Loudon Road Bicycle and Pedestrian Count Report

Prepared by the Central NH Regional Planning Commission and the
TPAC Bicycle-Pedestrian Subcommittee
July 28, 2016

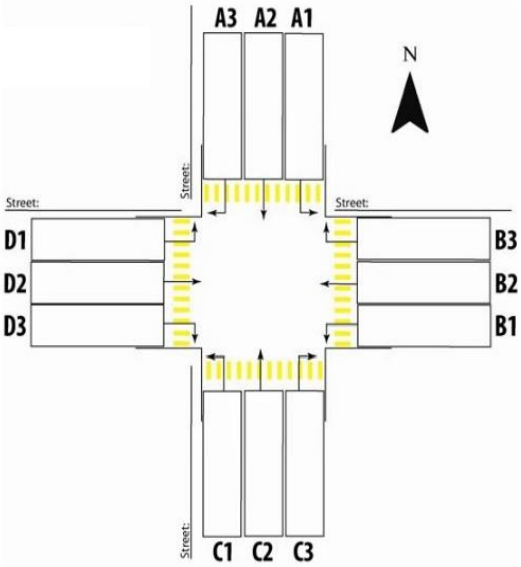
Introduction

Purpose

This report shares findings from the City of Concord's bicycle and pedestrian counting program as they relate to bicycle and pedestrian traffic on Loudon Rd. This information is intended to assist planners, engineers, and City Council in making informed decisions on the future of the Loudon Rd corridor.

Background on Concord's Bicycle and Pedestrian Counting Program

The Central New Hampshire Regional Planning Commission (CNHRPC) has assisted the City of Concord, the City's Transportation Policy Advisory Committee (TPAC) and its bicycle and pedestrian subcommittees develop and implement a bicycle and pedestrian counting program across the City of Concord. While planners and engineers have been counting automobile traffic nationwide for decades, data on bicycle and pedestrian traffic has only recently been collected. Concord is a statewide leader in counting bicycle and pedestrian traffic, with a growing database of 24 intersection locations having been counted 2 to 5 times since May of 2013. Count dates line up with nationally coordinated count dates in May and September, and occasionally July and January. In addition to traffic volumes, information on gender, age (kids who appear to be under age 16), helmet use, and sidewalk riding are also collected. This data enables us to quantify bicycle and pedestrian traffic in different parts of the City, and enables us to track trends and changes in traffic over time. Efforts are made to capture data before and after infrastructure improvements or private development. It also gives us an idea on who is walking and biking and why, and provides some insight on the bicycle/pedestrian crash reports that are collected and analyzed by the Police Department and the Traffic Operations Committee. These counts will also be used to track performance of the Main Street Complete Streets project, as required through the TIGER grant.



Counts are conducted manually, with paper and clipboard, for a 2 or 3 hour period, typically 4-6pm (which has been identified as a peak commuter time) or 2-4 pm in Safe Routes to School zones. Counts have been conducted by volunteers

from TPAC or its subcommittees and the Central NH Bicycling Coalition (CNHBC), and also by the Central NH Regional Planning Commission (CNHRPC) and City of Concord staff and interns. Automatic bicycle and pedestrian counting equipment has recently become available on a limited basis, and has added to the growing database.

Count reports are created annually that summarize that season's findings. As more data is collected, its usefulness and potential applications grow dramatically. Strategies for more sophisticated analysis of counts are in the works, and include activities such as comparison to longer range automatic counts and GPS track data. More information on bicycle and pedestrian counting in New Hampshire can be found here: https://www.nh.gov/dot/programs/bikeped/documents/BPTAC_CountingMasterPlan_FINAL_NOSTRAVA.pdf.

About This Loudon Rd Count Project

In light of planned safety improvements along the Loudon Road corridor, it was decided that the regular counting program would be supplemented with a special set of counts along the corridor to better understand bicycle and pedestrian use before and after any safety improvements.

Counts at 4 key corridor intersections were made simultaneously on multiple dates. Counts were conducted using the same methodology as other counts in the counting program. The counting period is 4-6pm (established peak commuter time in most of the city) on weekdays. In addition to turn movements and traffic volumes, information on helmet usage, sidewalk riding, children under age 16, and gender was also collected.

Counts were conducted by volunteers from the TPAC or its subcommittees, the Central NH Bicycling Coalition, as well as staff and interns from both the City of Concord and the Central NH Regional Planning Commission.

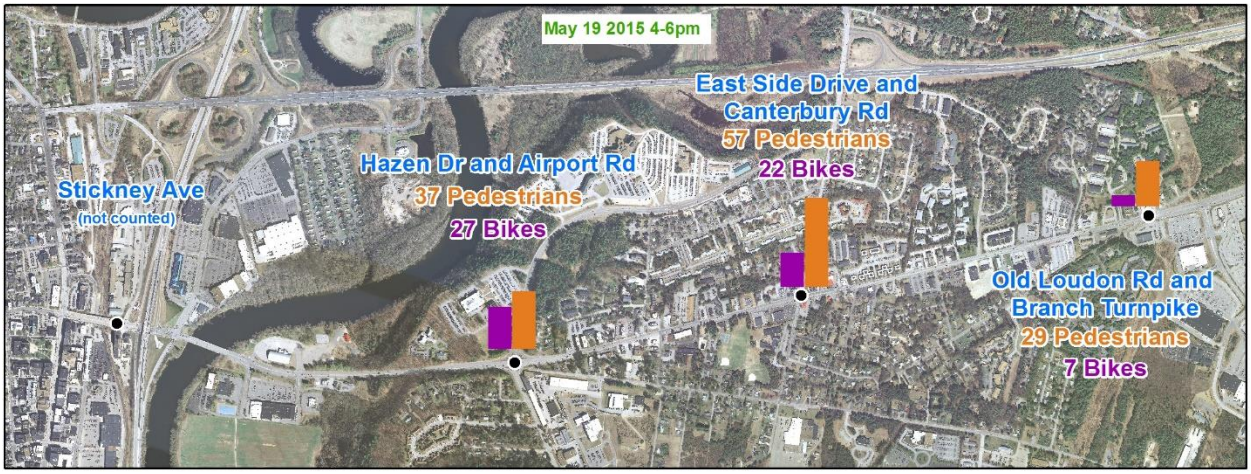
Loudon Road Count Analysis

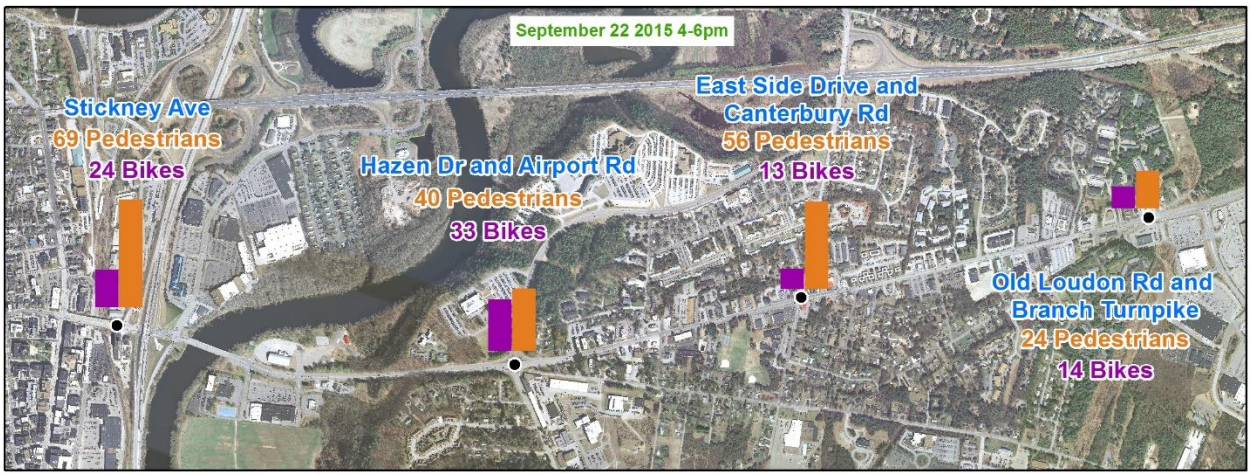
Count Volumes and Discussion:

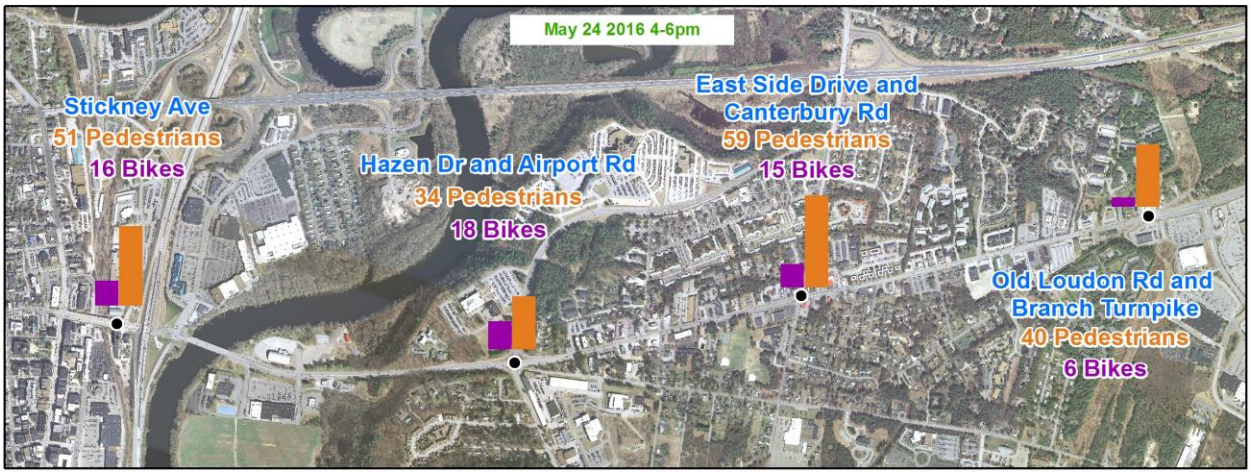
Special Loudon Rd counts were conducted on three dates.

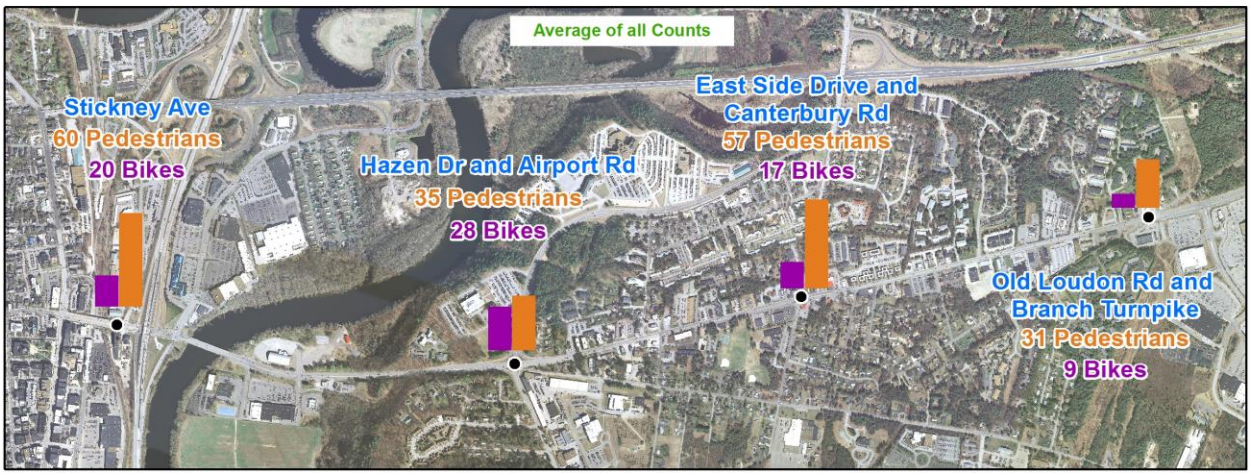
May 19th 2015, 4-6pm	Weather: Sunny, warm, humid
September 22 2015, 4-6pm	Weather: Cloudy, cool
May 24 2016, 4-6pm.	Weather: Cloudy, cool, showers earlier in the day

The following charts summarize the bicycle and pedestrian volumes for each location on the three count days as well as the average. The numbers represent the total number of bicycle or pedestrian trips through the intersection during the two hour timeframe from 4-6pm.


May 19 2015 4-6pm
Stickney Ave
(not counted)
Hazen Dr and Airport Rd
37 Pedestrians
27 Bikes
East Side Drive and
Canterbury Rd
57 Pedestrians
22 Bikes
Old Loudon Rd and
Branch Turnpike
29 Pedestrians
7 Bikes


September 22 2015 4-6pm
Stickney Ave
69 Pedestrians
24 Bikes
Hazen Dr and Airport Rd
40 Pedestrians
33 Bikes
East Side Drive and
Canterbury Rd
56 Pedestrians
13 Bikes
Old Loudon Rd and
Branch Turnpike
24 Pedestrians
14 Bikes


May 24 2016 4-6pm
Stickney Ave
51 Pedestrians
16 Bikes
Hazen Dr and Airport Rd
34 Pedestrians
18 Bikes
East Side Drive and
Canterbury Rd
59 Pedestrians
15 Bikes
Old Loudon Rd and
Branch Turnpike
40 Pedestrians
6 Bikes



Pedestrian and Bicycle traffic on Loudon Rd is relatively high compared to other parts of the City. For Pedestrians, only McKee Square, the area near the High School, and the Main Street locations match or exceed Loudon Rd volumes. Bicycle traffic is a little more evenly distributed than pedestrian traffic, but the counts at Hazen Drive and Stickney Avenue are in the top third citywide for bicycle traffic.

Additional counts along Loudon Rd have been conducted on earlier dates, but were not included in this study. The volumes and behaviors observed during those counts are in line with what was observed in the counts in this study.

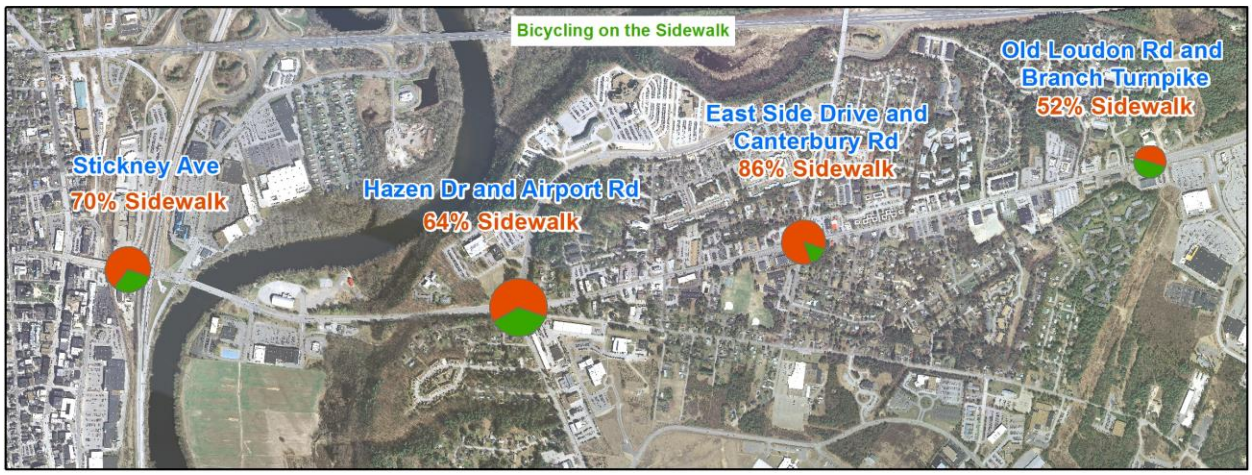
User Types and Discussion:

The Bicycle and Pedestrian counts also tracked information such as age, gender, helmet use and sidewalk riding. This "supplementary data" has proved to be as valuable as the count volumes themselves, and can better paint the picture of what is going on at a given location.

Sidewalk Riding

The first figure shows the rates of sidewalk riding. In the State of New Hampshire, bicycles are considered vehicles, and as such are not permitted to ride on the sidewalk. Sidewalk riding can be hazardous and is generally considered unsafe compared to riding on the street. Sidewalk riders are vulnerable to collisions from automobiles at driveways and intersections, especially when traveling opposite the direction of automobile travel. It can also present a hazard to pedestrians. Sidewalk riding is often not enforced. A majority of crashes along Loudon Rd occur while the bicycle is riding on the sidewalk. Considering the rates of sidewalk riding and other factors, there is no conclusive evidence that riding on the sidewalk is more or less safe than riding on the street on Loudon Rd.

The high rates of sidewalk riding on Loudon Rd are likely due to two factors. The most obvious is that Loudon Rd is not perceived to be a safe place to ride a bicycle on the street. Because of the high traffic volumes, speeds, and lack of shoulder space or bicycle lanes, bicycle riders feel safer on the sidewalk than on the street. The second factor may be the demographic of people riding on Loudon Rd. Experienced or enthusiast bicycle riders may be more aware of rules and regulations for riding on the street, and may also be more comfortable mixing with automobile traffic. Non-enthusiasts may be traveling at lower speeds and lack the skills necessary to navigate the heavy traffic.

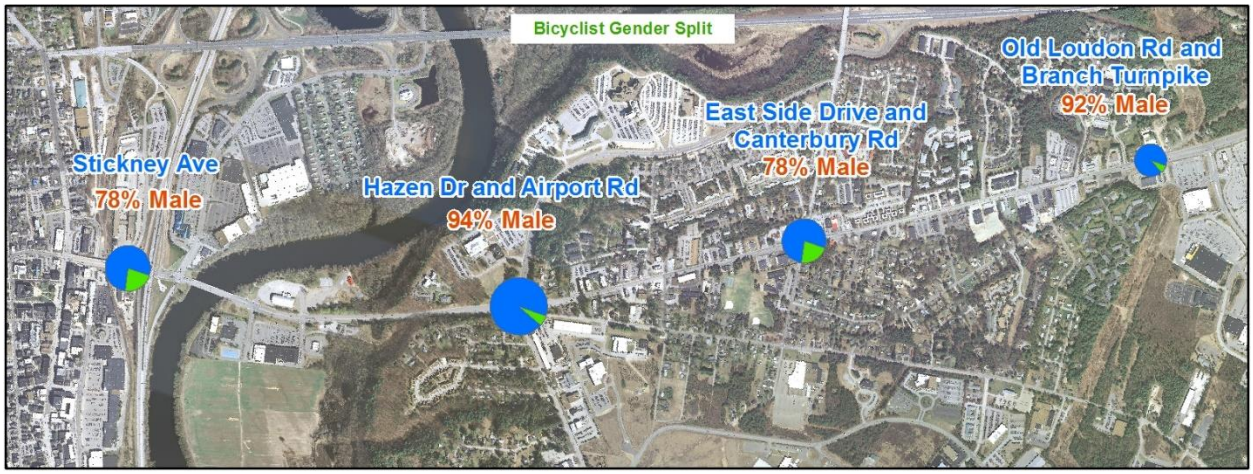


Rates of sidewalk riding elsewhere in Concord range mostly from 15 to 40%, with very few locations greater than 50%. High rates of sidewalk riding outside of Loudon Rd are often associated with either higher-stress roadways and/or higher rates of children bicycling.

Gender Split

Counters also collected data on the gender of bicycles. Gender of pedestrians was not collected. Gender of bicycle riders is significant to collect because of national efforts to better understand where and why rates of bicycling varies by gender. One predominant theory is that women bicyclists are more risk-averse than their male counterparts. It is a common pattern for higher-stress roadways to have lower rates of female bicycle riders than male. The extreme imbalance that we see on Loudon Rd raises questions about gender equality in mobility and access to services.

Females account for anywhere from 10 to 50% of bicycle riders at other count locations in Concord. Overall, rates of female riding is lower on Loudon Rd than other parts of Concord by a somewhat small margin.

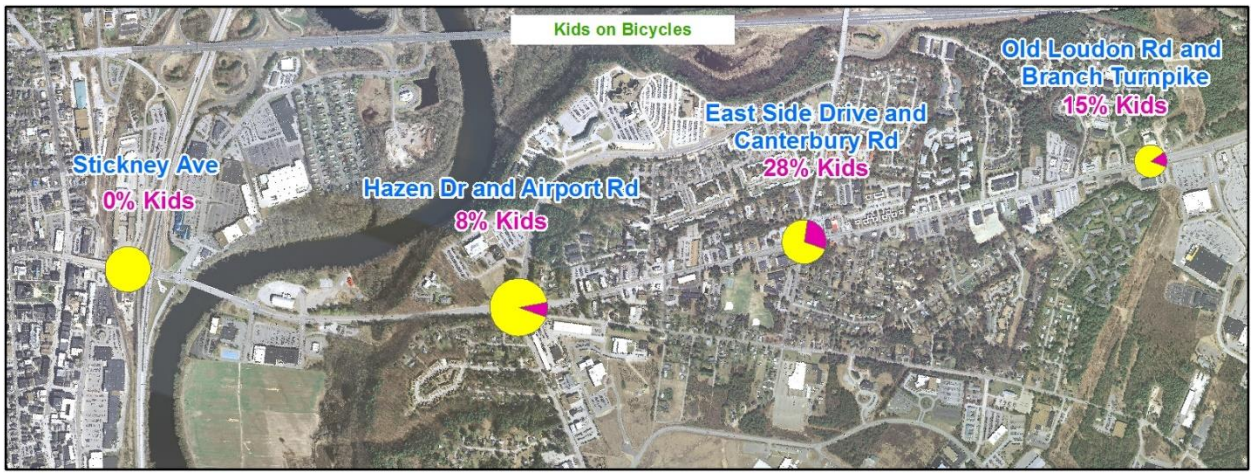


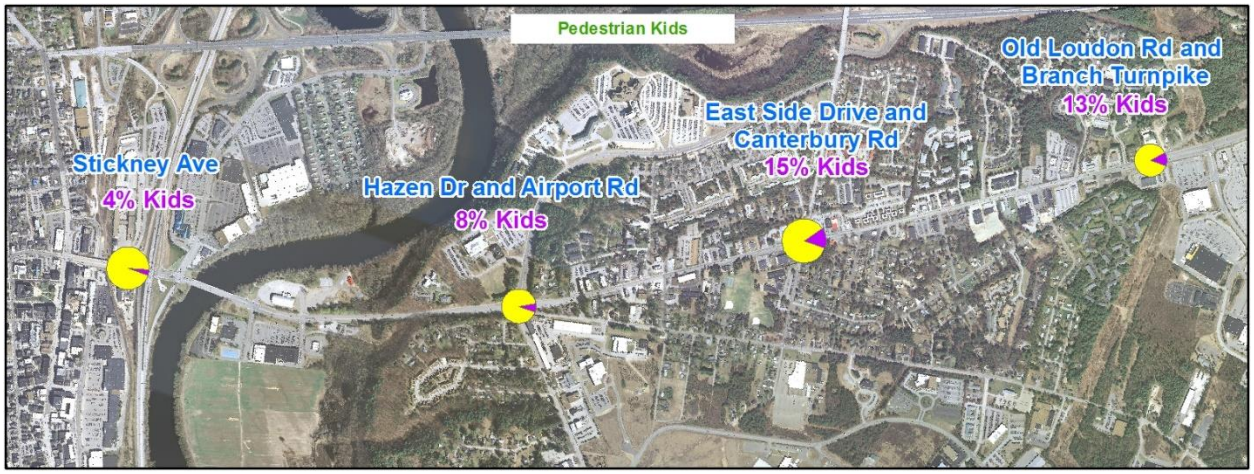
Children

Counters recorded the number of children bicycling and walking through the intersections. Counters are instructed to mark a person as a child if they believe they are under the age of 16. These numbers should be considered an estimate as there is no way to be certain of age short of interviewing.

One would expect a higher percentage of children around facilities such as parks, schools, or community centers. Despite what appears to be a perception that Loudon Rd is not safe for walking or biking, there are still relatively high rates of children on bike and on foot on Loudon Rd. It is not surprising that the Stickney Ave location has the lowest rates of children walking, as kids may be less likely to leave their neighborhood and cross from Downtown to the Heights. The East Side Drive and Canterbury Rd location has surprisingly high rates of children considering the high automobile traffic and wide, busy crossing. It is however in the center of the Heights neighborhood, in vicinity of relatively high density housing, a park, and a community center. The high rates of children walking and biking may also reflect a demographic of households that may not have access to an automobile, so children and their parents walk or bike despite the less than ideal conditions. Counters did not distinguish whether or not children were accompanied by an adult, but general observation tells us that many children are traveling without an adult.

Rates of children pedestrians range from 4% to 20% at count locations outside of Loudon Rd. This puts the western half of Loudon Rd below average, and the eastern half near average for children. Child bicycling rates vary widely by date and by location, so it is hard to get a good estimate. On the balance, the western half of Loudon Rd sees lower rates of children compared to other parts of the City, whereas the eastern half sees comparable or higher rates of children bicycling. The 28% children figure for East Side Drive and Canterbury Rd is quite high.

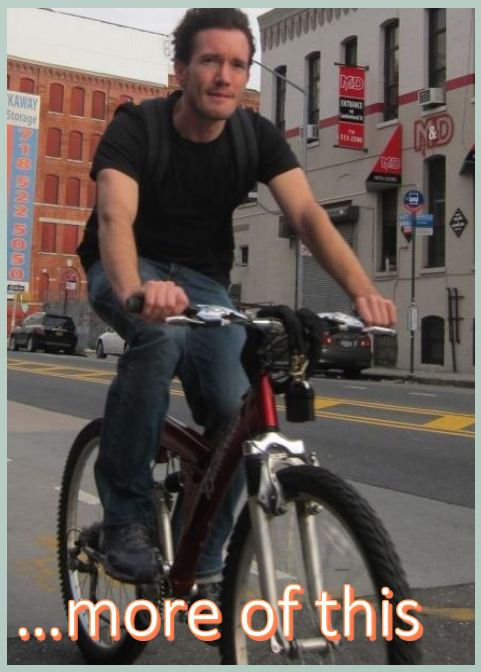




General observations

In addition to the quantitative data that are collected during counts, there are a number of subjective pieces of information the counter obtains through observation of the intersection. The counters who conducted these counts have participated in several other counts across the City since 2013. Through this observation, a general consensus of the types of traffic have emerged. The information shared here is not based on raw data, but on interviews with and experiences from counters.

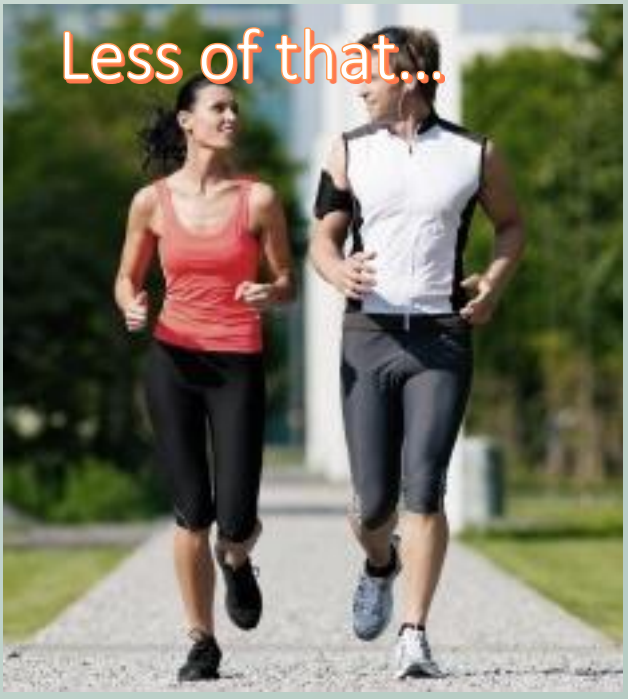
What kind of bike riding did the counters typically observe on Loudon Road?



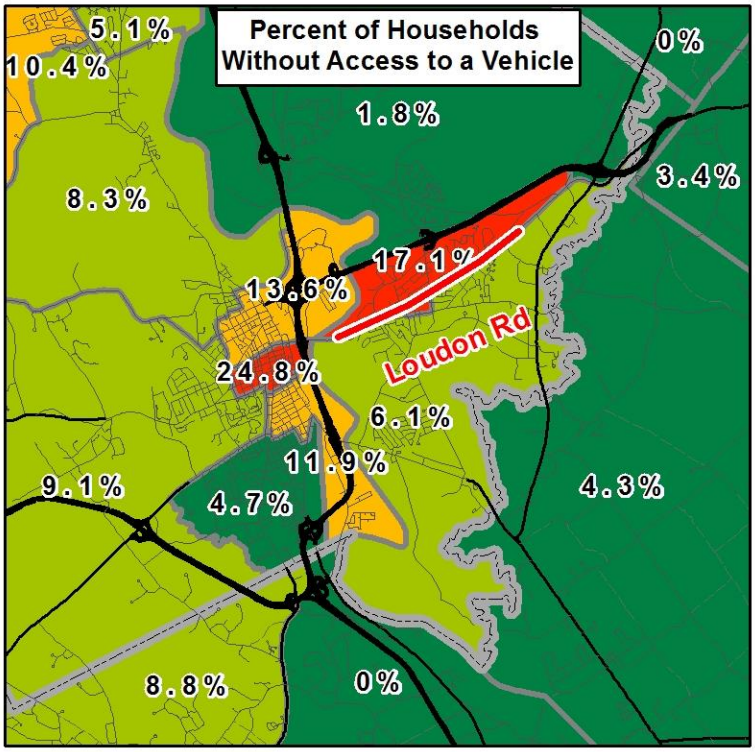
The image to the right is more typical of the bicyclist seen on Loudon Rd. Most people don't appear to be bicycle enthusiasts, but are just getting where they need to go. Counters felt that bicycle enthusiasts similar to the image in the left are more common in other parts of Concord compared to Loudon Rd.

Compared to other parts of concord, it appears that bicycle and pedestrian traffic on Loudon Rd is more of the utilitarian variety, and less of the recreational variety. One could conclude that people who have a choice as to where they ride or walk do not typically choose Loudon Rd. Given this, it may be surprising that Loudon Rd has such high rates of walking and bicycling compared to other parts of Concord. One reason could be that there is a high rate of people walking or bicycling for utilitarian, or transport purposes. There is data to back this up.

And what about for pedestrians?



The image on the right is a more typical scene. People are walking to and from where they need to go. It's common for people to be carrying grocery bags or backpacks. Counters did observe some joggers and exercise activities, but felt it was proportionately less common on Loudon Rd than most other parts of Concord.

In the census tract located between I-393 and Loudon Rd, 17.1% of households do not have access to a vehicle. This compares to a Merrimack County average of 5.7% of households without access to a vehicle. 79% of households in that census tract have access to only one or fewer vehicles. This implies that a majority of households may at times rely on walking, bicycling, or transit when their sole family vehicle is in use by another family member.

The percent of households without access to a vehicle is mapped by census tract at right. Access to vehicle information is from ACS 2014 5-Year Estimates.