The Case For A Complete Street On Commercial Drive

An Observational Study
About Slow Streets

Slow Streets is a multidisciplinary research group providing evidence for street design changes that connect with broader socioeconomic outcomes. Slow Streets is based out of Vancouver, Canada.

The Slow Street yields the best possible return on investment.

“Streets and sidewalks are a significant part of the public realm.”
(City of Vancouver, 2012, pg. 23)

Slow Streets is an approach that challenges what streets are for, and who they are for. A typical North American city street has been designed to move the maximum number of automobiles through as quickly as possible. Since streets are a public asset, does fast moving traffic bring the best return on our investment? Slow Streets demonstrates through research that designing streets strictly for automobile right-of-ways is ultimately harmful to cities. Therefore at Slow Streets we are calling for slower, more inclusive streets that generate more value and a greater return on our investment.

Slow Streets flips the typical transportation hierarchy and prioritizes what are traditionally ‘slower modes’ over ‘faster modes’. Slow Streets argues that prioritizing slower modes like walking, cycling, and transit will yield a greater return on investment for taxpayers and municipalities. Slowing down our streets also redefines their purpose, creating the potential for new uses other than mobility. Ultimately, streets are multipurpose spaces for people and a platform for creating social and economic value.

A street is more than simply about moving automobiles. Reconsidering the use of streets can achieve significant and positive impacts for cities. We believe these benefits are measurable and observable.

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Commercial Drive Is A Destination, Not A Traffic Corridor... Its Streetscape Should Reflect This

Executive Summary

Commercial Drive is one of Vancouver’s most cherished and unique neighbourhoods. It is also one of Vancouver’s premier retail streets for shopping, culture and dining. However, its current streetscape configuration fails to strengthen Commercial Drive’s role as one of Vancouver’s premier retail streets. Slow Streets asserts that a Complete Street on Commercial Drive better reflects this conviction and will in turn generate more value for all visitors, residents and businesses.

Currently, Commercial Drive is still treated primarily as a thoroughfare for automobiles whose size and speed create an uncomfortable walking and cycling experience. Reconfiguring Commercial Drive to better reflect Vancouver’s Transportation 2040’s ‘hierarchy of modes’ prioritizing ‘slower modes’ will free up more space for a greater range of street uses, making the street livelier and more accessible to a greater number of people.

Hierarchy of Modes

1. Walking
2. Cycling
3. Public Transit
4. Shared Vehicles
5. Private Vehicles

The Case For A Complete Street sets out to detail the greater value that can be achieved by implementing a Complete Street on Commercial Drive. The Case For a Complete Street also details primary research conducted by Slow Streets including pedestrian observations, business surveys and an inventory of parking. Slow Streets also conducted a literature review of Complete Streets best practices and the impacts on neighbourhoods and businesses in other cities. Slow Streets concludes that a Complete Street on Commercial Drive will generate more value for all visitors, residents and businesses and acknowledges the importance of Commercial Drive as a neighbourhood and destination.

A Complete Street will:
1. Improve revenues for businesses.
2. Foster a more pleasant place to walk, cycle, shop or stay.
3. Improve safety for drivers, pedestrians, cyclists and transit users.
What Is A Complete Street?

A Complete Street is a street that meets the ‘needs of every community member, regardless of their age, ability, or how they travel, where every resident can travel safely and conveniently’ (Smart Growth America, 2013, p.6). Complete Streets are unique to their context and do not adhere to a one-size-fits-all-approach. Whether people are riding transit, cycling, driving or walking, Complete Street design reflects that different modes and different people have different needs and every person deserves to feel safe and comfortable regardless of who they are and how they travel.

Complete Streets make it easy for everyone, regardless of how they travel, to safely and comfortably use the street.
What Could Commercial Drive As A Complete Street Look Like?

Slow Streets supports replacing two vehicular travelling lanes with two parking protected cycling lanes and widened sidewalks on Commercial Drive between Graveley and Grandview Highway. This will reduce the total number of lanes dedicated for vehicular travel and storage from six lanes to four lanes. In this configuration, it is important to note that vehicular parking lanes are preserved in both directions of travel. Widened sidewalks would allow for the relocation of clutter such as bicycle parking, utilities, shop signs and newspaper boxes. This would free up space for businesses and visitors. Slow Streets supports this as the most effective way for introducing safe and comfortable cycling infrastructure on Commercial Drive.
In 2013, the City of Vancouver approved the construction of a separated cycling lane with a vehicle-buffered zone on Union street between Main and Gore, connecting to the city’s Adanac bikeway.

As a retail street, Union Street provides a useful comparison to Commercial Drive. It demonstrates that it’s possible to increase the capacity to move more people in the same amount of space. Union Street still maintains access for all modes and supports the same proportion of people shopping.

1. **Parking**

   maintained on Union Street serves as a barrier, separating people cycling from moving traffic. This approach serves two purposes: First, access for vehicles is preserved and secondly parked vehicles protect people cycling from vehicular traffic.

2. **Buffer Zones**

   ensure that there is adequate space between people cycling and the doors of vehicles. This allows drivers to open doors without ‘dooring’ people cycling while exiting their vehicles safely.

Union Street demonstrates that you can provide safe access for walking, cycling and driving (including parking) and still successfully support retail.
Slow Streets conducted original research through a public space observation of Commercial Drive and Union Street, a parking inventory surrounding Commercial Drive, and a survey of Union Street businesses. Throughout this report findings originating from original Slow Streets research will be marked with *.
Slow Streets set out to determine who was visiting Commercial Drive, how they got there and what they were doing. This study observed the activities of over 1000 people at three observations periods (weekday afternoon and peak evening and weekend afternoon between September and October 2014). Our main finding is that people experience most of their time on the sidewalks of Commercial Drive, including people that drive and park. The majority of people shopping walked to the study sites. Most activities observed were necessary daily activities (e.g. commuting, grocery shopping). A small percentage (14%) stayed or socialized on the Drive demonstrating that due to high vehicular traffic volumes and speeds, people may not feel comfortable staying on Commercial Drive for prolonged periods of time.

Regardless of how people got to Commercial Drive, they spend the majority of their time on the sidewalk. Based on these observations, shouldn’t public investments prioritize creating a comfortable and secure sidewalk experience?

How did they get there?

![Diagram showing the percentage of people arriving at the sidewalk by different modes of transportation: 93% by foot, 3% by bike, 2% by car or truck, and 2% by bus.]

What did they do?

- 14% Staying and Socializing
- 72% Walked Through
- 14% Shopping
Comparing To Union Street, Vancouver’s Only Retail Complete Street

Union Street with its separated cycling lane gets four times more cycling traffic and one-fifth less vehicular traffic, but the proportion of shopping is approximately the same as Commercial Drive. Similar to Commercial Drive, visitors experience the majority of their time on Union Street on the sidewalk. Union Street demonstrates it’s possible to increase the capacity to move more people with the same space while maintaining the same proportion of people shopping and access for all modes.

Union Street moves more people cycling 4x
Commercial Drive: 65 people per hour
Union Street: 289 people per hour

Union Street is Quieter
Commercial Drive 76dB = standing 15m from a highway
Union Street 70dB = TV or Radio

People shop at similar rates on both streets:
Commercial Drive 14%
Union Street 12%
Why Should Commercial Drive Be A Complete Street?
It’s A Space Issue

The sidewalks on Commercial Drive are crowded.

There is only so much space on our streets. Are we using our street space effectively when we only accommodate vehicular traffic?

* Based on Slow Street’s Pedestrian Counts:

665 people walked by per hour
You can move more people walking, cycling, and using transit per hour than driving.

10 bicycles can fit in a single parking stall.

Source: Carlton Reid, Flickr

Source: Hugovk, Flickr
An Intimidating Street Only Attracts Those Willing To Cycle With Fast Moving Cars.

Source: Alex Eng, Flickr

What Can Efficient Use of Space Look Like?

Source: Alex Eng, Flickr
Commercial Drive On A Typical Day

Or During The Annual “Car Free Day”
Create A Destination And Maximize The Returns On City Investments

Your city invests considerable tax dollars (as much as $2,257,440/km per 3 meter of roadway (VTPI, 2013)) into our roadways, yet as public assets they do not fully recover these costs. Allocating public roadways for singular use as a traffic corridor to move vehicles through as quickly as possible is an ineffective way to recover the cost from invested tax dollars and contributes little to the surrounding businesses and residents. Alternatively, if cities were to focus on cultivating our main streets as people-friendly destinations, this would help ensure that city investments are self-sustaining.

Improve The Sidewalk Experience

Reallocating road space dedicated only for vehicle traffic with dedicated bicycle lanes and widened sidewalks fosters a pleasant sidewalk experience. Reducing the vehicular traffic volumes and speeds also reduces the noise levels experienced and allows conversations at the sidewalk. Installing curbside bicycle lanes also places moving traffic further away from the sidewalk contributing to a more comfortable walking and shopping experience. This would encourage more people to stay on Commercial Drive longer. Wider sidewalks will help reduce bottlenecks caused by sidewalk objects, such as lamp posts, mailboxes, fire hydrants, parking meters, bus stops and newspaper stands. Bulb outs at intersections would also create new places to stay and sit.

Traffic calming generally reduces traffic noise. Speed reductions from 50 to 30 km/hr typically reduce noise levels by 4-5 decibels, or more in some circumstances.

Source: (VTIP, 1999)
A Case Study: Louisville

A study in Louisville, Kentucky showed that slowing down traffic, by converting a one-way street to two-way, reduced noise levels, improved the street appeal and allowed the local residents and business owners to reclaim their street. The resulting reductions in noise and improvements to businesses and properties and general attractiveness of the street produced a significant increase in city revenues from the area (Gilderbloom, et al., 2014).

Lower Commercial Vacancies

In Vancouver, a study on the Hornby and Dunsmuir bike lanes showed that the bike lanes were associated with a reduction in ground floor commercial vacancies (Stantec, 2011).

2% Drop in Commercial Property Vacancies

Lower Costs Of Construction

It is less expensive to construct and maintain cycling lanes or sidewalks instead of vehicular lanes.

Not only can we maximize the return on investment from our tax dollars while creating an exciting place to be, we can also reduce the need for higher taxes.
Improved cycling and walking facilities impact the way we travel. In order to achieve the City of Vancouver’s goals of becoming the Greenest City in the world, along with its Transportation 2040 mode shift goals, safe and accessible infrastructure must be provided.

Research indicates that a protected bike lane increases the number of people cycling on the affected street. If Vancouver is serious about achieving its mode shift goals, safe and accessible infrastructure must be provided. It has been shown that mobility follows the ‘if you build it they will come’ principle. Cycling data from Vancouver supports this idea. Cycling is the fastest growing mode of transportation in Vancouver. From 2008 to 2011 alone, trips by bike increased by a full 40% (City of Vancouver, 2014).

"The research is clear, when cities provide high-quality, safe and accessible bikeways, people use them.” Jeffrey Tumlin


Source: (City of Vancouver, 2014)
Union Street Business Perspective

Slow Streets conducted a survey of businesses on Union Street that are directly affected by the bike lane. The businesses included retail, restaurants, and other services. Of the businesses that responded, the majority stated that the bike lane was good for Union Street and have noted that the lane draws more customers into their business.

When reflecting on the bike lane itself, the majority of businesses felt that the bike lane did not interrupt businesses operations. The on-street parking also received mixed reviews as many of the restaurants and cafes on Union Street could not point to the parking as critical to their business.

The largest criticism came from the loss of parking that occurred on the opposite side of the street, which resulted in a net loss of on-street parking. This, of course, is due to the thin nature of Union Street and would be avoided on Commercial Drive which already has business on both sides of the street and a larger road width.

A Survey of Union Street Businesses

7 out of the 12* businesses on Union Street were surveyed on their experiences with the bike lane:

- 5/7 businesses stated that the bike lane was good for Union Street.
- 4/7 businesses stated that the bike lane helped them draw more customers.
- 1/7 businesses stated that the bike lane limits customers who would have drove to the business.
- 5/7 businesses stated that the bike lane implementation had changed their minds for the better about bike lanes.

*Businesses that were operations based without walk-in customers were excluded.

“We definitely have benefited from the increased usage of the bike lane”
Steve Da Cruz owner of the Parker commenting on the Union Street bike lanes

“I think [businesses] would be crazy not to do it. I think that’s a super smart move, just in terms of the number of bikes you can get in a car parking spot. We can have up to 20 bikes there.”

John Neate owner of the JJ Bean Coffee Roasters commenting on the Commercial Drive bicycle parking corral

Increased Visibility Can Translate Into Increased Revenues

All businesses benefit, as separated cycling lanes and widened sidewalks add additional capacity to move more people with the same amount of space. People walking and cycling are also more likely to make spontaneous purchases.

Additional sidewalk space enhances public space and allows restaurants, bars, grocery stores and small retail stores to expand their square footage with minimal cost.

“Parking is important to our business, but the bike lane doesn’t really interfere with that.”

“I would have had a problem if they removed the parking. I approve of it since there is still room for parking spaces.”

Quotes from Slow Street’s Survey of Union Street businesses

Approximately 20% of residents who bicycled on a street stated that how often they stop at shops increased after the installation of the protected bike lanes.

12% of residents stated they were more likely to visit a business since the installation of a protected bike lane.

(NITC, 2014, p.13)

Study From Portland Found:

It has been demonstrated that people walking and cycling will spend more overall per month than people driving at restaurants, bars and convenience stores.

(Kelly Clifton, 2012)
Parking is certainly important for providing delivery and customer access to businesses. However, concerns about losing parking spaces are unwarranted. Slow Streets conducted a parking inventory finding there are over 700 public parking stalls surrounding Commercial Drive (between Grandview Highway and 1st Avenue). 87% of parking stalls are located off Commercial Drive and are available to the public for free. **Implementing a complete street would have no impact on the total parking both on and off Commercial Drive.**

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### An Abundance Of Parking

Parking stalls on & surrounding Commercial Drive

*On average 82% of parking on Commercial Drive was occupied.*
Providing Safe Mobility Alternatives

A safe and comfortable street experience is the most important factor when encouraging cycling and walking.

In order to reduce the number of cars on the road, it’s necessary to provide infrastructure that supports safe and convenient transportation options. Research indicates that many people (41%) fail to cycle because they feel unsafe riding with vehicular traffic (TransLink, 2011). Likewise, when pedestrians feel alienated or threatened by vehicular traffic, they are unlikely to consider walking or transit as a mobility option. Infrastructure is the foundation of mobility alternatives. Without safe and accessible infrastructure people will not feel secure cycling or walking. Providing better infrastructure for cycling and walking provides potential to reduce the number of cars on the road in Vancouver. A Complete Street on Commercial Drive will provide the foundation for safe and convenient mobility alternatives.

41% of people in Metro Vancouver don’t cycle more because they feel unsafe riding with vehicular traffic. Source: (TransLink, 2011)

Protected Bike Lanes In Other Cities

Opposition to bike lanes is typically based on the idea that eliminating space for traffic will inevitably lead to increased vehicular congestion. However this view is inconsistent with research.

In New York City, after protected cycling lanes were installed, travel speeds in the Central Business District stayed steady while retail sales increased and collisions for cycling and walking dropped. More surprisingly, travel times on Columbus Avenue and 8th Avenue actually improved (NYCDOT, 2014, 2).

A June 2014 report by NITC studied 16,393 people cycling on protected bike lanes in five major American cities (Portland, San Francisco, Chicago, Washington, Austin) in an effort to gauge the impact on nearby residents, motorists and people cycling. The study found that cycling trips increased anywhere from 21 to 171%. Perhaps most importantly they found that 10% of people cycling would have travelled by some other means. The lane also allowed 1% people to make trips they previously wouldn’t have if the lane did not exist (NITC, 2014, p.7).

Vehicle travel times in New York City improved or stayed steady after protected bike lanes were installed.
Commercial Drive Is A Critical Piece Of The Cycling Minimum Grid

A grid of connected, comfortable and safe cycling routes is necessary for maximizing the reliability of cycling and enticing more people to cycle.
In the 5 years since 2009 there were

64

Vehicle collisions involving people walking and
cycling on Commercial Drive from 1st Avenue to
Broadway

Source: (ICBC, 2014)

A Complete Street Improves Safety

There has been a high number of vehicular collisions with people walking and cycling on Commercial Drive over the last five years (compared to Vancouver overall). The Slow Streets Collision Map of Vancouver showed that wider roads were associated with a higher number of vehicle collisions involving people walking and cycling. Transforming Commercial Drive into a Complete Street by removing two lanes of vehicular travelling lanes and dedicating space for people cycling and wider sidewalks would improve safety significantly. Reducing the number of vehicle travel lanes reduces the speed and volume of vehicle traffic as well as pedestrian crossing distances.

“Road diets can be seen as one of the transportation safety field’s greatest success stories.”

(Pedestrian and Bicycle Information Center, 2013)

A Review Of 460 Lane Removals Found:

Total crashes might be expected to decline by an average of

29%

by converting four, undivided lanes to three
lanes (plus other uses such as bike lanes).

(Pedestrian and Bicycle Information Center, 2013)
Where Will Traffic Go?

Removing two lanes of traffic on Commercial Drive could potentially displace a maximum of 1,388 cars per hour during peak hours. There are three major North-South roadways adjacent to Commercial Drive which can accommodate greater numbers of vehicles during peak hours.

One lane of traffic can move 900 cars per hour at 50km/hr.


Removing 2 lanes of traffic on Commercial Drive could potentially displace a maximum of 1,388 cars per hour during peak hours

Trip Elimination

While it is difficult to determine whether or not people are leaving their vehicles behind once a bike lane is built, there is preliminary research supporting this idea. Intercept surveys conducted in 5 major American cities (Portland, San Francisco, Chicago, Washington, Austin) found that once a new bike lane was implemented 10% of people had shifted from driving to cycling (NITC, 2014).
Keep Traffic Out Of The Neighbourhood

While there is space to accommodate North and South traffic on Clark Drive, Nanaimo Street and Victoria Drive, there is concern about traffic being diverted from Commercial Drive to adjacent residential streets. These concerns are justified and appropriate traffic calming measures should be taken in order to prevent ‘rat running’. Vancouver’s West End has implemented a successful traffic calming strategy making it difficult to drive through the neighbourhood in a straight line and could serve as an example for the Grandview-Woodland Neighbourhood.

Traffic calming techniques like curb bulges, traffic circles, “No Through Road” signage and traffic diverters can make residential streets less appealing for non-residents as they will be unable to move through the neighbourhood quickly. These traffic calming measures will ensure that vehicular traffic is diverted to major roadways like Clark Drive, Nanaimo and Victoria so that neighbourhood streets remain protected from traffic. For example, with six lanes Clark Drive only moves 1,870 vehicles per hour during peak hours, but has the potential to carry 5,400 vehicles per hour.
Impacts on Transit

According to Translink (2013) data, Commercial Drive’s No. 20 bus is the 2nd busiest bus route in Metro Vancouver with approximately 27,000 daily weekday passengers. The entire route of the No. 20 bus also includes Hastings Street and Victoria Drive, and connects Downtown Vancouver and the Hastings Corridor, with the SkyTrain’s Expo and Millennium lines at the Commercial and Broadway SkyTrain station. The route also connects the SkyTrain with South Vancouver via Victoria Drive.

The No.20 bus currently runs on a four lane Commercial Drive configuration North of Graveley.

Almost half (1.2km) of the No.20 bus route on Commercial Drive, north of Graveley Street, is currently in one lane of mixed traffic during off-peak times. In peak times the parking lanes on both sides of the street are removed resulting in two lanes of mixed traffic in each direction. This street arrangement may not be perfect for bus efficiency, but it currently works on Commercial Drive. Therefore reducing the other 1.6km section of Commercial Drive, south of Graveley Street, to one or two lanes of mixed vehicle traffic would also work.

Complete Streets requires human speed traffic, and on Commercial Drive this means slower traffic of all kinds, including buses. It should be noted however that slower buses require longer transit journey times, which will either require additional buses to run the same route, or reduced bus frequency for the same cost. However even with slower top speeds, average bus speeds could be maintained with fewer bus stoppages. Fewer stops could be achieved by adding dedicated bus priority signals at Commercial Drive intersections. Maintaining a similar average bus speed, but a reduced top speed, could therefore help maintain bus route efficiency, and make the street a more human speed.

Transit is a very important part of Commercial Drive and must be accommodated into the slower streets redesign. Rerouting the No.20 bus to Victoria Drive between Hastings Street and 18th Avenue is not a viable option as it would take passengers away from Commercial Drive’s stores and community. A reroute on Victoria Drive would also reduce the convenience of taking transit, especially for customers of Commercial Drive businesses, and would probably also reduce the popularity of the bus route too. A reroute to Victoria Drive would also require new trolley wires and an additional SkyTrain entrance for Commercial/Broadway station at 8th Avenue, both of which would be expensive.
Commercial Drive in the Future?

While Commercial Drive is a vibrant street and a cultural landmark for the city of Vancouver, in its current format it is not living up to its full potential. As a public asset, Commercial Drive’s streetscape should maximize its value for all Vancouver residents. Six lanes of vehicular traffic erodes the sidewalk comfort and consequently the public space. It alienates people walking and cycling by creating excessive noise and unsafe crossings. The activity on Commercial Drive observed by Slow Streets shows that people want a connection to the street. People want to sit on the many outdoor patios provided by cafes and restaurants. The skinny and crowded sidewalks, high traffic volumes and the lack of buffering from vehicles in many areas exacerbate these issues. Slow Streets contends great improvements can be realized by removing two vehicle lanes and replacing them with protected bike lanes and widened sidewalks.

“If the pedestrians are consequently required to keep to the right to get through it, freedom of movement is more or less lost. People no longer meet but walk behind one another in ranks. The overcrowding is too great.”

Jan Gehl, Life Between Buildings

Looking to the future, a Complete Street on Commercial Drive will help Vancouver achieve many of its future sustainability goals and objectives:

- Active transportation is environmentally friendly, thus helping the city meet its Greenest City 2020 Goals.
- Translink and the City of Vancouver both share a goal of a majority of trips by walking, cycling and transit by 2040.

Perhaps most importantly, a Complete Street on Commercial Drive could set a precedent for other retail streets in Vancouver like Main Street, Davie Street and Kingsway and Fraser. These streets are also some of Vancouver’s most important destinations which lack critical infrastructure to support active transportation. A Complete Street on Commercial Drive treats all people equally regardless of age, gender, physical ability or how they travel. Streets are not simply places for vehicular traffic, they play a significant role in strengthening the public realm. They make our cities great places to live, work and play.

“It is vital that people feel safe and secure regardless of the transportation mode they use, no matter when and where they travel. The design and maintenance of the road network must ensure the safety of all road users, including pedestrians, cyclists, passengers and drivers.”

(Translink, 2008)
References & Sources


Appendix
A Comparison: Potential Impacts of a Retail Street Separated Bike Lane

**Commercial Drive**
Between 1st and Broadway

**Who?**
- **51%** Women
- **49%** Men
- **0.3%** Physically Impaired
- **9%** Older Adults
- **5%** Young Children
- **59%** Young Adults

**Groups**
- **64%** People
- **36%** Vehicles

**How did they get there?**
- **65%** Bicycles
- **22%** Cars
- **11%** Pedestrians
- **2%** Public Transportation

**Average Utilization Rate**
- **Bicycle Parking**: 54%
- **Auto Parking**: 82%

**Space used per Person by Parking Type**
- **Commercial Drive**: 2.5m²
- **Union Street**: 11m²

**What did they do?**
- **14%** Staying and Socializing
- **72%** Shopping
- **14%** Walking Through

**Context**
- Sunny Clear Skies
- Sept. 21 to Oct. 7, 2014
- **18°C** feels like **18°C**

**Union Street**
Between Main and Gore

**Who?**
- **48%** Women
- **52%** Men
- **0.9%** Physically Impaired
- **9%** Older Adults
- **4%** Young Children
- **67%** Young Adults

**Groups**
- **56%** People
- **44%** Vehicles

**How did they get there?**
- **90%** Bicycles
- **7%** Cars
- **3%** Pedestrians
- **0%** Public Transportation

**Average Utilization Rate**
- **Bicycle Parking**: 83%
- **Auto Parking**: 76%

**Space used per Person by Parking Type**
- **Commercial Drive**: 24m²
- **Union Street**: 336m²

**What did they do?**
- **9%** Staying and Socializing
- **79%** Walking Through
- **12%** Shopping

**Context**
- Sunny Clear Skies
- Sept. 28 to Oct. 10, 2014
- **18°C** feels like **18°C**

*These findings are the result of carrying out public space observations on Commercial Drive from Sept. 21 to Oct. 7, 2014, and Union Street from Sept. 28 to Oct. 10, 2014. The observations were conducted at varying times including the weekday peak and midday and weekend middy. Over 1000 people were counted in 10 minute samples.*