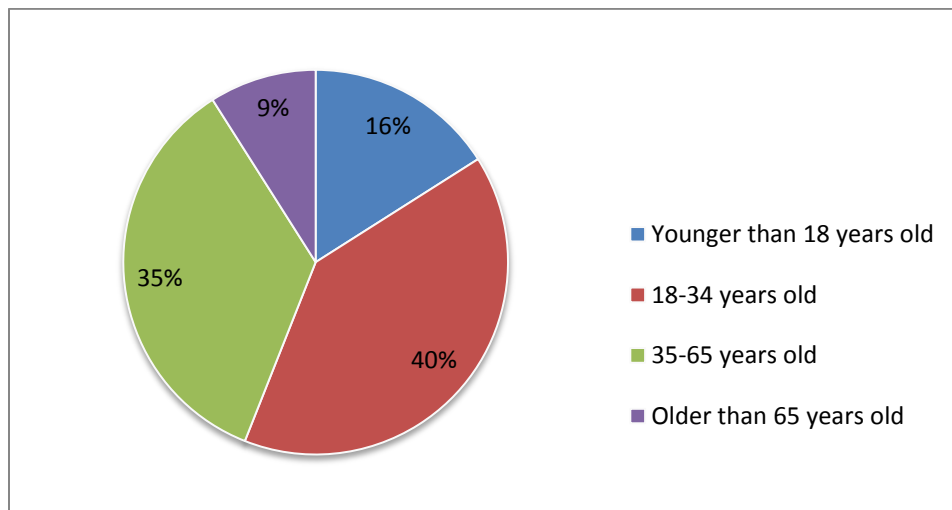
streets. African-American servants would live in smaller houses set back in the center of the quadrilateral, and close to the cemeteries (Campanella, 2011). This explains in part the racial divide between the center of the quadrilateral and the borders, with higher percentages of African-Americans to the center. The African-American population has been decreasing steadily since hurricane Katrina. R. Campanella (2011) describes the predominantly white-populated area from Carrollton to Bywater as a “teapot” with a broad “kettle” around Audubon/Carrollton/Universities and a narrow “spout” wending along the St Charles/Magazine corridor through the CBD, French Quarter and Marigny, and terminating in Bywater at the Industrial Canal. He demonstrates that historical pockets of black settlement within the teapot are fading under the process of gentrification. Overall, 19.7% of the population are African-American (down from 31.5% in 2000), 68.9% are White (up from 60.8% in 2000) and 11.4% belong to another race group (up from 7.7% in 2000).²

Today, the area is essentially a residential area for families and students. Most houses are single family residences with also many shotgun houses and some multi-family houses. Most of the neighborhood is zoned as “Residential Low Density Pre-war” with some “Mixed-Use Low Density” areas along South Carrollton Avenue and Maple Street. The larger buildings are either occupied by wealthy families or divided into smaller units and rented to students from Tulane and Loyola universities. The 2006-2010 census community survey gives demographic characteristics about the population of the East Carrollton Area. The report found 4253 residents in 2083 households (mean of 2 residents per household). Female residents represent 49.9% of the population and male residents 50.1%. As shown on figure 2, the most important age category is people between 18 and 34 years old with 40 %, followed by people 35 to 65 years old with 35%,

² 2006-2010 Census Community Survey

people younger than 18 years old with 16%, and people older than 65 years old with 9%. The median age is 35 years old. The largest demographic group of the area (18-34) can be explained by the proximity of Tulane and Loyola universities that attract thousands of young students from the state of Louisiana and the whole country.

Figure 2: Age Categories (Percentages, 2000 Census)



Analyzing the employment numbers by block group reveals that 48.3% of the population is employed, 8% are unemployed and 43.1% are not in the labor force.³ Compared to the age categories of the population, these numbers reveal the large population of full time students in the focus area: children and seniors represent 25% of the population but the number of people who are not in the workforce is 18 percentage points higher.

³ Statistics from the 2010 US Census processed with MS Excel, CVS file available at <http://www.census.gov/people/laborforce/about/EmploymentStatusforBlockGroups2006-20105-YearACS.csv>

Finally, the average household income is \$66,800, far above the Orleans parish mean of \$59,900 but below the national average of \$70,900. With 66% of the population earning less than \$60,000, we can conclude that the average is skewed by a minority of relatively high incomes (12% earn \$150,000 or more). Roughly 30% of the residents own their home while 70% are renters, which is the reverse of the national trend for homeownership. Those low income and high renting ratios can be explained once again by the number of students in the focus area.

2.3 Research Methods

As we saw in the first chapter of this paper, the uses and perceptions of the urban open space are affected by the built and social environments. It is not well understood which of these factors is the most important in the decisions to use active transportation or to engage in leisure activities in the neighborhood open space. Because neighborhood open space is directly accessible, there is interest in researching the reasons why residents use it or not. Similarly, there is interest in analyzing how the residents perceive their neighborhood open space because their perception might affect how and how much they use it. The data for this research comes from document analysis, geographic information system, participant observation, interviews and a survey. Document review and mapping were preliminary steps to better understand the characteristics of the focus area. They provided important information on the profile of the population as well as important features of the neighborhood presented in the previous section. The uses, perceptions and expectations of the population toward neighborhood open space were recorded with field notes, structured interviews and a population survey.

Document Review

Many documents have been published that describe the issues that are at stake in the focus area. Those documents are very different in scope, methodology and focus. Researching them was an important first step in the research process. It helped better understand specific characteristics of New Orleans and the East Carrollton area. It also brought valuable knowledge from different sources, which allowed crossing points of views and getting a more comprehensive understanding of the focus area. I reviewed official reports from the Regional Planning Commission, the City of New Orleans and the Greater New Orleans Community Data Center. I also gathered information from local non-profit corporations such as Stepping to School Kids Walk Coalition, Audubon Charter School and the Central Carrollton Neighborhood Association.

- The 2005 New Orleans Metropolitan Bicycle and Pedestrian Plan proposed by the Regional Planning Commission brings solutions to reduce the rate of bicycle and pedestrian crashes and fatalities.
- The City of New Orleans Master Plan is an ever-changing document with spatial data, especially zoning maps. Volume 3, Chapter 7 of the plan for the 21st century: New Orleans 2030 (adopted in August 2010) is a good resource on the green infrastructure available and projected in the city of New Orleans.
- The Greater New Orleans Community Data Center has created reports on the population characteristics based on the 2010 census. The report on the East Carrollton area is both well-built and recent. It has the advantage of bringing information on transportation trends in the neighborhood. I completed some of the findings with a statistical analysis of the income distribution from the 2010 Census.

- The 2011 Stepping to School Kids Walk Coalition Report created a methodology to assess school walkability that could be used to evaluate walkability around the schools in the target neighborhood. Those findings are built in large part on the 2009 Auditing Neighborhoods, Streets and Intersections for Pedestrian Safety created by the Regional Planning Commission and the Louisiana Department of Transportation and Development as “a toolkit for communities”.
- Audubon Charter School, one of the schools that are in the East Carrollton area, applied in 2012 for a Safe Route to School grant from the Louisiana Department of Transportation. The program, sponsored by the United States Department of Transportation, aims at reducing traffic congestion while providing more opportunities for active transportation. While writing the grant, the school officials gathered a lot of valuable information on transportations habits.
- The Central Carrollton Neighborhood Association, which covers more than half of the households of the focus area, has carried on a neighborhood survey during the fall of 2012. This survey was planned and organized by the Tulane University School of Public Health. I contacted the research group who invited me for their presentation of the survey findings. This survey was taken on-line, which brings issues of population self-selection as well as under-representation of poor households without Internet access.

Mapping the area

The mapping of the focus area was the next step in the analysis. Maps are critical because they allow us to “visualize aspects of our surroundings that are intangible, imperceptible, or purely conceptual” (Kimerling et al., 2009, p.xv). Geographic Information Systems have the ability to turn spatial data into information. Particularly, overlapping different layers of data can

show spatial patterns that are not understandable in other formats of communication. I built three reference maps using ISRI's ArcGIS software: a map describing the main features of the neighborhood (p10), a map showing the observation and interview locations (p18) and a map with street names to organize the door-to-door survey. I also created three analytical maps that are included in the body of this paper. The first one shows a difference in access to businesses inside the focus area (p26). The second map shows the block density of youth population and the places accessible to them (p28). It helped identify places suited for field observation and show which parts of the neighborhood lack destinations for children. The third map shows transportation infrastructure in and around the focus area (p36). It uncovers other places of interest for observation as well as possible hotspots for transportation problems.

Observation

DeWalt and DeWalt (2011) explain that “participant observation is a method in which a researcher takes part in the daily activities, rituals, interactions, and events of a group of people as one of the means of learning the explicit and tacit aspects of their life routines and their culture” (DeWalt & DeWalt, 2011, p1). One way that participant observation can help understand a population is structured observation: the observant schedules a series of observations at a specific place and time in order to make an objective description of daily habits. I practiced structured observations in specific locations of the focus area in order to document the issues related to open space access and use. Field notes showed to be very helpful to describe the behaviors of the residents and transients. I observed each point of interest three to five different times. I chose the observation points based on the neighborhood landmarks and transportation features. Observations location are shown on figure 3.

Figure 3: Observation and interview locations



Legend

- Interviews
- Observations
- Universities
- Schools
- Public library
- Cemeteries
- Public Parks

The stretch of Short Street between Claiborne Avenue and St Charles Avenue is interesting because it leads to three school sites. I observed driving, biking, parking and walking patterns between 7:15am and 7:45am.

The intersection of South Carrollton Avenue and Sycamore Street is the principal access point between the focus area and the adjacent Palmer Park. I observed road crossing patterns to and from Palmer Park between 3pm and 4pm.

The corner of Birch Street and Short Street is the location of Kipp Believe School. Both streets are two-way at that intersection. I observed student drop-off patterns between 7:30 am and 7:45 am.

The corner of Hampson Street and South Carrollton Avenue is the location of Audubon Charter School. I observed students pick-up patterns between 3:15 to 3:30

The intersection of Hickory Street and Adams Street is the Northwestern corner of the Carrollton Cemetery. It is also an intersection of two two-way streets. I observed the cemetery surroundings use between 4pm and 5pm, with a focus on walking, biking and staying out around the Carrollton Cemetery.

Interviews

Structured interviews are other research methods which are used in participant observation. I conducted a series of interviews with residents as well as neighborhood association officials, business owners and school officials. Those interviews brought inputs from people who have very different experiences of the neighborhood. The description of the neighborhood background has shown that the population is a mix of families with children, student's households and households without children. Also, the mapping has shown several public and private institutions that are susceptible to have an impact on the uses and perceptions of the

neighborhood open space in the focus area. A panel of individuals from those intuitions brings a nuanced perspective of those issues. Particularly, the persons who are in charge each have a professional knowledge of issues they have to deal with on a daily basis. In the following text, I used the word ‘informant’ in reference to the people I interviewed.

I interviewed 13 informants:

- One senior citizen who lives on Short Street
- One school employee with children who lives on Broadway Street
- One resident with children who lives on Oak Street
- One young school employee without children who lives on Short Street
- One parent from Audubon Charter School who lives on Pine Street
- One member of the neighborhood association without children who lives on Pine Street
- One board member of the Central Carrollton Neighborhood Association (CCA) who lives on Neron Place
- One business owner who works on Adams street
- One church official who works on Adams Street
- One Tulane student who lives on Willow Street
- One administrator from Audubon Charter School
- One administrator from Lusher Charter School
- One administrator from St Andrew Episcopal school who is also a board member of Maple Area Residents Inc. neighborhood association (MARI)

Among these informants, 7 are men and 6 are women while 1 is Asian, 2 are African American and 10 are Caucasian. This gender and race repartition matches the demographics of the neighborhood described previously.

Neighborhood Survey

I designed a neighborhood survey in order to have a broader input from the target population. A well designed survey can bring a more representative set of perspectives that demonstrate the complexity and diversity of uses and perceptions. The survey includes nominal, categorical and ordinal questions to cover uses, perceptions as well as some demographic data. It also includes a set of questions about the improvements that the residents would like to see in their neighborhood.⁴

I used funds from a UNO Thesis Improvement Grant to hire four students from the Tulane School of Public Health to conduct the survey. The survey spanned over two weeks during the month of January 2013. Surveyors collected data following a systematic plan to cover the whole area. They collected one survey per block every over block. 60 surveys were collected following this method. Surveyors were free to choose specific houses inside each surveyed block, which brings an issue of subjective selection. They reported that they mainly tried to find residents who were at home. They surveyed both during the day and in the evening, during the week and on week-ends. This process allowed covering a large part of the population, including typically under-represented households living toward the center of the quadrangle. The population that was surveyed is somewhat representative of the general population. The major differences appear in race, with an overrepresentation of White and housing status with an overrepresentation of homeowners. A more thorough survey would give more reliable data for future analysis. In the

⁴ See Appendix A for the survey questionnaire.

text of this paper, I used the word “respondents” in reference to the people who answered the survey

Table 1: Survey demographics (percentage of total population)

	Survey	Census tract
Gender: female	47	51.5
Gender: male	53	48.5
Gender: total	100	100
Race: White	83	69
Race: African-American	11	20
Race: Other	6	11
Race: total	100	100
Homeownership: homeowners	46	39
Homeownership: renters	54	61
Homeownership: total	100	100
Age: 18-35	48	47
Age: 36-65	40	42
Age: 66 and older	12	11
Age: total	100	100

3. Traveling and Destinations

While interviewing residents of the focus area, I quickly realized that there are two main reasons why they use the neighborhood open space. People go out either because they have somewhere to go or because they want to spend some recreational time outside. If they use the neighborhood open space as a transportation infrastructure, people can drive a motorized vehicle, walk or ride a bicycle. I investigated the specific reasons that make them decide to choose or not chose active transportation. On one hand, the focus area presents a series of objective assets that create a walking and biking friendly environment. There are many places to go, the household density and block length are adequate. On the other hand, several physical obstacles make it difficult to walk and ride a bicycle for transportation. Intersections are dangerous, sidewalks and street surface are in bad condition, the lights are often broken. However, results show that there is a weak relationship between the built environment and walking habits. Bicycle riding is more influenced by infrastructures than walking. But observations, interviews and the survey uncovered another set of reasons that can explain the limited use of active transportation. Those explanations tend to be related to human factors such as the organization of the schools in New Orleans, busy family schedules, the representation of danger and the perception of pedestrians' right of way.

The total time people spend outside in the neighborhood depends on the time of the day, the week and the year. During interviews, informants were unsure when quantifying how much time they spend outside on a typical day or week. The survey revealed that 78% of them spend more than one hour a week in the neighborhood open space. This time spent outside is greatly affected by the rhythm of the school year, with children and families spending more time outside

during school vacation. Finally, exceptional events draw many people in the neighborhood open space.

Thus, the amount of time spent outside can be evaluated on a 5-variable relative scale:

- Virtually no use = week nights all year (12am-6am)
- Limited use = week-end nights all year (12am-6am), working periods during the week (9am-12pm and 1pm-3pm), twilight in the Winter all week
- More use = early morning year long, lunch break year long, twilight Spring to Fall, school vacations all week, week-ends and school vacations all day
- Important use = morning rush (7-8) all year, school pick-up (2:30-3:30) except during school vacations and week-ends, evening rush (4-5pm) all year
- Exceptional use = parades, burials, Palmer Park Arts Market, Oak Street Festival, Hurricane-related power outages

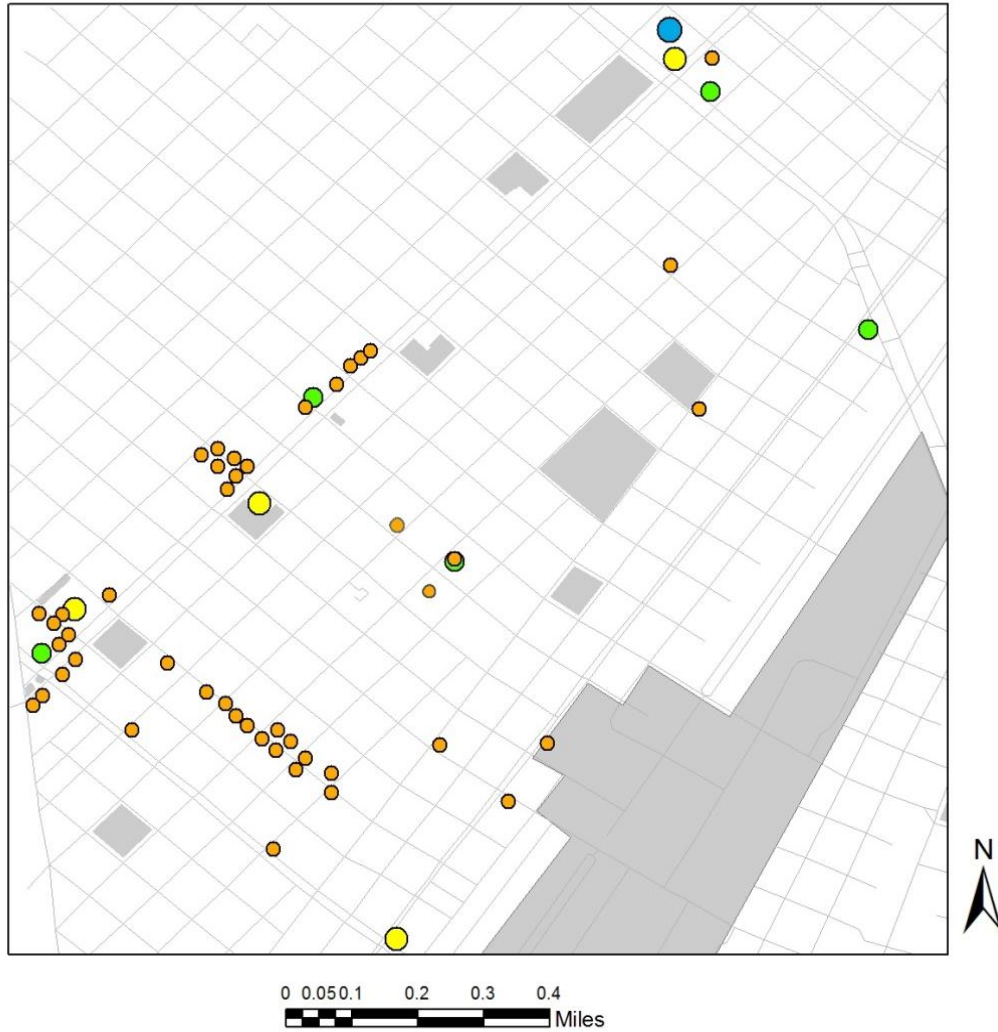
3.1. Where to go?

One important reason why people use active transportation is that they have to go somewhere. The focus area presents many amenities that have the potential of attracting residents who are willing to walk or ride a bicycle. Businesses, schools, public parks, the public library, numerous transit stops and two neighborhood cemeteries offer many opportunities for active transportation.

During interviews, nearby businesses were cited as destinations for walking or biking (Figure 4). Some restaurants such as Freret Café on Freret and Lowerline, Starbucks and Fresco Café on Maple Street, have terraces that are directly accessible from the sidewalk. People sitting at their tables see and are seen by pedestrians in the street. This intertwined public-private/sitting-

walking space creates a strong sense of place which attracts more pedestrians. Maple Street is the only commercial corridor of the neighborhood where people can be observed walking from one business to the other, which is an indication of a genuine pedestrian place. The street offers a large number of parking spaces, both on the street and off-street and many people simply walk from their car to businesses and from businesses to their car.

Figure 4: Businesses



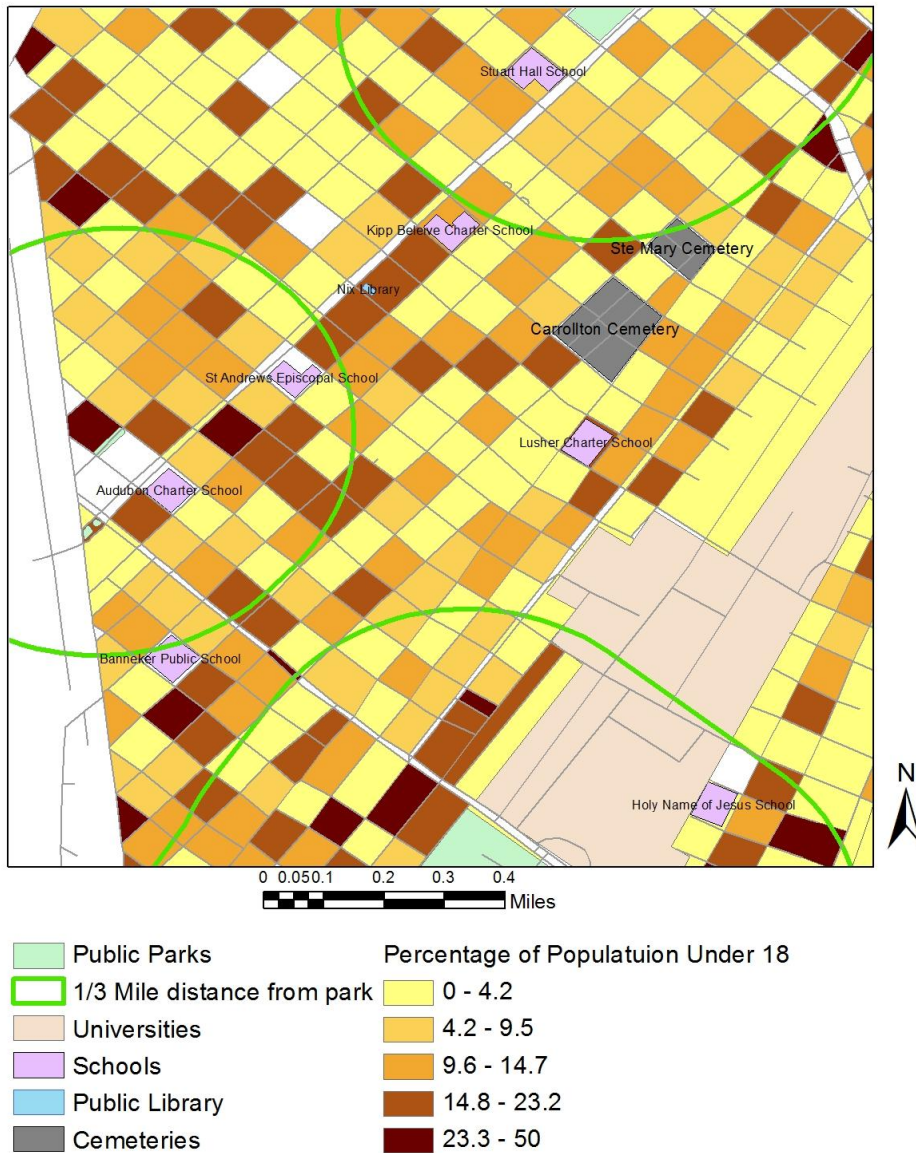
Legend

- Café, Bar & Restaurant
- Convenience Store
- Large Convenience Store
- Grocery Store

After businesses, respondents cited nearby parks as the second most important destination in the focus area. Indeed, Palmer Park is just on the other side of Carrollton Avenue and Audubon Park is two blocks away. The CCA survey asked residents why they like their neighborhood and the proximity of the parks came first (42% of respondents). The GIS analysis showed that many children live inside the focus area and at a walking distance from schools and

public parks (figure 5). Schools are the last destination involving active transportation that was cited by the residents.

Figure 5: Youth Population and Access to Schools and Parks



Businesses, schools, and public parks are all valid destinations for walking and bicycle riding. Transit stops can also influence the decision do use active transportation modes. The transit-oriented development model shows that a good public transit service can increase walking

for transportation because people have to walk to and from transit stops in order to complete their trip. A major streetcar line services the focus area, with streetcar stops every other block (Figure 7). As a consequence, the presence of public transit should increase walking for transportation in the focus area. However, I observed that several factors make it hard for residents to ride the streetcar in St Charles and Carrollton avenues. One could argue that the service offered by streetcars is more tailored for tourism than for transportation. Riders have to pay the exact fare inside the streetcar. Streetcar stops do not have any amenity that produces an efficient and appealing transit line: there is no bench, no weather protection, no timetable, no route map and no machine to buy travel tickets. Regularity and speed are not consistent, especially because too many stops slow the streetcar down. As a consequence, I observed that few workers and students ride the streetcar during the week. The bus lines on Broadway and Claiborne present the same lack of services, with the particularity of running far less vehicles. Only two bus stops at Claiborne and Carrollton have a bench, a shade and a map.

The last possible destinations for active transportation are the Carrollton and St Mary cemeteries. When asked if the cemeteries are a “great place to walk”, only 40% of the respondents agree (31% disagree and as much as 29% don’t have an opinion). Hence, almost a third of the residents have never walked to the cemeteries, which they do not consider a place to go.

3.2 How to get there?

There are many destinations within the focus area that offer opportunities to use streets and sidewalks for transportation. However, the large majority of the trips are taken by private automobile. During school weeks, I counted 50 cars for every pedestrian walking down Short

Street. In spite of the wide use of automobile, the distribution of transportation modes shows that relatively more people use active transportation than the US population (Table 2).

Table 2: Transportation Modes in the East Carrollton Area and in the United States⁵

Type of Transportation, Workers 16+	East Carrollton Area	United States
Car, truck, or van	78.2%	86.4%
Public transportation	4.7%	4.9%
Bicycle	4.0%	0.5%
Walked	7.2%	2.8%
Other means	1.2%	1.2%
Worked from home	4.6%	4.1%

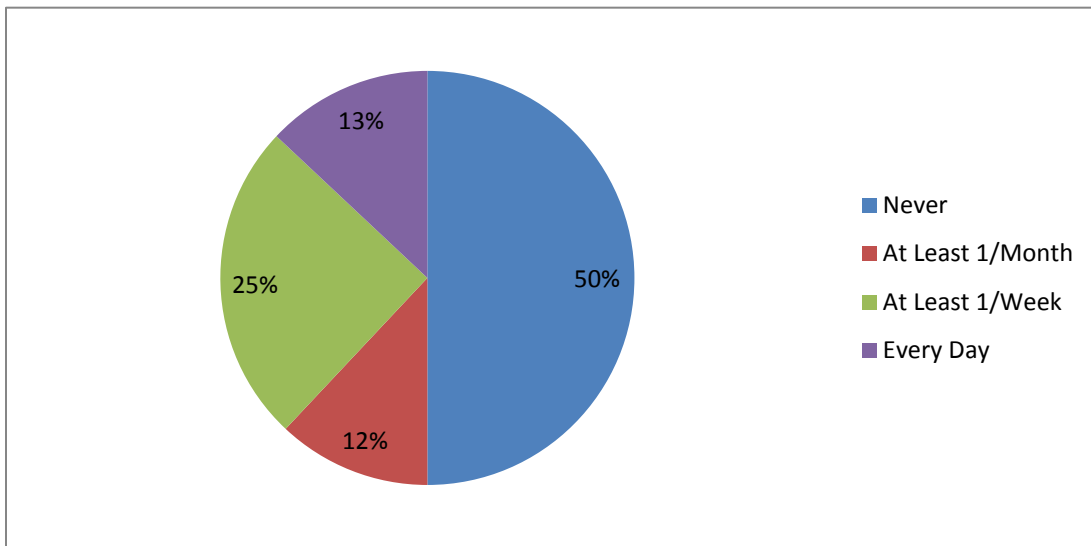
The lesser use of motor vehicle may be a consequence of the relatively low vehicle ownership in the focus area (83% compared to a national average of 91.1%). This data can be compared to the survey conducted by the Central Carrollton Neighborhood Association during the fall of 2012. They found that 30% of the respondents use public transit as a mode of transportation.

The observations, the interviews and the survey have given a more precise description of transportation patterns in the neighborhood. The survey showed that half of the population never rides a bike but 13% ride daily (figure 6). Observations have shown that bicycles are the only mode that is less used during peak hours compared to non-peak hours. Most riders observed were biking during the evening or the week-end, slowly and without a helmet. People seemed to go

⁵ GNOCDC analysis of data from U.S. Census 2000 Summary File 3 (SF3) and 2006-2010 American Community Survey

somewhere, but free of the time constraint imposed by school or workplace. Several respondents said that they ride their bicycle through neighborhood streets when they are not working, either to go to Audubon Park or to buy some goods at the close shops. Many customers of the Adams Street grocery shop ride their bicycle there, even though there's no bike rack. They lock their bicycle to a tree or the gate of the shop.

Figure 6: Bicycle Use



Almost every survey respondent reported walking in the neighborhood open space. Also, respondents said they used the Tulane campus as a walkway to the park. The route goes East through Hickory, Willow or Freret, then turns South in the campus and crosses St Charles in front of the park. Observation has shown that people also walk to Palmer Park, which is at the corner of Claiborne and Carrollton, and even further to the Walgreen and Robert stores that are on the other side of Claiborne Avenue. Some week-ends see an exceptional affluence of people who are walking. Many people park in the streets around Palmer Park to go to the Arts Market once a month. Also, Oak Street Po-Boy festival attracts thousands of people, many of whom drive and park their car in the adjacent streets. I observed that very few people walk or ride their bicycle at

night, either to meet people or to go out; and this despite the fact that the area has many restaurants and bars on Carrollton Avenue, Maple Street and Oak Street. No informant cited going out as a reason for walking or biking at night.

Although there are many children and schools in the focus area (Figure 5), walking to school is cited by less than 10% of all respondents. However, walking is the second mode of transportation (37%) that parents of the focus area use to bring their children to school. Depending on the school, 0% to 10% of the students walk to/from school. No school official reported more than five bicycle riders, which is a total of 20 out of 1500 students (1.3%).

3.3 Active transportation and the built environment

The East Carrollton area offers a wide variety of destinations to its residents. It should then be obvious that people walk or ride their bicycle to those nearby destinations. However, it appears that many people prefer driving their car rather than walking or biking, even for short trips. As mentioned in the literature review, in many cases urban design influences how and how much people use their neighborhood open space. Observations showed that the built environment of the focus area does not really encourage or discourage active transportation modes. The negative aspects of the neighborhood offset the positive features. As a consequence, one cannot draw a definite conclusion in either direction. Besides the numerous destinations within the neighborhood, the positive features affecting active transportation include household density and block length. Street and sidewalk conditions, streets direction and speed, crosswalks, signage and lighting are all negative features that have the potential to prevent active transportation modes.

Household density is widely recognized as a major factor influencing transportation choices. In denser neighborhoods, people tend to use public transit more. In order to take the bus

or the streetcar, transit riders almost always have to walk to and from the bus/streetcar stop. Although zoned as “low density”, the focus area matches a relatively dense model: there are about 6,300 households covering an area of 431 acres (gross average of 14 households per acre), which creates a relatively compact and access-friendly urban fabric.⁶ This type of household density should allow for a large use of active modes of transportation as well as transit usage. GIS analysis showed that no one in the focus area lives farther than 7 blocks away from the streetcar route. Likewise, block length has a measurable impact on walking and biking. Shorter blocks are better for walking because they offer better street connection which allows faster access to different places as well as a choice in the routes taken. With blocks less than 350ft in length, the neighborhood offers a reasonably walking friendly block pattern.⁷

Overall, several characteristics of the focus area are beneficial to active transportation modes. However, other aspects of the built environment affect negatively active transportation. This section lists the diverse physical obstacles to active transportation, among them street and sidewalk surfacing, street direction and speed, poor crossing conditions, and poor lighting.

Streets and sidewalk conditions are a major obstacle to easy walking and biking in the focus area. Most streets were heavily damaged during hurricane Katrina and few have been fixed. Observations have shown that resurfacing has been concentrated to two-way streets like Short, Adams, Panola, Spruce, Hickory, Birch and Hampson. Maple, which is the only commercial street of the area, also has been repaved. This situation draws more traffic in the streets that automobilists already use more, which is a deterrent to biking. Morning observations have shown

⁶ Ewing, R., Schmid, T., Killingsworth R., Zlot A. & Raudenbush S. (2003) Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity. *American Journal of Health Promotion*: September/October 2003, Vol. 18, No. 1, pp. 47-57.

⁷ Dill, J. (2004). *Measuring Network Connectivity for Bicycling and Walking*, Joint Congress of ACSP-AESOP

that automobilists from outside the neighborhood use Spruce Street as a shortcut through the neighborhood. This particular street doesn't have any stop sign between Carrollton and Broadway, which creates a hazardous corridor with speedy parents trying to go from one school to the other or from school to work. It is very difficult and hazardous to ride in those heavily used two-way streets with cars coming from both directions. Likewise, intersections are made more dangerous because some two-way streets cross other two-way streets, making a four-way crossroad. Surprisingly enough, two out of four schools have at least one of their corners which is a four-way intersection (Figure 7).

Figure 7: Transportation Infrastructure



Apart from speed and direction, the street paving design itself is an obstacle for walking and staying out. One of the informants noticed that the street level is often at the same level, and sometimes higher than the level of curbs and sidewalks. This widens the street while reducing the space that can be used for walking or playing. Automobiles can park on the park strip between

the street and the sidewalk.⁸ Heavy SUVs and trucks eventually destroy the whole park strip, which becomes muddy and full of pools. The reason why most streets lie higher than adjacent sidewalks and park strips is because people who resurfaced them did not remove the damaged surface before resurfacing. Hence, several layers of asphalt lie on top of each other which makes the whole street level rise at or above the level of the sidewalks.

Respondents who ride bicycles said that they are discouraged to use this mode of transportation because of the bumps and potholes in the streets. Alternative routes for bicycles are the four major roadways that frame the focus area. The city is very proud of the bicycle lane in Carrollton Avenue and St Charles Avenue. However, all informants who use bicycles said that they avoid taking it because of cars. Cars bring major deterrents to using the bicycle lane. First, they drive fast, between 30 and 40 mph. An informant said that “you take some risk when you’re biking”. Drivers have been described as “reckless” and considering bikers as “a nuisance”. Also, when going to the levee, bikers have to cross Carrollton in order to ride on the right side, which is perceived as dangerous. All four major streets have a 35mph speed limit except for school zones during drop off and pick up times. Claiborne is a multi-lane arterial where many cars have to be moved very fast and it makes sense to keep this speed. However, Carrollton, St Charles and Broadway have only one lane in each direction. They are posted at 35 mph because the lanes are separated by a median. But with businesses, schools, universities and streetcar stops along those streets, it makes sense to lower the speed so as to allow easier crossing for pedestrians and safer riding for bikers. Jefferson Avenue, which crosses Uptown in the North-South direction like Broadway and Carrollton, has similar features, with schools, businesses and a separate roadway. However, the speed there is limited to 25 mph.

⁸ See Appendix C for pictures of design obstacles for walking and riding.

The second deterrent brought by cars is the amount of fumes that bikers have to breathe at peak hours. At dismissal time, I observed that bicycles on the bike lane actually go faster than cars between St Charles Avenue and Oak Street. Peak hours are hazardous for bicycle less because of speed than because of recklessness. Several informants have cited the fear of being “doored” by drivers exiting their car as a reason why they avoid the bike lane in Carrollton. They would much prefer backstreets, but are deterred by the poor surfacing.

The whole intersection of Carrollton and Claiborne poses hazard for pedestrians and bicycles alike. Informants from the focus area have stated that they would like to walk more to Robert and Walgreens stores on the opposite side of the intersection. However, observations have shown that several features create obstacles for them to cross the major arterials. First, the length of the pedestrian light is too short to cross Claiborne at once. Pedestrians must stop on the median next to the bus stop and wait for a whole cycle to be complete before they can cross the second part. Moreover, all crosswalks are marked by two fading white lines that drivers seldom see. Zebra markings like the ones that have just been added on Esplanade and Oak streets are improvements cited by the 2005 New Orleans Metropolitan Bicycle and Pedestrian Plan as best practices that significantly increase the visibility of the crosswalk area. In the whole intersection, bicycle riders who want to follow the law have to share the road with three lanes of automobiles.⁹ The representative from CCA said that the neighborhood association is trying to take advantage of the underground works in Claiborne Avenue to ask for a remodeling of the whole intersection which would allow for more diverse transportation modes.

Observations have shown that most intersections around schools pose a real hazard to pedestrians and bicyclists. For example, students exiting Audubon Charter School on Hampton Street often walk to the small commercial center on the other side of Carrollton Avenue (Figure

⁹ See Appendix E for an aerial photography of the Carrollton/Claiborne intersection.

8). The intersection of Carrollton and Hampson is marked as a 20mph school zone but there are no flashing poles, there is no cross guard, no SCHOOL marking on the road, and the crosswalk is marked by yet another pair of fading white lines. Students have been observed hopping in their parent's car in the middle of the intersection. Also, because Hampson is two-way, parents and other cars park and drive on both sides of the street right in front of the dismissal gate. Students who have to cross the street to reach their parent's car are exposed to vehicles coming from both directions. This situation could be mitigated by converting the street to one-way, even temporarily during pick-up and drop-off.

Figure 8: The Audubon Charter School Dismissal



Aside from street surfaces and crosswalks, sidewalks are another impediment to active transportation. I have observed that sidewalks are in poor conditions wherever trees are planted

on the park strip. The roots of the live oak trees are the ones taking the heavier toll on sidewalks. Some are completely torn with steps and pieced of concrete pushed upward. This is dangerous for people walking at night and prevents any type of rolling. By city ordinance¹⁰, children under 15 are authorized to ride on sidewalks but this is in fact impossible. Parents with strollers cannot go on those sidewalks either, and they have to drive to a nearby park rather than walking around their block. During interviews, runner informants have reported that running on those sidewalks is hazardous, especially at night. Many obstacles force potential walkers to go on the street rather than stay on the sidewalk. On some blocks, the sidewalks are completely missing.¹¹ Other times, trees and bushes have grown where the sidewalk used to be. Sidewalks are a specific issue in New Orleans because by code property owners are responsible for maintaining the sidewalk in front of their house. In fact, sidewalks have a low priority in the investments residents are willing to make to enhance their property and the code is rarely implemented. The city could carry on the works and bill the residents but this never happens either.

Finally, the lack of proper lighting in the focus area is a major deterrent to active transportation and staying out at night. Almost all informants have cited fixing street lights as a priority. The lack of lights creates a hazard for pedestrians and even more for bikers. This is particularly true in Carrollton Avenue where several blocks are completely black at night.

3.4 Active transportation, social factors and the social environment

The built environment in the focus area presents an even balance of positive and negative features for active transportation. It is then natural to turn to human factors – the social environment – to determine how they affect the use of walking and bicycle riding for

¹⁰ City of New Orleans Code Sec. 154-1416. - Riding on sidewalks.

¹¹ See Appendix C3 for pictures of damaged sidewalks

transportation. Social factors limiting walking and bicycle riding for transportation are busy schedules as well as the organization of elementary and secondary schools. Issues of practicality and comfort, the perception of danger and the perception of the pedestrians' right of way constitute the social environment that affects transportation choices.

Schedules, Practicality, Comfort

Distance and the time to travel from one point to another are major deterrents to active transportation. Many people work long hours in places relatively far away. They have to drive to work in order to be there on time. The survey showed that 62% of commuters and 53% of parents taking their children to school use private automobile. In the Audubon school survey, parents cited distance as the first reason they don't let their children walk or ride to school (80% of respondents). Cars are cited by parents as more convenient for multi-destination trips such as dropping children at different schools and evening stops chains. Furthermore, they need to carry the children's backpacks and soccer gear, their coffee mug and whatever they purchased on their way from work. People who wish they could walk are sometimes deterred to do so because of the load they have to carry. One interview informant who is a teacher said that she would walk to work if she didn't have to carry her computer and school bag. When people want to practice an activity at the park, they might take their car instead of walking or biking. For instance, an interview informant cited roller skating as an activity that can only be performed at the park because the sidewalk are in such poor condition. However, carrying four pairs of roller skates is tiring and she preferred driving. More broadly, each time people have to carry a load, either to work, from a store or to the park, they prefer driving because walking with a load is too tiring.

Overall, residents favor easy automobile travel over active transportation. Even for short trips, they find it more practical to drive rather than to walk or ride a bicycle. During interviews,

informants who live in two-way streets have said that they favor two-way streets over one-way streets because it gives them more choice when pulling out of their house. They acknowledged, however, that it was not a great effort to drive around the block to go in the desired direction. Symmetrically, people who live in one-way streets say that they would not change if offered to. They see one-way streets as less dangerous and cluttered than two-way streets. Respondents almost always favor parking over any change. Despite the generous amount of driveways in the focus area, the survey showed that 70% of the population park on the curb and some respondents wish they would have more parking spaces. Many vehicles are either trucks or SUVs and they take a lot of place.

Finally, comfort plays a great part in transportation choices. After safety issues and the lack of time, the weather is the third factor cited by respondents when asked what keeps them inside. This importance of weather is specific to New Orleans and other Gulf Coast cities. The subtropical climate of Louisiana brings many hours of sunshine per year. It also brings very hot and humid summers with daily thunderstorms that have the potential to deter the bravest cyclist from riding to work. Even without thunderstorms, the temperature and humidity levels of summer months cause people to sweat in proportions unfit for work environment which is why they chose to drive to work. More broadly, informants said that they are accustomed to climate control and generally prefer staying inside when it is either too cold or too hot outside. The only exceptions to that are the periods of power outage, mostly related to hurricanes, when children play in the street and neighbors socialize.

New Orleans Schools

The organization of elementary and secondary education in New Orleans poses serious obstacles to active school transportation. The process of school integration initiated in the 1950s

led many white wealthy families to choosing private institutions for their children. Rarely do these children live less than 1 mile from the school they attend. St Andrew and Stuart Hall are expensive private schools whose students come from the whole urban area. The poor results of public education and the closing of all public schools following hurricane Katrina brought a major reorganization of the public school system. Schools like Kipp, Audubon and Lusher are public charter schools with specific profiles appealing to specific families. Lusher is the only school with a neighborhood district which gives priority to neighborhood families, but only ¼ of the students live there. The Audubon Family Survey reported that only 4% of the students live less than ¼ mile from the school. A study of home addresses of students attending St. Andrew showed that 8% of their students live less than ½ mile from the school. Observations have shown that Kipp school has seven school buses picking up and dropping off the students everywhere in the greater New Orleans. Those buses are actually a deterrent to the active use of neighborhood open space: they stop at the corner of Short and Birch and stop all traffic in the intersection for several minutes. It is impossible for bike riders to continue on Short street and very dangerous for pedestrians to cross Birch Street. Likewise, parents driving their children to and from school increase traffic in the whole focus area, which is a deterrent to walking and biking. More broadly, the poor condition of many school buildings and the closing of failing schools by the school board forces many public schools to move every year. This prevents schools to plan for the future and they don't invest in their neighborhood. Finally, citing liability issues, public schools in New Orleans refuse to make their school yards available for the general public. All school officials said that they won't allow the public to use their school yard after school hours or during week-ends/holidays.

Perception of Danger

Interviews have shown that fear is a major deterrent to active use of the neighborhood open space. Fear of crime is the most cited reason why people do not spend more time in the neighborhood open space. Everyone fears a dark street and observations have shown that many streets of the neighborhood are dark at night. The two cemeteries are unlit, which at night creates a wide black hole in the middle of the area. Furthermore, many informants share the fear of being attacked and robbed at night. UNO surveyors reported that students were the most concerned about safety and crime, maybe because many of them have not lived in the neighborhood for long. People also experience fear for their children, both from drivers and adult pedestrians. Besides distance, parents from Audubon School cited “Violence and crime” (65%) and “Amount of traffic along route” (55%) as the two major issues influencing their choice of cars rather than walking or biking for school transportation.¹² They would not let their children ride to school because of traffic and would not let them walk because of child molesters and drug dealers. Fear of crime and accidents is a much more powerful factor than fear of health issues, which explains in part the preference for automobile over more active transportation modes, even for short trips. Although Audubon parents have a favorable view of the benefits of walking and biking to/from school (55% think it’s fun, 90% said it would be healthy), only 3% allow their children to walk to school and 5% allow them to walk from school.¹³

Comparing respondent’s testimony to statistical data shows that the danger associated to walking is greatly overestimated by the target population. Two informants cited drug dealers in the neighborhood. One informant said that parents from Lusher school would not let their children walk down Willow and Oak streets because there are drug dealers at the corner of

¹² School family survey, Audubon Charter School Safe Route To School Application

¹³ School family survey, Audubon Charter School Safe Route To School Application

Adams Street. But another informant said that many of the clients are Tulane and Loyola students. He added that violent crime is bad for drug dealers because it attracts the police. As a consequence, these drug dealers are in fact very quiet and gentle. A review of crimes in the focus area over a six-month span between September 2012 and March 2013 shows that violent crimes that happen in the street represent a small minority of total crimes¹⁴. Assaults and robberies only amount to 17% of crimes compared to 58% of thefts and 24% of burglaries. During the same period, there were no assaults on children, rape, murder or attempted murder reported.

Perception of the Pedestrians' right of ways

The perception of automobile right of way is one of the most powerful factors that affect the use of neighborhood open space. The automobile is perceived both by drivers and pedestrians as the most legitimate use of the neighborhood open space. Observing cars that stop at crossroads brings information on how drivers envision their right of way. At the intersection of Carrollton and Claiborne, automobilists who want to turn right often stop in the middle of the crosswalk which pushes pedestrians in the way of cars coming from the perpendicular street. Parents of students exiting their parking space on Carrollton Avenue do not pay attention to bicycles that come behind them, which poses a real threat. On another hand, when arriving at an intersection where there is another car, many drivers would allow the other driver to pass, even though they have right of way. This dichotomy in the way drivers treat other drivers as opposed to pedestrians is echoed by the way pedestrians approach intersections. As opposed to drivers, pedestrians do not anticipate the intersection by turning their head in the direction of traffic. They do not look upcoming cars before they are completely stopped at the crosswalk. Only then do they assess the possibility of crossing. Often times, it seems that people do not consider walking only because

¹⁴ City of New Orleans crime map, available at www.crimemapping.com/map/la/neworleans

they didn't really think about it as a transportation mode. One informant said that she had never thought of walking to the grocery store but that, after being asked, she was now considering it.

Because of driving habits, the four major arterials boarding the focus area create a barrier effect for pedestrians. In spite of the state law, drivers almost never stop for pedestrians. Observations at Carrollton and Palmer Park have shown that at peak hours 30 cars would pass every minute. At the same time, 3 to 4 people would try to cross the avenue. On average, only one car out of 60 stops for pedestrians. Cars coming from North Carrollton and Claiborne drive typically faster than cars coming from South Carrollton. This is the effect of coming from a multi-lane arterial where people drive fast to a narrower one-lane street. When starting after the light turns green, some drivers actually race in order to merge in the single lane before the others. People speeding create an accordion effect: the first four to five cars drive fast along Palmer Park where two lanes last until Neron Place. When the group reaches Spruce and Panola, they brake and the whole line of cars brakes up to Claiborne. Because they drive fast, those cars don't have the time to stop for pedestrians who want to walk to/from Palmer Park. Furthermore, they present a real danger for children. This explains in part the fact that they never come to the park alone. This accordion effect is also observable in other parts of Carrollton Avenue, especially after the red light at the Oak Street intersection.

Finally, many objects such as gates, trash cans, cars, bikes and different sorts of trailers are left on or across the sidewalk¹⁵. Although forbidden by city code, parking on the sidewalk seems to be a universally accepted practice with two variables. Observations have shown that some people who have a driveway park two to three cars with one parked half way on the sidewalk. Some people who don't have a driveway use the space in front of the house, which used to be a front yard, as a parking area. They almost always block the sidewalk. Some

¹⁵ See Appendix D for Habits-Related Obstacles to the Use of the Neighborhood Open Space

restaurants have bike racks installed perpendicular to the sidewalk and parked bicycles block pedestrians. Some people who have a gate to their back yard would let it open yearlong, which creates a permanent obstacle for pedestrians. This particular use of sidewalks as an extension of the front yard denotes a privatization of the neighborhood open space to the benefit of individuals and at the expense of the general public. Furthermore, it shows that some people in the focus area perceive the neighborhood open space as a semi-private space where individual convenience has a greater legitimacy than public access. Thus, active uses of neighborhood open space become variable to automobilist priorities.

4. Leisure Activities

If the neighborhood open space can be used as a transportation infrastructure, it also offers the possibility to simply stay outside for leisure. New Orleanians are well known for enjoying outdoor festivals and street parades. But other, less organized activities, involve the use of the neighborhood open space. This chapter investigates the factors that affect those leisure activities. Nearly all survey respondents said they spent time outside for leisure one way or the other. Walking in the neighborhood is a widely spread activity even though walking conditions are not optimal. Front-yard activities are generally unrelated to the built environment. However, those activities uncover a specific aspect of the neighborhood open space. Some residents who spend a lot of time in front of their house perceive streets and sidewalks as part of a common place.

4.1 Going out for a walk

When I started interviewing residents, I realized how much they like walking in the neighborhood. The first person I interviewed has been living in the neighborhood for decades. She said that one of her favorite things about the area was that she was able to walk after work. Indeed, walking is the most frequent activity that people cite when asked to list reasons they go outside. Walking for leisure or exercise mostly takes place in the evening. Those walks can be quite long, with participants citing one-hour walks. Walking after dark is perceived as a danger and people avoid walking then or adopt risk-reduction strategies, such as choosing a well lit route, not wearing jewelry or walking with a dog. Palmer Park is almost empty at night, apart from bus riders who wait at the corner of Carrollton and Claiborne.

Dog walking is a widespread activity in the neighborhood. 15% of respondents to the survey cited walking or running with their dog as a regular activity. Mostly, people walk their dog in the blocks surrounding their house. Some people, mostly students, also run with their dog in the neighborhood. In these cases, their route goes beyond the surrounding blocks, sometimes as far as the river. Observations have shown runners at every time of the day, but mostly after 4pm. Running with a dog has an impact on the willingness of people to run in the evening. Runners, particularly women, feel safer with a dog when they run at or after dusk. Dog walking becomes a social activity as soon as dog owners meet each other. They are regulars who meet every morning, which develops small talk and ultimately neighborhood relationships.

The two cemeteries present a dual aspect that both attract and deter people from walking, biking or playing in their vicinity. Walkers and runners are pretty divided when it comes to the cemetery surroundings. Some would avoid them at all cost because they “heard it is dangerous” or because it “creeps [them] out”. Others “love the cemeteries” because they are a genuine open space and allow one to see beautiful sunsets above the graves with the houses in the background. Although not numerous, walkers and runners have been observed in and around the cemeteries on a regular basis. The sidewalks surrounding the cemeteries have the advantage of offering the longest uninterrupted paths inside the neighborhood. Walkers and runners don’t have to pay attention to cars pulling out of the driveways or at intersections. People love the open space that the cemeteries create in the middle of the urban fabric. Sunsets can be quite spectacular in New Orleans and Lowerline Street offers a privileged viewpoint to watch them. Trees are planted on most sides of the each cemetery albeit many of them are still too small to cast any sizeable shade. The cemeteries themselves are overcrowded with tombs, many of which are in very poor condition. The CCA neighborhood association has a program to clean them every year but nothing is ever done about fallen crosses and broken stones. When overgrown with weed, the

cemeteries give an impression of abandonment which can be bucolic at some times but quite lugubrious most of the time. The worst part of the cemeteries is the surrounding fence and wall. The fence is a rusted chain-link fence with poles that are leaning or broken. The side of Carrollton Cemetery along Adams Street has a concrete wall that is leaning at 45° toward the sidewalk. The park strip there is occupied by a ditch covered with weeds.¹⁶ The CCA neighborhood association has tried to enhance the park strip around the cemeteries by planting trees. They estimate that the cemeteries are “an asset” for the neighborhood because of their cultural value. The whole East Carrollton area is part of a historical district, which makes the case for a preservation approach of the cemeteries. The City of New Orleans has announced a project to change the fence with a more appealing one but the project stopped because, according to the CCA official, it was linked to other, more controversial cemetery renovations that have been halted by residents’ opposition.

4.2 Front-yard activities

Many residents like to spend some time walking in the neighborhood. One place that is directly accessible to them is the space between their house and the street. Indeed, many people spend some time on their front porch and front yard. Taking care of the front yard or simply sitting in front of the house is the second most frequent reason for going out that respondents cited in the survey (38%). Adults typically mow the lawn or take care of various trees and plants. Exceptionally, they work on their house or their car. One respondent cited smoking marijuana as a front yard activity.

¹⁶ See Appendix B for pictures of the cemetery surroundings.

Front-yard activities are somewhat related to the form of the the built environment. The most active blocks in terms of front yard activity are the ones with parallel rows of unfenced front yards. The quality of the built environment, however, does not show any influence on the quantity of front yard activity. Observations have shown several hot spots, such as the corner of Hickory and Adams, or Short Street between Green and Birch, where adults spend a lot of time in front of their houses.. In both locations, a group of African American men sit and talk for hours in front of their house. The intersection of Hickory and Adams presents a rather bad environment. Both streets are two-way but only Adams has a stop sign. There's no sidewalk along the western side of Adams Street and the park strip is now covered with gravel on both sides of the northern section of the street. The intersection is bordered with three blighted houses and a gloomy cemetery.¹⁷ Despite this poor streetscape, people have been observed sitting or standing there at every hour of the day and the week, under clement skies and cold rain. An unstructured interview revealed that these African-American men of all ages have very strong bonds, often dating from childhood. The neighborhood open space is part of their own space in the sense that it a place where they meet and where they belong. They have known all their neighbors for decades and some can trace the ownership history of every house on their block. Being together seems to be a major reason why people spend time outside in front of their house. Ultimately, the fact that people own their home and have been living here for a long time affects their perception and use of front yards, sidewalks and park strips.

The section of Pine between Willow and Plum was describe by one of the respondents as “an unusual block” where children play outside on sidewalks and in the street while adults talk and sometimes throw parties or dinners on their front yards. The area hosts rather affluent families with children as well as Tulane students. The area is pretty safe from speeding traffic

¹⁷ See Appendix B2 for an aerial photography of the Adams and Hickory intersection.

because it's a school zone (Lusher school is on the next block) and people are aware of the children playing here. This children friendly block is so successful that it attracts children from adjacent blocks as well. Children have appropriated all the open space between house façades on both sides of the street. They play indistinctly on front yards, sidewalks and the street. One interesting point is how children favor front yards against back yards because front yards are a neutral zone, where no one can impose his or her rule. Play rules are the same on front yards and in the street. On the contrary, backyards and school yards are not part of the neighborhood open space because they do not allow free movement throughout different places.

Those testimonies have led to a redefinition of neighborhood open space away from the ownership divide: unfenced front yards belong to the neighborhood open space as much as streets and sidewalks because people on their front yards can go freely in the street and can interact easily with people in the street/on the sidewalk. Only in these rare cases is the open space perceived as a common place. However successful in some parts of the focus area, the use of neighborhood open space as a place to play is rather exceptional: playing is only cited by 10% of the survey respondents. Indeed, not every front yard can be considered as a part of the neighborhood open space. Some houses, particularly in the wealthier streets such as Neron Place and Hampson Street, have fenced front yards that do not allow people to come and go freely between the public realm and private properties.

4.3 The public space as common place

The very aspect of streetscapes in the focus area is beneficial to playing and socializing outside. Most houses have an open front yard that creates a buffer between public and private space. People can see and greet each other from their front porch. Furthermore, front yards and

sidewalks are separated from the streets by a vegetable strip that is often covered with lawn, and sometimes also bushes and trees. This forms an appealing landscape with a lot of vegetation. The attention that some residents put in the treatment of this vegetable strip, along with their front yard, shows a sense of care and appropriation. People show that this open space is a place that is important to them. At the same time, they invest in the common space for the benefit of everyone. Some people who live in front of the cemeteries have even planted herbs and flowers on the strip between the street and the cemetery.

Typically, people who are not from the neighborhood show the less respect for the sidewalk and park strip. I have observed that parents dropping their children and contractors renovating houses often use for this part of the neighborhood open space as a parking space. As for residents, regardless of the quality of the built environment, there is a positive correlation between years spent in the neighborhood and the perception of the neighborhood open space as a common place. Group comparison of survey respondents showed that the longer people have been living in the neighborhood, the less they agree with parking on the sidewalk (Table 3).

Table 3: Agreement with parking on the sidewalk

How long have you been living in the neighborhood?	One year or less	More than one year and less than 3 years	More than 3 years
It is OK to park on the sidewalk.	41%	33%	27%

One could argue that residents who park on the sidewalk show little respect for the common public space. They mostly see the neighborhood open space as an infrastructure for automobile transportation as opposed to a common place. The blurry border between private and public space allows them to appropriate the latter for their own benefit. Some extreme examples

of neighborhood open space appropriation are people parking their boat or their trailer on the sidewalk. This use of neighborhood open space affects other people's perceptions: dilapidated streets and sidewalks are perceived negatively by the residents and people are less likely to use them for active transportation or staying outside. On another hand, well-maintained sidewalks, front yards and park strips send the message that they are cared for. They are more welcoming and people who walk their dog, for instance, will chose these places over less maintained ones.

Finally, the area sees some exceptional episodes of open space use when there is a burial at one of the cemeteries. In those occasions, a convoy of cars converges to the cemetery and people stay on the cemetery ground as well as sidewalks and streets to meet and greet. One Mardi Gras Indian burial was observed at the Carrollton cemetery where a crowd occupied the sidewalk and street at the corner of Adams and Hickory. People were singing and praying in the middle of the street for more than one hour. There are some exceptional block parties as well, organized by the Central Carrollton Association who aims at increasing the social interactions in the neighborhood. They have an annual gathering that they advertise in the neighborhood. People share food and drinks in a casual atmosphere. Maple Area Residents Inc. also started an annual neighborhood gathering.

All these activities are ways that help building a common place in the East Carrollton area. They show that people are attached to their neighborhood and that they value their built environment. This attachment was obvious when residents told what they would like to see in their neighborhood.

4.4. What do residents want?

Overall, leisure activities are a little more dependent on the qualities of the built environment than transportation decisions. The various obstacles that the residents face when they want to walk, run, bike or simply play in the neighborhood might affect when or where they decide to do so. However, when asked what they would like to change in their neighborhood, their answers rarely match issues relative to the use of the neighborhood open space. Their priorities seem to reflect their attachment to their neighborhood open space rather than considerations of active transportation or leisure activities.

All interview respondents said that they would like to spend more time outside in the neighborhood. Walking is the most favored activity. For example, 64% of the parents who answered the survey said they would like their children to be able to walk to school or to their after-school activities. 87% said they were interested in using a walking bus service for their children. Walking is also the most wished for mode for going to the park and going out. However, it is not clear whether improvements in the neighborhood open space would increase the number of travels by foot. For example, the automobile is the preferred mode of transportation for going to the store and meeting relatives.

When asked which improvements they would favor the most, informants and survey respondents gave the same answer: fixing streets first, then fixing sidewalks and lastly fixing lights. Only the issue of broken lights matches the safety issue. The two other priorities show that people would like to have a better built environment, but not necessarily in order to spend more time outside. Repairing sidewalks and street pavements are the top priorities but are ranked only at the fifth place in the motivations to stay inside (Tables 4a and 4b). Thus, those improvements might have no real impact on the uses of neighborhood open space.

Table 4a: Resident’s Motivations To Stay Inside

What are two reasons you don’t spend more time in the neighborhood?¹⁸
1. Safety / Crime / Dangerous / Not Enough Light
2. Lack of Time / Work to Do
3. Weather
4. Lack of Destination
5. Sidewalk and Street Pavement Quality
6. Don’t know People / The Neighborhood
7. Other

Table 4b: Residents Expectations For The Neighborhood

What changes would you like to see in the neighborhood? Place in order¹⁹.
1. Better Street Pavement
2. Better Sidewalks
3. Repair Lights
4. Neighborhood Store
5. Neighborhood Watch Program
6. A place for Children to Play
7. Designated Lanes for Bicycles
8. Protected Crosswalks
9. A Community Garden
10. Security Cameras
11. A Neighborhood Coffee House
12. Benches
13. More Trees
14. Other

A series of comparative tests between different categories of the population allows for a finer description of the resident’s wishes. People who never ride a bicycle want a safer environment for walking (cameras and neighborhood watch program) whereas people who bike at least once a month favor improvements for biking the most (Table 5).

¹⁸ Answers were processed with a word research tool which provided a frequency ranking.

¹⁹ Respondents were asked to place their choices in order from 1 to 14. Priorities were determined by adding the ranking numbers. Lower sums indicate higher overall priority.

Table 5: priorities of bicycle riders vs. non-bicycle riders

Ranking	NEVER RIDE	RIDE
4	CAMERAS	BICYCLE LANES
5	NEIGHBORHOOD WATCH	Place to play
9	Garden	NEIGHBORHOOD WATCH
10	BICYCLE LANES	Trees
13	Trees	CAMERAS

People with children favor destinations for their children over neighborhood stores (Table 6). This matches a sub-group of working parents who would not buy groceries any other way than by car. Smaller households buy less grocery at a time and are more willing to make frequent trips to the corner shop.

Table 6: Priorities of Parents vs. Residents Without Children

Ranking	CHILDREN	NO CHILDREN
2	PLACE TO PLAY	Sidewalks
4	Sidewalks	NEIGHBORHOOD STORE
10	NEIGHBORHOOD STORE	PLACE TO PLAY

Younger people favor bicycle riding lanes over places to play for children, maybe because most parents in the neighborhood are more than 35 years old (Table 7). Younger, childless adults would certainly use bicycle lanes more than parents with children. These parents would appreciate to be able to bring their children to a nearby playground.

Table 7: Priorities of Younger vs. Older Residents

Ranking	UNDER 35	35 AND OLDER
4	BICYCLE LANES	Neighborhood Watch
5	Neighborhood Store	PLACE TO PLAY
10	PLACE TO PLAY	BICYCLE LANES

People who have been living in the neighborhood for 3 years or more are more interested in using a neighborhood community garden (Table 8).

Table 8: Priorities of Recent Residents vs. Less Recent Residents

Ranking	LESS THAN 3 YEARS	3 YEARS OR MORE
4	Neighborhood Watch	GARDEN
10	GARDEN	Crossroads

People who live farther from the Maple Street businesses (CCA, North of Willow Street) are more interested in having access to a community garden and a neighborhood coffee shop whereas residents of the Maple Street Area are more concerned about security (Table 9)²⁰.

Table 9: Priorities of CCA Residents vs. MARI Residents

Ranking	CCA	MARI
4	GARDEN	NEIGHBORHOOD WATCH
8	COFFEE HOUSE	Place to play
10	Crossroads	GARDEN
11	NEIGHBORHOOD WATCH	Benches
13	Trees	COFFEE HOUSE

²⁰ See the Map of neighborhood associations created by City Works for the Neighborhood Partnership Network, at http://npnnola.com/CMSuploads/Planning_Area_Three.pdf

Conclusion

The main purpose of this study was to evaluate the possible benefits of interventions on the built environment in the East Carrollton area. The objective was to increase the active use of the neighborhood open space. The study has shown that the built environment has a limited influence on the uses of the neighborhood open space. Social factors and the social environment are the most important factors affecting the uses of the neighborhood open space. The neighborhood open space is primarily used for automobile transportation and the choice of this transportation mode rather than active modes is determined by social factors and the social environment. The distance between residence and workplace, the organization of New Orleans schools, concerns of practicality and personal comfort, the perception of danger and of pedestrians' right of way are the major impediments to walking and cycling for transportation in the neighborhood. Residents either do not have the time to use these modes of transportation or consider that the tradeoffs in terms of safety and comfort are too high. As a consequence, any intervention on the built environment of the East Carrollton area would have necessarily a limited impact on transportation choices.

However, this study has also shown that many residents like to spend some time outside in the neighborhood. The leisure activities that take place in the neighborhood open space are walking and cycling for leisure, running for exercise, playing and front-yard activities such as gardening and socializing with neighbors. When they decide to walk to a nearby restaurant, the residents make that choice because they want to enjoy a walk, not because this is the most efficient mode of transportation available.

The experience of the residents when they perform these activities is affected primarily by the built environment and, marginally, by the social environment. The poor state of sidewalk and street surfacing has a negative impact on walking and cycling for leisure. Bicycle riders are in a particularly difficult situation because they have to choose between a heavily damaged streets and a handful of better streets that concentrate two-way automobile flow. The poor engineering of street resurfacing has led to a disappearance of the curb, and instead automobile users park their car on the park strip. Moreover many residents consider the sidewalks are part of their driveway and have appropriated this part of the public space for their own benefit. Broken street lights prevent the residents from going out at night. The major arteries that border the neighborhood have a negative impact on both walking and cycling. Because these thoroughfares are designed as major avenues with 35 mph speed limits, cars drive fast and almost never stop for pedestrians. This mix of urban design and driving behavior prevents pedestrians from crossing the streets and deters bicycle riders from using the bicycle lanes. Finally, the poor state of crosswalks, even around schools, makes crossing neighborhood streets more dangerous.

Interventions on the neighborhood open space would greatly enhance the experience of the residents when they use it. Most of the surveyed residents wish they had better streets, sidewalks, and street lights. This shows that they are attached to their neighborhood open space and that they value it as an asset. They would like to have more security features so that they would feel safer in their neighborhood. They are also open to more neighborhood places to go. Depending on their demographic group, they favor a community garden, a corner shop, a playground.

This research has uncovered one particular outdoor activity which has led to a redefinition of the neighborhood open space away from the narrow characteristic of public property. The social interaction in front of houses takes place on the whole open space that stretches between

houses on either side of the street. Children play and adults socialize in the street, on the sidewalk, the park strip, front yards and front porches. The perception of private front yards as a legitimate part of the neighborhood open space denotes a well developed sense of place. This sense of place is independent from the quality of the built environment. The blocks where these activities take place are sometimes in good shape, more often in poor condition. The only physical common point between the different examples is the fact that on these blocks, unfenced front yards face each other in parallel rows of green open space.

Improving the residents' experience may be considered as an objective sufficient enough to justify interventions on the built environment. Particularly, enhancing the park-like features of the neighborhood could make the neighborhood open space an even more desirable place to engage in outdoor activities. This consideration could have important impacts on planning decisions for the study area as well as for other neighborhoods in US cities. If a mix of streetscape enhancements and policy changes can enhance active uses of the neighborhood open space, then the need for urban parks becomes less pressing. This presents advantages in terms of access, urban transportation and funding. If people can socialize, play and exercise in their neighborhood, they do not have to drive to remote urban parks. All the residents can enjoy the directly accessible open space, regardless of their ability to drive or to use public transit. This reduces the number of cars in the city which contributes to reducing traffic congestion. Finally, the investments in the neighborhood open space are offset by the savings in capital and operational investment for urban parks.

When facing the challenge of improving the neighborhood open space, planners have two options. In many cases, the limit between the street, the park strip, the sidewalk and the front yard is blurred by poor engineering, parking habits and social interactions. A first approach would be to restore the strict delimitation between the street and the surrounding space. This would have

the advantage of giving the sidewalks and the park strip back to pedestrians while confining the automobiles in the street. In order to achieve this goal, planners should work on lowering the street level so as to restore the curbs and police authorities should start implementing the law that forbids parking on the sidewalks.

The downside of a strict separation between automobile and pedestrian realms is that it takes the street away from pedestrians. This is why another approach may be more interesting in terms of neighborhood open space use. Planners could embrace the confusion between street, sidewalk, park strip and front yard so as to let the residents use the streets for leisure. Ever since the popularization of the private automobile in the 1910s, neighborhood streets have been perceived and planned as transportation infrastructures. Residents, engineers and city officials have “lost sight of the older functions of streets as places for recreation and social gatherings” (McShane, 1994, p57). After a century of automobile monopoly, it might be time to reclaim the street for people. A mix of streetscape enhancements and policy changes could help achieve this goal. Traffic calming infrastructures and signage could significantly reduce the speed of cars inside the neighborhood. Neatly resurfacing the streets at the same level of the sidewalks would make it clear that, if cars can park on sidewalks, pedestrians have every right to walk and play in the street. The major challenge would be to minimize the risk created by drivers from outside the neighborhood that use secondary streets as alternative commuting routes during rush hour. Maybe 4-stop signage at every intersection would deter them from speeding in the neighborhood streets. Finally, making abutters responsible for the maintenance of sidewalks seems particularly out of date. This amounts to subsidizing automobile transportation while leaving pedestrian activities at the mercy of individual decisions. Like streets, sidewalks should be maintained by the city and paid for by property taxes.

When it comes to active transportation, we have seen that the built environment has a marginal effect on transportation choices. If city authorities were to try to increase active transportation in the east Carrollton area, they should work in three directions. First, they could try to encourage active school transportation by starting walking school bus programs and implementing safe route to school policies. The funding and operational tools are available at the federal and state levels. It is necessary to note, however, that this policy would have a limited impact because so many students live far apart from the school they attend. Shifting back to a neighborhood school model would take major societal and political changes that are not in the foreseeable future. Active transportation commuting could be increased by offering more routes to bicycle users. This includes more bicycle lanes and resurfacing all neighborhood streets so that cyclists can choose less busy streets. Creating greenways would connect the focus area to the city parks system. Finally, the Regional Transit Authority could try to increase ridership by providing a transit service that allows workers to commute. This would make people walk more to and from the streetcar and bus stops.

Whether it is to shape a more park-like neighborhood or to increase active transportation, the implication for future research is broad. First, the tools that would make streets a legitimate part of the pedestrian realm are to be crafted and tested. This research described a few operational propositions but more research is needed to understand how they would impact the uses of the neighborhood open space in New Orleans and in other US cities. As for active transportation, more research is necessary to understand how active school transportation programs can affect transportation patterns, particularly in the setting of Southern cities such as New Orleans. Finally, one should point that this research is very narrow in scale and that the target population is not representative of the city of New Orleans. This constitutes the main limit of this study. Another limit is the specific urban form of the focus area. The East Carrollton area is in no way

representative of US cities in general and the findings presented here are relevant for the focus area only. More research is necessary in order to investigate transportation choices and neighborhood open space use in other types of urban spaces, such as denser inner-city neighborhoods or true low-density suburbs. Researchers in urban studies and practitioners of urban planning should consider the neighborhood open space as a valid replacement for urban parks. Urban residents and the design of the contemporary city could benefit from this new approach of the neighborhood open space.

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Appendices

Appendix A: Survey questionnaire



UNIVERSITY of
NEW ORLEANS

Surveyor:	Date:	Block #
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Address _____

Demographics:

- Sex: Male / Female
- Age: 18-34 / 35-64 / 65 up
- Race: White / AA / Other
- Homeownership: Homeowner / Renter
- How long living in the neighborhood? _____

Neighborhood open space use:

1. On a typical week, how much time do you spend outside in the neighborhood?

Less than 30 minutes 30 minutes - 1 hour More than 1 hour

1. List 3 things that you do when you spend time outside in the neighborhood?

2. What are 2 reasons that prevent you from spending more time in the neighborhood?

3. How much do you ride in the neighborhood?

Never At least once a month At least once week Every day

4. If you have school aged children, how do you take them to school?

N/A Walking Bicycle Car Transit School bus

5. How do you commute to work?

N/A Walking Bicycle Car Transit

6. Where do you park your car(s) most of the time:

N/A Driveway Curb Curb + Driveway



Neighborhood open space perception: Do you agree with the following statements?

	Don't know	Strongly Agree	Agree	Disagree	Strongly disagree
The neighborhood is a great place for walking					
The neighborhood is a great place for biking					
The neighborhood is a great place for playing outside.					
The cemeteries surroundings are a great place to have a walk.					
South Carrollton Avenue, Maple street and Oak street are great places to go out at night.					
I'd like my children to be able to walk to school.					
It is OK to park on the sidewalk (show picture).					
It's easy and safe to walk to the nearest school.					
It's easy and safe to bike to the nearest school.					
It's easy and safe to walk to the nearest park.					
It's easy and safe to bike to the nearest park.					
It's easy and safe to walk to the nearest grocery store.					
It's easy and safe to bike to the nearest grocery store.					
It's easy and safe to walk to your favorite neighborhood restaurant.					
It's easy and safe to bike to your favorite neighborhood restaurant.					



Neighborhood open space expectations:

1. Do you agree with the following statements?

	Don't know	Strongly Agree	Agree	Disagree	Strongly disagree
The cemeteries surroundings could be a great place to walk to.					
I would use a walking bus program for my children.					

2. For each of the following activities, what would be your preferred means of transportation?

	N/A	Walking	Bicycle	Car	Public Transit
Commute to work					
Take my children to school					
Take children to after school activities					
Go to the park					
Go out in the evening					
Go to the grocery store					
Meet relatives					

3. What changes would you like to see in the neighborhood? Place in order.

- Security cameras
- Repair lights
- Neighborhood Watch program
- Better sidewalks
- Better street pavement
- Protected crosswalks (picture)
- More trees
- Benches
- Neighborhood store
- Neighborhood coffee house
- A place for children to play
- A community garden
- Designated lanes for bicycles
- Other

Appendix B: The Carrollton Cemetery Surroundings



B1 = The existing fence on Adams Street



B2 = Aerial Photography of Adams and Hickory Intersection

Appendix C: Design Obstacles to Walking and Bicycle Riding



C1= Street widened with cars parked on the park strip



C2= sidewalk replaced by grass, a tree, a boat



C3= Root-Damaged sidewalk in Short Street

Appendix D: Habits-Related Obstacles to Walking and Bicycle Riding



D1 = Park strip Damaged by Cars



D2 = Car Parked on Sidewalk



D3 = Car Parked on Yard

Appendix E: Aerial Photography of the Carrollton/Claiborne intersection



Vita

The author was born in Saint-Etienne, France. He obtained a Bachelor's degree in History from the Université de Saint-Etienne in 1998 and a Maitrise in Geography from the Université de Sciences et techniques de Lille 1 in 2007. He joined the University of New Orleans graduate program to pursue a Master's degree in Urban Studies under the direction of Dr Renia Ehrenfeucht.