

UBC Transportation Planning: UBC Athletics and Recreation

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UBC Transportation Planning

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INTRODUCTION

A Sustainable UBC

In recent years, the University of British Columbia (UBC) has become a beacon of sustainability. With wide-ranging initiatives such as the Climate Action Plan, Place and Promise: the UBC Plan, and the Sustainability Academic Strategy, UBC aims to be at the leading edge of sustainability in all aspects, from teaching and research, to operations. One of the major initiatives is the Transportation Plan, originally drafted in 1998, and updated in 2005. The plan examines direct transportation services (those provided by the university) as well as transportation of staff, students, and faculty to its Point Grey Campus and sets out targets for the upcoming years. The Transportation Status Reports measure the progress toward these goals. According to the 2010 Transportation Status Report, 49% of the UBC community currently takes transit to campus (the large proportion is attributed to the introduction of the student UPass in 2003), while the remaining majority (48%) arrives in vehicles, with either single or multiple occupants. Goals in the 2005 plan included expanding the UPass program to staff and faculty, implementing a campus shuttle service, and improving end-of-trip facilities for cyclists. While the first goal has not yet been achieved, some progress has been made toward the latter two. UBC is required to report emissions data to the provincial government. While emissions data from commuting is not included in these statistics, UBC includes them under 'Scope 3' (indirect emissions) in the Climate Action Plan (UBC 2009).

Athletics and Recreation (A&R)

The Department of Athletics and Recreation, as a crucial constituent of campus life, is supporting the sustainability vision of the university by exploring ways in which it can reduce the footprint of its activities. An environmental impact study was commissioned (Dolf, forthcoming) and found that significant improvements can be made towards this goal by reducing the carbon emissions associated with travel to sports events. UBC A&R would therefore like to target this area, independently of work the university is undertaking, because these indirect travel emissions are not measured or reported under Scope 3. Therefore, by analyzing the transportation patterns both at UBC and A&R events through the modes of transport, this project aims to come up with a better understanding of carbon emissions around campus, and will provide a more robust picture of the sustainability of travel at UBC as a whole. Below is a description of the context to be considered when examining alternative transportation options for team members and spectators.

Scope

Given the large number of spectators involved, this project will focus on UBC Athletics events, rather than activities of UBC Recreation. Although team travel has a large impact on the total emissions (Dolf, 2012), we chose to focus on spectator travel to local games, as we believe that this can be more easily affected through behaviour change. This project proposes various options to address this.

The accessibility of bus stops can be a factor that can determine the amount of bus travel to the games. Dolf (2012) found that when games occur at the War Memorial Gym, a higher percentage of participants bus to campus, likely due to the close proximity of the bus stop to the venue. Conversely, less people took the bus to games at the Thunderbird stadium, where there is a lack of nearby bus stops. Given this, the project will mainly focus on events that take place at the South Campus facilities.

Current Transportation Situation

According to the 2010 Transportation Status Report, the vast majority arrived at UBC by either transit or in vehicles (see Table 1). For UBC Athletics and Recreation events, a second study compiled data from eight games (Dolf et al., 2011) and showed that, for spectators and staff, cars are by far the most frequent mode of transport. The next most frequent mode of transport is buses, followed by individuals who walk. The fourth most common means of transport includes the individuals who travel by plane, then people who cycle. The distances involved with each mode of transport differ. Distances that people flew varied dramatically, while those that drove came from Vancouver and neighboring cities. Bus rides were more numerous with individuals who lived within the City of Vancouver. Cycling involved people who lived near campus, and finally walking was more popular with people very close to campus.

Table 1: Travel modes to UBC campus and UBC sporting events

Travel Mode	UBC 2010 Transportation Status Update	8 UBC Games (Dolf , 2012)
Bike	1%	3%
Bus City	49%	10%
Bus Coach	N/A	6%
Car*	48%	66%
Plane	N/A	5%
Walk	1%	11%
Other	1%	0%

**includes single and high occupancy vehicles*

Note: totals may not add to 100% due to rounding

Combined with the introduction of the UPass, the university is reducing the number of vehicles that travel to/from the campus by readjusting parking prices and limiting the supply of parking spots that are available. According to the 2003 Campus Transit Plan, the campus comprises 11,000 parking spaces, 4,900 of which are located in the 5 parkades available, with the rest located in other parking areas and along the sides of streets. By encouraging different methods of transportation to/from the campus, the university has been able to reduce the amount of parking stalls available and use the space provided more efficiently. It is estimated that by 2021, parking spots will be reduced by more than 3,600 spaces (UBC 2003), including those at one parking lot at the UBC Thunderbird Stadium.

Impact on Neighbourhoods

The West Point Grey Community Vision outlines that “residents have a strong interest in the environment”. It is hopeful that this would encourage local residents to use alternative transport methods to reduce the GHG emissions related to UBC Athletics events.

The impacts of any proposed changes to transportation on the communities of West Point Grey and UTown could include increased bicycle traffic or decreased car traffic. In turn, air quality would be improved.

Although the main population affected would be the spectators at UBC Athletics events (as it is their transport patterns we are looking to alter), the West Point Grey community and the populations at UBC who live near the South Campus athletics would also be affected. Therefore, representatives from these communities would need to be consulted to ensure their input is taken into consideration.

Goal

UBC Athletics and Recreation has the opportunity and challenge to change transportation habits of its spectators, and through this, reduce its indirect carbon emissions. Current transport initiatives undertaken by UBC, and existing relationships with agencies and neighbourhoods, will inform this project. The goal is to reduce the negative environmental impact due to travel to UBC Athletics events, while considering the potential economic impacts and at the same time, increasing the positive social aspects.

After analyzing the data showing the mode and distance travelled by spectators, a number of options were suggested in order to reduce GHG emissions associated with UBC’s A&R department. The options proposed are online streaming, transportation planning app, cycling initiatives, shuttle reroutes, and a walking bus. Each will be explained in further detail in the following section.

OPTION #1: FILMING GAMES FOR VIEWING ONLINE



Concept

Dolf's study found that although the number of spectators that chose plane travel to arrive at games was low (4.5% at 8 games surveyed), the associated travel distance travelled is extremely high (61.7%), as are the associated carbon emissions. If these spectators had the opportunity to watch the athletes play without having to travel to the game, those emissions could be eliminated, assuming they were flying for the sole purpose of watching the game.

Games could be streamed live, and/or recorded and posted on a website after the game. The first option may be lower quality but would not need extra infrastructure. The second option would allow for higher quality, but there would be a delay in viewing. At A&R venues in south campus, there is only a wireless connection, which could limit the quality of videos if live streamed.

Impacts

Environmental

The significant carbon emissions associated with plane travel would be reduced, and replaced by those of a small number local individual (the camera people, technician, and commentator) travelling to the game.

Economic

The spectators who fly to games would save money otherwise spent on airfare. There would be a cost for UBC A&R to hire two camera people, a commentator and a production technician, as well as for necessary hardware (cameras, switcher) and software (to stream). This could be offset if local businesses were invited to advertise during the broadcast. Adding an internet connection to the venues for higher quality video would likely incur some costs.

Social

Some of the social impacts would be positive, while others might be negative. On one hand, they would be limited to seeing what is broadcast on the screen, but on the other, they will be able to watch in comfort, and save time by not having to travel. There is also a chance that attendance at games would be reduced if people choose to watch the game online rather than attending in-person. However, for local people (e.g. students) that do

not attend games, this initiative could pique their interest sufficiently for them to attend in-person. The possibility of having the games online after the fact is also beneficial to the UBC A&R community because the teams could use the videos as a coaching tool.

Benefits for UBC

UBC Thunderbird teams may be able to use parts of the videos either for advertising or for teaching purposes. An enhanced website could also be a positive outcome, as it would draw more people in and allow for other initiatives to be announced. Community members would have the option of viewing games online, resulting in increased support for Thunderbird teams.

Potential Challenges

The quality of video without a wired connection could be low with current technologies, and could be improved if fibre optic cables were in place. Qualified personnel would need to be contracted to ensure the success of the broadcast.

Stakeholders

Stakeholders would include the spectators in question, along with the cameraman, who could be someone from Media Group at UBC for example, an outside contractor or volunteer. The A&R webmaster would also need to be consulted in order to ensure the technological capacity is sufficient.

OPTION #2: UBC TRANSPORTATION PLANNING APP



Concept

UBC transportation planning has the opportunity to pilot a rideshare app through a joint venture. Carsurfing and Skwez are both companies that have expressed interest in working with UBC, and we feel that Skwez is a better option because it is a local company and has an existing partnership with Capilano University. The purpose of the rideshare app itself would be to allow for people who need rides to UBC to find vehicle owners going the same direction through the usage of the app. As of yet, UBC transportation planning has no apps available for smartphones, Facebook, Google or Tablets. This limits the amount of information UBC transportation planning can get out to individuals who are interested in attending the games.

A joint venture with Skwez could serve as pilot project for a broader UBC transportation planning app, with more functionalities than just ridesharing, available to all UBC students. As mentioned, Skwez already operates a rideshare app for Capilano University. Visit <http://www.csu.bc.ca/skwez/> to see how it works.

Skwez

Skwez is a company that has developed, and manages, a rideshare application. They are Vancouver based and still new, which leaves plenty of opportunities for UBC to customize the app to suit their needs. Skwez hasn't yet finished developing the app but an immediate implementation of a plugin, to view real time data of individuals coming in to and leaving campus, can be done very easily. This plugin can then be displayed on the A&R site or on the transportation planning site.

Impacts

Environmental

There are only positive environmental consequences of following through with a UBC transportation app. Firstly, it would reduce the number of single occupancy vehicles coming to games. Also, with a further development of the app with UBC, it would be feasible to make room to include promotions and updates concerning future games, which would trump the usage of fliers, and posters, due to the app's wide reach to anyone who simply downloads it, and so would reduce the paper wastage for UBC.

Economic

Riders pay the drivers based on distance; riders are required to pay them with an exact amount of cash but in the future Skwez hopes to introduce an online transaction system. The implementation of Skwez by UBC A&R would be completely free of charge, and maintenance of the associated technology is minimal, ensuring long-term economic feasibility.

Social

UBC A&R would be able to filter out information to spectators when people will be riding out to games so people can share a ride to and from games. Users of the app could have it linked to their Facebook account to have social interactions with their friends to see who will be attending games, thus encouraging others to follow through. Social media is a powerful motivator and a tool to increase the awareness in the community at UBC of the particular games available. The Skwez app allows people to only show as much or as little information as they wish on their profile, and allowing comments on rides and drivers decreases the risk of negative experiences for the users.

Benefits for UBC

A positive externality of the UBC transportation app would be its application towards individuals who seek transportation to and out of UBC, but that are not necessarily going to games. Because the app would be available to all who download it, it would allow individuals who need to get to UBC, find transportation to do so, through Skwez. The app would also provide information of how to get out of UBC and therefore could be used for individuals who need a way out of campus as well.

Potential Challenges

Because the app is still in development by Skwez, it would require some of UBC's resources to collaborate with them to develop an app that customized for UBC.

Stakeholders

The stakeholders involve individuals collaborating with Skwez, specifically a member of UBC IT, UBC Transportation planning and UBC A&R. The main stakeholders of the app would be the UBC students, as they will be the users. The app could also help UBC Transportation Planning gather data about how many individuals are getting to campus more efficiently. Finally, the community around campus would see a reduction of cars due to the increase in carpooling as well.

OPTION #3: ENCOURAGING CYCLING



Concept

Targeting cycling is a simple action to encourage participants to reduce the carbon footprint of matches. The “targeting” or “encouraging” of cycling as a mode of transport will be conducted through: having a bike valet service available, incentivizing the action by providing a small prize to anyone using the valet, publically awarding a prize to a bicyclist through a random draw at the halftime show, and ensuring the safety of cyclists by indicating well-lit, bike-only routes.

Of eight UBC Games surveyed, 3.1% of spectators arrived by bike (Dolf 2012). This is already higher than the 1% of regular trips to campus made by bike (UBC 2011). UBC A&R can use this to encourage a more fitness-minded audience that is willing to use alternative transport. This would be important to harness in new programming.

Better Environmentally Sound Transportation (BEST) runs bike valets for many events, small and large. They supply insurance, and have tips to offset costs through sponsorship opportunities. See <http://thebicyclevalet.ca/organizers.html> for more information.

Impacts

Environmental

The environmental impacts of the project are all positive. The overarching effect will be reduced car use as a primary mode of transport to games thereby reducing the greenhouse gases emissions related to UBC Athletics Events. An indirect environmental impact is that a greater use of bikes for transport to games will likely encourage bicyclists to use this mode more often as well as before and after games, reducing the entire campus’ GHG emissions related to other trips.

Economic

The economic impacts of this program would be the cost of bike valet supplies (tent, fencing, and racks), security to protect the bicycles (however this could be a volunteer), the awards, and the safety measures. However, the economic benefits of a new and fun outreach campaign would likely bring in more audience members and thus (at least partially) offset the costs.

Social

The social impacts of this initiative will be community building and community based social marketing. By engaging the entire community in encouraging bicyclists through the prizes given at half time, a community norm of cycling to games is developed. Cycling becomes a celebrated and positive action and the athletics community will begin to foster the change of mode. As well, by having more cyclists, the lobby for safer routes to the south campus facilities becomes a much stronger voice.

Benefits for UBC

A co-benefit is that with more cycling to Athletics Events, more people would be encouraged to cycle in general. This culture of cycling fosters healthier lifestyles thus indirectly decreasing health costs. As well, a partnership with other bike programs at both UBC and beyond could be highly beneficial to UBC Athletics. These programs could include the AMS Bike Co-Op, the Bike Kitchen, or the City of Vancouver's soon-to-pilot bike-share program run hand-in-hand with a bike-share on campus. If successful, the bike lanes around south campus could be made safer, and leave a positive legacy to cyclists at UBC.

Potential Challenges

The potential challenges of such a concept is its longevity. In order to keep up the bike valet, security, and prizes, a constant item in the budget must exist. However, over time the prizes will not be necessary and perhaps parking services could take over the bike valet as car parking demand decreases.

Stakeholders

The key stakeholders in this project are the UBC Athletics staff, who would be implementing the program; Transportation Planning, which would be responsible for providing the additional bike racks; and Campus and Community planning who could help with improving the safety and lighting along bike routes. In regard to safety, Campus Security and AMS Safewalk (safebike) programs could also be engaged.

OPTION #4: SHUTTLE RE-ROUTES



Concept

According to the spectator-staff travel survey (Dolf, 2012), the results collected show that there is a huge number of people (exceeding 70%) that are still travelling to/from the varsity events using transportation methods that leave a large carbon footprint. The amount of people driving to the games is at 65.7%. These results were surveyed over 8 different games with 6 of them taking place at the south of the campus while the other two by the north bus loop. The results obtained uncover an important feature, which is that the number of people travelling by car to the Basketball event on the 28th of October is at 35.8%, which is much less than the average. This is likely because this event takes place at the War Memorial gym that is adjacent to the north bus loop.

The number of people using their cars for events that are on the south side of the campus is significant because the service along Wesbrook is not consistent during the weekends, which is when most of the events take place. A proposed solution is to alter the bus routes of some of the community shuttles travelling around the campus so that more people can use them to get to these events. Specifically, shuttle C20 could be routed to go down West Mall and Stadium Road, while shuttle C22 could travel to 16th Ave, down East Mall, and then back up Thunderbird Ave to continue the route (see Appendix C for proposed changes). These events will become more accessible for the community to engage in, therefore resulting in increased attendance/support for various UBC Thunderbird teams.

Impacts

Environmental

Carbon emissions associated with the spectators attending the games will decrease dramatically because more people will start taking the bus therefore there are less number of cars on the road.

Economic

Spectators attending games will also be able to save money by leaving their cars at home since they will not have to pay for more gas. There would be no additional cost to Translink to reroute either shuttle.

Social

Some residents may be slightly inconvenienced by the proposed re-route.

Benefits to UBC

UBC would benefit from increased attendance at some of the games since accessibility does discourage some from attending games. This would also promote UBC's image towards becoming a more sustainable institution. As for Translink it would allow it to serve the public better by providing better service and offsetting costs. This would help UBC in its target to reduce emissions since this is another area that can certainly be improved upon and therefore can only yield positive results.

Potential Challenges

There is a possibility that Translink will not agree to alter the shuttle routes.

Stakeholders

The people involved in this project would be representatives from Translink, individuals from the UBC Athletics department, and UBC transportation planning.

OPTION #5: WALKING BUS



Concept

To encourage more people to walk to games, a coordinator could meet to walk groups of students/residents to the game, while at the same time increasing excitement for the games with spirit-building activities (e.g. cheering). Volunteers from A&R could be assigned to strategic locations around campus (residences, south campus) to lead larger groups of people to the game. As they walk, the volunteer could engage them through activities like cheers or trivia. Although the 'walking bus' concept is gaining popularity, there is no comparable initiative on campus. However, the initiative has been successful in Vancouver, as fans of the Vancouver Whitecaps can 'March to the Match' (see http://www.youtube.com/watch?v=pvsJ7T_eaUo).

Impacts

Environmental

There would be zero emissions associated with this initiative, making it a very sustainable option. It is intended that some people that would normally drive or take the bus would instead walk, thereby reducing overall emissions.

Economic

Volunteers would gain valuable experience in community-building. Those who choose to join the 'walking bus' rather than bus/drive would save money. Also, A&R may increase revenues from increased attendance.

Social

The social impacts would be significant. Firstly, attendance at the games would likely increase. Those that do attend would feel a better sense of connectedness through a shared experience. Fun competitions could be introduced at the game to further this cohesion, and provide a more positive experience overall. Lastly, safety of pedestrians would be increased through group travel. The exercise would provide immediate benefits, and a healthy lifestyle would be encouraged.

Benefits to UBC

Internal capacity would be developed to use the same for other events / departments on campus. UBC would be able to add this transport to its list of sustainability achievements.

Potential Challenges

This may not be an option for those who are not able to keep pace with the group (elderly, small children), although they could still attend independently. There may also be issues of increased noise along the chosen route.

Stakeholders

Volunteers at A&R would be needed. Student groups in residences and the University Neighbourhoods Association could also play a significant role

OPTIONS EVALUATION

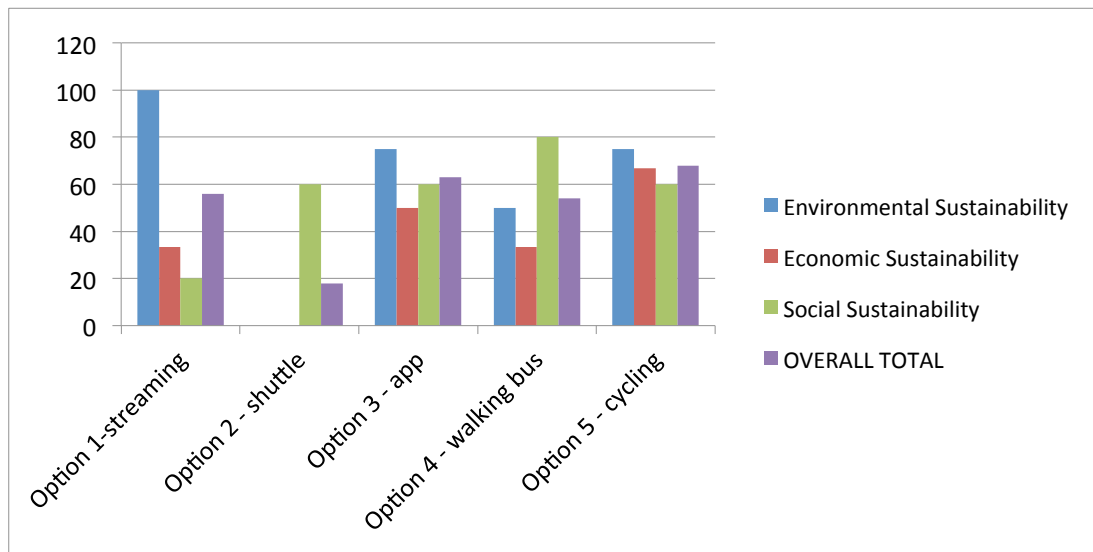
The options for alternative transportation to A&R games presented in the preceding pages were analyzed against different criteria and indicators using a rating system. To effectively evaluate the options proposed, criteria were divided into three categories: environmental, economic and social impacts. Each of these categories has its own indicators with the performance of each option proposed measured against each indicator. See Appendix A for the full matrix.

Because there is no hard data available to gauge the effectiveness of the criteria, relative indicators were used, rather than specific or absolute ones. Generally, if an indicator had no effect on the criteria, it was assigned a 0. If the effect was positive, it received a score of 1 (or 2), and if the effect was negative, it was assigned a score of -1. Some indicators were originally Yes/No, so in this way, if the option received a Yes, it was assigned a score of 1, or a 0 if it received a No. See Appendix B for the full options evaluation matrix. Because the project brief listed environmental impact as the primary goal, focusing on reducing greenhouse gas emissions, environmental criteria were weighted at 40%, while economic and social considerations were weighted at 30% each, for a total of 100%.

Table 2: Individual Scores for each criteria

Criteria	Option 1- streaming	Option 2 - app	Option 3 - cycling	Option 4 - shuttle	Option 5 - walking bus
ENVIRONMENTAL					
Reduced GHG emissions	3	2	2	0	2
Indirect Environmental Impact	1	1	1	0	0
ECONOMIC					
Professional Development	1	1	1	0	1
Contribution to the development of local economies	1	1	1	0	1
Affordability for UBC	-2	0	0	0	0
Affordability for spectators	1	0	0	0	0
Infrastructure development	1	1	2	0	0
SOCIAL					
Attendance	-1	1	0	1	1
Collective Travel	0	0	1	1	1
Awareness - knowledge and action	1	1	1	0	1
Accessibility	1	1	0	1	0
Healthier	0	0	1	0	1

Figure 1: Aggregate scores for each category, as a percentage of best score



Depending on the priorities of the department of Athletics and Recreation, one of the categories can take precedence over the other. The UBC Climate Action Plan (2009a) states that “the University of British Columbia will advance solutions on campus that eliminate emissions”. If the Athletics & Recreation department places an emphasis supporting UBC’s long-term environmental objectives, then the best option is to stream the games/events online.

The report Place and Promise: the UBC Plan (2009b) contains as an action “Develop and implement campus and community plans that promote pedestrian friendly campuses with an integrated transportation infrastructure and a lively public realm.” Given the desire for transportation infrastructure, the cycling initiatives were found to be more economically sustainable in the long term.

The Place and Promise report also indicates that UBC would like to “Foster social sustainability through teaching, research, and community engagement that promote vibrant human interaction and community cohesion.” The analysis shows that for this reason, the walking bus would be most effective with respect to social sustainability.

Some options require more resources to implement – namely the streaming option – while others are less costly to implement – such as the walking bus. This is important if human or financial resources are scarce.

While various options have been proposed under different scenarios, these options are not mutually exclusive. This project recommends that all proposed options be undertaken. We also recommend that UBC Athletics continue research in to different travel modes in order to collect data and monitor trends to allow for continuous improvement.

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