County of Essex

WWW.CWATS.CA

CWATS COUNTS

Active Transportation Monitoring Program 2020

Active Transportation

What is Active Transportation?

"Active transportation refers to all human-powered forms of transportation, in particular walking and cycling. It includes the use of mobility aids such as wheel chairs, and can also encompass other active transport variations such as in-line skating, skateboarding, cross-country skiing, and even kayaking. Active transportation can also be combined with other modes, such as public transit" (Transport Canada, 2011)

Benefits of AT

ENVIRONMENTAL BENEFITS

- Generates very little air pollution
- Less carbon intensive than cars
- Reduced energy consumption
- An important component to municipal greenhouse gas reduction plan

PUBLIC HEALTH AND SAFETY

- Encourages physical activity and therefore is a healthier mode of transportation
- A well-designed cycling infrastructure can greatly improve pedestrian and cyclist safety

ECONOMICAL BENEFITS

- The development and maintenance costs of AT infrastructure are far lower than other transportation infrastructure
- AT infrastructure can have positive local economic development impacts and produce individual cost savings

TRANSPORTATION BENEFITS

- A good municipal AT network improves connections to, and between, community destinations, which improves the broader transportation network
- AT decongests traffic throughout roadways

Resource: https://www.fcm.ca/Documents/tools/GMF/Transport_Canada/ActiveTranspoGuide_EN.pdf

AT Count Program

Overview

- In 2015, the County of Essex established a short term Active Transportation Count program that provides a snapshot in time for pedestrian/cyclist activity. Data on usage and demand is essential to build long term support for walking and cycling to improve conditions where possible.
- CWATS facilities connects all 7 municipalities of the County of Essex together and to the Trans Canada Trail (Great Trail).
- Purpose: Allows further development of the trail system, observe how the trails are currently being used as well as behavioral aspects of the active transportation users.
- Types of Infrastructure: Multi-Use Trails (MUT), paved shoulders, signed routes, bike lanes, 1-way cycle paths, 2-way cycle paths.
- MUT and paved shoulders are the most common types of facilities CWATS has built to date.

Terminology

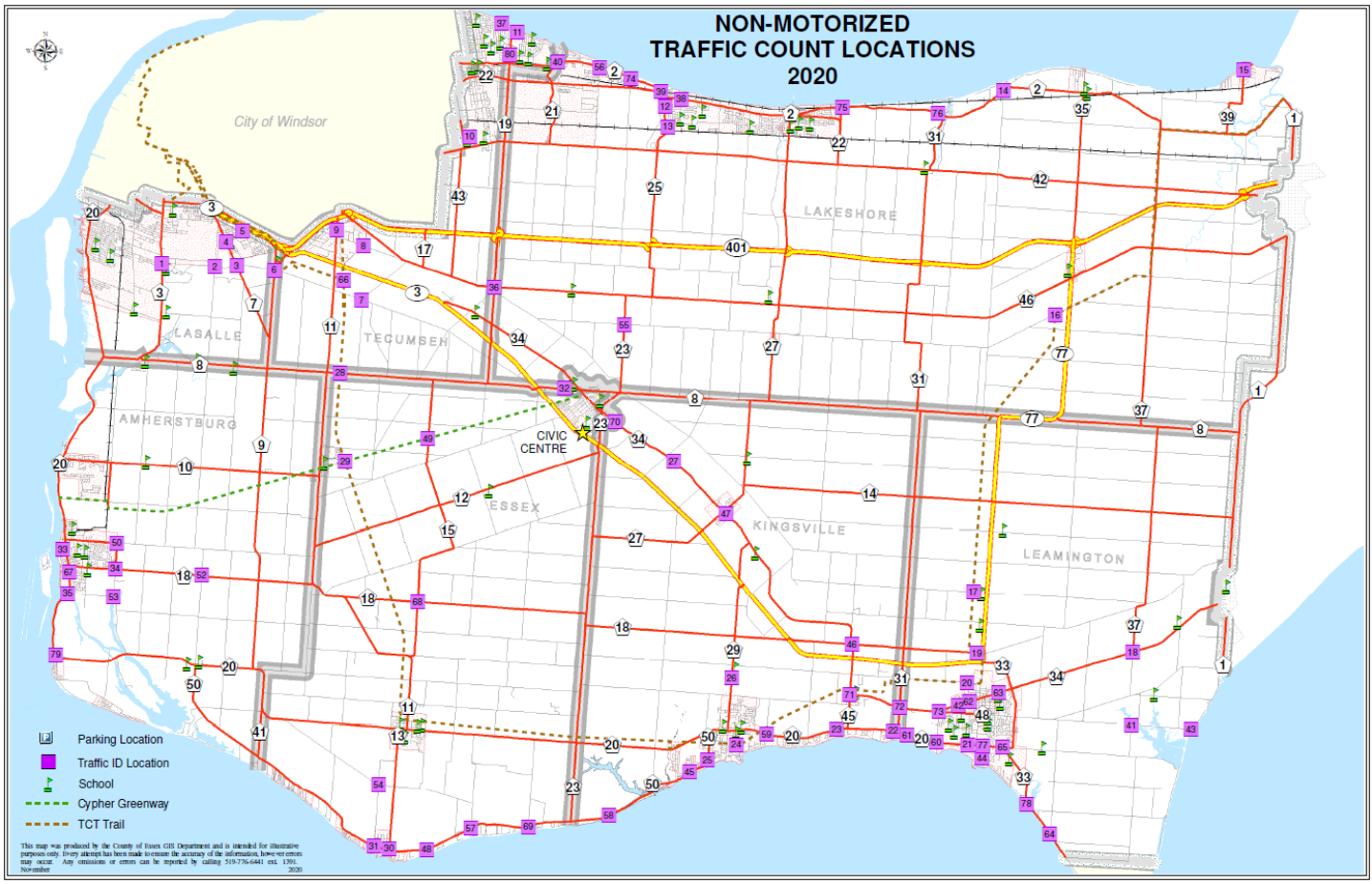
Definitions:

- Utilitarian Cyclists - those who ride a bicycle for utilitarian purposes such as going to work or school, running errands, going shopping or visiting friends
- Recreational Cyclists - those who ride a bicycle for recreation or fitness purposes
- Elite Cyclists - advanced cyclists
- Non-Cyclists - those who do not ride a bicycle (including pedestrians, e-bikes, rollerblades, skateboards, etc.)

Research Methodology

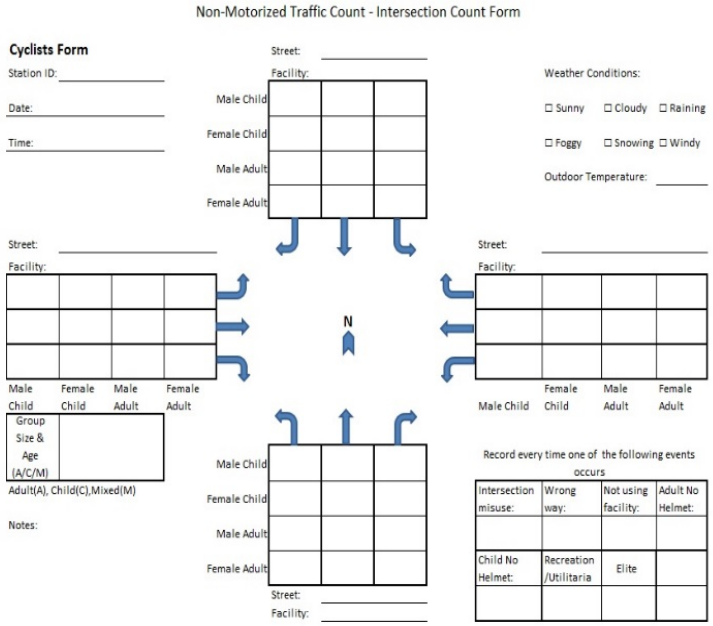
- The study aims to count active transportation users at all built locations, including new facilities that are planned in any given year.
- The study was conducted at 79 count locations in all 7 municipalities of the County of Essex.
- 2 new locations for 2020.
- Observe all forms of active transportation, direction of travel, appropriate usage, safety, age, gender.
- Timeline: June 26th – August 31st
- Time period: 1 - 2 hour counts per location, typically a morning count and an afternoon count.
- Peak times: 9 –10 am, 6-7 pm

Count Locations Map



Intersection and Segment Count Forms

The raw data was gathered using the following forms and then put into a comprehensive Excel database. Two forms were used, one for segments and one for intersections.



Non-Motorized Traffic Count - Intersection Count Form

Cyclists Form

Station ID: _____

Date: _____

Time: _____

Street: _____

Facility: _____

Male Child / Female Child / Male Adult / Female Adult

Weather Conditions:

☐ Sunny ☐ Cloudy ☐ Raining

☐ Foggy ☐ Snowing ☐ Windy

Outdoor Temperature: _____

Street: _____

Facility: _____

Male Child | Female Child | Male Adult | Female Adult

Group Size & Age (A/C/M)

Adult(A), Child(C),Mixed(M)

Notes:

N

Street: _____

Facility: _____

Male Child | Female Child | Male Adult | Female Adult

Record every time one of the following events occurs

Intersection misuse:	Wrong way:	Not using facility:	Adult No Helmet:
Child No Helmet:	Recreation /Utilitaria	Elite	

Street: _____

Facility: _____

Male Child / Female Child / Male Adult / Female Adult

Non-Motorized Traffic Count - Segment Count Form

Station ID: _____

Road Name: _____

Existing Facility: _____

Direction of Road: ☐ East-West ☐ North-South

Road Speed: _____

Date: _____

Time: _____

Weather Conditions: ☐ Sunny ☐ Cloudy ☐ Raining ☐ Snowing ☐ Foggy ☐ Windy

Outdoor Temperature: _____

Direction of travel: ☐ East ☐ North						Direction of travel: ☐ West ☐ South					
Activity	Child Male	Child Female	Adult Male	Adult Female	Group Size & Age (A/C/M)*	Activity	Child Male	Child Female	Adult Male	Adult Female	Group Size & Age (A/C/M)*
Walking/ Running						Walking/ Running					
Cyclists						Cyclists					
Rollerblades/ Skateboards						Rollerblades/ Skateboards					
wheelchair						wheelchair					
e-bike						e-bike					
other						other					
Total						Total					

Record every time one of the following events occurs:	Wrong way:	Not using facility:	Adult No Helmet:	Child No Helmet:

*take note of groups and mark the age of the users as Mixed(M),Adult(A), or Child(C)

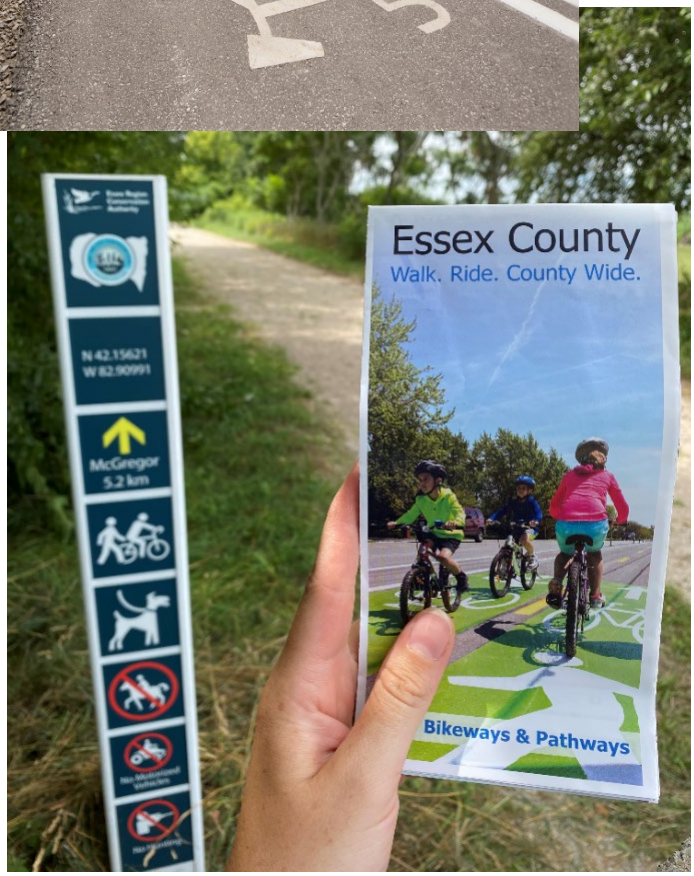
For each user place in category:

Elite	Recreation / Utilitarian

Key Findings

Overall Findings

Total Cyclists	1050
Total Non-Cyclists	666
Total Females	732
Total Males	984
Total Adults	1424
Total Children	292
Recreational/Utilitarian Cyclists	664
Elite Cyclists	251
Hours of Counts	149
Total AT Users	1716
User/hour	11.5

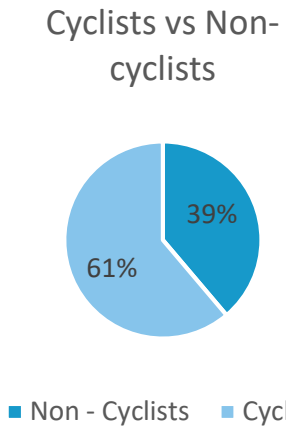


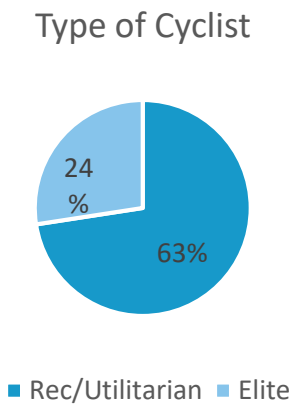
There were a total of 1050 cyclists and 666 non-cyclists throughout Essex County during the count program in 2020.

Demographic and Behavioural Findings: Cyclists

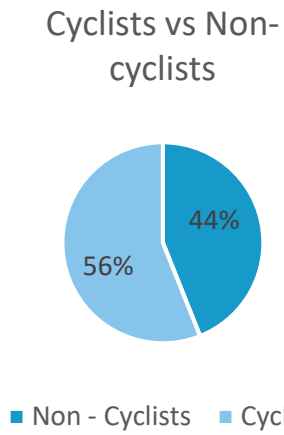
- A key finding of the active transportation count program has been a continued trend of increased cyclists.
- In 2017, the number of cyclists surpassed the number of non-cyclists.
- In 2020 of the total 1716 users, 61% were cyclists and 39% were pedestrians.
- In 2020, almost a quarter of all cyclists were elite cyclists.
- This demonstrates that cycling is increasingly more popular amongst Essex County residents as a mode of transportation.

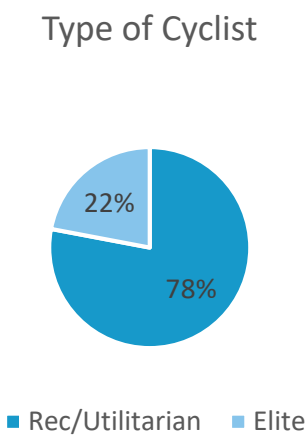
2020



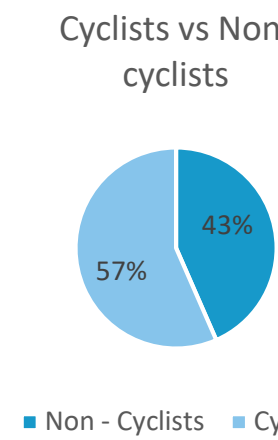


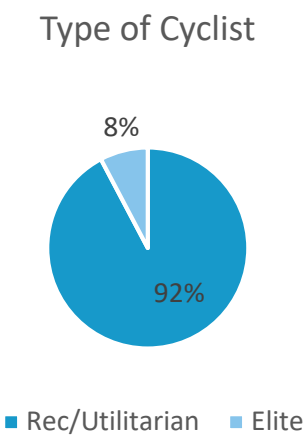
2019





2018



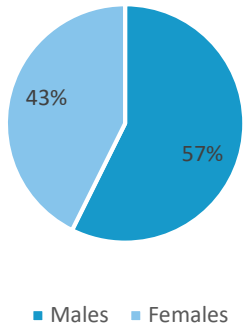


Demographic and Behavioural Findings: Gender and Age

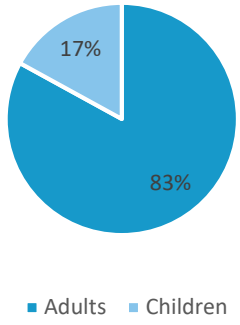
- These findings suggests there are generally more male active transportation users than females, 57% to 43% respectively, in 2020.
- Adults typically use active transportation facilities more than children, making up 83% of active transportation users.

2020

Males vs Females

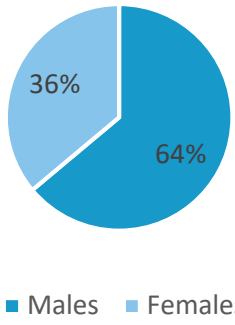


Adults vs Children

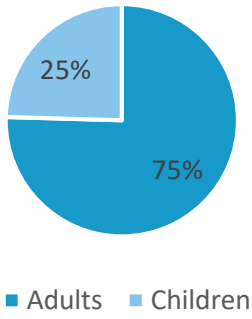


2019

Males vs Females

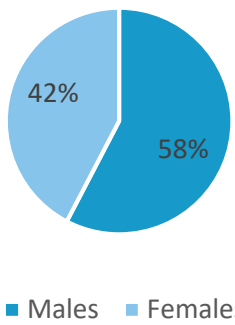


Adults vs Children

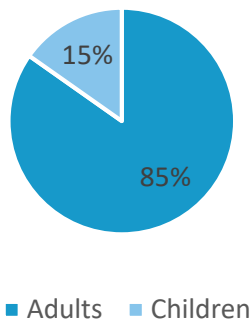


2018

Males vs Females

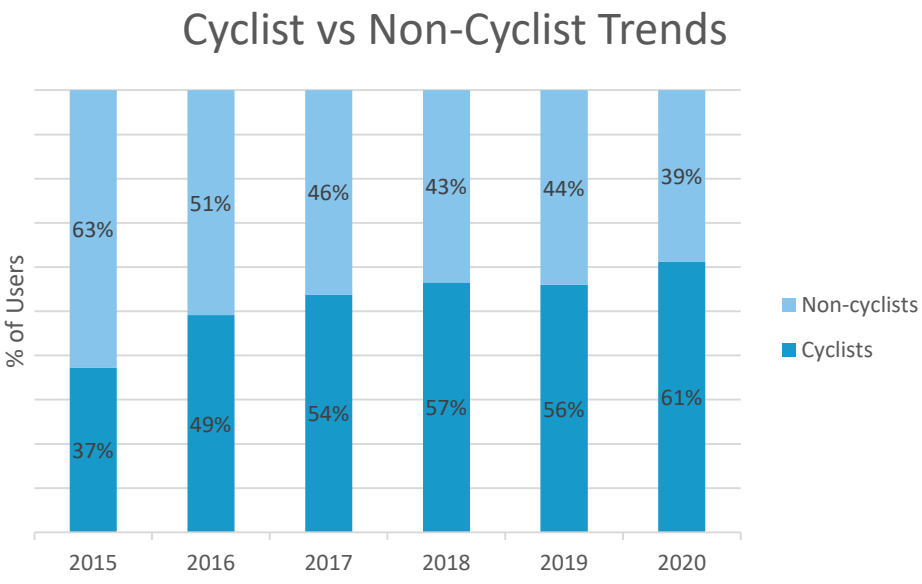


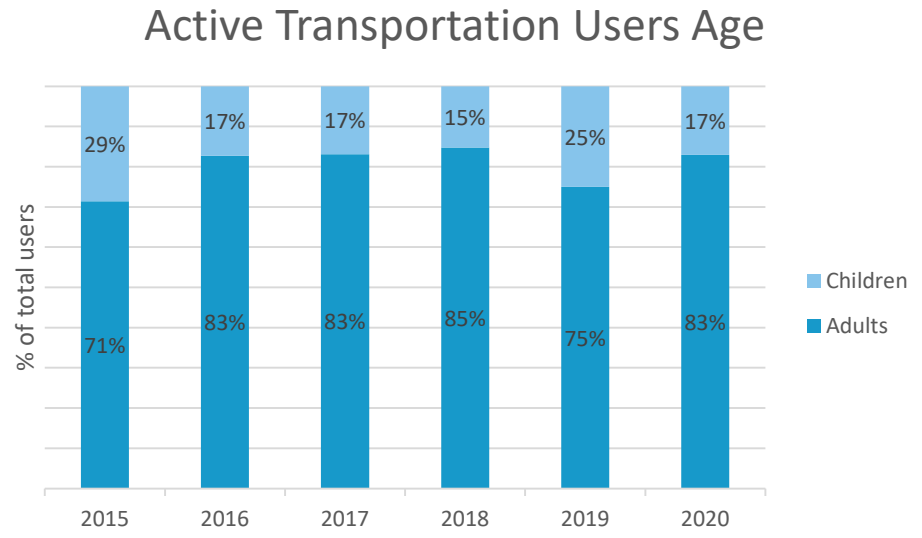
Adults vs Children

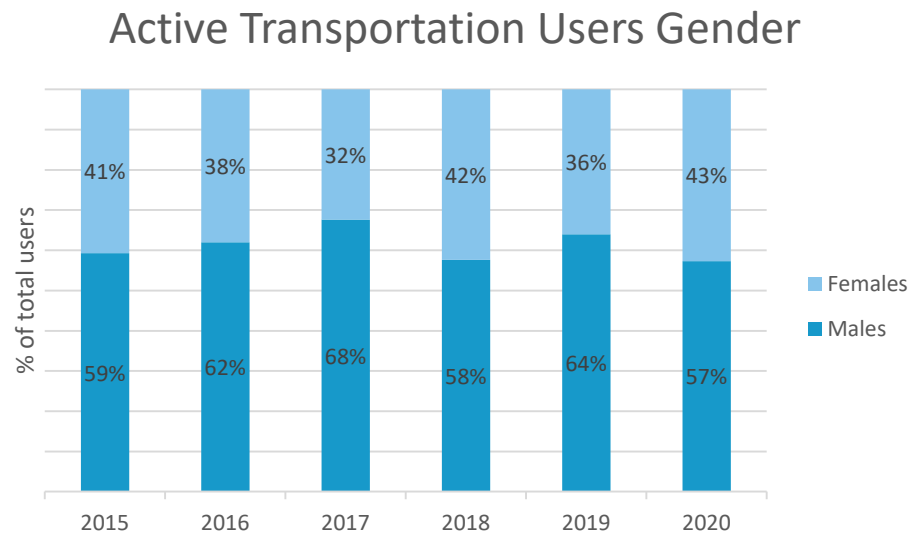


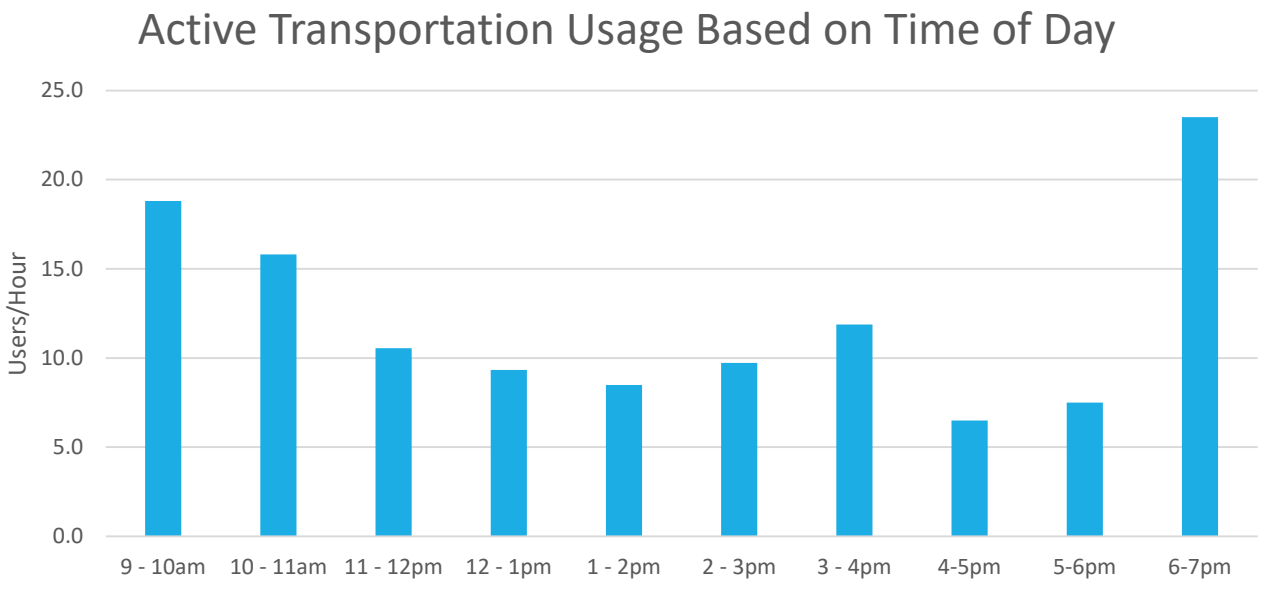
Demographic and Behavioural Findings: Overall Trends

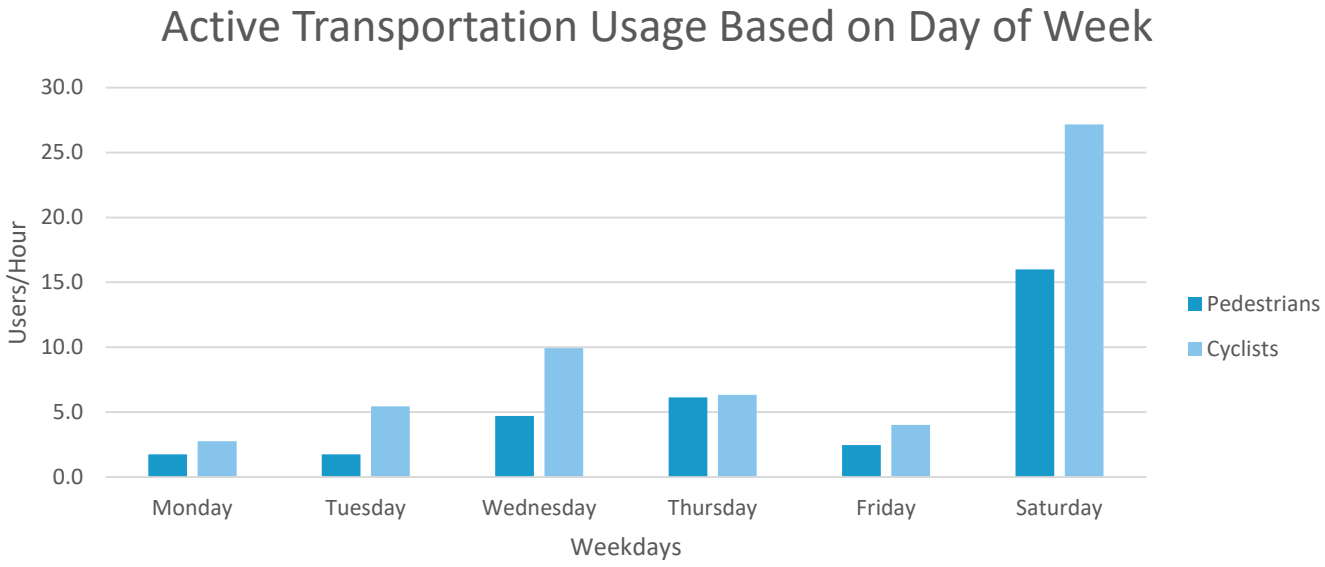
- The general trend in AT usage from 2015 to 2020 shows an increase in the number of cyclists using CWATS facilities.
- The age trend shows more adults than children using active transportation facilities.
- Although not a large variation, males typically use active transportation facilities more than females.









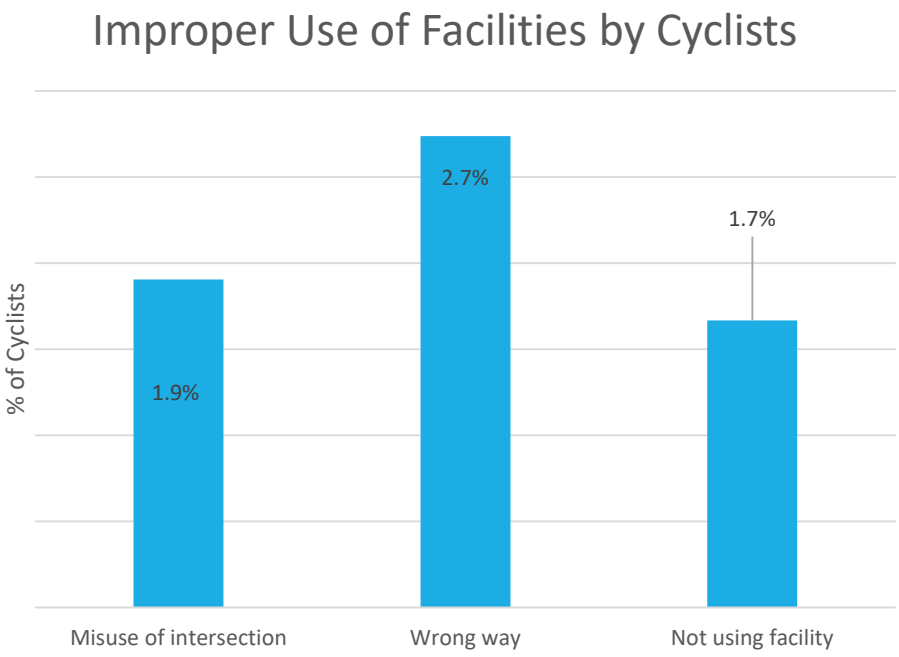


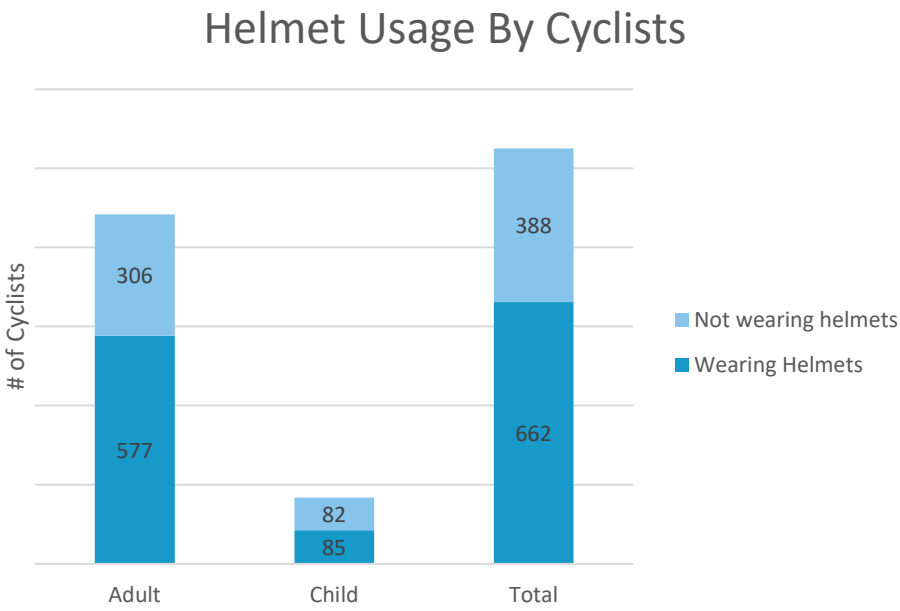
Demographic and Behavioural Findings: Time of Usage

- Peak times for facility usage are between the hours of 9 - 11 a.m. and 6 – 7 p.m.
- Peak days of the week for facility usage are Wednesdays and Saturdays.
- These findings, however, may not provide an accurate representation of active transportation usage throughout the day and week because different sites were counted at different times of the day on different days of the week.

Demographic and Behavioural Findings: Safety Factors

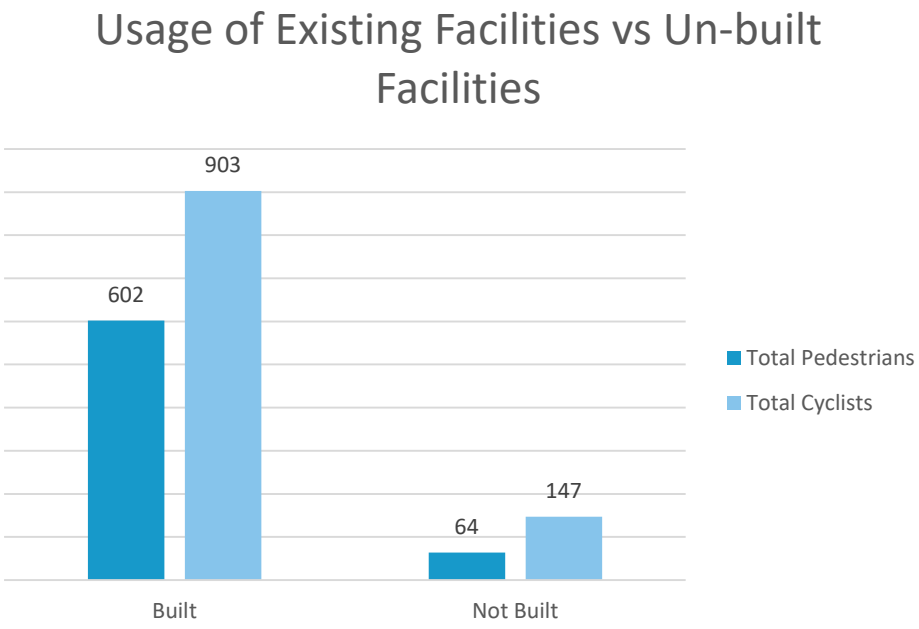
- The majority of CWATS users properly use active transportation facilities.
- Helmet usage increased in 2020 with 63% of all cyclists wearing helmets (49% in 2019).
- 35% of adults and 49% of children did not wear a helmet while cycling.
- This shows and increase in users targeting education on road and bike safety.

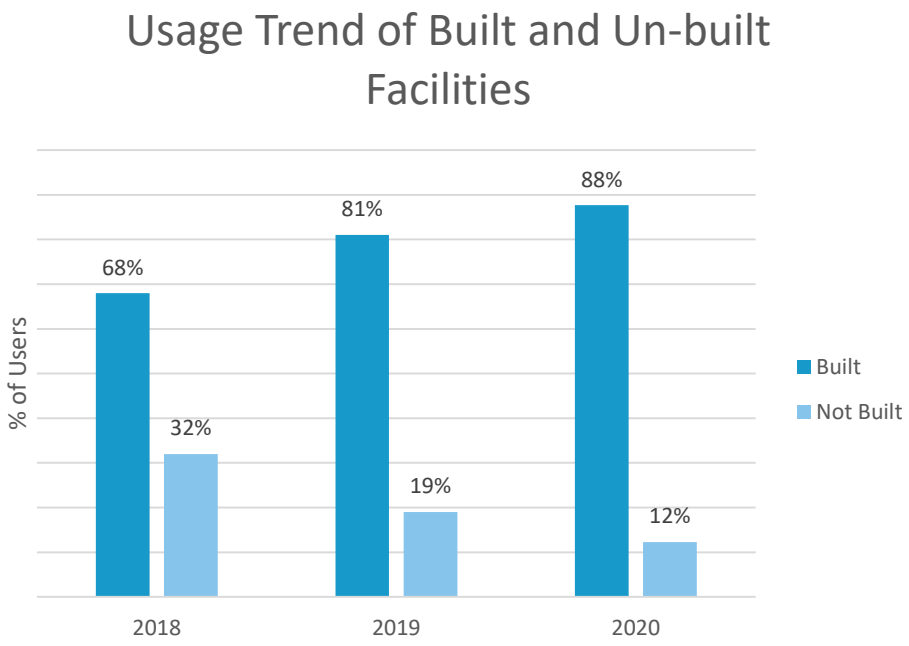


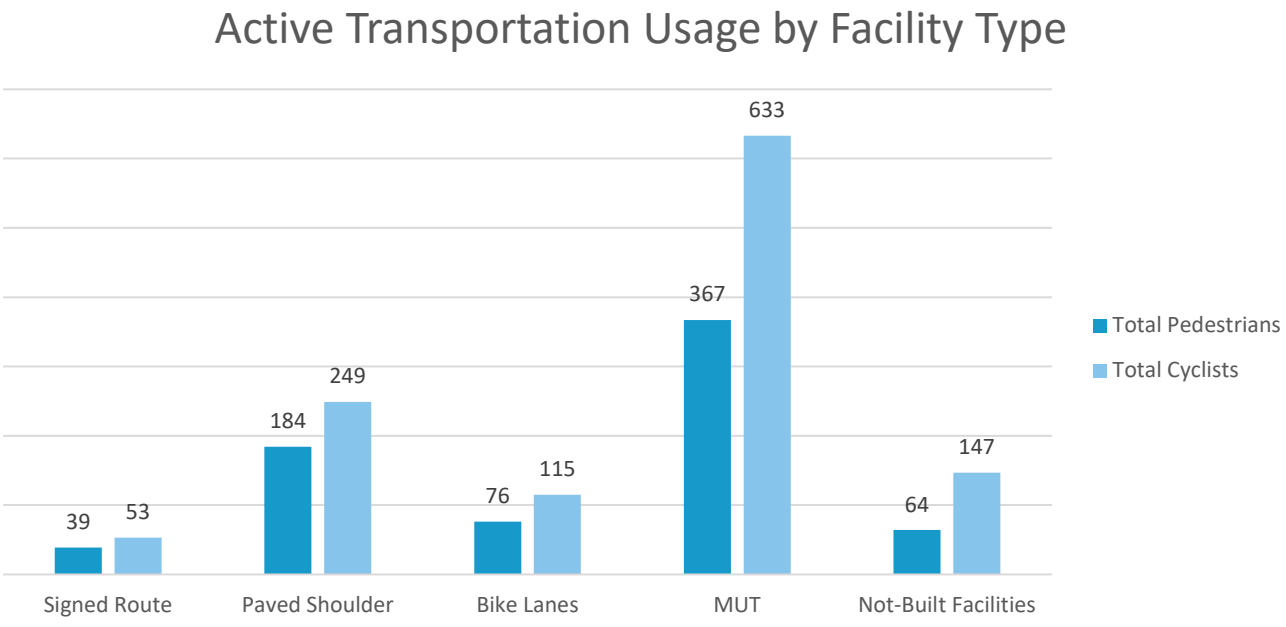


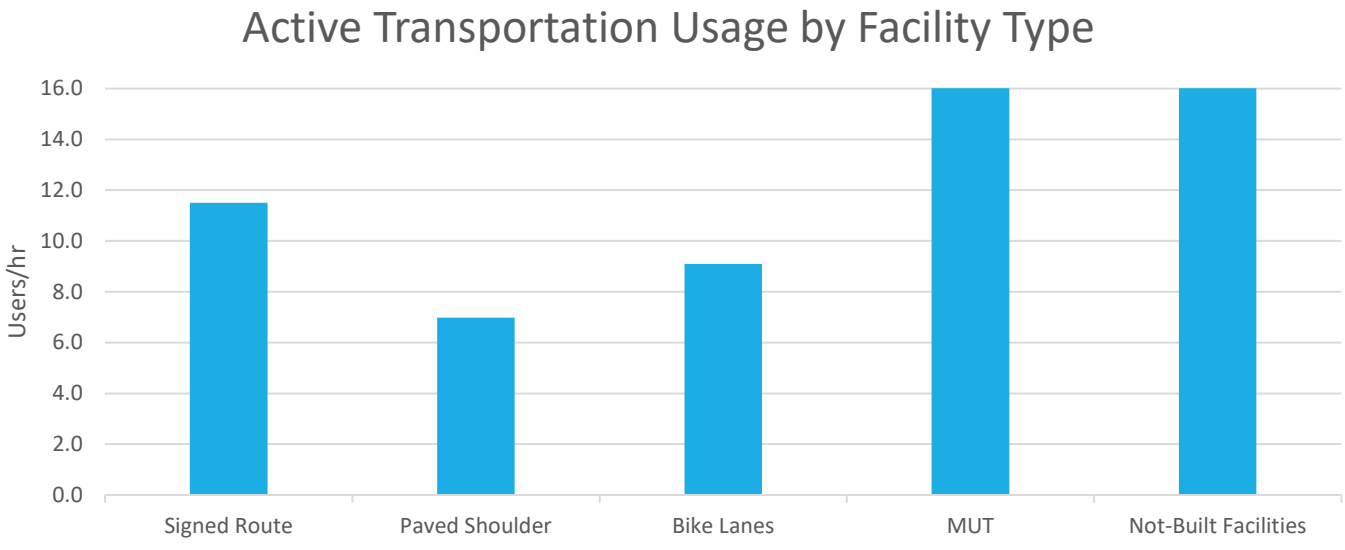
Findings Based on Facility Type

- Active transportation users generally took advantage of built facilities, with a steady increase in users on built facilities from 2018 to 2020.
- Newly built facilities typically experienced a spike in usage when compared to previous years.
- These findings suggest that users have a certain perception of safety and level of confidence when using the facilities. Trends align with assumptions that more users will utilize built facilities. Although, users will travel on unbuilt facilities if it leads them to their destination.



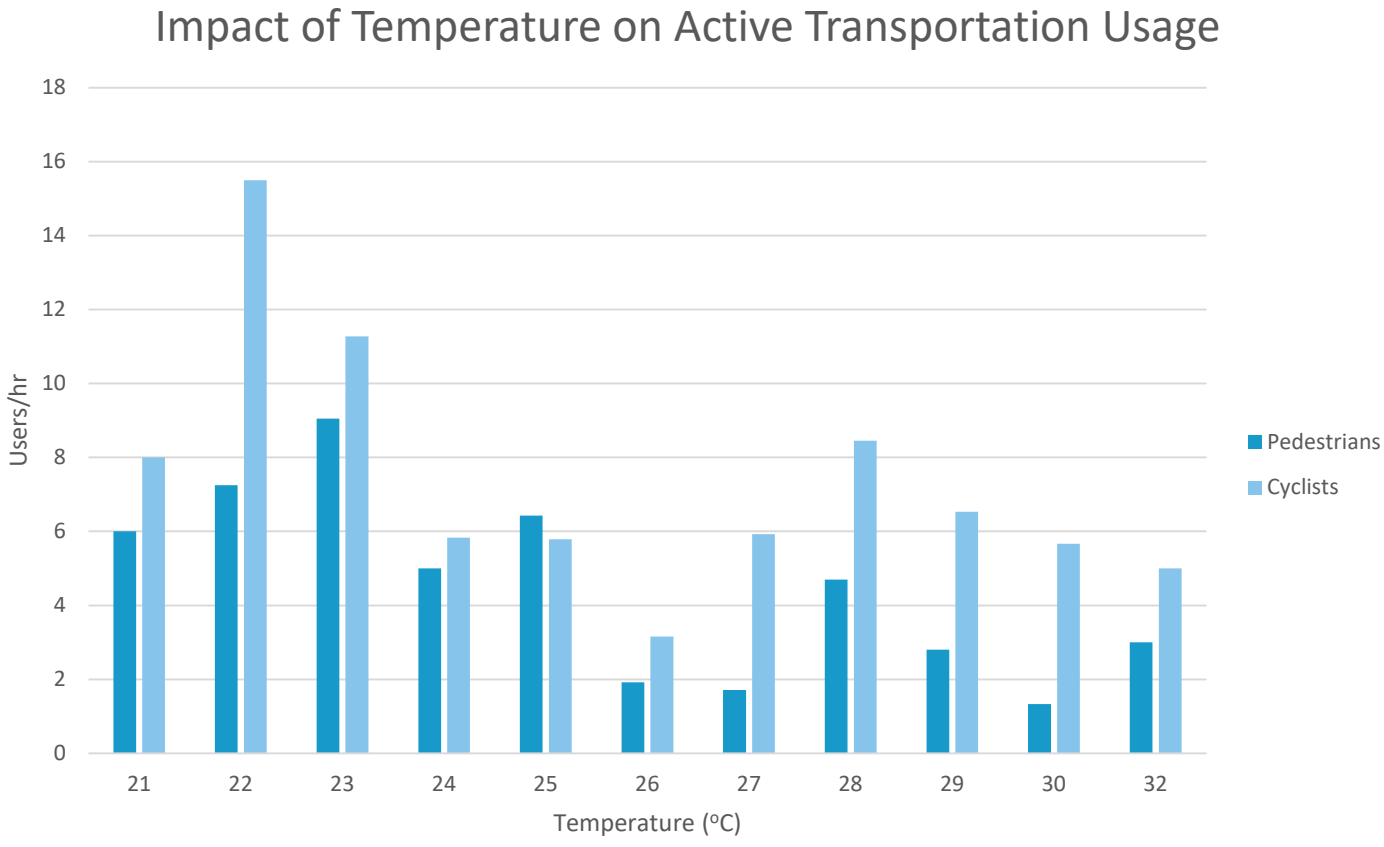






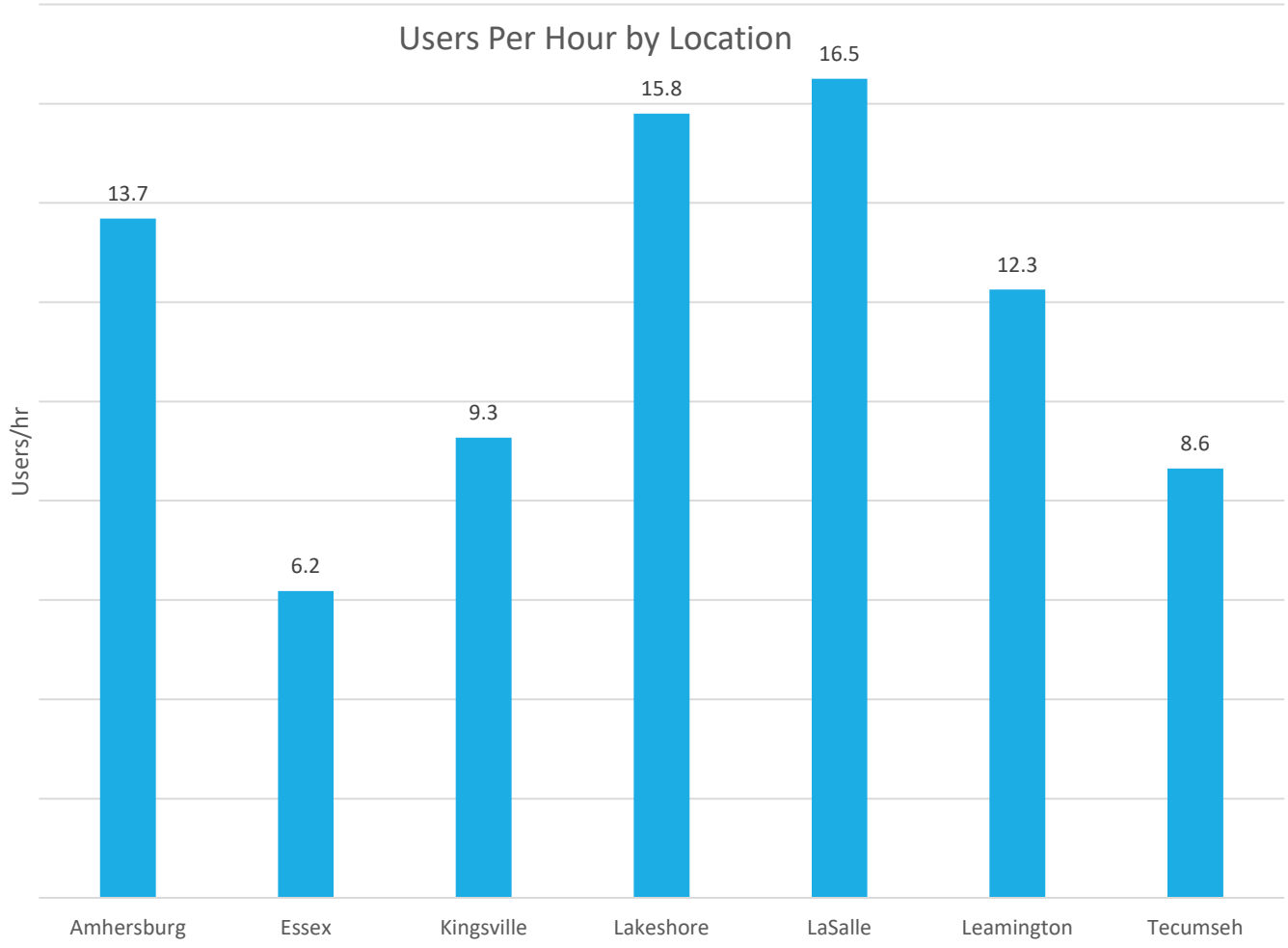
Findings Based on Facility Type

- There were 4 major types of CWATS facilities monitored in 2020: multi-use trails (MUT), paved shoulders, bike lanes and signed routes.
- Multi-use trails had the highest number of both cyclists and pedestrians.
- Count locations are usually a combination of two or three facility types.



Meteorological Findings

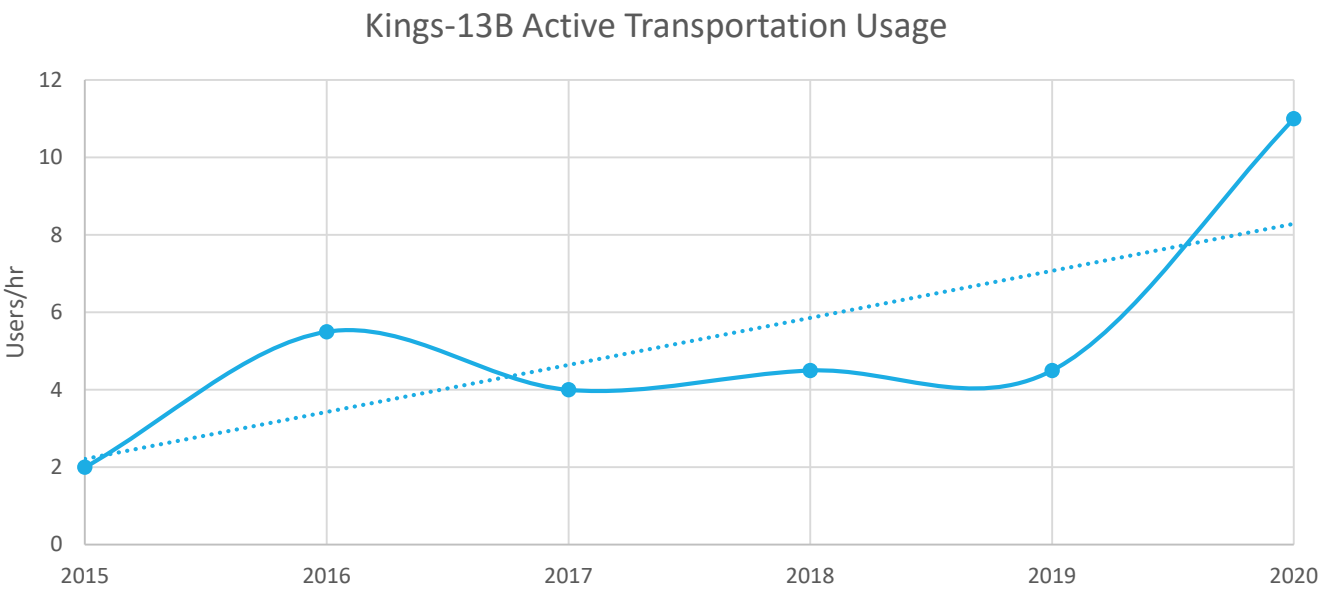
- Active transportation users were more likely to utilize the CWATS facilities on sunny days with a temperature range of 21°C to 32°C.
- Cyclists were most likely to be using the facilities when the temperature was around 22°C and sunny.
- Fewer pedestrians were observed using the CWATS facilities as the temperature increased.



Variation by Location

- The Town of LaSalle had the highest number of active transportation users at 16.5 users/hr.
- The Town of Lakeshore has the second highest number of active transportation users at 15.8 users/hr.

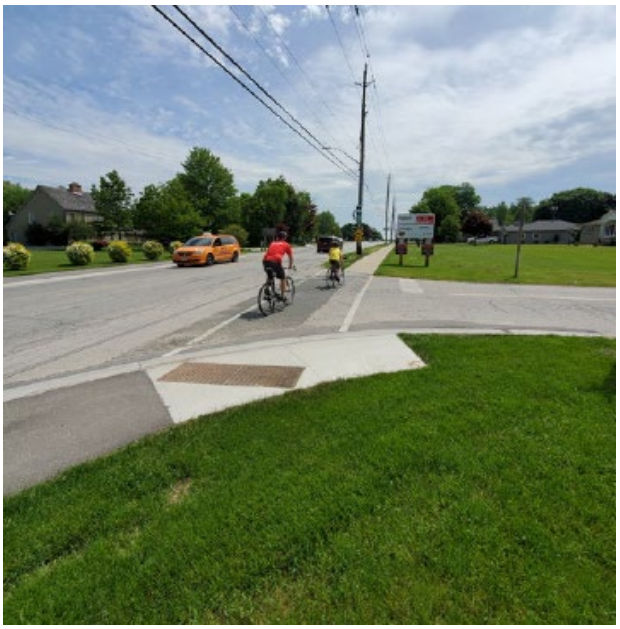
Project Usage Highlights: County Road 20 One-Way Cycle Track



- This CWATS facility located on County Road 20 in the Town of Kingsville, separates vehicles from cyclists and pedestrians with a physical curb barrier.
- Trends shows a spike in usage in 2016, the year it was built.
- Overall, data shows consistent usage of facility after construction, with a significant spike in usage in 2020.

Top 5 CWATS Facilities Used in 2020

CWATS ID	Location	Facility Type	Pedestrians	Cyclists	Total Users
Lake-11	County Road 2 at CNR Crossing	Multi-Use Trail & Paved Shoulders	34	66	**100**
Leam-28, Leam-37	Robson Road at Leamington Greenway	Multi-Use Trail & Signed Route	54	32	**86**
Lake-11	County Road 2 at Patillo Road	Multi-Use Trail & Paved Shoulders	29	54	**83**
Lake-11	County Road 2 East of Wallace Line Rd	Multi-Use Trail & Paved Shoulders	33	43	**76**
Amh-16	CR 20 at Pickering Street	Paved Shoulders	54	19	**73**



Automated Eco-Counters

- Automated eco-counters are devices that automatically count cyclists throughout all hours of the day.
- Of the 80 count locations, 6 were located at/or near Essex County's automated eco-counters on paved shoulders or bike lanes.
- Considering paved shoulders and bike lanes are on both sides of the road, the eco-counters only gather data of cyclists traveling in one direction.
- In order to gather accurate data of active transportation usage, consideration should be given to locating future counters on multi-use trails and two-way cycle paths. On these facilities, cyclist error is minimal and active transportation users are "funneled" onto a single shared path.

Automated Eco-Counters Comparison

CWATS Count Location	Location	Distance from Eco-Counter	Cyclists Counted Manually (direction accounted for)	Cyclists Counted by Eco-Counter
70	County Road 34 & Essex Boundary	0 m	**4**	**4**
57	County Road 50 & Ridge Road	40 m	**4**	**3**
22	County Road 20 & Rowley Park Drive	80 m	**5**	**3**
61	County Road 20 & Pinecrest Drive	0.5 km	**6**	**5**
60	County Road 50 & Bell Road	0.5 km	**9**	**7**
71	County Road 34 & Elgin Street	0.3 km	**0**	**0**

- Even when direction is accounted for, some numbers are still inconsistent.
- This is a result of cyclist behavior, including:
  - Avoiding eco-counters;
  - Crossing eco-counters multiple times; and
  - Riding on the wrong side of the road.

Possible Barriers for Active Transportation


Safety


Connectivity


Accessibility


Signage and Wayfinding


Attitudes / Education


End-of-trip facilities


Funding/ Cost


Design of AT and trails infrastructure


Lack of AT and trails infrastructure


Distance

Reference: https://www.countyofessex.ca/en/county-government/resources/Documents/CWATS_Survey_Results.pdf

Summary of Findings

- The number of cyclists exceed the number of pedestrians.
- Active transportation users generally use facilities that offer some degree of separation from motorists.
- 61% of cyclists were wearing a helmet, which was over a 10% increase in helmet use since 2019 counts.
- Peak times for active transportation users: 9 – 10 a.m., 6 – 7 p.m.
- Peak temperature range for active transportation users: 21 – 32 ^{o}C.
- Count sites that were closer to “destination” areas such as parks or by the river had consistently high usage.
- Enhancing our understanding of factors that influence active transportation in a local context will support evidence for informed decision making.
- Automated bicycle and pedestrian traffic data collection is recommended as a long term objective to provide a greater understanding of patterns in different contexts.

Recommendations

- Education & Safety
  - Increase signage – Clarify how and where to ride.
  - Public outreach – Motorist knowledge and awareness of active transportation users needs improvement. Reckless driving is at the forefront of active transportation users' safety concerns. Use of bike helmets remains an issue as well.
- Expanding the Network
  - Trail connections – Connection within and between municipalities should be a focal point for ease of access to CWATS.
  - Public surveys – Use public input to determine preferred areas for development.
  - Busy/high speed roads – Consideration must be given to current AT usage on busy/high speed roads prior to developing AT facilities. AT facilities on busy/high speed roads are oftentimes not fully utilized unless there is some form of physical separation (e.g. curb, delineator, space between trail and road)

Recommendations

- Automated Counters
  - Placement on facilities that channel active transportation users onto a single path (e.g. multi-use trails, 2-way cycle paths) is highly recommended for holistic data.
- Bike Storage Facilities
  - “Destination” areas – Areas such as parks, rec centers, shopping centers, schools and any location that attracts active transportation users should be considered candidates for bike storage facilities.
- Future Active Transportation Counts
  - As more automated counters are installed in Essex County, manual counts should focus more on areas of development. Manual counts are still important to gather demographic trends of those using the CWATS network.

Reference Websites

http://www.cwats.ca/en/about-cwats.asp

http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/825810eb3ddd203385257d4a0063d934/$FILE/Ontario%20Traffic%20Manual%20-%20Book%2018.pdf

https://www.canada.ca/en/transport-canada.html

https://www.fcm.ca/Documents/tools/GMF/Transport_Canada/ActiveTranspoGuide_EN.pdf

https://www.countyofessex.ca/en/county-government/resources/Documents/CWATS_Survey_Results.pdf