

Peterborough Bicycling Statistical Analysis Project

Final Report

By

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Course Code: 4851H

Course Name: Community-Based Research Project

Term: FALL 2016

Date of Project Submission: March 2017

Project ID: 4696

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Executive Summary

The data involved in this project was collected by volunteer university students (including myself) The students collected data by visiting one of several locations in the city of Peterborough (usually an intersection) and count how many bikers and pedestrians they saw pass through the location. In addition, the students had to keep track of how many of the bikers they saw were female, wearing a helmet, or riding on the sidewalk, and how many of the pedestrians were either in a medical scooter or a wheelchair.

The data collection occurred on September 28th and 29th, 2016, during two periods of time: the first from 7:30-9:30am, and the second from 3:00-5:00pm.

The purpose of this project was to gather the collected data, organize it into an effective series of documents, and analyze it for significant trends. One of the documents generated consists of two spreadsheets. The first contains all of the biker and pedestrian numbers collected to enable an easier comparison of the numbers from each location. The purpose of the second spreadsheet is to estimate how many bikers pass through each of the locations in a day, a week, a month and a year, based on how many were counted in the two hour blocks.

Further analysis in this report includes more detail on the number of bikers in the data collection. This includes line graphs that show how many bikers were counted every 15 minutes at each location, and how those numbers changed over time. Along with each graph, the locations that had a much higher biker count than the rest of the locations are highlighted. A more in-depth analysis of these locations is included in an attempt to locate the cause of higher counts. One of the conclusions that stood out in all four of the biker categories (total, female, helmet and sidewalk) was that Rotary Greenway Trail and Nassau Mills Road showed a high biker count on both data collection days from 7:30-7:45am and 8:15-8:30am due to bikers entering and leaving the nearby Rowing Club.

The data that was collected this year was compared to data that was collected in previous years (dating back to 2012). The most notable conclusion from this section was that of the five years being compared (2012-2016), the previous year (2015) had the highest total biker count in all four biker categories while this year has the lowest total biker count in all four biker categories. One cause for this could be that a total of 80 2-hour biker counts were taken last year while this year only had 63.

Of course this data collection method is not flawless. One error that appeared frequently was that students counted medical scooters and wheelchairs together as one total when their totals should have been separate. One student spotted several j-walkers at his location while another one counted a dog, and neither student knew whether these two categories should be counted as pedestrians. Since all students were given a list of instructions in advance on what to count as a biker, pedestrian, etc., in the future, GreenUp should include additional instructions on whether to count abnormal pedestrians like the ones mentioned above as actual pedestrians to be counted. Another notable flaw was that Rotary Greenway Trail at Y in trail south of Whitaker showed the highest sidewalk biker count on September 29th from 7:30-9:00am and 9:15-9:30am, even though that location does not even have a sidewalk.

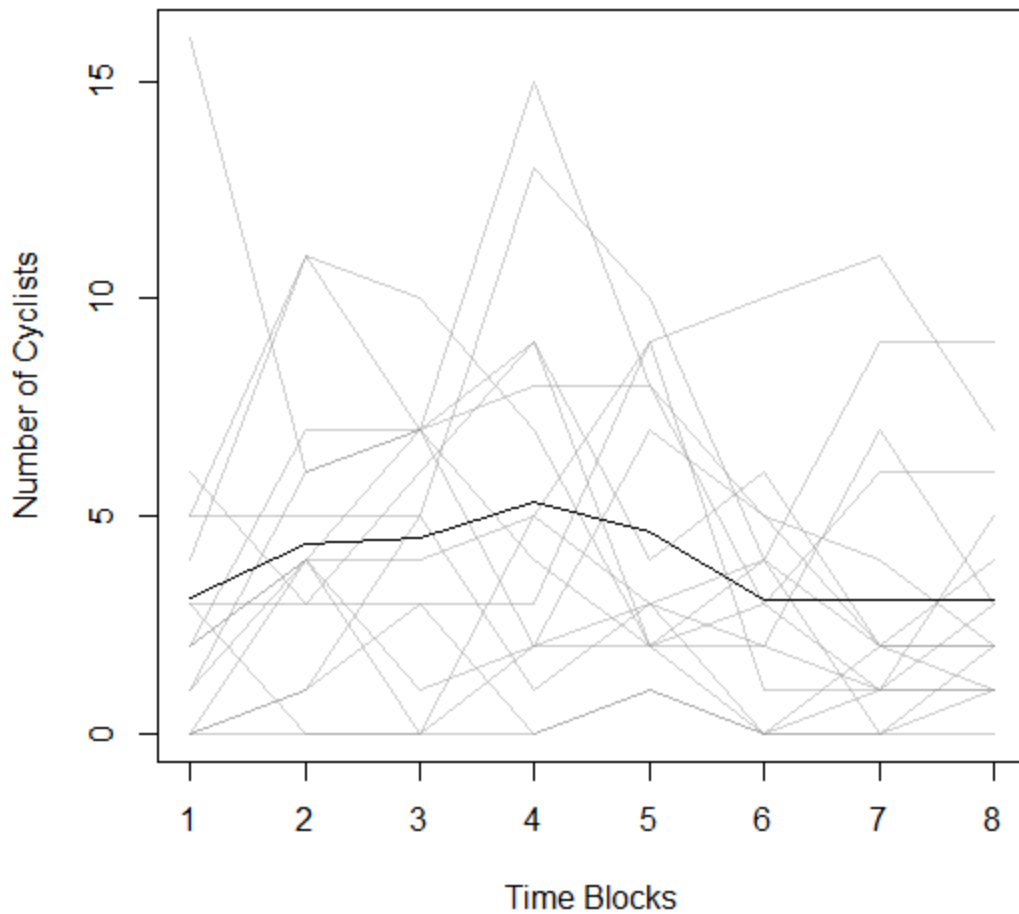
Data Findings

Legend for the 'Time Blocks' axis of the graphs in this section:

- 1- 7:30-7:45am (for the morning graphs), 3:00-3:15pm (for the afternoon graphs)
- 2- 7:45-8:00am (for the morning graphs), 3:15-3:30pm (for the afternoon graphs)
- 3- 8:00-8:15am (for the morning graphs), 3:30-3:45pm (for the afternoon graphs)
- 4- 8:15-8:30am (for the morning graphs), 3:45-4:00pm (for the afternoon graphs)
- 5- 8:30-8:45am (for the morning graphs), 4:00-4:15pm (for the afternoon graphs)
- 6- 8:45-9:00am (for the morning graphs), 4:15-4:30pm (for the afternoon graphs)
- 7- 9:00-9:15am (for the morning graphs), 4:30-4:45pm (for the afternoon graphs)
- 8- 9:15-9:30am (for the morning graphs), 4:45-5:00pm (for the afternoon graphs)

In each graph, each individual grey line represents the number of cyclists that were counted during each time block in one location. Each black line represents the average numbers of cyclists counted in each time block.

Total Cyclists for the Morning of September 28th



Location with the most cyclists between 7:30 and 7:45am:

-Rotary Greenway Trail and Nassau Mills Road: This intersection is located near the rowing club. There could have been a lot of bikers then because they were on their way to the club for rowing practice.

Location with the most cyclists between 7:45 and 8am:

-Monaghan and Romaine Street- eastern leg

-Monaghan and Lansdowne Street (I had done the data collection for this location).

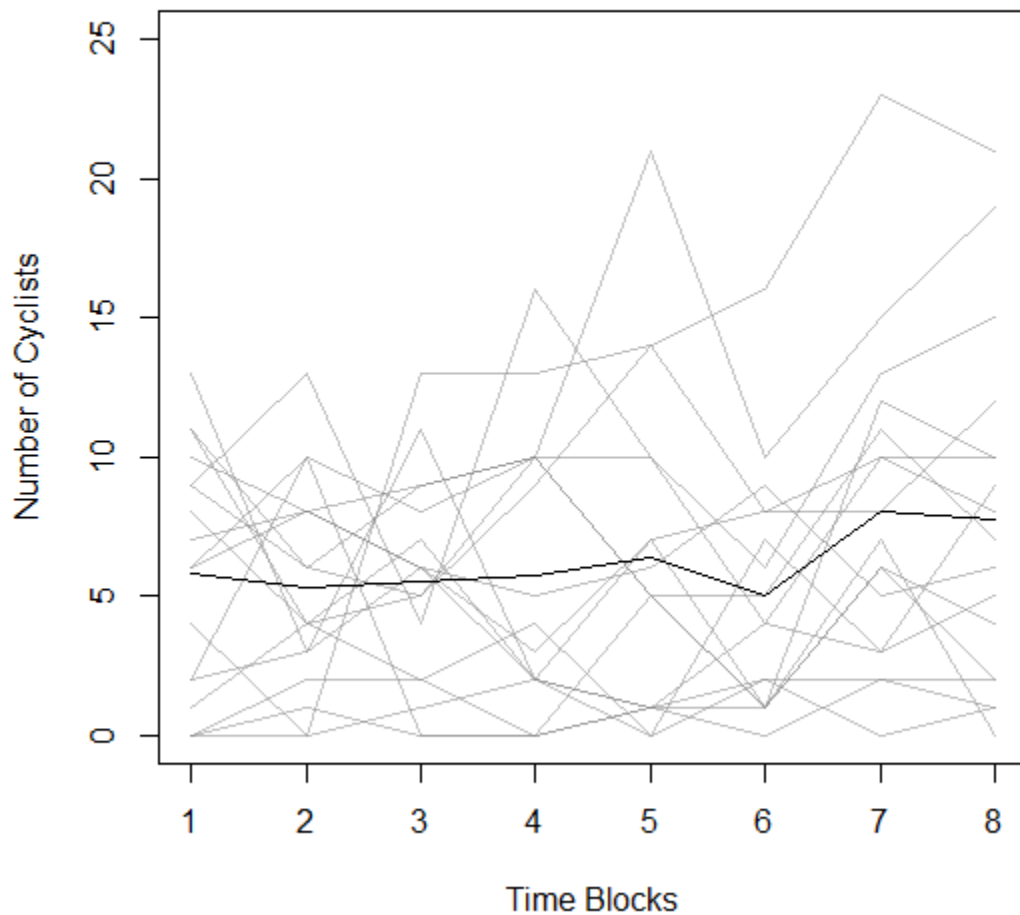
These two intersections are about a kilometer away from a school and I saw most of the cyclists appear to be 15 and under. There's a good chance they were on their way to school as most of them left the intersection in the school's direction.

Locations with the most cyclists between 8:15 and 8:30am:

-Rotary Greenway Trail and Nassau Mills Road: Rowing club members could have been leaving rowing practice mentioned earlier.

-Rotary Greenway Trail and Hunter Street: This intersection is located on the edge of the downtown area. Cyclists could be biking through this intersection to enter the downtown area for work or shopping.

Total Cyclists for the Afternoon of September 28th



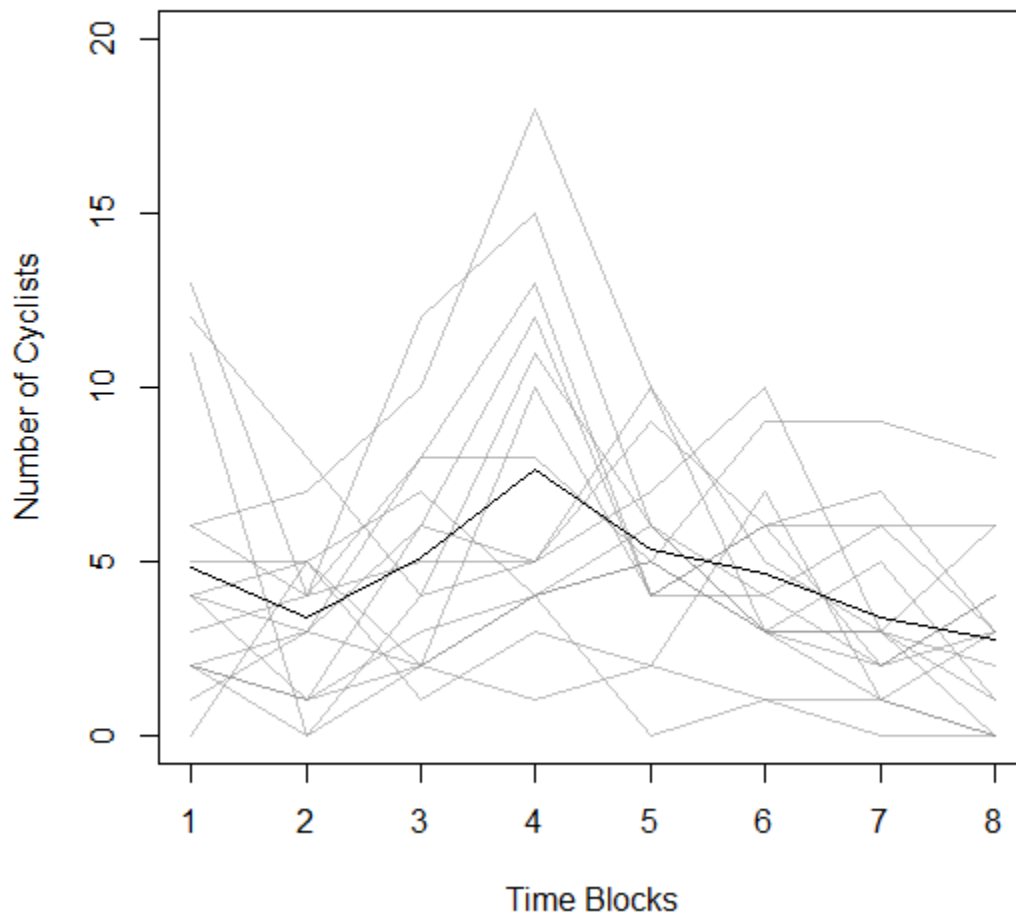
Location with a high cyclist count between 4 and 4:15pm and 4:45 and 5pm:

-Charlotte and Aylmer Street. This intersection is located in the south-west corner of downtown which leads to a block of condominiums that cyclists could be heading home to this late in the afternoon.

Location with a low cyclist count between 3 and 3:15pm, but increased and had the highest count between 4:45 and 5pm:

-Rotary Greenway Trail at Y in trail south of Whitaker: As this trail is located in a rural area a couple kilometers north of downtown away from the roads, it is logical for cyclists and pedestrians to be seen on it. The count could be high because people are finishing work or school and are using the path to either return home or have a leisurely ride. The reason why this location had counted no cyclists between 3 and 3:30pm is because the data collector arrived 30 minutes late.

Total Cyclists for the Morning of September 29th



Locations that counted 10+ cyclists between 7:30 and 7:45am:

-Rotary Trail and Nassau Mills Road: Near the rowing club. There could have been a lot of bikers then because they were on their way to the club for rowing practice.

-Hilliard and George Street at Rotary Trail Ling crossing: Most of the cyclists came from the North direction. It's likely they were headed downtown to shop or start their work day.

-Rotary Trail at Parkhill Road

Locations with the highest counts between 8:15 and 8:30am:

-Rotary Trail and Nassau Mills Road: Near the rowing club. There could have been a lot of bikers then because they were leaving rowing practice.

-Hilliard and George Street at Rotary Trail Ling crossing: Most of the cyclists came from the North direction. It's likely they were headed downtown to shop or start their work day.

-Rotary Trail at Parkhill Road

-Charlotte and Park Street.

-West end of Railway Bridge at Millennium Trail

-Rotary Greenway Trail at Y in trail south of Whitaker: Same reason as September 28th in the afternoon.

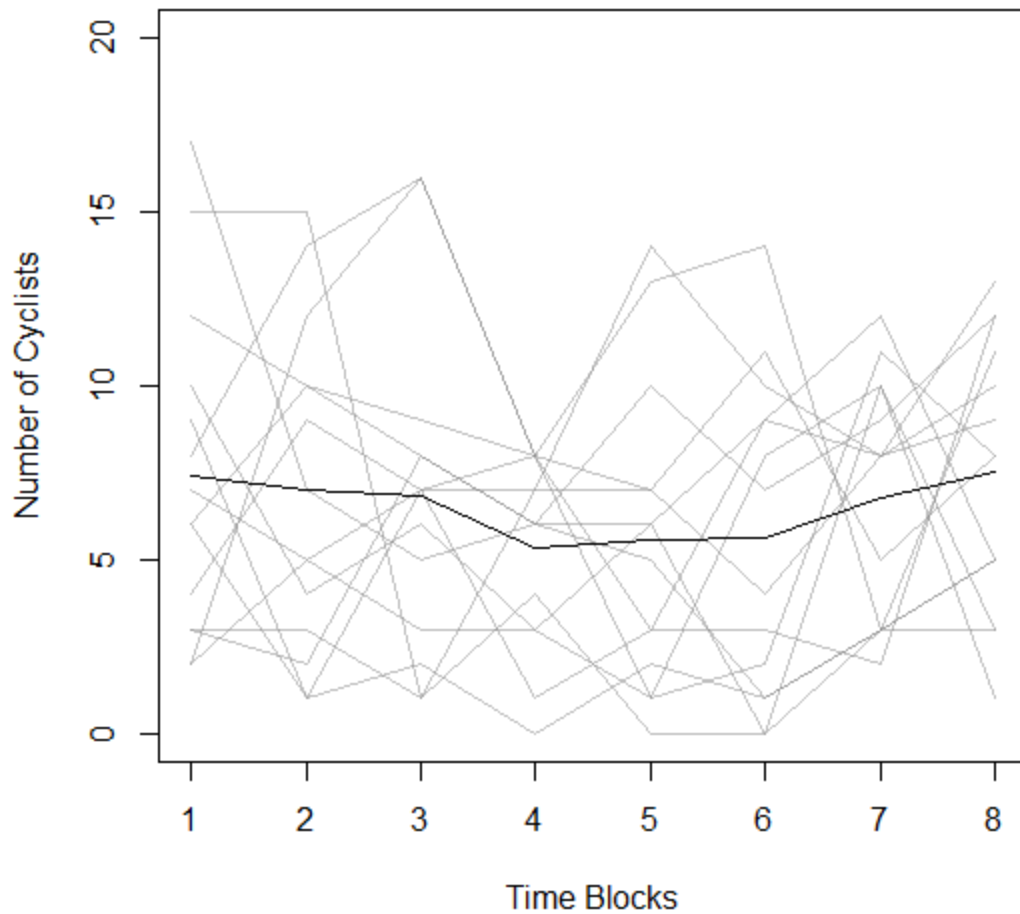
Locations with the highest counts between 8:45 and 9am:

-Water and University Heights Street: Near Trent University where students could be biking to for morning classes.

-Rotary Trail and Nassau Mills Road: Cyclists could be leaving the nearby rowing club.

-Charlotte and Aylmer Street: This intersection is located in the south-west corner of downtown which leads to a block of condominiums that cyclists could be departing from in the morning.

Total Cyclists for the Afternoon of September 29th



Locations with a lower number of cyclists between 3:15 and 3:30pm:

- Hilliard and George Street at Rotary Trail Ling crossing.
- London Street Footbridge- west end
- Lansdowne Street and Ashburnham Drive
- Rotary Greenway Trail at Y in trail south of Whitaker

Locations with the highest count between 3:30 and 3:45pm:

- McDonnel and Bethune Street: This area is surrounded by houses and apartment structures. Students could be returning home from school at this time.

-George Street at railway tracks by Holiday Inn: Majority of cyclists came from the North where the downtown area is. Those cyclists could be finishing their work shift and headed home.

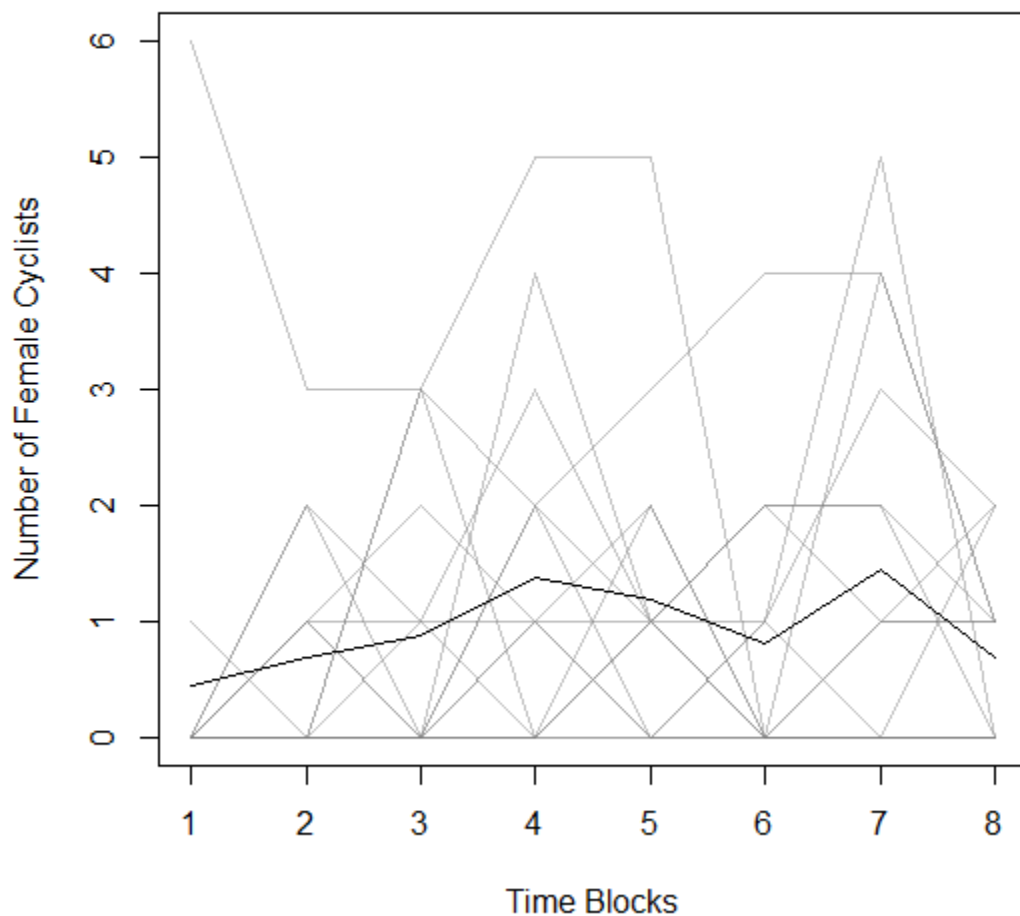
Locations with the highest count between 4 and 4:15pm:

-Charlotte and Aylmer Street: Heading home as condominiums and a bit of a neighbourhood is nearby, or headed for a shop (i.e. Shopper's).

-West end of Railway Bridge at Millennium Trail

-George Street at railway tracks by Holiday Inn. Cyclists could be finishing work and heading home.

Female Cyclists for the Morning of September 28th



Location with the most female cyclists between 7:30 and 7:45am:

-Rotary Greenway Trail and Nassau Mills Road: This intersection is located near the rowing club. There could have been a lot of bikers then because they were on their way to the club for rowing practice.

Locations with the most female cyclists between 8:15 and 8:30am:

- Rotary Greenway Trail and Nassau Mills Road: Rowing club members could have been leaving rowing practice mentioned earlier.

- Rotary Greenway Trail and Hunter Street: This intersection is located on the edge of the downtown area. Cyclists could be biking through this intersection to enter the downtown area for work or shopping.

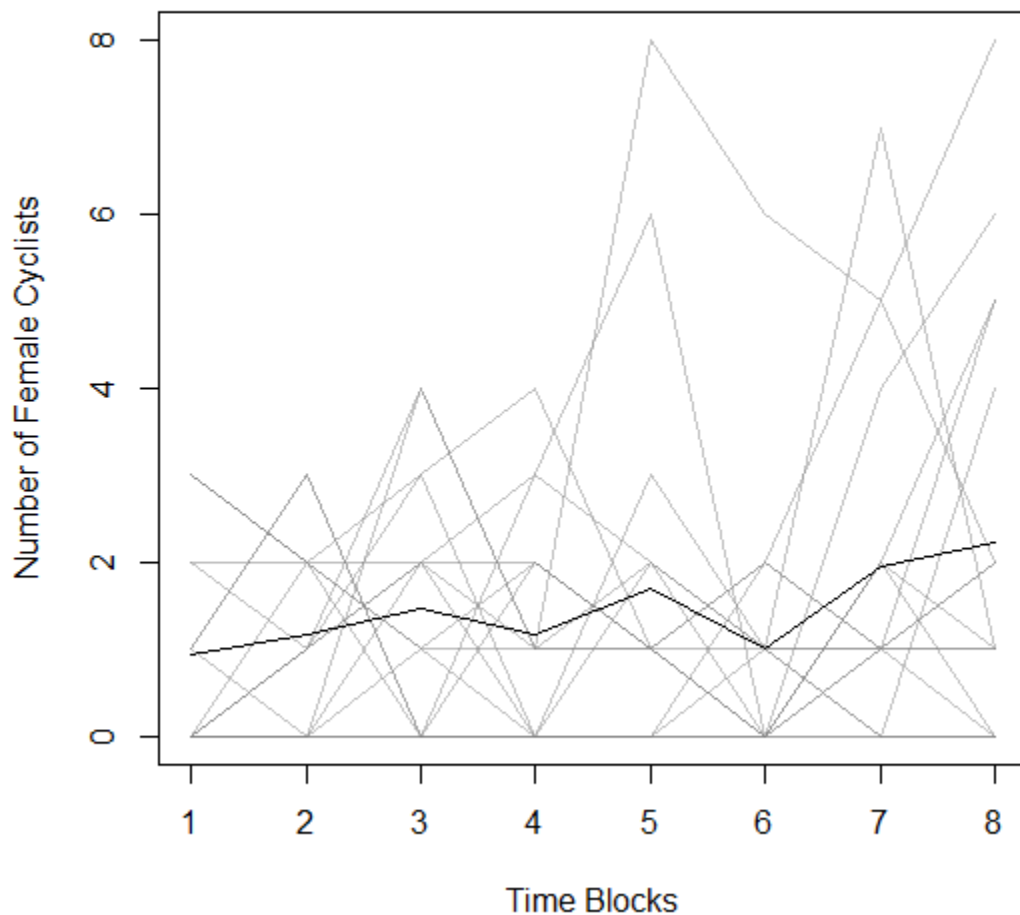
Locations with the most female cyclists between 9 and 9:15am:

- Charlotte and Aylmer Street: Cyclists departing from the nearby condos or neighbourhood.

- Rotary Greenway Trail and Nassau Mills Road

- Water and Hunter: Cyclists could be entering the downtown area to start work.

Female Cyclists for the Afternoon of September 28th



Locations with the most female cyclists between 4 and 4:15pm:

- Charlotte and Aylmer Street: Cyclists returning to nearby condos.

- Rotary Greenway Trail at Y in trail south of Whitaker: As this trail is located in a rural area a couple kilometers north of downtown away from the roads, it is logical for lots of cyclists and pedestrians to be seen on it. The count could be high because people are finishing work or school and are using the path to either return home or have a leisurely ride.

Location with the most female cyclists between 4:30 and 4:45pm:

- Rotary Greenway Trail and Hunter Street: The majority of female cyclists came from the North which is an off street trail. Because they were on a trail that wasn't part of the city, they could be taking a leisure stroll on the trail.

Locations with the most female cyclists between 4:45 and 5pm:

- Bethune and Hunter Street: Located on the west edge of the city. They could all be finishing work and headed to the rural part of town to get home.

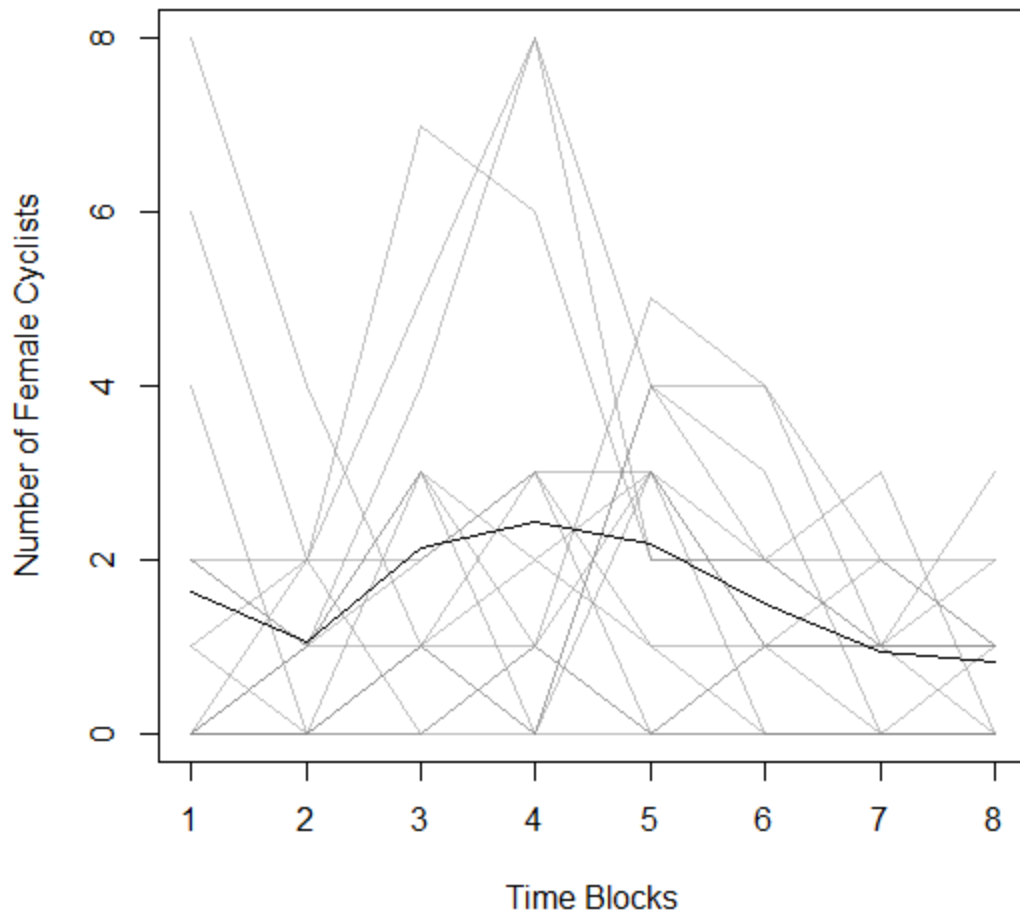
- Charlotte and Aylmer Street

- Rotary Greenway Trail at Y in trail south of Whitaker

- Rotary Greenway Trail and Hunter Street

The last three intersections mentioned above have paths consisting of bike and pedestrian trails, so the female cyclists could be avoiding the busy city portions to have a leisurely ride.

Female Cyclists for the Morning of September 29th



Locations with the most female cyclists between 7:30 and 7:45am:

- Rotary Trail and Nassau Mills Road: Near the rowing club: Female cyclists could be on their way to rowing practice.

- Hilliard and George Street at Rotary Trail Ling crossing: Most of the cyclists came from the North direction. It's likely they were headed downtown to shop or start their work day.

- Rotary Trail at Parkhill Road

Locations with the most female cyclists between 8 and 8:15am:

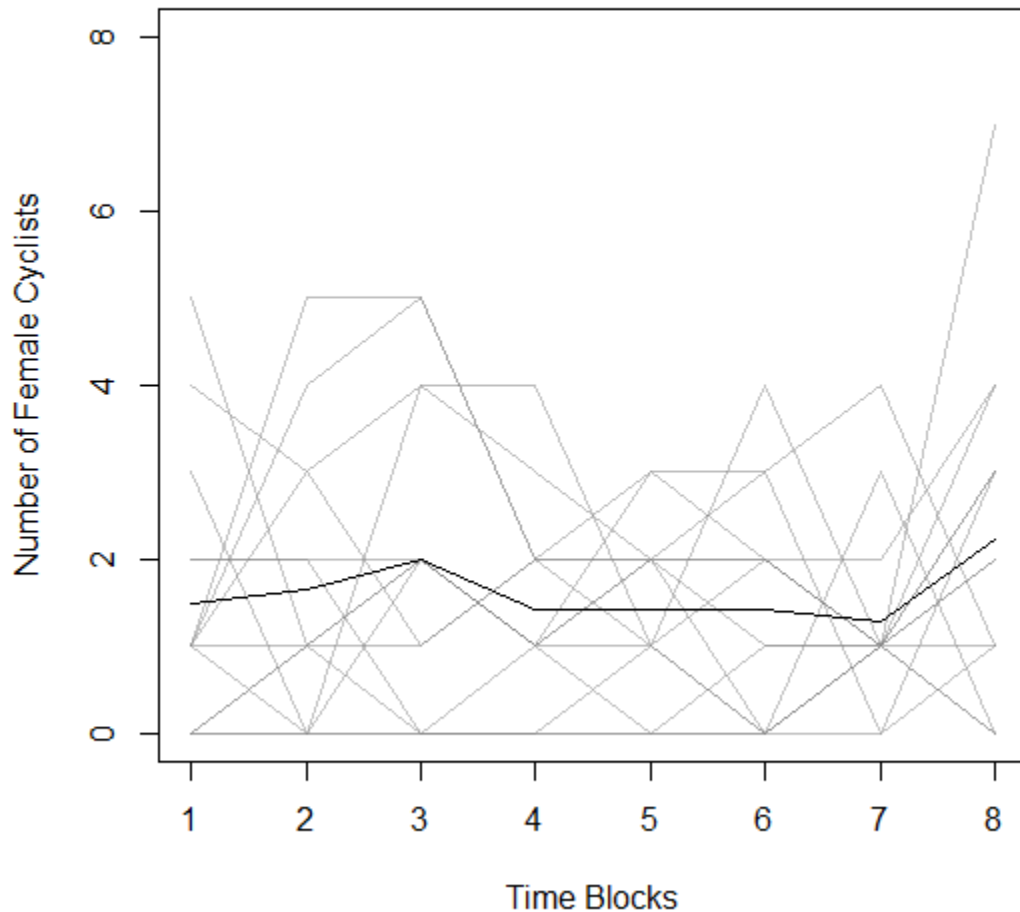
- Rotary Trail at Parkhill Road: The majority of female cyclists were on the trail, so they were either on a leisurely ride or possibly headed downtown for work or shopping.

Locations with the most female cyclists between 8:15 and 8:30am:

-West end of Railway Bridge at Millennium Trail.

-Rotary Greenway Trail at Y in trail south of Whitaker: Explanation in 'Total cyclists for September 28th in the afternoon'.

Female Cyclists for the Afternoon of September 29th



Two locations with the highest count between 3:30 and 3:45pm:

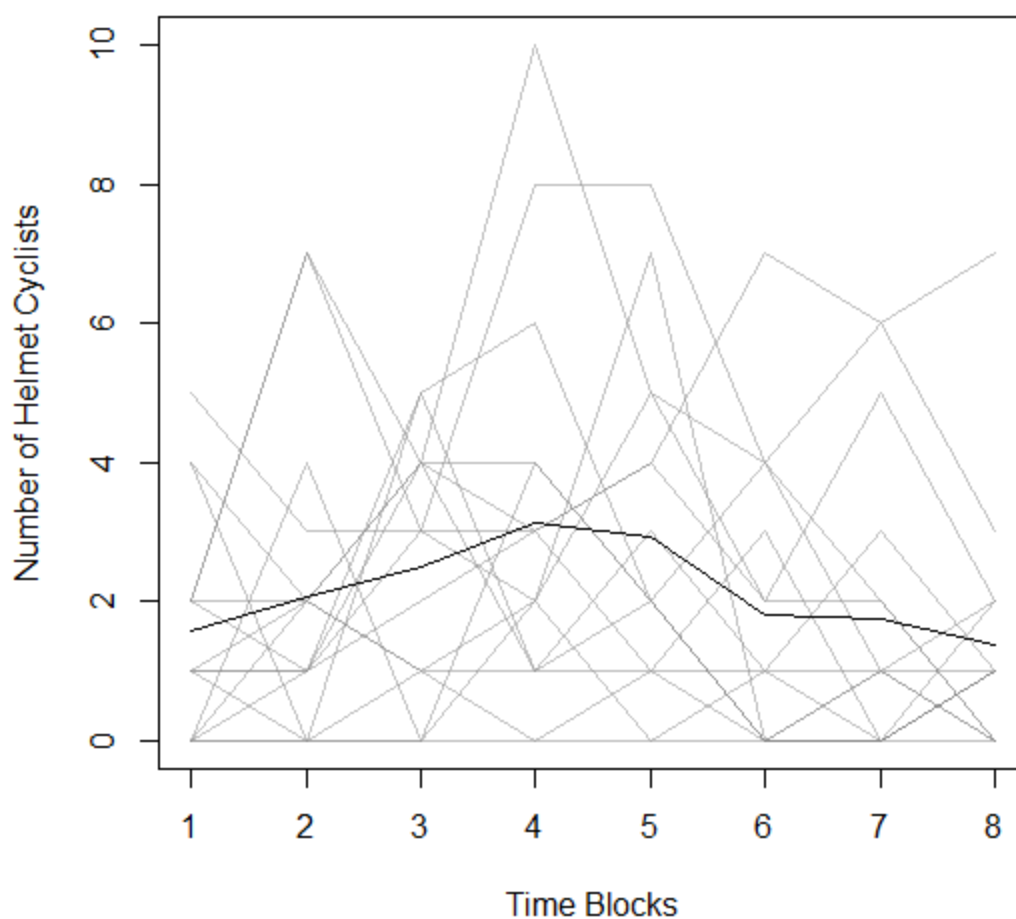
-McDonnel and Bethune Street: This area is surrounded by houses and apartment structures. Students could be returning home from school at this time to said houses.

-George Street at railway tracks by Holiday Inn: The majority of female cyclists came from the North. Those cyclists could be finishing their work shift and headed home.

Location with the most female cyclists between 4:45 and 5pm:

-West end of Railway Bridge at Millennium Trail.

Helmet Cyclists for the Morning of September 28th



Locations with the most helmet cyclists between 7:45 and 8am:

- Monaghan and Romaine Street- eastern leg

- Monaghan and Lansdowne Street

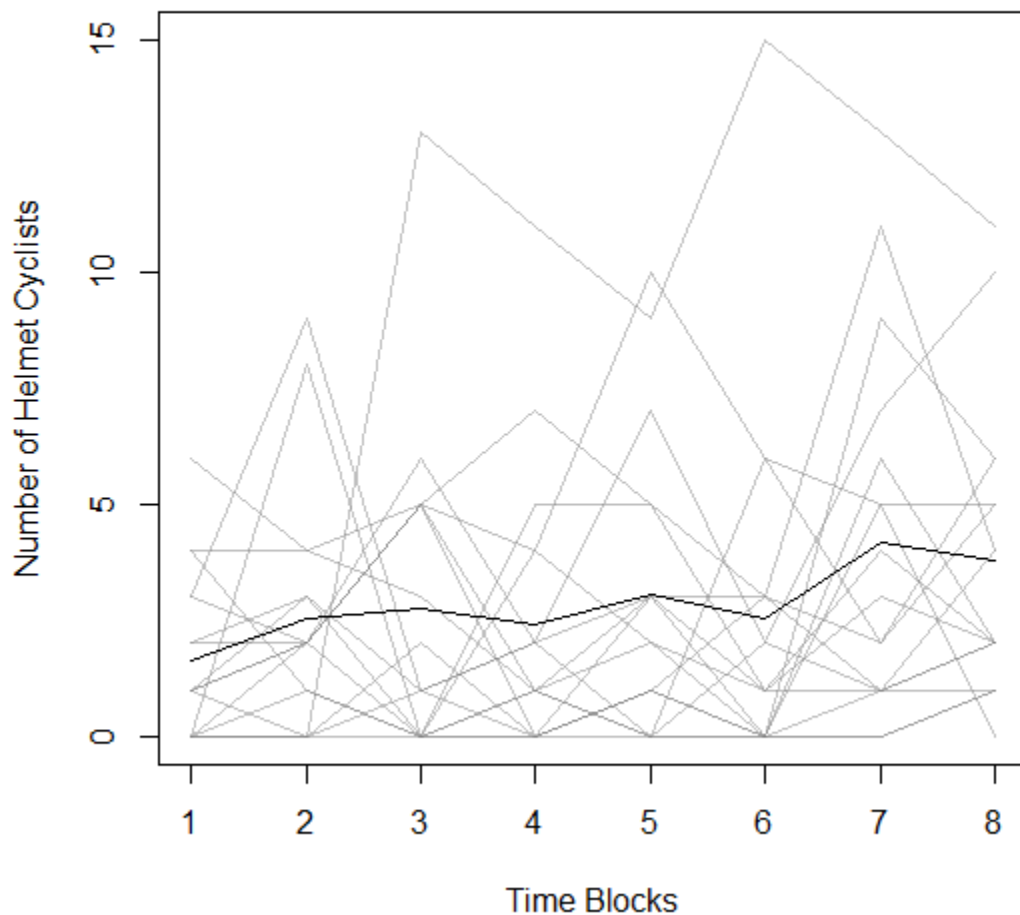
These intersections are about a kilometer away from a school and I saw most of the cyclists appear to be 15 and under. There's a good chance they were on their way to school as most of them left the intersection in the school's direction.

Locations with the most helmet cyclists between 8:15 and 8:30am:

- Rotary Greenway Trail and Nassau Mills Road: Rowing club members could be leaving rowing practice around this time

-Rotary Greenway Trail and Hunter Street: This intersection is located on the edge of the downtown area. Cyclists could be biking through this intersection to enter the downtown area for work or shopping.

Helmet Cyclists for the Afternoon of September 28th



Locations with the most helmet cyclists between 3:15 and 3:30pm:

-Spillsbury and Lansdowne Street

-Water and Hunter Street

Both of these intersections appear to be busier in the afternoon regarding car capacity, so more cyclists are likely to put safety first in this area and have helmets on.

Locations with the most helmet cyclists between 4 and 4:15pm:

-Charlotte and Aylmer Street. Cyclists are returning home to the nearby neighbourhood and condo area.

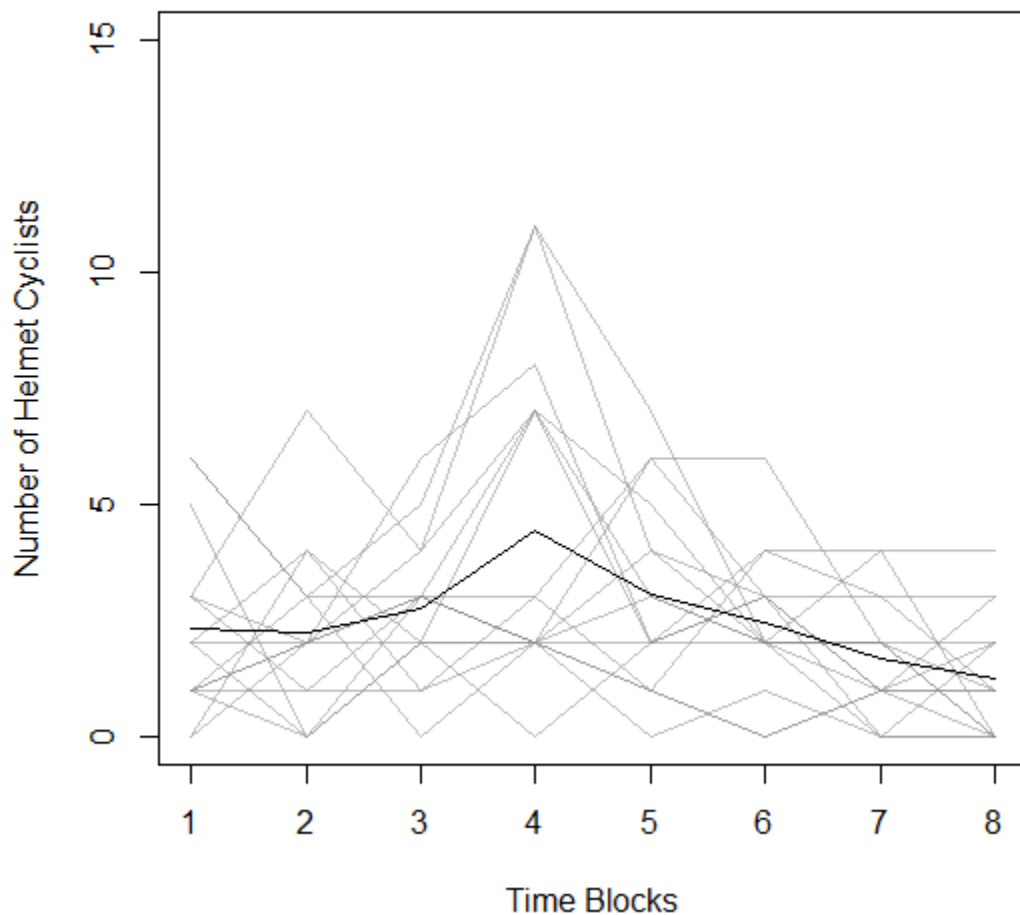
-Rotary Greenway Trail and Hunter Street

Location with no helmet cyclists between 7:30 and 8am, then at least 9 for each 15-minute block afterwards:

Rotary Greenway Trail at Y in trail south of Whitaker:

As this trail is located in a rural area a couple kilometers north of downtown away from the roads, it is logical for cyclists and pedestrians to be seen on it. The count could be high because people are finishing work or school and are using the path to either return home or have a leisurely ride. The reason why this location had counted no cyclists between 3 and 3:30pm is because the data collector arrived 30 minutes late.

Helmet Cyclists for the Morning of September 29th

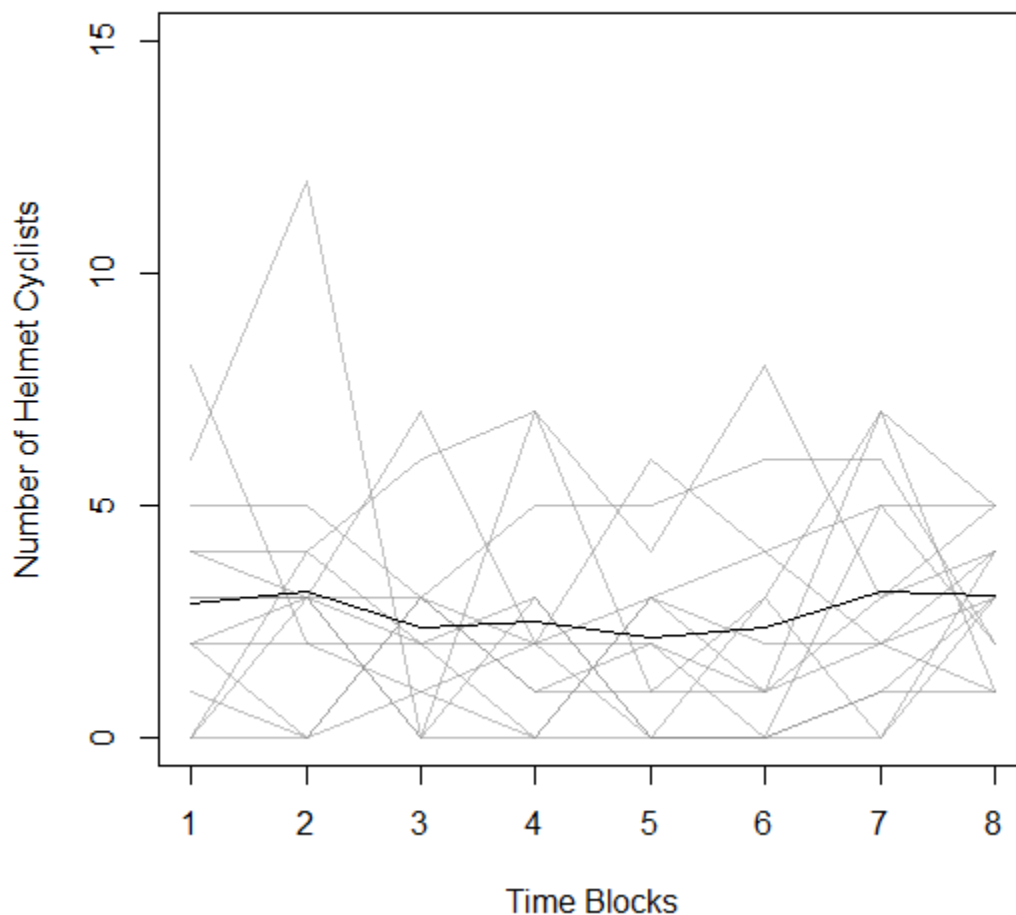


Locations with the most helmet cyclists between 8:15 and 8:30am:

-Rotary Trail at Parkhill Road: The majority of helmet cyclists came from the South so they may have been heading away from downtown at that time. It could be because they were doing a leisure ride in the morning and heading back to the rural area in the North part of Peterborough where they lived.

-Rotary Greenway Trail at Y in trail south of Whitaker: Explanation in 'Total cyclists for September 28th in the afternoon'.

Helmet Cyclists for the Afternoon of September 29th



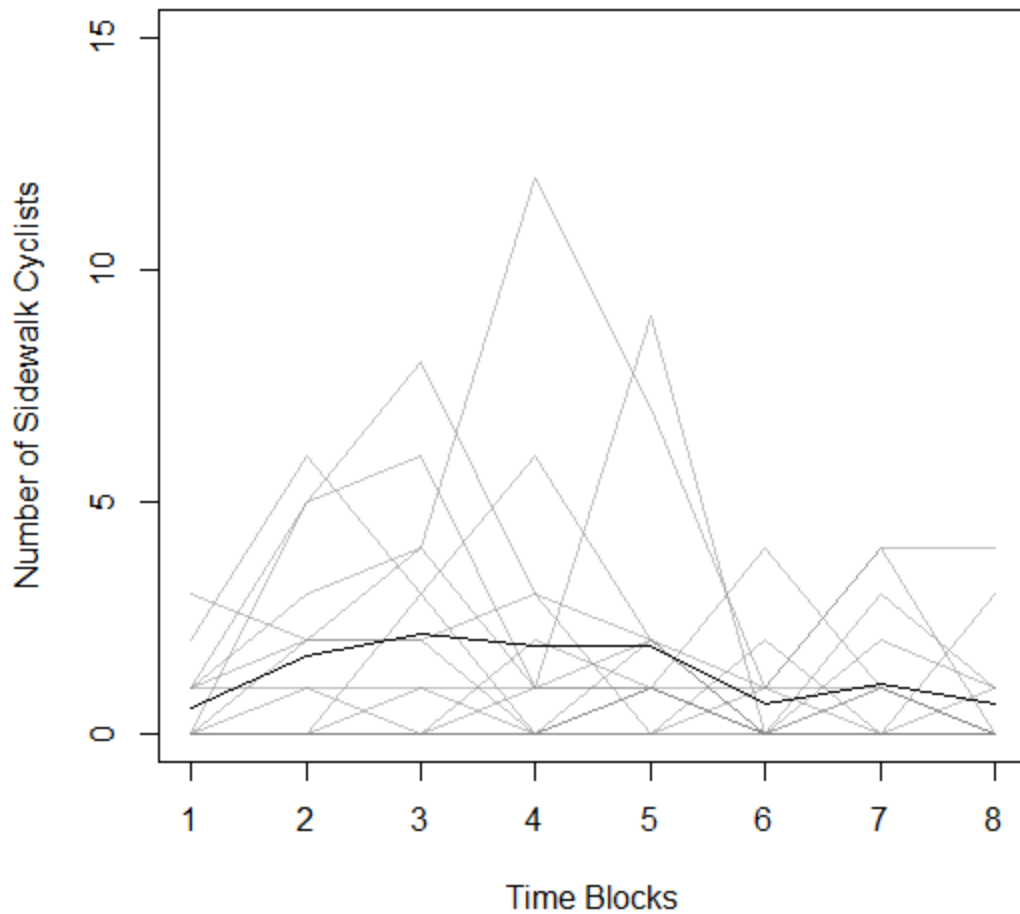
Location with the most helmet cyclists between 3:15 and 3:30pm:

-Rotary Trail at Parkhill Road: The majority of helmet cyclists came from the North which is a bike and pedestrian trail, so it's likely those cyclists were either taking a leisurely ride or headed downtown to do some shopping.

Location with the much less helmet cyclists between 3:15 and 3:30pm than between 3 and 3:15pm:

-Hilliard and George Street at Rotary Trail.

Sidewalk Cyclists for the Morning of September 28th



Locations with the most sidewalk cyclists between 8 and 8:15am:

-Monaghan and Lansdowne Street: All cyclists came from the North at this time. It's logical that people were either headed to shop at the mall by the intersection or headed south to get to school. It should also be noted that this intersection has no bike paths which could have encouraged cyclists to be on the sidewalk.

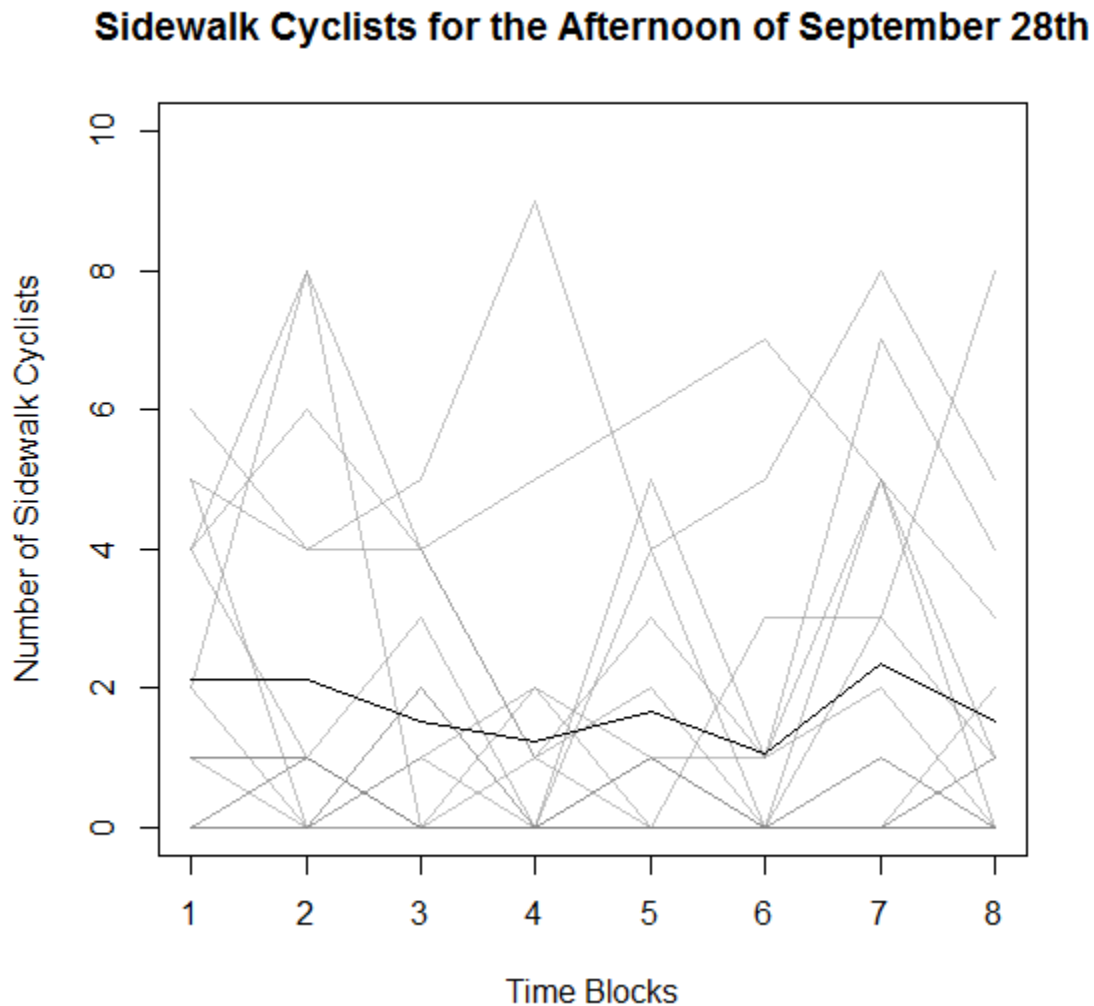
-Sherbrooke and Brealey Street: All cyclists came from the north and there's a public and secondary school near this intersection in the south-west portion. Again, cyclists could be on their way there and lack of bike paths in the area may have contributed to a higher sidewalk cyclist count.

Location with the most sidewalk cyclists between 8:15 and 8:30am:

-Rotary Greenway Trail and Nassau Mills by the rowing club: This location actually doesn't appear to have pavement that could be classified as a sidewalk.

Location with the most sidewalk cyclists between 8:30 and 8:45am:

Spillsbury and Lansdowne Street: From what I have experienced, this intersection is often heavily packed with cars. That along with lack of bike paths can explain this locations sidewalk cyclist count.



Locations with the most sidewalk cyclists between 3:15 and 3:30pm:

-George Street by Holiday Inn: People could be leaving work at this time and the roads might be very busy causing cyclists to stay on the sidewalks.

-Monaghan and Romaine Street- eastern leg: The majority of cyclists came from the north and west. They could be headed south where a neighbourhood is located.

-Spillsbury and Lansdowne Street

Location with the most sidewalk cyclists between 3:45 and 4pm:

-Rotary Greenway Trail and Nassau Mills by the rowing club: This intersection is near Trent University and students could be finishing their courses for the day around this time and heading home. This location actually doesn't appear to have pavement that could be classified as a sidewalk.

Location with the most sidewalk cyclists between 4:15 and 4:30pm:

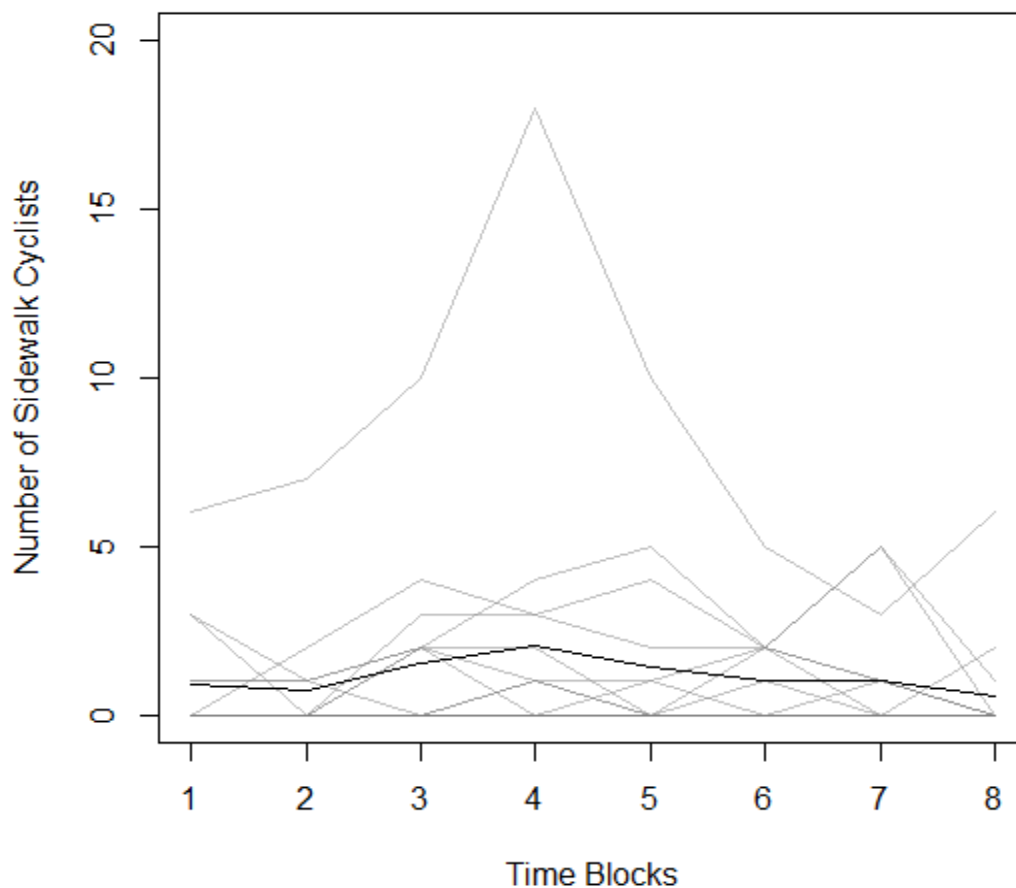
-Monaghan and Lansdowne Street: The majority of cyclists in this time frame were sidewalk cyclists. Since it's the middle of the afternoon, lots more cars could be leaving work, making the downtown area busy and roads full, thus bringing cyclists to the sidewalk.

Locations with the most sidewalk cyclists between 4:30 and 4:45pm:

-George Street by Holiday Inn

-Rotary Greenway Trail and Nassau Mills by the rowing club: Cyclists, namely students, could be leaving Trent University around this time. This location actually doesn't appear to have pavement that could be classified as a sidewalk.

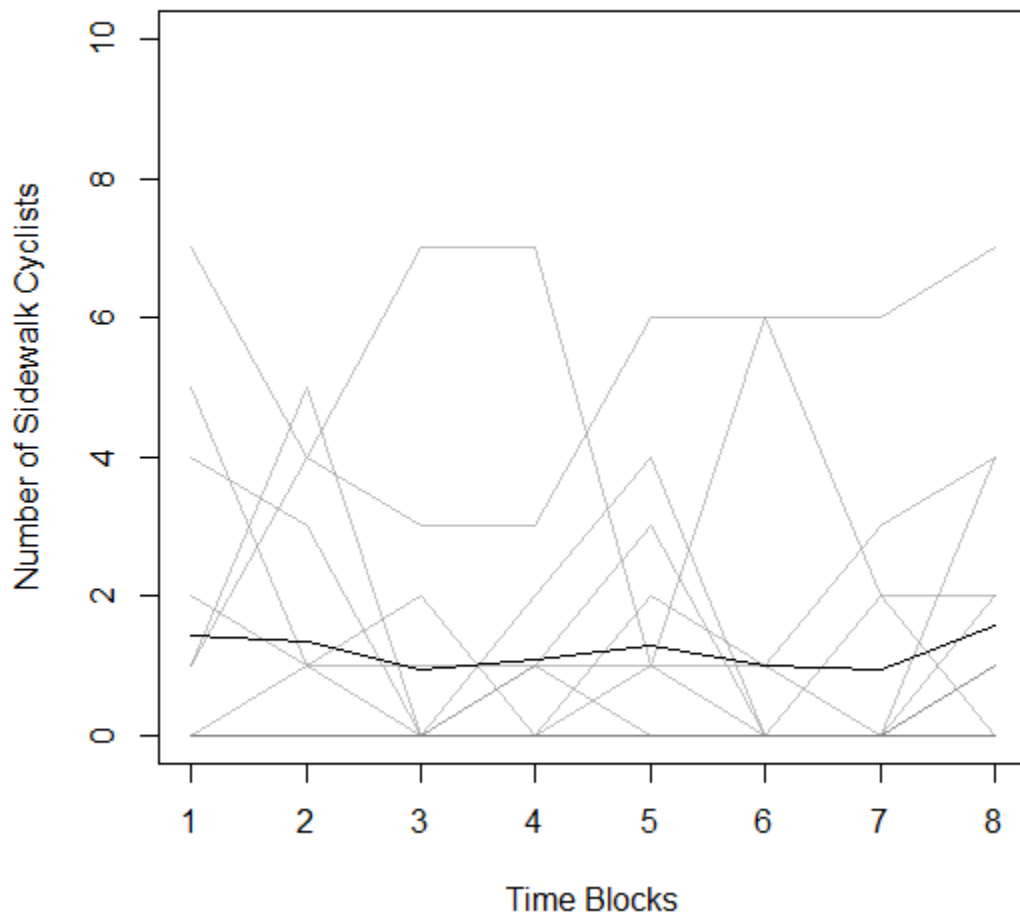
Sidewalk Cyclists for the Morning of September 29th



Location with the most sidewalk cyclists during each 15-minute time box except between 9 and 9:15am:

-Rotary Greenway Trail at Y in trail south of Whitaker: The apparent sidewalk cyclists were biking along the rotary trail which shows no signs of a sidewalk.

Sidewalk Cyclists for the Afternoon of September 29th



Location with the most sidewalk cyclists between 3:30 and 4pm:

-Trans-Canada Trail at Reid- east side: The majority of cyclists came from the east and west which is the Trans-Canada trail which, as far as I'm concerned, isn't really a sidewalk, at least when compared to sidewalks you see on the sides of streets.

Brief Facts from Extrapolation Data Sheet

Hilliard Street and the Parkway Trail had 171 cyclists come from the north direction each morning, which is more than the other three directions combined.

180,000+ cyclists cross the London Street Bridge each year.

Water and University Heights and Rotary Trail and Nassau Mills- have no cyclists coming from the south in the morning at all.

Rotary Trail at Parkhill Road- Has 278 cyclists come from the south in the morning and 300 come from the north in the afternoon on a daily basis. This could lead to the assumption that a couple hundred cyclists use the rotary trail in this location to enter the city in the morning (for work or shopping) and leave in the afternoon (to return home), or is the busiest intersection in town.

Rotary Trail at Parkhill Road- In spite of the west part of this intersection having a bike lane, none of the cyclists that came from the west in the data count seemed to use it. They were all on the sidewalk when approaching the intersection.

Also in the above intersection, the north and south parts of the intersection which consists of trail both have at least 4 times as many cyclists come from them annually as the west part of the intersection which contains a bike lane.

(West- 28,400+ annually, North- 134,000+ annually, South- 143,000+ annually)

Comparison with Previous Years

Total cyclists counted in each years data collection from 2012-2016: 2012- 3,664, 2013- 2,744, 2014- 3,077, 2015- 4,427, 2016- 2,662

Between the five years being compared, this year has had the lowest total cyclists counted during the full data collection period. Notice that this year's count of cyclists is very noticeably lower than last years.

Female cyclists: 2012- 995 (27%), 2013- 914 (33%), 2014- 940 (31%), 2015- 1,341 (30%), 2016- 702 (26%)

Female cyclists made up a noticeably bigger portion of the cyclists seen in the data collection (and therefore, Peterborough in general) in 2013 than in 2012, but each year after that, the portion they make up becomes smaller.

Helmet cyclists: 2012- 1,599 (44%), 2013- 1,366 (50%), 2014- 1,567 (51%), 2015- 2,088 (47%), 2016- 1,288 (48%)

Helmet cyclists have made up more than half the cyclists in Peterborough in 2014 which is much higher than is was in previous years, but that has changed with a big decrease in 2015 and around the same amount in 2016.

Sidewalk cyclists: 2012- 671 (18%), 2013- 622 (23%), 2014- 553 (18%), 2015- 1,039 (23%), 2016- 680 (26%)

Sidewalk cyclists alternated between 18% and 23% for the last four years, but this year, the count has reached 26%, the highest it has ever been over the last five years, which could be due to the significantly lower number of cyclists counted this year as fewer cyclists means fewer samples to include in the collection.

Number of 2-hour data collections recorded: 2012- 72, 2013- 57, 2014- 63, 2015- 80, 2016- 63

Average number of cyclists per data collection location: 2012- 51, 2013- 48, 2014- 49, 2015- 55, 2016- 42

The average number of cyclists for one intersection didn't vary a whole lot in 2012-2014, but it increased a good deal last year and took on a huge decrease this year. This could be because this year's data collection has the lowest total cyclist count of the last five years and the fact that much less data collection sheets were used this year compared to last year.

Similar arguments can be made for the total and average pedestrian counts.

Total pedestrians counted in each year of data collection: 2012- 9,463, 2013- 5,283, 2014- 6,556, 2015- 13,517, 2016- 7,575

Average number of pedestrians per data collection period: 2012- 131, 2013- 93, 2014- 104, 2015- 169, 2016- 120

Total E-Bikes counted in each year of data collection: 2015- 357, 2016- 271

Total Medical Scooters counted in each year of data collection: 2015- 136, 2016- 32

Over 100 fewer medical scooters counted this year, but the reason for that will be addressed in the next section.

Strengths and Weaknesses to the Citizen Science Approach

Strengths

In the citizen science approach, for each location where a count is being done, not one, but two students are sent to the location. This is a clever idea as it allows the two counters to compare their results and see if they're equal to one another. If that's the case, there's a good chance that the data from the two identical data collection sheets are accurate. In the case where they're different, I was asked to use whichever sheet had a higher cyclist or pedestrian count. That was the case in one or two counts in which the two data collectors has very different data

Regardless of which corner of the intersection a student is standing in, they're very likely to see a cyclist coming from a couple hundred meters away so they have plenty of time to figure out which direction they're coming from and if they fit into one of the three subcategories (female, helmet, sidewalk).

Anytime there happens to be two or more cyclists approaching from different directions, having multiple data collectors allows each of them to be spotted and counted by having each data collector looking in different directions.

Weaknesses

Of course, there's no guarantee that every single student volunteer will show up at their location on the day of data collection and this can be for miscellaneous reasons (forgot the date, caught a cold, caught up with studying, couldn't find the right location, etc.), which sadly was the case for a few of the student volunteers.

Comments made by the students regarding cyclists that were counted:

-Some cyclists, rather than enter and exit the intersection normally, instead cut behind the parking lot of a building that was directly adjacent to the parking lot. Students did not count those cyclists as ones that went through the intersection.

-In the event where a student arrived late, they began counting in the 15-minute block in which they arrived at setup.

-One of the data collectors went to look for a washroom sometime in the middle of a counting and thus had no count for a couple of 15-minute blocks, thus a full two-hours of data wasn't taken.

-There were situations where some cyclists went through an intersection during one 15-minute time block, then those same cyclists came through the intersection again in a later 15-minute block. Should they be counted as different cyclists in a single collection period? What if a cyclist went through the same intersection twice in a single 15-minute block?

-One student was at an intersection consisting of a road and an old railroad crossing. There's no crosswalk in that location, but several j-walkers were spotted there.

-There was an error in the raw data where 1 cyclist came from the south part of an intersection at 8am, yet 2 of those 1 cyclists came from the south at 8am on the sidewalk. Perhaps a counter assumed that a sidewalk cyclist only goes in the 'sidewalk cyclists' column and not 'total cyclists'.

-Many data collectors didn't read the section on E-Bikes and Medical Scooters carefully and kept a combined tally for both of them instead of writing E's for E-Bikes and W's for Medical Scooters.

-One student said that a pedestrian had a dog with them and was unsure if the dog counted as an additional pedestrian.

-As it is stated in the extrapolation sheet for a location that was made of bike lanes and trails rather than a basic intersection for traffic, one of the counters ended up counting every single cyclist as a sidewalk cyclist, even though the area they were counting in was trail/bike lane that technically doesn't have sidewalks.

Ideas to reduce future miscounts

-In each data collection period that had two people counting instead of one, some pairs ended up with slightly different numbers, so there's no telling which one is more accurate. One reason for this could be that each person was standing in a different corner of the intersection and thus can't really inform each other if one noticed a cyclist that the other did not. Unless the pair of data collectors are already doing it, they should remember to remain in the same part of the intersection together so when one of them sees a cyclist, they can tell the other right away and then they can both take a good look at the cyclist and come to an agreement on which direction the cyclist came from and which subcategories they fit into together. This would increase the chance of the data collectors having matching data.

-Additional causes for miscounts are represented in the weaknesses above. They could be resolved however, by adding additional instructions to the instruction sheet that was handed out to the students. Based on the errors mentioned under 'Weaknesses', some instructions that would be a good idea to include are:

1. If a cyclist enters a parking lot that's next to the intersection, and exits the intersection going off in a direction other than the one you saw them come from, (do or do not) include that cyclist in your count.
2. Please make sure you've gone to the bathroom before you start your count so that you can remain in the intersection for the full two hours.

3. If you see a cyclist that passed through your location earlier pass through it again, (do or do not) count that as an additional cyclist.

4. If a pedestrian passes through the intersection with a dog, cat or any other four-legged animal, (do or do not) count the animal as an additional pedestrian.

Wherever 'do or do not' appears in brackets, only one of the two options should be selected for the rule it's stated in. As GreenUp is the organization in charge of the data collection, it should be up to them if 'do' or 'do not' should be used in the suggested instructions

-Special instructions should be included for Rotary Greenway Trail and the Y south of Whitaker (Location 25) that say not to count cyclists as sidewalk cyclists as that location technically doesn't have sidewalks.

-I took part in one of the counts myself and noticed a supervisor came by at the half way point to see how we were holding up and offered us some snacks. I would also suggest that a supervisor stops by an intersection before a count begins so they can see whether or not the counters are in place and ready to go.

-E-Bikes and Medical Scooters are kept in the same tally box and students are to write E's for E-Bikes and W's for Medical scooters (not a tally). I think it would be a better option for E-Bikes and Medical Scooters to have separate tally boxes, because again, there were several cases where students didn't follow the E's and W's rule and did a tally instead.

-To make sure that future data collectors don't forget these suggested solutions, they should not only be added to the instruction sheets that were given out, but the sheet itself should remind data collectors to take the instructions with them to their location for reference in case they can't remember how a cyclist or pedestrian should be counted.