

Christchurch Coastal Pathway: Potential Use



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1. Executive Summary

1.1 Research Question:

• What potential does the Christchurch Coastal Pathway (CCP) have and how would this affect/benefit the local community?

1.2 Aims and Objectives:

- What factors may affect the level of use that the pathway would receive?
- What 'urban design' features would make the pathway would attract people to use the pathway?
- What would be the commuting and recreational benefits of the CCP? Is it likely to encourage increased levels of active transport?
- Would the pathway be a viable way of children and adolescents getting to school?
- What would be the health benefits of using the coastal pathway and active methods of transport?

1.3 Context for the Research:

- Due to the Earthquakes of 2011, the Sumner and Redcliffs area sustained severe damage.
- The causeway and beach walls need rebuilding, and local communities are calling for a shared pathway to be built.
- The existing road is used by cyclists, both commuters and recreational.
- Because of safety issues, children don't generally use the route to cycle to school.
- The CCP group would like to begin to assess potential benefits by analysing the number of children who might potentially use the CCP if it were perceived as safer to get to school.

1.4 Summary of Method:

- Qualitative data was collected through three focus groups; one with a group of adolescents, and two with parents whose children attend two local schools; Sumner Primary School and Redcliffs Primary School.
- Quantitative data was collected through an online survey that aimed to get the perceptions of the pathway of parents of school age children, and if it was a valuable way for their children to get to and from school.

1.5 Key Findings:

- Use of the pathway will vary seasonally, but locals would use it all year round.
- The pathway needs to be inclusive to all users with frequent access points with regular ramps.
- Key urban design features would be the determining factor of use, including; a continuous barrier between the road and the path, a safe way of crossing the main road, surface type and lighting.
- The pathway would provide a beneficial connection between Sumner, Redcliffs and Mt Pleasant.
- The pathway would have the potential to draw tourism into the area.
- The pathway would be used by Redcliffs parents in getting their children to school.
- The pathway would also provide a number of positive health benefits for both adults and children.

1.6 Limitations:

- A larger survey sample size would have made our findings more valuable.
- Our research timeframe was particularly short. With a longer timeframe, our research would have reached a larger number of people and provided better quantitative results.
- Due to university ethics guidelines and our research time frame, we had to be particularly careful when it came to who our research targeted. If we had the ability to consult children under the age of 16 and the elderly, the research results may have been vastly different.
- Revealed vs. Stated Preference was definitely a major limitation surrounding this research. However, until the pathway is completed this cannot be minimised or eliminated.

1.7 Suggestions for Further Research

- An examination of the environmental issues around the construction of the pathway.
- Getting a larger sample size with the survey, and a wider range of respondents of the area.
- Interviewing the elderly about the pathway, as there is a significant elderly population in the area.
- Further looking into other pathway projects to assess what works, and what does not.

2. Introduction

The Christchurch Coastal Pathway (CCP) is a community driven project, seeking to establish a 6.5 kilometre pathway from Scarborough beach in Sumner to the Ferrymead Bridge, which will provide people with a safe and scenic route, accommodating all types of users. Following the water's edge and physically separated from the road. The pathway is aimed to encourage people of all ages to engage in active commuting and will also provide a valuable recreational asset for people to enjoy where continuous access to the shoreline has been lacking. The project has recently secured funding from the Christchurch City Council who recognise the significance of the project, as well as the benefits that it will have for the local community and the wider Christchurch.

Subsequently, the pathway group wish to begin assessing the level of use the pathway may receive, as well as potential benefits that may arise from the development of a pathway. With this in mind, the main research aim was split into two parts; to investigate what level of potential the CCP has, and assess how this may affect the local community. From here, a variety of methods were used to conduct research, the details and results of which are outlined and discussed below.

3. Literature Review

Urban design is a key factor in getting individuals to use a pathway for both commuting and recreational uses. Factors such as, good lighting and surface types (Albidso, 2007), and pedestrian facilities, such as pedestrian crossing or traffic lights (Hess, Moudon, Snyder & Stanilov, 1991) play a vital role. Another significant factor will be pathway accessibility (Nelson & Allen, 1997; Dill & Carr, 2003; Abildso, 2007). It is also assumed that the further an individual lives from the pathway, the less likely they are to use it, and will also be influenced by the quantity and location of access points.

There is a growing interest surrounding the positive health benefits of active commuting and factors which influence individuals to use active commuting more often. These include, but are not limited to, neighbourhood area and route (Panter, Jones, Van Sluijs, & Griffin, 2010). There is also the possibility of some gender differences and social and environmental influences (Leslie, Kremer, Toumbourou, & Williams, 2010). For example, lower socioeconomic families would use the pathway more, as it would be more beneficial for them. Therefore, active commuting can become an essential form of daily physical activity.

4. Methodology

After developing a research question, five research aims were derived to assess the level of use the pathway may receive, with a specific focus on children and adolescents. A mixed method approach was selected, utilising both quantitative and qualitative data.

4.1. Quantitative

The pathway group were very clear that they wanted to begin to assess the potential benefits the pathway may receive, particularly through ascertaining how many children may use the route if it were perceived to be safe. In order to assess this, quantitative data was required.

An online survey, targeted at the parents of those under the age of sixteen, was used. It was recognised that children's use of the pathway, for both commuting and recreation, was going to be dependent on their parents' perception on how safe the pathway will be. Therefore, the survey explored areas such as; how children get to school now, would this change once the pathway is completed, urban design and safety features perceived as being important, how much recreational value the pathway may have and how families recreational habits may change upon completion of the pathway.

Some GIS analysis was used. A service area network was created using the pathway, crossings and road network to show how many people reside within 500 metres and 1000 metres of the pathway. This was then presented with census data, allowing assumptions to be made around how many people in the area may use the pathway, based on where they live.

4.2 Qualitative

It was clear that the quantitative data collected was not going to be enough to answer the research questions and aims. Therefore, we also utilised focus groups within our research. Three focus groups were conducted; one with a group of pupils from Linwood College, the local secondary school, another with a group of parents whose children attend Sumner Primary School, and finally one with a group of parents whose children attend Redcliffs Primary School. These three groups were selected as they would provide information surrounding the views of different demographics, but also highlight key perception differences between those who reside in the local areas.

During the focus groups with parents, questions were asked and discussion was focused around the issues and questions addressed in the online survey. This presented the opportunity to further build on what we had learned from the survey responses, but also brought to light other issues and ideas that the parents had identified, that we perhaps had not.

The second focus group with adolescents had a clear focus on the use of the pathway for commuting to the "local" high schools. Questions were asked and the discussion was focused around how they currently got to school, and whether this would change once the pathway was completed. Questions were also asked surrounding the reasons for their answers. Finally the potential recreational uses of the path for adolescents were addressed and any other design or safety features that they thought would be important.

5. Results & Discussion

5.1 Pathway Service Areas



Christchurch Coastal Pathway

Meters

Using the service area tool in ArcGIS, figure 1 was created, which provides a rough indication of where people live in relation to the pathway and how this may affect the level of use the pathway will receive. The map clearly shows that most of the areas' population live within 1000 metres of pathway crossing points; with the exception of those living further up the hills.

2006 census data for the Sumner, Mt Pleasant and Moncks Bay areas showed that there was a total of 11, 682 people living within the area (Statistics New Zealand, 2006). Of this total population, there are 2, 016 people between the ages of five and nineteen and 1,791 families with children (Statistics New Zealand, 2006). Therefore, it can be predict that the pathway will almost certainly be a valuable recreational asset for families and youth. Although active commuting is not particularly common in the area, the 2006 census data stated that 414 people have acknowledged actively commuting (Statistics New Zealand,

Figure 1: Service areas for the Christchurch Coastal Pathway

2006). Whilst these numbers are not enormous, it is still possible that in some cases the pathway will provide a safer option for those actively commuting.

5.2 Factors affecting the level of use

A considerable amount of information surrounding factors that will affect the level of use the pathway may receive, was gained from the three focus groups conducted. The most influential factor is the presence of a safe way to cross the main road. All three groups recognised this as the most important determining factor surrounding whether they will use the pathway. Currently Main Road is too difficult to cross, especially if children are crossing by themselves. This can be easily resolved by creating more pedestrian crossings, allocated near access points of the pathway, or more effectively traffic lights for pedestrians. Along with crossings on Main Road, there needs to be various access points at frequent intervals along the pathway, some with ramps for those with disabilities or buggies, to make the pathway inclusive for as many users as possible.

Results from the online survey, with 36 responses, show that 77.2% of families would use the pathway several times a week; no respondents said that they will never use it (Figure 2). From these results, it is safe to assume that a majority of the local population would use the pathway at least once a week, every week throughout the year. Frequency of use will certainly increase throughout the summer, which was confirmed by all three focus groups.



Figure 2: Frequency of recreational use, as answered by online survey respondents.

Looking at both the survey and focus group results, it is clear that the summer months will see a marked increase in the number of individuals using the CCP for both recreational and commuting activities. It will draw individuals in from around the city and increase tourism and tourists throughout the area. As the pathway will extend the current path at Scarborough Beach, it will encourage people to walk further, rather than walking up and down the same part of the esplanade.

Features such as frequent access points and location of crossings on main road and more ramps for buggies and wheelchairs, need to be included when the pathway is designed to make it as user friendly as possible and increase the number of individuals who will use the pathway. It was also noted that the pathway would be used more frequently by locals, as it will create a safe and accessible pathway connecting communities together, which is currently lacking.

The CCP will make Sumner a 'destination' for tourists to visit, as it will be unique and offer the opportunity to learn more about the history of the area and damage caused by the 2010 and 2011 earthquakes.

5.3 Important urban design features

Results clearly show that urban design is going to play a large role in the success of the pathway. Results show that a physical barrier between the pathway and the road is going to be the most important feature, along with adequate pedestrian crossings, to ensure that the pathway can be accessed safely and with ease (Figure 3).



Figure 3: Importance of urban design features as rated by online survey respondents

The results above indicate that safety is a major concern. Although it did not rank as the most important factor in the online survey, both sets of parents noted that being able to safely cross the main road would strongly contribute to how their families utilise the pathway. Path width and surface type ranked highly in both the online survey and with the focus groups. It was recognised by the focus groups, that in order to accommodate a wide variety of users, the path needs to be a generous width, and the suggested eight metres was popular.

All three focus groups were unanimous that the pathway would need to be surfaced with a smooth material, such as asphalt, which was suggested numerous times. Whilst surface type will clearly be important in terms of how the pathway is used. It was also noted that it is essential that the surface type is practical for all users, including those with disabilities, to ensure that the pathway provides a safe environment that is practical for everyone to use.

Although it did not rate that highly in the survey results, accessibility was a concern amongst all three focus groups. The adolescents noted that they do not want to have to go all the way to Ferrymead to get to Redcliffs, therefore there needs to be numerous access points' right along the pathway to make it a viable way of commuting locally. Both parents' focus groups suggested that you need to think about access points for those who use the coast recreationally, such as kayakers, as well as access points where there are ramps for those who have buggies or disabilities. Whilst not related to accessing the pathway itself, it was suggested by both the parents' focus groups that it would be useful to have access to parks and other local recreation areas from the pathway. The results for all of the above can be seen in figure 4.



Figure 4: Box and whisker diagrams for key urban design features. The black line is the mean response; the box indicates the second and third quartiles and the whiskers show the minimum and maximum values.

Finally, both parents' focus groups strongly suggested that there needs to be something along the pathway that will keep children interested. Features such as fitness equipment, local artwork, information boards and one kilometre markers were popular suggestions.

Both the survey and focus group results undoubtedly indicate that all of the top rated urban design features can be strongly associated with safety. User perception has been found to play a large role in the way in which a community will use recreational assets. Pedestrian volumes are closely related to neighbourhood design and pedestrian facilities, people are more likely to walk in areas where there are adequate walking facilities, such as good, well designed footpath networks or walkways (Hess et al., 1991).

When taking into account both the survey and focus group results, it is clear that in order for the pathway to be effective, the community needs to perceive it as a safe environment. Whether it is actual urban design features, or the pathway being an acceptable distance from the cliffs, safety was of utmost concern to all those talked to. It could be assumed that this stems from increased concern surrounding safety following both the 2010 and 2011 earthquakes. Whilst various urban design features, such as pedestrian crossings and a physical barrier between the road and pathway, would have always been necessary, it is likely that those relating to the distance of the pathway from the cliffs would not have been.

Although information boards did not rate highly on the online survey in terms of urban design, they were definitely popular amongst the focus groups, especially those with parents. This was strongly linked to the recommendation that there needs to be something along the pathway to entice children and keep them interested. Various options were suggested, and it was noted that the best pathways they have visited in other cities and towns, as well as other pathways in the Christchurch area, have been ones that do provide incentives to children. It was brought up in the Sumner parents focus group, that they prefer to go and use the recreation area at McLeans Island, as opposed to those at Bottle Lake Forest, simply because there are one kilometre markers along the pathways at McLeans Island, that keep children interested. Due to the large number of families and young people in the area, ensuring that the pathway is designed with them in mind is going to be essential in its success.

5.4 Commuting and recreational use

Recreational use

Survey respondents were asked to answer which activities they would mainly use the pathway for, and were able to select multiple activities (Figure 5). Results show that walking and cycling are the most popular potential use, with 19 responses for walking and 18 for cycling. The parents, answering on behalf of their children, said that they were more likely to use the path for cycling with 19 responses. When asked about making local trips using the pathway, 100% of respondents said that they would be more likely to make trips locally using the coastal pathway that they would have normally make via car.



Figure 5: Recreational uses of the pathway for parents and children as answered by online survey respondents

Recreational use of the pathway was the main interest of both the Sumner and Redcliffs parents. Many comments were made about the importance of creating a pathway that was interesting for children that would encourage them to use it frequently. Adults from both Sumner and Redcliffs perceived the CCP as a valuable recreational asset that would draw both locals and people from around Christchurch to the Sumner-Redcliffs area. Most of those who attended focus groups were parents of primary school aged children, who were enthusiastic about the prospect of having a pathway as a continuation of the Sumner Esplanade, which is already widely used.

Children Commuting



Christchurch Coastal Pathway

Meters

Figure 6: Map showing location of schools and areas of concern identified by residents

The focus group conducted with the parents of children from Sumner School revealed that the Coastal Pathway would have little impact on the way in which their children travel to school. Redcliffs parents were more open to the idea of the CCP changing the way in which their children get school, as it would open up a new route.

In Sumner the pathway would not encourage any further use for children getting to school, as the current Esplanade covers the same area and is generally impractical as it does not run between the houses and the school. It is the location of the majority of houses in

Sumner and their relative location to the school that makes the pathway an unsuitable route for travelling to school.



Figure 7: Survey responses for travelling to Redcliffs Primary

Overall, the parents' perceptions of current walkways, was that they do not provide an accessible, safe route to school for many of households in the Redcliffs area. Two questions were directed to the parents of children at Redcliffs School. Assuming that the school will return to its current location on Main Road the pathway could provide parents living in Monks Bay and some other parts of the suburb with an alternative route for getting their children to school. 83% of the respondents to the survey indicated that they would consider using the pathway for their children to get to school if it was to return to the original site. The same number said that they would use it to get to school at the current location, Van Asch in Sumner. Figure 7 shows the two graphs displaying the responses to the two questions. The distance that children would have to travel from Redcliffs to Sumner is much greater and is likely to be too far for most children to walk to get to school. We suspect that such high positive response rates are due to the safety that the CCP will offer to all users. This gives parents more confidence that their children can travel to school safely. Again, the survey results are backed up by the discussions that took place in the focus groups with parents who voiced their concerns over the safety of current pedestrian walkways along the road. Two key areas of concern were Wakefield Avenue and the section of Main Road between along Peacock's Gallop where the road has been narrowed by shipping containers protecting against rock fall. These areas are highlighted in green in figure 6.

Adolescents Commuting

All six participants in the adolescents' focus group currently catch the school bus to and from school each day and said that the pathway would not encourage them to cycle to school if they do not already. Some students cited extracurricular activities as a reason for not cycling as they can be required to carry sports equipment as well as their school bags. Some of them had biked to school before but did not see themselves doing so regularly even with the coastal pathway. However, a longer, more appealing pathway would be a popular location to meet in summer, when they typically spend more time at the beach. Participants of both adult focus groups said that they were unlikely to change the mode of transport they currently use to commute to work.

Following the discussions in the focus groups regarding the use of the pathway as a recreational asset, it could be concluded that the current feeling towards the pathway are that it would not have a profound effect on the way that young people travel outside of the suburbs serviced by the proposed pathway. However it would encourage them to visit Sumner in summer and possibly encourage them to walk or cycle there for recreation. Sumner Beach is a popular destination in summer for young people and the pathway could provide easier access to the beach from Mt. Pleasant and Redcliffs.

With very low rates of active commuting in New Zealand, often below 2%, there is great potential for improvement. Most European countries report that at least one fourth of urban trips are made using non-motorised transport (Pucher & Dijkstra, 2003). Many of the focus group participants indicated that they were not likely to change their commuting habits, even with the completion of a safe pathway. While they saw the pathway as an asset to the community for recreational purposes, it was unlikely to encourage more people to cycle to work. The most likely reason for this is a cultural disinclination to active commuting. A range of causes for this are likely, including the low cost of fuel and cars and the geographic location of the suburbs in our study, which means that many people have to travel over 20 kilometres each way. Cycling accidents are often reported in the media, which adds to the perception of it as a dangerous mode of transport and the current vehiclecentric road layouts only compound this.

5.5 Health benefits of active commuting

People of all ages need to travel to work and school commitments daily, however at present most of this is done using motor vehicles. The CCP will provide a unique opportunity for commuters to travel separately to traffic. As identified in the focus groups and surveys, currently commuters are discouraged largely due to safety concerns. However, when provided with a safe environment, active commuting can be a safe and efficient way to meet daily recommended exercise targets of 30 minutes continuous activity (American College of Sports Medicine, 2012). In New Zealand cycling only makes up 1.9% of total travel time (Ministry of Transport, 2011). Studies have shown that adults actively commuting consistently have lower body mass indexes, which puts them at lower risk of cardiovascular disease than those who did not commute actively (Raible, 2009).

For younger people, the establishment of a daily exercise routine increases the likelihood of an active lifestyle later in life. While data on active commuting to by New Zealand secondary school students is limited, in other countries, active commuting to school decreased prevalence of children not meeting minimum activity requirements by up to 20% (Tudor-Locke, Neff, Ainsworth, Addy and Popkin, 2002). Active commuting at a younger age helps to normalise the activity, which makes the students more likely to continue this as adults, hereby continuing to experience the positive health benefits.

6. Limitations

6.1 Sample size

The sample size of the survey was small. This means that the statistics generated from this are not likely to be entirely accurate however they tend to echo the findings from the focus groups which is reassuring. The distribution of the survey was not undertaken in the most efficient way and we were unable to advertise it in the local school newsletters, which would have reached a wider audience. It was not necessary to answer all of the questions in the survey so many of the questions received even fewer responses.

6.2 Research Time Frame

We only had ten weeks to complete this project, which is considerably short in terms of research time frames. A longer time frame would have seen a larger number of respondents to the online survey, and a wider range of respondents from the different communities, as the majority of the survey respondents were from the Sumner area (31.25%), Redcliffs and Mt Pleasant areas (both with 25%).

6.3 Ethics

Due to ethics we were not able to question children directly on their perceptions of the pathway and what activities they would use it for. For this reason we suspect that the parents' answers on their children's recreational activities would differ if we asked the children directly.

University of Canterbury ethics requirements also meant that we were not able to work with the elderly. 2006 census data states that, in the Sumner, Redcliffs, Mt. Pleasant and Moncks Bay there were 1929 people over the age of 65. It is estimated today that of the 1739 people living in Redcliffs, 22% of them are over the age of 65 (Geog309 Conference, 2012). It would therefore also be important to find out what they would like to see in a pathway, as some of their needs may have been overlooked.

6.4 Revealed vs. Stated Preference

This is potentially a significant limitation of this research. Put simply, it takes into account that people will not always do what they have stated they will do, and has the potential to work both ways. For example, although those who participated in our online survey have stated now that they may use the pathway for a variety of different purposes, this may not actually be the case once the pathway is completed. Whilst more research can be done to alleviate most of the limitations acknowledged above, this is something that cannot be minimised or prevented until the pathway has actually been developed and use can be monitored.

7. Conclusion

Taking all of the above into account, overall there is a very positive attitude towards the Christchurch Coastal Pathway within the local community. Using the research methods outlined above, we found that the pathway would be an invaluable asset for the community and would receive a significant amount of recreational use from everyone in the community. The most important factor that needs to be considered during the design process of the pathway is, by far, urban design; specifically those related to safety. It also became apparent, that the pathway needs to be designed to be practical for as many users as possible. During the planning process, it is going quintessential to include the local community, to ensure the pathway meets their needs as best as possible. Finally, the local residents we spoke to, felt that the pathway would be an excellent way to entice people back into the area. It was mentioned that tourism and recreational activities in the area have declined since the earthquakes; therefore the pathway provides an ideal solution to both these issues.

8. Acknowledgements

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10. Appendix

10.1 Online survey questions

1) How old is your child? (If you have more than one child, please answer this, and subsequent questions, for your youngest school-age child).

2) What school does this child attend?

Redcliffs Primary School Sumner Primary School Star of the Sea Other – Please Specify

If Redcliffs Primary School:

Given the current location of Redcliffs Primary School at Van Asch, would you consider the proposed pathway as a good way for this child to get to school?

Yes No – Please Explain

Assuming the school was to return to its original location, at 140 Main Road, Redcliffs, would you consider the pathway as a good way for this child to get to school?

Yes No – Please Explain

3) How does this child usually get to school?

Walk Bike Bus Car Scooter Other – Please specify

4) How long would this usually take?

Less than five minutes 6 – 10 Minutes 11 – 15 Minutes 16 – 20 Minutes Over 20 Minutes

5) If you would be willing to let your child use the pathway to get to school, would you need to accompany them to the pathway? (E.g. would you need to help them cross the main road/drop them at the bottom of the hill?)

Yes No

6) What pathway features would you consider to be important? E.g. Safety Features, Amenities, etc. Please drag and drop in order of importance:

Lighting Visibility from Road Surface Type Seating A continuous barrier between the path and road A continuous barrier between the pathway and the ocean Drinking Fountains Toilets Information Panels Width of Path Distance from Road Accessibility Means of getting across the main road – e.g. pedestrian crossings

7) Are there any other features we have missed that you consider to be important?

8) If it were to take longer for your child to get to school using the coastal pathway, what would you consider to be an acceptable increase in time taken to get to school?

0 – 5 Minutes 6 – 10 Minutes 11 – 15 Minutes Over 15 Minutes Would not use if it took longer

9) How often do you expect that your family would use the pathway for recreational purposes?

Once a week Several times a week Once a month A few times during the year Once a year Never

10) What would be your personal recreational uses of the pathway?

Walking Cycling Running Walking the Dog Other

11) What would be your child's main recreational uses of the pathway?

Walking Cycling Running Scooting Skating Dog Walking Other

12) If this path was well designed and functional, would you use it to make trips that you might otherwise normally make by car?

Yes No

10.2 Focus group discussion topics

1) Adolescents :

- How do you get to school now? How long does it take?
- Are you likely to use the proposed Coastal Pathway?
 - What would you use it for? Recreation, commuting or both?
 - Would a lack of decent cycleway from Ferrymead to Linwood discourage you to use it as a means of getting to school?
- How often do you think that you would use the path for recreational purposes?
- How far are you willing to actually travel in order to use the pathway?
- What factors would influence you using the pathway?
 - Safety features lighting, visibility, surface of path, ease of access
 - Other features seating, surface type, water fountains etc.
- If the pathway was a longer, but safer route to get to school, would you use it?
- Are there any other factors other than the ones already discussed that would influence your choice to use, or not use, the coastal pathway?

2) Parents of School Children :

- How do your children currently get to school? How long does it take?
- Would you be willing to let your children use the pathway as a method of getting to school?
 - If you had to drop your child/children at the bottom of the hill or near an access point in order to actually use the pathway, would you still consider this a viable method of getting to school?
- What features do you think the pathway would need to be considered a 'safe' option of getting to school?
 - Lighting, Visibility, Surface Type, Width of the Path, Distance from the Road, Accessibility, Means of Crossing the Main Road?
- If it took longer/was further to travel to school using the pathway, would you still consider it a good way for your children to get to school?
 - Proximity Issues
- Would you consider the pathway to be a valuable recreational asset for you and your family?
 - How often do you expect that you would use it in terms of recreational use?
- Given the obvious positive benefits of "active transport", especially in terms of health, would this encourage you to use the pathway more as a way and means of transport?
- If your children were to attend one of the local high schools would you let them cycle there using the CCP? Would it be a good method of commuting?