Nanaimo Transportation Master Plan

2012 Household Travel Survey
Preliminary Highlights

NANAIMO
TRANSPORTATION MASTER PLAN

Wednesday January 23, 2013

Process, Methodology and Scope

What: Survey of all household travel over 24hr period

Where: Study Area - (Cedar Rd south of Airport to Lantzville Rd north of Lantzville)

Who: 1500+ or ~3.5% of households within the Study Area.

How: Telephone survey by market research / survey firm.

When: March/April 2012

Expansion and Limitations

Household Sample Size: ~1500

Total Households: ~44,000

Sample Results are expanded to match total number of households, but consider other factors such as age, location and sex.

Average expansion factor about 30:1

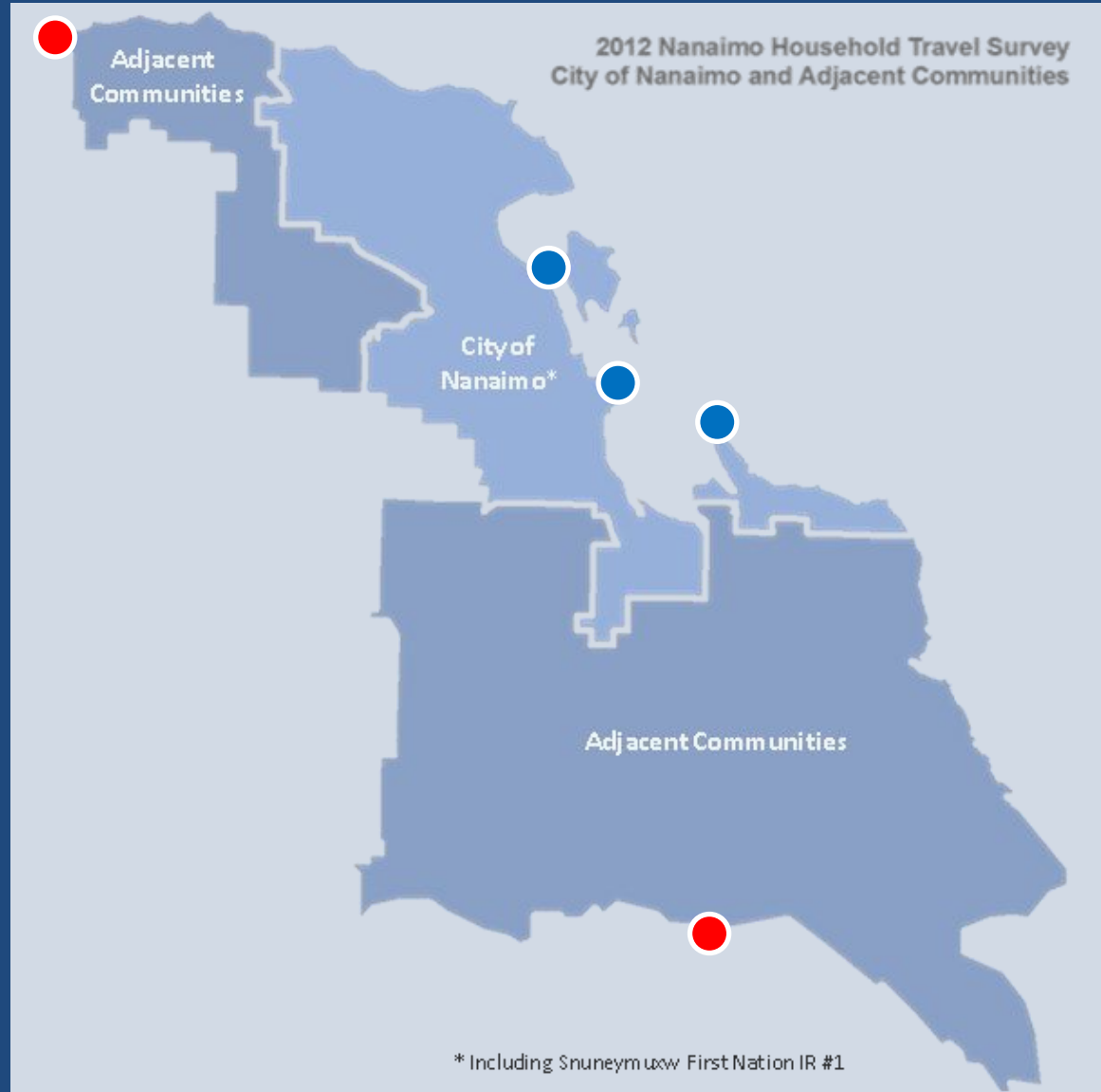Survey area further broken down into "*Superzones*" which have about a 100 household sample size.

Caution: Results from small geographies and/or samples will have larger sample errors.

Geography

Study Area

City of Nanaimo

2012 Nanaimo Household Travel Survey
City of Nanaimo and Adjacent Communities

Adjacent Communities

City of Nanaimo*

Adjacent Communities

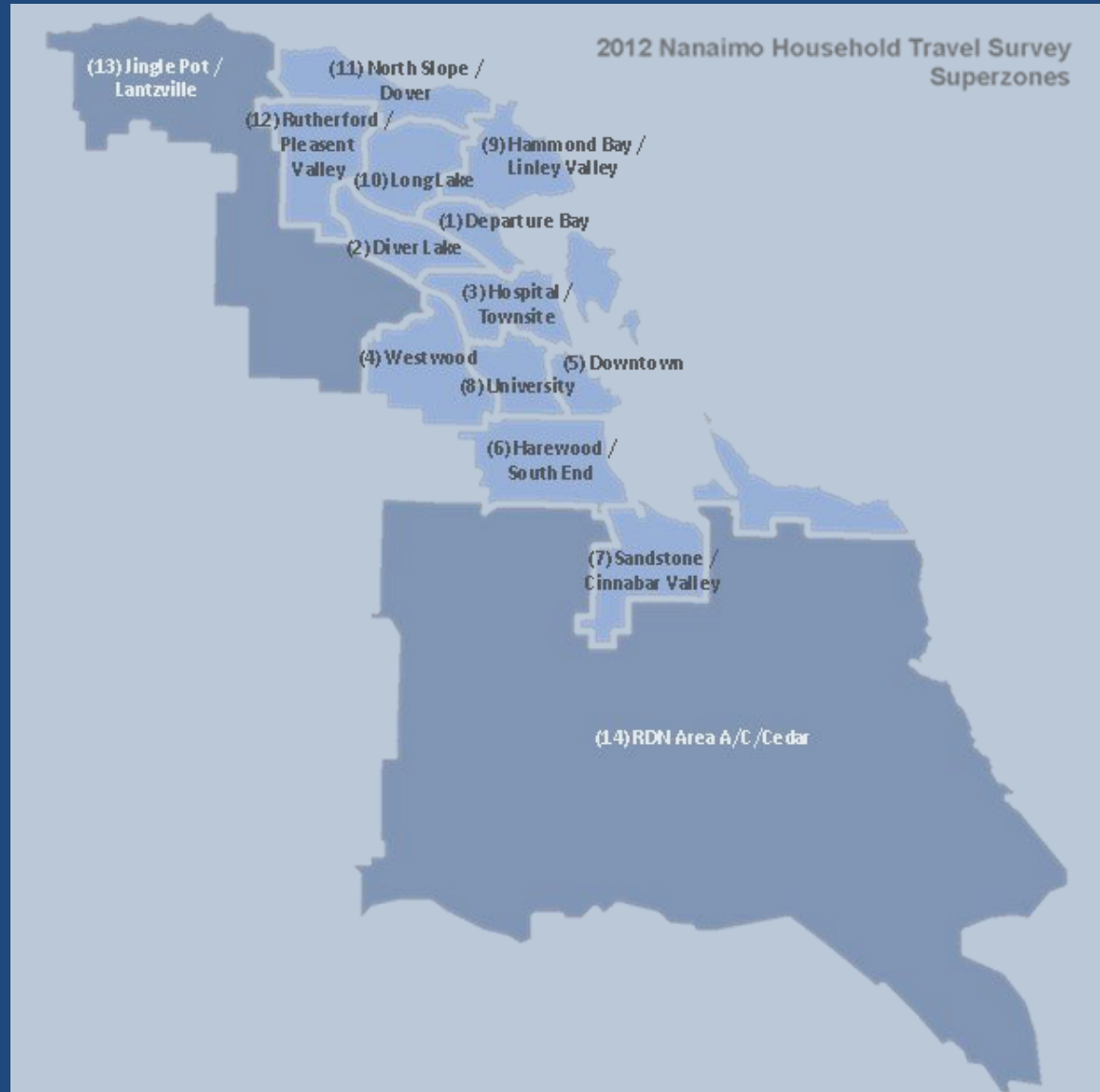* Including Snuneymuxw First Nation IR #1

Geography

14 Superzones

Smaller neighbourhood level analysis areas.

1-12 – Within City of Nanaimo, generally consistent with neighbourhoods but in some cases multiple neighbourhoods combined to increase sample size.

13 - Jingle Pot (Area "C") and District of Lantzville

14 - RDN Area A/C/Cedar and CVRD Area H

2012 Nanaimo Household Travel Survey Superzones

(13) Jingle Pot / Lantzville
(11) North Slope / Dover
(12) Rutherford / Pleasant Valley
(9) Hammond Bay / Linley Valley
(10) Long Lake
(1) Departure Bay
(2) Diver Lake
(3) Hospital / Townsite
(4) Westwood
(5) Downtown
(8) University
(6) Harewood / South End
(7) Sandstone / Cinnabar Valley
(14) RDN Area A/C/Cedar

CITY OF NANAIMO
THE HARBOUR CITY

City-wide Values

251,000

Estimated trips made by City residents over a typical weekday (24hrs)

6.7
trips / day / household

2.9
trips / day / person

Avg 5.9km/trip

1.5million km/day
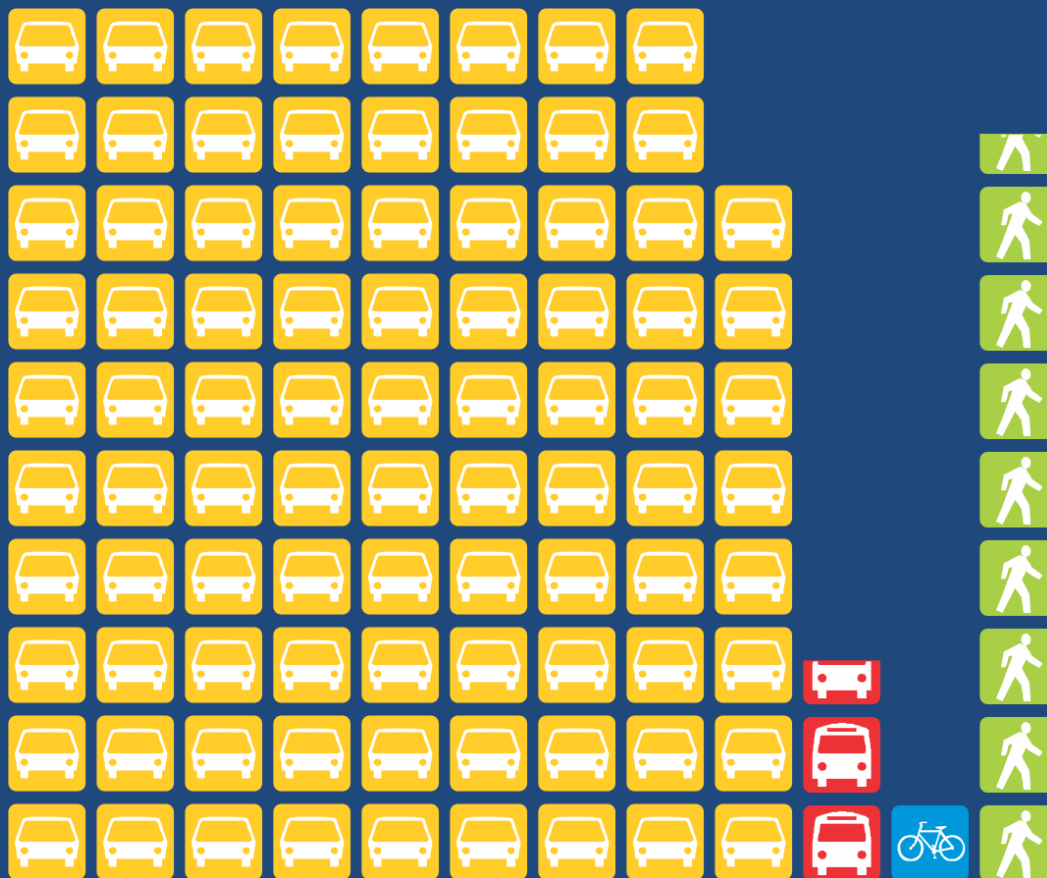
To the moon and back; twice.

City-wide Values

24Hr Mode Split
(Person-Trips / Weekday /
Spring 2012)

Auto (88%)

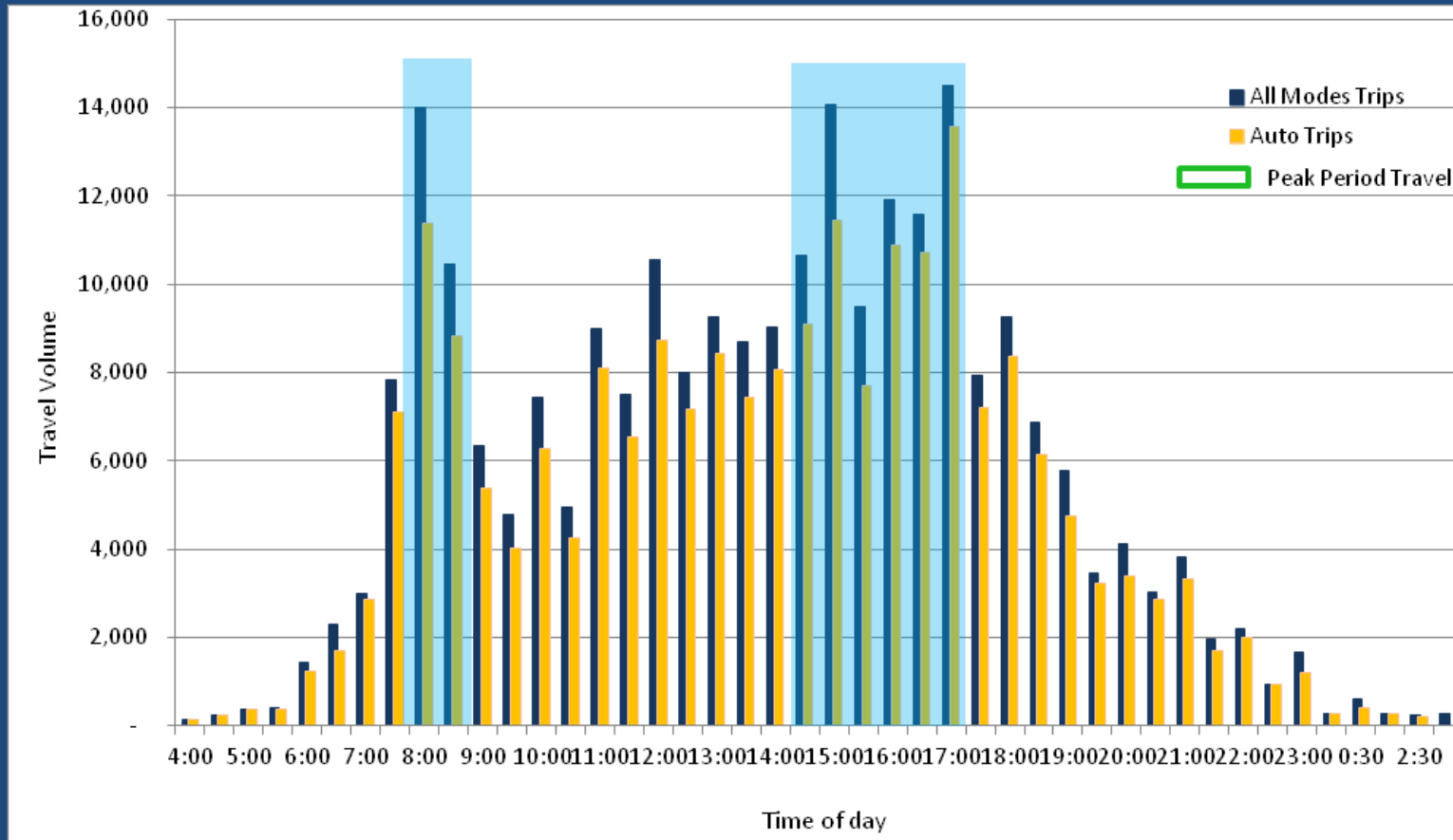Transit (2.5%)*

Bike (1.1%)*

Walking (8.3%)

* Due to survey sample size; values of small proportion tend to be underestimated.
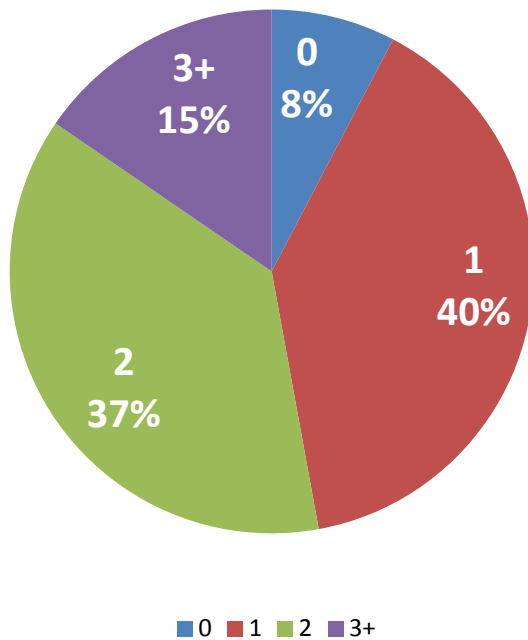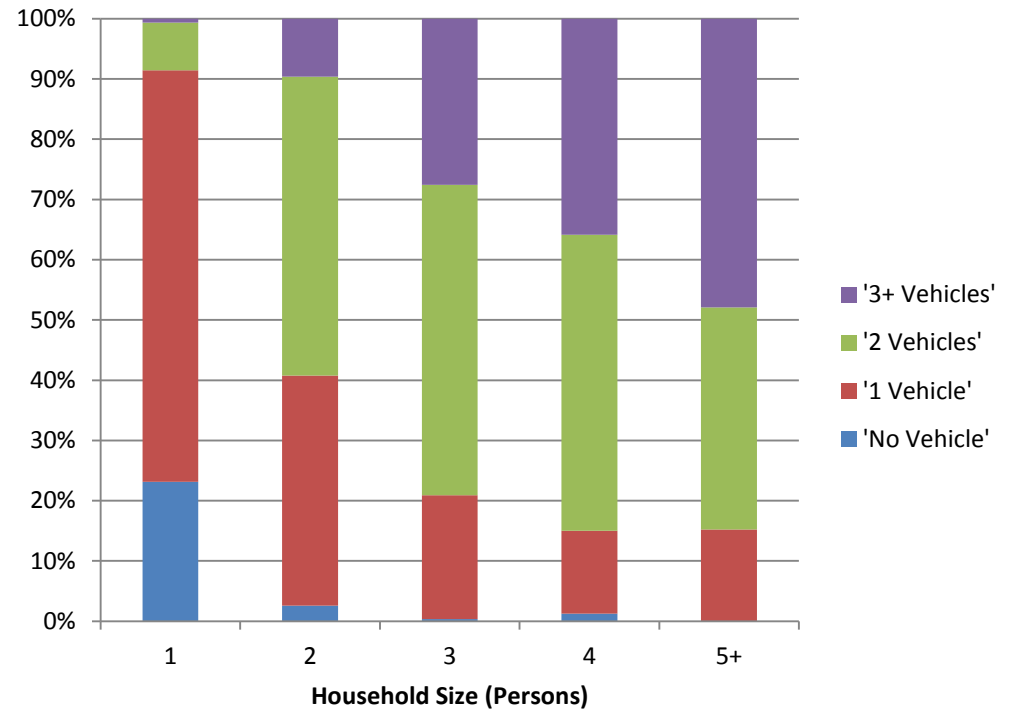
Results – Total Trips over 24Hrs

Results – Household Vehicle Availability

Vehicle per Household

- 0 — 8%
- 1 — 40%
- 2 — 37%
- 3+ — 15%

Legend: 0, 1, 2, 3+

Number of Vehicles per Household by Household Size

Household Size (Persons): 1, 2, 3, 4, 5+

Legend:
- '3+ Vehicles'
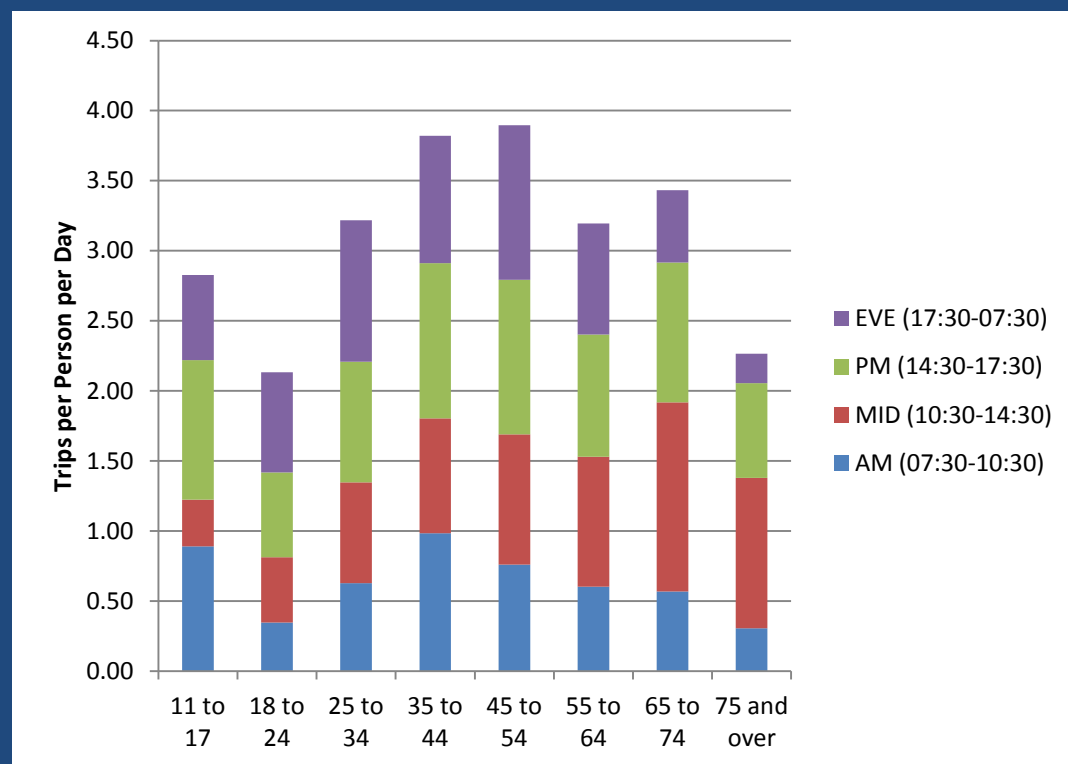- '2 Vehicles'
- '1 Vehicle'
- 'No Vehicle'

Results – Trip Rates by Age Group and Time of Day
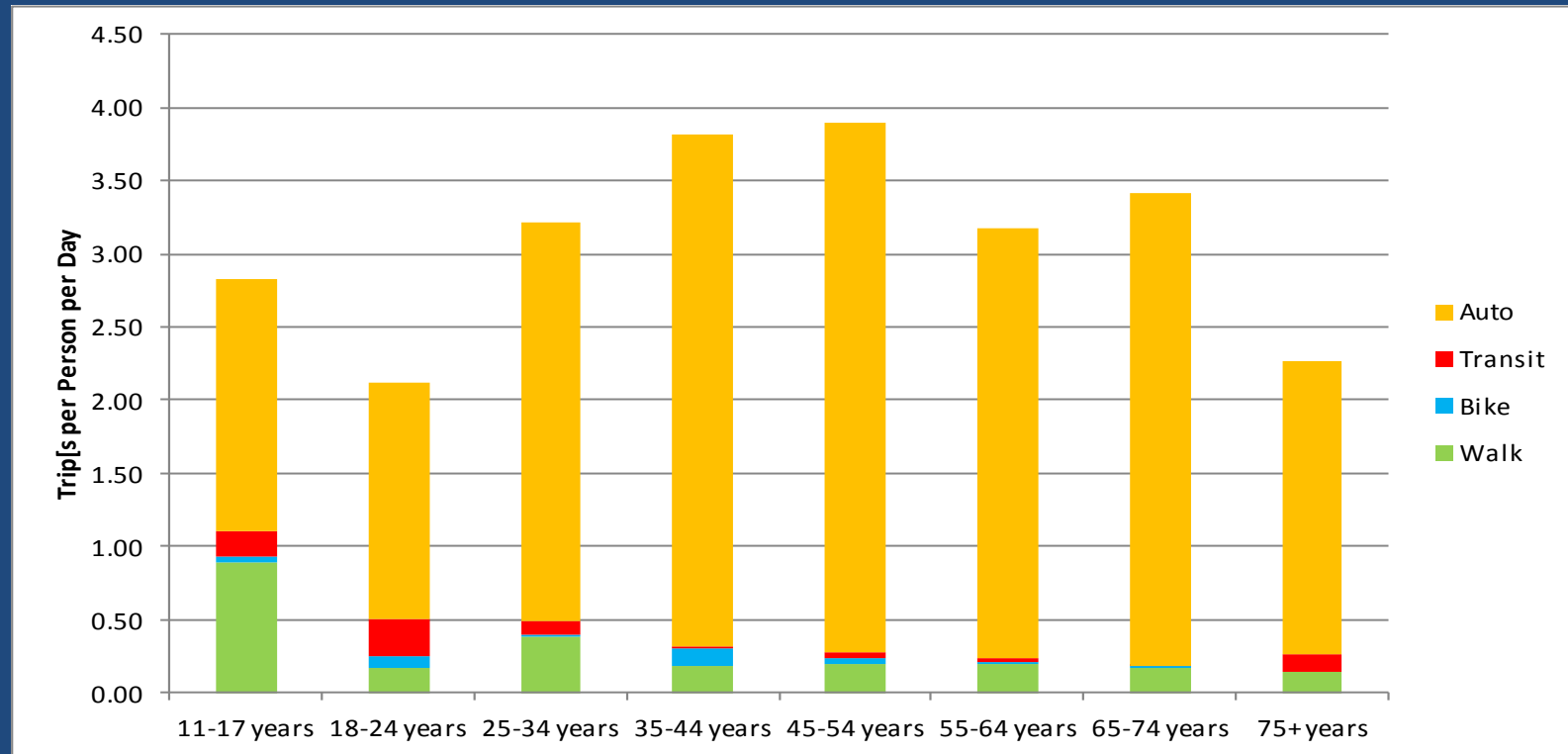
Trip rates peak during mid-life.

Post retirement, trips rates are still high, but with a shift away from **am** travel into the **mid-day** and **pm**.

Under-reporting is common for the 18 to 24 age cohort.

Chart: Trips per Person per Day by age group, with stacked categories EVE (17:30-07:30), PM (14:30-17:30), MID (10:30-14:30), AM (07:30-10:30). Age groups: 11 to 17, 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 and over.

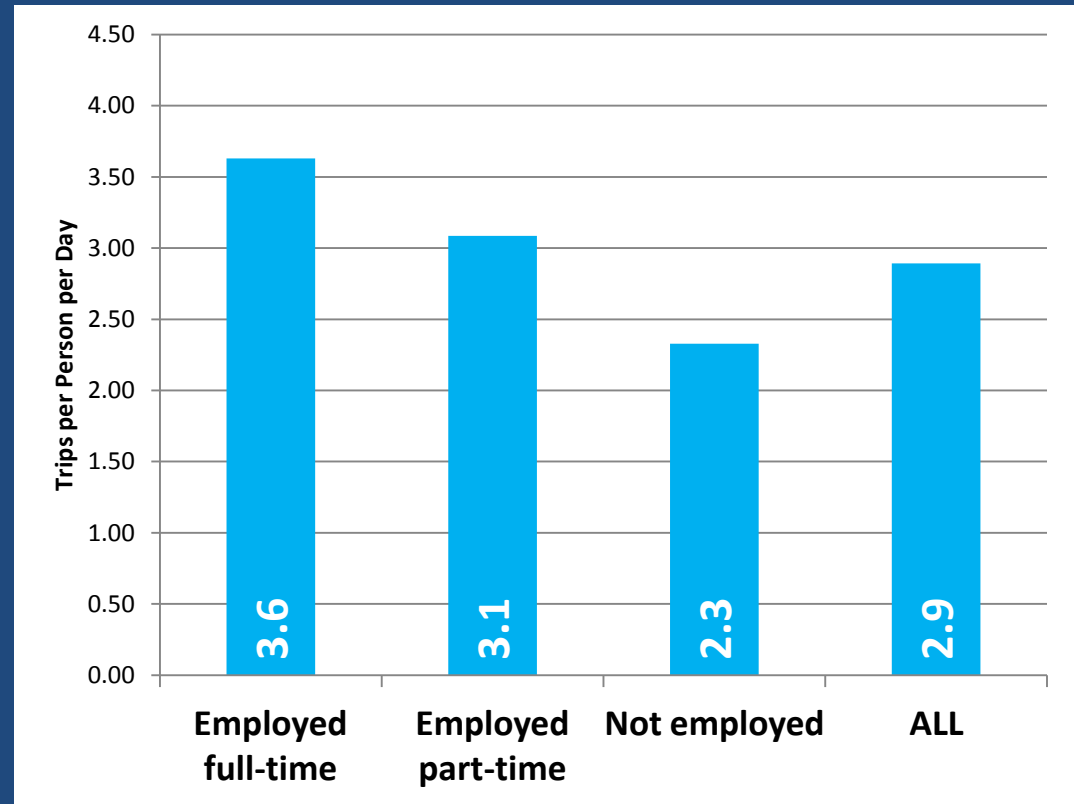# Results – Mode Split by Age Group

Results – Trip Rates vs Employment Status

Trip rates are correlated to economic activity and employment.

During strong periods of economic growth the same population will tend to make more trips and require more accessibility vs other periods.

Average Trip Length

Across all modes of travel the average length of trips was **5.9 km**.

Average Trip Length by Mode (All Trips)

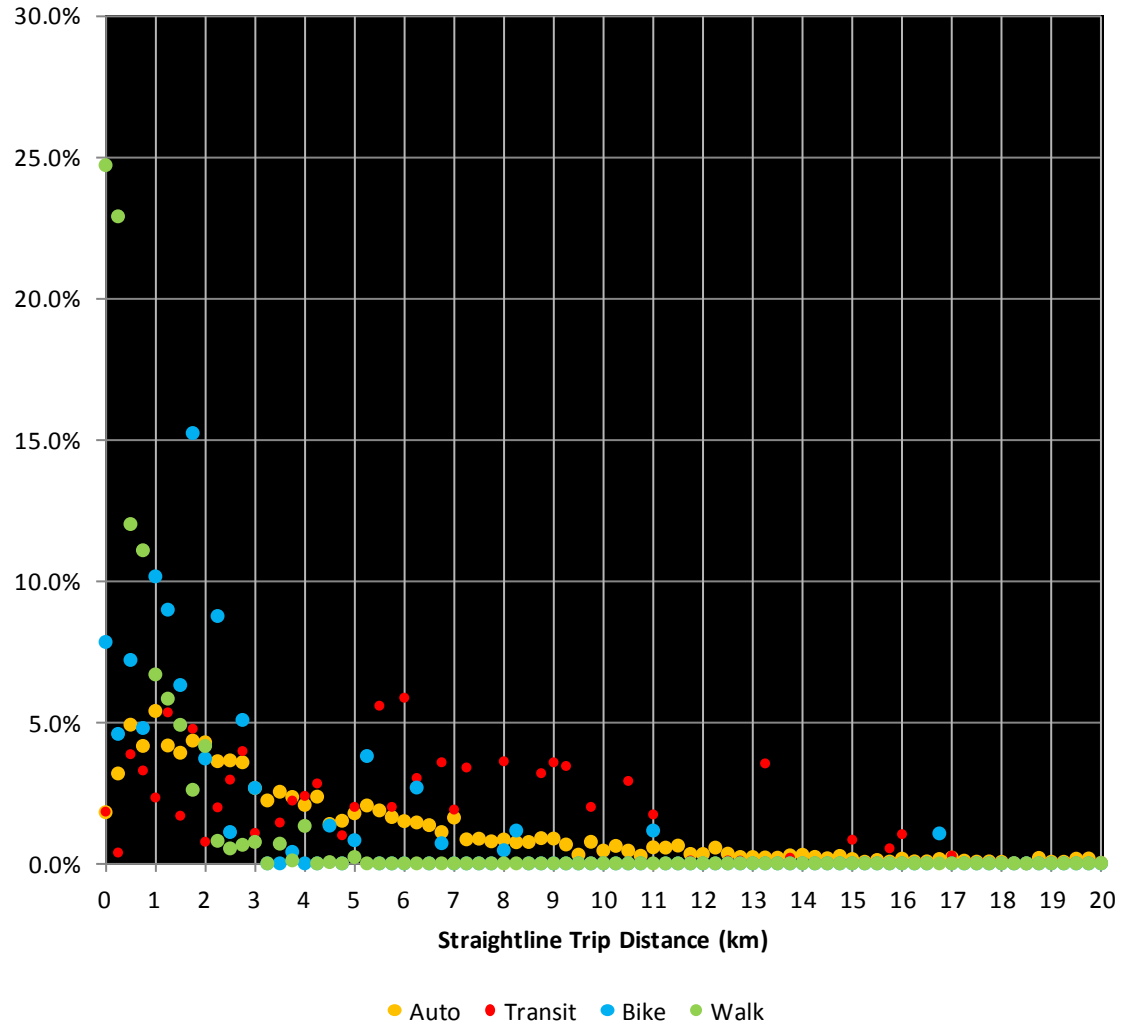|	
🚶	**0.8km**
🚲	**2.1km**
🚌	**5.5km**
🚗	**6.5km**

Distribution of Trip Length by Mode (L<20km)

X-axis: Straightline Trip Distance (km)

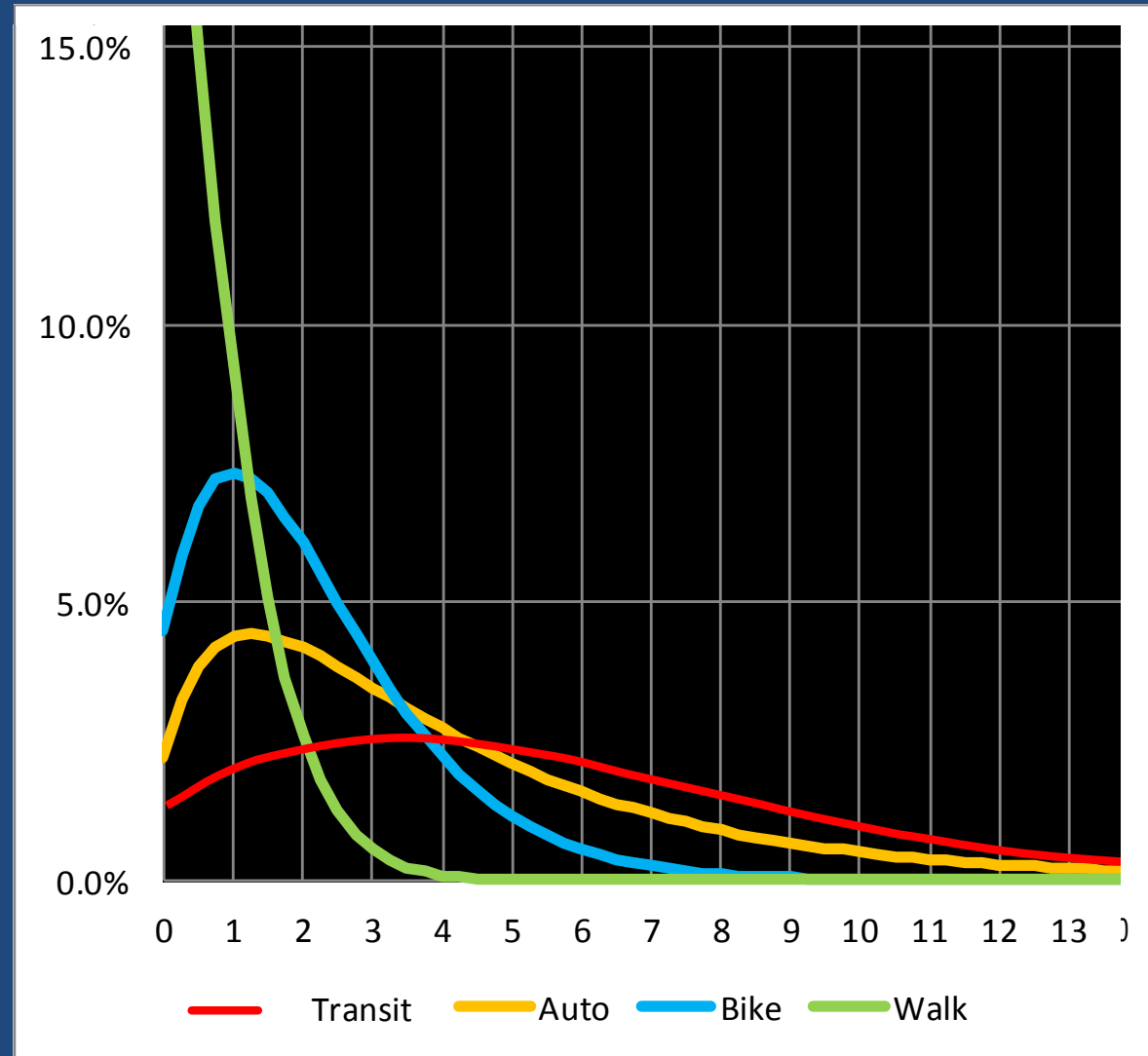Legend: Auto · Transit · Bike · Walk

Average Trip Length

Different travel modes have different lengths.

Active transportation modes (walking/biking) tend to be shorter trips.

Motorized trips (transit/auto) tend to be longer trips, however there is still many auto trips within a typical walk/bike range.

Average Trip Length

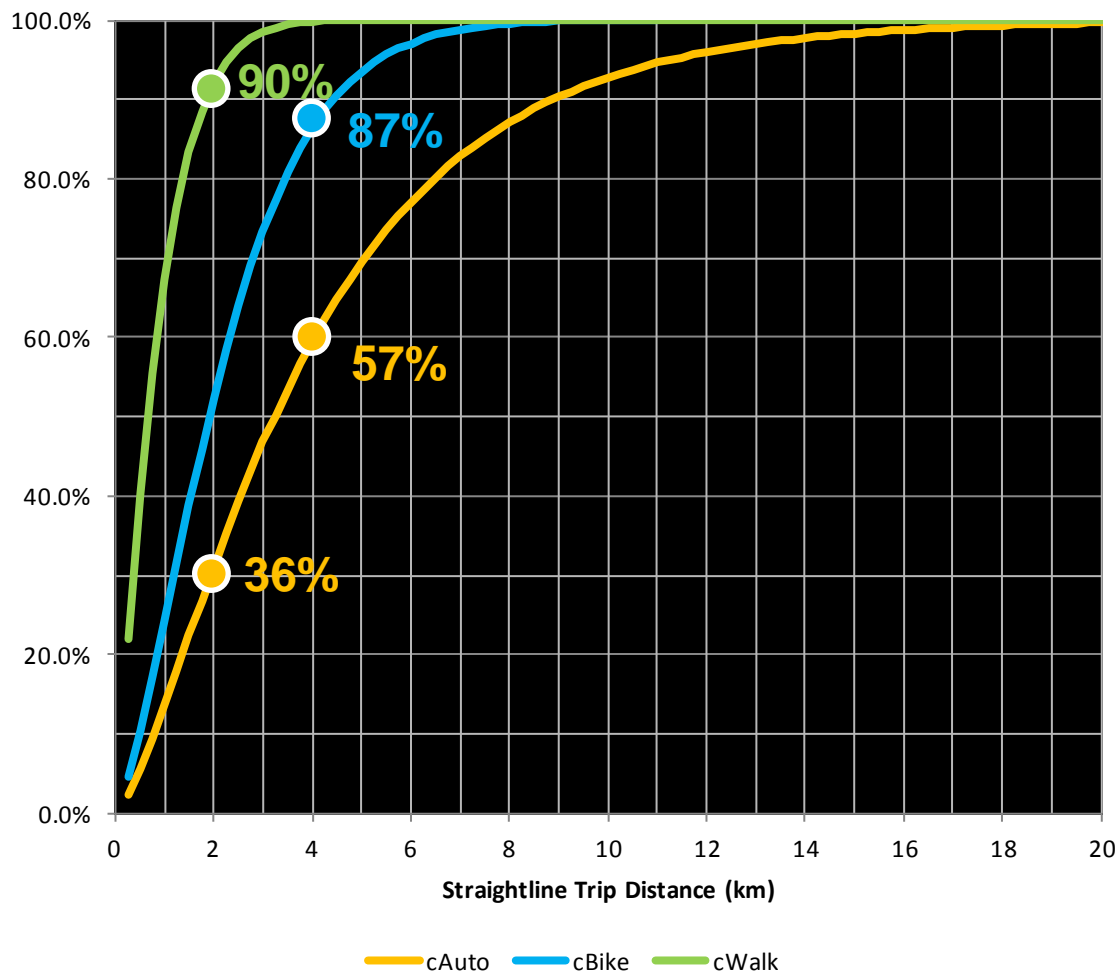50% of walking trips are less than 800m in length

(City Hall to the Sea Plane Base)

90+% of walking trips are less than 2km in length

(City Hall to Townsite Rd)

87% of biking trips are less than 4km in length

Cummulative Distribution of Trip Length by Mode (L<20km)

Straightline Trip Distance (km)

Legend: cAuto, cBike, cWalk

Data labels: 90%, 87%, 57%, 36%

Average Trip Length

Where you live can determine how far you need to travel to access employment, goods and services.

Residents of rural and areas on the edge of the City travel more and have a greater impact on the road network.

2011 Average Total Travel per Day by Superzone (trip-km)

Total Trip Distance*
per Resident
(person-km/resident)

- < 12 km/day
- 12-16
- 16-20
- 20-24
- >24 km/day

*Trip Distance calculated as the straight line distance between trip origin and destination.
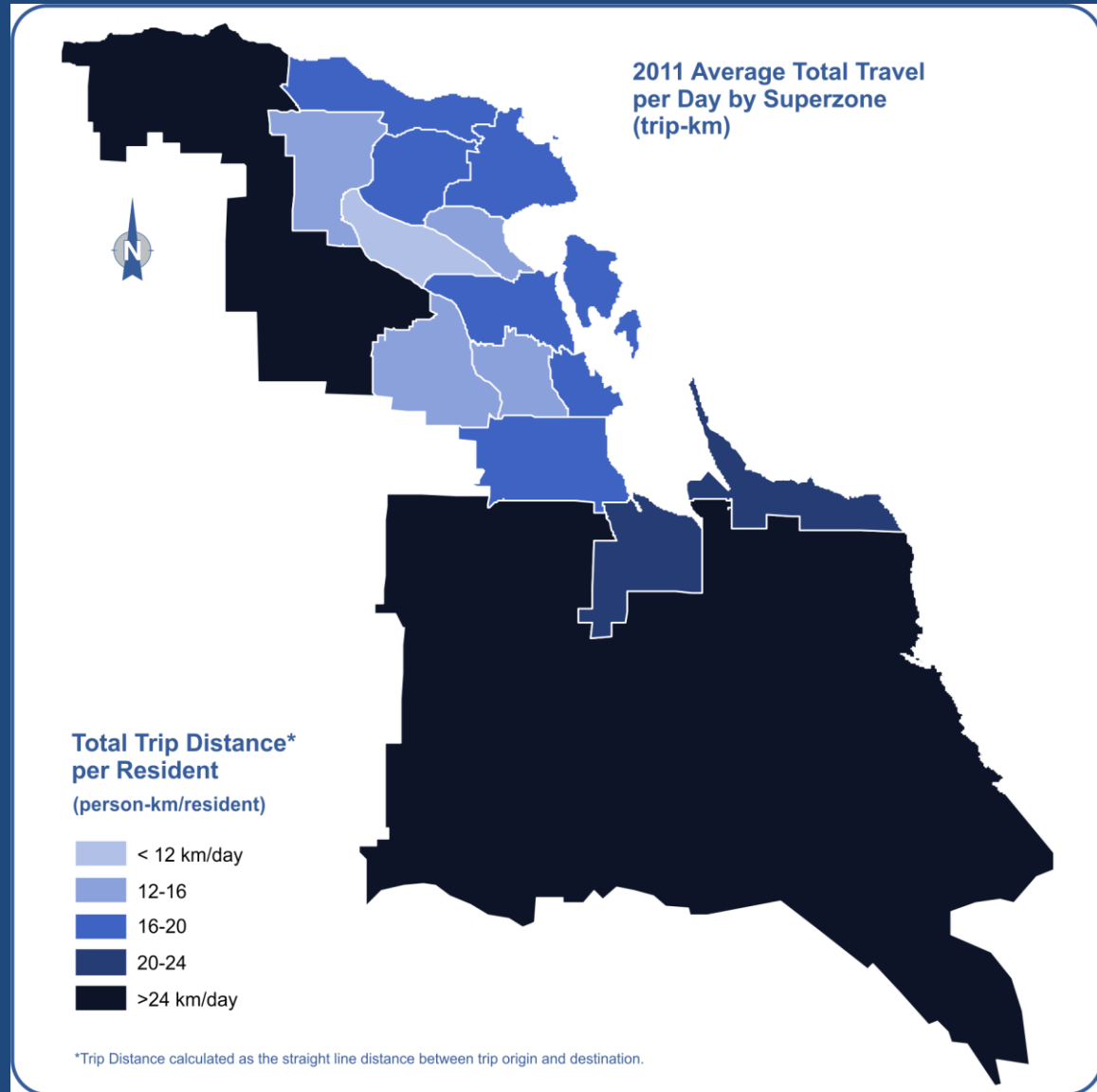
Distribution of Population (2011)

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Distribution of Population by Superzone within the Study Area (2011)
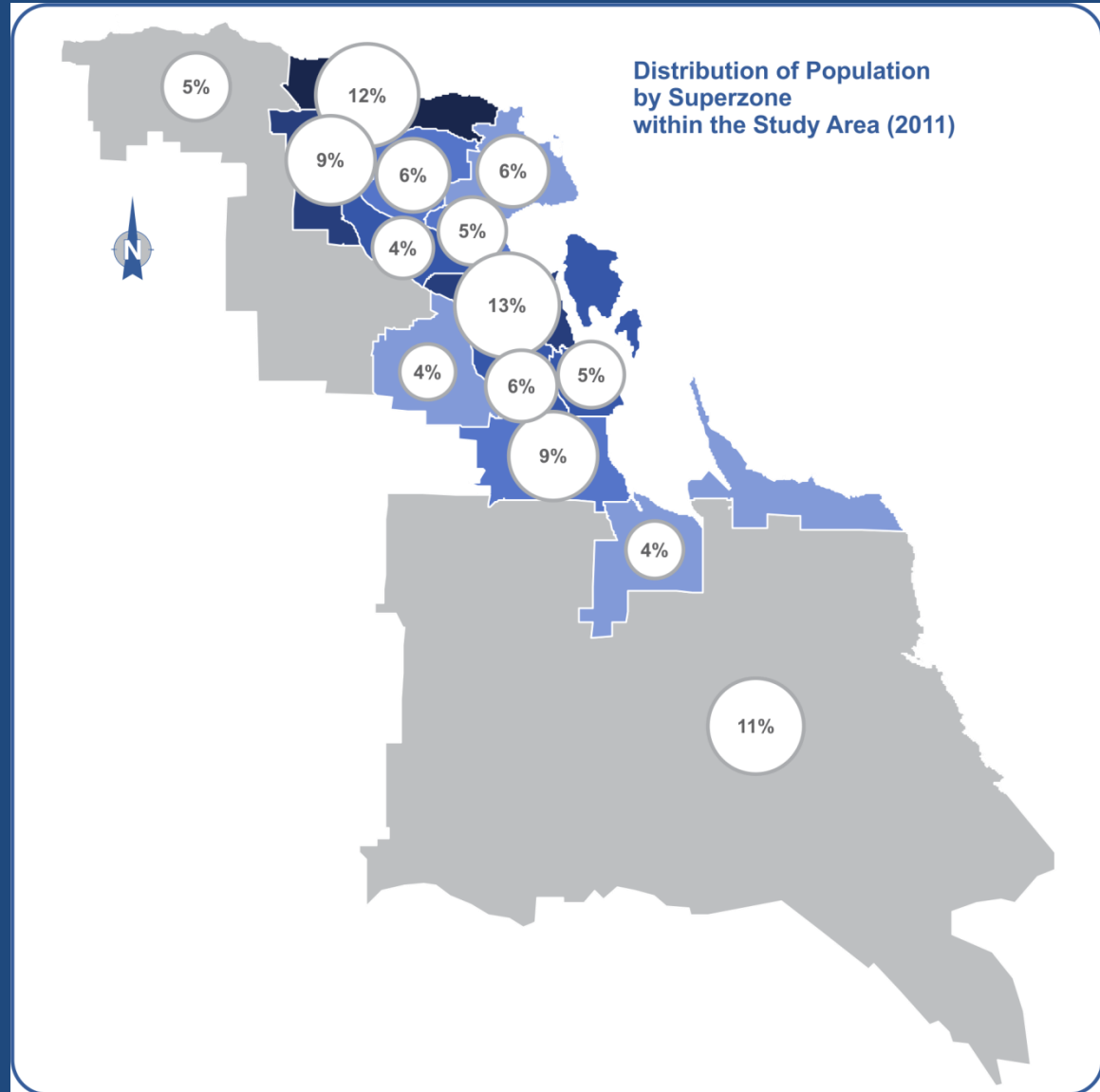
Distribution of Trip Start and End Points

While the distribution of trip is strongly influenced by population, it is also impacted by commercial and employment activity.

**Distribution of Total Trip Ends
24Hr
(All Modes, Origins + Destinations)**

3%

14%

12%

7%

3%

7%

4%

12%

2%

8%

10%

6%

3%
**External
Trips**

4%

6%

Notes:
* Trips recorded by Household Travel Diary
** Trip End defined as the start or end of a trip; each trip has two trip ends.
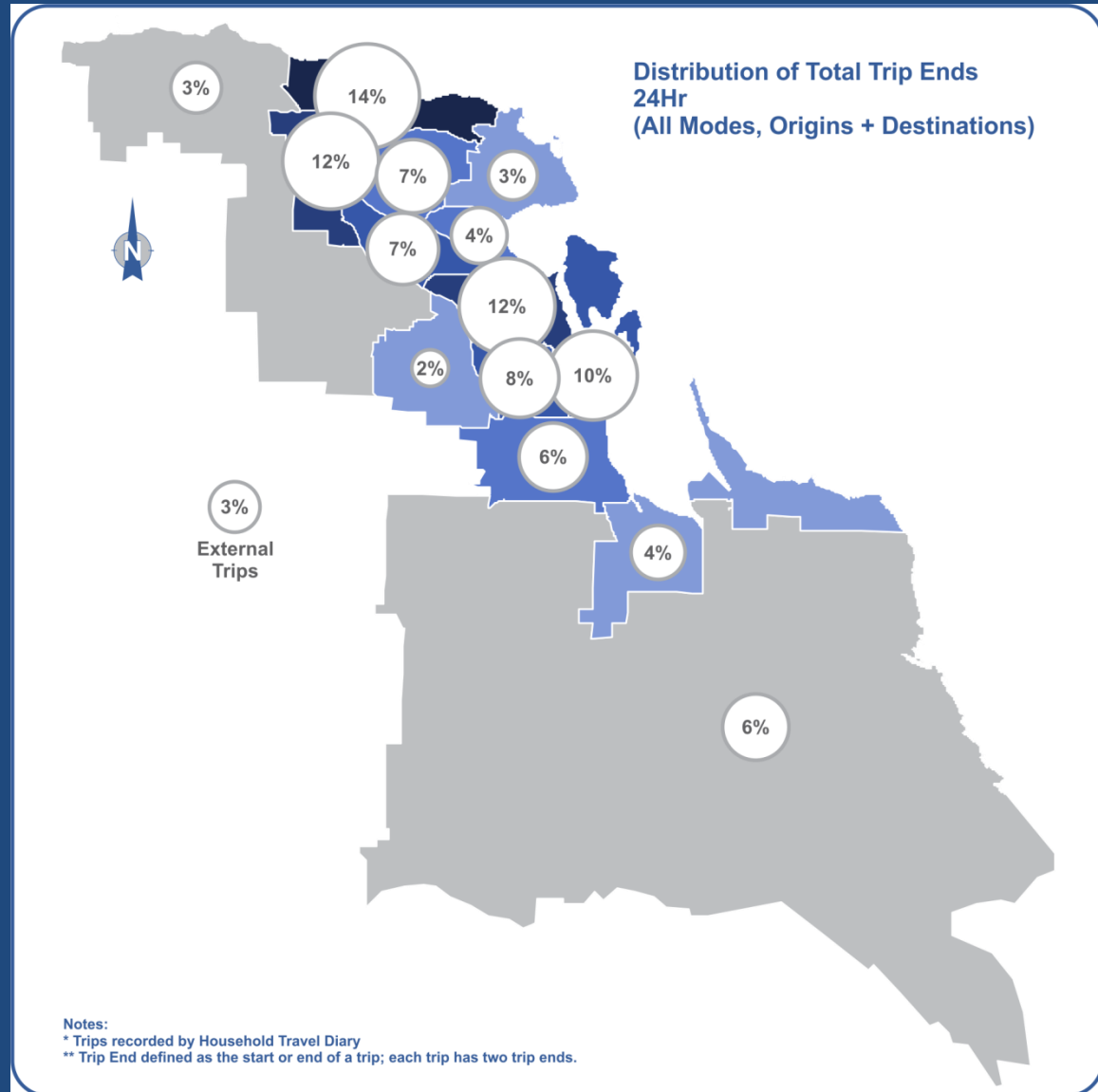
Trip starts and ends during the PM Peak Period.

During the PM Peak period, areas with high levels of employment tend to be net trip generators, while largely residential areas tend to net trip sinks.

Commercial areas tend to balance out with roughly equal trips to/from the zone.
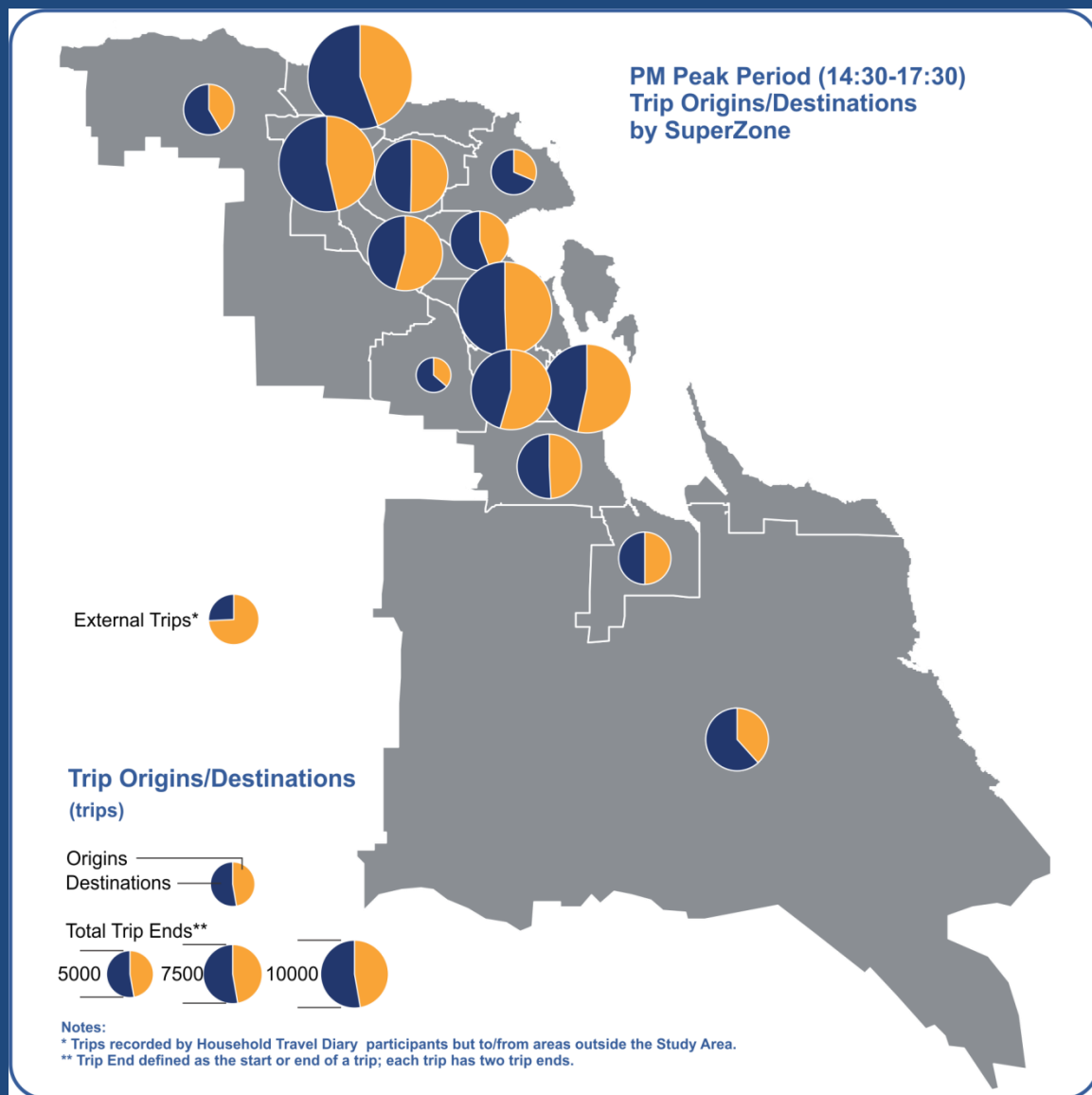
Trip patterns tend to be complex during this period.

PM Peak Period (14:30-17:30)
Trip Origins/Destinations
by SuperZone

External Trips*

Trip Origins/Destinations
(trips)

Origins
Destinations

Total Trip Ends**

5000   7500   10000

Notes:
* Trips recorded by Household Travel Diary participants but to/from areas outside the Study Area.
** Trip End defined as the start or end of a trip; each trip has two trip ends.

Non Auto Trips by Superzone

Residents of the Townsite, Newcastle, Downtown, University and Harewood Neighbourhoods generated large number of non-auto trips and achieved a strong mode split.

Residents in neighbourhoods adjacent to Woodgrove created some non-auto trips.

Total Non-Auto Trips and Mode Split of Travel by Residents of Superzone (24Hr)

Trip Origins/Destinations (trips)

Superzone Non-Auto Mode Split
Transit
Cycle
Walk
15%

Total Trips*
1000 2000 4000

Notes:
* Total non-auto trips by residents of SuperZone over 24hrs; trips may have been made outside SuperZone of residence.
Low sample rates mode split results at the Superzone level result in higher error ranges for mode split results.