

# Becoming Radio Active: Using Public Service Announcements to Encourage Students to Cycle



ENVS/SUST 3502

Greening the Campus

Term Project

April 13, 2011



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### ACKNOWLEDGEMENT

We would like to thank the following people for providing guidance, services, information, and advice throughout our research process:

Rochelle Owen, Director of the Dalhousie Office of Sustainability

Rebecca McNeil, Masters of Environmental Studies in the School of Resource and Environmental Studies

Mark Pineo, CKDU Radio Technician

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## 1.0 Abstract

The Greening the Campus movement seeks to foster a powerful environmentally sustainable campus culture. Transportation plays a major role in the making of sustainable choices on campus and in everyday life. This study addresses the transportation choices of Dalhousie University and University of King's College undergraduate students, inspired by a recent statistic that indicates that only 5% of students regularly cycle to and from school each day. The purpose of this project was to create Public Service Announcements (PSAs) to be played on the campus radio station while testing the effectiveness of PSAs to increase the likelihood of students to use cycling as a mode of transportation. The PSAs contained information about the Dalhousie Campus Bike Centre, rules of the road, and dos and don'ts of cycling in Halifax. Using focus groups, the researchers played the PSAs for the student participants. Researchers gathered information on how to improve the PSAs to make them more persuasive. Participants also provided information on the perceived barriers to cycling in Halifax. Students indicated that after listening to the PSAs, they were not more likely to cycle in Halifax. The main barriers to cycling identified by the participants was safety. The PSAs addressed some safety concerns, however participants found that in doing so the ads did not make cycling sound appealing, nor did the PSAs change the fact that they feel unsafe on the roads.

## **2.0 Introduction**

### ***2.1 Background***

Interest in active transportation as an alternative and preferred method of transportation is ever-increasing in a rapidly urbanizing world. Encouraged by more advanced knowledge and interest in environmental issues, as well as evidence of human and environmental health benefits, active transportation is also becoming an increasingly standard component of urban planning initiatives (Larsen et al., 2010). Research has been conducted in many areas of study exploring the cost and benefits of active transportation, effectively demonstrating that active transportation is the best option for the maintenance and improvement of human health as well the health of the planet (Health Canada, 2002; Larsen et al., 2010).

A study conducted on transportation and sustainable campus initiatives states that “the daily movement of people to campus in cars burning fossil fuels is the largest impact a university has on the planet” (Toor & Woodworth, 2004). This means that the university campus is also a site in which the possibility for significant reduction in environmental impact due to transportation is great. This research project sought to explore bicycling as a form of active and alternative form of transportation at Dalhousie University and the University of King’s College, and the use of radio Public Service Announcements (PSAs) as a means of promoting this mode of transportation on both campuses.

#### ***2.1.1 Benefits of Bicycling***

According to Canada’s Physical Activity Guide, an individual’s physical health can be significantly improved by accumulating 30 to 60 minutes of moderate physical activity each day (Health Canada, 2002). In an increasingly industrialized society, a common barrier to the

enjoyment of physical activity is the perception of time. In a study done by Health Canada (2002), Canadians declared that a lack of time is the greatest barrier to physical activity. Active transportation overcomes this barrier by including physical activity into a daily routine. In many cases cycling to work or school, for example, can save what people perceive as much needed time (Larsen et al., 2010). In fact, Health Canada declares that for distances up to 5km in urban environments, cycling is the fastest way to travel (2002).

In addition to being a healthy mode of active transportation, bicycling also functions as a viable transportation alternative to the fuel-burning automobile. Riding a bicycle can greatly reduce the greenhouse gas emissions produced in daily commutes (Frank et al., 2010). In a university setting, where thousands of people commute to and from campus each day, there is a great potential for emission reduction (Toor & Woodworth, 2004). Well-planned infrastructure such as bike routes and services, along with high-frequency transport such as buses can be highly effective methods of limiting emissions due to transportation, thus limiting the environmental impact of the daily campus commute (Toor & Woodworth, 2004).

### *2.1.2 Bicycling on Campus*

Both Dalhousie University and the University of King's College are located in the peninsular port city of Halifax, Nova Scotia. According to a 2007 census, Halifax has an approximate population of 375,000 (Statistics Canada). Of the workforce that consisted of approximately 186,000 workers in 2006, 141,000 regularly drove or were driven to work in fuel burning automobiles, while a comparatively small population of 20,660 people regularly rode their bicycle to work (Statistics Canada, 2006). There is a small but rich existing bicycle culture in Halifax, as evident in the existence of groups such as the Halifax Cycling Coalition, the Dalhousie Campus Bike Centre and events such as Critical Mass and Halifax Bike Week.

A map made by the Dalhousie Office of Sustainability displaying the locations of student residences in relation to Dalhousie University and the University of King's College, reveals that the majority of students live on the Halifax peninsula within a five kilometre radius from school (Dalhousie, 2011). This means that the larger cycling community of Halifax is easily accessible to students. The close proximity of the majority of students to campus also demonstrates that for most students cycling is a time efficient way in which to commute to and from school each day. In a recent exploratory research initiative conducted on active transportation in Canada, researchers noted that "cities with shorter commuting distances are more likely to have higher rates of active transportation" (Benthan, 2010). With this knowledge it is evident that in a city the size of Halifax, where most students live within a short commute from Dalhousie and King's campuses, cycling advocacy is not only pertinent to larger environmental issues and a way to become involved in the community, but also feasible in terms of empirical data . Cycling can certainly add an element of convenience to a student's daily life by cutting down on transportation time, leaving more time for studying and extra curricular activities.

Although there is much room for improvement, Dalhousie and King's campuses provide some services and infrastructure to the campus cycling community. The Dalhousie Campus Bike Centre is one of such services. The Campus Bike Centre has been in existence since the fall of 2009, working in partnership with Clean Nova Scotia, Dalhousie Athletics Department, and the Dalhousie Office of Sustainability. The Centre offers bike repair, maintenance and safety advice, as well as a community oriented space in which to advocate for more bike infrastructure on campus and in the city of Halifax (Dalhousie, 2011).

A recent research study conducted by the Dalhousie Office of Sustainability indicated that, despite the relatively short commute to and from school each day and the existing bicycling



infrastructure on campus, only 5% of students regularly use bicycling as a mode of transportation to and from school each day. The same study indicated that 12% of students regularly use single occupancy automobiles for this commute (Mans, 2010). The research done in this project sought to address the correlative gaps that exist between the benefits of cycling, the existence of campus and city-wide bike infrastructure, and the relatively low population of students who use biking as a mode of transportation, through the creation of Public Service Announcements (PSAs).

### *2.1.3 Cycling Public Services Announcements*

The city of Portland, Oregon, with a population of approximately 582,130 in 2009, is roughly similar to Halifax, and boasts a rich bicycling and university culture (Portland State University, 2009). The inspiration for the PSAs created in this research project came from a similar initiative that exists within the city of Portland. “Bike Portland” is a radio PSA campaign played on the local community radio station (BikePortland, 2011). The campaign started in March of 2010, and each PSA is approximately 30 seconds in length and runs during the morning and then again during prime listening time. The PSAs range from safety tips to promotion of bicycle events around the city of Portland. Since the initial setup of the PSAs, the station has created a page on its website dedicated to BikePortland, where the PSAs can be played, and links can be followed to various bicycle advocacy groups in the community (BikePortland, 2011). Due to similarities in objectives as well as similarities in the two cities themselves, BikePortland provided a useful starting point from which our project developed.

## ***2.2 Project Definition***

The research undertaken in the project sought to incorporate Greening the Campus ideology into addressing bicycling on campus, through the creation of three radio PSAs. The PSAs were inspired by those made by BikePortland, and they address existing community and

campus bicycling services , such as the Campus Bike Centre, as well as safety tips and general cycling information. In making the PSAs, the research sought to answer the question: whether Dalhousie and King’s undergraduate students were more likely to use cycling as a means of transportation after hearing PSAs. Although behaviour change is almost never affected by knowledge alone, informing the community about the specific reasons to cycle, as well as the specific resources to help them cycle, could potentially lead in the right direction toward a positive environmental change (Mackenzie-Mohr, 1995).

A University is an ideal place to initiate positive environmental behaviour. According to research done on environmental management on Canadian campuses, it said that Universities are in the position to take environmental action due to their capabilities in planning, implementation, control, and the economic scale that they can achieve. University actions can influence the surrounding communities, employers, customers and suppliers of the university (Thompson & Bakel, 1995). With this being said, it is evident that a Public Service campaign at a university has the potential to be especially effective in raising awareness while also possessing the potential to increase the likelihood of cycling as a popular mode of transportation for students. There is an accessible demographic of students on both campuses who could cycle but don’t. Measuring how likely students were to cycle instead of how willing they were made this project feasible.

### ***2.3 Scope***

The outcome of the results was determined by the size of the project. If the research wanted to truly quantify Halifax as a “bike friendly” city ,compared to that of Portland, for example, then city-wide focus groups or surveys would have had to take place. Thus, the scope of the project was limited to the Dalhousie and King’s campuses, which have a combined population of approximately 17,800 (University of King’s College, 2009). We limited the scope

further to specifically students at the Undergraduate level; a community of approximately 14,000 people (Dalhousie University, 2011). To fairly represent this demographic with quantitative data, 200 people would have to be surveyed, 55% of which were female and 45% of which were male as per the male/female Dalhousie enrollment breakdown. These are very ambitious numbers for a group of researchers in a situation such as this. With only two months to work, half of which was devoted to project organization and the preparation of the radio campaign, proportional, quantitative research and representation were left in favour of a qualitative approach.

### **3.0 Methods**

#### ***3.1 Study design***

In this study interviews and surveys were administrated simultaneously in a focus group setting to collect data. The use of focus groups is proven to produce higher response rates than questionnaires and also allows for any ambiguous information or questions to be brought forth and clarified (Palys & Atchison, 2008). Focus groups are used to collect a large amount of data in a short period of time (Hair et al., 2003). Due to the limited time span for this project, the focus group format proved to be the most logical way to collect data. Many themes were brought forth that would have otherwise not been found using closed ended questionnaires (AEEPE, 2005).

When conducting a focus group it is recommended that a structured script is followed, that each group contain six to ten participants and that three to five groups are conducted per project. It is also recommended that these participants share a commonality (AEEPE, 2005). All participants in the four focus groups conducted were Dalhousie/King's Undergraduate students. Four focus groups were conducted, and each remained within the recommended range of

participants. The focus groups were conducted by a moderator using a predetermined script. A questionnaire was also administered during the focus group interview period to collect demographic information. This information was collected to allow the researchers to see possible trends between sexes and areas of the study (degree programmes), and may help direct future researchers in this field.

The research in this study was limited to Dalhousie University and University of King's College Undergraduate students. In order to screen for this quality, students were asked upon entering the focus group room. If students did not fit the qualifications they were not permitted to take part in the group. Thus, all students who attended the focus groups were undergraduate students who fit the qualifications for the research.

### ***3.2 Participants***

A sample of 28 undergraduates (20 females; 8 males) from Dalhousie University and the University of King's College were recruited from the undergraduate population. Of the 28 participants, 15 were in the Bachelor of Arts program, 8 in Bachelor of Science program, 2 in Bachelor of Commerce, 1 in Bachelor of Journalism, 1 in Bachelor of Computer Science, and 1 in Bachelor of Engineering.

### ***3.3 Materials***

*Two study rooms.* There were four focus groups conducted within this study. Two focus groups occurred in the Mona Campbell Building College of Sustainability Board Room. This was a small room with a large table with chairs around it. The second two focus groups occurred in room 316 of the Student Union Building, a relatively small classroom, with a table in the middle with chairs around it.

*iPhone.* An iPhone was used to record the focus groups while they were in session.

*Computer.* A computer was used to edit the radio PSAs, play the PSAs during the focus groups, type the focus group recorded data, code the focus group data, compile questionnaire answers, and create graphical representations of the results.

*PSAs.* Three PSAs used in the study were created by the researchers.

### ***3.4 Procedures***

This experiment was conducted in four separate 30 minute sessions. In each session, students were asked to enter the room sit down. They were encouraged to take a slice of pizza, drink, and a cupcake. After five minutes from the advertised start time the mediator began with the opening statement (Appendix A). The moderator started out by welcoming everyone to the focus group. They informed everyone that the session would be recorded so that all verbal information could be analyzed later. The participants were informed that the study was taking place for a group project for SUST/ENVS 3502 and that the final report with all the findings from the focus group will be published on the Dalhousie website. Participants were informed that all specific views and names will not be published in the article, so they should feel free to speak their mind.

The moderator began with two opening questions: “Where are you from and are you a cyclist?” This allowed the moderator to identify cyclists and non-cyclists when directing questions toward certain people. The moderator then asked an introductory question (Appendix A). After the introductory questions, 3 different PSAs were played for the focus group participants. After each PSA was played the moderator asked the participants what they believed the ad communicated and how they thought it could be improved.

Once all three PSAs were played, some general questions were asked (Appendix A). After all questions were asked, students were free to leave. Both the moderator and researchers

thanked all participants for taking part in the study. All information was recorded with an audio recording iPhone and was turned off after the participants had left.

### ***3.5 Reliability and Validity***

#### ***3.5.1. Reliability***

Reliability is defined as the ability of a study to be repeated over and over again, yielding consistent results (Hair et al., 2003; AEEPE, 2005; Palys & Atchison, 2008). Given the type of answers and data collected within focus group interviews, it is very difficult for researchers to substantiate data reliably or distinguish small differences in the collected data. Also, small sample sizes and unstructured data collected from focus group interviews make it very difficult to categorize data into statistical formats such as mean and percentage values. Statistical information is needed in order to assess the reliability of the data. This is almost impossible with this type of data collection (Hair et al., 2003).

With this type of data collection, we must take into account aspects such as consistency and neutrality to keep the data collected as reliable as possible. Consistency in focus group research is defined as keeping internal and external factors constant so that there are fewer confounding variables (AEEPE, 2005). In order to keep this study consistent, the moderator was kept the same for all except one focus group. All focus groups were held in a small and non-threatening space and all scripted questions were the same.

To keep the neutrality in qualitative data analysis (such as focus group data collection,) the methods of the research and data collected is fully documented. A second researcher will look over this process to ensure no bias or underlying motivation has occurred in the collection of data (AEEPE, 2005). All processes in the study were documented to ensure neutrality, and an outside source was used to ensure the data collection and process was not biased.

### *3.5.2. Validity*

Validity is the ability of a research method to yield results pertinent to the study or measure what it is intended to measure (AEEPE, 2005; Palys & Atchison, 2008). If a focus group is narrowed down to a specific topic, then the results should give insight into the intended area of study. Possible factors that could overthrow the validity of the data collected in a focus group could be interviewer bias and/or professional respondents.

Interviewer bias affects internal validity of the study and may occur if the moderator is not trained in interpreting verbal, emotional, and physical responses (Murray, 2006). Interviewer bias could have been a threat in this study because the moderator was not professionally trained. In order to combat interviewer bias, the moderator attempted to stick to a strict script. A possible aspect that could threaten the external validity of the experiment could be in the selection of participants. Many marketing research focus groups pick respondents from a professional participant bank (Murray, 2006). Using professionals would make it so that the data collected is not as relevant to the general population. In this study, participants of the focus groups were recruited from the Dalhousie/King's undergraduate population. Participant's backgrounds varied, however none of the participants were professional focus group attendees.

Another factor that could affect the external validity is called the volunteering bias. There is a difference between people who choose to take part in a study and those that choose not to. Research shows that volunteers may not be representative of the whole population because they are likely more giving and eager than the general population (Bordens & Abbott, 2009).

### ***3.6 Limitations and Delimitations***

### *3.6.1 Delimitations*

The limits that pertained to this project largely resulted from the limited time-frame allowed for the study. Therefore, to be able to complete the research project on time, the researchers limited the scope of the project from active transportation to just cycling. It was discovered that by focusing on one form of active transportation, the results were consequently more focused and easier to analyze. Narrowing the research to cycling also helped to eliminate the confounding variables. The limited time-frame for this study also effected the evolution of the research topic. Because of the short period of time between proposal feedback and the deadline for the completion of the research, the methods had to be reevaluated. Originally the study was going to consist of random sampling questionnaires given to students on the street, but was changed to a questionnaire/focus group mix. This meant that more information could be gained in a condensed period of time. The researchers had a week to organize, advertise and hold 4 focus groups.

Since only four focus groups were held, participation was limited to Dalhousie/King's Undergraduate Students. This requirement excluded graduate students, faculty, staff, and the Halifax community in general. King's students were included in the study because it was discovered that the majority of King's students attend classes at Dalhousie and use Dalhousie's facilities.

### *3.6.2 Limitations*

Since focus groups were chosen to collect data instead of random street sampling, the researchers were aware that the sample size would be much smaller. With a smaller sample size data is not proportional and cannot be generalized to all Dalhousie/King's students. The data



collected is not representative to gender and area of study, but these demographics were recorded from participants for other purposes. The amount of discussion in each focus group determined the quality of the information gathered. Due to time and resource constraints, data could not be collected from every student from all campuses. Because the focus groups took place at the end of the semester academic pressures also affected the number of participants who were willing to participate in a thirty minute study.

In an attempt to recruit participants, a total of 40 posters (Appendix B & C) were placed in many buildings on Studley and King's campuses. This limited the people who viewed these posters to those who frequent these campuses. Undergraduate students on Sexton and Carleton campuses would likely not have seen the posters, thus were less likely to attend the focus group. Social networking such as Facebook and Twitter, was also used to recruit participants and all researchers sent an advertisement to relevant parties on this site. Students recruited from Facebook were encouraged to bring along any of their friends. This recruitment style further limited the study largely to friends and acquaintances of the researchers. A notice was also sent out to students in SUST/ENVS 3502 class (Appendix D). This recruitment style limited the people recruited to people in this class.

Another limitation to the study was that the PSAs were played in a focus group setting that is : a) not on the radio, b) not in the setting in which they normally listen to music, and c) not in an environment that fosters multitasking. In other words, the focus group sampling does not capture the typical radio experience and the potential distractions that accompany this experience. This difference in setting may have affected the level of focus and attention given to the PSAs by the participants.

In conclusion, there was much to be done in the time between the writing of the proposal to the deadline for the final report. There was less than two months to write radio scripts, record PSAs, conduct focus groups, process the data and formulate it into a cohesive project. Time was by far the most limiting factor in this study. In working within the time-frame, there were many avenues that were intentionally and unintentionally excluded from the project in order to meet the final deadline.

## **4.0 Results**

### ***4.1 Focus groups***

The barriers to cycling in Halifax discussions had themes in all the focus groups such as safety, poor infrastructure, traffic and weather. The most common theme for both cyclists and non-cyclists was safety, they did not feel safe riding a bike in Halifax. A non-cyclist responded that they would only cycle if it was allowed on the sidewalk, but it is illegal, so they do not bike at all. Safety on the streets of Halifax ties in with the other major themes of poor infrastructure. Examples of these concerns were; poor road maintenance, lack of bike lanes, and storage of bicycles on campus. Drivers not respecting cyclists on the road and a lack of bikeshare programs or facilitated bicycle accessibility on campus were also an issue.

The overall major response to the effectiveness of the PSA's was negative during the discussions in the focus groups (Table 1). All four focus groups discussed that the PSA's were not effective enough to encourage non-cyclists to cycle. This sentiment was shared and discussed with both non-cyclists and cyclists during the focus groups. There were exceptions to this as represented in Table 1. The number of negative responses in the focus groups, as indicated in Table 1, emphasized that more people thought the PSA's presented in the focus groups were ineffective. The response to the first ad was that many found it too long and some people thought

the ad did not hold the listeners attention. The second PSA had more positive response, for example, “It (PSA #2) was in an upbeat tone and then I was like oh.. I want to cycle.” (Table 1). In group 1 the cyclists thought that the information presented was redundant while in group 4 some of the information was new to the non-cyclists. The response to the 3<sup>rd</sup> PSA had the most varied response out of all of them. Some people liked the opening sequence because it grabbed the attention of the listener, but with other people, such as one person in group 4 specifically, it was so disturbing that they did not listen to the rest of the PSA.

Table1. Sample of the responses in all four focus groups and whether listening to PSA’s will make non-cyclists more likely to cycle

Positive responses		Negative responses	
Individual PSA’s	PSA’s in general	Individual PSA	PSA’S in general
“I think it (PSA) helped”.	“...people don’t listen to the radio when biking so in this case it (PSA) would be successful”	“I don’t listen to the radio, so I would never hear this ad anyway”	“I think it (Radio as a medium) is becoming less (relevant). I don’t think you can argue that less and less people are listening to the radio now than they were, like, ten years ago. But in a university setting I think more people listen to CKDU than the other Halifax radio stations .But in terms of your options there isn’t really a whole way to get it out to everyone because not everyone is going to listen.”
“It (PSA #2) was in an upbeat tone and then I was like oh.. I want to cycle.”	“ yes PSAs can be effective”	“I am a non-cyclist and I wasn’t encouraged by it (PSA)”	“I think social media would be a good way, I know so many people who communicate through facebook these days ..... It definitely reaches out to a younger generation too because you wouldn’t see as many middle aged people biking around the city as you would younger people”
“The first ad was made me feel like I already had to be involved in cycling, where this one was more helping me get involved in cycling”	“.. because when people listen to the radio they don’t switch channels often, if heard in car you would think ‘oh man I should be cycling’	“..I do not necessarily think that it (PSA) will attract more bikers, it’s just going to rally the present bikers ”	“I don’t think [it would encourage me to cycle]”
	“When listening to radio usually in car, but when hear it you think you should be biking. A think about next time you would try to bike”	“still not in the city (cycling). I’ll still bike at Keji or in my hometown, which is a village, but not in a city like Halifax.”	“PSA’s don’t work very well because it is trying to give too many facts that are sometimes stretched or altered to get people’s attention. I am thinking of like TV and radio PSAs”
	“Students are looking for deals and perks. If PSA’s can communicate that then people are more likely to listen.”	“No, it’s like you brought forth all the things that made me not cycle. The backlights and reflectors and stuff is a lot to worry about. I could just walk. Too much effort to make sure you are safe on a bike.”	
		“It doesn’t necessarily make me feel safer biking on the roads because there is no bike lanes, but the information is good to know for people who do bike in Halifax”	
		“...does not instil confidence and wash away fears of how biking is unsafe.”	



Although the response to the individual PSA's from the study were mostly negative, the answer to the question whether PSA's in general would be effective had a more varied answer (Table 1). There were some people in the focus groups that thought PSA's could be effective if they were tweaked and made with targeting non-cyclists in mind. Some of the positive responses are listed in Table 1. Some of the opinions were that radio is an ideal medium because people are not as likely to turn the channels with radio compared to media such as television. People also thought it was ideal to reach non-cyclists because they could be listening to it in the car or at home. There were a few opinions that differed from this, with one person saying that people were listening to radio less often. Other opinions were that the use of social networking would be a more effective way to reach non-cyclists and increase awareness.

During the discussion in all focus groups, it was apparent that most people would not change their cycling behaviour after hearing the three PSA's. The discussion on whether the PSA's would get non-cyclists to change their transportation habits yielded a mostly negative response. In focus group one, a non-cyclist commented that hearing information about biking alone does not encourage them to use a bike more often.

When asked how they would get non-cyclists to start cycling, a lot of people said that the barriers needed to be addressed and fixed, not just changes to the content in the PSA's. As previously stated, the number one theme in all the discussion groups and the survey results was safety. Non-cyclists and cyclists said that this was the main barrier to cycling for Undergraduates in the city and giving out safety tips and information did not alleviate these fears or encourage non-cyclists in the focus groups to reconsider cycling. In some responses, the mention of safety issues in the PSA's had the opposite response, reminding them why they do not cycle in the first place. One response from a non-cyclist said that the PSA's inform the listener of people who are trying to make the roads safer, but do not reduce the fear of biking in Halifax. One strong response to this question came from a journalism student in focus group 4, who said that PSA's in general are completely inadequate because they do not give out enough information to represent the whole biking issue, and it will therefore not change people's minds. But this last response was not a theme in the rest of the focus group discussions.

The second major theme in relation to getting non-cyclists to cycle was the lack of infrastructure. All the participants, cyclists in particular, said that the poor cycling infrastructure in Halifax is keeping people from biking more often. The PSA's were effective in letting people know about the services available such as the Dalhousie bike centre and other resources that are already available through various cycling websites. Some cyclists gained knowledge of the bike centre, but most respondents already knew this information so it was not effective. Mention of the bike centre in the first two PSA's did not generally convince the non-cyclists to bike more.

#### *4.1.1 Recommendations by the focus groups*

The recommendations for the PSA's themselves were talked about extensively. The general themes in this regard were that the ads needed to be shorter, the music must be carefully

considered, and they need to be energetic to hold the attention of the listener. Cyclists recommended that to get non-cyclists to bike as a means of transportation, the PSA's should contain information on the fun of cycling, the community that is available, and the financial incentives to specifically target undergraduates, and convince them to cycle. Non-cyclists agreed that merely repeating biking information and statistics will not encourage potential new cyclists.

There were themes that permeated all of the focus groups, but there were also some themes that were stronger in specific ones. The biggest theme that was limited specifically to an individual focus group, was found in focus group one. In this focus group, there was a major emphasis on emphasizing and expanding the biking community. This was briefly touched on in other focus groups but not to the same extent. In focus group one, the major dominating theme was making a biking community around Dalhousie. Focus group two had the most negative reaction to the PSA's while the 3<sup>rd</sup> focus group was very positive. The other two groups had a more moderate response between the two.

#### ***4.2 Questionnaires***

Firstly, the results as to whether the participants listened to CKDU or the radio were clear. 18 out of 28 people answered that they do listen to the radio, but of the those who do listen to the radio, indicated that they listen to it often (Figure 2). The rest of the listeners were split in the amount of time they listen to the radio; about 50% of them listen to the radio between once a day to once

a month (Figure 2). radio,only 28%, listen to CKDU (See Figures 1 and 2).

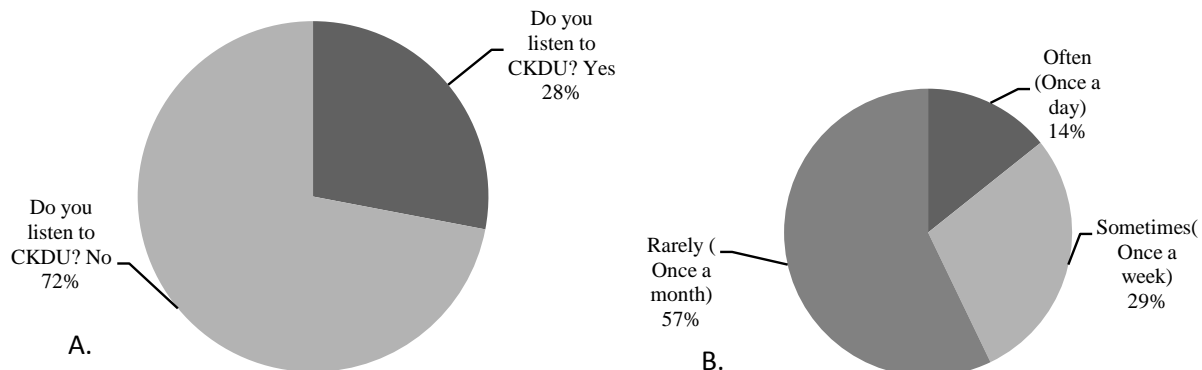


Figure 1. A. The number of respondents who indicated whether they listen to Dalhousie community based radio station CKDU. B. is how often they listen to CKDU. This data was taken from the surveys filled out by the focus groups and the other surveys filled out .

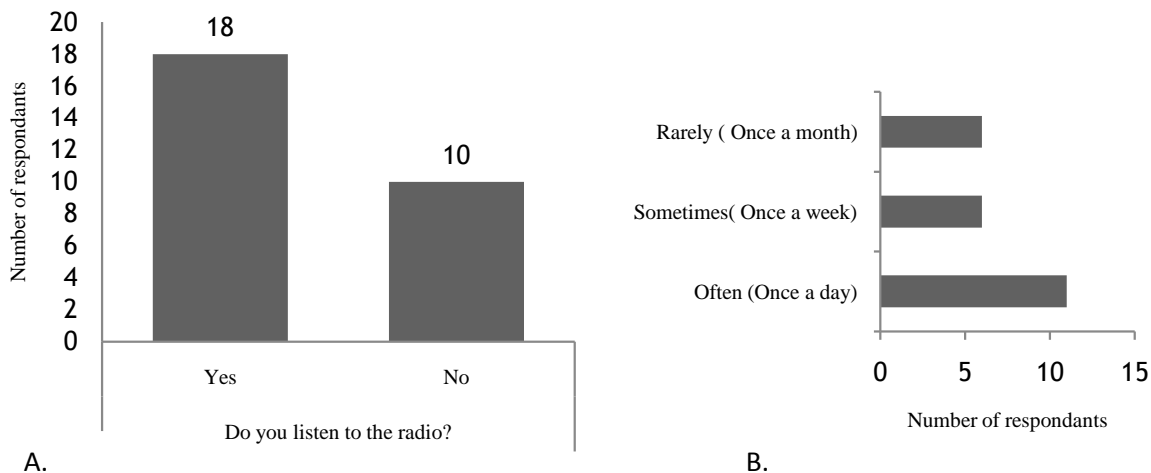


Figure 2. A. The number of people who listen to the radio, a combination of focus group questionnaires and surveys that were filled out on the street. B. the people who said yes , amount of time they listen to the radio.

Secondly, the number of undergraduate non-cyclists that answered that they will cycle more after hearing after hearing the PSA's was only 12.5%. 75% answered that they would not

be more likely to bike after hearing them (Figure 3). Although there were exceptions - i.e. one respondent replying that they were not sure whether they would bike more after hearing the PSA's - this result is consistent in all the focus group discussions.

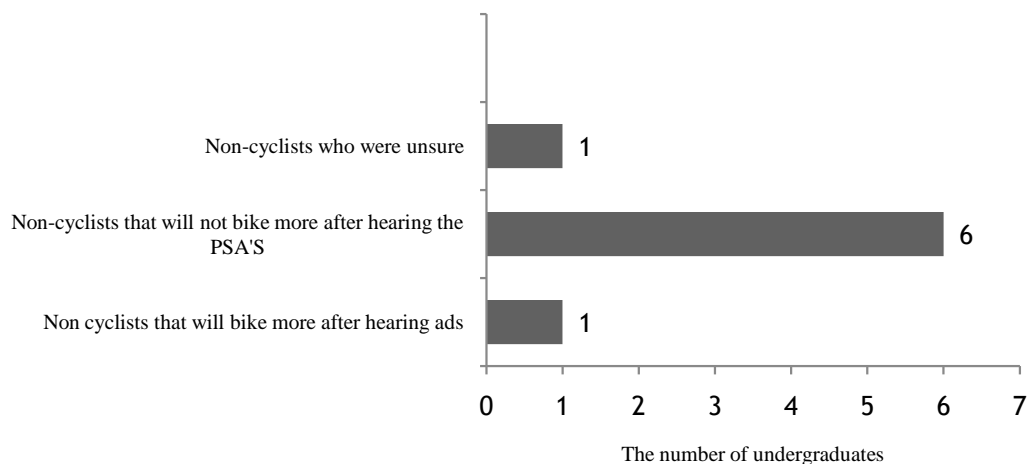


Figure 3. The percentages on whether non-cyclist are more likely to cycle after hearing the PSA's . The data was taken from four focus groups conducted at Dalhousie University with undergraduates. The data was collected from eight undergraduates.

Two people answered that they would bike after hearing the PSA's, because it served as a reminder to start cycling. Out of the eleven cyclists that filled out the survey, 9 of them said that they cycle in Halifax but two of them said that they don't cycle on Halifax. The explanation given by these two cyclists was that they cycle other places because they feel safer but do not find it safe to cycle in Halifax. These fears were not alleviated by the PSA's used in the focus groups.

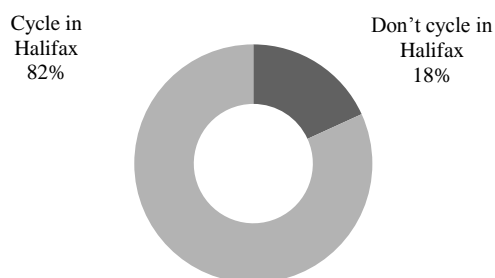




Figure 4. The total number of cyclists that do cycle in Halifax taken from the 28 questionnaires collected from Dalhousie undergraduate students.

The majority of the cyclists that answered whether they would cycle more after hearing PSA's replied that they would not because they already cycle a lot. There were more diverse answers from cyclists that do not cycle as often and they are represented in Table 2. Non-cyclists were also not more likely to cycle according to the survey results and gave similar reasons as was discussed in the focus groups (Table 2). Safety once again was a predominant theme in these responses from non-cyclists.

Table 2. The Positive and negative responses of people who filled out the questionnaires and answered whether PSA's would change their behaviours toward cycling after hearing them.

Positive Response	Negative Response
<b>Non-cyclists</b>	
"Yes because it seems more the like the norm. If everyone is doing it because it is accessible and popular."	"I'm not sure because I don't feel confident riding a bike on the road..."
"Yes it helps explain feasibility of cycling in the city"	"Kind of brought forth all the reasons I don't cycle"
"No"	"Probably not "
	"No , I have bigger priorities"
	"No , because my education and friends keep me up to date on the (bike) issues."
<b>Cyclists</b>	
"Yes the PSA's were very informative and helpful...."	"Probably not, I still don't feel safe riding in Halifax."
"Yes it reminded me to take out my bike for the summer."	"I think I already bike a lot , not sure any PSA would change that. Particularly since I don't listen to the radio very often"
"Sort of, knowing there is a building cycling movement. iT makes me feel less like an individual cyclist and part of a larger safer group."	

## 5.0 Discussion

The purpose of this research was to answer the question whether or not Dalhousie and King's undergraduate students were more likely to use cycling as a means of transportation after hearing PSAs. The overall response garnered from the four focus groups and questionnaires was that the PSAs would not make them cycle. However, this was in direct response to the three PSAs heard during the focus groups and not directed at PSAs in general. The majority of the participants disliked the sample PSAs and had a multitude of recommendations to change their content, style and length. The participants found it difficult to consider the medium as a whole and difficult to separate the three PSAs from each other. Often they would compare one to the other, ultimately stating that they enjoyed the third spot the most. This made it difficult to glean from their responses a direct answer to the research question. Thus, the mediators elaborated upon their scripted questions by asking if any PSA, in general, would be a good way to encourage cycling. By asking this question, the results became more constructive to the research.

Participants reviewed value of PSAs more positively, indicating that if their numerous suggestions were incorporated into the making of the PSA, the desired effect would be more likely to occur. The participants recommendations included (but were not limited to) highlighting the vibrancy of the Halifax cycling community, as well as the efficiency of cycling over other modes of transportation, the affordability of cycling, the health and environmental benefits, and the fact that cycling is an enjoyable way in which to travel.

In hindsight, the researchers discovered a major weak point in their scripted focus group questions, thus the need for the addition of other questions. The scripted questions created discussion centering on the three PSAs played in the group, and not the overall capacity for radio PSAs to be successful. This weakness can likely be accounted for due to the mediator's

inexperience both in focus group settings and with marketing in general. This discovery certainly stressed the importance of choosing the appropriate set of questions when seeking to answer a specific research problem. Naomi Henderson, author of *Crafting Careful Qualitative Questions, Fruitful Discussions Start with Powerful Questions* states that there are 5 points to a successful focus group: a clear purpose statement, the right respondents, a trained moderator, an appropriate research setting (a safe place for communication) and the right questions (2010). She notes that the most important of these aspects is the implementation of the right questions. If the questions are not appropriate the discussion will most likely deviate from the initial purpose of the research.

The results prove that a handful of the questions, such as “What does the ad communicate? How can this be improved?” (See Appendix A), lent themselves more to answers regarding the specific PSAs and steered the respondents from the research topic. Unfortunately, this resulted in the sample PSAs permeating the rest of the focus group discussion. Thus when the questions more directly dealing with the research question were asked, such as “Do you think PSA’s are an effective way to encourage non-cyclists to use biking as a mode of transportation? Why or why not?” (See Appendix A), they were answered in regards to the sample PSAs. The results indicate that the majority of the information gathered did not pertain to the research question. The information garnered talked about the barriers to cycling, benefits of cycling and recommendations for radio PSAs. There was only a small portion of the results that answered whether or not the participants would cycle more after listening to PSAs . Yet this is not an entirely unhelpful phenomena as the information not immediately pertaining to the research question is important to this field of research in general. There is a lack of academic information on radio PSAs and their effect on university student populations; particularly in regards to

Dalhousie University and the University of King's College. Therefore, any data collected in this field helps to fill the void and is beneficial for further research studies.

A main trend discovered in the results was that the targeted audience perceives lack of safety as the main barrier to cycling in Halifax. This is contrary to a study done at University of Western Australia (UWA) where it was found that the most significant barrier to active commuting was travel time (Shannon et al., 2004). A study done by Enbars and Hendrickson (2010) found different barriers to cycling in their study such as weather and distance. The reasons given by the participants as to why they did not feel safe were their anxieties about cycling with cars, bad drivers, poor infrastructure, lack of bike lanes etc. These anxieties were mentioned by cyclists and non-cyclists alike. It was recommended that the PSAs attempt to alleviate these concerns by directly addressing them. This was an interesting comment as the PSAs did provide safety tips and indicated the laws designed to protect cyclists here in Halifax. It seems that the information given in the PSAs on safety was a poor choice.

This also simply demonstrates the complexity that non-cyclists perceive as being inherent when attempting to cycle. Thus a non-cyclist participant explained that the PSAs perpetuated the fear she already had, and indicated that the PSA may indeed keep individuals away from choosing cycling as a means of transportation. However, it was stated that even if these barriers, or any of the other barriers for that matter, are addressed in the PSAs that it would not have the desired effect of getting undergraduates to cycle. Therefore, the city of Halifax has to address these issues and make the necessary infrastructure changes to accommodate a cycling culture in Halifax before the PSAs can be effective. This echoes the results from the UWA study in which they found "that reducing barriers is likely to be more effective than promoting the benefits of active modes [of transportation]" (Shannon et al., 2004). The general consensus was that the

sample PSAs did not remove any of the barriers to cycling and this is one of the reasons PSAs were denoted as not being able to change the targeted audiences' choice of transportation to cycling.

Furthermore, the results showed that the participants saw the PSAs as not successful in changing the desired behaviour because they were being directed at cyclists and most, if not all, the information was already known to the cyclists who participated in the focus groups. The participants recommended that showing the benefits of cycling in the radio PSAs, such as the fun aspect of cycling, how healthy and environmentally friendly it is, the affordability and the efficiency over other forms of transportation, would entice non-cyclists to cycle. The respondents noted that the benefits of cycling were greatly underrepresented in the three sample PSAs. Additionally, they encouraged the PSAs to emphasize cycling (as part of a) culture. There was discussion of showing how the individual would be a part of a vibrant community, one that was 'fun' and 'cool'. It was even mentioned that it maybe helpful in encouraging students to cycle by demonstrating the popularity of cycling. Studies show if something is perceived as being more popular within a culture, more will do it. For example, the Netherlands has a prevalent cycling culture and therefore it is strange to be a non-cyclist in this country (Pucher et al., 1999).

What is important to note is that the results from the questionnaires provided information regarding radio listenership and specifically about the CKDU audience that was not available before. During the research process it became apparent that there is no current data regarding the listenership of CKDU (Erica Butler, personal communication, 2011). The results stated that there was 28 participants, 18 of which listen to the radio and only seven listened to CKDU and out of that seven only one listened to CKDU daily. This showed that even if the PSAs were on the air, the undergraduate students of Dalhousie and King's may not even hear them. Similar results

were found at Rutgers University in New Jersey which also held focus groups and the general consensus among the results was that the participants were not aware of the radio station's existence which meant the advertisements went without notice (Szymona et al., 2011).

Regrettably, the sample PSAs did not make the targeted audience want to cycle. However, this research provided invaluable data on what Dalhousie and King's undergraduate students perceive as the main barriers to cycling in Halifax, the benefits of cycling, and what they consider to be a good radio PSA that would effectively entice undergraduates to cycle. Also it provided valuable information regarding radio listenership on campus.

## **6.0 Conclusion**

Through examining the responses of the participants in this study, it became evident that before attitudes toward cycling can be changed, barriers must be removed. The most constructive feedback gained from the participants was not solely addressed toward PSAs in general, as it was toward the lack of cycling infrastructure on campus and in the city of Halifax.

The biggest barrier to cycling uncovered in this study was safety. If people do not feel safe on the roads they will not bike. So the first action that needs to be taken must address the safety concerns of current and potential cyclists, in order to remove this barrier. Biking infrastructure must be improved both on campus and in the city. Recommended actions include the creation of more bike lanes, and safe bicycle storage throughout the city. On Dalhousie and King's campuses, students expressed a desire for more opportunities to gain access to bicycles on (such as a bikeshare program).

The information gathered that did pertain the initial research question, indicated that radio PSAs need to include many elements in order to be effective. A recommended action

would be the creation of short, fun PSAs that emphasize and reflect biking culture, and promote the financial, environmental and health related advantages to biking.

To properly research the effectiveness of cycling PSAs on a university student audience, there are a few studies that need to be conducted. Research on University radio and its audience- particularly that of CKDU at Dalhousie - would greatly increase the accuracy of the scope of the project. Long term studies done after the spots are played on CKDU would indicate the ultimate effectiveness of the spots in encouraging cycling in the community.

The lack of cycling research, especially in the city of Halifax, was a major barrier to sufficiently analyzing the data obtained in this study. There is a definite lack of research done upon campus and cycling oriented PSAs, as the small amount of information found on this subject generally related to a younger audience. Research also needs to be done on the medium of radio itself. Because of the increasing number of alternate media venues (such as smartphone technologies, etc.) perhaps another medium conveying the same information would have been more effective in encouraging student cycling.

Although the research in this project could have been improved by a variety of external and internal factors, the project was conducted to the best of the researchers abilities, and was a great stepping stone for all of them personally. This project provided a foundation upon which further research in the area can be done. Encouraging cycling is an important way in which to contribute to the Greening the Campus movement.

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## APPENDIX A

Research question we are trying to answer with these focus groups: Are Dalhousie/King's undergraduate students more likely to cycle as a means of transportation after hearing PSAs?

Welcome to everyone who came here today. We are just going to get your opinions on biking in Halifax and we are going to listen to PSAs. So everyone knows this meeting is being recorded by audio and any information will be used in a report . It is completely anonymous and we want completely honest answers.

Focus Groups

Play all three

play each one individually and get the reaction for each one then have a general discussion for all three.

Introduction 5 minutes

pass out surveys on general information

wavers

explain what a PSA is

etc..

First off we would like every one to state if they are a cyclist or not and where they are from

### **Introduction question**

What do you consider to be the main barriers to cycling in Halifax?

Play the first ad (1 minute)

Discussion for first ad( 5 minutes)

What does the ad communicate? How can this be improved?

Play second ad (1 minute)

Discussion (5 minutes)

What does the ad communicate?How can this be improved?

Play 3 ad (1 minute)

Discussion (5 minutes)

What does the ad communicate? How can this be improved?

**General discussion**

How would you encourage Dal/King's undergrads to cycle?

Do you think PSA's are an effective way to encourage non-cyclists to use biking as a mode of transportation? Why or why not?

What would you consider to be the most important information that needs to be in PSAs for them to be successful in encouraging non cyclists to cycle?

Do you think there is anything we overlooked?

**Time**

APPENDIX B

**Do you want...**

**FREE PIZZA ?**



**Come to a Focus Group**

**This Friday at 1-1:30pm or 2-2:30pm**

**@ the College of Sustainability**

**(1<sup>st</sup> floor in the Mona Campbell, 1459  
LeMarchant)**

## APPENDIX C

**Do you want...**

**FREE PIZZA ?**



**Come to a Focus Group**

**Wednesday (March 30<sup>th</sup>)**

**at 1-1:30pm or 2-2:30pm**

**In Room 316 of the SUB**

**APPENDIX D**

**FREE PIZZA ON FRIDAY!**

March 24, 2011 10:38 AM

**ATTEND A FOCUS GROUP ON CYCLING AND GET FREE PIZZA AND BAKED GOODS!!!**

Come to our focus group Friday March 25th (TOMORROW) from 1:00-1:30 or 2-2:30 in the College of Sustainability Boardroom, located in the Mona Campbell Building... follow the signs!

You will:

- Get free food
- Listen to some radio ads
- Discuss cycling in Halifax

So come out and take a break from your homework and help out your fellow classmates :)"

Thanks so much,

Natalie Verstichelen

**FREE PIZZA on Wednesday March 30**

March 29, 2011 7:50 PM

Focus group on Wednesday March 30th

**FREE PIZZA**

Location: SUB Room 316

Times: 1-1:30 or 2-2:30 (just pick one!!)

Topic: VERY secretive. If you like pizza you are well suited to join this group

## APPENDIX E

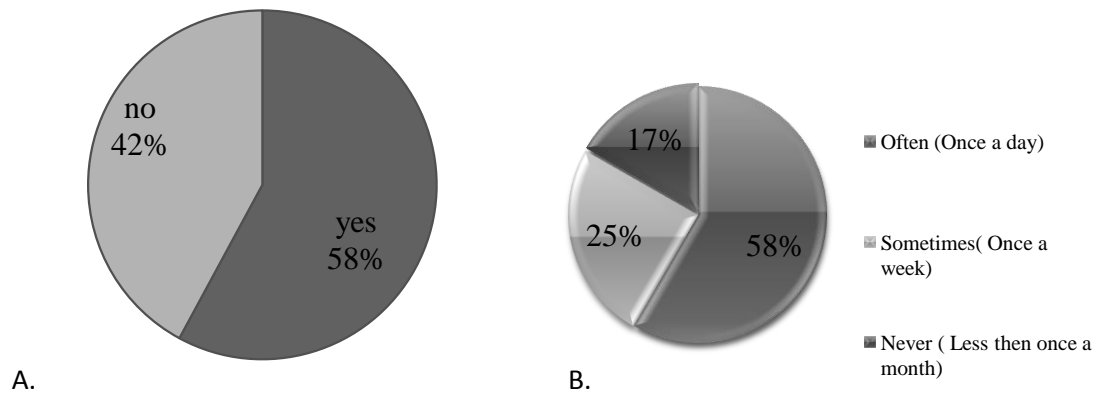


Figure 5. A. The total number of cyclists that participated in the focus groups. B is the answer to how often the cyclists cycle.



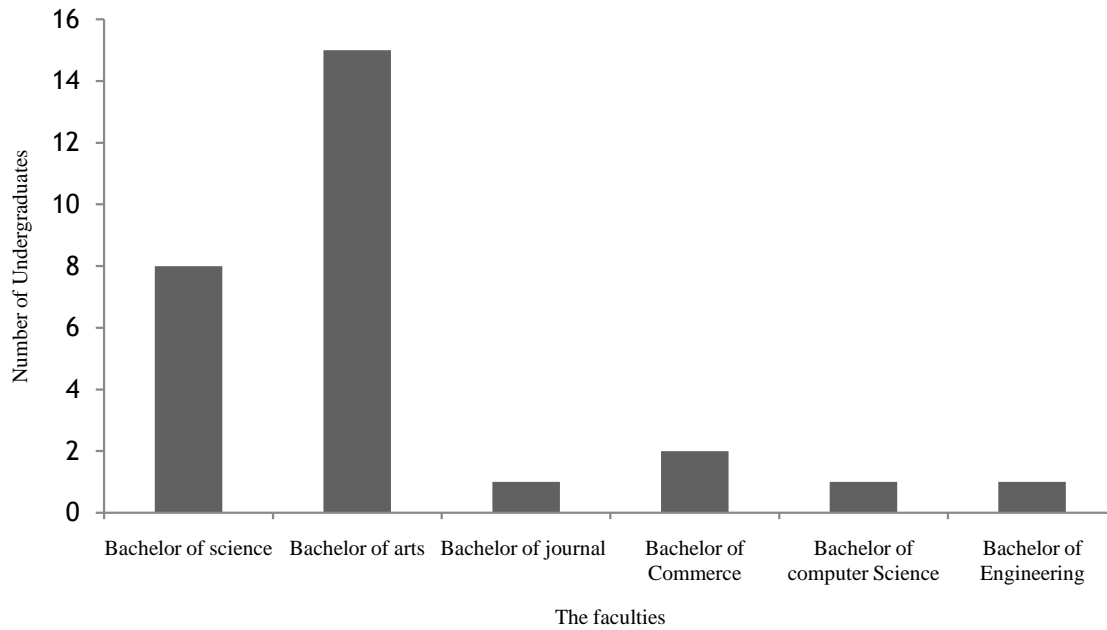
**APPENDIX F**

Figure 6. The percentages of Dalhousie /Kings undergraduate students and their degree faculty. This was taken from the combined surveys from the focus groups and the surveys distributed.