




# Incorporating Health Measures into Vancouver's Annual Trip Diary Panel Survey

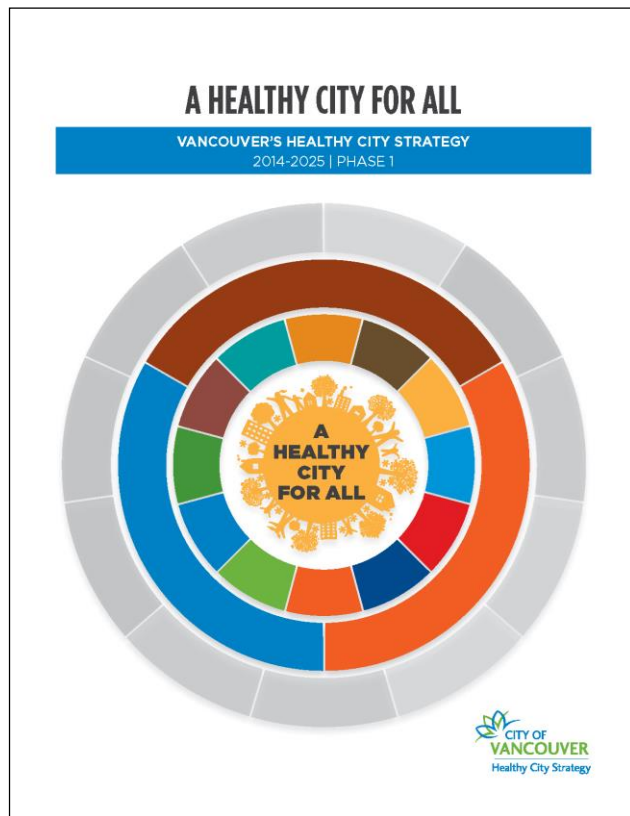


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Senior Transportation Engineer,  
Active Transportation Branch

- Healthy policy context
- What does it mean?
- Opportunity: Panel survey & health
- Adaptations to the Panel Survey



## Healthy City Strategy 2014-2025 - Phase 1 (HCS)



### CHALLENGES:

- Growing and aging population – number of **seniors expected to double** by 2036 BC Statistics, 2012
- 21% of **households have low income** and growing income disparities Statistics Canada, 2010
- 35% of **kindergarten children are vulnerable** in Vancouver UBC Human Early Learning Partnership Early Development Instrument, 2011-13
- **Health inequities** – *avoidable* inequalities in health between groups of people Health Officers Council of BC, 2008

## Healthy City Strategy 2014-2025 - Phase 1 (HCS)

- Health a big part of the Vancouver “brand”
- Hope HCS will enable longer-term health-related decision making and resource allocation
- Active transportation figures prominently



**Sustainability = Environmental + Social + Economic**



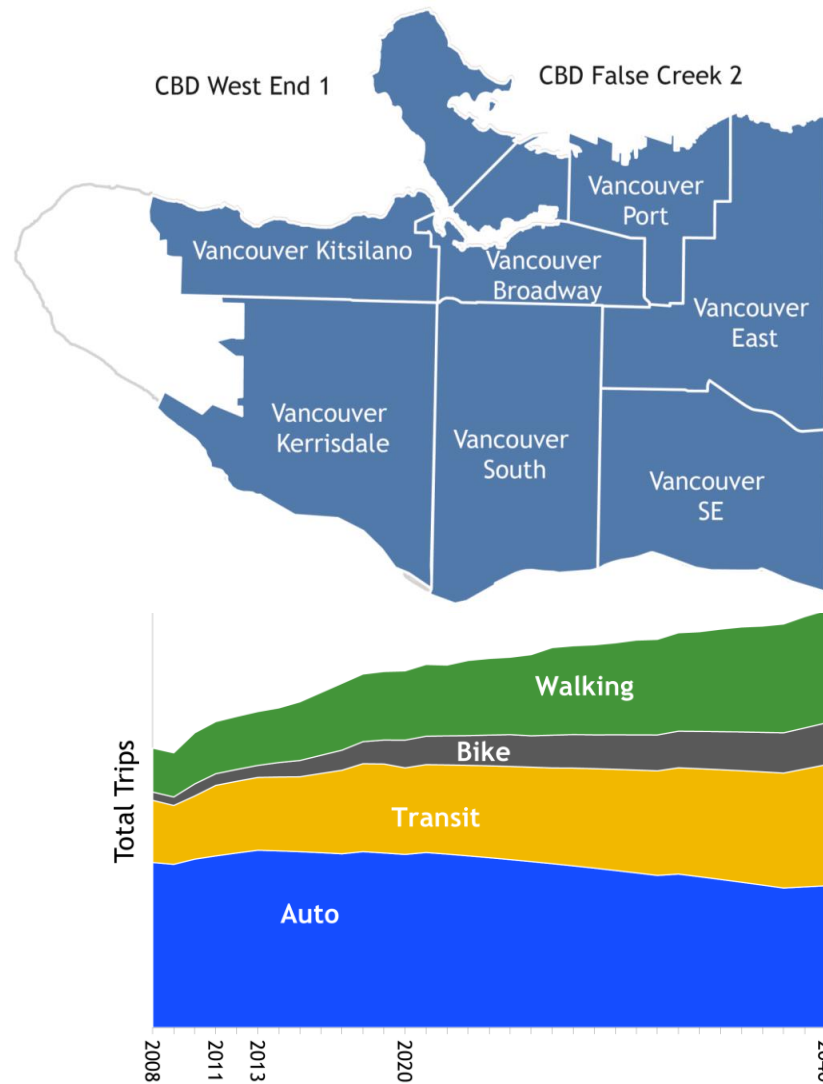
## Health-related initiatives led by the Active Transportation Branch:

- Hosting Pro Walk Pro Bike Pro Place 2016
  - Considerable involvement from health sector (1<sup>st</sup> time)
  - Vancouver Coastal Health and BC Ministry of Health on host committee and co-funding with City
- Corridor-scale before/after studies evaluating health impacts of AT projects
- City-wide safety review of collision data and hospital injury reports (on-going cycling and pedestrian safety studies)
- System for collecting “demographic-based” pedestrian and cyclist volumes to monitor impacts on different population segments
- Video-based automated conflict analysis tools
- **On-going city-wide assessment of the well-being of our citizens**



## Opportunity: Annual Trip Diary Panel Survey

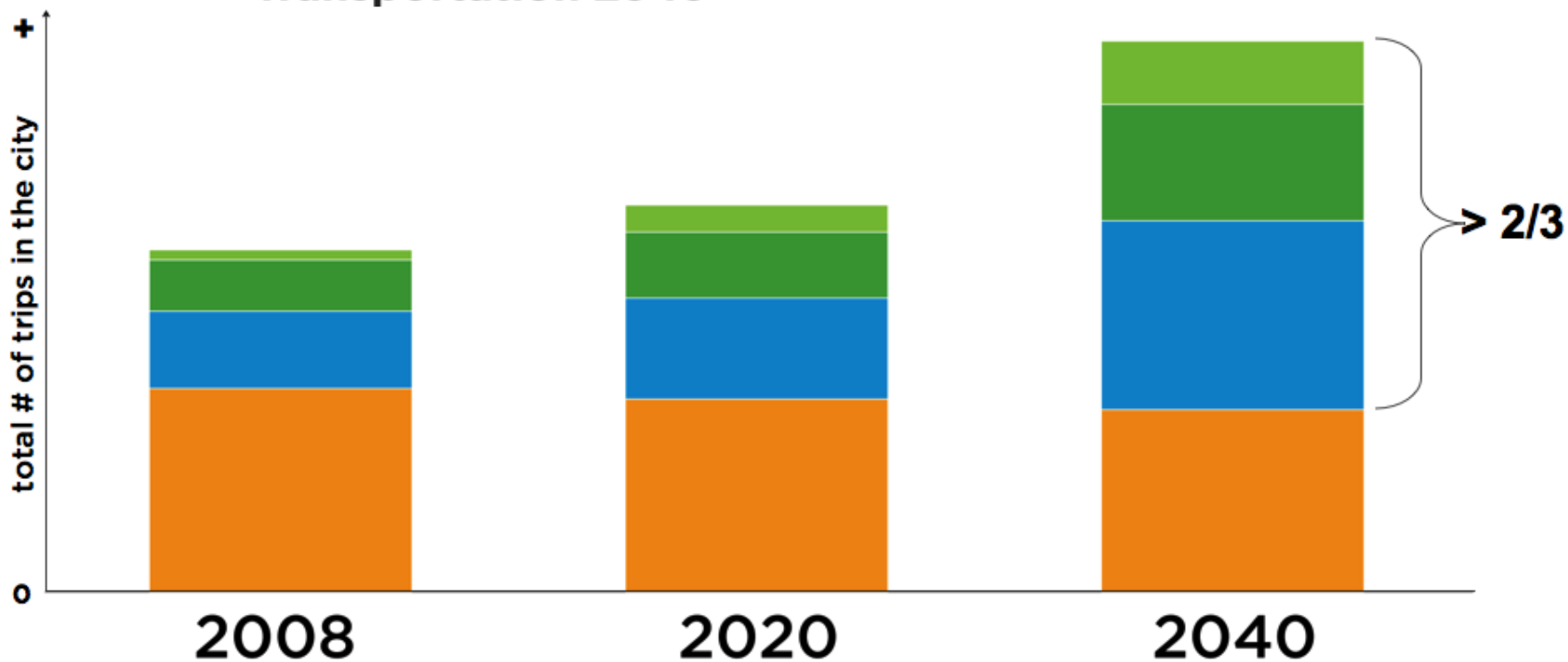
- Started in 2013
- 0.5% sample (15+ years)
- Primary goals:
  1. Estimate mode share for each zone
  2. Estimate VKT for the city
  3. Track trends on a more frequent basis to inform investments (other sources every 5 years and delayed 2 years)



Qualitative purposes only. Uses 2008/2011 TD mode shares, 2020/2040 mode share targets.

# PLAN TARGETS

## Transportation 2040



40% of all trips on foot, bike, or transit

at least **half** of all trips on foot, bike, or transit

at least **two-thirds** of all trips on foot, bike, or transit

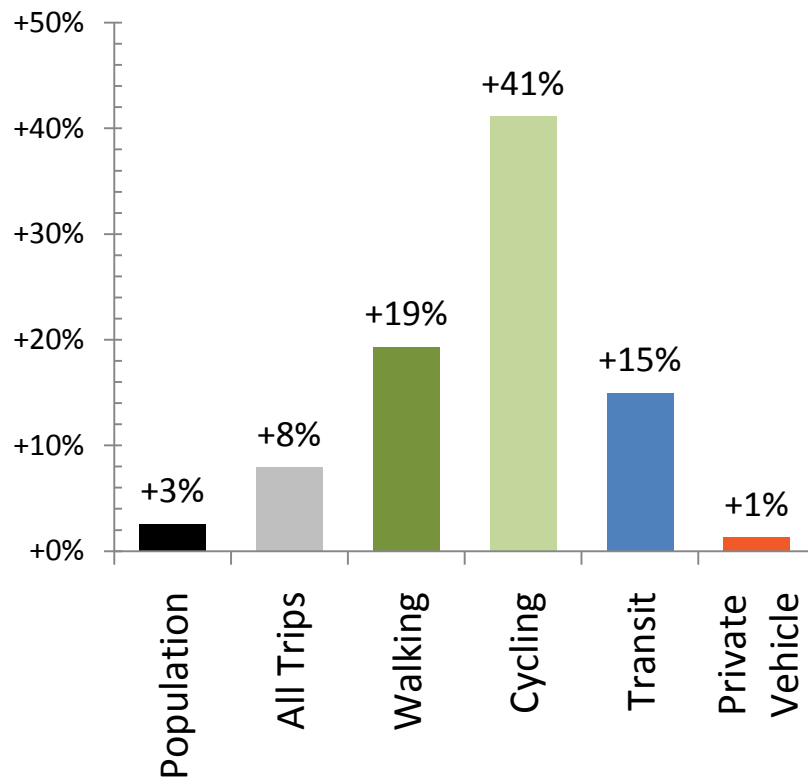
■ Motor Vehicle   
 ■ Transit   
 ■ Walk   
 ■ Bike

For all trips originating in the City of Vancouver.  
 2008 data source: TransLink Trip Diary Survey. Trips by commercial drivers (couriers, taxis, trucks, and bus drivers) not included.



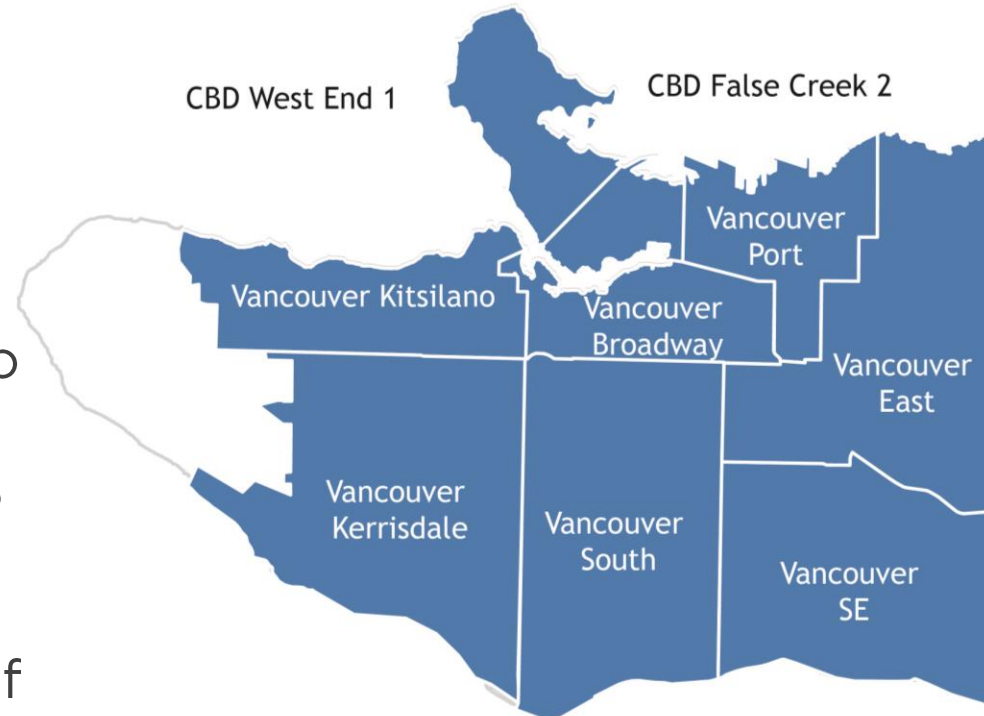
## Growth Rate by Transportation Mode

Percentage Change in Estimated Daily Trips Originating in City of Vancouver, 2008-2011



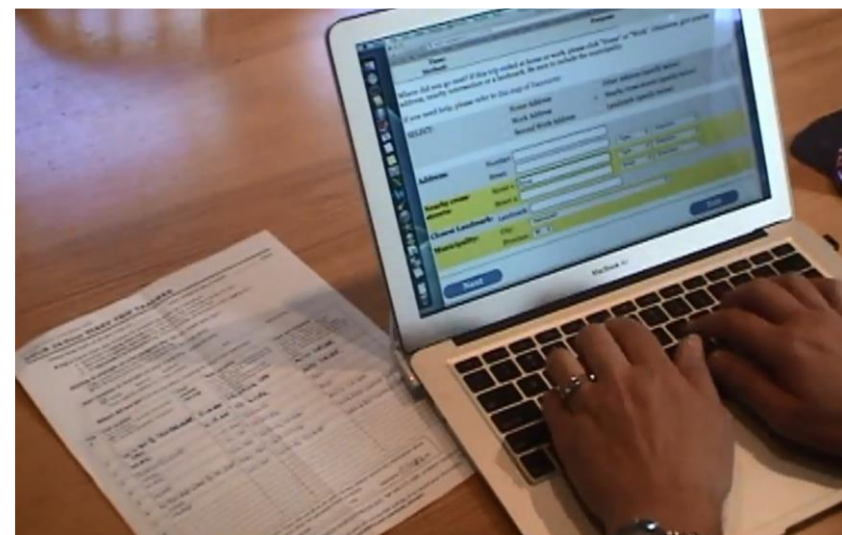
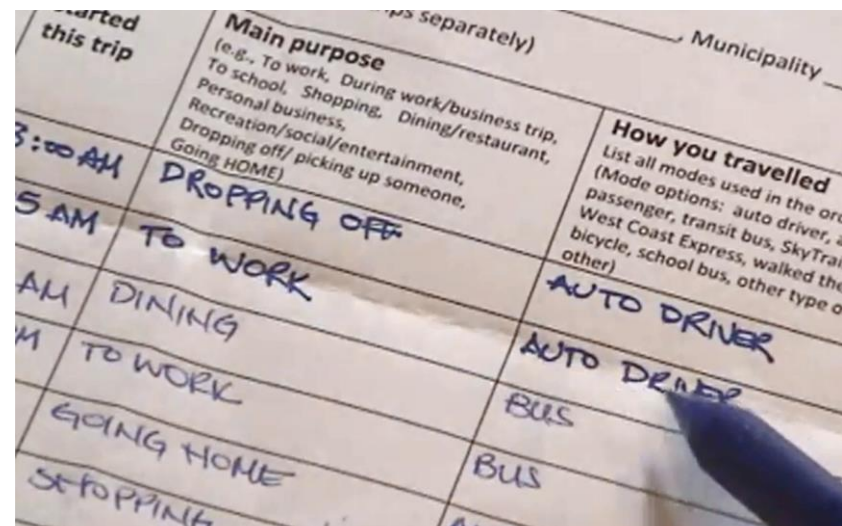
## Opportunity: Annual Trip Diary Panel Survey

- Trip diary for a randomly assigned weekday (similar to trip diary)
- Statement of usual mode of travel to work (similar to census)
- Demographic questions to help expand the sample
- Questions related to travel behaviour and likelihood of using sustainable modes
- Vehicle odometer readings to inform VKT estimate

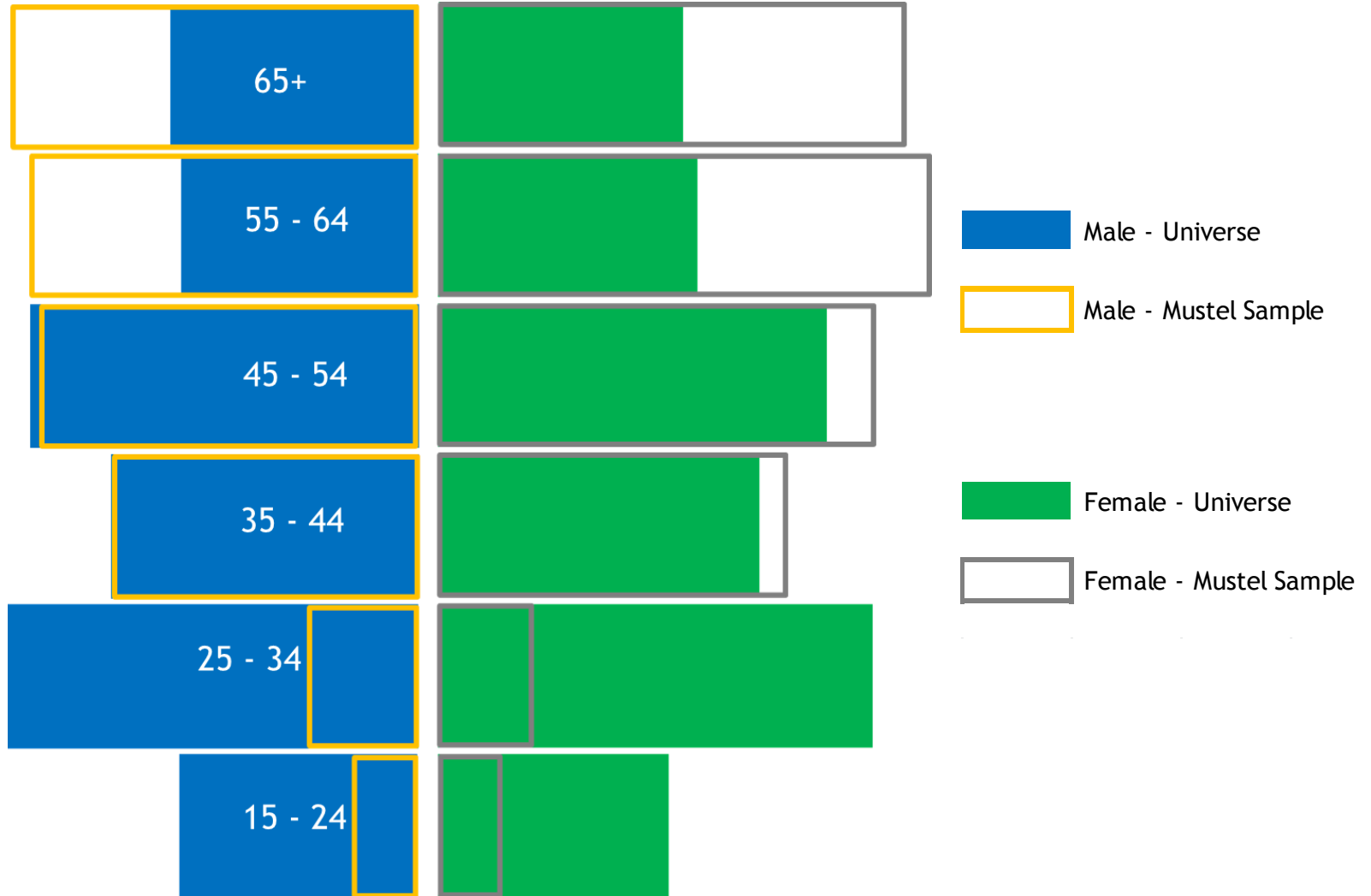


## Opportunity: Annual Trip Diary Panel Survey

- 2014 iteration – window to capture health impacts of travel behaviour.
- Few examples of trip diaries that include health impacts
- Given significant respondent burden – changes constrained.
- Consulted Vancouver Coastal Health & local researchers
- Ensured language and demographic consistency with existing trip diary and health-related surveys



## Age and Gender Comparison (Unweighted Sample vs. Universe)



## HCS Targets

- By 2020, make the majority (over 50%) of **trips on foot, bike, and transit**
- By 2025, increase Vancouver residents' **sense of belonging** by 10%
- By 2025, increase the percentage of Vancouver residents aged 18 and older who meet the **Canadian Physical Activity Guidelines** by 25% over 2014 levels



## 4 health-related changes proposed for 2014 Trip Diary Panel Survey:

- 1.** Include recreational trips (those with the same origin and destination)
- 2.** Self-reported general health assessment
- 3.** Friendly interaction during travel
- 4.** Cycling market research

## 1. Allow the survey to also record recreational trips (those with same O/D pair)

- Allows more complete picture of how travel contributes to recommended physical activity.
- Requires also reporting estimated trip travel time.
- Preliminary results suggest added 40% of trips
- Temporal mismatch – daily travel vs. weekly guideline (still missing weekend travel)

## 2. General health assessment

*In general, would you say that your health is...*

- *Excellent*
- *Very good*
- *Good*
- *Fair*
- *Poor*

- “The little question that could.”
- Simple but well-established correlation with overall mortality risk
- Enables comparison with other on-going surveys (one national)



## 3. Friendly Interaction

*Aside from any travelling companion(s) that may have been with you, did you engage in friendly interaction with anyone else while travelling to your destination? (e.g. with a neighbour, friend, transit rider, driver, or stranger)*

- Yes
- No

- Insight on social inclusion (and quality of life)
- Add to trip-related questions
- Link responses to the characteristics of specific trips
- Based on pilot survey responses, we may see ~25% of trips with positive responses.



## Also considered:

*I think my community is a good place for me to live*

- Strongly agree
- Agree
- ...

- Found to be reliable and valid across range of countries, demographics, & cultures
- Used with communities (place and interest) and significant at both individual and community scales
- Research has established a \$ measure of the benefit of moving up the scale



## Also considered:

*Which of the following factors discourage you from walking for more of your day-to-day needs in your home neighbourhood?*

- Nothing, I walk as much as I like to*
- I often need to transport kids / family / heavy loads*
- Sidewalks are too narrow or missing*
- ...*

*For walk trips...*

*Did you generally feel comfortable and safe walking to this destination?*

- Yes*
- No, there was too much traffic*
- No, I was uneasy about the threat of crime*
- ...*

*For short non-walk trips...*

*Why did you choose not to walk to this destination (check all that apply)?*

- The route is missing some sidewalks*
- The destination was too far*
- I was unsure of how to get there by walking*
- ...*



Carrall Street Greenway



VSO  
VANCOUVER SYMPHONY ORCHESTRA  
BRAMWELL TOVEY  
MUSIC DIRECTOR  
2014/2015 SEASON

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VANCOUVER SYMPHONY ORCHESTRA  
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Dunsmuir Viaduct



### Crossing the Fraser River

Most comfortable:

- H Canada Line Bridge (AAA)**  
A dedicated pedestrian/cyclist section is provided, fully separated from motor vehicles and trains.

Less comfortable:

- I Oak Street Bridge**  
Cyclists must use the sidewalks.
- J Knight Street Bridge**  
Cyclists must use the sidewalks.
- K Arthur Laing Bridge**  
Painted bike lane next to curb in both directions.

# “AAA” - All Ages and Abilities cycling and walking routes

### AAA Network

Most comfortable for people who cycle of all ages and abilities.

### Separated Bikeways

People who are cycling are separated from motor vehicles by a physical barrier.

### Local Street Bikeway

People who are cycling the roadway with motor vehicles on relatively narrow neighbourhood streets.

### Painted Bike Lanes

A painted bike lane located between a parked lane and a moving vehicle lane, or between a parked lane and a moving vehicle lane.





**Before**  
York & Cypress



BEGIN  
ONE  
WAY  
BICYCLES  
TWO WAY



**After**  
York & Cypress





W 1<sup>ST</sup> AVE  
2800



**Before**  
Point Grey at Macdonald



**After**

Point Grey & Macdonald



Point Grey & Macdonald



Granville St

CLUB

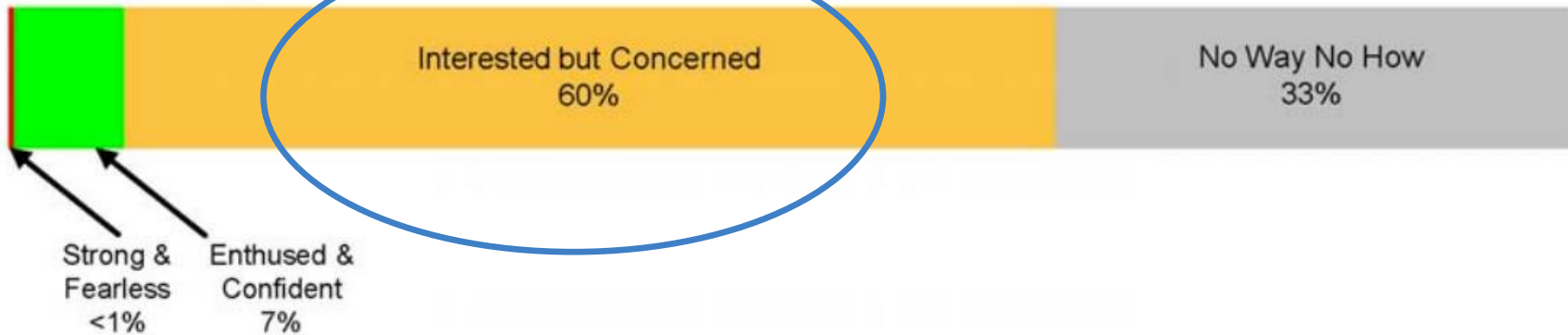
**Dunsmuir & Granville**  
Dunsmuir Protected Bike Lane

## 4. Market Research

- On-going AT Promotion and Enabling Plan
- Promotion potentially a key action of HCS.
- A significant effort underway to characterize the cycling and walking markets, through a variety of survey instruments:
  - Talk Vancouver – Walk
  - Talk Vancouver – Cycle
  - Market Study by Sentis
    - ✓ Walk and Cycle Survey (Motivations and Barriers) – likely to be conducted in June
    - ✓ Baseline data – Likely the Fall now
    - ✓ Identify target audiences – Fall



## Four Types of Transportation Cyclists in Portland By Proportion of Population



## A Regional Cycling Strategy for Metro Vancouver June 2011

REGULAR CYCLIST  
**25%**

INTERESTED BUT CONCERNED  
**41%**

NOT INTERESTED IN CYCLING  
**34%**

## 1. Frequency

Which of the following best describes you?

- When I ride a bicycle, I most often chose to ride only in fair weather and avoid rain or cold
- When I ride a bicycle, I ride year round regardless of rainy or cold weather
- I am physically not able to ride a bicycle
- I never ride a bicycle

How often do you typically travel on bicycle?

- At least twice per week
- Once per week to once per month
- Less than once per month
- I never ride a bicycle

## 2. Interest

Regarding bicycling, would you say that...

- you want to travel by bike more than you do now
- you are happy with how much you currently bike
- you have no interest in bicycling



# Panel Survey's Healthy Adaptations

A



## 3. Comfort

B



E



C



D



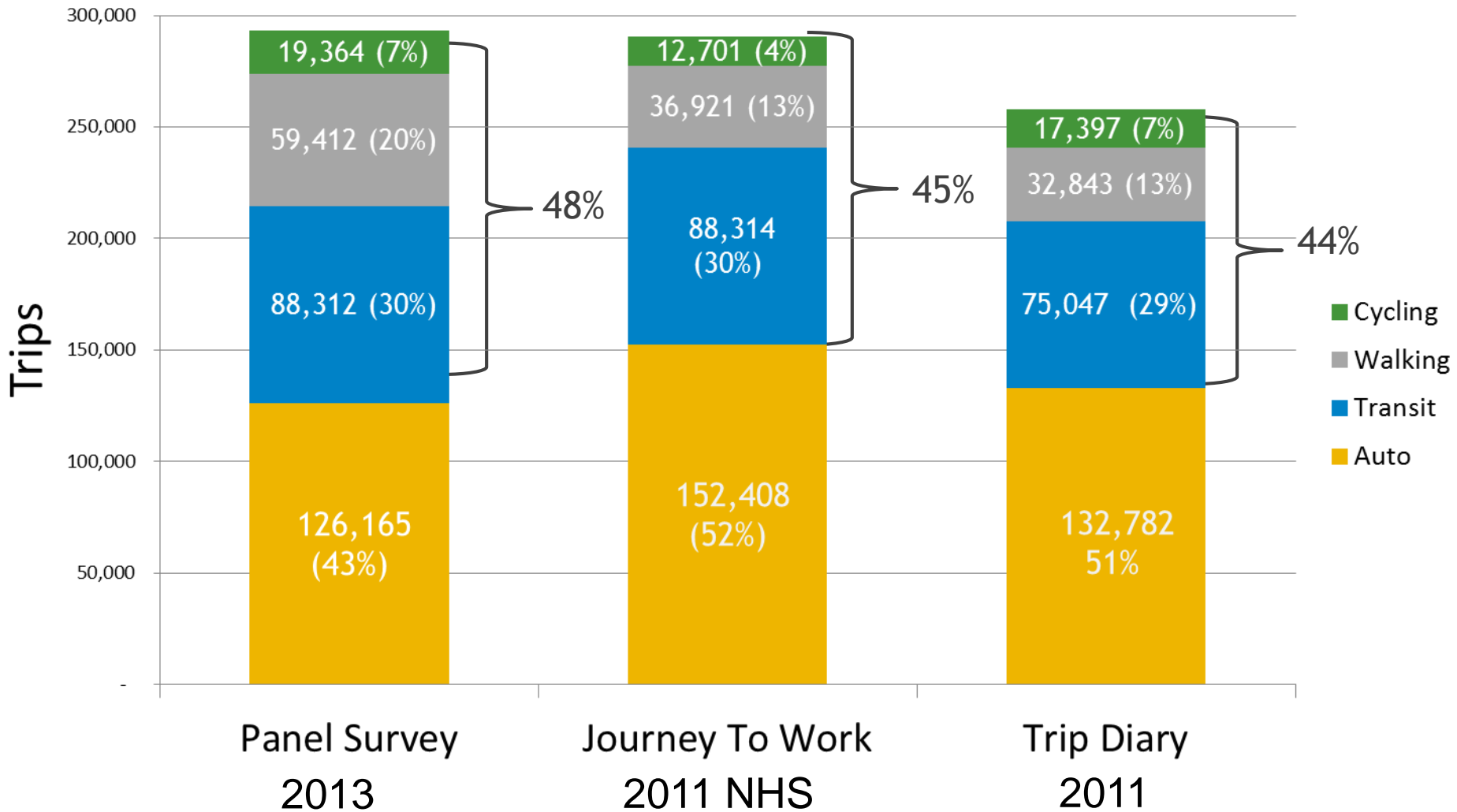
# Panel Survey's Healthy Adaptations

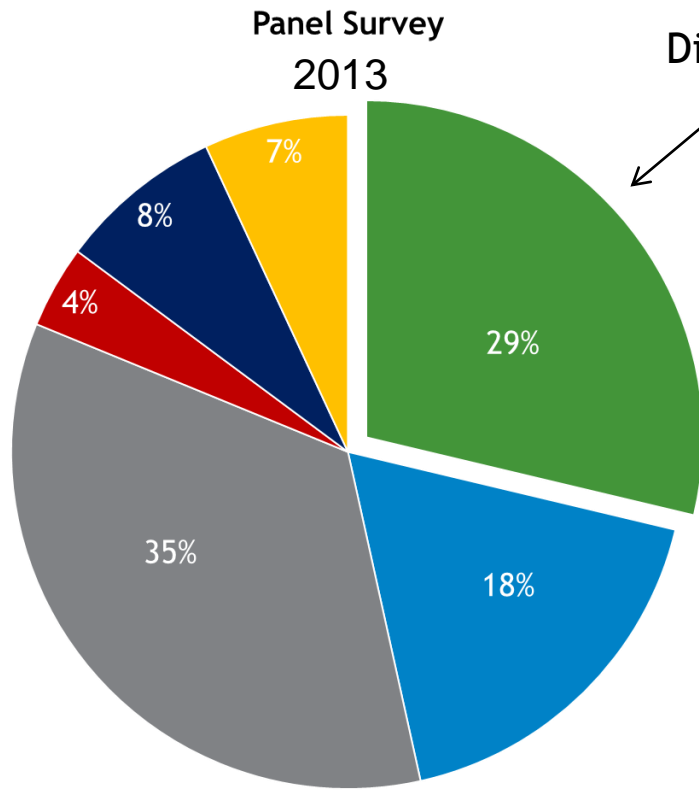
					Interest:		Agree			No			No interest in cycling			
					Frequency:		Regular	Occasional	Never	Regular	Occasional	Never	Regular	Occasional	Never	
Environment				<input checked="" type="checkbox"/>	Any street regardless of traffic		SF	SF	SF	SF	SF	SF	X	X	NWNH	
			<input type="checkbox"/>	Any street regardless of traffic	Major streets w painted bike lanes	<input checked="" type="checkbox"/>	EC	EC	EC	EC	EC	IC	X	X	NWNH	
		<input type="checkbox"/>	Any street regardless of traffic	<input type="checkbox"/>	Major streets w painted bike lanes	<input checked="" type="checkbox"/>	EC	IC	IC	EC	IC	NWNH	X	X	NWNH	
	<input type="checkbox"/>	Any street regardless of traffic	<input type="checkbox"/>	Major streets w painted bike lanes	<input type="checkbox"/>	Major streets with SBL	<input checked="" type="checkbox"/>	EC	IC	IC	EC	IC	NWNH	X	X	NWNH
	<input type="checkbox"/>	Any street regardless of traffic	<input type="checkbox"/>	Major streets w painted bike lanes	<input type="checkbox"/>	Major streets with SBL	<input checked="" type="checkbox"/>	IC	IC	IC	IC	IC	NWNH	X	X	NWNH
				<input checked="" type="checkbox"/>	Not comfortable cycling anywhere.		X	IC	IC	X	NWNH	NWNH	X	X	NWNH	
				<input checked="" type="checkbox"/>	Physically not able to ride a bike.		X	X	NWNH	X	X	NWNH	X	X	NWNH	

Thank you!

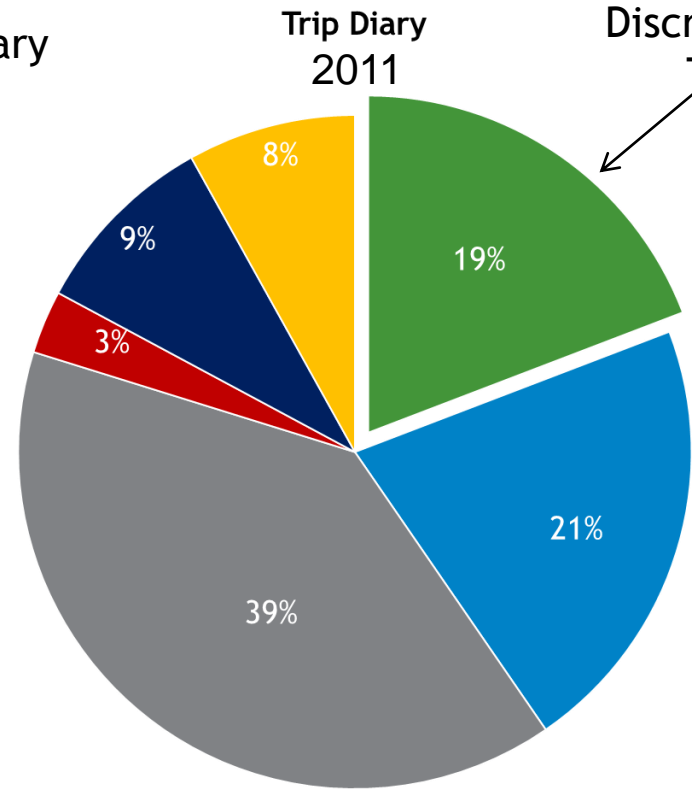
Questions?

# Validation – Comparison with Trip Diary and Journey to Work





Discretionary Trips



Discretionary Trips

Dining/Shopping/Personal

To work/school

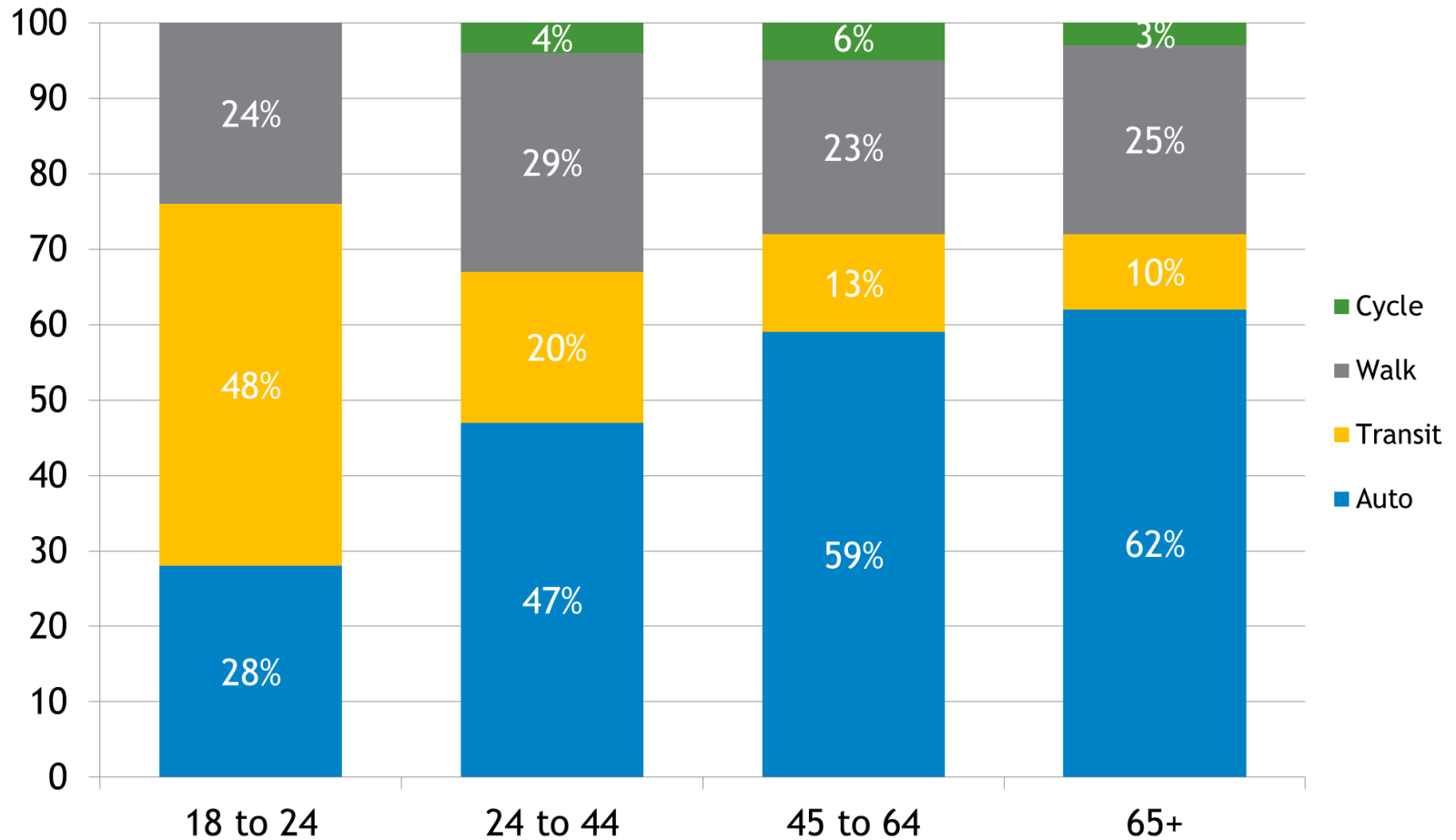
To go home

During work/business trip

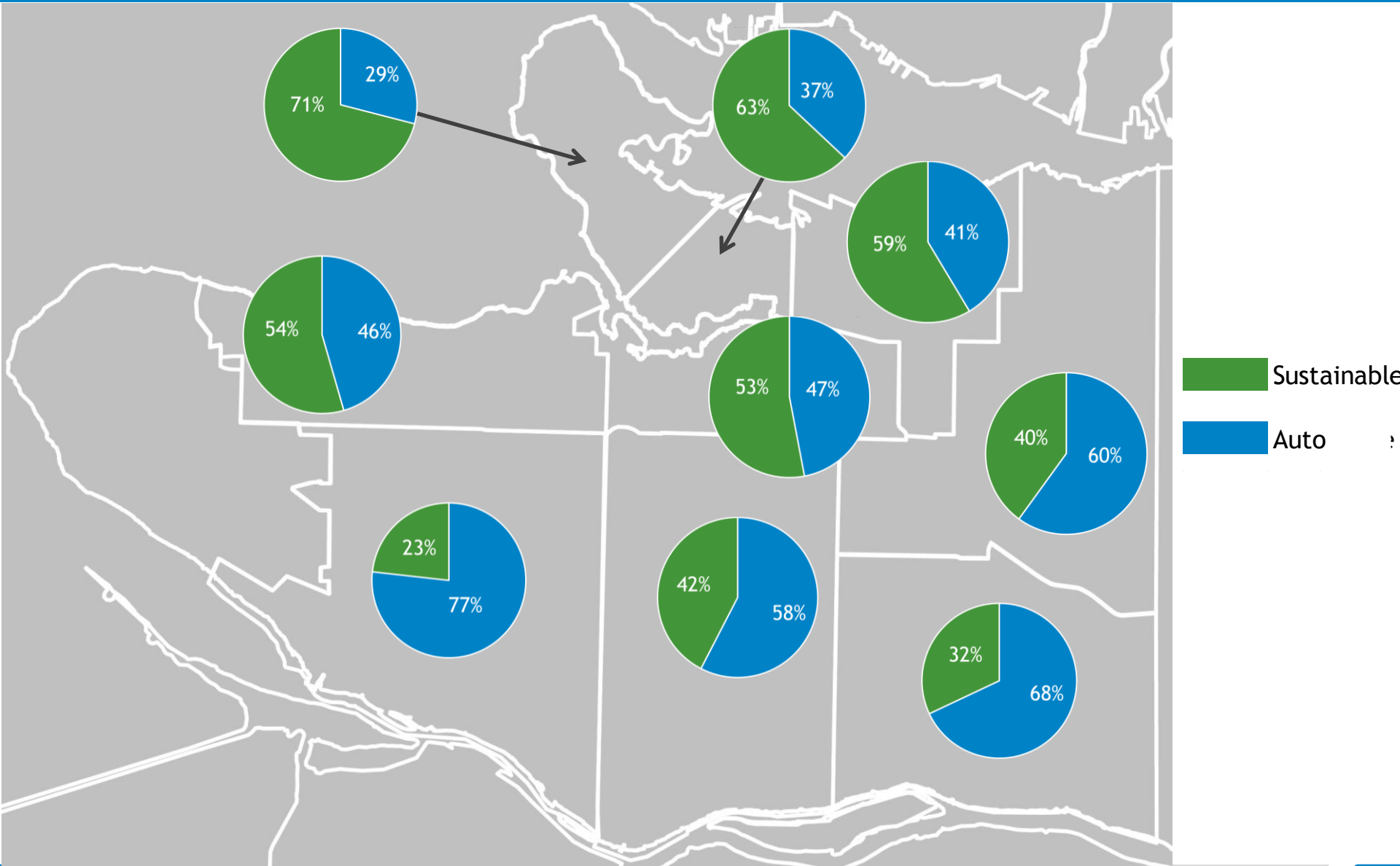
Recreation/Social Event

To drive somebody

## Mode Share by Age Distribution 2013 Panel Survey



# Results - Mode Share by Zone



## Trends in Sustainable Mode Share from Trip Diary and Panel Survey - High and Low Ranges

