

# Off-Campus On-Street Parking Study

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**campus + community planning**  
transportation planning



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

## Summary

With the introduction of the U-Pass in 2003, transit ridership to and from the UBC campus has increased significantly and now accounts for 49% of all trips, with close to 64,000 transit trips being made to and from UBC each day. Automobile traffic to the campus has also decreased by 15% since 1997 from 62,400 trips daily in 1997 to 52,800 trips in 2010. However residents in adjacent communities have reported difficulties in finding parking on some neighbourhood streets and have attributed this to an increase in the number of students who are parking in neighbourhood on-street parking spaces and riding a bus for the remainder of their commute to the UBC campus.

An 'Off-Campus On-Street Parking Study' was conducted in March 2011, and included a one-day parking survey of on-street parking patterns when UBC classes were not in regular session (during reading break) and a one day follow up survey when UBC classes were in regular session.

As a basis for determining the impacts of parking demand, UBC used a standard measurement from parking theory. This measurement defines the ultimate capacity of a parking facility as 100 per cent of the parking supply while the practical capacity is based on 85 per cent of the ultimate capacity. If parking demand is below the practical capacity (85 per cent), users typically have no difficulty finding a parking space.

Key findings:

- South West Marine Drive: Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 9% more vehicles parked when UBC classes are in regular session. During reading break, 8% of parking spots were occupied over the survey hours, compared to 17% when UBC classes are in regular session.
- West 41st Avenue: Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 11% more vehicles parked when UBC classes are in regular session. During reading break, 26% of parking spots were occupied over the survey hours, compared to 37% when UBC classes are in regular session.
- West 10th Avenue and West 16th Avenue Area: Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 4% more vehicles parked when UBC classes are in regular session. During reading break, 42% of parking spots were occupied over the survey hours, compared to 46% when UBC classes are in regular session.

Observed results of this study indicate the parking demand never exceeds the practical capacity in all three neighbourhood areas.

## Background

With the introduction of the U-Pass in 2003, transit ridership to and from the UBC campus has increased significantly and now accounts for 49% of all trips, with close to 64,000 transit trips being made to and from UBC each day. Automobile traffic to the campus has also decreased by 15% since 1997 from 62,400 trips daily in 1997 to 52,800 trips in 2010. However residents in adjacent communities have reported difficulties in finding parking on some neighbourhood streets and have attributed this to an increase in the number of students who are parking in neighbourhood on-street parking spaces and riding a bus for the remainder of their commute to the UBC campus.

The City of Vancouver controls and manages on-street parking within its city limits and has enacted a bylaw (2849) that prohibits non-resident parking for more than three hours on streets abutting residential or commercial properties between 8 am and 6 pm. UBC has no direct control or enforcement authority on City of Vancouver streets.

## The Study

UBC is interested in learning more about the impacts of student parkers on neighbouring residential communities and has undertaken a study to better understand the issue.

As a basis for determining the impacts of parking demand, UBC used a standard measurement from parking theory. This measurement defines the ultimate capacity of a parking facility as 100 per cent of the parking supply while the practical capacity is based on 85 per cent of the ultimate capacity. Practical capacity is an operational threshold which determines how efficiently a parking facility is being used. If parking demand is below the practical capacity (85 per cent), users typically have no difficulty finding a parking space. Any observed parking demand that exceeds the ultimate capacity of 100 per cent indicates that illegal or improper parking is taking place.

An 'Off-Campus On-Street Parking Study' was conducted in March 2011, and included a one-day parking survey of on-street parking patterns when UBC classes were not in regular session (during reading break) and a one day follow up survey when UBC classes were in regular session. For each of the survey days, the number of parked vehicles was recorded in 60 minute intervals for each selected road segment between 7 am and 7 pm. The same day of the week was chosen for both survey days in order to control external factors as much as possible. The parking patterns between the two survey days were compared to quantify increases in parking that may be attributed to 'non-residential' users, including UBC students. The neighbourhoods included in this study include the Marine Drive Area; the West 41st Avenue Area; and the West 10th/West 16th Avenue Area. Twelve road segments throughout these neighbourhoods were included in the study, and selected based on three criteria:

- Identified through feedback from residents living in these communities;
- Proximity to transit stop (within 400 m or 5 min walk). This proximity is based on transportation literature that suggests this is the average distance people are willing to walk to a transit stop;
- Identified as a key area based on block faces that have requested resident permit parking designation through the City of Vancouver Parking Enforcement Branch.

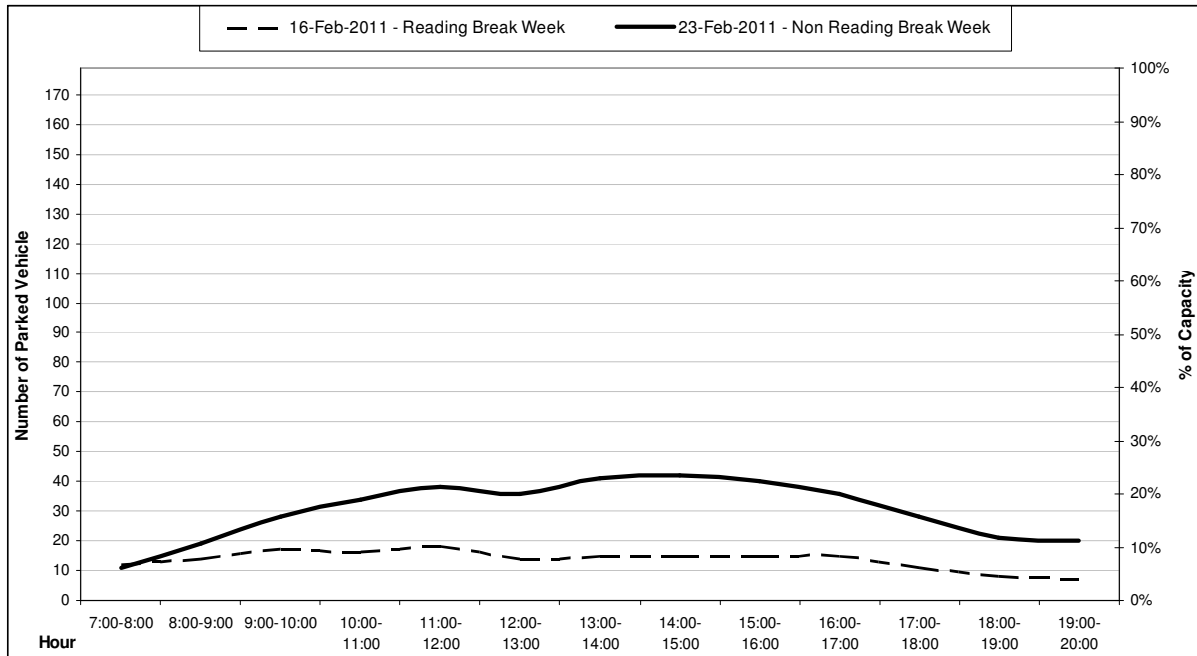
The scope of the study is not comprehensive and is intended to provide a sample of parking pattern changes within select block faces that can be used to further assess the issue.

# Results by Neighbourhood

## South West Marine Drive Key Findings

- There are a total of 179 on-street public parking spaces with no restriction in the Marine Drive area.
- During reading break, the peak parking demand occurred between 11:00 am and 12:00 pm when 18 vehicles were observed (or 10% of the capacity), leaving 161 empty parking spaces available.
- When UBC classes were in regular session, the peak parking demand occurred between 2:00 pm and 3:00 pm when 42 vehicles were observed (or 23% of the capacity), leaving 137 empty parking spaces available. The number of vehicles parking during this peak period is 0.07% of UBC’s daily automobile volumes.
- Comparing peak parking demand between the two survey days, there are 24 additional vehicles parked (occupying an additional 13% of the capacity) when UBC classes are in regular session.
- Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 9% more vehicles parked when UBC classes are in regular session. During reading break, 8% of parking spots were occupied over the survey hours, compared to 17% when UBC classes are in regular session.

### ON-STREET OBSERVED TOTAL PARKED VEHICLE DEMAND (Marine Drive Area)





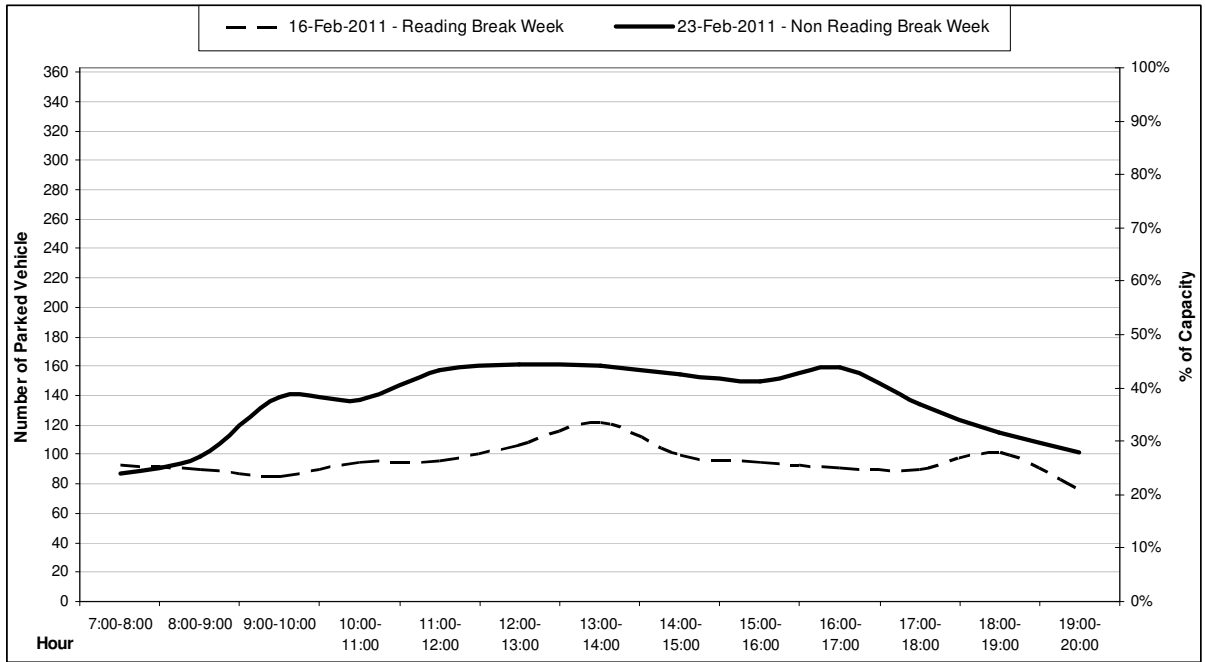
Selected road segments included in study are highlighted in yellow

### West 41st Avenue Area Key Findings

- There are a total of 363 on-street parking spaces in the West 41st Area, of which 2 spaces have 2-hour free parking, 28 spaces have 1-hour free parking, and 333 spaces are for general public use.
- During reading break, the peak parking demand occurred between 1:00 pm and 2:00 pm when 122 vehicles were observed (or 34% of the capacity), leaving 241 empty parking spaces available.
- When UBC classes were in regular session, the peak parking demand occurred between 12:00 pm and 1:00 pm when 161 vehicles were observed (or 44% of the capacity), leaving 202 empty parking spaces available. The number of vehicles parking during this peak period is 0.3% of UBC's daily automobile volumes.
- Comparing peak parking demand between the two survey days, there are 39 additional vehicles parked (occupying an additional 10% of the capacity) when UBC classes are in regular session.
- Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 11% more vehicles parked when UBC classes are in regular session. During reading break, 26% of parking spots were occupied over the survey hours, compared to 37% when UBC classes are in regular session.



**ON-STREET OBSERVED TOTAL PARKED VEHICLE DEMAND (West 41st Avenue Area)**

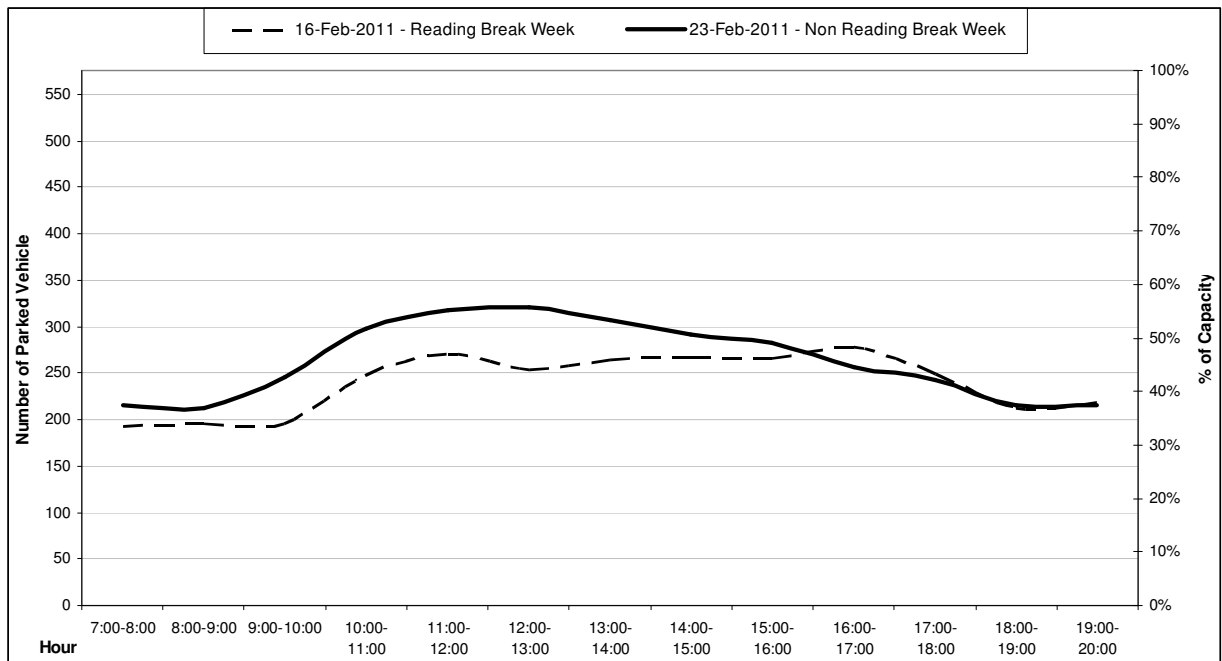


Selected road segments included in study are highlighted in yellow

## West 10th Avenue and West 16th Avenue Area Key Findings

- There are a total of 576 on-street parking spaces in the West 10th/West 16th Avenue Area, of which 4 spaces have 2-hour free parking, 27 spaces are restricted for permit, and 545 spaces are for general public use.
- During reading break, the peak parking demand occurred between 4:00 pm and 5:00 pm when 278 vehicles were observed (or 48% of the capacity), leaving 298 empty parking spaces available.
- When UBC classes were in regular session, the peak parking demand occurred between 12:00 pm and 1:00 pm when 321 vehicles were observed (or 56% of the capacity), leaving 255 empty parking spaces available. The number of vehicles parking during this peak period is 0.6% of UBC’s daily automobile volumes.
- Comparing peak parking demand between the two survey days, there are 43 additional vehicles parked (occupying an additional 8% of the capacity) when UBC classes are in regular session.
- Comparing the percentage of total parking spots occupied over the survey hours between the two survey days, there are 4% more vehicles parked when UBC classes are in regular session. During reading break, 42% of parking spots were occupied over the survey hours, compared to 46% when UBC classes are in regular session.

### ON-STREET OBSERVED TOTAL PARKED VEHICLE DEMAND (West 10th/West 16th Avenue Area)







Selected road segments included in study are highlighted in yellow

## Comments

Observed results of this study indicate the parking demand never exceeds the practical capacity in all three neighbourhood areas. At the peak hour or busiest hour of parking when UBC classes are in regular session, parking demand occupies 56% of capacity in the West 10th/West 16th Avenue Area, followed by the West 41st Avenue Area at 44% and the Marine Drive Area at 23%.