Final Project Report

Gurjasraj Singh, Harvinderpal Singh, Jed Mamish
STAT 307 | Dr. David Chu

Question 1: How has the transportation in these three corridors evolved over time in Chilliwack?

Answer:

In order to determine how the transportation in the three main North-South transportation corridors has evolved over time in Chilliwack, we must analyze the data provided to us on https://www.maps.chilliwack.com/b/. We filtered for "Traffic Count" in the side menu, then selected four pink stations for each of the three corridors. The pink stations symbolized stations that had data for the sum of traffic counts over a 24-hour period during a given day. We decided to choose four different stations for each corridor, specifically stations that contained data during the years 2014, 2016, 2018, 2020, and 2022, so that we could easily compare data among each of the corridors, and this would not interfere with any of our summed calculations when adding all of the station data values together for a specific corridor. After gathering data on corridors 4, 12, 21, 30, 44, 75, 81, 97, 132, 161, 165, and P2, an excel file was created, which included traffic count data for each of the 5 years previously mentioned.

Results:

Data was then placed into Tableau, and a line graph was created with the 3 corridors of interest. Data was stacked on top of each other for easier visualization, making it easier to see that the central corridor has the highest amount of traffic volume over the years (then East, then West), and it appears to increase the fastest over time compared to the other corridors. For all corridors, there appears to be a dip in traffic volume during 2020, which is most likely due to COVID lockdowns, making it difficult for people to leave their homes. After 2020, traffic volume increases once more, and is expected to increase as time progresses (future research is required to confirm this).

Question 2: What are the impacts of the population growth in Chilliwack on the transportation in these three corridors?

Answer:

In order to understand how the population growth in Chilliwack affects transportation data in these three corridors, we must first analyze the data provided on www.maps.chilliwack.com (as mentioned in paragraph 1 of question 1), as well as consult Statistics Canada Chilliwack census population data provided online. As this only gives the populations for 2016 and 2021, we must also use estimated data provided by the Chilliwack Progress.

Results:

The data illustrates that as Chilliwack's population grew from approximately 77K in 2013 to 101K in 2022, traffic volumes also escalated, suggesting that transportation infrastructure usage intensified. However, a dip can be seen in 2020 due to Lockdown during Covid-19 pandemic.

Solutions:
This pattern of traffic and population growth, along with the unexpected variables like the 2020 downturn, demonstrates the importance of transportation development in Chilliwack. As the city continues to rise in population, future infrastructure projects and sustainability efforts can be put in place.

Question 3: What is the busiest & slowest stations (of our data) in Chilliwack from 2014-2022 and where are they located?

Answer:
The purpose of this study is to know the slowest and the busiest stations (of our Data) in Chilliwack city and to know how the city can reduce traffic on roads. To answer this, we used data as provided in www.maps.chilliwack.com/b/ following the same procedure as outlined in paragraph 1 of question 1.

Results:
The busiest station in Chilliwack from our data set is shown to be "Station 4" of Yale Road (North of Vedder Road) from the Central Corridor, with a total Traffic Count from the 5 years of 182K.

The slowest station in Chilliwack would be "Station 165" of Highway 1 Off-Ramp (Near Evans Road) from the West Corridor with a total Traffic Count from the 5 years of 30K.

Solutions:
The proposed solutions can be to have a better transportation system throughout the city by having better timing for the bus (especially in the central corridor). A crucial point here to note is that most jobs are in Vancouver, and many people commute there on daily bases which passes through the central corridor. A better transportation system, such as a SkyTrain connecting Chilliwack to Abbotsford to Langley to Vancouver would be great system to add.