

2010

Camosun College Modal Split

How Does the College Community Get to Campus?



Transportation and Parking



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1/21/2011

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Introduction

Camosun College, located on Victoria British Columbia, is spread over two campuses. The Interurban Campus is located in the municipality of Saanich at 4461 Interurban Rd, adjacent to the Pacific Institute for Sport Excellence (PISE) and near the Vancouver Island Technical Park. The Lansdowne Campus, at the corner of Lansdowne and Foul Bay roads, is located within Oak Bay and Saanich municipalities, near the City of Victoria border and the University of Victoria. Camosun College during fall 2010 had 10,611 student learners, 6031 of them attending Lansdowne and 4580 of them attending Interurban. The college also has more than 1000 staff members and faculty. The parking lots on both campuses are managed by Robbins Parking and overseen by Ancillary Services at Camosun College.

In 2008, Camosun College, with Consultant Todd Litman, developed a Transportation and Parking Management Plan (TPM) aimed at addressing current transportation issues, including parking congestion. One of the goals of was to create modal split targets. A modal split looks at the portion of travel made by single occupancy vehicles, walking, cycling, rideshare and public transit (Litman, Performance Evaluation - Evaluating Progress towards Planning Objectives). Two of the goals of the TPM were; to reduce traffic congestion around the campuses and the total number of motor vehicles driven to the college; and to accommodate additional campus development, minimize impervious surface and preserve greenspace. Modal split is a good indicator the college's parking and transportation situation over time.

The aim of this report is to outline the modal split survey which was conducted at Camosun College Interurban and Lansdowne Campuses October 26th and 27th 2010. It will also provide the results of this survey by quantifying the modal split for Camosun College as a whole, for each campus, as well as identifying peak intervals for morning and afternoon travel periods. Finally, as it is the first modal split survey done at Camosun College Campus it will make recommendations for future surveys conducted at the college and outline mode share targets for the future.

Methodology

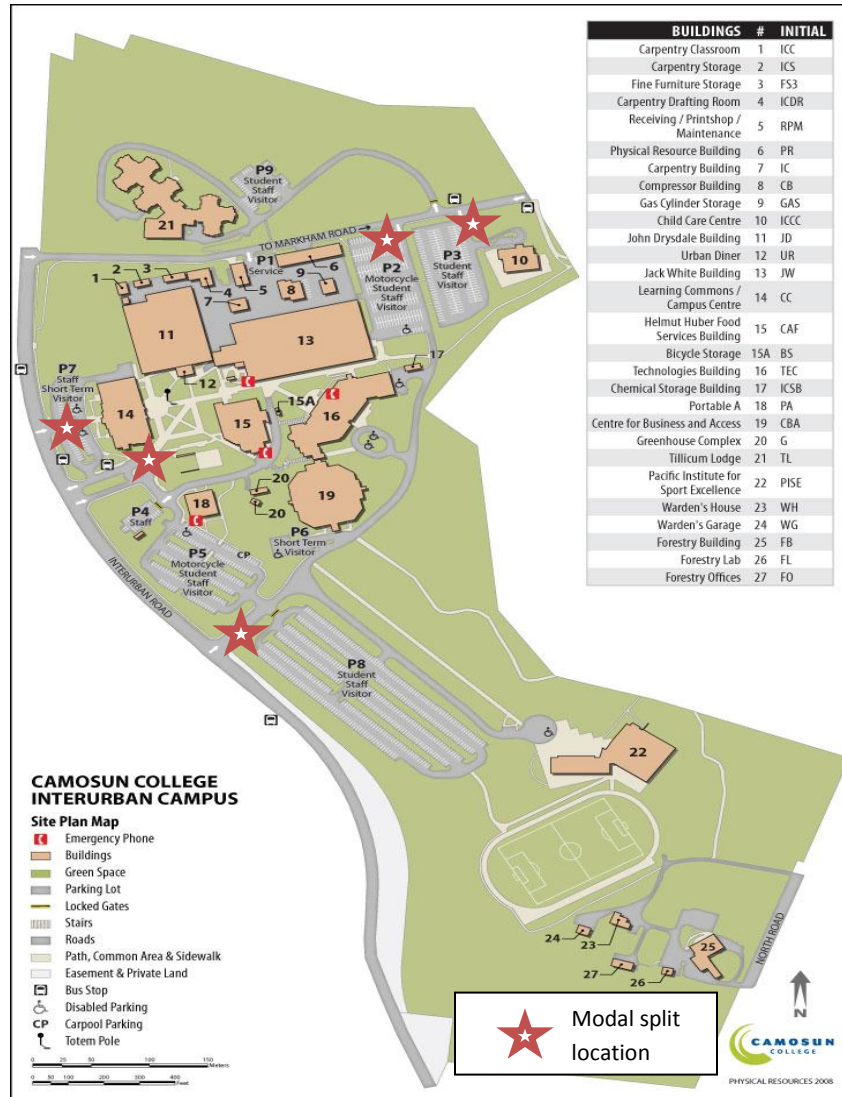
The modal split survey took place over two days (October 26th and 27th 2010) at both Camosun College campuses (Lansdowne and Interurban.) The survey took place in conjunction with the Camosun College annual Parking Stall Occupancy Survey, conducted by Robbins Parking.

Modal Split counters were located at key entrances to campus. The mode share counters noted people arriving at the campus in the morning (7am to 9am) and leaving campus in the afternoon (3pm to 5pm). The modes counted were; Vehicles (1, 2, 3, 4 or 5 occupants), Non-transit bus, Bicycle, Large/Delivery Truck, Construction related truck and other (Skateboard/Rollerblade). Due to the layout differences between the two campuses and with the intention to keep the survey methodology comparable for each campus, transit riders and pedestrians were counted in the same group. Please see appendix for count sheet example.

The Camosun modal split survey was modeled on the University of Victoria's Modal Split Survey. The count sheets used by Camosun College were also modeled on UVIC's Modal Split count sheets.

Counters were located at five areas at the Interurban Campus and in seven at the Lansdowne Campus (Please see figure 1 and 2 respectively.)

Figure 1. Camosun College Interurban: Modal Split Counter Locations



At Interurban campus, modal split counters were located in five areas which included:

- Off Markham Rd. in P3 (counted were people entering or exiting P3 and P9)
- Off Markham Rd. in P2 (counted were people entering or exiting P2)
- Off Interurban Rd. in P7 (counted were people entering or exiting P7 and surrounding paths)
- On the top of the Interurban bus loop (counted were people entering/exiting bus loop)
- Off Interurban Rd. by P5 and P6 (counted were people entering/exiting this roadway)

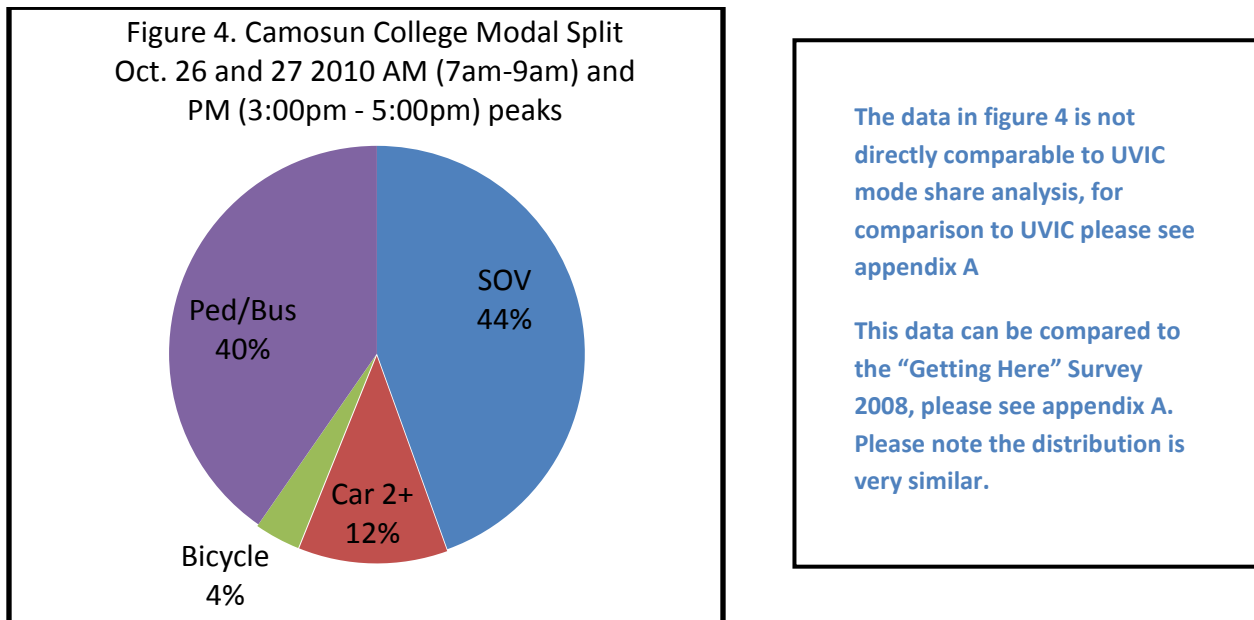
Results

Table 1 below outlines the Camosun College Modal Split count data totals separated by Campus.

Table 1. Camosun College Modal Split Count Data Totals (October 26 & 27 2010) (Car 2 = vehicle with 2 people inside, Ped/Bus= Pedestrians and Transit Riders)									
Interurban									
SOV	Car 2	Car 3	Car 4	Car 5	Cycle	Ped/Bus	Large Truck	Construction Vehicle	Other
2891	619	48	10	8	130	1862	10	6	0
Lansdowne									
SOV	Car 2	Car 3	Car 4	Car 5	Cycle	Ped/Bus	Large Truck	Construction Vehicle	Other
2089	566	41	6	1	269	2653	11	30	5

Mode Share Data: Camosun College Combined

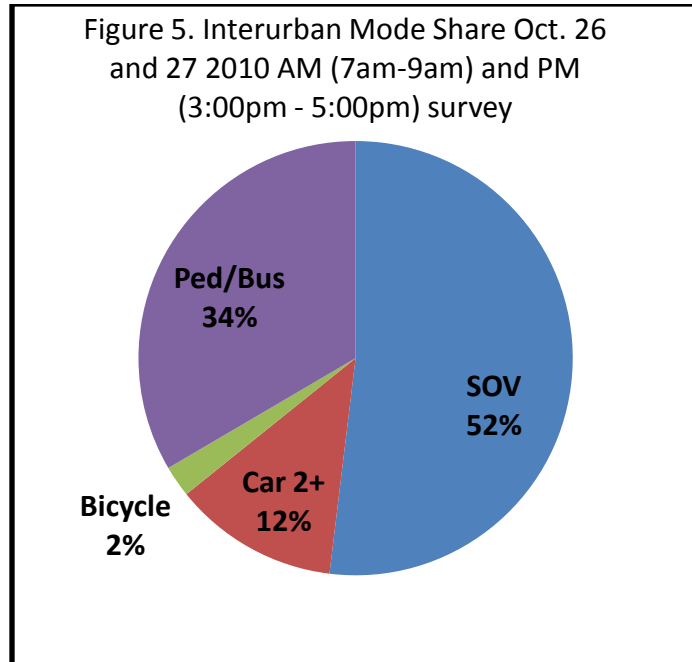
Figure 4 below shows the modal split for Camosun College with both campuses combined and both the morning and afternoon surveys included.



The largest travel mode was Single Occupancy Vehicles (SOVs) (44%) followed closely by transit riders or pedestrians (Ped/Bus) (40%) then vehicles with two or more occupants (Car 2+) (12%) and finally cyclists (4 %.)

Mode Share: Interurban

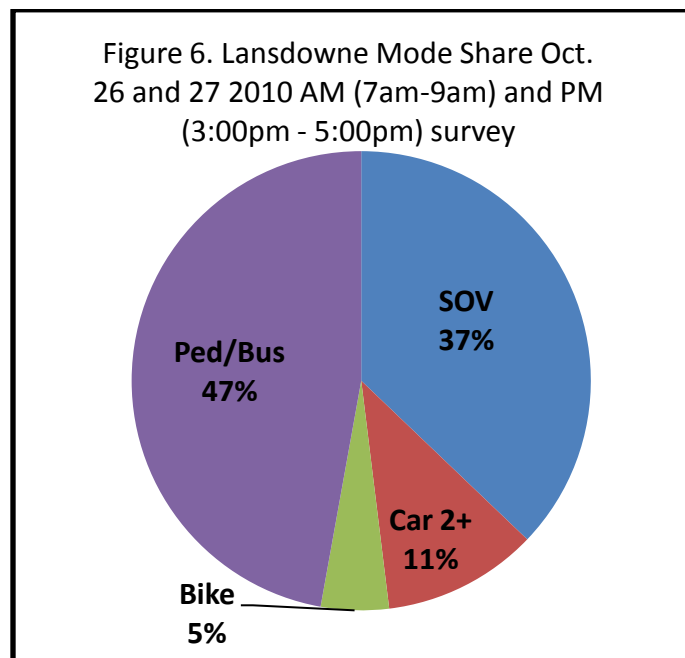
Figure 5 below shows the modal split for Camosun College Interurban campus with both the morning and afternoon surveys included.



The highest proportion of commuters for Interurban Campus was found to be Single Occupancy Vehicles (SOVs) (52%) next was transit riders or pedestrians (34%) then vehicles with two or more occupants (12%) and finally cyclists (2%).

Mode Share: Lansdowne

Figure 6 below shows the modal split for Camosun College Lansdowne campus with both the morning and afternoon surveys included.



The highest proportion of commuters for Lansdowne Campus was found to be transit riders and pedestrians (47%) next was SOVs (37%) then vehicles with two or more occupants(11%) and finally cyclists (5%.)

Mode Share: Campus Comparison

The modal split for Camosun College differed greatly depending on the campus. Lansdowne campus is located in a more urban setting, has higher levels of transit service and has higher residential and commercial density in the immediate area (2-3 km). Interurban campus is located in a more suburban setting, has lower levels of transit service and much lower residential and commercial density within the area (6-7km).

At Interurban, 52% of vehicles (n=2891) coming onto campus were occupied by one individual (SOV) compared to 37% (n=2089) at Lansdowne. There was a 1% difference for vehicles with 2 or more occupants; 12% (n=685) at Interurban and 11% (n=614) at Lansdowne. It should be noted that a large number of these vehicles coming onto and leaving campus were dropping off/ picking up passengers and not staying on campus.

Pedestrian and Transit Riders were counted in the same group due to campus layout and transit route stop locations; however, it was noted that approximately 95% of those counted in the pedestrian and transit riders group were transit riders. Lansdowne campus had a 47 % pedestrian and transit share (n=2653) while Interurban had 34 % (n=1862). This was a 13% difference between campuses.

Cycling was more popular at Lansdowne with 5% (n=269) compared to Interurban with 2% (n=130).

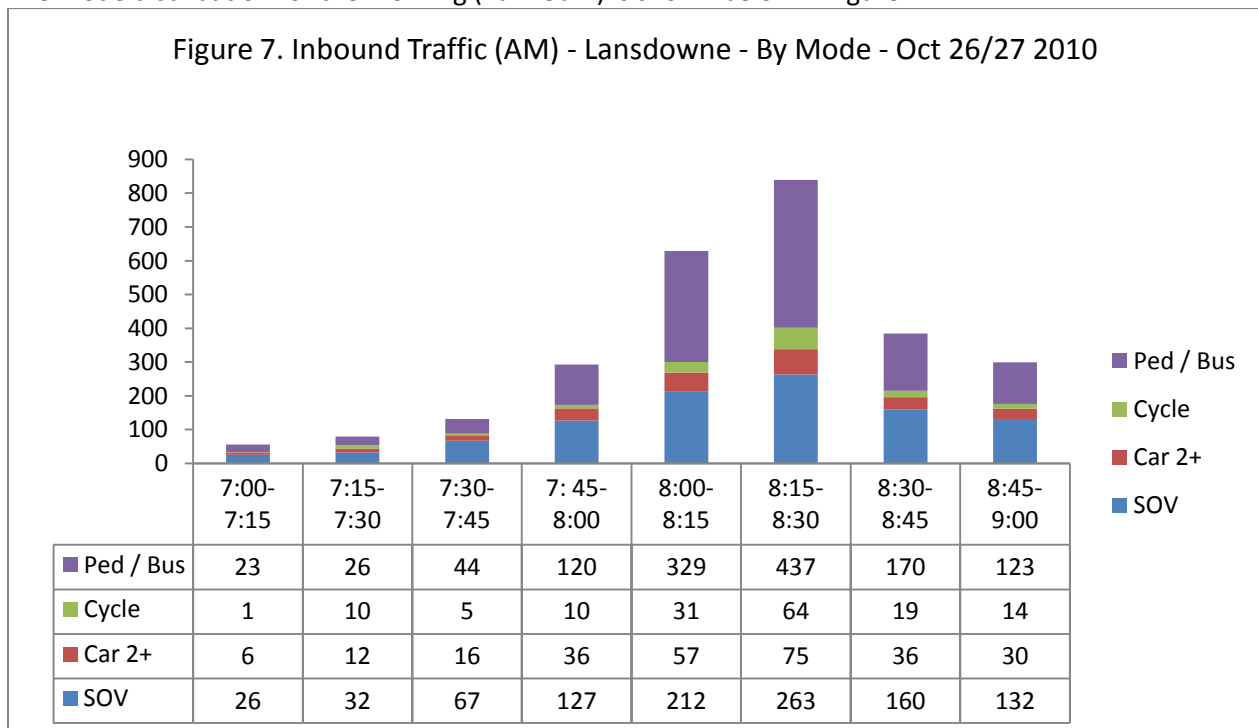
The Other category (construction, delivery vehicles, skate boards and roller blades) did not make up a significant amount of the mode share to be included in the overall picture. At Interurban the Other category was (n=16) and at Lansdowne it was (n=46.) Please see figures 4 and 5.

Peak Travel Time Data

The peak commuter traffic time for morning and afternoon at Camosun College Interurban and Lansdowne were identified using the 15-minute intervals of the modal split survey counts.

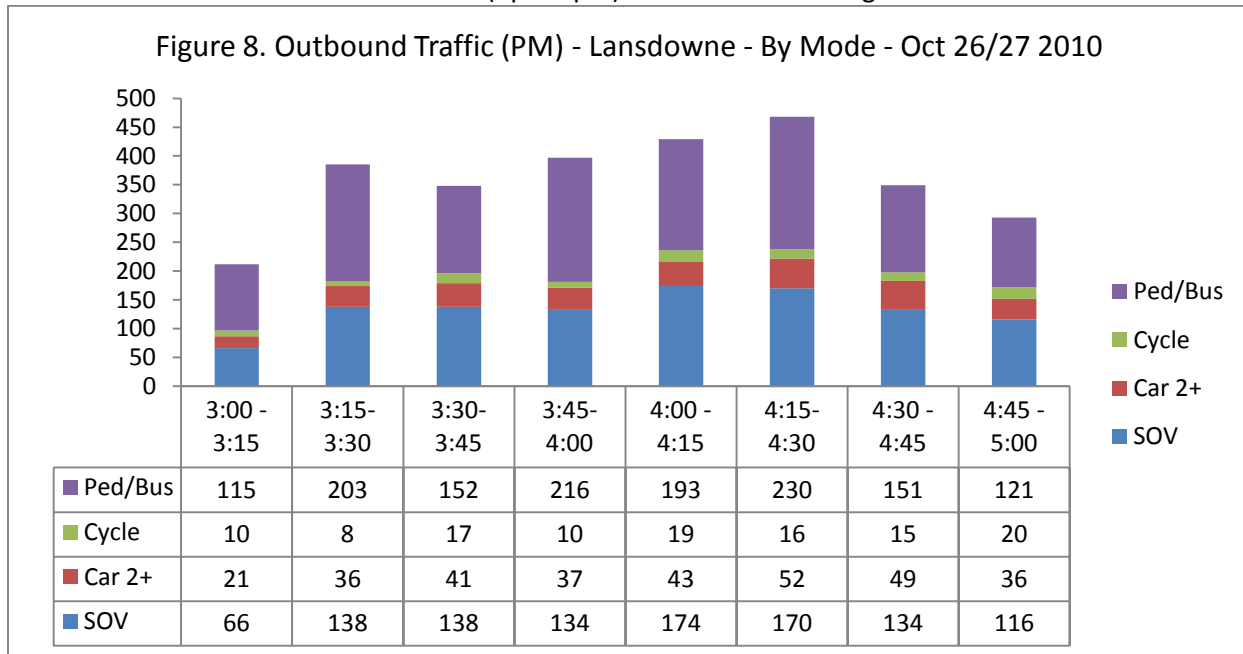
Lansdowne

Lansdowne mode distribution for the morning (7am-9am) is shown below in figure 7.



Lansdowne Campus morning (7am-9am) peak commute time was found to be between 8:15am and 8:30am. 839 total modes arrived on campus in this 15 minute interval; 437 were transit riders or pedestrians, 263 were single occupancy vehicles, 75 were vehicles with 2 or more occupants and 64 were cyclists.

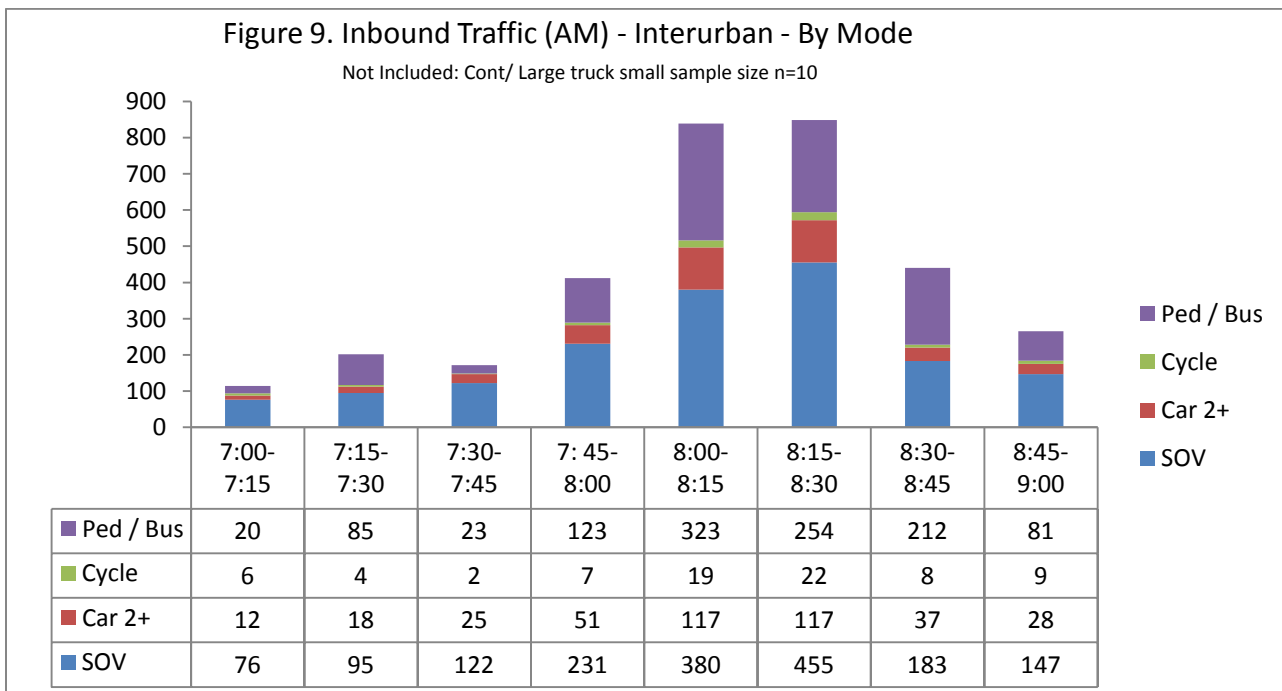
Lansdowne mode distribution for the afternoon (3pm-5pm) is shown below in figure 8.



Lansdowne Campus afternoon (3pm-5pm) peak commute time for outbound traffic was found to be between 4:15pm and 4:30pm; however this peak was only slightly higher than all other 15 minute intervals. 468 total modes left campus in this 15 minute interval; 230 were transit riders or pedestrians, 170 were single occupancy vehicles, 52 were vehicles with 2 or more occupants and 16 were cyclists.

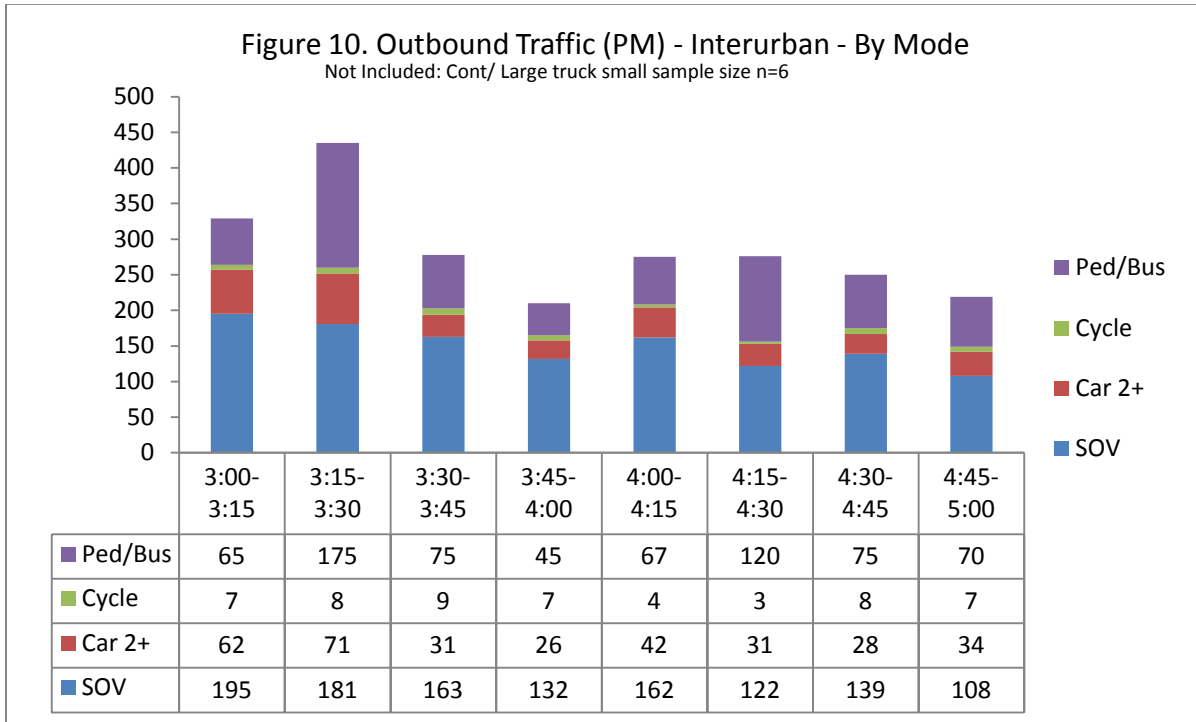
Interurban

Interurban mode distribution for the morning (7am-9am) is shown below in figure 9.



Interurban Campus morning (7am-9am) peak commute time was found to be between 8:15am and 8:30am. 848 total modes arrived on campus; 254 were transit riders or pedestrians, 455 were single occupancy vehicles, 117 were vehicles with 2 or more occupants and 22 were cyclists. (8:00am to 8:15am was also very high with 839 total modes arriving on campus.)

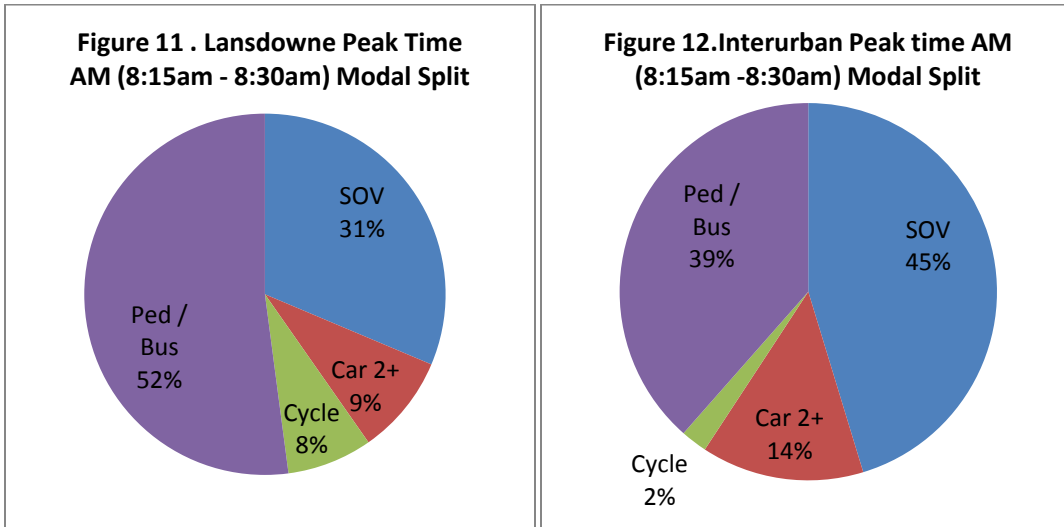
Interurban mode distribution for the afternoon (3pm-5pm) is shown below in figure 10.



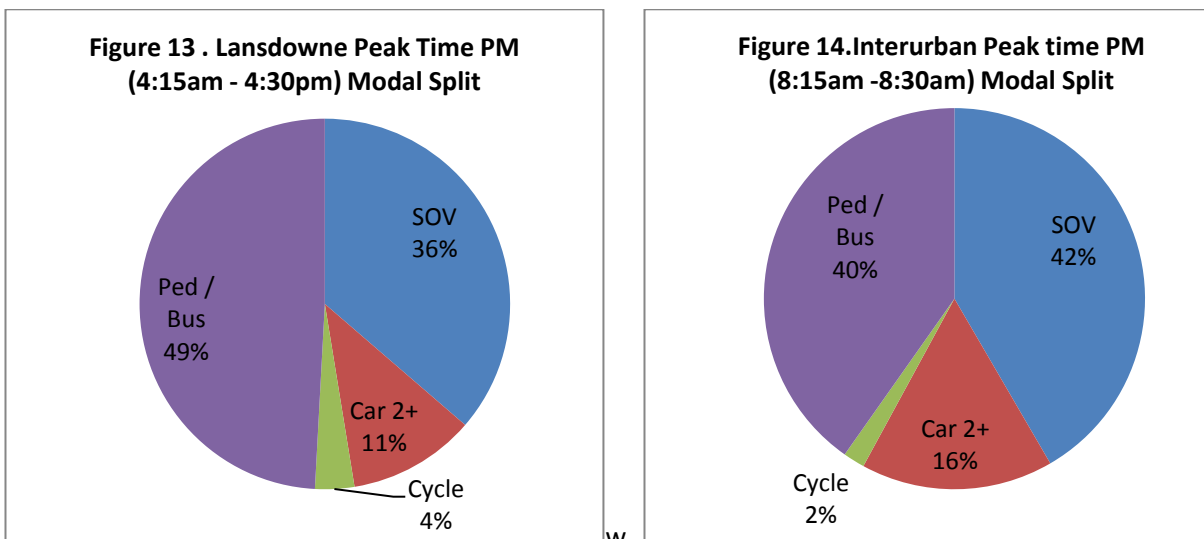
Interurban Campus afternoon (3pm-5pm) peak commute time for outbound traffic was found to be between 3:15am and 3:30am. 435 total modes left campus in this 15 minute interval; 175 were transit riders or pedestrians, 181 were single occupancy vehicles, 71 were vehicles with 2 or more occupants and 8 were cyclists.

Peak Time: Campus Comparison

Peak commuting times for the morning and afternoon were comparable between both Lansdowne and Interurban. Morning peak time was found to be 8:15am – 8:30am for both campuses. Lansdowne Campus had 839 total modes inbound in this 15 minute interval and Interurban Campus had 848 inbound. However, the difference came in the modal split within this peak time. At Lansdowne Campus the highest mode was Pedestrian and Transit Riders (52%) while at Interurban it was Single Occupancy Vehicle (45%) (See Figure 11 and 12 below.)

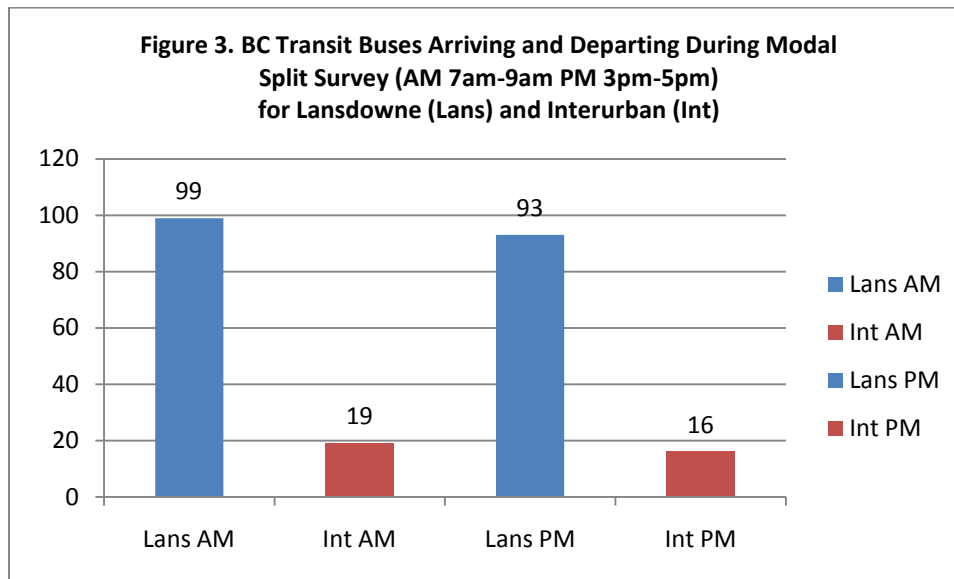


Afternoon peak time was not as homogeneous and both campuses had harder to define peaks. Lansdowne Campus afternoon (3pm-5pm) peak commute time for outbound traffic was found to be between 4:15pm and 4:30pm. Interurban Campus afternoon (3pm-5pm) peak commute time for outbound traffic was found to be between 3:15pm and 3:30pm. Lansdowne Campus had 468 total modes outbound in their peak 15 minute interval and Interurban Campus had 435 outbound. The modal split mirrors the AM modal split. At Lansdowne Campus the highest mode was Pedestrian and Transit Riders (49%) while at Interurban it was Single Occupancy Vehicle (42%). See Figure 13 and 14 below.



Transit during Modal Split Survey

Figure 3 below shows the number of buses that stopped at the College in the AM and PM count times of the modal split survey – distinguished between Lansdowne and Interurban.



In the AM (7am-9am) 99 buses stopped at the Lansdowne campus, 19 buses stopped at the Interurban campus. In the PM (3pm-5pm) 93 buses arrived stopped at the Lansdowne campus, while 16 buses stopped at the Interurban campus.

TPM Background

This report has established the modal split for Camosun College during the fourth week of October 2010. Two of the goals of the TPM were; to reduce traffic congestion around the campuses and the total number of motor vehicles driven to the college, and to accommodate additional campus development, minimize impervious surface and preserve green space. In order to manage expectations, modal split targets should be defined. The TPM (p.61 of 67) suggests that a 6% reduction in all vehicle trips, (which is equal to approximately 20% of employees) could be expected following the elimination of free staff parking. A further 6% reduction could be expected from increased parking rates. Additional reductions could be achieved through improvements to transit service, pedestrian facilities and cycling infrastructure. These figures focus on vehicle trip reduction.

Modal Split Targets – 2012

The modal split targets will focus on increasing the use of active modes of transportation, which will have a corresponding effect on demand for vehicle parking.

The one year modal split targets for Interurban are as follows:

- Carpool increase of 2%, from 12% to 14% of total modal split count
- Cycling increase of 2%, from 2% to 4% of total modal split count

Potential for increasing the modal split for transit at Interurban campus exists, however; this will require increase in transit service levels to the campus.

The one year modal split targets for Lansdowne are as follows:

- Transit rider and pedestrian increase of 2%, from 47% to 49% of total modal split count
- Cycling increase of 1%, from 5% to 6% of total modal split count
- Carpool increase of 1%, from 11% to 12% of total modal split count

[These are modest goals towards the 20 to 40% reduction in parking demand outlined in the TPM. For comparison, UVic took 12 years to reduce the number of SOVs coming to campus by 20%. UBC took 8 years to decrease the number of SOVs coming to campus by 4.8%. Demand for parking should be distinguished as a separate factor from the percentage of SOVs coming to campus.]

Conclusion

This survey provides a representative overview of the commuting mode choices of the Camosun College community. It provides evidence to support a planned modal shift to increased rates of transit ridership, carpooling, walking and cycling at the College.

This survey indicates that motor vehicles are the primary transportation mode of choice, followed by transit and walking, then carpooling and finally cycling. There is a large difference in modal choice between the Lansdowne and Interurban Camosun College campuses. Interurban campus has a high percentage of single occupancy vehicles arriving on campus, while Lansdowne has a high percentage of transit riders and pedestrians arriving on campus.

Recommendations

- Camosun College to conduct modal split survey counts annually during the second or third week of October. Furthermore, this should be supplemented with a bi-annual self reporting mode choice survey.
- Extend the time frame of the counts. In the morning the counts would run from 7:30am-10:30am and in the afternoon counts would run from 2:30pm-5pm.
- Motorcycles should have a separate category in the next modal split survey.
- Transit riders could be counted separately from pedestrians in the next modal split survey- this may require additional counters.
- BC Transit should be contacted for route and stop information, before modal split survey occurs.
- Contacts with BC Transit should be maintained and more detailed passenger loading and unloading stats obtained, as these become available.

Works Cited

Camosun. About Camosun. 22 Oct 2010. 18 November 2010 <<http://camosun.ca/about/>>.

Litman, Todd. Camosun College Transportation and Parking Management Plan. Technical Report. Victoria B.C.: Camosun College, 2008.

—. "Performance Evaluation - Evaluating Progress towards Planning Objectives." 12 November 2010. Victoria Transport Policy Institute. 18 November 2010 <<http://www.vtpi.org/tdm/tdm131.htm>>.

Shaefer, Anny. Getting Here: Results of the 2008 Transportation and Parking Survey. Survey Analysis. Victoria: Camosun College, 2009.

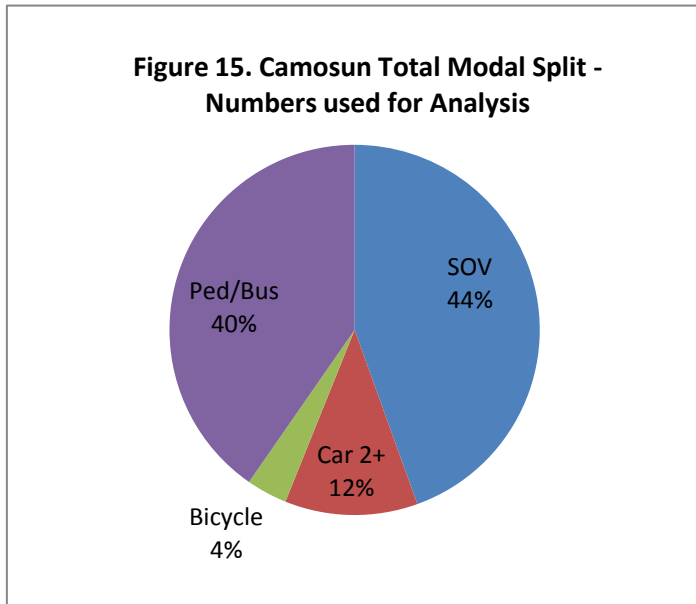
Appendix A – UVIC/Camosun Comparison

Camosun College analysis focused on the vehicles coming to campus. University of British Columbia has done a similar analysis. The University of Victoria analyzed modal splits differently. Their analysis looked at the number of drivers and the number of passengers in separate categories. The following show the two different analyses of the same data set.

Camosun Modal Split Data

Table 6 below shows Camosun Modal Split data, presented in the same way as in the body of this document.

Table 6. Camosun Modal Split Data							
Car with 2, 3,4 or 5 occupants (Count is for each vehicle not for each individual in vehicle)							
	SOV	Car 2	Car 3	Car 4	Car 5	Cycle	Ped/Bus
Lansdowne	2089	566	41	6	1	269	2653
Interurban	2891	619	48	10	8	130	1862
Total	4980	1185	89	16	9	399	4515

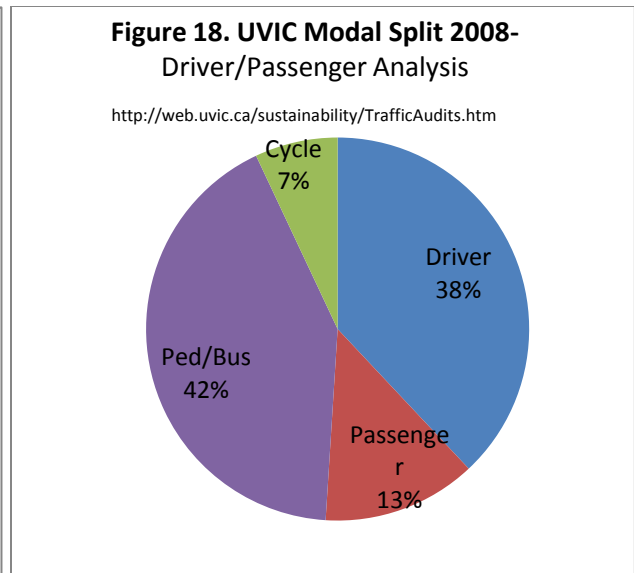
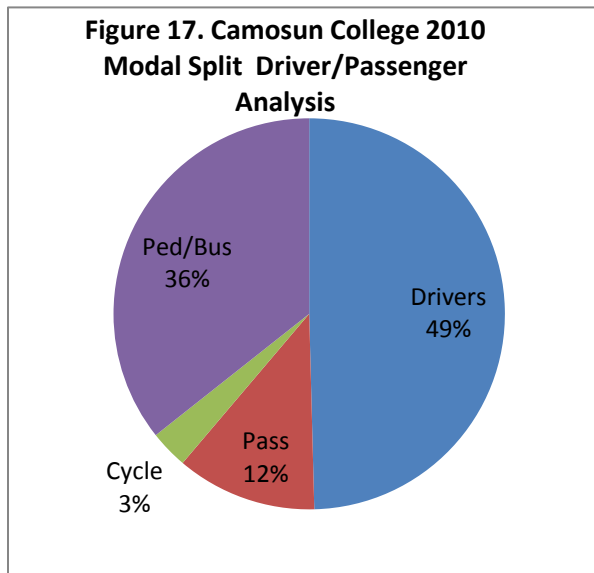


Camosun Mode Share Data – Analyzed using UVIC approach Driver/Passenger

Table 8 below shows Camosun Modal Split data analyzed using the same approach as UVIC. This approach consists of separating vehicle passengers from vehicle drivers.

Table 8. Camosun Mode Share Numbers Using UVIC style Driver/Passenger Analysis: Separating Drivers and Passengers				
	Drivers	Passengers	Cycle	Ped/Bus
Lansdowne	2704	670	269	2653
Interurban	3576	801	130	1862
Total	6280	1471	399	4515

[2008 Camosun transportation survey figures were virtually identical to the modal split shown in the 2010 modal split count. We had considered including them, but they didn't seem to add any context or extra information.]



How?

Camosun College counted each vehicle that contained 1, 2, 3, 4, 5 and 6 people giving them a count of one, for each type that entered the campus. In order to separate drivers and passengers for the UVIC analysis, the Camosun numbers had to be broken down.

E.G. Cars with 2 were multiplied by 2 then half the contents were put into the driver category and half went into to the passenger category.

APPENDIX B – Getting Here Survey

Camosun Modal Split and 2008 'Getting Here' Survey

Table 9 below shows Camosun Modal Split data and the "Getting Here" 2008 Bi-annual survey results for the question: "What is your usual mode of transportation to campus?" The "Getting Here" 2008 Bi-annual survey invited students and employees to answer questions via a voluntary online platform and looked at broad transportation issues, including primary mode of transport to the college. The results for the "Getting Here" survey modes were separated into seven categories: Car, Bus, Walk, Motorcycle, Bike, Telework and other. The modal split survey modes were separated into four categories: Car, Car with two or more passengers, Bike, Walk/Bus. In order to compare these two surveys the categories have been adjusted.

Please see Figure 19 and 20 which compares the two surveys from the data in table 9.

Table 9.				
	Survey 2008		Modal Split	
	Number	%	Number	%
Car	1014	63.89%	7726	61%
Bus/Walk	503	31.70%	4515	36%
Bicycle	70	4.41%	399	3%
Total	1587		12640	

Figure 19. 2008 Bi-annual survey "Getting Here" Question 3 How do you usually travel to Camosun College?

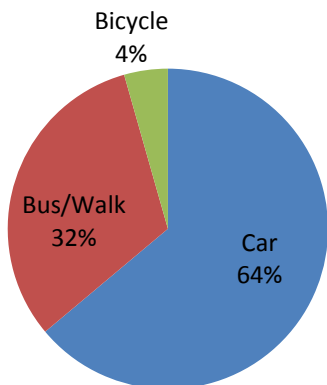
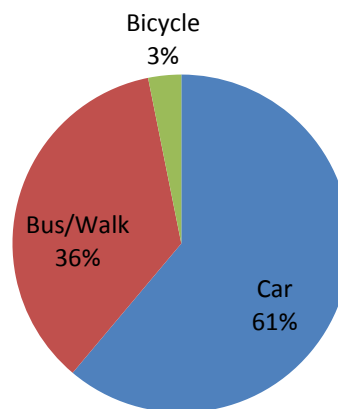


Figure 20. Camosun Modal Split for "Getting Here" survey comparison



The data obtained through the 2008 "Getting Here" survey was very similar to the modal split 2010. This shows the self reported survey information is an accurate reflection of transportation choices at the college.

Appendix C: BC Transit Data

Table 8. Lansdowne Buses Arriving and Leaving Campus During Modal Split Survey					
Morning (7:00 am - 9:00 am)					
Route # 4	Route # 7	Route # 14	Route # 15	Route #8	Route#33
7:16	7:05	7:03	7:03	7:00	8:02
7:28	7:09	7:04	7:06	7:33	8:14
7:31	7:21	7:13	7:16 (X2)	8:03	8:37
7:32	7:28	7:14	7:20	4:39	8:40
7:46	7:36	7:23	7:26		8:55
8:00	7:38	7:24	7:27		
8:01	7:51	7:33	7:31		
8:07	7:59	7:43	7:33		
8:11	8:10	7:46	7:36		
8:17	8:12	7:53	7:41		
8:19	8:13	7:57	7:43		
8:21	8:25	8:02	7:46		
8:28	8:32	8:03	7:53		
8:32	8:38	8:13	7:56		
8:35	8:45	8:14	7:58		
8:38	8:58	8:18	8:03		
8:44		8:21	8:06		
8:48		8:28(x2)	8:08		
8:50		8:35	8:13		
8:55		8:38	8:16		
8:56		8:41	8:23		
		8:43	8:26		
		8:44	8:33		
		8:48	8:36		
		8:53	8:43		
		8:58	8:46		
			8:53		
Afternoon (3:00 pm - 5:00 pm)					
Route #4	Route # 7	Route # 14	Route # 15	Route #8	
3:01	3:04	3:03	3:00	3:10	
3:02	3:13	3:06	3:03	3:51	
3:12	3:23	3:11	3:04	4:24	
3:20	3:24	3:16	3:08		
3:22	3:34	3:21	3:10		
3:30	3:43	3:26	3:13		
3:32	3:54	3:31	3:18		
3:42	3:56	3:36	3:20		
3:46	4:06	3:41	3:21		
3:52 (x2)	4:16	3:46	3:28		
3:59	4:24	3:51	3:29		
4:02	4:26	3:56	3:32		
4:07	4:37	4:01	3:38		
4:12	4:44	4:06	3:40		
4:21	4:57	4:11	3:48		
4:22	4:58	4:16	3:50		
4:26		4:21	3:57		
4:32		4:26	4:00		
4:41		4:31	4:08		
4:43		4:37	4:10		
4:50		4:41	4:18		
4:52		4:47	4:20		
		4:51	4:28		
		4:57	4:38		
			4:40		
			4:48		
			4:50		
			4:58		

Table 9. Interurban Buses Arriving and Leaving Campus During Modal Split Survey				
Morning (7:00 am - 9:00 am)				
Route # 21	Route # 8	Route # 39	Route # 83	
7:00 am 7:28 am 7:47 am 8:06 am 8:26 am 8:48 am 8:56 am	7:29 am 8:02 am 8:32 am One additional am bus added	7:16 7:39 7:53 8:16 8:20	7:55 am 8:13 am	
Afternoon (3:00 pm – 5:00 pm)				
Route # 21	Route # 8	Route # 39	Route # 83	
3:22 3:45 4:02 4:24 4:40 4:54	3:12 pm 3:25 pm 3:50 pm 4:27 pm	3:27 pm 4:11 pm 4:41 pm	3:22pm 4:25 pm	