2021 Traffic Study

Bike Cochrane Active Transportation Committee

Jan 2022

Background

- In Winter 2020, Bike Cochrane entered into a 'Data Sharing Agreement' with the Town of Cochrane to allow for **bike counting on the Town's pathway network**

- Piloted at the Ranche park in Jan/Feb 2021 and methodology defined (see appendix), Bike Cochrane undertook a traffic study in summer 2021 to **better understand recreational and 'bike to school' cycling traffic**

- Month-long studies to align to Strava data gathering period, determine correlation factors to Strava (SUR or Strava User Rate)

Metrocount RidePod BT with local storage, data retrieved at month end

Example retrieved raw data

MetroCount Traffic Executive
Weekly Vehicle Counts

WeeklyVehicle-3 -- English (ENU)

Datasets:
Site:	**[Ranche House Near Bridge] Shared Path on Red Shale**
Attribute:	Bike Cochrane
Direction:	1 - North bound. **Lane:** 0
Survey Duration:	20:34 Wednesday, January 20, 2021 => 13:36 Wednesday, February 17, 2021,
Zone:	
File:	Ranche House Near Bridge 0 2021-02-17 1337.EC0 (DemoL) ← adjustable
Identifier:	NV27ZGTS MC5926-X13 (c)MetroCount 09Nov16
Algorithm:	**Modified** - Factory default axle, PF = 2.800 (v5.07)
Data type:	Axle sensors (bicycle) - Paired (Class/Speed/Count)

Profile:
Filter time:	**20:35 Wednesday, January 20, 2021 => 13:36 Wednesday, February 17, 2021 (27.7097)**
Included classes:	1, 2, 3
Speed range:	5 - 40 km/h. ← adjustable
Direction:	North, East, South, West (bound), P = <u>North</u>, Lane = 0-16
Separation:	Headway > 0 sec, Span 0 - 100 metre
Name:	Default Profile
Scheme:	Vehicle classification (Shared path)
Units:	Metric (metre, kilometre, m/s, km/h, kg, tonne)
In profile:	Vehicles = 47 / 72 (65.28%) ← Summary of bikes/total vehicles

Data profile from standard 'Weekly Vehicle Count' Table template

Example hourly data

Hour	Mon 18 Jan	Tue 19 Jan	Wed 20 Jan	Thu 21 Jan	Fri 22 Jan	Sat 23 Jan	Sun 24 Jan	Averages 1 - 5	1 - 7
0000-0100	*	*	*	0	0	0	0	0.0	0.0
0100-0200	*	*	*	0	0	0	0	0.0	0.0
0200-0300	*	*	*	0	0	0	0	0.0	0.0
0300-0400	*	*	*	0	0	0	0	0.0	0.0
0400-0500	*	*	*	0	0	0	0	0.0	0.0
0500-0600	*	*	*	0	0	0	0	0.0	0.0
0600-0700	*	*	*	0	0	0	0	0.0	0.0
0700-0800	*	*	*	1	0	0	0	0.5	0.3
0800-0900	*	*	*	0	0	0	0	0.0	0.0
0900-1000	*	*	*	0	0	0	0	0.0	0.0
1000-1100	*	*	*	0	0	0	0	0.0	0.0
1100-1200	*	*	*	0	0	0	0	0.0	0.0
1200-1300	*	*	*	0	0	0	0	0.0	0.0
1300-1400	*	*	*	0	0	0	1	0.0	0.3
1400-1500	*	*	*	3	1	0	0	2.0	1.0
1500-1600	*	*	*	1	0	1	0	0.5	0.5
1600-1700	*	*	*	1	0	0	0	0.5	0.3
1700-1800	*	*	*	0	0	0	0	0.0	0.0
1800-1900	*	*	*	1	0	0	0	0.5	0.3
1900-2000	*	*	*	0	0	0	0	0.0	0.0
2000-2100	*	*	0	0	0	0	0	0.0	0.0
2100-2200	*	*	0	0	0	0	0	0.0	0.0
2200-2300	*	*	0	0	0	0	0	0.0	0.0
2300-2400	*	*	0	0	0	0	0	0.0	0.0
Totals									
0700-1900	*	*	*	7	1	1	1	4.0	2.5
0600-2200	*	*	*	7	1	1	1	4.0	2.5
0600-0000	*	*	*	7	1	1	1	4.0	2.5
0000-0000	*	*	*	7	1	1	1	4.0	2.5

Hour	Mon 25 Jan	Tue 26 Jan	Wed 27 Jan	Thu 28 Jan	Fri 29 Jan	Sat 30 Jan	Sun 31 Jan	Averages 1 - 5	1 - 7
0000-0100	0	0	0	0	0	0	0	0.0	0.0
0100-0200	0	0	0	0	0	0	0	0.0	0.0
0200-0300	0	0	0	0	0	0	0	0.0	0.0
0300-0400	0	0	0	0	0	0	0	0.0	0.0
0400-0500	0	0	0	0	0	0	0	0.0	0.0
0500-0600	0	0	0	0	0	0	0	0.0	0.0
0600-0700	0	0	0	0	0	0	0	0.0	0.0
0700-0800	0	0	0	0	0	0	0	0.0	0.0
0800-0900	0	0	0	0	0	0	0	0.0	0.0
0900-1000	0	0	0	0	0	0	0	0.0	0.0
1000-1100	0	0	0	0	0	0	0	0.0	0.0
1100-1200	0	0	0	1	0	1	1	0.2	0.4
1200-1300	0	0	0	1	0	1	0	0.2	0.3
1300-1400	0	0	1	3	0	3	0	0.8	1.0
1400-1500	0	0	0	0	1	3	0	0.2	0.6
1500-1600	0	0	0	0	0	1	0	0.0	0.1
1600-1700	0	0	1	1	0	0	1	0.4	0.4
1700-1800	0	0	1	1	0	1	4	0.4	1.0
1800-1900	0	0	0	0	0	0	0	0.0	0.0
1900-2000	0	0	0	0	0	0	0	0.0	0.0
2000-2100	0	0	0	0	0	0	0	0.0	0.0
2100-2200	0	0	0	0	0	0	0	0.0	0.0
2200-2300	0	0	0	0	0	0	0	0.0	0.0
2300-2400	0	0	0	0	0	0	0	0.0	0.0
Totals									
0700-1900	0	0	3	7	1	10	6	2.2	3.9
0600-2200	0	0	3	7	1	10	6	2.2	3.9
0600-0000	0	0	3	7	1	10	6	2.2	3.9
0000-0000	0	0	3	7	1	10	6	2.2	3.9

BIKE COCHRANE

2021 Summer Traffic plan

- Summer traffic plan aligned to target **school-related traffic** (April/May/June/Sept/Oct) along with **recreational traffic** (July/August)
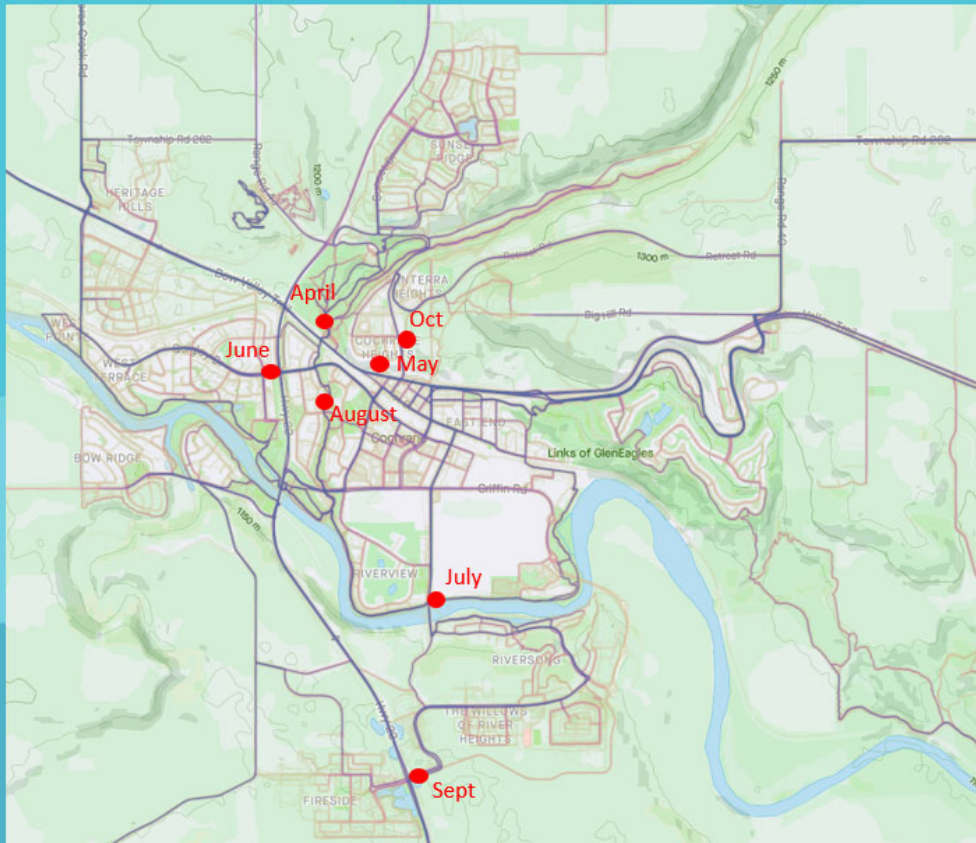
- April – Ranche House park (same location)

- May – Pathway up to Tri-schools

- June – Quigley Drive by Highway 22

- July – Riverfront pathway near River Ave

- August – Glenbow Park shale

- Sept – James Walker Trail (north side pathway)

- Oct – Sidewalk along 4th Ave (route to school)

April 2021 Summary

- Counter located near **Big Hill Creek bridge at Ranche House park**
- On shale pathway for March-April due to not needing to move counter/tubes with snow plowing
- Sandwich board and counter locked with bike locks to deter theft
  - Challenge with keeping tubes in the ground – may have been wind
- Clear **recreational usage**, not much commute traffic (7am to 9am) but likely based on icy conditions, no plowing, bridge under CP rail is impassable at this time

Monthly Count – 1947
SUR – 15.4%, 6.5x

Daily Bike Counts - Ranche House April 2021
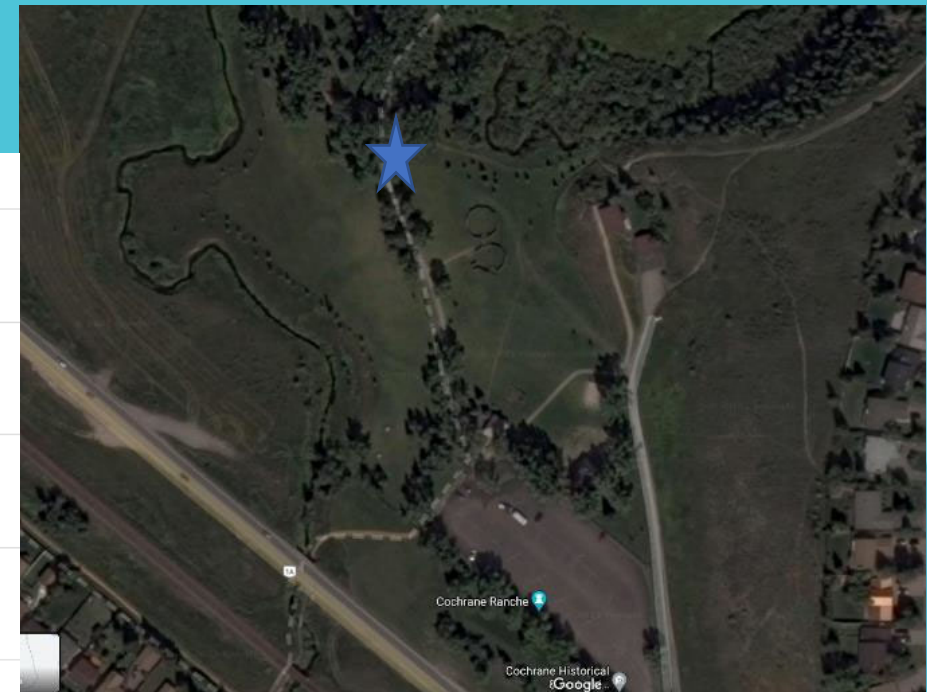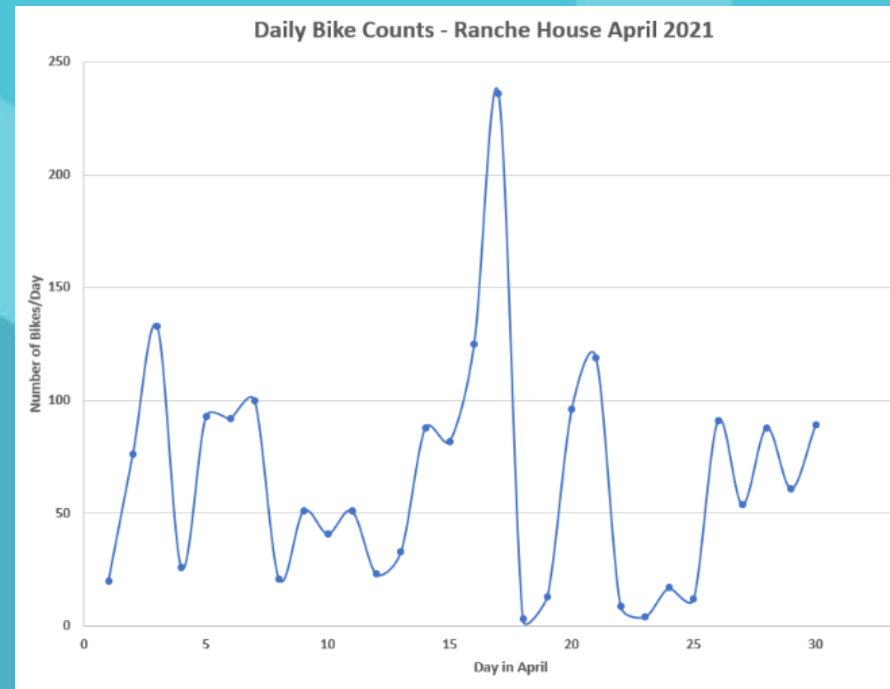
Peak of 236 bikes/day in April at Ranche

BIKE COCHRANE

May 2021 Summary

- Placed on 4th Ave pathway (not sidewalk) up to Tri school area

- Data does not show a route that is consistent with bike commuting to school/work

  - Looks to be recreational use for 'training' due to steep slope

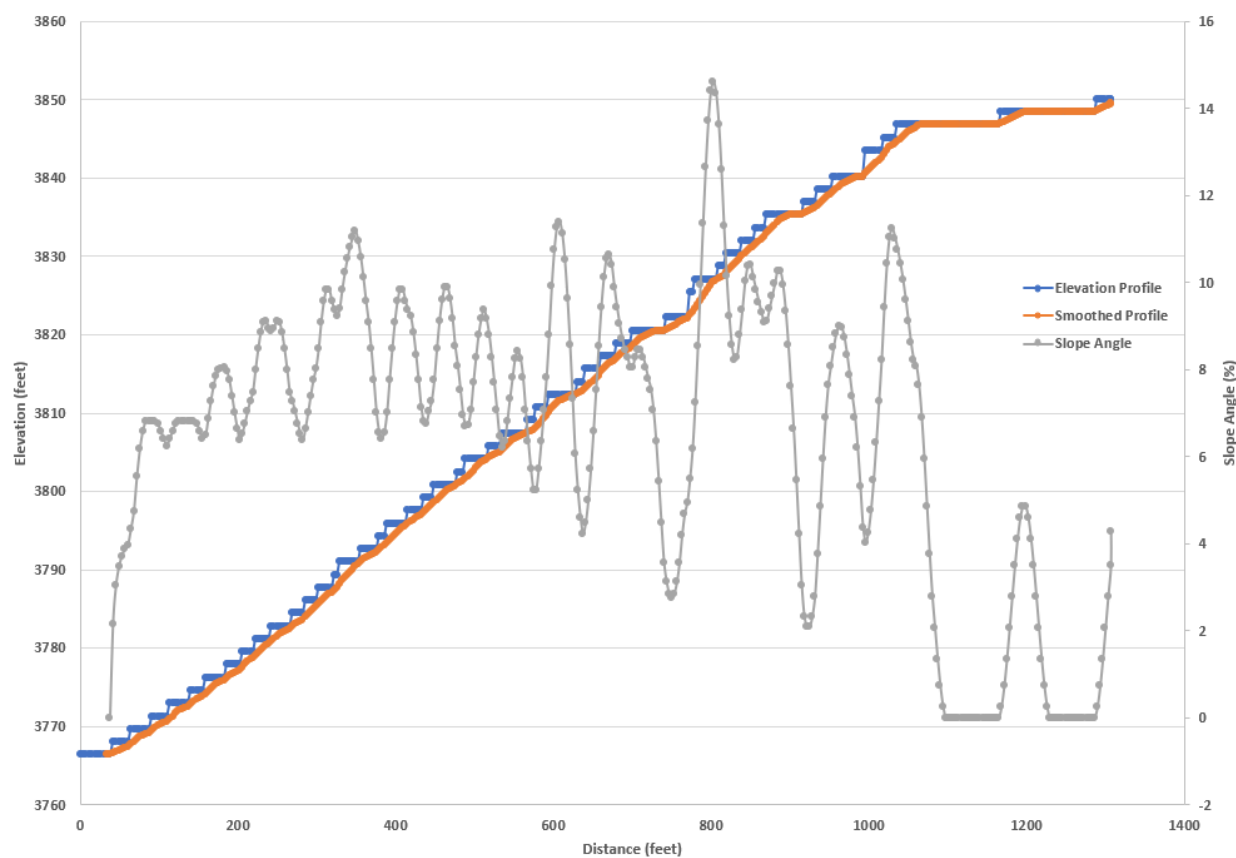Monthly Count – 62
SUR – 24.1%, 4.1x

Data notes
- 14 of the 15 counts here were one Strava user doing 'training laps'

This report includes aggregated and de-identified data from Strava Metro Edge UID 236895161
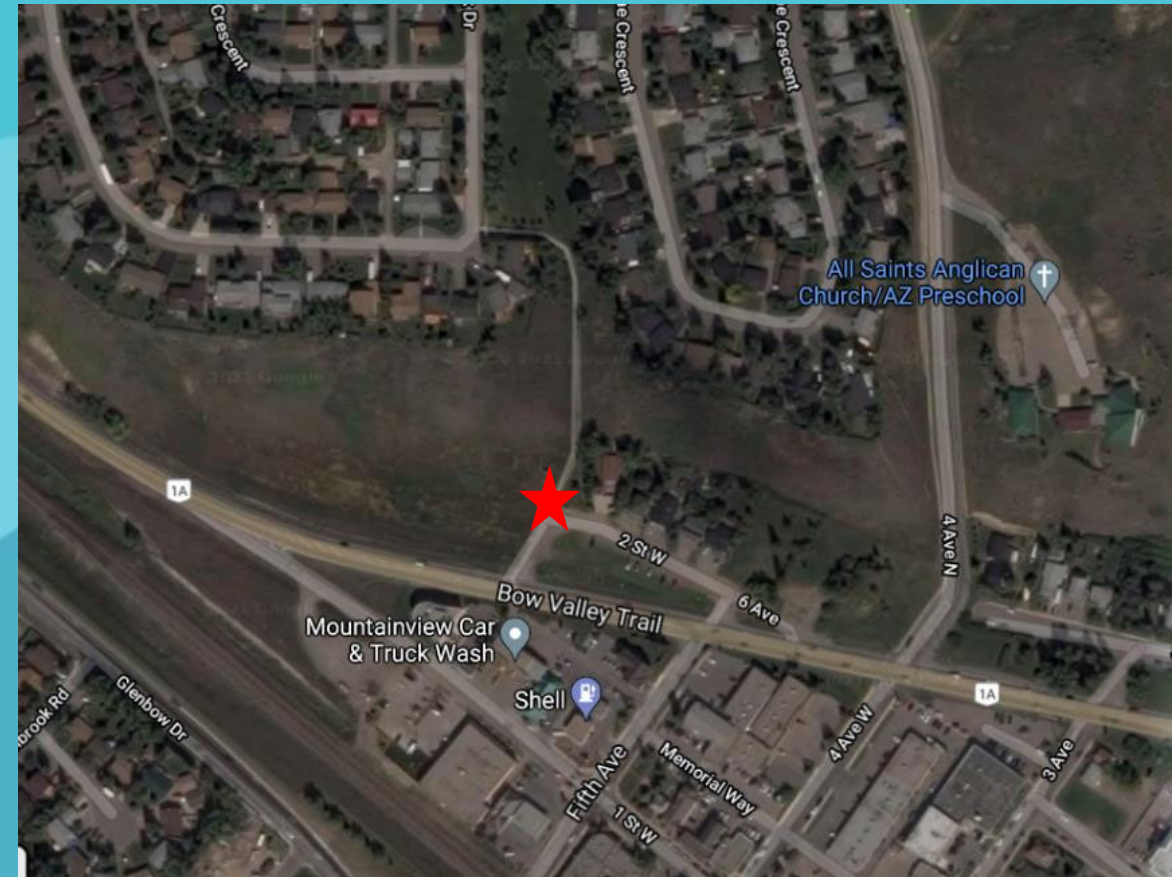
Question – why isn't this used more for 'Bike to School'? Answer - Sidewalk is less steep

Elevation Profile of 4th Avenue Sidewalk

Elevation Profile of 4th Avenue Pathway

- Peak of 14% with mostly 6-10% grade
- **Average grade 6.5%**
- City of Calgary pathway guidelines call out no more than 8%
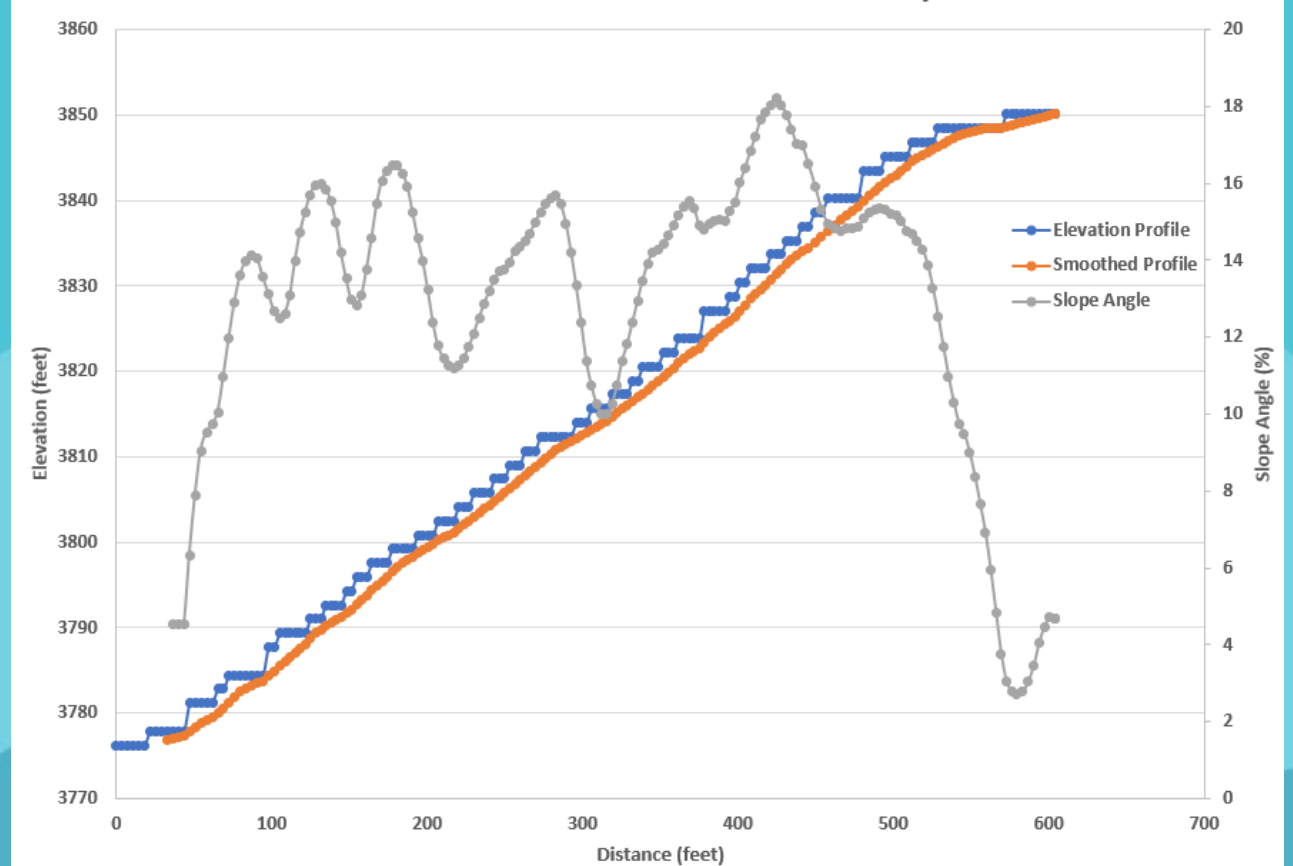
- Peak of 18% with mostly 10-16% grade
- **Average Grade 12.7%**
- City of Calgary pathway guidelines call out no more than 8%

June 2021 Summary

- Placed on sidewalk on south side of Quigley Dr, a popular 'bike to school' route to Glenbow School, Mitford, Ecole Notre Dame, Cochrane Christian Academy

- **Obvious bike commuting patterns seen (7am to 8am, 2pm to 3pm)**

- Sidewalk considered 'safer' by parents due to traffic/intersection hazards (per Bike Cochrane user reporting)

Monthly Count – 5764
SUR – 2.4%, 41.2x

For school-focused corridors, Strava Metro appears to be a massive undercount
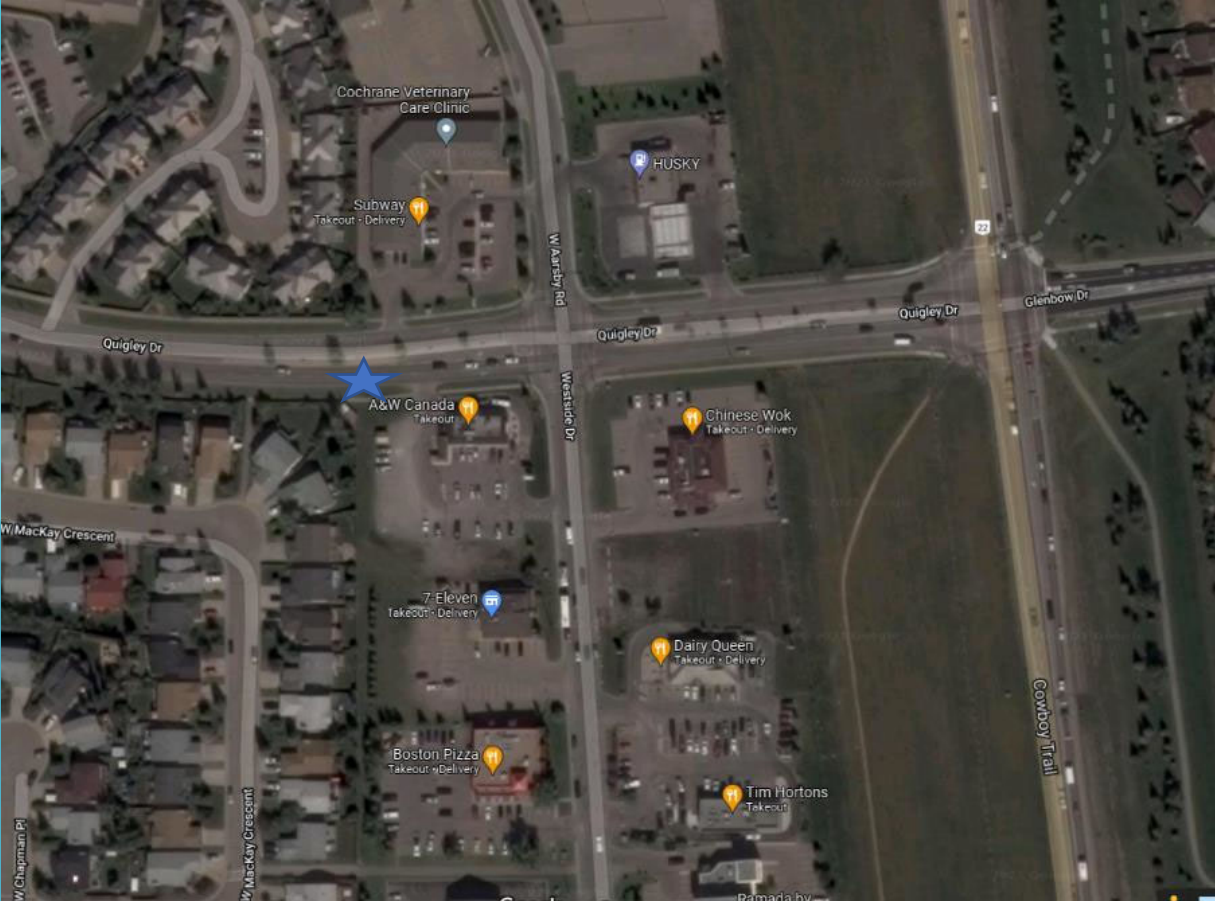
This report includes aggregated and de-identified data from Strava Metro Edge UID 236894000

BIKE COCHRANE

July 2021 Summary

- Bow River Pathway (near wooden pedestrian bridge), on west side of River Ave

- Flat location, commonly used for **recreation biking/walking**

- Note counter was vandalized (locks cut and one tube cut) on Friday July 9th around midnight so data integrity isn't as good as it should be, but the counts are still useful
  - Had to use 'EventCounts' rather than 'Classification reports' in MTExec

Monthly Count – 8516
SUR – 5.5%, 18.3x

**This report includes aggregated and de-identified data from Strava Metro
Edge UID 236894449**

Data highlights
- Most bikes in an hour – 51
- Most bikes in a day – 338
- As early as 5AM we see traffic
- Good potential location for **permanent counter**

Aug 2021 Summary

- Brand new bridge connection across Bow River (Jack Tennent)

- Lots of expected bike/walking traffic

- Camera located here (good placement based on July vandalism)

Monthly Count – 683
Strava Count – N/A
SUR – %, x

Data notes
- High volume of walkers based on A/B tube counts
- No Strava data since this is a new segment recently added
- Lower than expected bike counts, maybe more using roadway, or bypassing this segment


BIKE COCHRANE

Sept 2021 Summary

- Placed on sidewalk on north side of James Walker Trail

- Corridor between Fireside school and Riversong/River Heights, along with Bow River High School

- Expected school traffic although the highway 22 intersection is 'scary' per our summer 2021 'Bike to School' survey so there may be latent need here that is uncounted

Monthly Count – 956
SUR – 2.1%, 47.8x

Data notes
- Low SUR unsurprising given it's a 1.2m sidewalk
- Peak biking traffic seen during school commute times
- Making the ~40m Highway 22 intersection shorter with refuge islands would help with safety

This report includes aggregated and de-identified data from Strava Metro Edge UID 236894349
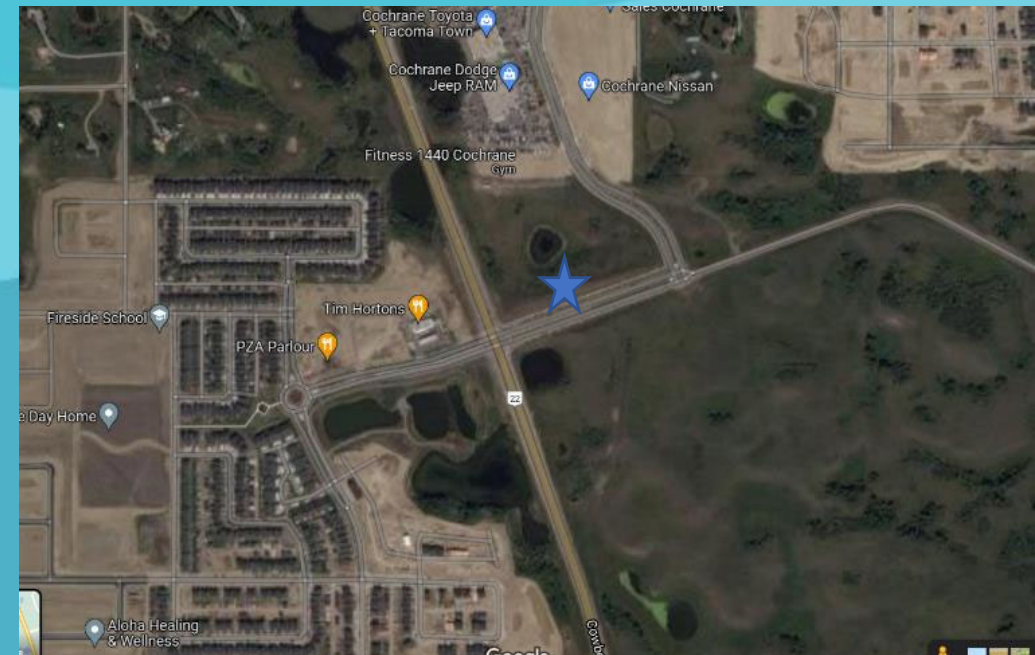
Oct 2021 Summary

- Placed on west side of 4th Ave N on sidewalk

- Tri-school area commute corridor (mix of road and sidewalk)

- Oct 6th – International Bike/Walk to School Day

Monthly Count – 172
SUR – 17.4%, 5.7x

Data notes
- Peak biking seen on Oct 6th (double the days around it)
- Strava data is for the roadway, not the sidewalk, so likely a pretty healthy overcount
- 3x more kids on this route than the pathway (likely due to slope)

This report includes aggregated and de-identified data from Strava Metro Edge UID 236895223
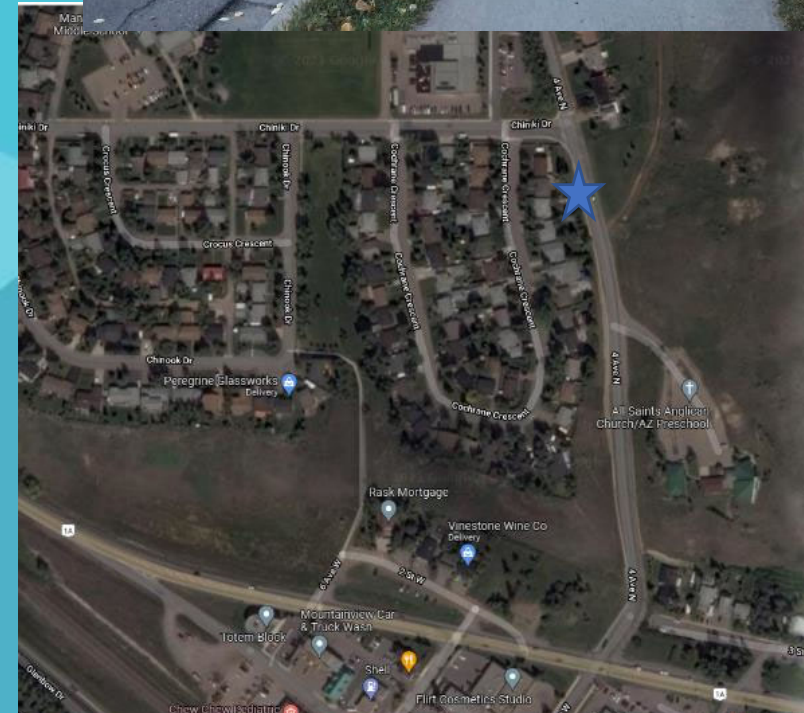
2021 Traffic Study Summary

	Description of site	Monthly Count (using Metrocount RidePod BT)	SUR (% and multiplier)
April 2021	Big Hill creek bridge in Ranche Park on red shale pathway – **recreational** usage	1947	15.4%, **6.5x**
May 2021	4th ave pathway on route to Tri-school area – expected 'bike to school' but actually **recreational** usage	62	24.1%, **4.1x**
June 2021	Quigley Drive sidewalk – mostly **bike to school** with commuting timing seen in the data	5764	2.4%, **41.2x**
July 2021	Bow River Pathway – mostly **recreational** usage	8516	5.5%, 18.3x
August 2021	Jack Tennent bridge – expected recreational route, but likely commute corridor (maybe on roadway)	683	N/A, N/A
September 2021	James Walker trail north side sidewalk - mostly **bike to school** with commuting timing seen in the data	956	2.1%, **47.8x**
October 2021	4th Ave N sidewalk heading to Tri school area – mostly **bike to school** with commuting timing seen in the data	172	17.4%, 5.7x (likely Strava overcount of sidewalk)

BIKE COCHRANE

2022 Traffic plan

- Winter months – place at red shale path in Glenbow (off Glenpatrick Road)
- Summer – focus on 'bike to school' planned improvement areas
  - Quigley Drive sidewalk/roadway
  - CP Rail crossing at Carolina Drive/1st St E
  - River Heights Drive connector
  - Griffin Road unofficial pathway
  - Continued Bow River Pathway counting
  - Heartland/Heritage Hills pathway or CP Rail crossing

- Consider a permanent counter installation on Bow River Pathway
  - Eco Counter ZELT would be a good option

Conclusions/Notes

- Ensure Strava segment exists before choosing count location

- Consider cameras/monitoring if placing counter near off-leash areas

- **Recreational cycling usage** translates to SUR >10-20%, so use **correlation factors of ~5-10x**
  - This aligns with initial estimates from Bike Cochrane on using Strava data

- Sidewalks and **'bike to school' corridors** are less likely to be using Strava and we see SUR >2-5%, so use **20-50x multipliers**
  - This is bit higher than expected from Bike Cochrane estimates