New Orleans 2013 Pedestrian and Bicycle Count Report

Final Report

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PEDESTRIAN BICYCLE RESOURCE INITIATIVE

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CONTENTS

List of Tables ii
List of Figures iii
Acknowledgements iv
Executive Summary 1
1 .0 Introduction 3
1 .1 Orleans Parish Bicycle Network, 2005-2013 3
1.2 Manual Count Site Selection 9
1.3 Electronic Count Location 9
2.0 Count Observation Methodologies 11
2.1 Manual Counts 12
2.2 Electronic Counts 12
2.3 Manual Count Estimation and Extrapolation Methodology 14
3.0 Manual Count Data 15
3.1 Observed Count Totals: Existing Count Sites 15
3.2 Estimated Daily Traffic for Existing Manual Count Sites, 2010-2013 19
3.3 Observed Count Totals: New Count Sites 25
3.4 Commuting Patterns near Manual Count Sites 27
3.5 Mode Shares for Manual Count Sites 30
3.6 Demographic and Behavioral Characteristics 32
3.7 Impact of Bicycle Facilities on Usership 40
4.0 Electronic Count Data 44
4.1 Observed Traffic Volumes 44
4.2 Patterns of Use by Hour, Day, Month, and Season 47
4.3 Meteorological Variables and Traffic Volume 51
5.0 State, Regional, and National Context: Comparing the Gender Split for Bicyclist and Pedestrian Commuters 56
5.1 Bicycle Commuting in New Orleans 56
5.2 Pedestrian Commuters in New Orleans 59
6.0 Conclusions 61
6.1 Bicycle Activity in New Orleans 61
6.2 Pedestrian Activity in New Orleans 62
6.3 Jefferson Davis Trail 63
6.4 Evaluating Active Transportation in New Orleans: Policy Implications and Next Steps 63
Appendices 65
Appendix A: Manual Count Site Characteristics 66
Appendix B: Manual Count Observation Protocol 67
Appendix C: Manual Count Observation Sheets 70
Appendix D: Manual Count Weather Data 72
Appendix E: PBRI Extrapolation Methodology 74
Appendix F: NBPD Project Count Adjustment Worksheet 75
Appendix G: Additional Automatic Count Data Tables 78

LIST OF TABLES

Table 1: 2013 Count Site Locations 10
Table 2: Observed Total Manual Count Volumes for Bicycles, Existing Count Sites, 2010-2013 17
Table 3: Observed Total Manual Count Volumes, Pedestrians, Existing Count Sites, 2010-2013 18
Table 4: Estimated Daily Traffic, Bicycles, 2010-2013, Existing Count Sites 20
Table 5: Estimated Daily Traffic, Pedestrians, 2010-2013, Existing Count Sites 22
Table 6: 2013 Bicycle Estimated Daily Traffic 23
Table 7: 2013 Pedestrian Estimated Daily Traffic 24
Table 8: Observed Total Volumes and EDT, Bicycles, 2013, New Count Sites 26
Table 9: Observed Total Volumes and EDT, Pedestrians, 2013, New Count Sites 26
Table 10: Approximate Active Transportation Mode Share for Select Sites 30
Table 11: Bicycle and Pedestrian Relative Mode Share, 2010-2013 31
Table 12: Overall Bicyclist Composition, 2010-2013 33
Table 13: Overall Pedestrian Composition, 2010-2013 34
Table 14: Bicyclist Travel Orientation and Helmet Use by Race 37
Table 15: Bicyclist Composition by Count Site, 2013 38
Table 16: Pedestrian Composition by Count Site 2013 39
Table 17: Change in Site Statistics by Presence of Bicycle Facilities, 2010-2013 41
Table 18: Jefferson Davis Trail Average User Volumes by Month, 2010-2013 46
Table 19: Jefferson Davis Trail User Volume by Day of Week 48
Table 20: Jefferson Davis Trail User Volumes by Month 49
Table 21: Jefferson Davis Trail User Volume by Season, 2010-2013 50
Table 22: Jefferson Davis Trail Average Daily Temperature and User Volumes 53
Table 23: Top Cities Over 250,000 for Bicycle Commuting, 2011 57
Table 24: Regional Bicycling Commuting Statistics, 2011 57
Table 25: Bicycle Commuting in Louisiana, 2009-2011 58
Table 26: Top Cities over 250,000 for Pedestrian Commuting, 2011 59
Table 27: Regional Pedestrian Commuting Statistics, 2011 60
Table 28: Pedestrian Commuting in Louisiana, 2009-2011 60

LIST OF FIGURES

Figure 1: Orleans Parish Bicycle Facilities, 2005 4
Figure 2: Orleans Parish Bicycle Facilities, 2008 5
Figure 3: Orleans Parish Bicycle Facilities, 2010 6
Figure 4: Orleans Parish Bicycle Facilities, 2012 7
Figure 5: Orleans Parish Bicycle Facilities, 2013 8
Figure 6: Map of Electronic and Manual Count Locations, 2013 11
Figure 7: Jefferson Davis Trail Eco-Counter Installation at Conti St 13
Figure 8: Detail of Eco-Counter Infrared Sensing Device 13
Figure 9: Bicyclist Estimated Daily Traffic, 2013 21
Figure 10: Pedestrian Estimated Daily Traffic, 2013 23
Figure 11: Bicycle Commuters by Census Tract, 2007-2011 28
Figure 12: Pedestrian Commuters by Census Tract, 2007-2011 29
Figure 13: Bicycle Commuters and Bicycle Facility Expansion, 2004-2011 43
Figure 14: Jefferson Davis Trail Average Daily Usage, 2010-2013 45
Figure 15: Jefferson Davis Trail Users by Hour of Day 47
Figure 16: Jefferson Davis Trail User Volume by Day of Week 48
Figure 17: Jefferson Davis Trail User Volume by Season 50
Figure 18: Temperature and Usership (Daily) 51
Figure 19: Temperature and Usership (Weekly) 52
Figure 20: Temperature and Usership (Monthly) 53
Figure 21: Precipitation and Average Daily Users by Month 54
Figure 22: Precipitation and Usership (Daily), 2012-2013 55

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EXECUTIVE SUMMARY

Over the last four years during which the Pedestrian Bicycle Resource Initiative at the Merritt C. Becker, Jr. University of New Orleans has conducted pedestrian and bicycle counts, New Orleans has become a recognized leader in the South, and an emerging leader nationwide, in active transportation. Over 50 miles of new bicycle facilities have been constructed, with several miles of additional facilities forthcoming in 2013 and 2014. A series of major street and sidewalk improvements was completed in the French Quarter in 2012, and Complete Streets policies at the local, regional, and state level should ensure that the needs of bicyclists and pedestrians (including transit users) are incorporated in the design and construction of all roadway projects in the future.

The data in this report expands on previous count studies conducted in 2010, 2011, and 2012 documenting active transportation demand and the impact of new facility development. Through bicycle and pedestrian count data collected at 12 manual count locations from 2010 to 2013, two additional Jefferson Parish count locations observed from 2011 to 2013, and one electronic count device installed since May, 2010, this report provides data suggesting that investments in the built environment for bicyclists and pedestrians have resulted in citywide increases in the prevalence of active transportation, particularly in areas where these investments have occurred. This report also provides baseline data for twelve new count locations (including two additional counts in Jefferson Parish) that can be used to inform investment priorities and evaluate post-intervention outcomes in safety and usage.

Overall, this report demonstrates that bicycling and walking are on the rise. Trends toward increasing numbers of bicyclists and pedestrians at most count locations have continued. In some locations, these trends accelerated from 2012 to 2013. In others, steady, incremental increases were documented. In a very few locations, bike and/or pedestrian activity has decreased, potentially indicating relative deficiency in the infrastructure present and a consequent opportunity for future growth. In total, among existing count sites, the number of bicyclists observed has increased by 63% at the 12 core count locations since 2010, while pedestrians activity has increased by 67%.

The most notable gains and highest observed volumes for bicycles have been at CBD-adjacent “gateway” sites linking the downtown core of the city with residential Uptown neighborhoods, potentially suggesting increased bicycle commuting, as well as on major arterial corridors that include dedicated bicycle facilities (i.e. bike lanes). Overall, bicycle activity at sites with bicycle facilities has increased by 105% over four years, compared to a 56% increase at all count locations combined, and only a 23% increase at locations that have no bicycle facilities present or adjacent.

This study also documents travel behaviors and demographic trends as indicators of safety and opportunities for spatially targeted education efforts. The proportion of cyclists that are female, indicating greater acceptance of bicycling as a means of transportation and typically a more comfortable bicycling environment, has increased over previous years, as has helmet use and correct (on-street, with the flow of traffic) travel orientation. Pedestrian trends, while somewhat more volatile, reinforce the idea of New Orleans as a city where active transportation is gaining traction as a healthy, low-cost alternative to driving, with overall increases at 11 out of 12 core count sites, spread among a diverse set of demographic groups.

PBRI has also collected continuous data on use of the Jefferson Davis Parkway Trail, a multi-use path connecting several

neighborhoods, to track broad, long-range active transportation trends. This analysis shows a steady positive trend from year to year toward greater use of this facility, corroborating the increases observed during manual counts and providing insights into temporal shifts in use. Most notably, the trail is well-used even during weeks and months that are extremely hot, very cold, or intensely rainy: in New Orleans, biking and walking are year-round activities for many residents. This report also updates national American Community Survey Data (2011 1-year and 3-year estimates) to show that even as active transportation use has surged in many cities, New Orleans retains its position among the top cities for bicycling and walking commute mode share, improving on the preceding year's figures to be ranked 9th highest for bicycle commuting and 13th highest for commuting by walking.

Enhancing opportunities for biking and walking is an integral component of advancing a more sustainable, muilti-modal transportation network in the New Orleans region. New Orleans' efforts to increase the availability and quality of facilities for active transportation has been rewarded with national recognition in addition to the usage gains documented in this report. However, the city and region still have work to do in creating safe, equitable environments for bicycling and walking. Continuing issues which should be addressed by government agencies and/or future research efforts include:

- Developing and funding an ongoing program for the collection of multimodal counts and mode-share analysis, including transit users
- Linking count and crash data to infrastructure investment priorities and project development
- Improving, but still low rates of helmet usage overall and at particular locations and among some demographic groups
- Prioritizing "missing links" in the existing bike and pedestrian networks, as well as local and regional "chokepoints" such as bridges where users are compelled to use deficient infrastructure
- Evaluating impacts of specific pedestrian infrastructure investments as well as other factors contributing to pedestrian activity beyond the scope of this report

In sum, New Orleans has made significant progress toward becoming a bikeable, walkable city through investments and policies that facilitate greater active transportation use. In order to continue these trends, improve safety, and promote more sustainable and economically robust communities, the policies and programs that have resulted in such progress must be embraced and institutionalized at all levels of government and within the community, so as to promote the development of more complete, interconnected transportation networks that effectively serve all modes and all users.

1.0 INTRODUCTION

Since 2010, the Pedestrian and Bicycle Resource Initiative (PBRI) at the University of New Orleans has conducted a series of bicycle and pedestrian counts at sites around the New Orleans area. The 2013 New Orleans Pedestrian and Bicycle Count Report continued and expanded these counts for a fourth year at a total of 27 sites, in order to build upon the existing data set, identify emerging trends, and build a foundation for future research and analysis as the New Orleans region continues to expand and improve its bicycle and pedestrian infrastructure.

The objectives of this study are to evaluate the impact of recent and planned investments in bicycle and pedestrian infrastructure on active transportation trends in the region over time, providing baseline and (where applicable) post-intervention benchmarks by which to evaluate progress toward achieving higher rates of bicycling and walking in a given community, as well as information regarding user demographics and behaviors that may impact safety outcomes and/or educational campaigns.

In addition, this expanded count study provides additional information on user volumes and characteristics for selected corridors and nodes that have been identified as areas of high pedestrian crash incidence, as evaluated in the *New Orleans Multi-Tool Pedestrian Safety Study* (PBRI 2013).

This report presents new data from one electronic count device and 26 manual count locations in the New Orleans metropolitan region, and compares this data to that previously collected from 2010-2012. It also provides recommendations for areas of further research and analysis based on the data collected to date, as the region continues to expand its active transportation infrastructure and implement a "Complete Streets" approach to transportation investment.

1.1 ORLEANS PARISH BICYCLE NETWORK, 2005-2013

New Orleans' rapid expansion of a bicycle infrastructure network since Hurricane Katrina in 2005 is ongoing and expected to continue with several miles of new infrastructure installed in the second half of 2013. Total bicycle facility mileage has grown from about eleven miles in 2005 to approximately 64 miles in June 2013, including bike lanes, shared lanes, bike boulevards, and off-street multi-use paths. Figures 1 - 5 illustrate the growth of this network over time.

This expansion of the bicycle network has provided an opportunity to monitor the impact of these investments on both overall active transportation activity as well as specific sites where new facilities have been installed. The 2013 count study includes several count sites located on or near existing bicycle facilities, as well as sites where future facility installation is anticipated.

Approximately 8.5 miles of new bicycle facilities were installed between April 2012 and March 2013 (when counts were conducted) including shared and dedicated lanes in the French Quarter connecting to the existing Decatur Street Count location. Several of this year's manual count locations are located on street segments that have been identified as targets for future bicycle facility installation, including a bike lane on Esplanade Avenue that was under construction at the time of this year's counts. It is important to continue monitoring these sites post-intervention to evaluate the impact of the new facilities on usage, as it is installed. The expanded set of count locations for which data was collected for this year's study will enable effective continued impact analysis as several significant new facilities are finished in the next 6-12 months.

Figure 1: Orleans Parish Bicycle Facilities, 2005

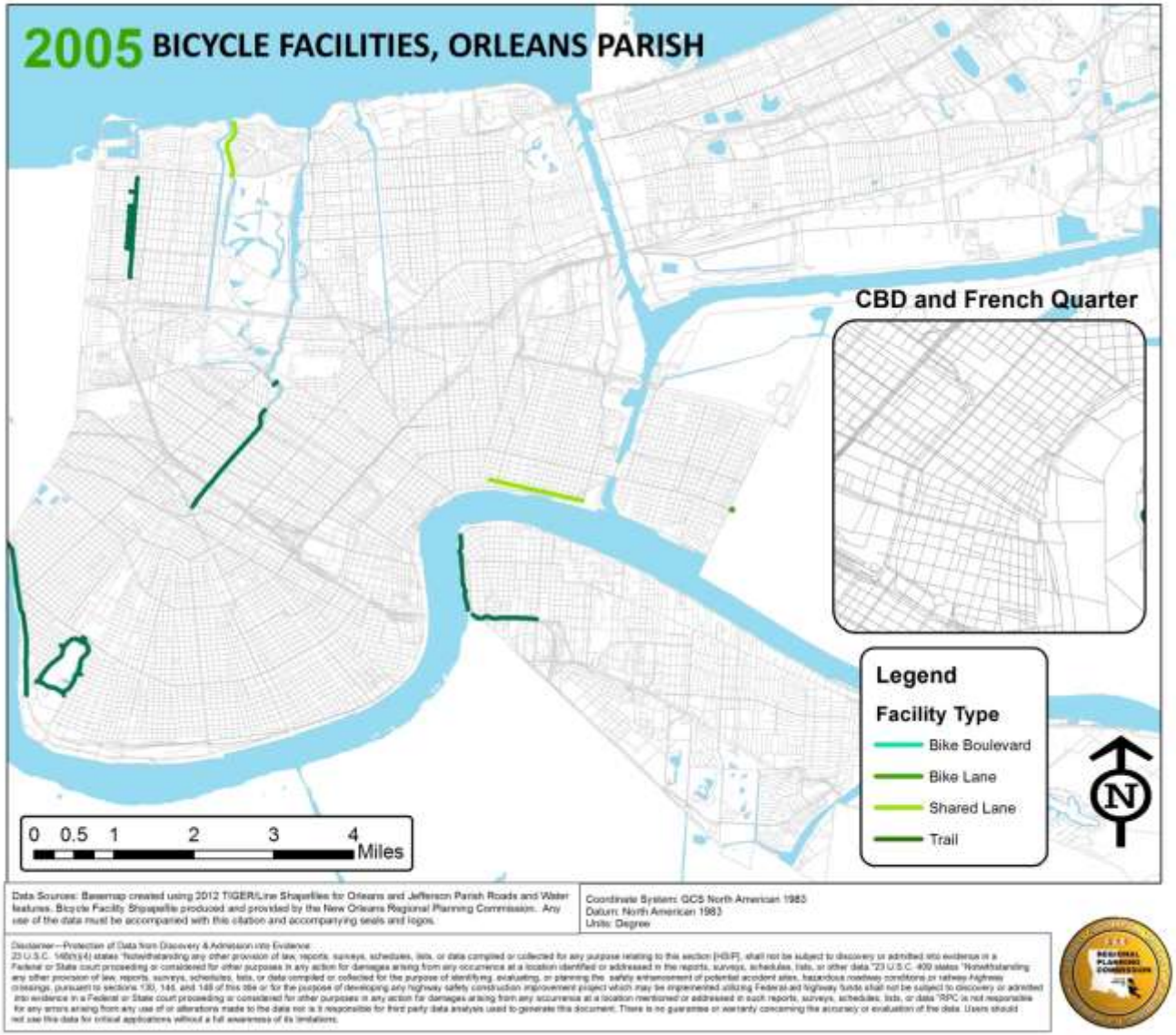


Figure 2: Orleans Parish Bicycle Facilities, 2008

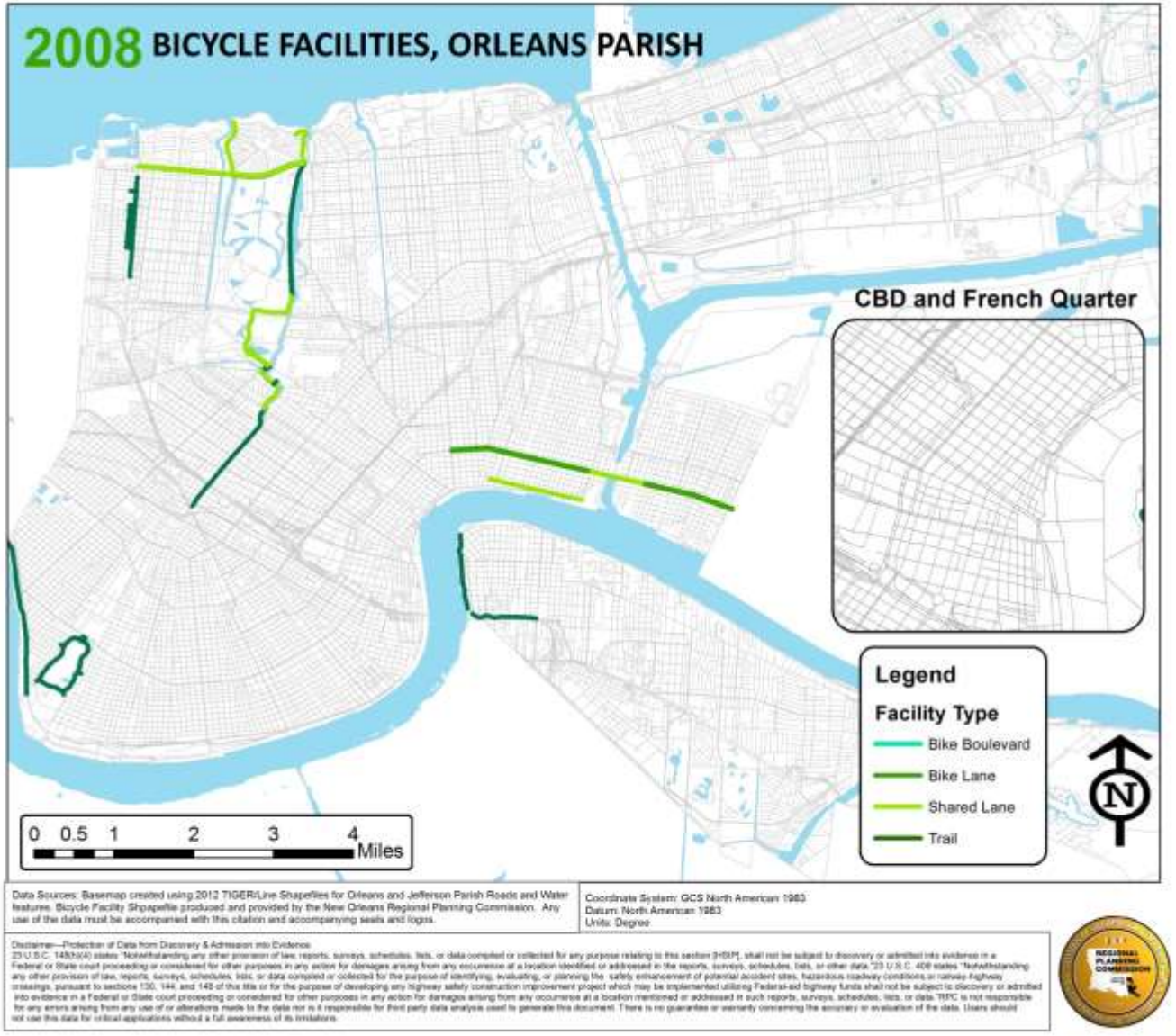


Figure 3: Orleans Parish Bicycle Facilities, 2010

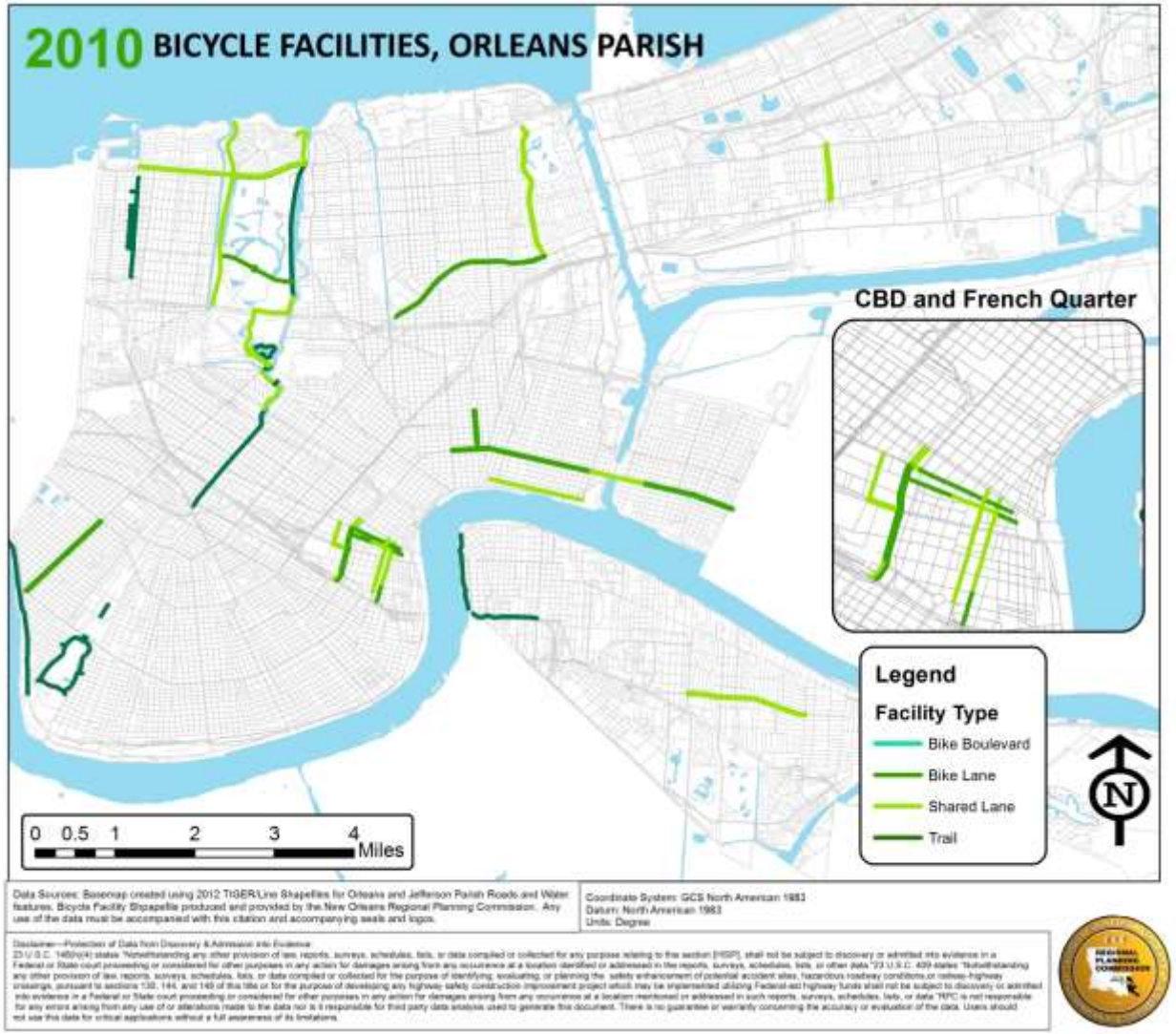


Figure 4: Orleans Parish Bicycle Facilities, 2012

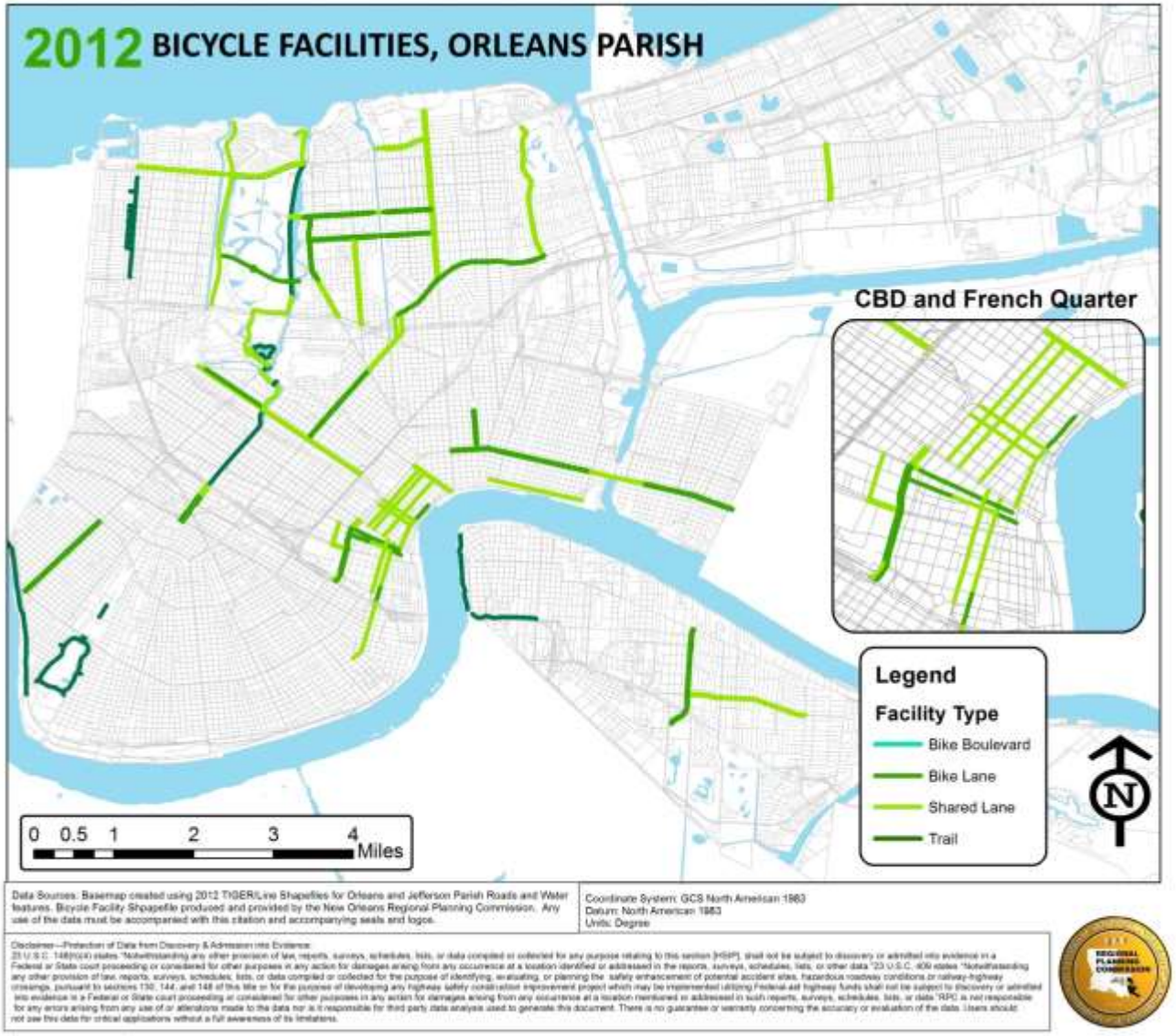
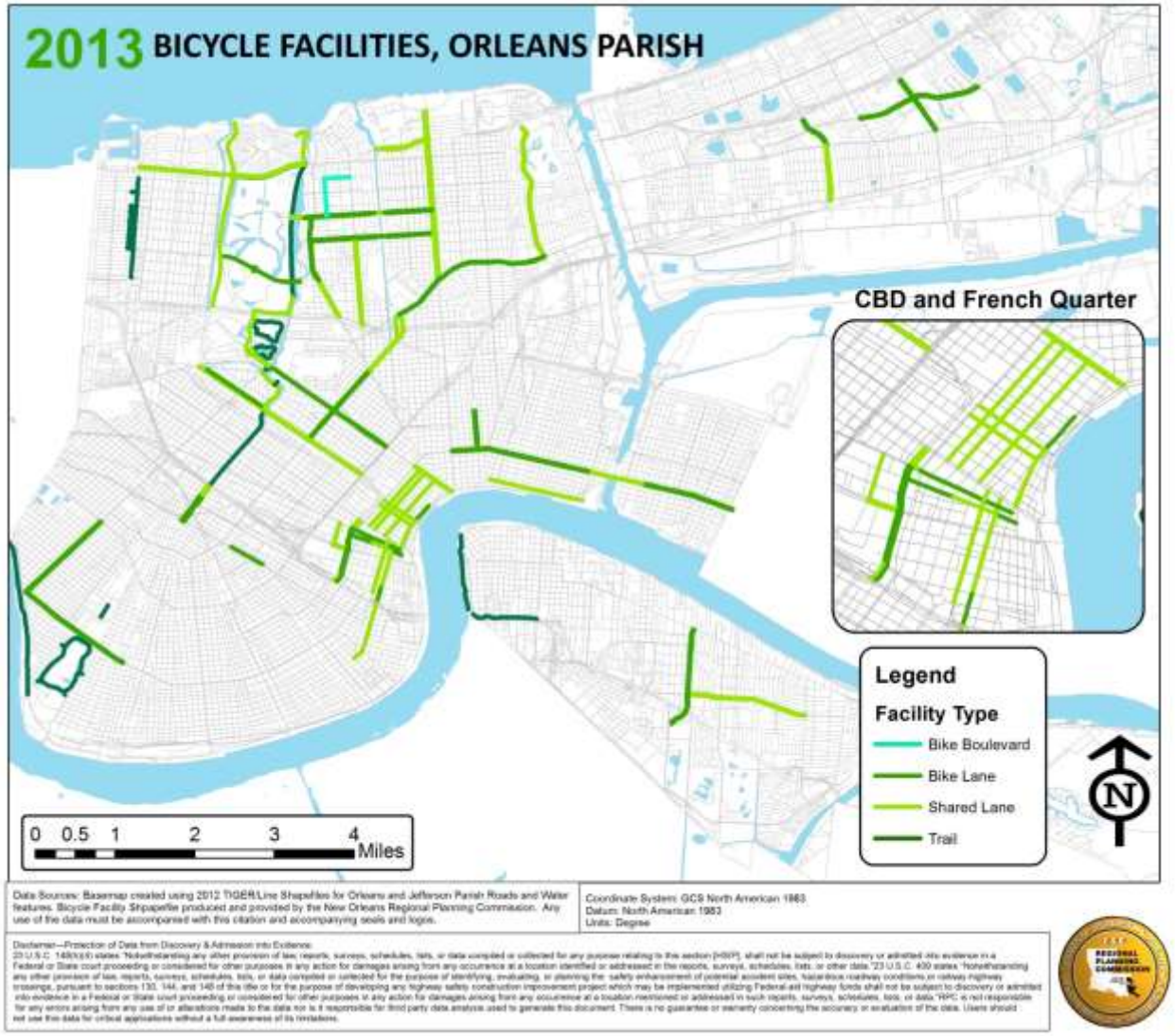


Figure 5: Orleans Parish Bicycle Facilities, 2013



1.2 Manual Count Site Selection

In the spring of 2010, PBRI conducted its first manual counts at 13 sites throughout the City of New Orleans, detailed in PBRI's 2010 State of Active Transportation report.[1] These counts were repeated in April and May of 2011, with the addition of counts at two new sites in Jefferson Parish, LA, at Metairie Hammond Highway near South Carrollton Avenue, and at Papworth Avenue near Veterans Boulevard, both sites where bicycle infrastructure improvements have been proposed. 2012's count study included the same 15 sites, which were selected based on the following criteria:

- Proximity to existing or future bicycle facilities, sidewalk improvements or other infrastructure improvements
- Use as a gateway between the Central Business District (CBD) and Uptown New Orleans
- Representation of a specific neighborhood, in order to gain a more holistic understanding of active transportation trends throughout the city.

In 2013, the count study was expanded to include 12 additional count sites in Orleans and Jefferson Parish, including five sites which correspond to high pedestrian crash incidence, three sites where dedicated bicycle infrastructure is expected to be constructed in the next 12 months, two sites where bicycle infrastructure has been installed and previous data has been collected by Tulane University's School of Public Health, and two count sites on bridges identified by local bicycle advocacy organization Bike Easy as key regional connections and critical "chokepoints" in the bicycle infrastructure network. One previous count site (Paris and Burbank) was eliminated from the 2013 count program. This expansion of the scope of the count study not only provides a more comprehensive view of overall walking and bicycling patterns in the New Orleans area, but also provides needed data for a variety of organizations and agencies working to better understand and improve particular aspects of active transportation in the region.

Table 1 lists the manual count sites observed in 2013, and Figure 6 maps these locations. For a detailed breakdown of count site characteristics for all 2013 manual count locations, please refer to Appendix A.

1.3 Electronic Count Location

Since 2010, an infrared electronic count device has been installed on the Jefferson Davis Trail in Mid-City, collecting continuous data on trail use from June 2010 to March 2013. The Jefferson Davis Trail is located on the median of Jefferson Davis Parkway in the Mid-City neighborhood. This trail was selected for continuous electronic data collection due to its connectivity in linking multiple neighborhoods for commuting, its proximity to recreational facilities, and its future intersection with the proposed Lafitte Greenway.

The approximately 1.5 mile facility, which connects with bike lanes from the end of the trail to Washington Avenue, serves as an important active transportation connection between neighborhoods that otherwise are physically separated by Interstate 10. In addition to housing playground equipment and neighborhood open space, this site is also located near the recreational amenities of Bayou St. John, City Park, and the Fairgrounds Race Track.

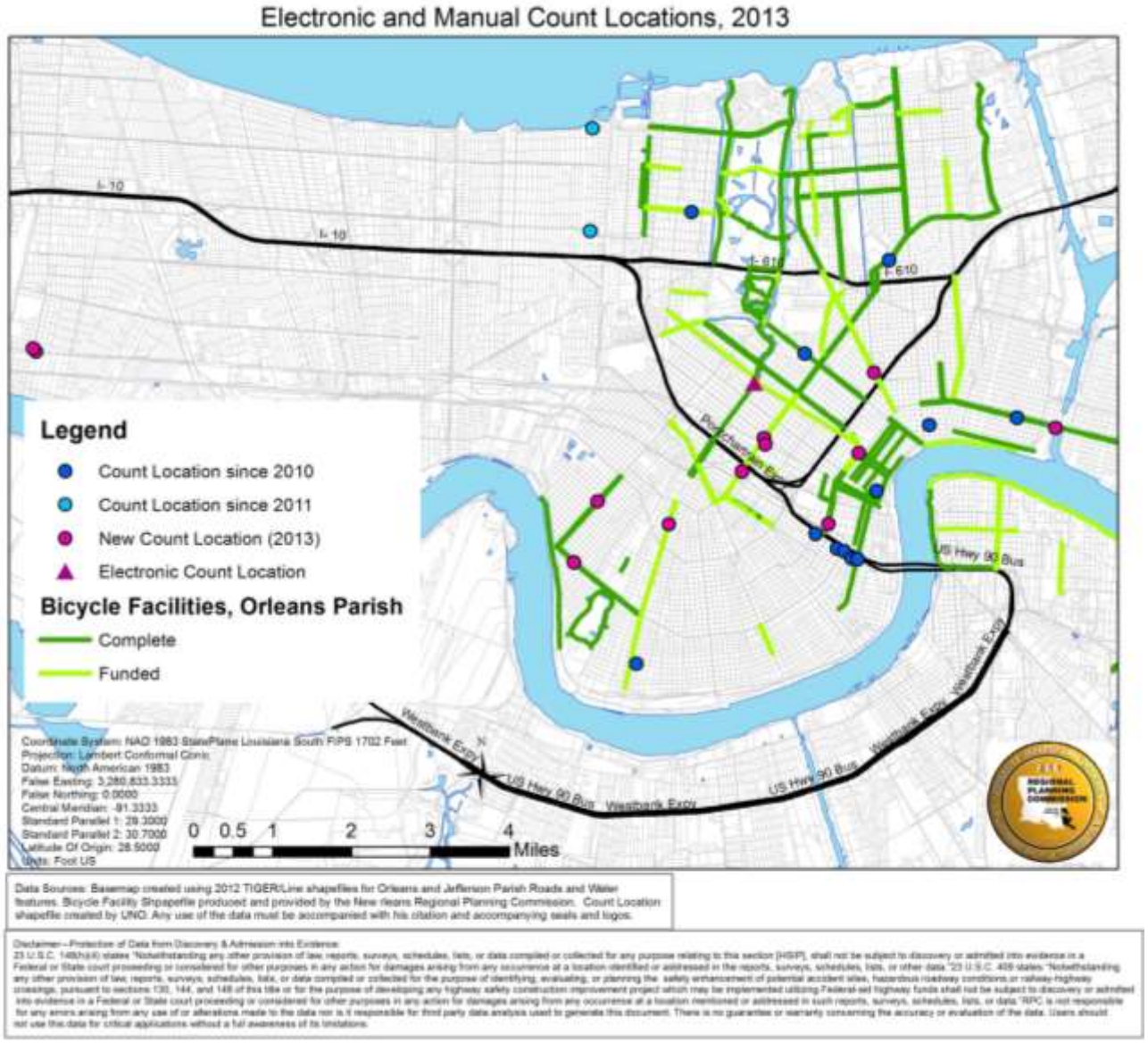
[1] Accessible at http://transportation.uno.edu/phire-content/assets/files/PBRI-State%20of%20Active%20Transportation%202010.pdf

The electronic counter is located at the intersection of Jefferson Davis Trail and Conti St, as shown in Figure 7. A disruption to the pole to which the device is mounted resulted in a loss of data for the months of April and May 2013, therefore this report presents only ten months of data and infers overall trends based on patterns established in previous years.

Table 1: 2013 Count Site Locations

2013 Count Site Locations		
#	Site	Boundary Streets
1	Decatur St	Iberville St & Canal St
2	Royal St	Mandeville St & Marigny St
3	St. Claude Ave	Pauline St & Independence St
4	Simon Bolivar Ave (Gateway)	Clio St & Calliope St
5	Carondelet St (Gateway)	Clio St & Calliope St
6	St. Charles Ave (Gateway)	Clio St & Calliope St
7	Camp St (Gateway)	Clio St & Calliope St
8	Magazine St (Gateway)	Erato St & Calliope St
9	Magazine St (Uptown)	Arabella St & Joseph St
10	Esplanade Ave	N White St & N Dupre St
11	Gentilly Blvd	St. Denis St & Milton St
12	Harrison Ave	Gen. Diaz & Harrison Ct
13	Metairie Hammond Hwy	Carrollton Ave & Seminole Ave
14	Papworth Ave	Veterans Blvd & Raspberry St
15	St. Bernard Ave	N Roman St and Derbigny St
16	Airline Dr	Williams Blvd and Compromise St
17	Broad St	Tulane Ave and Banks St
18	St. Charles Ave (Uptown)	Adams St and Hillary St
19	Basin St	St Louis St and Toulouse St
20	Williams Blvd	Airline Dr and 9th st
21	Nashville Ave	S Rocheblave Stand S Tonti St
22	Tulane Ave	S Dorgenois St and Broad St
23	Loyola Ave	Howard Ave and Julia St
24	S Carrollton Ave	Green St and Birch St
25	St. Claude Bridge	Poland Ave and Industrial Canal
26	Broad St Bridge	Euphrosine St and Howard Ave
27	Jefferson Davis Trail	Conti St & Lafitte St

Figure 6: Map of Electronic and Manual Count Locations, 2013



METHODOLOGIES

This section explains the methodologies utilized by PBRI in performing manual and electronic counts and attempts to qualify their accuracy and effectiveness.

2.1 MANUAL COUNTS

Manual counts for this study were completed between March 12th and May 23rd of 2013. PBRI recruited student workers from The University of New Orleans. Workers were trained by UNO Transportation Institute staff on observation protocol, and were required to satisfactorily perform a practice count to gain certification. The Observation Protocol, developed by Kathryn Parker, assistant director of the Tulane Prevention Research Center at the Tulane School of Public Health, can be found in Appendix B. PBRI methodology follows the Tulane protocol, with a few exceptions.

All counts were mid-block screenline counts, during which all counters sat in view of each other on opposite sides of the street, creating a visual "plane of observation" for users to cross and be counted. On streets with a neutral ground,[2] each counter tallied users on their side of the street and their sidewalk, while one counter was designated to count users on the neutral ground. If there was no neutral ground at the count site, both counters were responsible for counting all users of the street and both sidewalks. In the case of discrepancies, an average was taken.

Counters tallied pedestrians and bicyclists and categorized them by gender, race, and general age group (adult vs. child). Counters also distinguished bicyclists and pedestrians by their travel orientation, i.e. whether they were observed on the street, sidewalk, or neutral ground. For bicyclists, counters also noted helmet usage and right-way vs. wrong-way use, as well as use of a bike lane where applicable. Wrong way use was defined as on-street bicyclists traveling in the opposite direction of traffic. For copies of the tally sheets used by observers, see Appendix C.

Counts were performed on two days for each site, either on a Tuesday, Wednesday, or Thursday. Each day included counts from 7:00-9:00 AM and from 4:00-6:00 PM. These time periods and days of the week are based on recommendations by the National Bicycle and Pedestrian Documentation (NBPD) Project.[3] Counts were generally only performed under reasonably good weather conditions (i.e. no heavy rain), although a few observations took place on days of inclement weather (Appendix D).

2.2 ELECTRONIC COUNTS

As mentioned above, the Jefferson Davis Trail electronic count site was equipped with an automated count device (called an Eco-Counter) that was installed in May 2010, and that has continuously recorded trail use for 32 months. This report provides an analysis of the third year of this continuous stream (excluding April and May 2013, when the device was temporarily removed due to the dislocation of the city infrastructure on which it was installed) of data to analyze temporal patterns and variability and understand patterns of use in relation to the first two years of data collected.

[2] "Neutral ground" is a colloquial phrase for a median separating street traffic; this term is used throughout this report.

[3] See http://bikepeddocumentation.org/ for more information

The Eco-Counters use passive infrared sensor technology to record all users. Two directional sensors (IN and OUT) count all users within a distance of 4 meters (approximately 13 feet) and record that information in a data box from which it may be retrieved via infrared or Bluetooth technology. Two key limitations to the Eco-Counters are important to note: its inability to distinguish between types of users (bicyclists vs. pedestrians) and potential undercounting due to parallel movement of users. In addition, PBRI has found that Eco-Counter accuracy is also impacted by hardware sensitivity to extreme heat. [4]

In order to address these issues and the possibility of other observational error, PBRI staff calibrated the Jefferson Davis Trail machine upon installation, and has performed periodic calibration checks in the subsequent three years to evaluate accuracy. Overall, this device has been found to provide highly accurate and reliable data.[5] Anticipated expansions to PBRI's electronic count collection program in 2013 will enable similar data streams to be made available for additional trail and/or on-street locations, permitting a more accurate and comprehensive analysis of overall trends, as well as enabling greater calibration and reliability testing of manual count extrapolation techniques, as discussed below.

Figure 7: Jefferson Davis Trail Eco-Counter Installation at Conti St

Figure 8: Detail of Eco-Counter Infrared Sensing Device

Photo credits: Taylor Marcantel, 2010

[4] This was a major limiting factor for the now-defunct Mississippi River Trail counter, as discussed in depth in The New Orleans Pedestrian and Bicycle Count Report, 2010-2011

[5] Greater than 95% total and directional accuracy rate over four tests

2.3 Manual Count Estimation and Extrapolation Methodology

This section details the methods used to estimate daily, monthly, and yearly volumes of pedestrians and bicyclists at the observed manual count sites. Estimations were not necessary for the electronic count site because it provides a continuous stream of data. The estimations in this report are essentially extrapolations based upon the manual counts performed by PBRI and on temporal patterns of use as suggested by the NBPD Project.

The methodology for extrapolating manual counts to daily, monthly, and annual estimates is based on the methods provided by the National Bicycle and Pedestrian Documentation (NBPD) Project. NBPD methodology classifies count sites as either Multi-use Paths or Pedestrian Districts. Manual Counts are therefore classified as Pedestrian Districts, defined by the NBPD Project as "higher density pedestrian areas with some entertainment uses such as restaurants," descriptive of nearly all 2013 count locations.

This methodology was previously employed in PBRI's 2010 State of Active Transportation Report and the New Orleans Pedestrian and Bicycle Count Report, 2010-2011.[6] As the latter document summarizes, that methodology includes the following characteristics:

- All count observation periods for a single site are separated into A.M. and P.M. counts. Bicycle and pedestrian counts from both days observed are then averaged together for a combined user average for each time period.
- These averages are used to derive a daily and weekly extrapolation for each time period based on time of the day and day of the week counts were observed.
- Weekly extrapolations for A.M. and P.M. counts are then averaged together for each location in order to form the weekly estimate.
- This weekly estimate is multiplied by 4.33 to get the estimated monthly users. The annual estimate is then extrapolated by multiplying this monthly estimate by the monthly adjustment factor provided by the NBPD methodology.
- Estimated Daily Traffic (EDT) for manual count sites is figured by dividing the annual estimate by 365. To disaggregate bicycle and pedestrian estimates at any point, the estimate is simply multiplied by the respective ratio (bicycle vs. pedestrian) observed at the count site.

For more detailed information regarding this methodology refer to Appendices B, C, E, and F, which include a detailed methodological summary as well as the NBPD Adjustment Factors document from which the methodology is derived.

It should be noted that the extrapolation methodology provided by the NBPD Project is based on patterns of use by climate region. These patterns of use influence how much weight any given count will have depending on: the hour of the day, day of the week, and month of the year. NBPD Project methodology provides three climates to choose from, of which New Orleans is categorized into the "Very hot summer, Mild winter" category. While this climate category is the most appropriate selection available, observed trends of use from the continuous electronic counts did not precisely fit this national formula.

Extrapolations for manual counts have not been comprehensively tested for reliability and actual daily traffic volumes may vary based on land uses or user groups that deviate from NBPD's model or circumstances unique to the New Orleans area that impact local travel patterns. The New Orleans Pedestrian and Bicycle Count

[6] Available at http://pbriLA.org/research

Report, 2010-2011 discusses the divergence between the NBPD Project's patterns of use and the patterns of use observed by Eco-Counters in New Orleans in-depth, and concludes that patterns of use in New Orleans differ from all three climates modeled. Further research, potentially including expanded use of electronic counters in order to evaluate the efficacy of this extrapolation technique is necessary to better understand local patterns of use.

3.0 MANUAL COUNT DATA

This section summarizes the manual count data collected in 2013 and compares this data to that collected from 2010-2012, where previous years of data exist. It presents actual total counts (observed over a period of eight hours) as well as Estimated Daily Traffic (EDT) figures, and discusses mode share, commuting patterns, and compositional statistics for bicyclists and pedestrians (i.e. gender, helmet use, travel orientation, age, and race).

3.1 OBSERVED COUNT TOTALS: EXISTING COUNT SITES

2013 count data show an overall 6.3% increase in the total number of bicyclists and a 14.7% increase in the number of pedestrians observed at the 12 core count sites observed since 2012 (Tables 2 and 3). Overall, counters observed 145 more cyclists at these count sites than the previous year, and 902 more pedestrians. Although not as rapid an increase in cyclists observed as the previous two years of count data, these figures suggest that ridership is increasing steadily even though planned infrastructure improvements at some of the sites have not yet been completed. Pedestrians observed have increased steadily each year at these sites, possibly reflecting both ongoing improvements to the pedestrian network as well as an overall trend toward greater levels of walking as a form of transportation or for fitness.

An approximately 12% decrease in bicyclists and 19% increase in pedestrians at the two existing Jefferson Parish sites was observed (Tables 2 and 3). However, the total user numbers at these two sites have been consistently very low so this difference actually represents a very minor variation in usage.

Of these 14 sites, nine experienced 2012-2013 increases in cyclists, with the strongest percentage gains at Gentilly Boulevard, Camp Street, Papworth Avenue, and Esplanade Avenue. The greatest absolute increases in cyclists observed were at Gentilly Boulevard, Camp Street, and Esplanade Avenue.

Only four sites (Harrison Avenue, Royal Street, Metairie Hammond Highway, and Papworth Avenue) have experienced longer-term declines in use from 2010 to present. Of these, Metairie Hammond Highway, Papworth Avenue, and Harrison Avenue both represent relatively low-volume sites where planned infrastructure has not yet been constructed. Royal Street, on the other hand, the only count site which has had decreasing volumes of cyclists each year of the study, is located in a neighborhood with very high rates of bicycle commuting, and may therefore indicate a displacement of users to other nearby routes with improved facilities (such as St. Claude Avenue), rather than an actual decrease in bicycle use. Notably, the sites with the highest rates of increase in cyclists observed over the four-year period were St. Claude Avenue, where a bike lane was installed in 2008, and Gentilly Boulevard, where a bike lane was installed in 2010, suggesting a clear relationship between facility construction and use (discussed further in section 3.7).

Similarly, all but two of the 14 existing count sites have experienced four-year increases in pedestrian volumes observed, though figures have been somewhat more volatile for pedestrian activity. Strong 2012-2013 percentage increases were observed at Papworth Avenue, Harrison Avenue, Carondelet Street, Magazine Street (gateway), and Simon Bolivar Avenue. The greatest absolute increase in observed pedestrians was at Decatur Street, the most heavily trafficked count location by a wide margin, followed by substantial absolute increases at Simon Bolivar Avenue, St. Charles Avenue, and Harrison Avenue.

One of the two sites with an overall decrease, Metairie Hammond Highway, has minimal and incomplete pedestrian infrastructure and also experienced inclement weather on one of the 2013 observation days, possibly accounting for the apparent decline. The other, Gentilly Boulevard, has experienced a 4% decline overall for reasons that are not known. The most rapid increases in observed pedestrians over the four year period occurred on Esplanade Avenue and Decatur Street, both of which are located in mixed-use historic districts with regular tourist traffic. Harrison Avenue, a commercial corridor that has experienced robust growth over the last several years, has also seen a very strong increase in pedestrian activity.

Table 2: Observed Total Manual Count Volumes for Bicycles, Existing Count Sites, 2010-2013

Observed Total Manual Count Volumes, Bicycles, 2010-2013, Existing Count Sites

	Observed Volume				Absolute Change				*Percent Change*			
2010-2013 Count Sites	2010	2011	2012	2013	2010-2011	2011-2012	2012-2013	**2010-2013**	*2010-2011*	*2011-2012*	*2012-2013*	***2010-2013***
Harrison Ave***	27	33	48	23	6	15	-25	**-4**	*22.2%*	*45.5%*	*-52.1%*	***-14.8%***
Gentilly Blvd*	46	69	76	173	23	7	97	**127**	*50.0%*	*10.1%*	*127.6%*	***276.1%***
Esplanade Ave	105	117	185	217	12	68	32	**112**	*11.4%*	*58.1%*	*17.3%*	***106.7%***
Royal St	377	295	281	253	-82	-14	-28	**-124**	*-21.8%*	*-4.7%*	*-10.0%*	***-32.9%***
St. Claude Ave***	96	153	266	287	57	113	21	**191**	*59.4%*	*73.9%*	*7.9%*	***199.0%***
Magazine St (Uptown)	38	63	95	92	25	32	-3	**54**	*65.8%*	*50.8%*	*-3.2%*	***142.1%***
Camp St (Gateway)**	157	249	276	332	92	27	56	**175**	*58.6%*	*10.8%*	*20.3%*	***111.5%***
Magazine St(Gateway)**	153	223	285	266	70	62	-19	**113**	*45.8%*	*27.8%*	*-6.7%*	***73.9%***
Decatur St****	150	199	258	262	49	59	4	**112**	*32.7%*	*29.6%*	*1.6%*	***74.7%***
Simon Bolivar Ave (Gateway)**	86	150	175	161	64	25	-14	**75**	*74.4%*	*16.7%*	*-8.0%*	***87.2%***
Carondelet St (Gateway)	87	114	103	115	27	-11	12	**28**	*31.0%*	*-9.6%*	*11.7%*	***32.2%***
St. Charles Ave (Gateway)	191	229	269	281	38	40	12	**90**	*19.9%*	*17.5%*	*4.5%*	***47.1%***
Total	**1513**	**1894**	**2317**	**2462**	**381**	**423**	**145**	**949**	***25.2%***	***22.3%***	***6.3%***	***62.7%***
	Observed Volume				Absolute Change				*Percent Change*			
2011-2013 Count Sites		2011	2012	2013		2011-2012	2012-2013	**2011-2013**		*2011-2012*	*2012-2013*	***2011-2013***
Metairie Hammond Hwy		14	13	10		-1	-3	**-4**		*-7.1%*	*-23.1%*	***-28.6%***
Papworth Ave		6	4	5		-2	1	**-1**		*-33.3%*	*25.0%*	***-16.7%***
Total		**20**	**17**	**15**		-3	-2	**-5**		***-15.0%***	***-11.8%***	***-25.0%***

Notes:

*Bicycle facilities installed before April, 2011 on observed segment of facility

**Bicycle facilities installed before April, 2011 on connecting segment of facility

***Bicycle facilities already present in 2010, either on observed segment or on connecting segment

****Bicycle facilities installed before March, 2013 on connecting segment of facility

Observed total volumes represent a total of eight hours of counts per site

Table 3: Observed Total Manual Count Volumes, Pedestrians, Existing Count Sites, 2010-2013

Observed Total Manual Count Volumes, Pedestrians, 2010-2013, Existing Count Sites												
	Observed Volume				Absolute Change				*Percent Change*			
2010-2013 Count Sites	2010	2011	2012	2013	2010-2011	2011-2012	2012-2013	**2010-2013**	*2010-2011*	*2011-2012*	*2012-2013*	***2010-2013***
Harrison Ave***	124	117	164	285	-7	47	121	**161**	*-5.6%*	*40.2%*	*73.8%*	***129.8%***
Gentilly Blvd*	126	140	127	121	14	-13	-6	**-5**	*11.1%*	*-9.3%*	*-4.7%*	***-4.0%***
Esplanade Ave	230	289	607	573	59	318	-34	**343**	*25.7%*	*110.0%*	*-5.6%*	***149.1%***
Royal St	324	314	371	376	-10	57	5	**52**	*-3.1%*	*18.2%*	*1.3%*	***16.0%***
St. Claude Ave***	230	205	536	325	-25	331	-211	**95**	*-10.9%*	*161.5%*	*-39.4%*	***41.3%***
Magazine St (Uptown)	330	269	321	338	-61	52	17	**8**	*-18.5%*	*19.3%*	*5.3%*	***2.4%***
Camp St (Gateway)**	144	183	189	199	39	6	10	**55**	*27.1%*	*3.3%*	*5.3%*	***38.2%***
Magazine St (Gateway)**	159	187	229	334	28	42	105	**175**	*17.6%*	*22.5%*	*45.9%*	***110.1%***
Decatur St****	1,313	1,902	2,547	3,053	589	645	506	**1740**	*44.9%*	*33.9%*	*19.9%*	***132.5%***
Simon Bolivar Ave (Gateway)**	608	433	494	692	-175	61	198	**84**	*-28.8%*	*14.1%*	*40.1%*	***13.8%***
Carondelet St (Gateway)	81	101	92	140	20	-9	48	**59**	*24.7%*	*-8.9%*	*52.2%*	***72.8%***
St. Charles Ave (Gateway)	550	501	460	603	-49	-41	143	**53**	*-8.9%*	*-8.2%*	*31.1%*	***9.6%***
Total	**4219**	**4641**	**6137**	**7039**	**422**	**1496**	**902**	**2820**	***10.0%***	***32.2%***	***14.7%***	***66.8%***
	Observed Volume				Absolute Change				*Percent Change*			
2011-2013 Count Sites		2011	2012	2013		2011-2012	2012-2013	**2011-2013**		*2011-2012*	*2012-2013*	***2011-2013***
Metairie Hammond Hwy		20	32	7		12	-25	**-13**		*60.0%*	*-78.1%*	***-65.0%***
Papworth Ave		21	15	49		-6	34	**28**		*-28.6%*	*226.7%*	***133.3%***
Total		**41**	**47**	**56**		6	9	**15**		*14.6%*	*19.1%*	***36.6%***
Notes:	*Bicycle facilities installed before April, 2011 on observed segment of facility											
	**Bicycle facilities installed before April, 2011 on connecting segment of facility											
	***Bicycle facilities already present in 2010, either on observed segment or on connecting segment											
	****Bicycle facilities installed before March, 2013 on connecting segment of facility											
	Observed total volumes represent a total of eight hours of counts per site											

3.2 Estimated Daily Traffic for Existing Manual Count Sites, 2010-2013

In order to provide context to the numbers and allow for comparison of data with other count studies, count volumes observed by PBRI counters have been extrapolated to Estimated Daily Traffic (EDT) figures (Tables 4 and 5; Figures 9 and 10). This methodology was outlined above and is further elaborated in Appendix E.

Extrapolation of the data to a 24-hour period, while revealing trends identical to direct observations, somewhat reduces the impact of fluctuations observed during the eight hours of count collection on overall percent change, as higher usage rates during peak morning and afternoon hours would not necessarily translate to correspondingly higher rates of use at off peak times. For bicycles, a slight 2.6% EDT increase is calculated from 2012-2013 among the 12 core count sites, resulting in a 55.9% total increase from 2012-2013. For pedestrians, a 12.2% EDT increase is documented in those 12 sites from 2012-2013 for a total increase of 51.3% from 2010-2013.

Overall, bicycling trends have been more stable than pedestrian trends, with fewer rapid gains and decreases from year to year. However, both modes have experienced a four-year increase at most locations, with overall trends more apparent over this longer data range despite such volatility.

2012 Estimated Daily Traffic, Ranked

Overall, the top sites for estimated daily bicycle traffic in 2013 were St. Charles Avenue (Uptown), Camp Street (CBD gateway), St. Charles Avenue (CBD gateway), Loyola Avenue, and Magazine Street (CBD gateway) (Table 6). Just below these are a cluster of count locations in the French Quarter, Marigny, Bywater, and Bayou St. John neighborhoods. This is consistent with previous data suggesting strong rates of ridership into and out of the CBD and in bicycle-friendly downtown neighborhoods. In addition, the addition of new count sites with very high volumes of bicycle traffic demonstrates that bicycle activity is widespread, and demand for the new facilities on St. Charles Avenue, Loyola Avenue, and Esplanade Avenue is strong. Suburban and residential locations have the lowest bicycle EDT, consistent with previous years of data, while Uptown, Mid-City, Central City, and bridge locations tend to fall in the middle of the range.

As in previous years, Decatur Street's very high pedestrian EDT easily surpasses any other count site, while Simon Bolivar Avenue has surpassed Esplanade Avenue for the second highest figure (Table 7). High pedestrian EDT strongly corresponds elsewhere to major activity centers (such as the vicinity of Tulane and Broad), or mixed-use arterials with commercial attractions, pedestrian amenities such as trees, and/or transit. Again, the lowest pedestrian EDTs were found in environments that are clearly inhospitable to pedestrians, including the Airline/Williams intersection and both bridges, as well as suburban residential count locations with minimal pedestrian attractors.

Table 4: Estimated Daily Traffic, Bicycles, 2010-2013, Existing Count Sites

Estimated Daily Traffic (EDT), Bicycles, 2010-2013, Existing Count Sites

	EDT				Absolute Change				*Percent Change*			
2010-2013 Count Sites	2010	2011	2012	2013	2010-2011	2011-2012	2012-2013	**2010-2013**	*2010-2011*	*2011-2012*	*2012-2013*	***2010-2013***
Harrison Ave***	71	87	150	68	16	63	-82	**-3**	*22.5%*	*72.4%*	*-54.7%*	***-4.2%***
Gentilly Blvd*	151	217	250	505	66	33	255	**354**	*43.7%*	*15.2%*	*102.0%*	***234.4%***
Esplanade Ave	330	332	557	739	2	225	182	**409**	*0.6%*	*67.8%*	*32.7%*	***123.9%***
Royal St	1,056	901	832	712	-155	-69	-120	**-344**	*-14.7%*	*-7.7%*	*-14.4%*	***-32.6%***
St. Claude Ave***	437	395	824	827	-42	429	3	**390**	*-9.6%*	*108.6%*	*0.4%*	***89.2%***
Magazine St (Uptown)	121	163	262	263	42	99	1	**142**	*34.7%*	*60.7%*	*0.4%*	***117.4%***
Camp St (Gateway)**	598	850	1,073	1,202	252	223	129	**604**	*42.1%*	*26.2%*	*12.0%*	***101.0%***
Magazine St (Gateway)**	471	783	955	857	312	172	-98	**386**	*66.2%*	*22.0%*	*-10.3%*	***82.0%***
Decatur St	490	586	775	754	96	189	-21	**264**	*19.6%*	*32.3%*	*-2.7%*	***53.9%***
Simon Bolivar Ave (Gateway)**	332	565	638	579	233	73	-59	**247**	*70.2%*	*12.9%*	*-9.2%*	***74.4%***
Carondelet St (Gateway)	322	423	376	407	101	-47	31	**85**	*31.4%*	*-11.1%*	*8.2%*	***26.4%***
St. Charles Ave (Gateway)	665	748	977	953	83	229	-24	**288**	*12.5%*	*30.6%*	*-2.5%*	***43.3%***
Total	**5,044**	**6,050**	**7,669**	**7,866**	**1,006**	**1,619**	**197**	**2,822**	***19.9%***	***26.8%***	***2.6%***	***55.9%***

	EDT				Absolute Change				*Percent Change*			
2011-2013 Count Sites		2011	2012	2013		2011-2012	2012-2013	**2011-2013**		*2011-2012*	*2012-2013*	***2011-2013***
Metairie Hammond Hwy	n/a	41	50	26		9	-24	**-15**		*22.0%*	*-48.0%*	***-36.6%***
Papworth Ave	n/a	19	11	15		-8	4	**-4**		*-42.1%*	*36.4%*	***-21.1%***
Total		**60**	**61**	**41**		**1**	**-20**	**-19**		***1.7%***	***-32.8%***	***-31.7%***

Notes:

*Bicycle facilities installed before April, 2011 on observed segment of facility

**Bicycle facilities installed before April, 2011 on connecting segment of facility

***Bicycle facilities already present in 2010, either on observed segment or on connecting segment

Observed total volumes represent a total of eight hours of counts per site

Figure 9: Bicyclist Estimated Daily Traffic, 2013

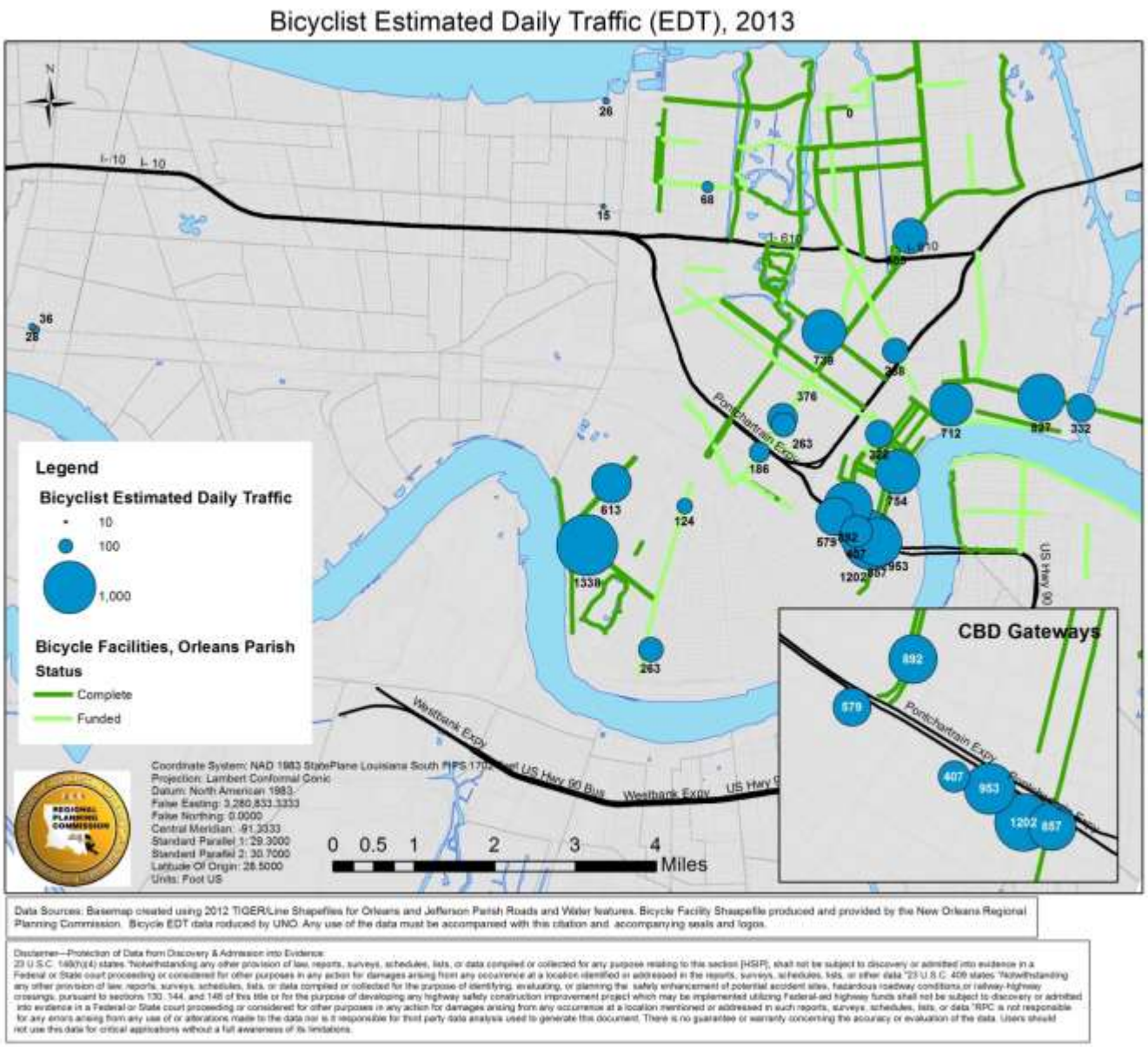


Table 5: Estimated Daily Traffic, Pedestrians, 2010-2013, Existing Count Sites

Estimated Daily Traffic (EDT), Pedestrians, 2010-2013, Existing Count Sites

	EDT				Absolute Change				*Percent Change*			
2010-2013 Count Sites	2010	2011	2012	2013	2010-2011	2011-2012	2012-2013	**2010-2013**	*2010-2011*	*2011-2012*	*2012-2013*	***2010-2013***
Harrison Ave***	325	307	514	844	-18	207	330	**519**	*-5.5%*	*67.4%*	*64.2%*	***159.7%***
Gentilly Blvd*	412	441	418	353	29	-23	-65	**-59**	*7.0%*	*-5.2%*	*-15.6%*	***-14.3%***
Esplanade Ave	723	819	1,828	1,951	96	1,009	123	**1,228**	*13.3%*	*123.2%*	*6.7%*	***169.8%***
Royal St	907	959	1,098	1,059	52	139	-39	**152**	*5.7%*	*14.5%*	*-3.6%*	***16.8%***
St. Claude Ave***	1,047	529	1,661	937	-518	1,132	-724	**-110**	*-49.5%*	*214.0%*	*-43.6%*	***-10.5%***
Magazine St (Uptown)	1,054	696	885	965	-358	189	80	**-89**	*-34.0%*	*27.2%*	*9.0%*	***-8.4%***
Camp St (Gateway)**	548	624	735	721	76	111	-14	**173**	*13.9%*	*17.8%*	*-1.9%*	***31.6%***
Magazine St (Gateway)**	490	657	767	1,076	167	110	309	**586**	*34.1%*	*16.7%*	*40.3%*	***119.6%***
Decatur St	4,289	5,600	7,650	8,782	1,311	2,050	1,132	**4,493**	*30.6%*	*36.6%*	*14.8%*	***104.8%***
Simon Bolivar Ave (Gateway)**	2,345	1,631	1,800	2,490	-714	169	690	**145**	*-30.4%*	*10.4%*	*38.3%*	***6.2%***
Carondelet St (Gateway)	300	375	336	495	75	-39	159	**195**	*25.0%*	*-10.4%*	*47.3%*	***65.0%***
St. Charles Ave (Gateway)	1,915	1,635	1,671	2,045	-280	36	374	**130**	*-14.6%*	*2.2%*	*22.4%*	***6.8%***
Total	**14,355**	**14,273**	**19,363**	**21,718**	**-82**	**5,090**	**2,355**	**7,363**	***-0.6%***	***35.7%***	***12.2%***	***51.3%***

	EDT				Absolute Change				*Percent Change*			
2011-2013 Count Sites		2011	2012	2013		2011-2012	2012-2013	**2011-2013**		*2011-2012*	*2012-2013*	***2011-2013***
Metairie Hammond Hwy	n/a	58	123	18		65	-105	**-40**		*112.1%*	*-85.4%*	***-69.0%***
Papworth Ave	n/a	66	42	145		-24	103	**79**		*-36.4%*	*245.2%*	***119.7%***
Total		**124**	**165**	**163**		**41**	**-2**	**39**		***33.1%***	***-1.2%***	***31.5%***

Notes:

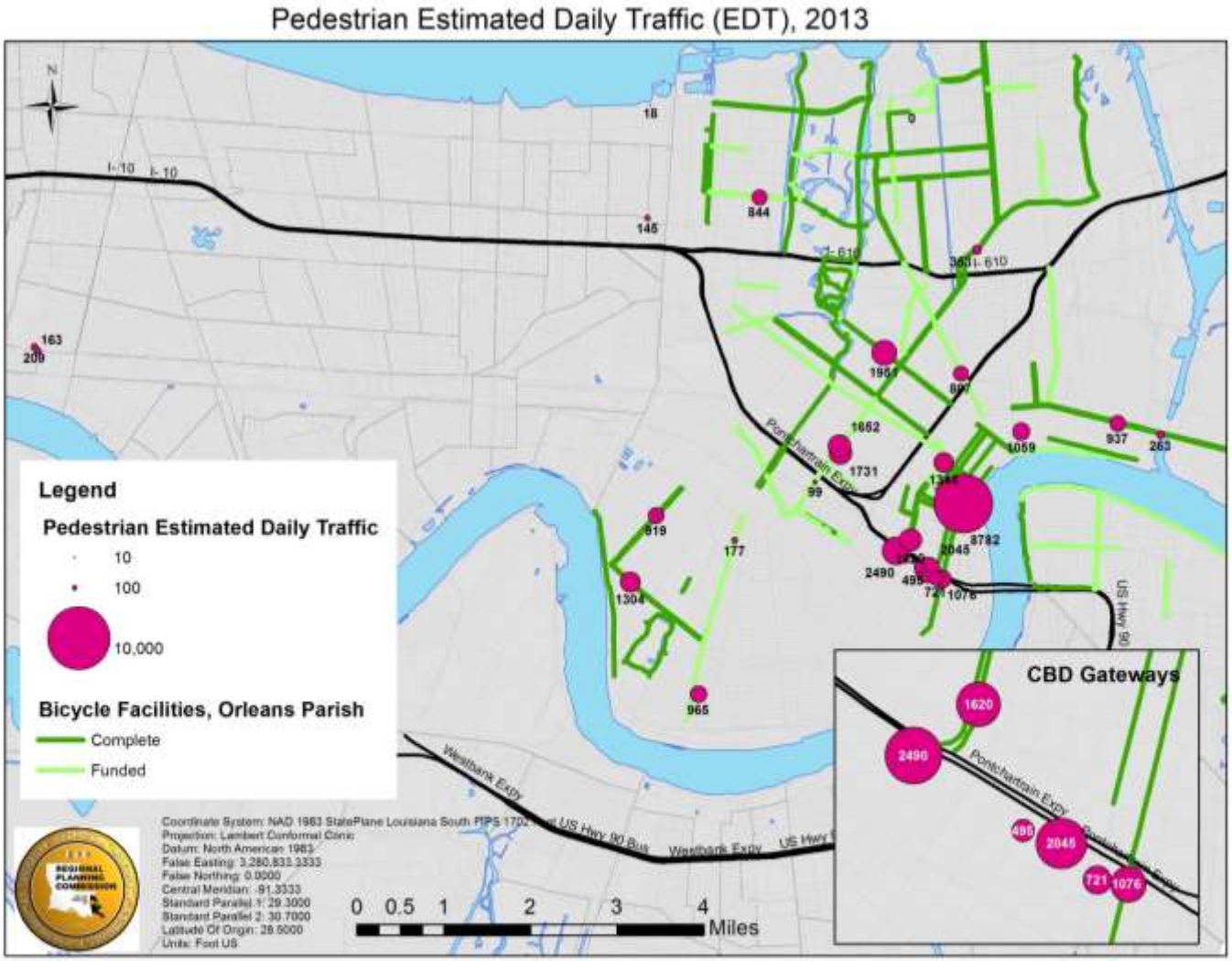
*Bicycle facilities installed before April, 2011 on observed segment of facility

**Bicycle facilities installed before April, 2011 on connecting segment of facility

***Bicycle facilities already present in 2010, either on observed segment or on connecting segment

Observed total volumes represent a total of eight hours of counts per site

Figure 10: Pedestrian Estimated Daily Traffic, 2013



Data Sources: Basemap created using 2012 TIGER/Line Shapefiles for Orleans and Jefferson Parish Roads and Water features. Bicycle Facility Shapefile produced and provided by the New Orleans Regional Planning Commission. Bicycle EDT data reduced by UNO. Any use of the data must be accompanied with this citation and accompanying seals and logos.

Disclaimer—Protection of Data from Discovery & Admission into Evidence:
23 U.S.C. 148(h)(4) states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data."23 U.S.C. 409 states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions,or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data."RPC is not responsible for any errors arising from any use of or alterations made to the data nor is it responsible for third party data analysis used to generate this document. There is no guarantee or warranty concerning the accuracy or evaluation of the data. Users should not use this data for critical applications without a full awareness of its limitations.

Table 6: 2013 Bicycle Estimated Daily Traffic

2013 Bicycle Estimated Daily Traffic

		Rank, by EDT			
Count Site	**EDT**	*2013*	*2012*	*2011*	*2010*
St. Charles Ave (Uptown)	1,338	*1*	*n/a*	*n/a*	*n/a*
Camp St (Gateway)	1,202	*2*	*1*	*2*	*3*
St. Charles Ave (Gateway)	953	*3*	*2*	*4*	*2*
Loyola Ave	892	*4*	*n/a*	*n/a*	*n/a*
Magazine St (Gateway)	857	*5*	*3*	*3*	*5*
St. Claude Ave	827	*6*	*5*	*8*	*6*
Decatur St	754	*7*	*6*	*5*	*4*
Esplanade Ave	739	*8*	*8*	*9*	*8*
Royal St	712	*9*	*4*	*1*	*1*
South Carrollton Ave	613	*10*	*n/a*	*n/a*	*n/a*
Simon Bolivar Ave (Gateway)	579	*11*	*7*	*6*	*7*
Gentilly Blvd	505	*12*	*11*	*10*	*10*
Carondelet St (Gateway)	407	*13*	*9*	*7*	*9*
Broad St	376	*14*	*n/a*	*n/a*	*n/a*
St. Claude Bridge	332	*15*	*n/a*	*n/a*	*n/a*
Basin St	322	*16*	*n/a*	*n/a*	*n/a*
St. Bernard Ave	288	*17*	*n/a*	*n/a*	*n/a*
Magazine St (Uptown)	263	*18*	*10*	*11*	*11*
Tulane Ave	263	*19*	*n/a*	*n/a*	*n/a*
Broad St Bridge	186	*20*	*n/a*	*n/a*	*n/a*
Nashville Ave	124	*21*	*n/a*	*n/a*	*n/a*
Harrison Ave	68	*22*	*12*	*12*	*12*
Airline Dr	36	*23*	*n/a*	*n/a*	*n/a*
Williams Blvd	28	*24*	*n/a*	*n/a*	*n/a*
Metairie Hammond Hwy	26	*25*	*14*	*13*	*n/a*
Papworth Ave	15	*26*	*15*	*15*	*n/a*

Table 7: 2013 Pedestrian Estimated Daily Traffic

2013 Pedestrian Estimated Daily Traffic

		Rank, by EDT			
Count Site	**EDT**	*2013*	*2012*	*2011*	*2010*
Decatur St	8,782	*1*	*1*	*1*	*1*
Simon Bolivar Ave (Gateway)	2,490	*2*	*3*	*3*	*2*
St. Charles Ave (Gateway)	2,045	*3*	*4*	*2*	*3*
Esplanade Ave	1,951	*4*	*2*	*5*	*7*
Tulane Ave	1,731	*5*	*n/a*	*n/a*	*n/a*
Broad St	1,652	*6*	*n/a*	*n/a*	*n/a*
Loyola Ave	1,620	*7*	*n/a*	*n/a*	*n/a*
Basin St	1,344	*8*	*n/a*	*n/a*	*n/a*
St. Charles Ave (Uptown)	1,304	*9*	*n/a*	*n/a*	*n/a*
Magazine St (Gateway)	1,076	*10*	*8*	*7*	*9*
Royal St	1,059	*11*	*6*	*4*	*6*
Magazine St (Uptown)	965	*12*	*7*	*6*	*4*
St. Claude Ave	937	*13*	*5*	*9*	*5*
South Carrollton Ave	919	14	*n/a*	*n/a*	*n/a*
Harrison Ave	844	*15*	*10*	*12*	*11*
St. Bernard Ave	807	*16*	*n/a*	*n/a*	*n/a*
Camp St (Gateway)	721	*17*	*9*	*8*	*8*
Carondelet St (Gateway)	495	*18*	*12*	*11*	*12*
Gentilly Blvd	353	*19*	*11*	*10*	*10*
St. Claude Avenue Bridge	263	20	*n/a*	*n/a*	*n/a*
Williams Blvd	209	*21*	*n/a*	*n/a*	*n/a*
Nashville Ave	177	*22*	*n/a*	*n/a*	*n/a*
Airline Dr	163	*23*	*n/a*	*n/a*	*n/a*
Papworth Ave	145	*24*	*15*	*14*	*n/a*
Broad St Bridge	99	25	*n/a*	*n/a*	*n/a*
Metairie Hammond Hwy	18	*26*	*14*	*15*	*n/a*

3.3 Observed Count Totals: New Count Sites

The 12 additional count sites included in the 2013 study indicate a wide range of usage levels for these facilities, ranging from very low bicycle use at the Jefferson Parish thoroughfares of Airline Drive and Williams Boulevard, to very high usage at St. Charles Avenue (Uptown), Loyola Avenue, and South Carrollton Avenue, all of which have recently-installed dedicated bike lanes (Table 8). Pedestrian patterns are similar, with low volumes in Jefferson Parish and at the residential Nashville Avenue count location, and high volumes on major arterials including Broad Street, Tulane Avenue, Loyola Avenue, St. Charles Avenue, and Basin Street (Table 9).

Notably, bicycle and pedestrian volumes at the St. Claude Avenue and Broad Street Bridge count sites, while relatively low, still represent a significant number of users given the inhospitable nature of both facilities, with estimated daily traffic (discussed below) of 332 bicyclists and 263 pedestrians per day on the St. Claude Bridge, and 186 bicyclists and 99 pedestrians estimated to cross the Broad Street Bridge each day.

Data from Williams Blvd, Airline Drive, Loyola Avenue, Tulane Avenue, and Broad Street (in addition to Simon Bolivar Avenue from the existing count locations) informs user trends for three key pedestrian crash hot spots (See: *New Orleans Multi-Tool Pedestrian Safety Study*, PBRI 2013). While bicycle volumes are relatively low at the two Jefferson Parish sites, crash incidences are among the highest in the region, suggesting that the existing pedestrian infrastructure is insufficient to safely allow access to this commercial hub. Similarly, substantial user volumes at the remaining two hot spots (Tulane/Broad and Loyola/Calliope) suggest that crashes are a function of high pedestrian demand in these areas, and infrastructure (particularly at intersections) that is insufficiently equipped to prioritize pedestrian needs accordingly.

Data for Basin Street, St. Bernard Avenue, and Nashville Avenue represents baseline data by which to evaluate future impacts resulting from the construction of new bicycle and improved pedestrian infrastructure expected to be completed later in 2013. In addition, user volumes for Tulane Avenue and South Broad Street may be useful in informing future anticipated improvements to these corridors in the coming years.

Table 8: Observed Total Volumes and EDT, Bicycles, 2013, New Count Sites

Observed Total Manual Count Volumes and Estimated Daily Traffic (EDT), Bicycles, 2013, New Count Sites		
Count Site	2013 Observed Volume	*2013 Estimated EDT*
Williams Blvd	9	*28*
Airline Dr	10	*36*
Loyola Ave*	267	*892*
Tulane Ave	71	*263*
S Broad St	112	*376*
St. Charles Ave (Uptown)*	441	*1,338*
St. Bernard Ave	88	*288*
Basin St	99	*322*
Nashville Ave	37	*124*
South Carrollton Ave*	206	*613*
Broad St Bridge	57	*186*
St. Claude Ave Bridge*	105	*332*
Notes: *Bicycle facilities installed before March 2013 on observed segment of facility		
**Bicycle facilities installed before March 2013 on connecting segment of facility		
Observed total volumes represent a total of eight hours of counts per site		

Table 9: Observed Total Volumes and EDT, Pedestrians, 2013, New Count Sites

Observed Total Manual Count Volumes and Estimated Daily Traffic (EDT), Pedestrians, 2013, New Count Sites		
Count Site	2013 Observed Volume	*2013 Estimated EDT*
Williams Blvd	68	*209*
Airline Dr	45	*163*
Loyola Ave*	485	*1,620*
Tulane Ave	468	*1,731*
S Broad St	492	*1,652*
St. Charles Ave (Uptown)*	430	*1,304*
St. Bernard Ave	247	*807*
Basin St	413	*1,344*
Nashville Ave	53	*177*
South Carrollton Ave*	309	*919*
Broad St Bridge	31	*99*
St. Claude Ave Bridge*	81	*263*
Notes: *Bicycle facilities installed before March 2013 on observed segment of facility		
**Bicycle facilities installed before March 2013 on connecting segment of facility		
Observed total volumes represent a total of eight hours of counts per site		

3.4 COMMUTING PATTERNS NEAR MANUAL COUNT SITES

Utilizing census tract-level data from the American Community Survey 2007-2011 five year estimates, commuting patterns were mapped in Figures 11 and 12. Active transportation commutes have increased slightly overall citywide from the previous year, but census-tract level patterns remain relatively stable. As in previous years analyzed, count sites with high observed volumes tend to be located in or near census tracts with higher rates of active transportation commuting.

The manual count sites with the highest 2013 bicyclist EDT (St. Charles Avenue, the CBD gateways of Camp Street, St. Charles Avenue, Loyola Avenue, and Magazine Street, as well as St. Claude Avenue in the Marigny/Bywater area) are within or adjacent to the census tracts with the highest rates of 2007-2011 bicyclist commuting (6% or more). One exception exists at the Gentilly Boulevard count location, where high 2013 ridership was observed, but 2011 bicyclist mode share for commuting is low.

Conversely, the lowest EDT sites (Papworth Avenue and Metairie Hammond Highway in Metairie, as well as Harrison Avenue and Nashville Avenue in Lakeview and Uptown, respectively) are near census tracts with low rates of commuting by bicycle (zero to 5%). Again, there are exceptions to this trend that were not observed in previous years of this study, such as a relatively high rate of bicycle commuting in the vicinity of Airline Drive and Williams Boulevard, but low rates of observed use, potentially indicating that cyclists are selecting alternate, more bike-friendly routes for their work trips.

For pedestrians, correlations between commute mode and observed use are difficult to discern, as in previous years. Land uses, neighborhood demographics, and infrastructure may all play a role in pedestrian activity observed. Although some sites in or adjacent to census tracts with high rates of pedestrian commuting (e.g. Decatur Street and St. Charles Avenue, as well as some CBD gateway sites) also represent areas of high observed pedestrian totals, this is not consistently the case. Other sites with high observed numbers of pedestrians likely reflect non-work pedestrian trips (e.g. shopping, recreation, and public services)

As observed in previous iterations of this count report, it is important to note that 5-year ACS estimates for the 2007-2011 period include years of rapid transition in New Orleans following Hurricane Katrina. It is therefore difficult to clearly discern trends in active transportation commuting at this geographic scale and draw relationships to PBRI count observations, due to the small sample sizes and high margins of error involved. Figure 13 in section 3.7 further examines the relationships between commute mode share, observed count volumes, and facility construction from 2004-2011.

Figure 11: Bicycle Commuters by Census Tract, 2007-2011

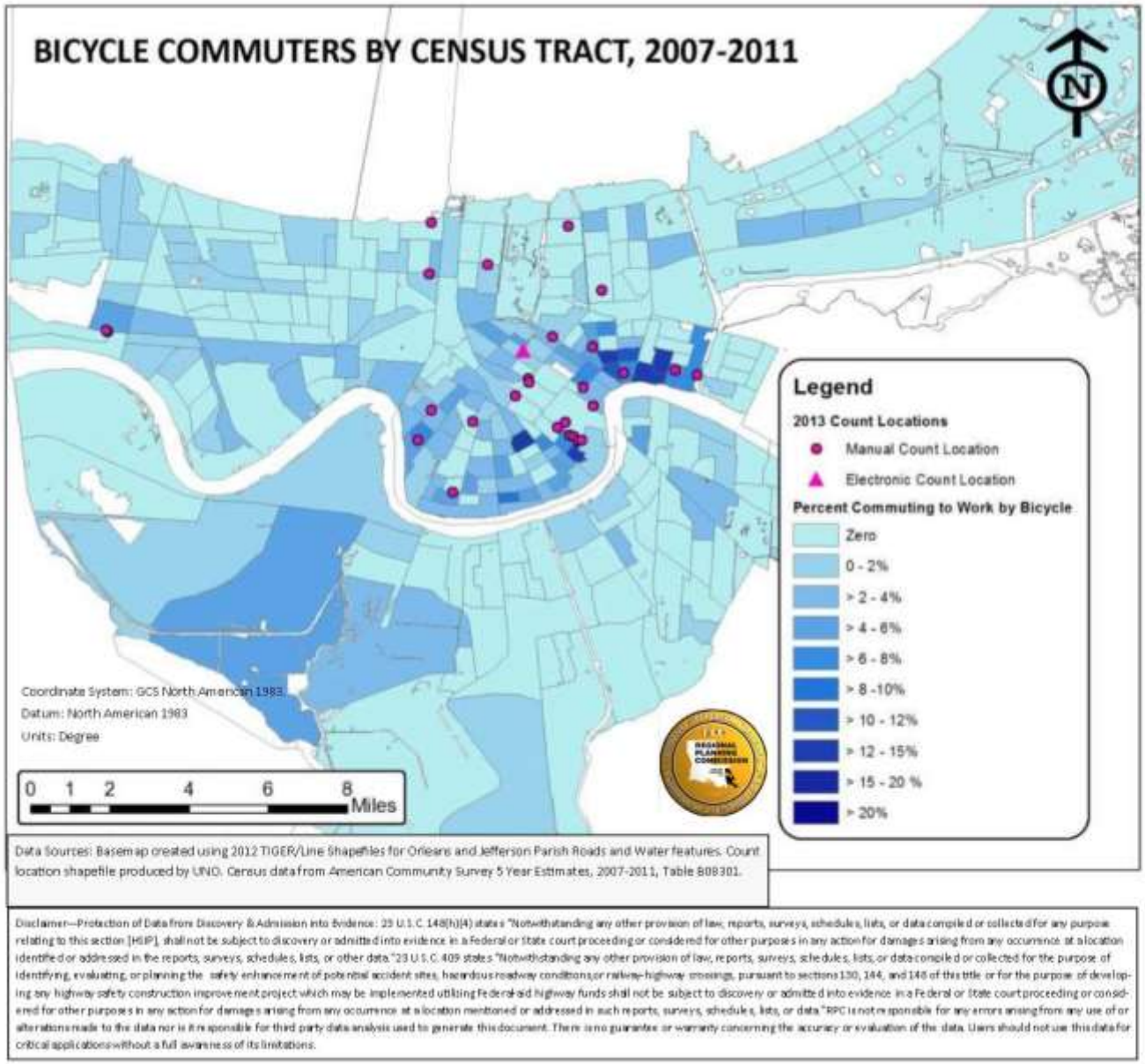
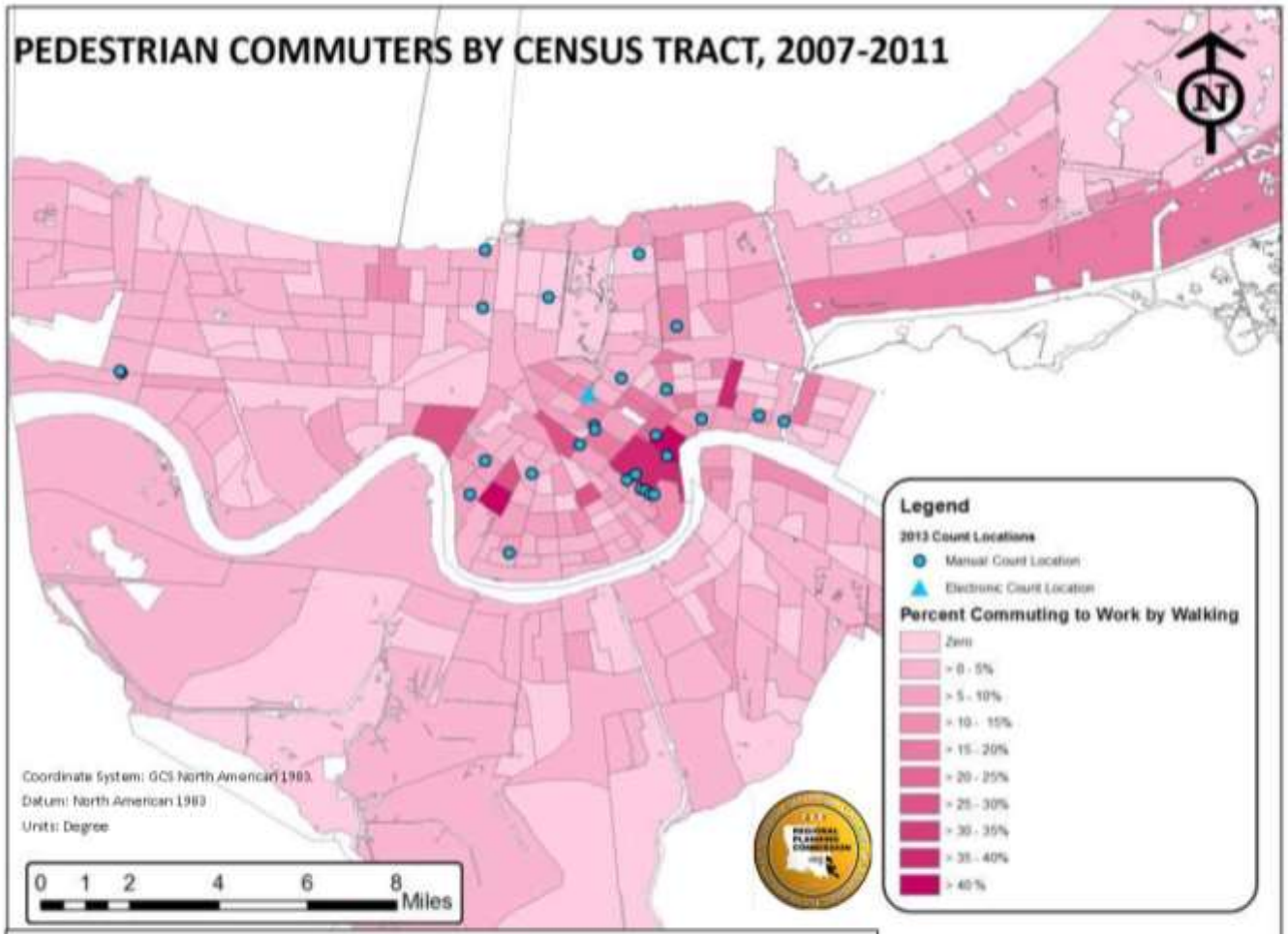


Figure 12: Pedestrian Commuters by Census Tract, 2007-2011



Data Sources: Basemap created using 2012 TIGER/Line Shapefiles for Orleans and Jefferson Parish Roads and Water features. Count location shapefile produced by UNO. Census data from American Community Survey 5 Year Estimates, 2007-2011, Table B08301. Any use of the data must be accompanied with this citation and accompanying seals and logos.

Disclaimer—Protection of Data from Discovery & Admission into Evidence: 23 U.S.C. 148(h)(4) states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section [HSIP], shall not be subject to discovery or admitted into evidence in a federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data." 23 U.S.C. 409 states "Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing federal-aid highway funds shall not be subject to discovery or admitted into evidence in a federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data." RPC is not responsible for any errors arising from any use of or alterations made to the data nor is it responsible for third party data analysis used to generate this document. There is no guarantee or warranty concerning the accuracy or evaluation of the data. Users should not use this data for critical applications without a full awareness of its limitations.

3.5 MODE SHARES FOR MANUAL COUNT SITES

The New Orleans Pedestrian and Bicycle Count Report, 2010-2011 examined mode share by comparing active transportation count data with automobile Average Daily Traffic (ADT) data collected by the New Orleans Regional Planning Commission at locations proximate to manual count sites. This analysis has been updated to include new count sites as well as more recent automobile count figures from both the Regional Planning Commission and Louisiana Department of Transportation and Development (Table 10). Using this data, we can construct a rough approximation of the mode share of selected facilities.

Notably, transit riders are not accounted for in this analysis. In addition, the bicycle and pedestrian EDT figures have an unknown margin of error as noted above, and motor vehicle counts are not necessarily from the same year as bicycle and pedestrian counts. Future data collection efforts should attempt to refine upon this analysis in order to more accurately capture all road users, including transit riders, and to coordinate the timing and location of future counts.

Combining estimated daily traffic for bicycling and walking with automobile ADT reveals that active transportation may account for a substantial percentage of overall daily traffic, particularly at points of entry and exit to the CBD. The highest active transportation mode shares are at Camp Street with 28%, up from 23% in 2011, and Magazine Street with 15.8%, an increase from 12.3% in 2011. Very low estimated mode shares are found in Jefferson Parish, and on the St. Claude Bridge. Elsewhere, active transportation mode shares fail to reach the levels found in and approaching downtown, but tend to be higher than the figures for ACS commute mode share described above, which only capture trips to and from employment.

Table 10: Approximate Active Transportation Mode Share for Select Sites

Approximate Mode Share for Select Sites						
	2013 Bicycle/ Pedestrian EDT		Motorized Vehicle ADT			Total
	#	%	#	Year	%	#
Camp St (Gateway)	1,923	27.9%	4,960	2009	72.1%	6,883
Magazine St (Gateway)	1,933	15.8%	10,287	2009	84.2%	12,220
St. Charles Ave (Uptown)	2,642	12.9%	17,839	2008	87.1%	20,481
Simon Bolivar Ave (Gateway)	3,069	11.5%	23,579	2009	88.5%	26,648
Loyola Ave	2,512	9.6%	23,579	2009	90.4%	26,091
St. Charles Ave (Gateway)	2,998	9.3%	29,180	2009	90.7%	32,178
Tulane Ave	1,994	8.5%	21,451	2010	91.5%	23,445
S Broad St	2,028	8.0%	23,244	2008	92.0%	25,272
St. Claude Ave	1,764	6.9%	23,714	2008	93.1%	25,478
S Carrollton Ave	1,532	6.0%	23,926	2008	94.0%	25,458
Gentilly Blvd	858	4.0%	20,366	2008	96.0%	21,224
Williams Blvd	237	2.5%	9,423	2011	97.5%	9,660
St. Claude Ave Bridge	595	1.6%	36,644	2010	98.4%	37,239
Airline Dr	199	0.7%	26,372	2011	99.3%	26,571
Metairie Hammond Hwy	44	0.3%	16,126	2011	99.7%	16,170
Source	http://www.norpc.org/traffic_counts.html; http://www.dotd.la.gov/highways/tatv/default.asp					

Table 11: Bicycle and Pedestrian Relative Mode Share, 2010-2013

Bicycle and Pedestrian Relative Mode Share, 2010-2013								
	2013		2012		2011		2010	
Site	% Bike	% Ped	% Bike	% Ped	% Bike	% Ped	% Bike	% Ped
Broad St Bridge	65%	35%	n/a	n/a	n/a	n/a	n/a	n/a
Camp St (Gateway)	63%	37%	59%	41%	58%	42%	52%	48%
Gentilly Blvd	59%	41%	37%	63%	33%	67%	27%	73%
Metairie Hammond Hwy	59%	41%	29%	71%	41%	59%	n/a	n/a
St. Claude Ave Bridge	56%	44%	n/a	n/a	n/a	n/a	n/a	n/a
St. Charles Ave (Uptown)	51%	49%	n/a	n/a	n/a	n/a	n/a	n/a
St. Claude Ave	47%	53%	33%	67%	43%	57%	29%	71%
Carondelet St (Gateway)	45%	55%	53%	47%	53%	47%	52%	48%
Magazine St (Gateway)	44%	56%	55%	45%	54%	46%	49%	51%
Nashville Ave	41%	59%	n/a	n/a	n/a	n/a	n/a	n/a
Royal St	40%	60%	43%	57%	48%	52%	54%	46%
South Carrollton Ave	40%	60%	n/a	n/a	n/a	n/a	n/a	n/a
Loyola Ave	36%	64%	n/a	n/a	n/a	n/a	n/a	n/a
St. Charles Ave (Gateway)	32%	68%	37%	63%	31%	69%	26%	74%
Esplanade Ave	27%	73%	23%	77%	29%	71%	31%	69%
St. Bernard Ave	26%	74%	n/a	n/a	n/a	n/a	n/a	n/a
Magazine St (Uptown)	21%	79%	23%	77%	19%	81%	10%	90%
Basin St	19%	81%	n/a	n/a	n/a	n/a	n/a	n/a
Simon Bolivar Ave (Gateway)	19%	81%	26%	74%	26%	74%	12%	88%
S Broad St	19%	81%	n/a	n/a	n/a	n/a	n/a	n/a
Airline Dr	18%	82%	n/a	n/a	n/a	n/a	n/a	n/a
Tulane Ave	13%	87%	n/a	n/a	n/a	n/a	n/a	n/a
Williams Blvd	12%	88%	n/a	n/a	n/a	n/a	n/a	n/a
Papworth Ave	9%	91%	21%	79%	22%	78%	n/a	n/a
Decatur St	8%	92%	9%	91%	9%	91%	10%	90%
Harrison Ave	7%	93%	23%	77%	22%	78%	18%	82%

Table 11 shows the relative mode shares for bicyclists and pedestrians at each count site from 2010-2013. As in previous years, the majority of count sites have a greater share of pedestrians than bicyclists. The exceptions to this in 2013 are the Broad St Bridge, Camp Street, Gentilly Blvd, Metairie Hammond Highway, the St. Claude Bridge, and St. Charles Avenue (Uptown), which were observed to have a greater number of bicyclists than pedestrians. Sites with very high relative pedestrian mode shares include Harrison Avenue and Decatur Street (both active commercial areas), Papworth Avenue and Williams Blvd (both of which had very low numbers of both), and Tulane Avenue (located at a transit hub and proximal to numerous public services and other pedestrian attractors. These figures are largely consistent with previous years of data, except where large increases or decreases in only one mode (such as Gentilly Blvd and St. Claude Avenue).

3.6 DEMOGRAPHIC AND BEHAVIORAL CHARACTERISTICS

This section summarizes the user characteristics of bicyclists and pedestrians observed in 2013, including gender, age category (adult versus child), race, travel orientation, and helmet use for bicyclists (Tables 12 and 13). Gender, helmet use, and travel orientation are important indicators of bicyclist safety and perceptions toward bicycling, while age group and race illustrate demographic variances in usership and highlight potential opportunities to target future safety and educational campaigns to the groups and neighborhoods that could best benefit from them.

Tables 15 and 16 break down these attributes by count location for bicycles and pedestrians respectively, highlighting how various characteristics shift dramatically by location.

Gender

As has been widely documented in the literature, the proportion of female bicyclists is a strong indicator of the perceived safety and bicycle-friendliness of a location. Higher percentages of women and girls indicate a more comfortable cycling environment for all users. To some extent, this may also be true of high female pedestrian activity in a given area, although less research exists documenting this subject. After three years of relatively stable ratios of males to females at the 14 core count sites (including the two Jefferson Parish sites for which counts began in 2011), 2013 saw a notable increase in female bicyclists and a sharp spike in female pedestrians. Female bicyclists increased from 28% of all cyclists at these sites to 31.1%, while female pedestrians increased from 42.4% of the total to 58.1%. As noted above, pedestrian count figures have tended to be more volatile than cyclist counts, therefore it is unclear whether this jump is indicative of a major shift in active transportation among women, or simply a circumstantial anomaly.

Notably, inclusion of the 12 new count sites in 2013 in these summary statistics reflects a much smaller overall change in the gender breakdown of users, with females representing 28.7% of all cyclists and 40.6% of all pedestrians counted, consistent with previous years of data for the smaller dataset. Increases at this core set of count sites, however, suggest that after several years of stagnation, active transportation use among women may be on the rise in the New Orleans area. Sites with the highest female bicyclist percentage include Metairie Hammond Highway (although again, this site has very low overall bicycle volumes), Harrison Avenue, St. Charles Avenue (Uptown), and Camp Street. Very low percentages of female cyclists are found at Airline Drive, the Broad Street Bridge, and Loyola Avenue. The last of these is surprising, as the literature has shown that female ridership tends to be higher on corridors with dedicated bicycle facilities, as Loyola now has. Future count studies should continue to track this facility for demographic shifts over time.

Count locations with the highest percentage of female pedestrians include Magazine Street, St. Charles Avenue, and Nashville Avenue, with women and girls constituting greater than 50% of users. Low female pedestrian percentage sites include Metairie Hammond Highway, the Broad Street Bridge, and Simon Bolivar Avenue each with less than 25% of users identified as female.

Table 12: Overall Bicyclist Composition, 2010-2013

Overall Bicyclist Composition, 2010-2013							
	Continuing Count Sites, 2010-2013						All 2013 Count Sites
	Percent of Total				*Percentage Point Change*		Percent of Total
	2010	2011	2012	2013	*2012-2013*	*2010-2013*	2013
Male Bicyclists	72.9%	72.1%	72.3%	69.0%	*-3.3%*	*-4.0%*	71.3%
Female Bicyclists	27.1%	27.9%	28.0%	31.1%	*3.0%*	*4.0%*	28.7%
White Bicyclists	70.3%	72.5%	73.1%	73.9%	*0.8%*	*3.6%*	69.7%
Black Bicyclists	19.3%	20.5%	21.7%	21.5%	*-0.1%*	*2.3%*	25.7%
Other Bicyclists	8.7%	7.0%	5.2%	4.6%	*-0.7%*	*-4.2%*	4.6%
Adult Bicyclists	n/a	98.7%	98.4%	98.1%	*-0.3%*	*n/a*	98.1%
Youth Bicyclists	n/a	1.3%	1.6%	1.5%	*-0.1%*	*n/a*	1.9%
Helmet Users	10.4%	16.3%	15.8%	20.9%	*5.1%*	*10.5%*	23.0%
Travel Orientation:							
Street - Right Way	75.5%	73.9%	80.2%	82.1%	*2.0%*	*6.7%*	81.0%
Street - Wrong Way	11.6%	9.7%	7.9%	7.3%	*-0.6%*	*-4.3%*	7.0%
Sidewalk	12.6%	16.1%	11.6%	10.4%	*-1.2%*	*-2.2%*	11.8%
Neutral Ground	0.4%	0.3%	0.3%	0.2%	*-0.1%*	*-0.2%*	0.2%

Notes: in 2010, At Harrison Ave site, race/ethnicity wasn't included in one of the four counts. Adult/Youth data not available for 2010.

Table 13: Overall Pedestrian Composition, 2010-2013

Overall Pedestrian Composition, 2010-2013							
	Existing Count Sites, 2010-2013						All 2013 Count Sites
	Percent of Total				*Percentage Point Change*		Percent of Total
	2010	2011	2012	2013	*2012-2013*	*2010-2013*	2013
Male Pedestrians	60.0%	60.3%	57.6%	41.9%	*-15.7%*	*-18.1%*	59.4%
Female Pedestrians	40.0%	39.7%	42.4%	58.1%	*15.7%*	*18.1%*	40.6%
White Pedestrians	57.1%	65.5%	62.0%	67.0%	*5.0%*	*9.9%*	58.4%
Black Pedestrians	32.0%	28.1%	31.2%	27.6%	*-3.6%*	*-4.4%*	36.1%
Other Pedestrians	8.1%	6.3%	6.8%	5.4%	*-1.4%*	*-2.8%*	5.5%
						2011-2013	
Adult Pedestrians	n/a	96.4%	96.1%	96.2%	*0.1%*	*-0.2%*	95.4%
Youth Pedestrians	n/a	3.6%	3.9%	3.8%	*-0.1%*	*0.2%*	4.6%
Travel Orientation:						*2011-2013*	
Sidewalk	n/a	92.6%	92.9%	92.7%	*-0.2%*	*0.1%*	91.3%
Street	n/a	4.7%	4.8%	4.9%	*0.1%*	*0.3%*	4.8%
Neutral Ground	n/a	2.8%	2.3%	2.4%	*0.1%*	*-0.4%*	3.9%

Notes: in 2010, race/ethnicity wasn't included in one of the four counts at Harrison Avenue. No data on travel orientation was collected for pedestrians in 2010. Adult/Youth data not available for 2010.

Race

Racial characteristics of users, categorized as "black," "white," or "other," did not diverge substantially from data collected in previous years. These categories, assigned by the student observers, are highly subjective and used here for descriptive purposes only.

Among the existing 14 count sites, 73.9% of cyclists were identified as white 21.5% as black, and 4.6% as other. Over the four year period from 2010-2013, this reflects a slight increase in the percentage of white and black bicyclists, and a slight decrease in those identified as "other." Among all 26 count locations, a slightly smaller percentage were identified as white (69.7%) and a greater percentage were identified as black (25.7%), likely reflective in part of the demographics of the neighborhoods surrounding the new count locations.

Similarly, pedestrian race statistics appear to be even more closely tied to the specific demographic characteristics of the neighborhoods adjacent to the count sites. Among the 14 existing count sites, there was a 5% increase in 2013 in the percentage of white pedestrians identified, with corresponding decreases in those identified as black or other. This is consistent with four-year trends indicating a greater percentage of pedestrians that are white overall. As with cyclists however, when all 26 count locations for 2013 are included, we see a greater share of pedestrians identified as black (36.1%).

Age

As in previous years of data, the percentage of bicyclists and pedestrians identified as youths, i.e. 14 or younger, remains very small, at 1.5% of bicyclists and 3.8% of pedestrians. Observers are instructed in techniques for assessing age category, however it remains a subjective determination. Exceptions include Harrison Avenue, where 21.7% of all cyclists observed were identified as youths. Notably, relatively high percentages of youth cyclists were identified at Nashville Avenue (5.4%) and St. Bernard Avenue (4.5%), on segments where future bicycle facilities are planned. In addition, 4.5% of cyclists crossing the St. Claude Avenue Bridge, a gap point in the St. Claude bicycle lane on either side of the bridge, of were identified as youths. Each of these three corridors would more safely serve their existing young users through the provision of dedicated bicycle facilities. Among pedestrians, Metairie Hammond Highway, St. Bernard Avenue, St. Claude Avenue, and the St. Claude Avenue bridge all noted percentages of youths greater than 15%, the latter three of which are all within walking distance of one or more schools.

Helmet Use

Although helmet use is not mandatory among adults in Louisiana, helmet use is an important indicator of bicyclist safety. After a slight decrease in helmet use from 2011 to 2012, the percentage of cyclists wearing helmets observed at the 14 existing count sites increased by 5.1% in 2013 to 20.9%, an overall 10.5% increase over the four year period from 2010 to 2013. Among all 26 count sites, the total percentage of helmet wearers was 23%, an encouraging trend, though still well below leading cities for cycling nationwide. The highest rates of helmet use were observed at Harrison Avenue (60.9%), Papworth Avenue (60%), St. Charles Avenue (Uptown) (44%), Nashville Avenue (43.2%), Metairie Hammond Highway (40%), and Gentilly Boulevard (32.4%). Very low rates of helmet use were observed at Airline Drive (0%), Williams Boulevard (0%), Simon Bolivar Avenue (6.2%), Tulane Avenue (8.5%), and Broad St (8.9%). Areas with particularly low helmet use rates should be identified as targets for future campaigns promoting cyclist safety.

Travel Orientation

Travel orientation describes the direction and surface on which pedestrians and bicyclists are traveling. Bicyclists were sorted into the following categories for travel orientation: Right Way Riders (traveling in the street with the flow of traffic); Wrong Way Riders (traveling in the street against the flow of traffic); Sidewalk Riders; and Neutral Ground (median) Riders. Pedestrians are categorized as traveling on the sidewalk (or, in the case of Papworth Avenue which lacks sidewalks, on the curb), in the street, or on the Neutral Ground. Bicycling in the wrong direction or on the sidewalk or neutral ground, in addition to being illegal, significantly reduces safety for cyclists, drivers, and pedestrians alike, while pedestrians observed in the street may indicate gaps or inadequacies in the pedestrian infrastructure in the area.

Among bicyclists at the 14 existing count sites, there was a 2% increase in right-way, on-street riding (from 80.2% to 82.1%) from 2012 to 2013 and a corresponding decrease in each other category. Over the four-year period from 2010-2013, right-way riding increased by 6.7%, an encouraging trend. In particular, wrong-way on-street riding has decreased by 4.3%, while sidewalk riding has decreased at a slower rate. Among all 26 count locations, right-way riding is slightly lower at 81%, with slightly higher rates of sidewalk riding. Cyclist use of the neutral ground, where applicable, remains very low at .2%. Where dedicated bike lanes exist, their use is very high among on-street riders (87-99%), with most exceptions observed outside of the lane due to obstructions or in preparation for a left turn.

Sites with the highest rates of right-way, on-street cycling include: Nashville Avenue (100%), St. Charles Avenue (Uptown) (99.1%), Esplanade Avenue (90.8%), South Carrollton Avenue (90.8%), and Royal Street (90.5%). Count locations with the highest rates of wrong-way, on-street cycling include: Airline Drive (40%), Metairie Hammond highway (30%), Papworth Avenue (20%), Simon Bolivar Avenue (26.1%) and St. Bernard Avenue (23.9%). A high percentage of sidewalk cycling was observed on Williams Boulevard (100%), Tulane Avenue (50.7%), Airline Drive (50%), Harrison Avenue (43.5%), and Broad Street (33%).

Among pedestrians at the existing 14 count locations, sidewalk use decreased by a tiny margin (0.2%), for an overall 0.1% increase from 2011-2013 (the years for which pedestrian travel orientation was collected). Neutral ground and street travel have remained similarly stable, with a 0.4% decrease in neutral ground use over the three year period, perhaps attributable to the Regional Transit Authority's 2012 campaign to reduce streetcar collisions by discouraging walking and jogging on the tracks. Among all 26 count sites, on-street travel orientation is comparable at 4.8%, while neutral ground travel makes up a higher percentage of the total (due to the inclusion of several more streets that have medians) at 3.9%. A few sites in particular have very high rates of non-sidewalk pedestrian travel orientation. On Metairie Hammond Highway, an absence of concrete sidewalks left 100% of pedestrians walking on the street, while 17.6% of pedestrians at Simon Bolivar Avenue, 17.8% at Airline Drive, and 17.1% at Carondelet Street were observed walking in the roadway. Significant use of the neutral ground occurred at St. Charles Avenue (Uptown) (28.8%), Harrison Avenue (15.4%, where the neutral ground is used for parking), and South Carrollton Avenue (15.2%).

As identified in the New Orleans Pedestrian and Bicycle Count Report 2012, there remain clear correlations between bicyclist race and travel orientation/helmet use (Table 14). Right-way, on street ridership among both black and white cyclists increased in 2013 to 63.3% and 88.2% respectively, while correct travel orientation for those identified as "other" dropped to 67.9%. Both cyclists identified as "other" and black continue to be observed riding against traffic or on the sidewalk at greater rates than white cyclists.

In addition, disparities in helmet use remain sharp; while helmet use increased significantly from 2012 to 2013 among white riders, helmet use among cyclists identified as black and "other" has held steady or even decreased. Targeting future education efforts to the areas and populations at an increased safety risk from lack of helmet use or improper travel orientation is recommended to counteract these findings.

Table 14: Bicyclist Travel Orientation and Helmet Use by Race

Bicyclist Travel Orientation and Helmet Use by Race						
	White		Black		Other	
	2012	2013	2012	2013	2012	2013
Right Way	87.2%	88.2%	58.2%	63.3%	74.2%	67.9%
Wrong Way/Sidewalk/Neutral Ground	12.8%	11.8%	41.8%	36.7%	25.8%	32.1%
Helmet Use	20.1%	31.6%	2.3%	2.0%	10.5%	6.0%

Table 15: Bicyclist Composition by Count Site, 2013

Bicyclist Composition, by Count Site, 2013 (Ordered by EDT)													
	Gender		Race			Age Group		Helmet Use	Travel Orientation				
Site	Female	Male	White	Black	Other	Adult	Youth	%	Street-Right Way	Street-Wrong Way	Sidewalk	Neutral Ground	Bike Lane Use (of on-street riders)
St. Charles Ave (Uptown)*	41.0%	59.0%	88.0%	8.4%	3.6%	98.2%	1.8%	44.0%	99.1%	0.2%	0.7%	0.0%	98.6%
Camp St (Gateway)****	40.7%	59.3%	87.7%	8.7%	3.6%	99.4%	0.6%	22.6%	84.3%	0.0%	15.7%		
St. Charles Ave (Gateway)	27.1%	73.0%	78.3%	18.5%	3.2%	98.6%	1.4%	27.4%	86.5%	1.4%	10.7%	**1.4%**	
Loyola Ave*	9.7%	90.3%	45.7%	49.8%	4.5%	98.1%	1.9%	22.9%	74.9%	10.5%	13.9%	0.8%	86.8%
Magazine St (Gateway)****	35.3%	64.7%	82.7%	9.4%	7.9%	99.6%	0.4%	24.4%	82.3%	6.8%	10.9%		
St. Claude Ave*****	31.7%	68.3%	59.2%	37.3%	3.5%	97.6%	2.4%	16.4%	87.5%	7.7%	4.5%	0.4%	96.3%
Decatur St****	28.6%	71.4%	69.5%	20.2%	10.3%	98.5%	1.5%	11.8%	77.1%	5.7%	17.2%		
Esplanade Ave	31.3%	68.7%	86.2%	10.6%	3.2%	99.5%	0.5%	28.1%	90.8%	0.9%	8.3%	0.0%	
Royal St	33.2%	66.8%	90.5%	5.1%	4.4%	97.1%	2.9%	13.4%	90.5%	7.9%	1.6%		
S Carrollton Ave*	27.7%	72.8%	71.4%	21.4%	7.3%	100.0%	0.0%	26.2%	90.8%	1.9%	7.3%	0.0%	**98.9%**
Simon Bolivar Ave (Gateway)****	11.8%	88.2%	18.0%	81.4%	6.2%	98.1%	1.9%	6.2%	55.3%	26.1%	18.6%	0.0%	
Gentilly Blvd***	34.1%	65.9%	75.1%	21.1%	1.7%	97.1%	2.9%	32.4%	85.0%	14.6%	0.6%	0.0%	96.5%
Carondelet St (Gateway)	22.6%	77.4%	59.1%	31.3%	9.6%	97.4%	2.6%	13.9%	72.2%	20.9%	7.0%		
S Broad St	10.7%	89.3%	37.5%	56.3%	6.3%	96.4%	3.6%	8.9%	51.8%	13.4%	33.0%		
Basin St	25.3%	74.8%	58.6%	34.3%	7.1%	97.0%	3.0%	23.2%	71.7%	17.2%	11.1%	0.0%	
St. Claude Bridge**	20.0%	75.2%	58.1%	41.0%	1.0%	95.2%	4.8%	11.4%	71.4%	0.0%	28.6%		
St. Bernard Ave	21.0%	79.0%	61.0%	38.0%	1.0%	95.5%	4.5%	14.8%	59.1%	23.9%	17.1%		
Magazine St (Uptown)	26.1%	73.9%	76.1%	22.8%	1.1%	97.8%	2.2%	27.2%	76.1%	4.4%	19.6%		
Tulane Ave	16.9%	83.1%	50.7%	47.9%	1.4%	98.6%	1.4%	8.5%	43.7%	5.6%	50.7%		
Broad St Bridge	8.8%	91.2%	35.1%	49.1%	15.8%	100.0%	0.0%	12.3%	70.2%	8.8%	21.1%		
Nashville Ave	35.1%	64.9%	78.4%	16.2%	5.4%	94.6%	5.4%	43.2%	100.0%	0.0%	0.0%	0.0%	
Harrison Ave*****	43.5%	56.5%	91.3%	8.7%	0.0%	78.3%	21.7%	60.9%	56.5%	0.0%	43.5%		
Airline Dr	0.0%	100.0%	20.0%	80.0%	0.0%	90.0%	10.0%	0.0%	10.0%	40.0%	50.0%		
Williams Blvd	11.1%	88.9%	22.2%	66.7%	11.1%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%		
Metairie Hammond Hwy	70.0%	30.0%	100.0%	0.0%	0.0%	90.0%	10.0%	40.0%	70.0%	30.0%	0.0%		
Papworth Ave	20.0%	80.0%	80.0%	20.0%	0.0%	100.0%	0.0%	60.0%	80.0%	20.0%	0.0%		

Notes: *Bicycle facilities installed before March 2013 on observed segment of facility ; **Bicycle facilities installed before March 2013 on connecting segment of facility
***Bicycle facilities installed before April, 2011 on observed segment of facility ; ****Bicycle facilities installed before April, 2011 on connecting segment of facility
*****Bicycle facilities already present in 2010, either on observed segment or on connecting segment

Table 16: Pedestrian Composition by Count Site 2013

Pedestrian Composition, by Count Site, 2013 (Ordered by EDT)										
	Gender		Race			Age Group		Travel Orientation		
Site	Female	Male	White	Black	Other	Adult	Youth	Sidewalk	Street	Neutral Ground
Decatur St	47.2%	52.7%	80.4%	13.1%	6.5%	98.1%	1.9%	98.7%	1.3%	
Simon Bolivar Ave (Gateway)	24.1%	75.9%	3.8%	94.8%	1.5%	96.7%	3.3%	78.3%	17.6%	4.1%
St. Charles Ave (Gateway)	31.7%	68.3%	70.5%	25.2%	4.3%	98.2%	1.8%	85.4%	2.2%	12.4%
Esplanade Ave	47.0%	53.1%	73.0%	21.6%	5.4%	96.2%	3.8%	94.9%	4.5%	0.5%
Tulane Ave	36.8%	63.3%	29.7%	65.7%	4.7%	96.4%	3.6%	94.9%	4.9%	0.2%
S Broad St	34.8%	65.2%	13.4%	79.7%	6.9%	93.3%	6.7%	93.3%	4.9%	1.8%
Loyola Ave	34.0%	66.0%	32.8%	61.0%	6.2%	97.5%	2.5%	94.0%	3.7%	2.3%
Basin St	33.4%	66.6%	42.4%	55.0%	2.7%	93.5%	6.5%	86.9%	5.8%	7.3%
St. Charles Ave (Uptown)	52.8%	47.2%	84.9%	7.9%	7.2%	98.4%	1.6%	68.4%	2.8%	28.8%
Magazine St (Gateway)	34.7%	65.3%	75.8%	18.0%	6.3%	97.9%	2.1%	94.3%	5.7%	
Royal St	37.5%	62.5%	85.9%	9.8%	4.3%	97.3%	2.7%	93.9%	6.1%	
Magazine St (Uptown)	62.7%	37.3%	88.2%	7.4%	4.4%	95.3%	4.7%	97.0%	3.0%	
St. Claude Ave	36.3%	63.7%	13.5%	85.2%	1.2%	81.5%	18.5%	80.9%	13.2%	5.9%
S Carrollton Ave	46.3%	53.7%	68.9%	18.8%	12.3%	96.4%	3.6%	82.2%	2.6%	15.2%
Harrison Ave	37.5%	62.5%	86.0%	6.3%	7.7%	90.9%	9.1%	80.7%	3.9%	15.4%
St. Bernard Ave	25.9%	74.1%	5.7%	94.3%	0.0%	76.1%	23.9%	95.6%	3.6%	0.8%
Camp St (Gateway)	38.7%	61.3%	67.3%	23.6%	9.1%	98.5%	1.5%	99.0%	1.0%	
Carondelet St (Gateway)	35.0%	65.0%	50.7%	40.0%	9.3%	93.6%	6.4%	82.9%	17.1%	
Gentilly Blvd	46.3%	53.7%	14.9%	83.5%	1.7%	85.1%	14.9%	95.0%	5.0%	0.0%
St. Claude Ave Bridge	27.2%	72.8%	18.5%	80.3%	1.2%	82.7%	17.3%	95.1%	4.9%	
Williams Blvd	30.9%	69.1%	27.9%	70.6%	1.5%	85.3%	14.7%	89.7%	4.4%	5.9%
Nashville Ave	56.6%	43.3%	66.0%	20.8%	13.2%	96.2%	3.8%	90.6%	9.4%	0.0%
Airline Dr	44.4%	55.6%	11.1%	86.7%	1.1%	86.7%	13.3%	77.8%	17.8%	4.4%
Papworth Ave	46.9%	53.1%	77.6%	14.3%	8.2%	100.0%	0.0%	93.9%	6.1%	
Broad St Bridge	16.1%	83.9%	32.3%	58.1%	9.7%	90.3%	9.7%	83.9%	16.1%	
Metairie Hammond Hwy	14.3%	85.7%	100.0%	0.0%	0.0%	71.4%	28.6%	0.0%	100.0%	

3.7 IMPACT OF BICYCLE FACILITIES ON USERSHIP

Previous PBRI pedestrian and bicycle count reports have attempted to provide a preliminary evaluation of the impacts of new facility construction on active transportation in the New Orleans area by looking at relative change in bicyclist and pedestrian Estimated Daily Traffic, as well as the percentage change in helmet use, female cyclists, and right-way travel at locations with or adjacent to bicycle facilities compared to sites with no facilities present or nearby. Relative change for each category from 2010-2013 is displayed in Table 17. Figures in this evaluation differ from those identified in the New Orleans Pedestrian and Bicycle Count Report 2012 due to changes in facility presence (Decatur Street) and the elimination of Paris/Burbank, Metairie Hammond Highway, and Papworth Avenue from the dataset.

In the first column of Table 17, "Bike Facilities Present" includes those count sites among the 12 core sites which have been counted since 2010 that have any type of marked bicycle facility along the actual segment under observation, including bike lanes and shared use lane markings. These sites include Camp Street (Shared use lane), Magazine Street (Gateway, shared use lane), Gentilly Boulevard (bike lane), and St. Claude Avenue (bike lane). The next column, "bike facilities present or adjacent," includes these four count locations, as well as Simon Bolivar Avenue (connection to Loyola Avenue bike lane), Harrison Avenue (connection to Harrison Avenue bike facilities at City Park), and Decatur Street (connection to shared use lane marking on contiguous blocks of Decatur Street, installed in 2012).

All other count locations are included in the third column, where no bicycle facilities are currently present or adjacent. Sites with bicycle facilities present or adjacent saw their bicycle EDT increase at a much more rapid rate than those with no nearby bicycle facilities from 2010 to 2013, although the rate of increase was much slower in all categories from 2012-2013. This difference is particularly pronounced for count locations where bicycle facilities are present on the observed segment, with a 104.6% four-year increase, compared to an 87.9% increase for those with facilities present or adjacent, and only 23.3% increase at locations with no facilities present or nearby.

Trends describing the relationship between presence of bicycle facilities and cyclist behavior are difficult to discern from this data, and may require additional years of data collection and inclusion of a greater number of count locations in this analysis to identify strong correlations. However, it is notable that helmet use has increased by 13.9% at locations where facilities exist, exceeding increases over the four-year period for all other count locations. Interestingly, from 2012 to 2013, helmet use increased by the greatest margin (8.1%) at locations with no facilities at all, potentially indicating a more widespread acceptance of helmet use and/or greater mobility of more cautious cyclists, previously reluctant to travel on roadways without marked facilities.

Table 17: Change in Site Statistics by Presence of Bicycle Facilities, 2010-2013

Change in Site Statistics by Presence of Bicycle Facilities 2010-2013					
		Bike Facilities Present	Bike Facilities Present or Adjacent	No Nearby Bicycle Facilities	All Facilities
Percent Change in Bicyclist EDT	2010-2011	35.5%	36.6%	2.9%	**19.9%**
	2011-2012	38.2%	33.9%	17.0%	**26.8%**
	2012-2013	9.3%	2.7%	2.3%	**2.6%**
	2010-2013	**104.6%**	**87.9%**	**23.3%**	**55.9%**
Percent Change in Helmet Use	2010-2011	6.0%	6.8%	5.0%	5.7%
	2011-2012	2.9%	0.6%	-2.5%	-0.7%
	2012-2013	5.0%	3.6%	8.1%	5.4%
	2010-2013	**13.9%**	**11.0%**	**10.6%**	**10.4%**
% Point Change in Percentage of Female Cyclists	2010-2011	-1.7%	0.8%	2.0%	1.3%
	2011-2012	0.0%	0.0%	1.3%	0.5%
	2012-2013	6.3%	4.7%	-1.0%	2.4%
	2010-2013	**4.6%**	**5.4%**	**2.3%**	**4.2%**
% Change in Percentage of Cyclist Right Way Travel	2010-2011	-1.9%	-2.7%	0.8%	-1.5%
	2011-2012	10.7%	9.2%	4.4%	7.1%
	2012-2013	3.5%	0.2%	4.0%	1.7%
	2010-2013	**12.2%**	**6.7%**	**9.2%**	**7.2%**
Percent Change in Pedestrian EDT	2010-2011	-9.9%	3.5%	-8.5%	-0.6%
	2011-2012	59.1%	38.4%	29.8%	35.7%
	2012-2013	-13.8%	12.2%	12.0%	12.2%
	2010-2013	**23.6%**	**60.8%**	**33.0%**	**51.3%**

The data also suggest that presence of facilities or proximity to facilities has a slight positive impact on the percentage of female cyclists, with a 5.4 percentage point increase in the percentage of female cyclists at such sites, compared to a 2.3 percentage point increase at sites with no nearby facilities. This trend was particularly clear from 2012-2013, where sites with facilities saw the greatest increase, followed by sites with facilities present or adjacent, whereas sites with no nearby facilities actually experienced a percentage point decrease in the percentage of females cycling.

Travel orientation trends show similar results, though these are complicated by the fact that travel orientation appears to also be closely related to demographic composition of neighborhoods; wrong-way travel persists in some areas even with the installation of bike lanes. However, overall, right-way travel has increased by the greatest margin at sites with facilities present, whereas proximity to nearby facilities appears to have minimal impact. Continued efforts to encourage correct travel orientation are needed to continue progress toward higher rates of right-way travel, and to avoid safety issues related to improper use of streets and sidewalks.

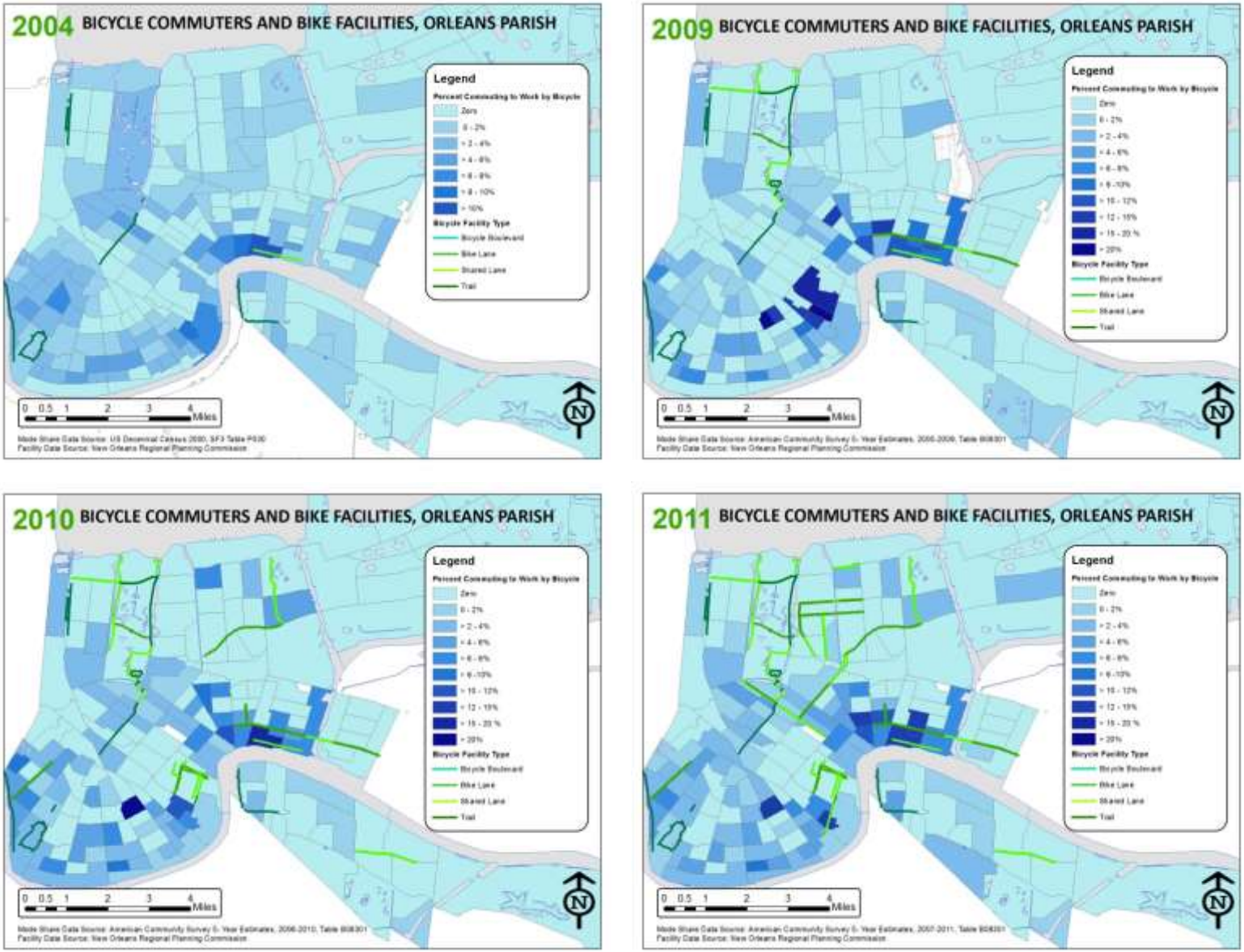
On the other hand, pedestrian EDT increased substantially over the four-year period at all count sites, without any clearly discernible relationship to presence or absence of bicycle facilities, suggesting that although a "complete streets" approach to roadway design that provides space for cyclists is known to improve the pedestrian environment and safety as well, pedestrian behavior appears to be more closely linked to other factors such as land use, perceived safety, transit access, and pedestrian infrastructure.

Finally, it is increasingly well-documented that construction of bicycle facilities is likely to have an impact on either overall mode share, travel patterns, or both, although this correlation is impacted by numerous other variables and not always easy to isolate directly.[7] Analysis of shifts in census-tract level active transportation commute mode share relative to expansions in the bicycle infrastructure network in New Orleans from 2004-2011 (Figure 13), based on available Census and American Community Survey Data, reflects the complexity of this relationship. In some instances, commute mode share appears to have increased with the provision of new facilities (e.g. Lower Garden District near Magazine and Camp Street shared lane markings, and the Marigny and Bywater neighborhoods).

In other cases, new infrastructure does not yet appear to have impacted mode share significantly (e.g. Gentilly and Lakeview neighborhoods), though this may reflect a lag time between facility construction and changes in residents' habits. In one case (New Orleans CBD and Warehouse District), active transportation use appears to have actually dropped just as facilities were developed; however this is likely attributable to anomalous data in the years immediately following Hurricane Katrina in 2005-2009, rather than a direct impact of bicycle facility installation. Future years of ACS data should help better clarify the spatial relationships between facility construction and long-term modal shifts.

[7] See for example: Douma, F. and Cleveland, F. (2008). *The Impact of Bicycling Facilities on Commute Mode Share* (http://www.lrrb.org/PDF/200833.pdf); Krizek, K., Barnes, G., and Thompson, K. (2009). *Analyzing the Effect of Bicycle Facilities on Commute Mode Share over Time*, Journal of Urban Planning and Development 135:2.

Figure 13: Bicycle Commuters and Bicycle Facility Expansion, 2004-2011



4.0 ELECTRONIC COUNT DATA

This section analyzes count data from the Jefferson Davis Trail Eco-Counter from June 2010 through March 2013. This data was analyzed based on temporal and meteorological variables. For additional detailed data tables, refer to Appendix G.

4.1 OBSERVED TRAFFIC VOLUMES

Figure 14 and Table 18 show the monthly and annual average daily traffic volumes observed on the Jefferson Davis Trail from June 2010 to March 2013. Due to dislocation and subsequent temporary de-installation of the electronic count device during the months of April and May, 2013, a total usership figure for the third year of the device's operation is not available. However, by excluding those two months and evaluating usership based on a ten-month period for each year, we see that average daily usage has continued to increase from an average of 491 for June-March of 2012 to 505 in 2013, or 2.8% more users per day. Notably, the two months for which data is excluded are historically the most heavily trafficked of the year due to numerous festivals and events taking place at or near the count location, and it is reasonable to assume that figures comparable to or greater than previous years would have been expected in 2013 if the device were operational. Overall, since installation in 2010, average daily use of the Jefferson Davis Trail (again, using 10-month figures) has increased by 19.7%.

In 2012-2013, user volumes were highest in October, March, and February, consistent with previous years excluding the peak months of April and May. The lowest volumes were recorded in August, July, and December. The Eco-Counter observed more users in every month of the third year of operation than were recorded the previous year except for August, September, and January, with the largest increases (greater than 18%) in user volume occurring in October, February, and December. These variations in user volume may be attributable to more favorable or unfavorable weather patterns (discussed below) as well as to temporally variable events such as carnival season.

Overall, this trail experienced consistent user volumes year-round, with an average use rate of 505 users per day, a figure which would be higher if data from the months of April and May were available. From the 34 months of data available, trail usage appears to be continuing to increase, although at a slower rate than in the first two years. This Eco-Counter, now reinstalled, should continue to be regularly monitored to see whether volumes continue to increase or new trends emerge.

Figure 14: Jefferson Davis Trail Average Daily Usage, 2010-2013

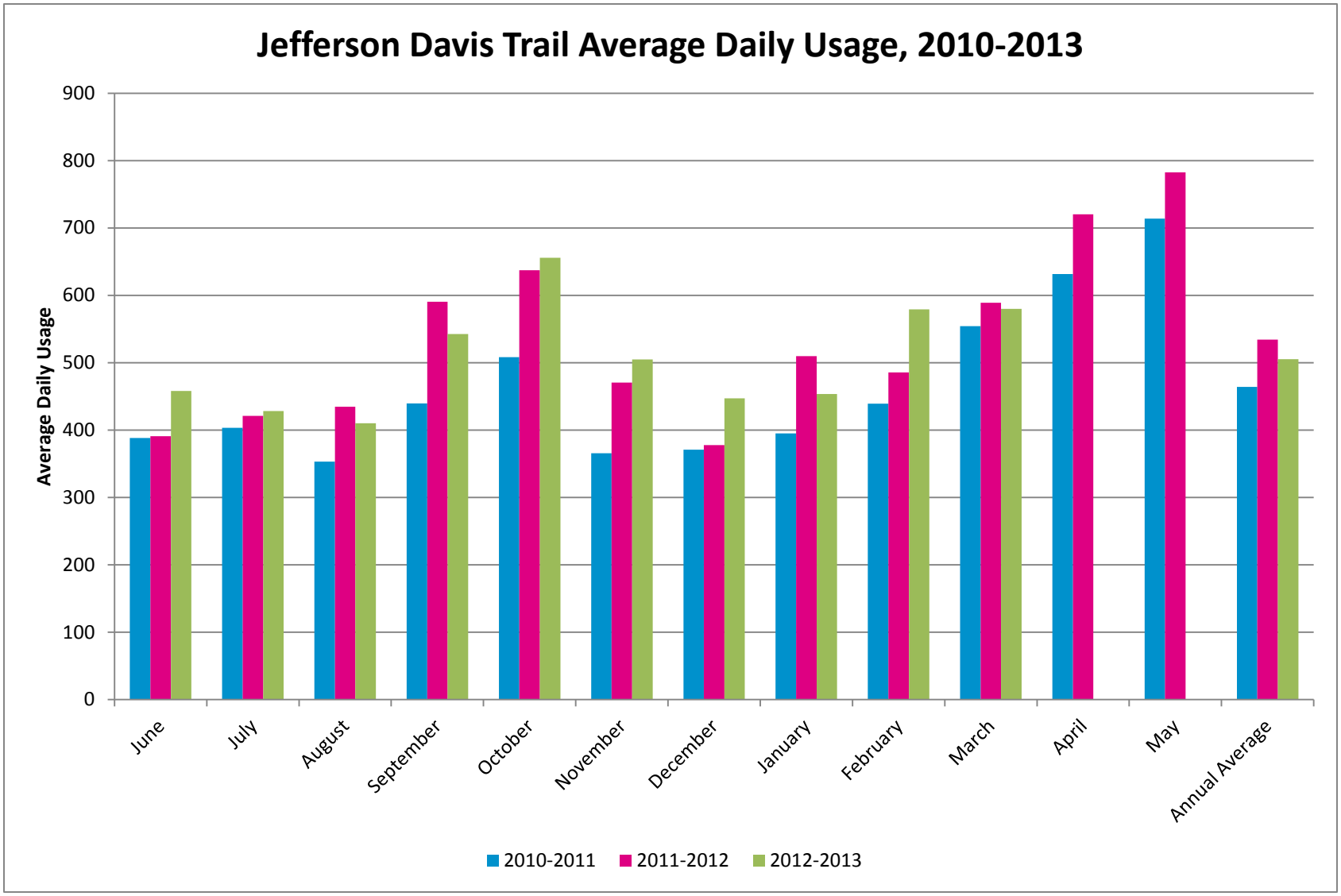


Table 18: Jefferson Davis Trail Average User Volumes by Month, 2010-2013

Jefferson Davis Trail User Volumes, 2010-2013, by Month										
	Total Usage					Average Daily Usage				
Month	2010-2011	2011-2012	2012-2013	Absolute Change, 2010-2013	*Percent Change, 2010-2013*	2010-2011	2011-2012	2012-2013	Absolute Change, 2010-2013	*Percent Change, 2010-2013*
June	*11,648*	*11,733*	*13,740*	*2,092*	*18.0%*	*388*	*391*	*458*	*70*	*18.0%*
July	*12,506*	*13,053*	*13,273*	*767*	*6.1%*	*403*	*421*	*428*	*25*	*6.1%*
August	*10,945*	*13,471*	*12,719*	*1,774*	*16.2%*	*353*	*435*	*410*	*57*	*16.2%*
September	*13,191*	*17,719*	*16,278*	*3,087*	*23.4%*	*440*	*591*	*543*	*103*	*23.4%*
October	*15,755*	*19,752*	*20,330*	*4,575*	*29.0%*	*508*	*637*	*656*	*148*	*29.0%*
November	*10,975*	*14,117*	*15,146*	*4,171*	*38.0%*	*366*	*471*	*505*	*139*	*38.0%*
December	*11,502*	*11,715*	*13,867*	*2,365*	*20.6%*	*371*	*378*	*447*	*76*	*20.6%*
January	*12,245*	*15,806*	*14,057*	*1,812*	*14.8%*	*395*	*510*	*453*	*58*	*14.8%*
February	*12,301*	*14,080*	*16,215*	*3,914*	*31.8%*	*439*	*486*	*579*	*140*	*31.8%*
March	*17,188*	*18,256*	*17,978*	*790*	*4.6%*	*554*	*589*	*580*	*25*	*4.6%*
10-Month Total	***128,256***	***149,702***	***153,603***	***25,347***	***19.8%***	***422***	***491***	***505***	***83***	***19.7%***
April	*18,946*	*19,449*	*n/a*	*n/a*	*n/a*	*632*	*720*	*n/a*	*n/a*	*n/a*
May	*22,128*	*24,256*	*n/a*	*n/a*	*n/a*	*714*	*783*	*n/a*	*n/a*	*n/a*
Total	***169,330***	***193,407***	*n/a*	*n/a*	*n/a*	***464***	***534***	*n/a*	*n/a*	*n/a*

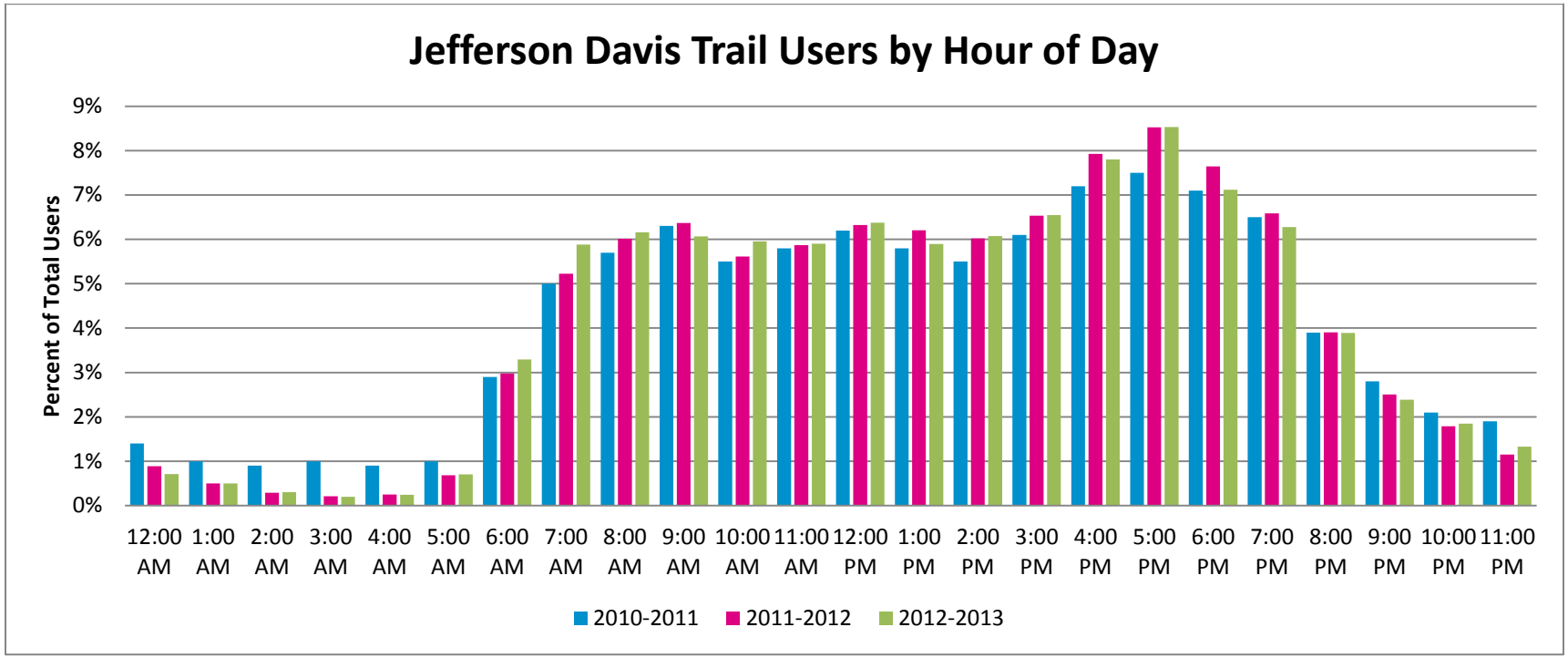
4.2 PATTERNS OF USE BY HOUR, DAY, MONTH, AND SEASON

Electronic counts by hour, day of the week, and month all 34 months of data were collected, allowing evaluation of usage patterns at various levels of detail. The following figures summarize these patterns. Percentages of total usership, rather than absolute totals, are used in order to compare the two years of data.

Hourly Trends

Figure 15 breaks down the electronic count data by hour for the Jefferson Davis trail by absolute hourly volume and as a percentage of the total users observed. Hourly patterns of use appear to be highly consistent from year to year. The highest volume and percentage of users, as in previous years, were in the evening peak hours of 4:00 to 8:00 pm.

Figure 15: Jefferson Davis Trail Users by Hour of Day



Weekly Trends

As in previous years, 2013-2013 weekly trends indicate a relatively even distribution of use across each day of the week, with a slightly higher percentage of users on Fridays and Saturdays (Figure 16 and Table 19). Interestingly, Sunday user volumes decreased proportionally in the third year of data collection, potentially due to the exclusion of April and May data, when weekend events and festivals contributed significantly to weekend usership in previous years.

Figure 16: Jefferson Davis Trail User Volume by Day of Week

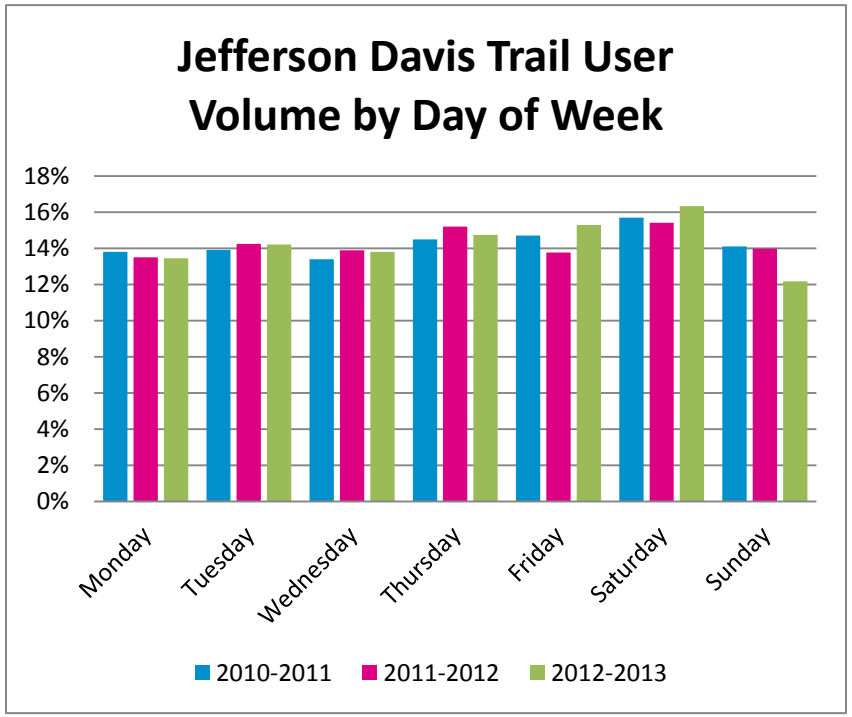


Table 19: Jefferson Davis Trail User Volume by Day of Week

Jefferson Davis Trail Volume by Day of Week			
	Absolute #	% of Total	Average Daily Users
Monday	20,653	13.4%	480
Tuesday	21,826	14.2%	508
Wednesday	21,200	13.8%	493
Thursday	22,639	14.7%	526
Friday	23,493	15.3%	534
Saturday	25,098	16.3%	570
Sunday	18,694	12.2%	425
10 Month Total	**153,603**	**100.0%**	**505**

Monthly and Seasonal Trends

Tables 20 and 21 and Figure 17 break down Jefferson Davis Trail data by month of the year and by season[8] for each year observed. Unsurprisingly, user volumes were highest during the fall for the third year of data (Spring 2013 is excluded due to incomplete data), corresponding with mild average daily temperatures and moderate rainfall (discussed below). Trail usership was greater in the fall and winter of 2012-2013 than in previous years, though slightly lower in summer, 2012 than the previous year.

Table 20: Jefferson Davis Trail User Volumes by Month

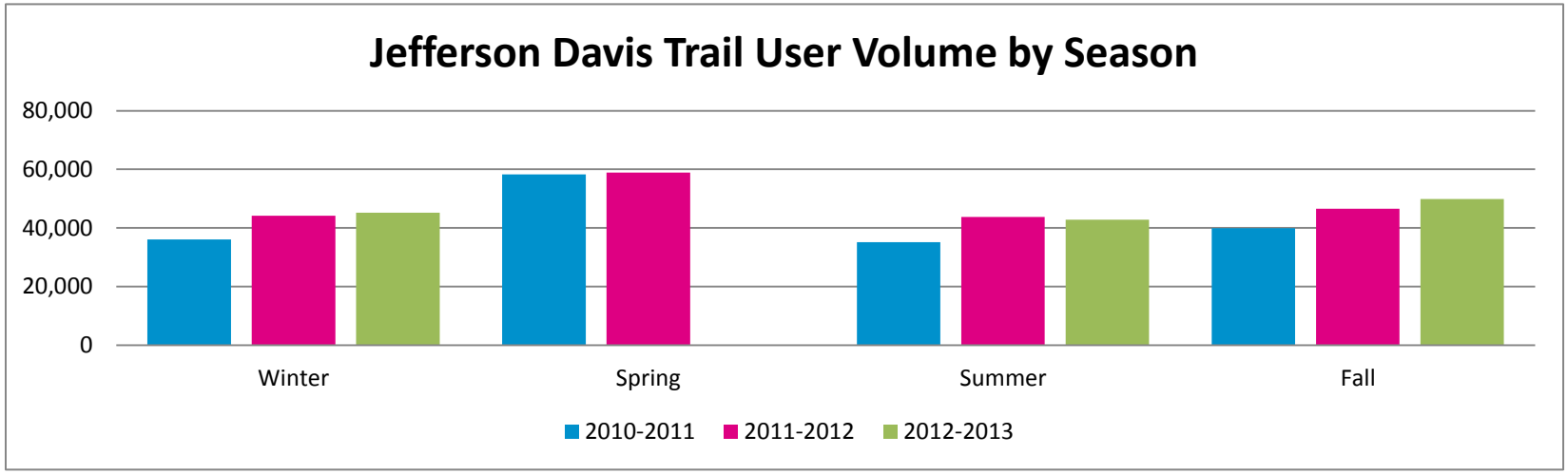
Jefferson Davis Trail User Volumes by Month					
	Total Users	*% of Annual Volume*	Average Daily Users	Average Daily Temperature	Total Precipitation (in)
June, 2012	13,740	*8.9%*	458	83	3.2
July, 2012	13,273	*8.6%*	428	84	11.6
August, 2012	12,719	*8.3%*	410	83	18.6
September, 2012	16,278	*10.6%*	543	81	3.0
October, 2012	20,330	*13.2%*	656	70	0.4
November, 2012	15,146	*9.9%*	505	61	2.5
December, 2012	13,867	*9.0%*	447	59	5.1
January, 2013	14,057	*9.2%*	453	57	6.4
February, 2013	16,215	*10.6%*	579	58	7.2
March, 2013	17,978	*11.7%*	580	59	1.1
10 Month Total	**153,603**	*100.0%*	**505**	**69**	**59.1**

[8] Spring season calculated based on the first 20 days of June of the preceding year, plus data from Spring Equinox of the following year through May 31st

Table 21: Jefferson Davis Trail User Volume by Season, 2010-2013

Jefferson Davis Trail User Volumes by Season				
	Absolute #	*Average Daily Users*	Average Daily Temp	Total Precip. (in)
Summer 2010	35,099	*382*	85	24.0
Summer 2011	43,776	*466*	84	31.0
Summer 2012	42,875	*456*	83	32.0
Fall 2010	39,921	439	65	3.8
Fall 2011	46,550	517	66	4.3
Fall 2012	49,880	554	66	7.8
Winter 2010-2011	36,048	401	56	14.4
Winter 2011-2012	44,224	497	63	8.3
Winter 2012-2013	45,245	508	57	15.8
Spring 2011	58,262	633	77	9.1
Spring 2012	58,857	654	78	17.8
Spring 2013	n/a	n/a	72	23.4

Figure 17: Jefferson Davis Trail User Volume by Season



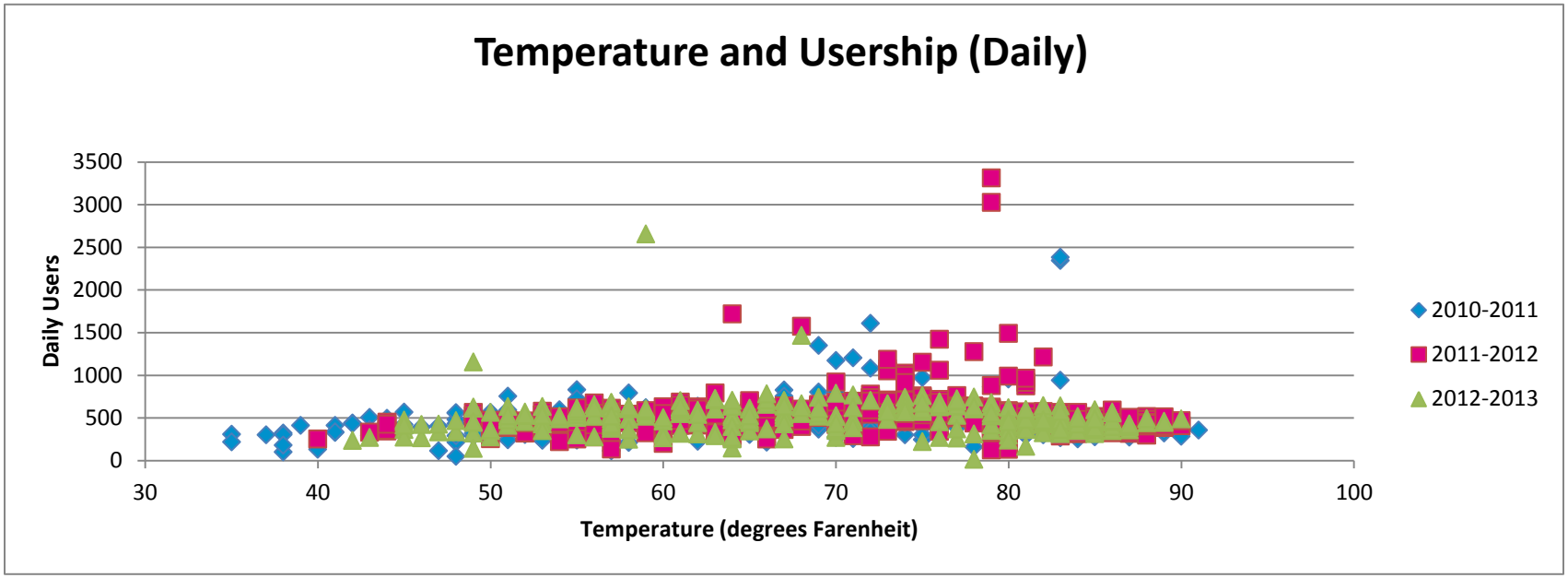
4.3 METEOROLOGICAL VARIABLES AND TRAFFIC VOLUME

As previously identified in the New Orleans Pedestrian and Bicycle Count Report, 2010-2011, significant correlations appear to exist between temperature, precipitation, and active transportation activity. This section continues to track these relationships between electronic counts at the Jefferson Davis Trail and average daily temperatures and precipitation at the daily, weekly, and monthly scale. Temperature and precipitation data were obtained from The Weather Underground historical database.

Temperature

Table 22 and Figures 18, 19, and 20 illustrate the relationship between average temperatures and user volumes at the daily, weekly, and monthly level. Average daily temperatures are used for this analysis. Daily volumes (Figure 18) follow a similar overall pattern, though there are several outliers corresponding to special event days which vary by year, and are missing from spring 2013. At this level, it is difficult to discern a clear relationship between temperature and usership; trail usage is relatively consistent from a range of 40 degrees Fahrenheit to 90 degrees, with a number of higher usage days occurring when weather is between 70 and 80 degrees.

Figure 18: Temperature and Usership (Daily)



Weekly analysis (Figure 19) further illuminates that as in previous years, the highest weekly volumes tend to occur in weeks where the average temperature ranges from approximately 60 to 80 degrees. Weeks with higher or lower average temperatures are more likely to have lower volumes. Therefore, this range of temperatures can be said to represent a threshold at which user volumes peak and then decline in either direction (higher or lower temperatures).

At the monthly level (Figure 20, Table 22) these patterns remain consistent. Early spring temperatures in 2013 (February and March) were cooler than recent years, though use remained high. Similarly, mild weather in winter months of 2012-2013 appears to have resulted in higher average user volumes than in previous years. Overall, the relationship between temperature and usership of the Jefferson Davis Trail appears to be relatively stable. For additional detailed data tables not presented here, see Appendix G.

Figure 19: Temperature and Usership (Weekly)

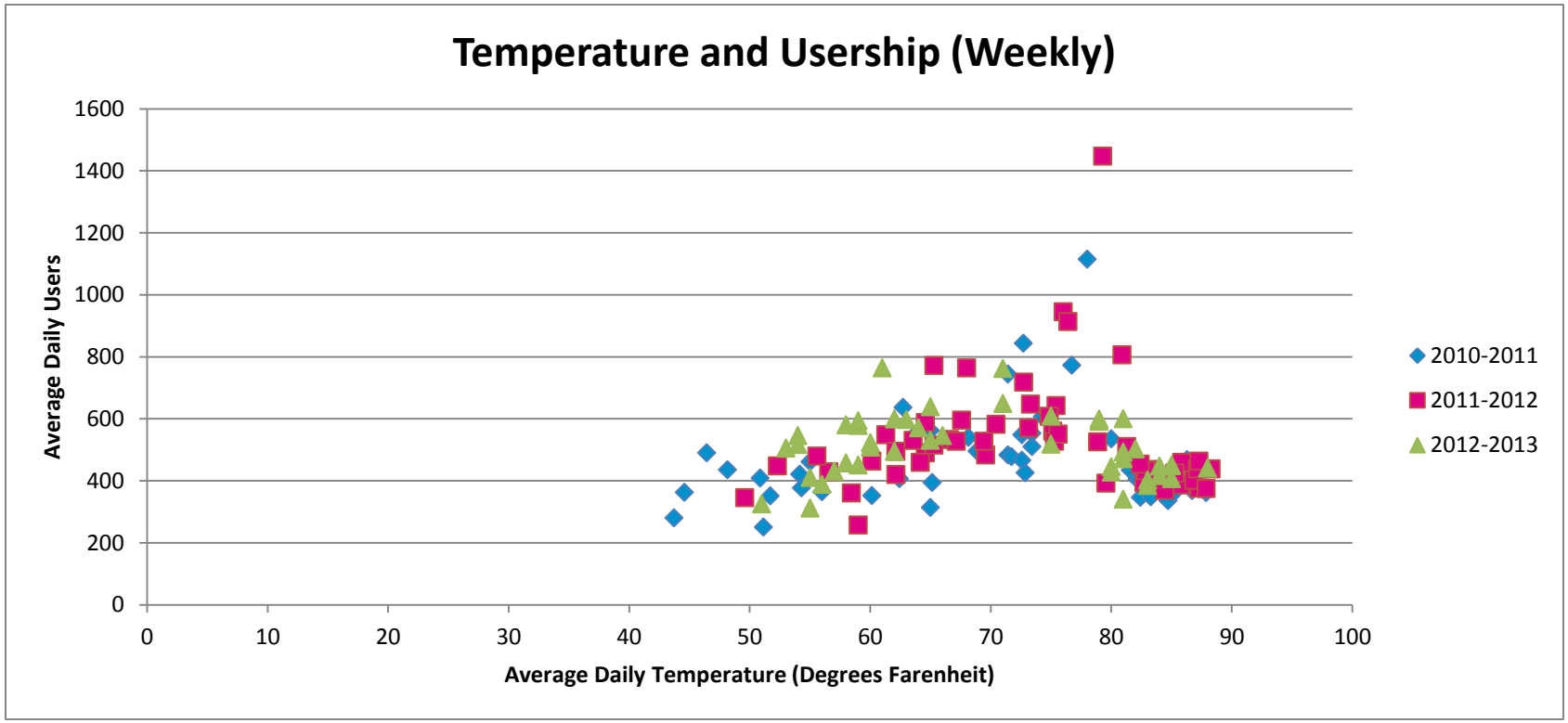
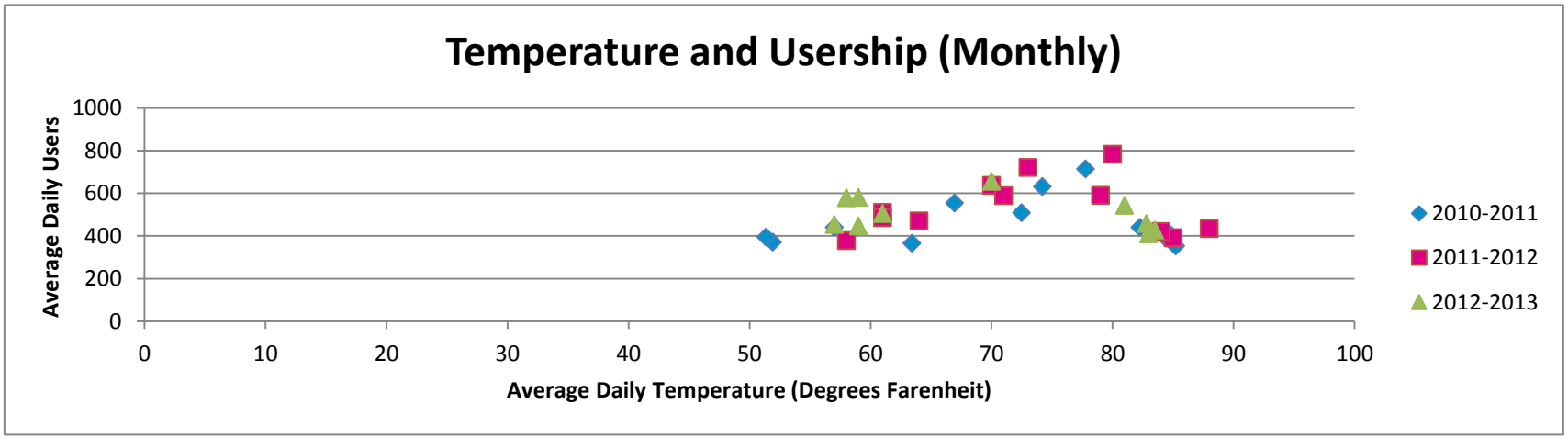


Table 22: Jefferson Davis Trail Average Daily Temperature and User Volumes

Jefferson Davis Trail Average Daily Temperature and User Volumes						
	2010-2011		2011-2012		2012-2013	
Month	Average Daily Users	Average Daily Temperature	Average Daily Users	Average Daily Temperature	Average Daily Users	Average Daily Temperature
June	388	84	391	85	458	83
July	403	85	421	84	428	84
Autust	353	85	435	88	410	83
September	440	82	591	79	543	81
October	508	72	637	70	656	70
November	366	63	471	64	505	61
December	371	52	378	58	447	59
January	395	51	510	61	453	57
February	439	57	486	61	579	58
March	554	67	589	71	580	59
April	632	74	720	73	n/a	68
May	714	78	782	80	n/a	74

Figure 20: Temperature and Usership (Monthly)



Precipitation

Precipitation can also be used as a variable by which to evaluate active transportation facility use. Precipitation in the New Orleans area tends to be highest during the summer months and early autumn, months which also experienced some the lowest user volumes on the Jefferson Davis Trail in 2012-2013 (Figure 21). However, at the monthly level of analysis, clear correlations between precipitation and user volumes do not emerge.

The relationship between precipitation and user volumes is clearer at the daily level, as daily variation in precipitation is high. Figure 22 shows that the days with the highest amount of precipitation tend to fall nearer to the bottom or middle of the range, with the day experiencing the greatest precipitation (during Hurricane Isaac) resulting in zero trail use at all. Similarly, almost all of the days in this ten-month period with very high average daily usership correspond to days with little or no rain.

Figure 21: Precipitation and Average Daily Users by Month

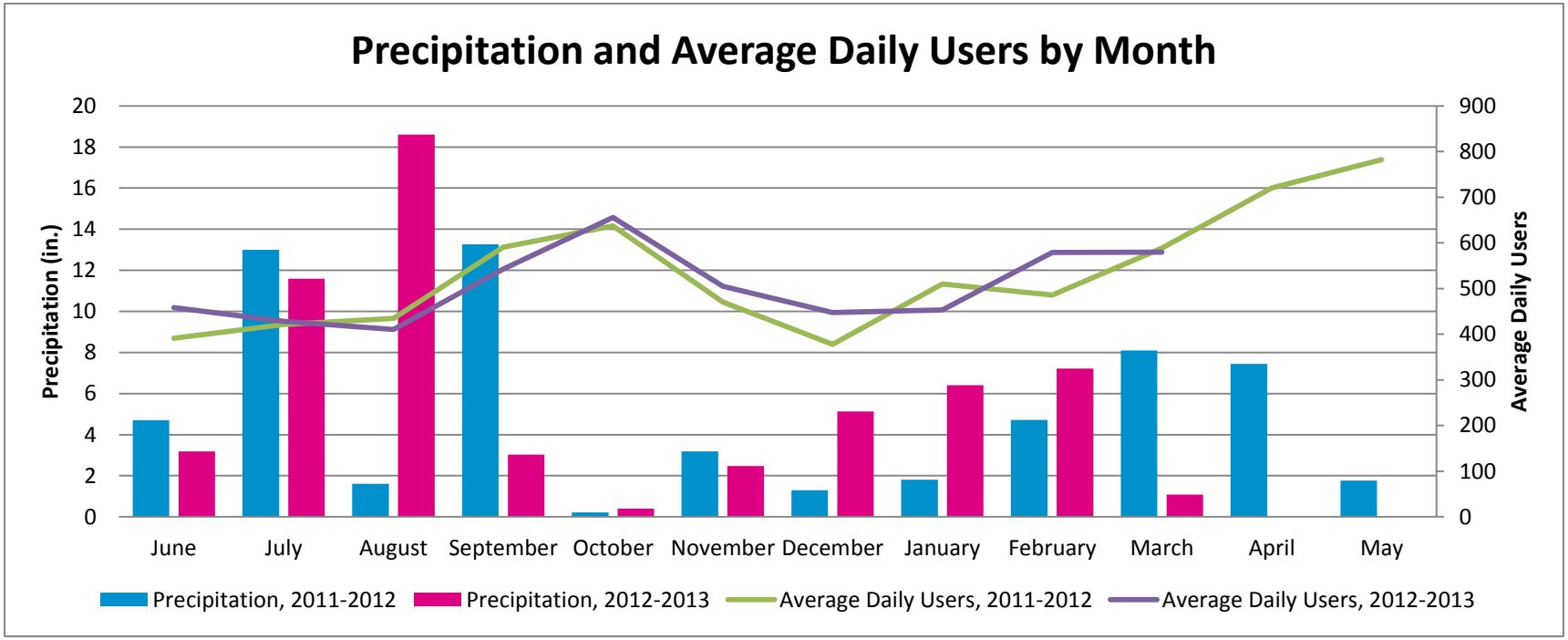
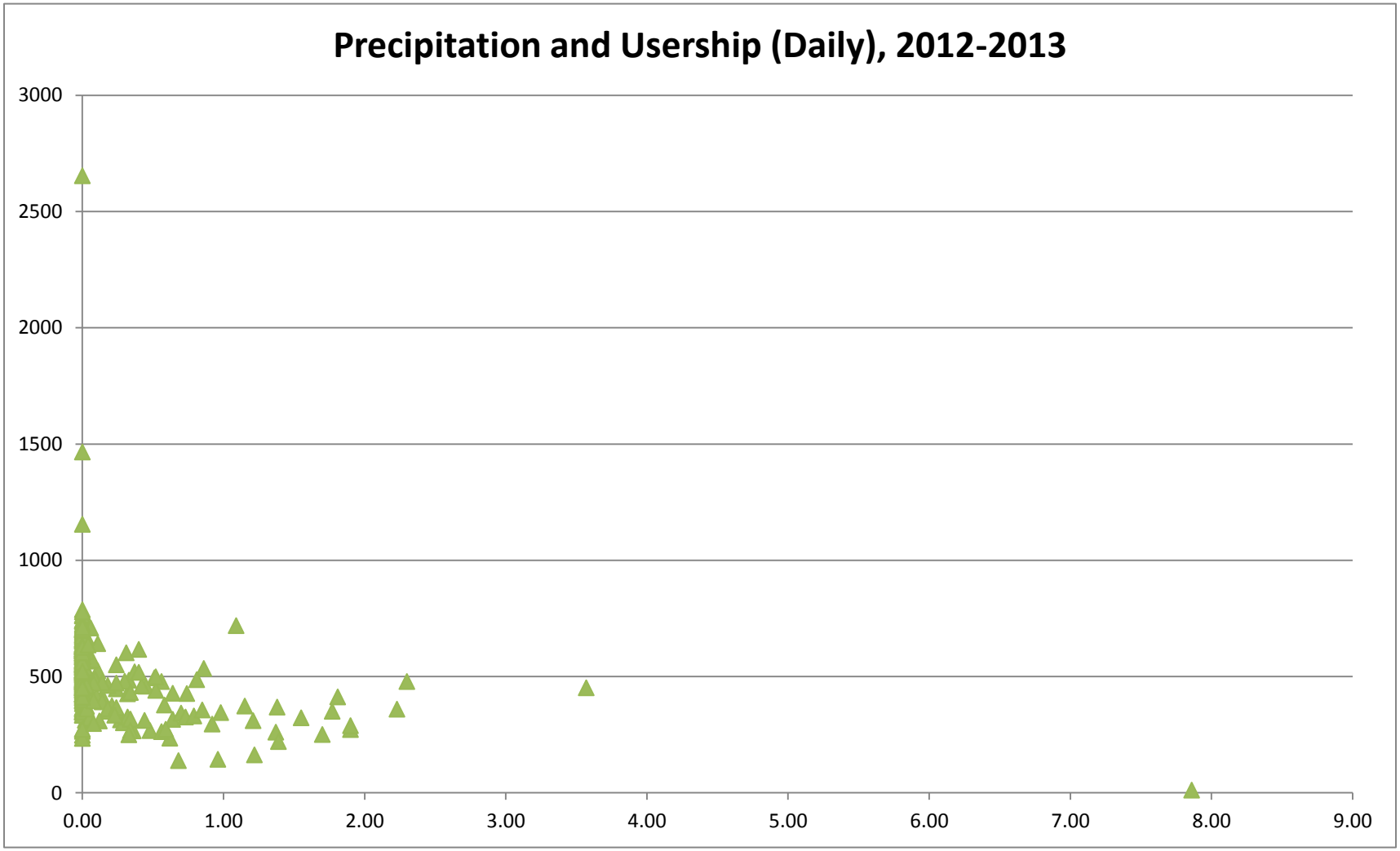


Figure 22: Precipitation and Usership (Daily), 2012-2013



5.0 STATE, REGIONAL, AND NATIONAL CONTEXT: COMPARING THE GENDER SPLIT FOR BICYCLIST AND PEDESTRIAN COMMUTERS

This section provides an update to evaluations of commute data from the U.S. Census and American Community Survey (ACS) found in previous PBRI Pedestrian and Bicycle Count Reports, evaluating New Orleans progress as an active transportation leader relative to its context in the state of Louisiana, the Southern region of the United States, and the nation overall. This report updates this information with 2011 ACS data.

5.1 BICYCLE COMMUTING IN NEW ORLEANS

As noted above, rates of female bicyclists are often examined as an indicator of the overall safety, comfort, and popularity of bicycling for a given area. This section compares New Orleans' percentages of total and female bicycle commuters respectively to national leaders in active transportation, the South Region (as defined by the U.S. Census), and other cities in Louisiana.

Comparing Female Bicyclists with National Leaders in Active Transportation

New Orleans has regained its 2009 position within the top ten cities in the country with a population over 250,000 in terms of the overall percentage of bicycle commuters, in 9th place with 2.39% (Table 23). Among bicycle commuters in 2011, 45.6% were female, a greater percentage than all but one other top bicycle commuting city. Notably, this is a sharp increase from the 26% of bike commuters that were identified as female in the 2010 ACS, reflecting relatively high variability and margins of error in one-year sample data on commute mode. This percentage is also considerably higher than the 27.9% of cyclists identified as female in PBRI's own observations in 2011. However, in four of the last six years, New Orleans has been in the top ten cities for bicycle commuting, even as other cities have also invested in new bicycle infrastructure and strongly promoted active transportation options.

Comparing Female Bicyclists at the Regional Level

Regional figures, as illustrated in Table 24, show that New Orleans had the second highest overall mode share for bicyclists in South Region cities over 250,000, after slipping from first to third in 2010. New Orleans also had the highest rate of female bicyclists among top bicycling cities (over 250,000) in the region, up from 5th place in the previous two years. As in 2010, however, the South Region had both the lowest bicycle mode share and rate of female bicyclists in 2011 compared to other regions in the country.

Table 23: Top Cities Over 250,000 for Bicycle Commuting, 2011

Top Cities over 250,000 for Bicycle Commuting, 2011			
Overall Rank	City	Bicycle Mode Share	Percent of bike commuters who are female
1	Portland, OR	6.83%	36.97%
2	San Francisco, CA	3.73%	29.09%
3	Seattle, WA	3.68%	30.31%
4	Minneapolis, MN	3.57%	32.74%
5	Washington, DC	3.31%	38.83%
6	Oakland, CA	3.29%	36.21%
7	Tucson, AZ	2.86%	27.08%
8	Denver, CO	2.58%	29.68%
9	New Orleans, LA	2.39%	45.63%
	PBRI Findings, 2011	*n/a*	*27.90%*
10	Sacramento, CA	2.30%	39.44%
11	Austin, TX	2.01%	26.94%
12	Lexington, KY	1.93%	26.76%
13	Philadelphia, PA	*1.83%*	*45.92%*
14	Boston, MA	1.81%	23.43%
15	Tampa, FL	1.60%	1.64%
Note	Total commuting population excludes those that work at home		
Source	U.S. Census Bureau, 2011 American Community Survey, Table B08006		

Table 24: Regional Bicycling Commuting Statistics, 2011

Regional Bicycling Commuting Statistics, 2011		
Geography	Bicycle Mode Share	Percent of bike commuters who are female
West Region	**1.16%**	**27.95%**
Midwest Region	**0.47%**	**26.86%**
Northeast Region	**0.47%**	**26.36%**
South Region	**0.35%**	**23.69%**
Washington, DC	3.31%	38.83%
New Orleans, LA	2.39%	45.63%
PBRI Findings, 2011	*n/a*	*27.90%*
Austin, TX	2.01%	26.94%
Lexington-Fayette, KY	1.93%	26.76%
Atlanta, GA	1.58%	19.56%
Miami, FL	0.91%	41.21%
Baltimore, MD	0.83%	30.89%
Raleigh, NC	0.45%	22.37%
Virginia Beach, VA	0.45%	23.37%
Tulsa, OK	0.44%	7.71%
United States	**0.59%**	**26.93%**
Notes	Selected cities in the South Region represent the 10 highest bicycle commuting rates for cities over 250,000	
	Total commuting population excludes those that work at home	
Source	U.S. Census Bureau, 2011 American Community Survey, Table B08006	

Comparing Female Bicyclists at the State Level

To evaluate New Orleans relative to other cities in Louisiana, three-year aggregate ACS data from 2009-2011 is used. Table 25 summarizes bicycling trends in major cities in Louisiana. As in previous years, New Orleans has the highest bicycle commuter mode share, as well as the highest percentage of female bike commuters (estimated at 36.8%) of all cities except for Lake Charles, where 100% of the very small number of bicycle commuters present were women. Overall, during the 2009-2011 period, Louisiana's rate of bicycle commuting increased from .38% to .43%, while the south region as a whole held steady at .33%, indicating that Louisiana may be beginning to make ridership gains due to increases in New Orleans and other urbanized areas. However, the state has still not surpassed the national average of .57%.

Table 25: Bicycle Commuting in Louisiana, 2009-2011

Bicycle Commuting in Louisiana, 2009-2011		
Geography	Bicycle Mode Share	Percent of bike commuters who are female
New Orleans	**2.38%**	**36.84%**
Baton Rouge	0.81%	18.10%
Lafayette	0.70%	1.94%
Metairie	0.65%	7.97%
Kenner	0.51%	0.00%
Monroe	0.41%	10.67%
Shreveport	0.17%	0.00%
Lake Charles	0.07%	100.00%
Louisiana	**0.43%**	**26.56%**
South Region	0.33%	24.64%
United States	**0.57%**	**26.76%**
Notes	Louisiana cities selected were the only geographies for which data is available	
	Total commuting population excludes those that work at home	
Source	U.S. Census Bureau, 2009-2011 American Community Survey, Table B08006	

5.2 Pedestrian Commuters in New Orleans

This section compares New Orleans' percentages of total and female pedestrian commuters relative to other cities in Louisiana, the South Region, and the United States as a whole to evaluate progress toward becoming a more active city where men and women are comfortable walking to work, as well as to other destinations for daily needs and recreation.

Comparing Female Pedestrians with National Leaders in Active Transportation

In 2011, New Orleans ranked 13th in the share of its population that walks to work among cities with populations greater than 250,000 in 2010 (Table 26), up from 15th in 2010, with a total of 6.3% of commuters walking to work. The proportion of estimated female pedestrian commuters has fluctuated over the last several years, from 31% in 2009 to 59% in 2010 to 45.8% in 2011. PBRI count data, meanwhile, suggests that female pedestrians make up about 40% of pedestrians (including non-commute trips), as in previous years.

Comparing Female Pedestrians at the Regional Level

New Orleans ranked third among southern cities with high rates of walking in 2011, as it did in 2010, but only 6th in the percentage of those commuters who are female (Table 27). As with bicycling, the South lags behind other regions in overall pedestrian commuters, and New Orleans significantly exceeds the average for both the South region and the United States as a whole.

Table 26: Top Cities over 250,000 for Pedestrian Commuting, 2011

Top Cities over 250,000 for Pedestrian Commuting, 2011			
Overall Rank	City	Walking Mode Share	Percent of pedestrian commuters who are female
1	Boston, MA	15.08%	51.58%
2	Washington, DC	12.39%	46.98%
3	Pittsburgh, PA	11.16%	50.69%
4	New York, NY	10.86%	53.38%
5	San Francisco, CA	10.70%	45.80%
6	Honolulu, HI	10.44%	55.02%
7	Seattle, WA	9.57%	40.66%
8	Philadelphia	9.52%	51.73%
9	Newark, NJ	9.22%	46.70%
10	Jersey City, NJ	8.28%	45.27%
11	Baltimore, MD	7.38%	56.52%
12	Chicago, IL	6.60%	52.11%
13	New Orleans, LA	6.30%	45.84%
	2011 PBRI Findings	*n/a*	*39.70%*
14	Minneapolis, MN	6.15%	39.24%
15	Buffalo, NY	5.99%	48.79%
Note	Total commuting population excludes those that work at home		
Source	U.S. Census Bureau, 2011 American Community Survey, Table B08006		

Table 27: Regional Pedestrian Commuting Statistics, 2011

Regional Pedestrian Commuting Statistics, 2011		
Geography	Walking Mode Share	Percent of pedestrian commuters who are female
West Region	**3.12%**	**46.14%**
Northeast Region	**4.90%**	**49.83%**
Midwest Region	**2.77%**	**45.17%**
South Region	**1.93%**	**43.53%**
Washington, DC	12.39%	46.98%
Baltimore	7.38%	56.52%
New Orleans	6.30%	45.84%
PBRI Findings, 2011	*n/a*	*39.70%*
Atlanta	5.02%	34.42%
Miami	4.44%	50.80%
Lexington, KY	3.56%	56.18%
Virginia Beach, VA	3.12%	30.08%
Austin	2.98%	46.45%
Corpus Christi, TX	2.93%	63.21%
Louisville, KY	2.49%	44.88%
United States	2.94%	46.45%
Notes	Selected cities in the South Region represent the 10 highest commuting rates for cities over 250,000	
	Total commuting population excludes those that work at home	
Source	U.S. Census Bureau, 2011 American Community Survey, Table B08006	

Comparing Female Pedestrians at the State Level

As with bicycling data, state-level comparisons were conducted using 2009-2011 3-Year ACS estimates. Table 28 summarizes the resulting pedestrian commuting patterns in Louisiana. New Orleans had the highest mode share for pedestrian commuting in the state, as in previous years, and a slightly above average rate of female pedestrians relative to other cities and the state as a whole. Louisiana's overall rate of pedestrian commuters and female pedestrians, at 2.04% and 44.65% respectively, is slightly higher than the southern regional average, but again lags behind national averages.

Table 28: Pedestrian Commuting in Louisiana, 2009-2011

Pedestrian Commuting in Louisiana, 2009-2011		
Geography	Walking Mode Share	% of pedestrians who are female
New Orleans	**5.78%**	**46.81%**
Baton Rouge	4.00%	52.71%
Lake Charles	3.04%	65.11%
Shreveport	2.15%	30.68%
Metairie	2.05%	27.21%
Lafayette	1.71%	36.73%
Kenner	1.67%	40.00%
Monroe	1.02%	46.03%
Louisiana	**2.04%**	**44.65%**
South Region	1.93%	42.94%
United States	2.94%	46.31%
Notes	Louisiana cities selected were the only geographies for which data is available	
	Total commuting population excludes those that work at home	
Source	U.S. Census Bureau, 2009-2011 American Community Survey, Table B08006	

6.0 CONCLUSIONS

This section synthesizes the trends and data presented in this report and evaluates possible directions for future study, in order to promote New Orleans as a regional and national leader in active transportation.

6.1 BICYCLE ACTIVITY IN NEW ORLEANS

The total number of observed bicyclists at the 12 2010-2013 count sites increased by 6.3% from 2012 to 2013, a much slower rate of increase than was observed in the previous two years of the study. However, over the four year study period to-date, bicycle use at these 12 sites has increased by a total of 63%. When the data is extrapolated into Estimated Daily Traffic (EDT) figures to adjust for temporal variations, an overall 56% increase in bicycle activity at these sites is reported. As discussed in the New Orleans Pedestrian and Bicycle Count Report, 2010-2011, New Orleans' EDT figures at many manual count sites city wide have been found to be relatively low compared to national leaders in active transportation, despite a high reported rate of commuting to work by bicycle as documented by the American Community Survey. This continued upward trend in cyclists observed indicates that bicycling is becoming more popular for both work and non-work trips.

High bicycle volumes continue to be observed at sites located near the Central Business District, though rates of increase have varied substantially by site from year to year, with the strongest increases observed at Camp Street and Magazine Street over a four-year period. 2011 ACS data corroborates this finding, with increased bicycle commuters reported in the census tracts immediately adjacent to these count locations.

At the 12 new count locations, baseline data was established for comparison to 1) future post-facility construction studies; 2) existing datasets collected by other organizations documenting pre- and post-facility construction change; and 3)crash data and built environment audit data (as documented in the *New Orleans Multi-Tool Pedestrian Safety Study* (PBRI 2013) in order to better understand active transportation patterns and potential concerns in locations identified as crash hot spots or hazardous connections in the active transportation network. Preliminary analysis of this data indicates that active transportation use where new facilities have been constructed is very strong, while there is significant opportunity for growth—particularly in cycling—on count locations slated for future improvements. Moreover, considerable demand exists for biking and/or walking on facilities identified as potentially hazardous (Tulane Avenue at Broad Street, Loyola Avenue and Simon Bolivar Avenue at Calliope Street, Williams Boulevard at Airline Drive, and the Broad Street and St. Claude Avenue bridges). Improvements to each of these should be considered in order to improve safety outcomes for existing users as well as to encourage greater active transportation use. Follow up counts at each of these locations should be conducted in order to capture impacts of any improvements, and/or to track increasing or decreasing user demand.

Efforts to approximate mode share calculations at sites for which data is available reveal that if EDT projections are accurate, up to 28% of traffic (excluding transit users) is comprised of bicyclists and pedestrians at the Camp Street count location, while active transportation mode shares above 10% exist at three additional locations.

Indicators of safe cycling behavior appear to be on the rise, with a substantial increase in helmet use (21% of existing count sites, 23% of all count sites observed) though this figure still doesn't approach the high rates of helmet use of national leaders in cycling such as Portland (77% helmet use) and Minneapolis (64% helmet use).[9] In addition, right-way, on-street travel has continued to incrementally increase each, for a four-year improvement from 75.5% in 2010 to 82.1% in 2013. This indicates that regional educational campaigns emphasizing correct travel orientation and safe cyclist behavior may be having an impact. However, apparent correlations between race and cyclist behavior indicate that continued education, particularly targeting groups observed to ride illegally and/or without a helmet, may be helpful in advancing these positive trends among all demographic groups.

In addition, the percentage of bicyclists that are female, as well as the total number of female cyclists, has increased to just over 31% in 2013 among existing count locations (29% including all 2013 count sites). While encouraging, increases in the proportion of women cycling have been slow and New Orleans continues to lag behind many national bicycling leaders. Notably, however, ACS commute data indicates a higher proportion of those that commute to work by bicycle are women at 46%.

Finally, 2013 data continues to demonstrate that presence of bicycle facilities has an impact on the number of cyclists likely on a given facility. Overall, bicyclist EDT has increased by 105% at locations where facilities exist, compared to just 23% at locations with no facilities present or nearby. Not only are there more cyclists at sites where improvements have been made, but they are safer cyclists as well: helmet use has increased more rapidly at sites with bicycle facilities, the proportion of female cyclists has increased more substantially, and the change in the percentage of cyclists who travel on-street and in the direction of traffic has increased by a greater margin.

[9] Bike Walk Twin Cities. 2010. *Pedestrian and Biccyle Count Report: Bike Walk Twin Cities 2009;* Portland Bureau of Transportation. 2010. *Portland Bicycle Count Report 2010.*

6.2 Pedestrian Activity in New Orleans

Total observed volumes of pedestrians, as well as Estimated Daily Traffic (EDT), at manual count sites observed from 2010-2013 has also increased steadily from year to year, with a 15% increase from 2012 to 2013 and a four-year total increase in pedestrians observed of 67%, or an adjusted increase in EDT of 51% over the same period. New pedestrian count data for 12 additional locations was collected, demonstrating significant pedestrian activity at several locations identified as crash hot spots, indicating a need for infrastructure improvements to reduce pedestrian/vehicle conflict.

In addition, this data supports the need for pedestrian improvements as well as planned bicycle improvements at certain locations, as there are more pedestrians currently using these segments than bicycles. Required ADA retrofits accompanying planned roadway projects at these locations will benefit these users, but additional improvements to signalized and un-signalized intersections as well as sidewalk repairs are recommended in order to maximize the impact of these investments for all users.

The percentage of female pedestrians observed in 2013 increased substantially among existing count sites to 58%, though it remains around 40% for all count locations observed, closer to the 46% of pedestrian commuters that are female reported by the 2007-2011 ACS. New Orleans continues to be a national leader for walking to work, and the percentage of such commuters that are women. Travel orientation remains stable at above 90% traveling on

sidewalks, with the remaining pedestrians mostly concentrated at a couple of count locations.

Pedestrian activity does not appear to correlate to bicycle facility construction, although some pedestrian infrastructure improvements (such as ADA-compliant curb ramps) often accompany such projects. Future studies should more closely evaluate the drivers of pedestrian activity, including land use relationships, variations in pedestrian infrastructure, and pedestrian-specific amenities and disamenities (e.g. lighting, vacancy, and shade) in order to better understand pedestrian travel behavior and facilitate continued increases in active transportation via walking.

6.3 Jefferson Davis Trail

The electronic counter located on the Jefferson Davis Trail at Conti St includes data for both bicycles and pedestrians, combined. On average, the counter recorded 505 users per day—a 2.8% increase from the previous year of data collected during the same 10-month period. This reflects a decrease from the 2011-2012 annual daily average due to a loss of data during the two months of historically peak activity, April and May. Over the three years of the device's operation, clear and stable temporal trends have been identified. Average Daily Traffic (ADT) is variable by season with the highest ADT volumes occurring during the spring season and the lowest occurring during the summer. Usership spikes sharply during festivals and sporting events in the Mid-City area and tends to be higher on weekends, but very seldom declines below about 300 users per day. Hourly patterns of use reveal relatively consistent use throughout daylight hours, with a peak in activity in the late afternoon and early evening. Predictable relationships exist between weather and usership, with the highest usership occurring on mild days with little or no rainfall. Importantly though, except in very extreme circumstances, inclement weather does not completely inhibit use. Regular trail users appear to exist year-round, regardless of temperature or precipitation.

Though this data stream has not revealed any notable changes in user patterns over the last three years (other than a steady increase in overall use), it is a valuable resource for long-term, continuous data collection and is the only such device currently installed in the New Orleans area collecting data on active transportation activity. Installation of additional count devices in the future would significantly enhance our understanding of differences in biking and walking patterns across different locations, as well as provide greater insight into overall trends in active transportation use regionwide.

6.4 Evaluating Active Transportation in New Orleans: Policy Implications and Next Steps

After four years of study, some clear trends are beginning to emerge about the state of active transportation in the New Orleans area and the impacts of the City and region's efforts to build and enhance infrastructure and improve safety outcomes through education. An aggressive program of bicycle network expansion has been rewarded with increased bicycling and safer cyclist behavior, particularly in areas where such improvements have occurred.

These increases have not necessarily happened evenly, or immediately: where new facilities are constructed use may increase immediately reflecting latent demand among more hesitant users,

or it may take a few years for impacts to be fully realized as residents and commuters adjust their transportation habits in response to new options. In addition, it is important to note than disconnected segments of bicycle facilities are likely not sufficient to encourage additional cyclists; impacts on usership also depend on the development of a contiguous network of linked facilities, creating safer, more comfortable access to various neighborhoods and destinations.

National data indicate that New Orleans leads the state, as well as the South region, in active transportation, and is an emerging leader nationally, ranked high for biking and walking mode share. As more and more connections between existing facilities for cyclists are developed, New Orleans has the opportunity to maintain and improve its reputation as a bikeable city.

Decision-making processes regarding the prioritization and placement of future bike facilities, as well as improvements to the pedestrian environment, should take quantitative data sources (including this report) into account. Additionally, effective fulfillment of the Complete Streets policy approaches now codified at the state, regional, and local level in New Orleans depends on access to multimodal user data in order to ensure that investment impacts are maximized, and the needs of all potential user groups. Continuing to enhance opportunities for active transportation will promote a healthier, more equitable, and more sustainable city and region. Initial efforts in the last five years have already begun to yield substantial results. Future research efforts should continue to evaluate the results of ongoing infrastructure and educational investments that promote active transportation, and should advance efforts to prioritize key bicycling, walking, and multi-modal connections throughout the region.

APPENDICES

A. Manual Count Site Characteristics
B. Manual Count Observation Protocol
C. Manual Count Observation Sheets
D. Manual Count Weather Data
E. PBRI Extrapolation Methodology
F. NBPD Project Count Adjustment Worksheet
G. Additional Automatic Count Data Tables

Appendix A: Manual Count Site Characteristics

2013 Manual Count Site Characteristics						
Site	**Neighborhood**	**Facility Type**	**On-Street Parking**	**Bicycle Infrastructure Improvements**	**Year Installed**	**CBD Gateway**
Decatur St	French Quarter	1-lane, One-Way	One Side	Connecting segment with sharrows	2013	
Royal St	Marigny	1-lane, One-Way	Both Sides			
St. Claude Ave	Bywater	4-Lane, Divided	Both Sides	Bike Lanes	2008	
Simon Bolivar Ave	Central City	4-Lane, Divided	Both Sides	Connecting segment with sharrows and bike lanes	2010	X
Carondelet St	Central City	2-Lane, One Way	Both Sides*			X
St. Charles Ave	Central City	4-Lane, Divided	Both Sides			X
Camp St	Lower Garden District	2-Lane, One Way	One Side	Connecting segment with sharrows	2010	X
Magazine St	Lower Garden District	2-Lane, One Way	Both Sides	Connecting segment with sharrows	2010	X
Magazine St (Uptown)	Uptown	2-Lane	None			
Esplanade Ave	Mid-City	2-Lane, Divided	Both Sides	Bike Lanes	2013	
Gentilly Blvd	Gentilly	4-Lane, Divided	None	Buffered Bike Lanes	2010	
Harrison Ave	Lakeview	4-Lane, Divided	Both Sides	Connecting segment with bike lanes	2009	
Metairie Hammond Hwy	Bucktown	2-Lane	None			
Papworth Ave	Metairie	2-Lane	None			
Williams Blvd	Kenner	4-Lane, Divided	None			
Airline Dr	Kenner	4-Lane, Divided	None			
Loyola Ave	CBD	6-Lane, Divided	One Side	Bike Lanes (upgraded from sharrows installed in 2010)	2012	X
Tulane Ave	Tulane/Gravier	6-Lane, Divided	Both Sides			
S Broad St	Tulane Gravier	6-Lane, Divided	Both Sides			
St. Charles Ave (Uptown)	Uptown	2-Lane, Divided	Both Sides	Bike Lanes	2013	
St. Bernard Ave	Seventh Ward	4-Lane, Divided	Both Sides			
Basin St	Treme/Lafitte	6-Lane, Divided	Both Sides			
Nashville Ave	Fountainbleu	4-Lane, Divided	Both Sides			
S Carrollton Ave	East Carrollton/Audubon	2-Lane, Divided	Both Sides	Bike Lanes	2010	
Broad St Bridge	Tulane/Gravier	4-Lane, Divided Bridge	None			
St. Claude Bridge	Bywater/Holy Cross	4-Lane, Divided Bridge	None	Sharrows; Connecting segment with bike lanes	2008	
Notes:	Orleans Parish neighborhood classification derived from New Orleans City Planning Commission.					
	*One side of the block observed on Carondelet has an off-street parking strip immediately perpendicular to the road.					

Appendix B: Manual Count Observation Protocol

Bike Ped Observation Protocol

Rationale

In 2009-2011, the city of New Orleans Department of Public Works and the State of Louisiana Department of Transportation installed approximately fifty miles of bicycle lanes in New Orleans. These bike lanes run through several neighborhoods in New Orleans. We would like to examine the effect of bike lanes on ridership and pedestrian behavior in New Orleans.

Summary

This data collection method was created by Kathryn Parker, MPH. The data collection sheet is based upon examples of other pedestrian and bicycle data collection methods from the United States Department of Transportation.[10] The method is based upon two individuals counting

Training and Certification

All observers will read this protocol with the trainer and then practice near the corner of N. Rampart and Canal Streets. Observers will be certified with 80% agreement with the trainer after 30 minutes of observation.

Codes and Recoding

Intersection: Usually, this will be Broad and Lafitte; etc.

Temperature: Observers will leave this section blank. The temperature will be filled out by the project manager using the average hour weather data from www.wunderground.com

Rain: Observers will record if there are any rain showers.

Observer Name: Observers will record their first and last name

Hour: example: 7:00-8:00am will read: 7:00am. Only one hour should be indicated per time slot. If the observer sees that they are running out of room, they may use a time slot for every half hour or less.

bicycle riders on the street, sidewalk and neutral ground before and after the installation of bike lanes. The counts of pedestrians will also be made. The data can be analyzed to find the number of cyclists by direction of travel, specific location, (i.e. street, sidewalk or neutral ground) gender, race and approximate age.

Observation Areas

Each group of streets will have different observation areas. These areas will be provided on maps we give to you.

Two observers should stand or sit at the designated location as indicated by the observation area maps. One observer should be located at each side of the street, within eyesight of the other observer.

Training and Certification

All observers will read this protocol with the trainer and then practice near the corner of N. Rampart and Canal Streets. Observers will be certified with 80% agreement with the trainer after 30 minutes of observation.

Codes and Recoding

Intersection: Usually, this will be Broad and Lafitte; etc.

Temperature: Observers will leave this section blank. The temperature will be filled out by the project manager using the average hour weather data from www.wunderground.com

Rain: Observers will record if there are any rain showers.

Observer Name: Observers will record their first and last name

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Comments: Observers should note if there are any unusual circumstances affecting lane usage, such as cars parked on the bike lane or unsafe riding conditions. It should also be noted if another observer substitutes counting by adding their name and the time they observed under comments (i.e., for a bathroom break).

[1]Schneider, Robert; Patton, Robert; Toole, Jennifer; Raborn, Craig. Pedestrian and Bicycle Data Collection in United States Communities: Quantifying Use, Surveying Users, and Documenting Facility Extent. January 2005. Pedestrian and Bicycle Information Center,

Hour: example: 7:00-8:00am will read: 7:00am. Only one hour should be indicated per time slot. If the observer sees that they are running out of room, they may use a time slot for every half hour or less.

Comments: Observers should note if there are any unusual circumstances affecting lane usage, such as cars parked on the bike lane or unsafe riding conditions. It should also be noted if another observer substitutes counting by adding their name and the time they observed under comments (i.e., for a bathroom break).

Appendix C: Manual Count Observation Sheets

Bicycle Observation Tally Form

Observer Name: _____ Intersection: _____

Day: _____ Date: _____ Temperature: ____ Rain: Y/N

Hour	Street								Neutral Ground				Sidewalk				Helmet?
	Women		Girls		Men		Boys		Women	Girls	Men	Boys	Women	Girls	Men	Boys	
	RW	WW	RW	WW	RW	WW	RW	WW									
	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
-:--	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
-:--	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	
	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
-:--	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	

Comments:

Pedestrian Observation Tally Form

Observer Name: _____ Intersection: _____

Day: _____ Date: _____ Temperature: _____ Rain: Y/N

Hour	Street				Neutral Ground				Sidewalk			
	Women	Girls	Men	Boys	Women	Girls	Men	Boys	Women	Girls	Men	Boys
	W	W	W	W	W	W	W	W	W	W	W	W
	B	B	B	B	B	B	B	B	B	B	B	B
	O	O	O	O	O	O	O	O	O	O	O	O
	W	W	W	W	W	W	W	W	W	W	W	W
	B	B	B	B	B	B	B	B	B	B	B	B
	O	O	O	O	O	O	O	O	O	O	O	O
	W	W	W	W	W	W	W	W	W	W	W	W
	B	B	B	B	B	B	B	B	B	B	B	B
	O	O	O	O	O	O	O	O	O	O	O	O
	W	W	W	W	W	W	W	W	W	W	W	W
	B	B	B	B	B	B	B	B	B	B	B	B
	O	O	O	O	O	O	O	O	O	O	O	O

Comments:

Appendix D: Manual Count Weather Data

2013 Manual Count Weather Data						
		Temperature (°F)			Precip.	Observed Weather Events
Site	Count Date	High	Average	Low	(in)	
Harrison Ave	4/2/2013	77	67	56	0.04	Fog
	4/4/2013	63	57	51	T	
Metairie Hammond Highway	4/2/2013	77	67	56	0.04	Fog
	4/10/2013	83	78	72	0	
Papworth Avenue	3/19/2013	74	67	60	0	
	3/21/2013	65	58	50	0	
Gentilly Blvd	4/9/2013	81	77	72	T	
	4/17/2013	84	79	73	0	
Esplanade Ave	5/21/2013	87	81	74	0	
	5/23/2013	89	79	69	T	
Royal St	4/9/2013	81	77	72	T	
	4/10/2013	83	78	72	0	
St. Claude Avenue	4/17/2013	84	79	73	0	
	4/18/2013	83	78	72	T	
Magazine Street (Uptown)	4/16/2013	84	79	73	0	
	5/1/2013	76	72	67	1.34	Rain-Thunderstorm
Camp Street (Gateway)	4/23/2013	82	74	66	0	
	5/8/2013	82	72	61	0	
Magazine Street (Gateway)	4/30/2013	77	72	66	0.58	Fog-Rain
	5/8/2013	82	72	61	0	
Decatur Street	4/23/2013	82	74	66	0	
	4/25/2013	73	65	57	T	
Simon Bolivar Ave (Gateway)	5/1/2013	76	72	67	1.34	Rain-Thunderstorm
	5/7/2013	81	69	57	0	
Carondelet St (Gateway)	5/7/2013	81	69	57	0	

	5/9/2013	83	74	65	0	
St. Charles Avenue (Gateway)	5/14/2013	82	71	59	0	
	5/15/2013	82	72	62	0	
St. Bernard Avenue	3/12/2013	66	57	47	0	
	3/13/2013	67	56	44	0	
Airline Drive	3/13/2013	67	56	44	0	
	3/21/2013	65	58	50	0	
Broad St	3/12/2013	66	57	47	0	
	3/14/2013	66	57	48	0	
St. Charles Avenue	3/19/2013	74	67	60	0	
	3/28/2013	68	55	42	0	
Basin St	3/19/2013	74	67	60	0	
	3/21/2013	65	58	50	0	
Williams Blvd	3/26/2013	56	49	41	0	
	3/27/2013	60	50	40	0	
Nashville Ave	3/26/2013	56	49	41	0	
	3/27/2013	60	50	40	0	
Tulane Ave	3/26/2013	56	49	41	0	
	3/28/2013	68	55	42	0	
Loyola Ave	4/2/2013	77	67	56	0.04	Fog
	4/4/2013	63	57	51	T	
South Carrollton Ave	5/21/2013	87	81	74	0	
	5/22/2013	79	74	69	0.13	
St. Claude Bridge	5/15/2013	82	72	62	0	
	5/16/2013	83	74	65	T	
Broad St Bridge	5/14/2013	82	71	59	0	
	5/16/2013	83	74	65	T	
Source: The Weather Undergound						

Appendix E: PBRI Extrapolation Methodology

Manual Counts were performed at 15 sites in Orleans and Jefferson Parish, LA. Each count site represents a total of four observation periods: two AM counts (7-9 AM) and two PM counts (4-6 PM). For all sites, with the exception of the Paris and Burbank intersection count, two volunteers observed from opposite sides of the street, creating a "plane" of observation. Observers differentiated between pedestrians and bicyclists and noted gender, race, age group, helmet use, and travel orientation. With the data collected by PBRI student workers, the following extrapolation method, derived from the National Bicycle and Pedestrian Documentation (NBPD) Project, was used to estimate daily, weekly, monthly, and annual traffic volumes of pedestrians and bicyclists.

PBRI Extrapolation Methodology

- Divide counts into AM and PM sessions. There should be two, 2-hour counts for each session.
- Come up with separate bicycle and pedestrian averages for AM and PM sessions. (i.e. for AM bicycle average, add both 2-hour AM bicycle counts and divide by the amount of hours observed, which should be four.)
- Add the bicycle and pedestrian averages together for a total user average. Then, multiply this number by 1.05 (this multiplier accounts for traffic between 11pm and 6am which is rarely manually counted and assumed to make up 5% of all daily volume).
- To calculate the daily volume, note the time (hours) that were observed for AM and PM counts. These should always be 7-9am for AM counts and 4-6pm for PM counts. Also note the month of the year. Use the NBPD Project extrapolation formula to find the corresponding adjustment factors for the time period and month. For our purposes, all manual counts are PED trails and should have been observed on a weekday. Divide total user averages by their appropriate adjustment factor to get the daily user average.
- For weekly volumes, determine the days that the AM and PM counts were observed. They may be the same or different. Use NBPD Project methodology to find the correct adjustment factor(s) for the AM and PM counts. If, for example, one AM count (2 hours) was taken on a Tuesday and the other count (2 hours) was taken on a Thursday, take the average of the two adjustment factors and apply it. Divide the AM and PM session daily user averages by their appropriate adjustment factor to get the weekly averages for AM and PM sessions.
- At this point, average the weekly user averages for the AM and PM sessions together since all unique data attributes have now been accounted for.
- Get the monthly user average by multiplying the combined AM and PM weekly average by 4.33 (the number of weeks in a year).
- In order to get the annual estimate, note the month that the counts were observed. This is done to account for seasonal variation in use. Use NBPD Project methodology to find the respective adjustment factor for the month observed under our climate pattern and divide the monthly user average by this number. NBPD methodology provides 3 climates to choose from. For New Orleans, choose "very hot summer, mild winter." Climate is accounted for because it affects monthly patterns.
- To get monthly or daily averages from the annual estimate above, simply divide by 12 or 365 respectively.
- In order to get individual bicycle and pedestrian averages, multiply the desired average (daily, weekly, monthly, or annual) by the bicycle or pedestrian percentage observed from the manual counts at that site.

Appendix F: NBPD Project Count Adjustment Worksheet

NATIONAL BICYCLE & PEDESTRIAN DOCUMENTATION PROJECT

Count Adjustment Factors

March 2009

While more year-long automatic count data is needed from different parts of the county, especially for pedestrians and on-street bicyclists, enough data now exists to allow us to adjust counts done almost any period on multi-use paths and pedestrian districts to an annual figure.

All percentages in the following tables represent the percentage of the total period (day, week, or month).

How to Use This Data

The factors in the following tables are designed to extrapolate daily, monthly, and annual users based on counts done during any period of a day, month, or year. The factors currently are designed to be used by (a) multi-use pathways (PATH) and (b) higher density pedestrian and entertainment areas (PED).

How Many Counts Can it Be Based On?

Given the variability of bicycle and pedestrian activity, we strongly encourage that all estimates be based on the average of at least two (2) and preferably three (3) counts during the same time period and week, especially for lower volume areas. For example, counts could be done from 2-4pm on consecutive weekdays (Tuesday – Thursday) during the same week, or, in consecutive weeks. Weekday counts should always be done Tuesday through Thursday, and never on a holiday. Weekend counts can be done on either day.

Bicyclists versus Pedestrians

The factors used in these formulas are for combined bicyclist and pedestrian volumes. Once you have calculated your total daily, monthly, or annual volume, you can simply multiple the total by the percent breakdown between bikes and pedestrians based on your original count information.

Start with the Hour Count

Once you have collected your count information and developed an average weekday and weekend count volume for bicyclists and/or pedestrians, pick any one (1) hour period from either of those days.

Adjustment Factor

Your next step is to multiply those counts by 1.05.

Sample #1

Average 1 hour weekday count: 236 bikes/peds x 1.05 = 248

Average 1 hour weekend day count: 540 bikes/peds x 1.05 = 567

1

NBPD Count Adjustment Factors (March 2009)

This adjustment factor is done to reflect the bicyclists/pedestrians who use the facility between 11pm and 6am, or, about 5% of the average daily total. The count formulas are all based on total counts between 6am and 10pm, since many available counts only cover those periods. If you are certain your facility gets virtually no use between those hours, you can forgo this step.

Calculate Daily Weekday and Weekend Daily Total

Identify the weekday and weekend hour your counts are from in Table 1 below. Be sure to use the PATH column for all multi-use paths, and the PED column for all higher density pedestrian areas with some entertainment uses such as restaurants. Be sure to select the correct time of year (April-September, or, October-March) as well.

Sample #2: done in June on a multiuse path (weekday = 4-5pm, weekend day = 12-1pm):

Adjusted weekday hourly count = 248/.07 = 3,542 daily users

Adjusted weekend day hourly count = 567/.1= 5,670 daily users

Calculating Average Weekly Volumes

We need to adjust these figures based on the day of the week. See table 2 below. Find the day of the week your counts were done, and factor them by that percent. If you did multiple counts on different days of the week, then take the average of those factors.

Sample #3: counts were done on a Tuesday and a Saturday.

Adjusted weekday count = 3,542/.13 = 27,246 average weekly users

Adjusted weekend count = 5,670/.18 = 31,500

Add these two figures together, and divide by 2: 27,246+31,500=58,746/2 = 29,373 people

The average weekly volumes for that month are 29,373 people.

Convert to Monthly Volumes

To convert from average weekly volumes to an average monthly volume, multiply the average weekly volume by the average number of weeks in a month (4.33 weeks).

Sample #4: 29,373 x 4.33 = 127,282 people.

This is the average monthly volume for the month the counts were conducted.

Convert to Annual Totals

To convert from the average monthly volume for the month the counts were taken into an annual total, divide the average monthly figure by the factor from Table 3 for the month the counts were conducted. Use the general climate zones described. Some climate zone types are not included.

Sample #5: counts were done in June in a moderate climate zone.

Average monthly volumes = 127,282/.08 = 1,591,037 people.

Based on these sample figures, it is estimated that almost 1.6 million people use the pathway annually.

2

Average Monthly and Daily Figures

To identify the average monthly and daily figures, simply divide the annual figure by 12 (for month) or by 365 (for daily figures).

Monthly average = 1,591,037/12 = 132,586 people

Daily Average = 1,591,037/365 = 4,359 people

Table 1

Hourly Adjustment Factors

Multi-use paths and pedestrian entertainment areas by season

	April - September 6am - 9pm					October - March 6am - 9pm			
	---- PATH------		-----PED-----			---- PATH------		-----PED-----	
	wkdy	wkend	wkdy	wkend		wkdy	wkend	wkdy	wkend
0600	2%	1%	1%	1%	0600	2%	0%	1%	0%
0700	4%	3%	2%	1%	0700	4%	2%	2%	1%
0800	7%	6%	4%	3%	0800	6%	6%	3%	2%
0900	9%	9%	5%	3%	0900	7%	10%	5%	4%
1000	9%	9%	6%	5%	1000	9%	10%	6%	5%
1100	9%	11%	7%	6%	1100	9%	11%	8%	8%
1200	8%	10%	9%	7%	1200	9%	11%	9%	10%
1300	7%	9%	9%	7%	1300	9%	10%	10%	13%
1400	7%	8%	8%	9%	1400	9%	10%	9%	11%
1500	7%	8%	8%	9%	1500	8%	10%	8%	8%
1600	7%	7%	7%	9%	1600	8%	8%	7%	7%
1700	7%	6%	7%	8%	1700	7%	5%	6%	6%
1800	7%	5%	7%	8%	1800	6%	3%	7%	6%
1900	5%	4%	7%	8%	1900	4%	2%	7%	6%
2000	4%	3%	7%	8%	2000	2%	1%	6%	6%
2100	2%	2%	6%	8%	2100	2%	1%	5%	5%

Table 2

Daily Adjustment Factors

Note: Holidays use weekend rates.

MON	14%
TUES	13%
WED	12%
THURS	12%
FRI	14%
SAT	18%
SUN	18%

Table 3

Monthly Adjustment Factors by Climate Area

	Climate Region		
Month	Long Winter Short summer	Moderate Climate	Very hot summer Mild winter
JAN	3%	7%	10%
FEB	3%	7%	12%
MAR	7%	8%	10%
APR	11%	8%	9%
MAY	11%	8%	8%
JUN	12%	8%	8%
JUL	13%	12%	7%
AUG	14%	16%	7%
SEP	11%	8%	6%
OCT	6%	6%	7%
NOV	6%	6%	8%
DEC	3%	6%	8%

Appendix G: Additional Automatic Count Data Tables

Jefferson Davis Trail Observed Volume by Hour of Day			
	Absolute #	*% of Total*	Average Hourly Users
12:00 AM	1,111	*0.7%*	4
1:00 AM	784	*0.5%*	3
2:00 AM	468	*0.3%*	2
3:00 AM	308	*0.2%*	1
4:00 AM	378	*0.2%*	1
5:00 AM	1,094	*0.7%*	4
6:00 AM	5,135	*3.3%*	17
7:00 AM	9,170	*5.9%*	30
8:00 AM	9,597	*6.2%*	31
9:00 AM	9,451	*6.1%*	31
10:00 AM	9,283	*6.0%*	30
11:00 AM	9,195	*5.9%*	30
12:00 PM	9,938	*6.4%*	32
1:00 PM	9,191	*5.9%*	30
2:00 PM	9,462	*6.1%*	31
3:00 PM	10,200	*6.5%*	33
4:00 PM	12,162	*7.8%*	39
5:00 PM	13,291	*8.5%*	43
6:00 PM	11,093	*7.1%*	36
7:00 PM	9,780	*6.3%*	32
8:00 PM	6,067	*3.9%*	20
9:00 PM	3,722	*2.4%*	12
10:00 PM	2,877	*1.8%*	9
11:00 PM	2,070	*1.3%*	7
10-Month Total	**155,827**	***100.0%***	**22.2**

Jefferson Davis Trail Observed Volume by Week

Week of	Absolute #	% of Total	Average Daily Users	Average Daily Temp	Total Weekly Precipitation (in)
Fri 01 Jun 2012	3299	2.12%	471	81	0.1
Fri 08 Jun 2012	2998	1.92%	428	80	2.1
Fri 15 Jun 2012	3452	2.22%	493	81	1
Fri 22 Jun 2012	3087	1.98%	441	88	0
Fri 29 Jun 2012	3141	2.02%	449	85	0.3
Fri 06 Jul 2012	2811	1.80%	402	83	3.2
Fri 13 Jul 2012	2687	1.72%	384	83	3.2
Fri 20 Jul 2012	3515	2.26%	502	82	4.1
Fri 27 Jul 2012	2840	1.82%	406	85	0.8
Fri 03 Aug 2012	2910	1.87%	416	84	2.5
Fri 10 Aug 2012	3131	2.01%	447	84	1.2
Fri 17 Aug 2012	3115	2.00%	445	80	4.3
Fri 24 Aug 2012	2381	1.53%	340	81	10.6
Fri 31 Aug 2012	3151	2.02%	450	85	0
Fri 07 Sep 2012	4197	2.69%	600	81	0.2
Fri 14 Sep 2012	4134	2.65%	591	79	1.5
Fri 21 Sep 2012	4190	2.69%	599	79	0.2
Fri 28 Sep 2012	3629	2.33%	518	75	1.1
Fri 05 Oct 2012	4543	2.92%	649	71	0
Fri 12 Oct 2012	4262	2.74%	609	75	0.4
Fri 19 Oct 2012	5335	3.42%	762	71	0
Fri 26 Oct 2012	4194	2.69%	599	62	0
Fri 02 Nov 2012	3712	2.38%	530	65	1.3
Fri 09 Nov 2012	3556	2.28%	508	60	0.1
Fri 16 Nov 2012	3654	2.34%	522	60	0
Fri 23 Nov 2012	3010	1.93%	430	57	1
Fri 30 Nov 2012	3814	2.45%	545	66	2.9
Fri 07 Dec 2012	3155	2.02%	451	59	0.3
Fri 14 Dec 2012	3466	2.22%	495	62	0.4
Fri 21 Dec 2012	2868	1.84%	410	55	1
Fri 28 Dec 2012	2274	1.46%	325	51	1.1
Fri 04 Jan 2013	2187	1.40%	312	55	3.4

Fri 11 Jan 2013	2715	1.74%	388	56	1.6
Fri 18 Jan 2013	3818	2.45%	545	54	0
Fri 25 Jan 2013	4179	2.68%	597	63	0.9
Fri 01 Feb 2013	4049	2.60%	578	59	2.8
Fri 08 Feb 2013	5350	3.43%	764	61	0.5
Fri 15 Feb 2013	3616	2.32%	517	54	0.4
Fri 22 Feb 2013	3200	2.05%	457	58	3.6
Fri 1 Mar 2013	3537	2.27%	505	53	0
Fri 8 Mar 2012	4150	2.66%	593	59	0.7
Fri 15 Mar 2012	4466	2.87%	638	65	0.1
Fri 22 Mar 2012	4058	2.60%	580	58	0
Fri 29 Mar 2012	3991	2.56%	570	64	2.3
10-Month Total	**155827**	**100.00%**	**506**	**69**	**61.2**