2014-2022

University of Canterbury Cycle Plan

Sustainability Office
University of Canterbury
11/6/2014

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2014-2022

Contents

Executive Summary

This UC Cycle Plan 2014-2022 indicates an eight year programme of works to meet the expectations of staff, students and visitors of the University of Canterbury (UC) around cycling.

It addresses key areas of cycle parking, route planning, facilities (such as showers, lockers and other requirements), and education/engagement programmes.

The Plan summarises the data that UC has collected about cycling, summarises what has been achieved to date, and uses this as the starting point to outline what is needed to achieve the University's 2007 ambition of being a "highly pedestrian and cycle friendly campus".

It is intended to provide guidance to University planners about the full extent of provision for cyclists required, in the context of a large remediation programme following the Canterbury Earthquakes. It should inform the forthcoming Campus Masterplan.

1 Introduction

In July 2013 the Sustainability Office was asked to take the lead on developing some high level principles for provision of cycle facilities. A *UC Cycle Strategy* resulted from this request, and was issued in August 2013. The need for this strategy was obvious in light of the Canterbury earthquakes of 2010-2012 and the extensive remediation, betterment and rebuild projects that resulted.

The *2013 UC Cycle Strategy* informed subsequent planning (specifically around cycle parking) and the principles developed in it underpin this *Plan*.

The *UC Cycle Plan 2014-2022* builds on data collected through the four-yearly Travel Survey, previous cycle planning documents, and a number of research projects about provision for cyclists at UC. It also expands on ideas developed during the creation of the 2011 *Draft UC Sustainability Strategy, 2012-2022*.

The *Plan* is essentially in three pieces: previous research, existing facilities for cyclists, and plans for the future.

It was signed off by the University's Transport Working Group on 10 June 2014.

Primary authors: Matt Morris with Ryan Brosnahan, with editorial input from the Transport Working Group.

2 UC's Cycling Population

The UC Travel Surveys have been conducted since the 1960s (and provide a consistent and comparative data set since 2000) and provide a rich level of detail regarding the kinds of improvements that the UC community would like to see. They also provide data as to which improvements would be most likely to encourage people to choose a sustainable travel option to get to and from UC (see Morris & Campbell, 2012; Brosnahan, 2014).

This data is therefore crucial in cycle planning. It tells us about current cycling patterns, identifies trends in cycling over time, and suggests ways that provision for cyclists could be improved as well as telling us how we can get more people cycling.

Modal Shifts

The majority of staff – currently 67 per cent – usually drive to work.

Despite slight changes across the sample years, cycling amongst staff has stayed just under 20 per cent and in 2012 was 17 per cent (Figure 1).

Like staff, students who drive to university have historically been the largest group since 2000.

Cycling saw a sharp increase between 2004 and 2008 of 7 per cent which declined only marginally in 2012 to 19 per cent (Figure 2).

Wider Christchurch Modal Trends

It is useful to compare UC Travel modes to trends in the wider Christchurch area to understand better our specific planning needs.

In the wider Christchurch areas, drivers again make up the largest percentage of commuters at around 76 per cent (Figure 3). The other three modes of

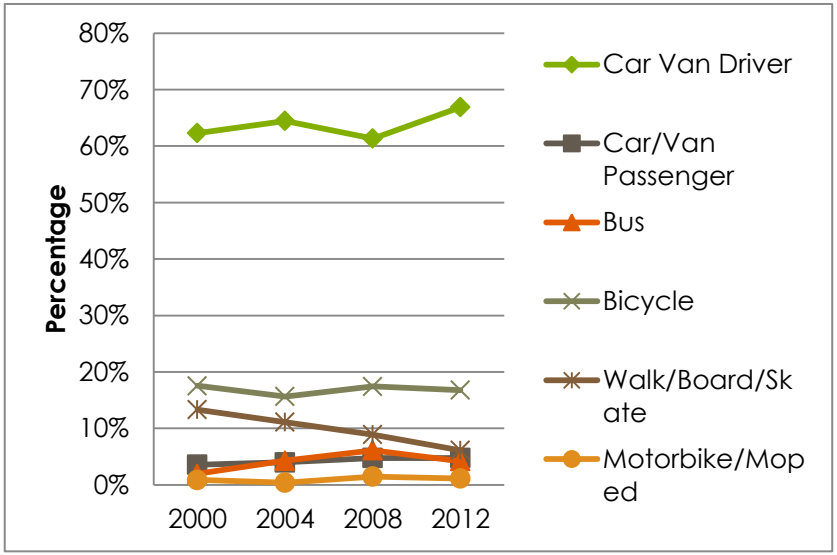

Figure 1: Staff Travel Modes, 2000-2012
Source: UC Travel Survey data

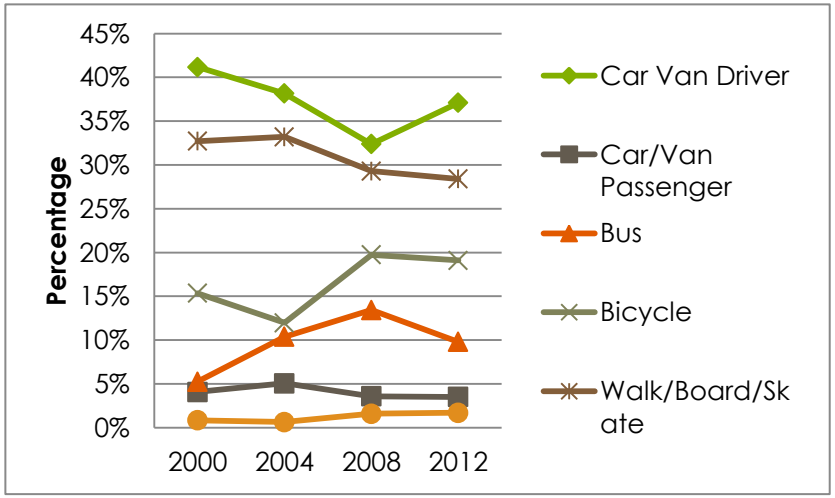

Figure 2: Student Travel Modes, 2000-2012
Source: UC Travel Survey data

transport all stayed relatively balanced between 2001 and 2013 with only minor fluctuations. The second most used mode of transport is cycling but this percentage is around half of what staff and student numbers at the University of Canterbury was between 2000 and 2013.

As far as cycling is concerned, then, the regular cyclists at the University of Canterbury are significantly higher in number than the cycling population of the wider Christchurch area, and this number appears to be growing (earthquake interruptions aside). As enrolments climb and travel routes settle down we can anticipate this figure increasing, and this needs to be taken into account in our cycle planning.

Mean Travel Distance

On the whole, most staff are moving further away from the university. This residential spread has meant a greater travel distance and a change in travel behaviour (Figure 4). It is probable that the increase in motorised transport seen in Figure 1 could be accounted for by this increase in travel distance.

The student mean distances for most transport modes in Figure 5 demonstrate less of a steady shift away from the university.

Student cycling shows a very consistent mean distance throughout the years with only 0.7km as its highest fluctuation, and a mean distance just under 4km. Walk/board/skate appears to level off in 2004 and remain at around 1.8km from the main campus. Just like staff in Figure 4, the cut-off walking distance for students sits around the 2km mark.

For staff, if the mean travel distance is 6km this may generally equate to a fifteen to twenty-five minute bike-ride each way, which is ample time to work up a sweat. Students are on average cycling five to ten minutes each way

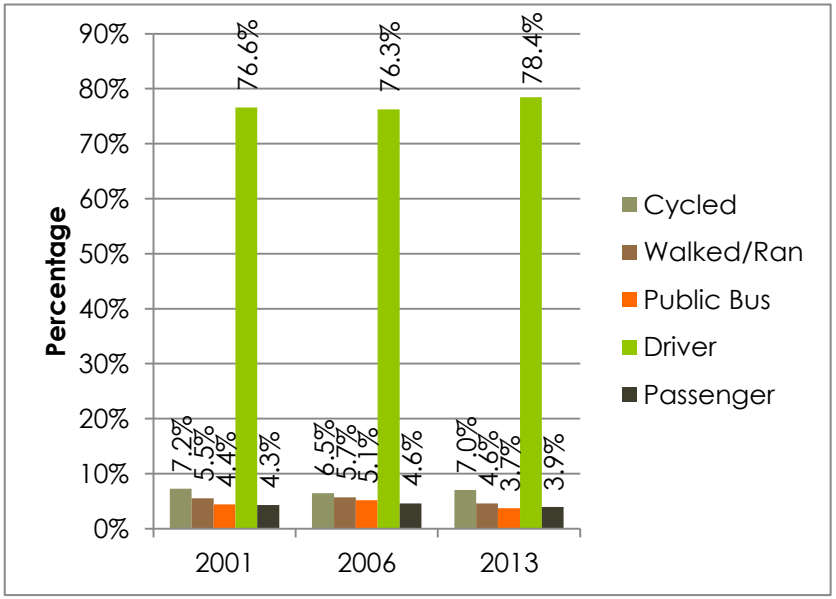

Figure 3: Wider Christchurch Travel Modes, 2001-2013
Source: Statistics NZ

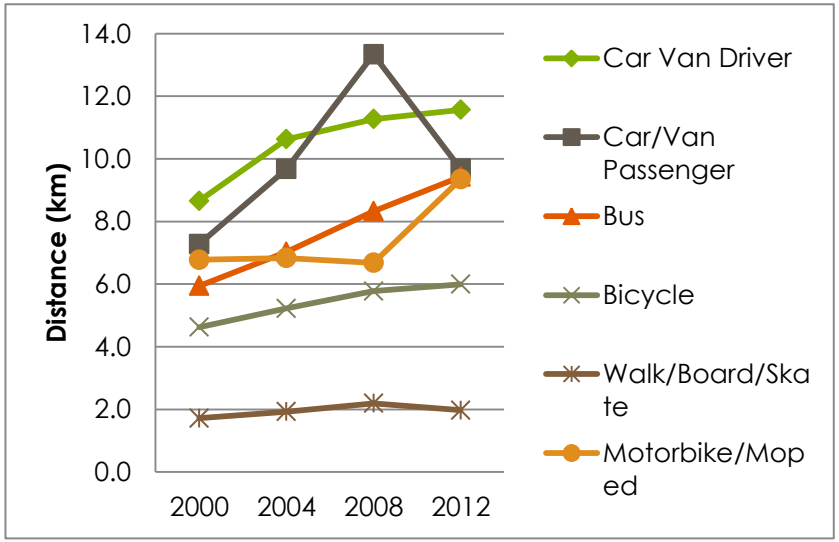

Figure 4: Staff Mean Travel Distance, 2000-2012
Source: UC Travel Survey data

and are therefore less likely to need showering and changing facilities than staff. However, this is only the mean distance, and many students are cycling much greater distances than indicated here.

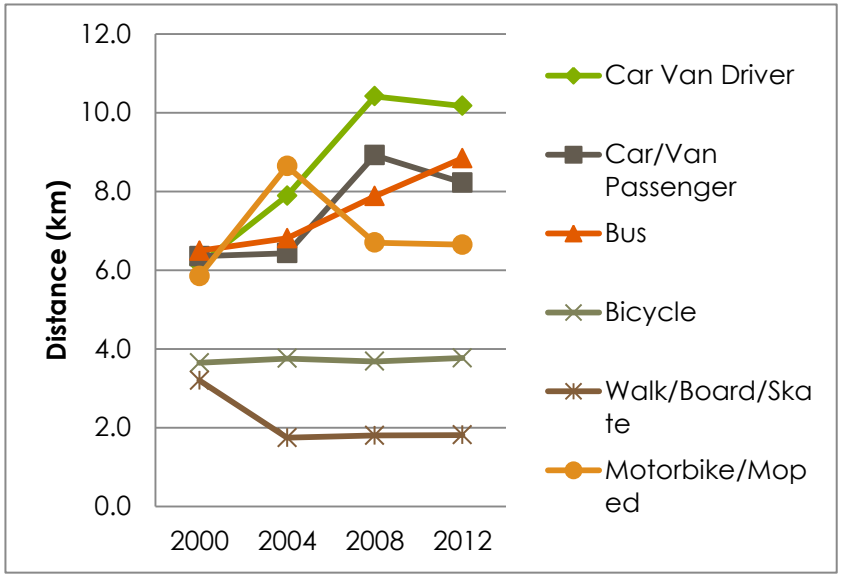

Figure 5: Student Mean Travel Distance, 2000-2012
Source: UC Travel Survey data

Encouragement of Sustainable Transport: 75th Percentile

The 2012 survey asked respondents to choose from a list of options about what would encourage them to walk, cycle or bus.

The tables below (from Brosnahan, 2014, following Prof Simon Kingham, head of the UC Transport Working Group) show those motorists who we believe could potentially cycle to university.

These motorists live between 2.3 and 7.7km from the university, where 2.3km is the 75th percentile for pedestrians and 7.7km is the 75th percentile for cyclists. In Table 4 it is clear that 'nothing' is the most popular answer for both staff and students, meaning that they believe that nothing would make them cycle. The top five answers that make up around 60 per cent of responses for all respondents are nothing, more courteous drivers, improved cycle routes to UC, less traffic on roads, and easier access to showers/changing rooms at UC.

When asked for the most important encouragement, of this group almost half of staff who drive a car/van say that nothing would encourage them to cycle to university. For students, 34.3 per cent reported that nothing would encourage them to cycle. Other top responses given for staff and students were more courteous drivers, improved cycle routes, easier access to showers/changing rooms at UC, and less traffic on the roads.

A notable difference for one of the responses between staff and student is 'cheap/free use of a bike for a year'. Only 2.2 per cent of staff chose this as the most important while 9.2 per cent of students said that would encourage them to cycle more.

These results seem to back up the claim by Geller (2006) that there are four types of cyclists; strong and fearless (1 per cent), enthused and confident (7

Cycling Encouragement - Car/Van Drivers between 2.3-7.7km						
	Staff	%	Student	%	TOTAL	% TOTAL
Nothing	111	20.2%	146	13.0%	257	15.4%
More courteous vehicle drivers	61	11.1%	136	12.1%	197	11.8%
Improved cycle routes to UC	61	11.1%	132	11.7%	193	11.5%
Less trafic on roads	54	9.8%	128	11.4%	182	10.9%
Easier access to showers/changing rooms at UC	65	11.8%	102	9.1%	167	10.0%
Fuel cost increase	28	5.1%	91	8.1%	119	7.1%
More lockers at UC	29	5.3%	69	6.1%	98	5.9%
Cheap/free use of bike for a year	18	3.3%	78	6.9%	96	5.7%
More traffic congestion	14	2.6%	62	5.5%	76	4.5%
Improved security for cycles at UC	30	5.5%	41	3.6%	71	4.2%
Other	35	6.4%	33	2.9%	68	4.1%
Help with bike skills/confidence	15	2.7%	31	2.8%	46	2.7%
Reduced traffic speed in residential areas	18	3.3%	27	2.4%	45	2.7%
Opportunity to cycle with others	3	0.5%	22	2.0%	25	1.5%
Weather	6	1.1%	17	1.5%	23	1.4%
Faster/Distance	1	0.2%	9	0.8%	10	0.6%
TOTAL	549	100.0%	1124	100.0%	1673	100.0%

Table 1: Cycling Encouragement Preferred Options
Source: UC Travel Survey data

Cycling Encouragement (Most Important)- Car/Van Drivers between 2.3-7.7km						
	Staff	%	Student	%	TOTAL	% TOTAL
Nothing	103	46.0%	141	34.3%	244	38.4%
Improved cycle routes to UC	26	11.6%	51	12.4%	77	12.1%
Other	22	9.8%	23	5.6%	45	7.1%
Easier access to showers/changing rooms at UC	22	9.8%	22	5.4%	44	6.9%
Less trafic on roads	13	5.8%	31	7.5%	44	6.9%
Cheap/free use of bike for a year	5	2.2%	38	9.2%	43	6.8%
More courteous vehicle drivers	11	4.9%	28	6.8%	39	6.1%
Fuel cost increase	9	4.0%	21	5.1%	30	4.7%
Weather	3	1.3%	15	3.6%	18	2.8%
More traffic congestion	1	0.4%	13	3.2%	14	2.2%
More lockers at UC	1	0.4%	11	2.7%	12	1.9%
Help with bike skills/confidence	2	0.9%	8	1.9%	10	1.6%
Improved security for cycles at UC	5	2.2%	2	0.5%	7	1.1%
Faster/Distance	0	0.0%	5	1.2%	5	0.8%
Opportunity to cycle with others	1	0.4%	2	0.5%	3	0.5%
Reduced traffic speed in residential areas	0	0.0%	0	0.0%	0	0.0%
TOTAL	224	100.0%	411	100.0%	635	100.0%

Table 2: Cycling Encouragement Most Preferred Option
Source: UC Travel Survey data

per cent), interested but concerned (60 per cent), and no way no how (33 per cent). The ‘strong and fearless’ is not represented in our findings as they would already cycle. That means the ‘no way no how’ group would be now be around 35 per cent and coincides with the ‘nothing’ category from our findings of 38.4 per cent. These people will under no circumstances ever be influenced to cycle.

Encouragement of Sustainable Transport: General Campus Population

The 2008 UC Travel Survey revealed improving trends in behaviour. Numbers of cyclists had increased over 2004 numbers, while numbers of motorists had decreased (although staff numbers of cyclists had declined slightly while staff driving to work had increased slightly). These changes seem to have resulted from the following improvements:

- investment in secure cycle stands
- increased cycling support (puncture repair kits, cycle maintenance workshops, and cycling events like Bike Free Breakfast).

The 2012 UC Travel Survey indicated that the numbers of students regularly cycling to university had decreased slightly, (to 19%) but was still very high by city-wide standards. A separate piece of research based on this data has revealed that of the small group who switched from cycling to driving between 2010 and 2012, many had done so due to relocating their home further from campus as a result of the earthquakes.

As opposed to determining who we felt could potentially cycle to university rather than driving, 69% of respondents self-identified as people who believe they live within reasonable cycling distance to the university. Of that group, those who did not currently cycle said they would if:

- the **cycle routes to UC were improved** and drivers were more courteous
- there were **more easily accessible showers and changing facilities** (21% of staff and students)
- there was **free or cheap use of a bike** for a year (19% of students)

The results are therefore very similar between this group and the group of drivers who live within the 75th percentile for cyclists.

In the further comments section of the 2012 Travel Survey there was also an overwhelming call for:

- **more cycle stands**, and for these to be placed more conveniently, especially outside Erskine and the James Hight Library. More cycle stands was demanded just as much as more car parks – an unexpectedly loud demand.

Respondents also asked for

- more **covered cycle stands**.
- Better, **designated cycle paths** on campus
- **bike shop and better bike maintenance facilities**.

The Transport Working Group considered all of these responses and developed its own action plan in 2012 as follows:

Desired Outcome	**Actions required**	**2012 Status**	**2014 Status**	**Person Responsible**
Improved cycle routes/lanes	UC to liaise with relevant local authority to lobby for this	In part this will be covered by the Ilam Rd Upgrade. UC will input on the CERA plan as well with	Ilam Rd upgrade completed	TWG Chair

Figure 6: Bike parking at capacity outside Erskine Building, June 2013

Figure 7: Bike parking at capacity outside James High Library, June 2013

		this in mind		
More (covered) cycle stands	Review of cycle stands required	Currently identifying best spaces	Best places will be identified as part of Campus Master Plan	Capital Projects
Free or cheap bike hire for a year	Current project underway through the UC Sustainability Office to make this possible	Proposed project with UCSA, UC Bike and Sustainability Office	UCSA trialling a green bike hire scheme in 2014	UCSA President, Sustainability Advocate
Shower/changing/locker facilities	Need to be incorporated into building remediation, and CMP	This will come up in Phase 3 of Undercroft redevelopment	Completed. Shower for staff only and only 80 lockers provided.	Capital Projects

Summary

In summary, a high proportion of UC staff and students cycle to university as their main mode of transport. Since the Canterbury earthquakes, and associated problems with the roading network and on-campus cycling infrastructure, the proportion of people at UC who regularly cycle to university has declined slightly, but not dramatically, since 2008. UC's cycling population is far higher than the city average, which suffered a similar post-earthquake decline.

Staff who cycle have, on average, also moved further away from the university, as have the numbers of staff who drive regularly, which may be another effect of the earthquakes. Students who cycle live much the same distance from university as they did in 2008, while those who drive live slightly closer.

Addressing barriers to cycling amongst a population who live close enough to cycle comfortably include, most importantly:

- improving cycle routes to university
- easier access to showers and changing rooms on campus
- free or cheap use of a bike for a year (for students).

It is recognised that there will always be a proportion of the population who will refuse to cycle or who just can't, but the improvements to cycling infrastructure listed here would encourage a sizable group (27 per cent of students and 23 per cent of staff) to switch from driving to university to cycling.

3 Past UC Cycle Planning

While improvements to cycling infrastructure have been taking place for decades, the current basic infrastructure has been in place for about ten years.

Reviews of it commenced around 2005, with two Walking and Cycling Audits, by James Wijemanne and Adnan Ali. Ali's Audit promoted the idea of a "Garden Campus", where cars were restricted to the periphery and the central campus was for cyclists and pedestrians. Mark Peacey's 2006 report on cycling at UC was very revealing about key barriers, preferred routes and cycle stand demand. In particular, his mapping of cyclist flows on campus gives some strong clues about ideal cycle route planning even in the context of a very different campus plan post-earthquakes, and informs this plan.

Wijemanne's Audit fed into the 2007 Walking and Cycling Review produced by GHD and Steve Abley Transportation Engineers. This identified that cyclists were less satisfied than pedestrians, noting in particular:

- needs for **dedicated cycle paths, more and better showers, and better support**. The Registry building was specifically mentioned as a site for more showers and lockers.
- **Covered bike stands were wanted in the Sciences and Engineering areas** (Chemistry, Physical Sciences Library, Computer Science and the Engineering back entrance to E8 and E9).
- The **lack of signage** was also highlighted as a concern – both to let cyclists know where facilities (such as showers, lockers and stands) were, and to indicate who had the right of way on paths.
- New paths were suggested for the south side of Ilam Fields and along Okeover Stream between Engineering Road and Rutherford.

University of Canterbury Cycle Improvements

- **November 2002** – Decision was made in to implement parking fees Income generated went into building secure bike stands, improved pathway lighting and the introduction of bus tracking information displays.
- **February 2003** – Parking charges introduced for students of $40 per year and $2 a day.
- **April 2003** – Parking charges introduced for staff of $40 per year and $2 a day.
- **Early 2003** – Secure bike stands built, cycle lanes built around campus streets
- **Feb 2005** – Engineering secure covered cycle stand opened (previous three constructed in 2003)
- **Jan 2006** – Cycle/walkway completed between main campus and Dovedale site
- **Nov 2006** – University wins national award for "Cycle-Friendly Commitment by Public Organisation"
- **2007** – Dr Bike initiative started which offers a free bike servicing facility
- **2007** – 'BUG' (Bicycle Users Group) established
- **2008** – Bike Breakfast
- **February 2011** – Christchurch Earthquake
- **During 2011** – Relocation of a large number of bike stands and also a loss of several due to the earthquake (including some secure ones)
- **September 2012** – Cycle Runway fashion show on bikes
- **June 2013 - 2014** – Ilam Rd upgrade with concrete separators for cyclists and delineated cycle paths around bus stops. Two new pedestrian crossings were also installed as part of this project.

UC's goal was to be recognised for *"the ease of access to the University through a range of transport modes, particularly as a highly pedestrian and cycle friendly campus that is supported by an extensive public transport network and carpooling scheme. Staff, students and visitors increasingly choosing to access the University via the more sustainable transport modes rather than through sole-occupant use of private motor vehicles."*

Figure 8: UC Cycle Runway (2012)

4 Present UC Cycle Infrastructure

Present Cycle Stands

Secure cycle stands

At present UC has secure cycle stands in the following locations:

- Engineering (due to be demolished)
- Old Maths (due to be demolished mid year)
- Law/History
- Central Lecture Theatres

Capacity and pinch-points

A visual inspection was conducted on the Ilam Campus on 30 July 2013 between 11:20am and 12.15pm, during which 797 bicycles were counted. Given that this was the middle of winter during a year of low enrolments, there was no question that the need for more bike parks was genuine.

Bike parking facilities in the following locations were either full or almost full:

- Erskine (Figure 6)
- Old Maths secure stand
- E8/E9 entrance to Engineering
- Engineering by the School of Biological Sciences carpark
- Engineering secure stand (Figures 9 and 10)
- Geography (by Commerce)
- Shilling Club and Science Lawn (Figure 7), and

Figure 9: Engineering Secure Cycle Stands

Figure 10: Engineering Secure Cycle Stands

- UBS.

Significant issues were noted in the following locations in particular:

- The back entrance to E8 and E9, raised as a pressure point for cycle parking in 2007, was still an issue (although a single small stand is now installed there),
- Bike parking around the Central Library, by the Shilling Club and also between A1-3 and 1894 Café was still completely inadequate.
- It was noted that the bike parks on the cold, south side of the Central Library were underutilised.

In January 2014 a campus-wide audit of cycle stands was completed which captured the number of bike parking spaces available as well as the number of bike parking spaces that would be available if the stands were placed more effectively. This was plotted on a map (Figure 11) along with areas where significant numbers of bike parks had already been lost and areas proposed by the Sustainability Office for new bike parks.

This exercise demonstrated that **in 2014 UC had approximately 764 less bike parks than in 2010, catering for 1704,** and of these many are not in the areas of greatest need. Appendix A itemises each of the cycle parking spaces. If we were to cater for every cyclist based on 2012 numbers, we would need a total of 3042 cycle stands.

The District Plan is currently being reviewed, and the draft review indicated that cycle stand provision would need to be increased over and above even this number. According to this **we need to increase numbers to almost 4000 parking spaces.** (Table 3) Cycle parking is also required for visitors at a ratio of 1 cycle stand per 20 bedrooms. According to this measure **we are therefore short by 2248 cycle spaces**.

	Total population numbers	% who are cyclists	# who are cyclists	District Plan review ratio	# needed according to District Plan review	March 2014 number
Students	14617	19.1	2791.85	1:4	3654.25	
Staff	1491	16.8	250.49	1:5	298.2	
Total	16108	18.89	3042		3952	1704

Table 3: Cycle parking needed for students and staff based on proportions who are cyclists, and District Plan review.

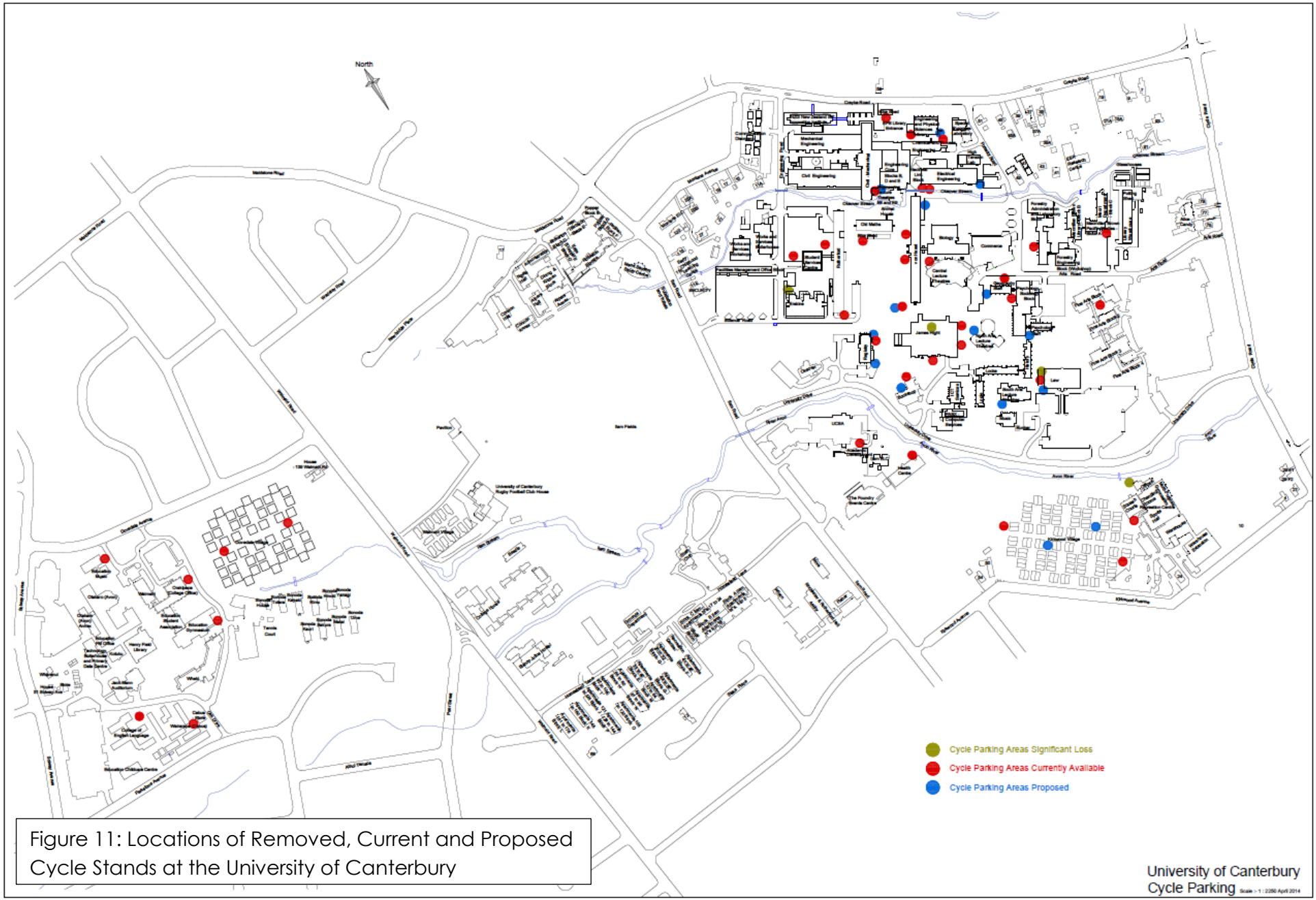

Figure 11: Locations of Removed, Current and Proposed Cycle Stands at the University of Canterbury

Present Cycle Routes

It is generally recognised that routes for cyclists, pedestrians and motorists through campus are far from ideal. As mentioned earlier, collisions between pedestrians and cyclists are common (Peacey's 2006 research showed that 48% of cyclists selected pedestrians as their greatest barrier on campus) and there are no convenient 'fast' routes through campus for cyclists.

Work completed in 2007 identified desire lines for cyclists and impediments (steps) that could be addressed in future landscaping and route planning exercises. These were plotted onto a map in 2012 by Kelli Campbell (Figure 12). This exercise underscored the need for better route planning through campus.

There is also a significant issue on the path between the James Hight Library and Central Lecture Theatres, which is too narrow for both pedestrians and cyclists. It is assumed that this area will become a pedestrian priority area. Having said this, the Transport Working Group has expressed its belief that this cannot be engineered by constructing more physical impediments to cycling, but rather by creating preferred cycling routes that will lead cyclists away from pedestrians.

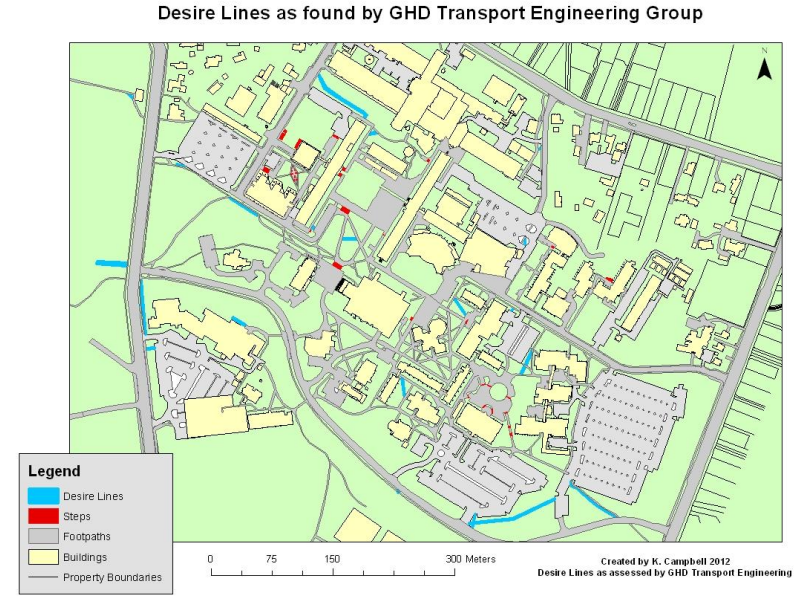

Figure 12: Desire Lines on Ilam Campus, 2012

Present Facilities for Cyclists

Facilities for cyclists primarily include showers and lockers, but can also be extended to include clothes/towel drying areas and bike maintenance equipment.

Showers

Across both campuses, UC currently has showers in 10 locations. However, not all of these are accessible to students and some are in poor condition. One (Dovedale Gymnasium) is currently closed. New showers are being put into the Registry Building, though these may not be very accessible to students.

Lockers

New locker facilities are being installed in buildings as they are remediated and as space permits. Examples include James Hight Undercroft and the Registry Building. However, there is a significant lack of locker space across campus

Puncture repair kits and bike pumps

Puncture repair kits are available from the Security Office free of charge. These are supplied from the Sustainability Office budget. Bicycle pumps are also available from the Security Office, and they are also available in all of the secure bike stands. However, the pumps are frequently damaged due to incorrect use.

Figure 13: Bike pumps in the secure stands

Signage

No cycle-specific signage has been installed, despite repeated recommendations of transport consultants.

Present Engagement for Cyclists and Potential Cyclists

There have been numerous efforts over the years along the lines of community based social marketing for sustainable behaviour change. These have included:

- Dr Bike maintenance sessions (2007-2014) (funded by Facilities Management) (Figure 15)
- 'BUG' (Bicycle Users Group) established (2007)
- Bike Breakfasts and Commuter Challenges (2008/9) (Figure 14)
- the One Day Challenge (2010) with associated workshops
- a large fashion show on bikes called Cycle Runway (2012) (Figures 8 and 27)
- In 2013 the Sustainability Office, UC Bike (the student bike club) and the University of Canterbury Students' Association collaborated to restore abandoned bikes and sell them to students at reduced cost, which generated media attention. Hannah Howard (UC Bike club president, 2013), won a Gold Sustainability Award in 2013 for her part in this work (Figure 17).

There are no further community engagement projects about cycling planned for 2014, although members of UC Bike have committed to running Dr Bike in 2014.

Figure 14: UC Bike Breakfast 2008

Figure 15: Dr Bike in action, 2012

5 Current Large Projects

Regional Science & Innovation Centre, and Canterbury Engineering the Future Redevelopment

Since at least 2007 there have been calls to improve the cycling facilities around the Sciences and Engineering buildings, and the new RSIC and CETF cluster of buildings provides the best opportunity to correct this problem, along with creating a potential through-route for cyclists along the Okeover Stream ecological corridor. It is proposed that a new bike park be constructed under E8/E9. While building is in progress in this area many cycle facilities in the northern part of the campus will be affected, therefore **temporary cycle parking will become increasingly essential in the middle, southern and eastern parts of the Ilam campus.**

Registry Building

The Registry Building has also been noted since 2007 as being an excellent opportunity to improve bike parking and increased showers and lockers due to its proximity to the Central Library, which is drastically underserviced in these respects. Plans are already in place to increase cycle parking facilities on one side of Registry by more than 100 spaces, and showers have been installed inside the building. **This will become the main cycle parking area in the central campus.**

Law/History Landscaping

One large bike parking facility is to be removed outside the History Building. It is critical that this process takes into account the anticipated City to University Cycleway which will probably come close to the Law Building if it is developed as an off-road dedicated cycle path through campus. The cycle stands currently here service a wide area and are usually in high demand, so

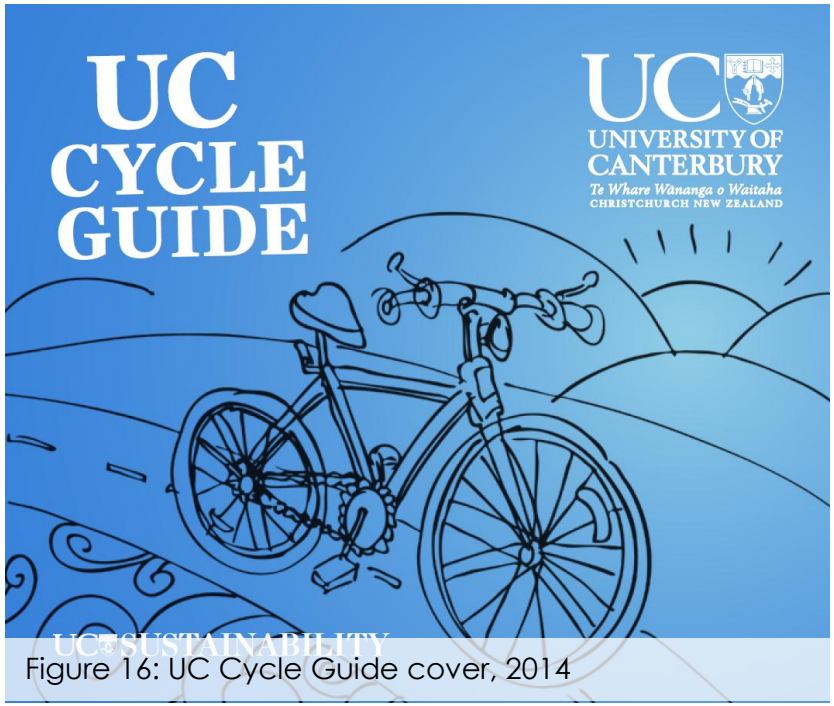

Figure 16: UC Cycle Guide cover, 2014

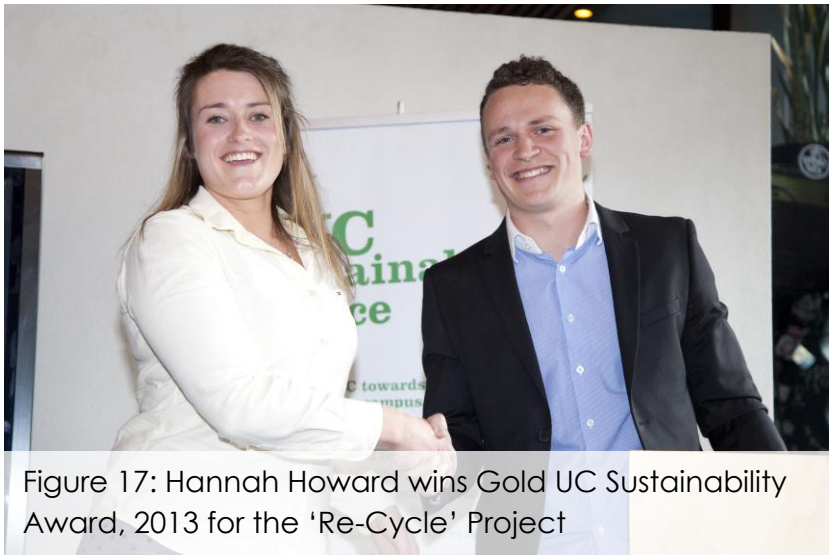
Figure 17: Hannah Howard wins Gold UC Sustainability Award, 2013 for the 'Re-Cycle' Project

removing cycle parking here would not be sensible. It is proposed that new cycle parks be made on the south side of the Psychology Building to offset the loss of bike parks between History and Law. Additional cycle parking will also be required around South Arts Lecture Theatres.

Future Remediation Works

Decanting of staff and students from their present buildings into different spaces will mean that some cycle infrastructure developed to meet current needs will need to be moveable. It is a key principle of this plan that the closure of any cycle stands in the future is matched with provision of new cycle stands.

6 City to University Cycleway

The first of thirteen major cycleways funded by the Christchurch City Council is planned to enter the UC campus at University Drive and exit onto Ilam Road, cross Ilam Fields and run up Dovedale Ave. Planning work on this began in August 2013 and work is expected to begin during the 2014/15 financial year. Given how important this project is to University staff and students (as revealed by the results of the 2012 Travel Survey), it is imperative that this project proceeds.

It was enthusiastically endorsed by a UC Transport Working Group meeting on 25 June 2013, with some suggested modifications. One was that instead of running along University Drive (which is probably too narrow), the route run through what is now the Law Carpark. **This new route will almost certainly bring a lot more bikes to campus, meaning increased pressure on cycle facilities.**

It must be remembered that University Drive may be reconfigured, and that this cycleway cannot be permanently in place for some years to come.

7 UC Cycle Plan 2014-2022

UC's 2014 principles relating to provision of cycling facilities support the 2007 goal of being a "cycle friendly campus".

Because the campus remediation programme will be continuing for more than a decade, the approach taken here to cycle planning is necessarily focussed first on *principles* that can be utilised when doing detailed plans of different parts of the campus, and secondly it is *staged* in short, medium and longer term sections. An indication of what the final layout might look like for stands and routes is shown in Figure 19.

Future Cycle Routes through Campus

For cyclists, the major issue about travelling through campus is clashes with pedestrians, at numerous pinch points. The following hierarchy suggests itself based on research going back to 2005, and should be considered:

1. Major off-road cycle routes, which are reserved for cyclists only and offer no or very limited opportunity for clashes with pedestrians. These should be few in number (two or three), running closer to the outer edges of the campus, as well as through the middle as part of the City to University Cycleway. They should connect with major points of access to the Ilam Campus for cyclists (essentially at the four corners). Naturally, these should connect with bike facilities 'hubs', and also feed into shared cycle paths.

2. Shared cycle/pedestrian paths, which feed the off-road cycle routes into slower, but potentially more numerous, paths. Shared paths is not an ideal solution on campus where there is high foot-traffic. The Christchurch City Council's 'Christchurch Cycle Design Guide' recommends that shared paths should be no less than 3.5m wide (wide enough for a cyclist and a

Figure 18: A current shared path along the Okeover Stream ecological corridor.

pedestrian). They may need to be wider in some locations. It should be understood that this system could only work where there are also dedicated pedestrian paths. It is assumed that these shared paths would connect the bike facilities 'hubs' to more numerous covered cycle stand 'spokes'. The point here is to create clear, logical and useful preferential pathways for cyclists in order to minimise clashes and take cyclists quickly to where they want to go (usually to specific buildings). Research conducted in 2006 suggested that over one third of all cyclists think there is a need for cycle lanes on campus and of these 43% would prefer that these were dedicated cycle-only lanes (Peacey, 2006).

3. "Quiet Streets" as part of the cycling network (roads where there are low traffic volumes and/or speeds). These will be part of the City's cycleway networks. If this seems to be the right option, we need to engage with Council about possible enhancements to some of them so that they are even less desirable for driving, e.g. more speed management, or lack of through connectivity for driving. Because they're not obvious cycle routes, we may also want to enhance route signage along them. Consider trialling some "sharrow" (shared lane marking) markings.

	Short term (2014-15)	Med term (2015-18)	Long term (2018-2022)
Major off road cycle routes	Construction of the uni-city cycle way (off campus) begins	Decision is made regarding primary and secondary cycle route through campus (including	Construction of on-campus cycle routes begins.

		between CEFT and RSIC)		
Shared paths			Planning for an integrated network of shared paths is underway	Construction of new shared paths is underway
Quiet streets	Discussion with CCC about integrating quiet street designs into cycle network happening		Designs for quiet streets underway	Construction, if appropriate commences.

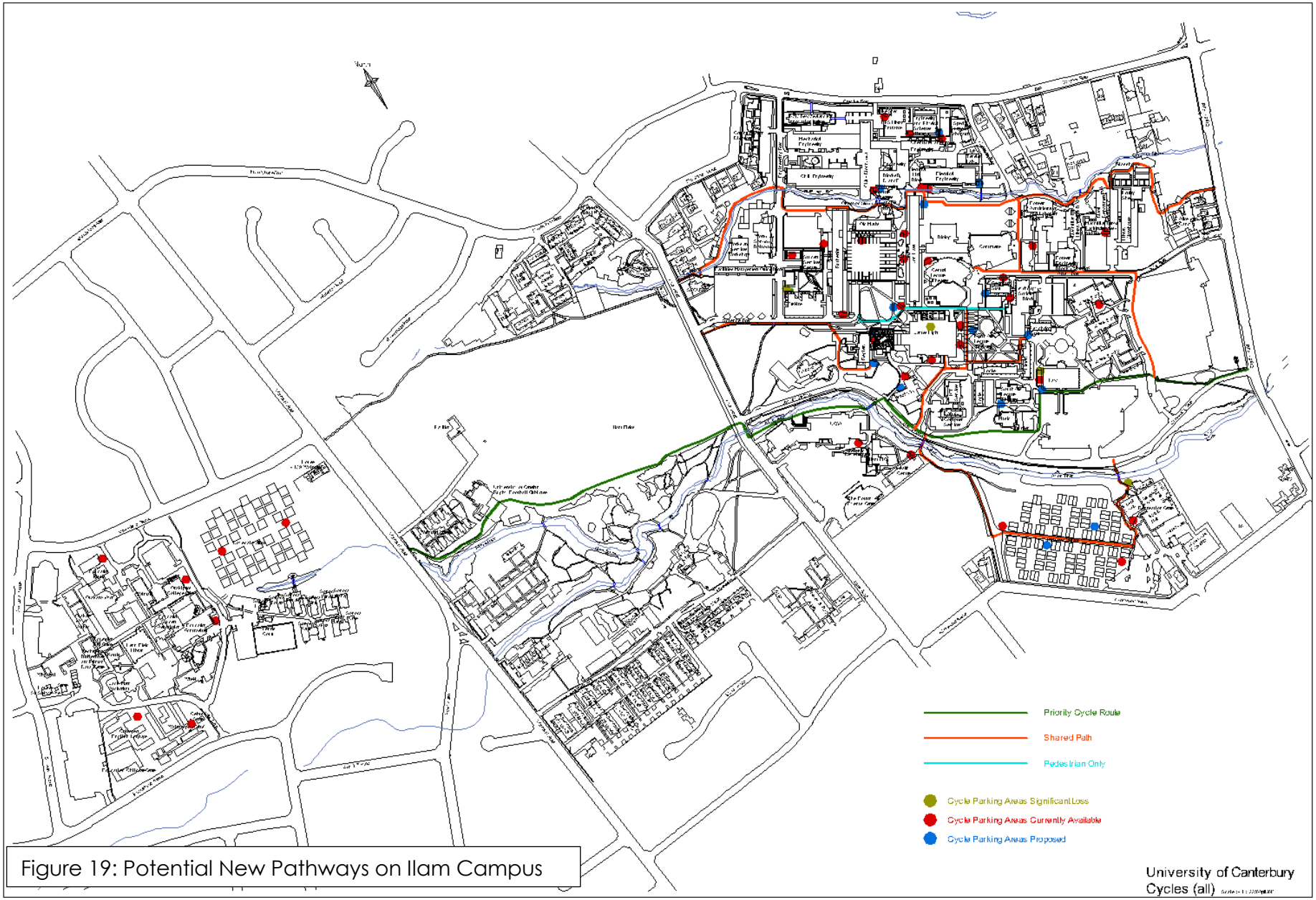

Figure 19: Potential New Pathways on Ilam Campus

Future Cycle Stands

Internationally, universities that have embraced similar visions have tended to make features of their cycle parking facilities. UC's initial attempts, the enclosed concrete structures, made an important contribution in demonstrating that it took the matter seriously, and in reducing bike thefts (Peacey, 2006). Peacey's 2006 research showed that 54% of cyclists preferred fully secure stands over covered stands with open access. Although popular, it is also true that the secure stands could be upgraded (see below).

We need to ensure more use of better cycle-stand designs for all solutions, i.e. those with a greater variety of fixing points rather than the numerous "wheel-bender" styles around campus. This could include Sheffield hoops (sets of these could be moveable to suit changing demand) or the "finger-style" fixings in the secure stands. Hang-up hooks have their place for space advantages, but don't work for non-standard bikes and many smaller people may struggle to get their bikes on/off.

The District Plan review provides design guidelines which require stands to support the bicycle frame and a wheel, and allow for the frame to be secured (see appendices for guidelines and visit http://resources.ccc.govt.nz/files/TheCouncil/policiesreportsstrategies/districtplanning/districtplanreview/dprtransportchapterdraftfeb2014.pdf)

Sheffield Hoops

UC has arranged to provide around 40 sets of these stands, as shown in Figure 20.

Figure 20: Sheffield Hoops on Rails

Figure 21: A possible wall-mounted option

Wall Hung or Abutting

Where space permits a wall hung or stand that abuts a wall design should be explored. In the short term these may simply be relocated stands from existing bike parking facilities (eg Old Maths and HIST/LAW open stands). Figure 21 shows one option for a wall hung design which is highly space efficient as well as being user friendly.

A mixture of options is required, and **UC should therefore adopt a model of 'hubs' and 'spokes'**, which would also be an effective way to communicate the enhanced initiative.

1. Secure cycle facilities, which feature highly space efficient cycle parking. Some of these may also feature showers, lockers, drying facilities and bike maintenance facilities such as bike pumps and puncture repair kits. There could even be IT such as an LCD screen with video tutorials about fixing punctures, or giving safer cycling tips. These should be placed at strategic points around the campus, acting as bike 'hubs'. They are most likely to be used by distance commuters, who will have higher requirements for showers, lockers and changing facilities, and who are also more likely to have expensive bikes that they want secured. Their locations may not necessarily be the same as the existing secure cycle stands (for example, one may be required by the Rec Centre, and one may be needed at Dovedale). The mechanism for accessing these stands should be reviewed as the current system has been called into question – access being perceived to be too easy. Some of these could be free-standing; others may wrap around the

Figure 22: Contemporary design for cycle parking
Source: Penny Farthing Cycle Pods

Figure 23: Contemporary design for cycle parking
Source: Penny Farthing Cycle Pods

corner of a building as a clip-on. Some models utilise solar PV on the roof to heat water for showers (Figures 22 and 23).

2. Covered cycle stands, not necessarily secured. Feedback from the 2012 Travel Survey suggests there is a greater demand for this than there is for secure stands. There should be more of these than the secure cycle stands, accommodating the vastly greater proportion of cyclists who live close to University. These stands would act as 'spokes' for the bike 'hubs'. The number and location of these stands is budget dependant, but the principle is that they are close to buildings/destinations, rather than being dotted around campus as interesting landscape features.

The need for covers over cycle stands is a requirement of the District Plan review. Covers may take a variety of forms, but must be designed so that at least three sides are enclosed to keep out the rain, and the roof should be of a material that will not allow direct sunlight to fall on the bikes (as this will damage them over time). The open side should be positioned both for ease of access, and it must face away from prevailing weather.

3. Outdoor racks that are easily relocatable as the remediation programme continues to shift the campus population around. There will probably always be a need for outdoor racks, which can be placed close to buildings at little expense.

	Short term (2014-15)	Med term (2015-18)	Long term (2018-2022)
Secure Cycle Facilities	Existing secure cycle stands removed as	Planning for new secure cycle stands	New secure cycle stands constructed

	appropriate	(placement and design) is underway	
Covered Bike Stands	Planning for new covered cycle stands completed (including design and placement)	New covered cycle stands constructed.	Covers for Registry cycle park installed
Outdoor racks	New outdoor racks installed.	Continuous relocation of cycle racks as needs shift.	Continuous relocation of cycle racks as needs shift.

Future Facilities for Cyclists

Showers

Because many of the showers on campus are currently sub-standard, it is necessary to upgrade these as the remediation and betterment programme roles out. In particular, given the nature and scale of the Regional Science and Innovation Centre, it is imperative that provision for showers be included in the designs, and at this stage showers are proposed on all floors in each toilet block. It is also suggested that a secure cycle stand be constructed close to the RSIC, and the inclusion of showers in this building should be considered as part of the total design for the site. The District Plan review requires that one shower be provided for every ten staff cycle parks provided. Based on the figures on p.16, **UC needs 30 showers in total**.

A typical space for a shower is 1m^2. Shower rooms must have a lockable door. Showers may be in unisex facilities or gender specific. Design specifications at the University of Canterbury for shower cubicles are that the rate of flow and the temperature should be adjustable. However, low-flow shower heads must be installed where there is high pressure. The standard shower rose in these cases should be Methven Satinjet or, failing this, Methven's Bella Shower Rose (which comes with a flow restrictor and works with both high and low pressure systems). For slide showers on low pressure, the Methven Milano Slide Shower should be used; for mains pressure the Alpha Slide Shower should be used. The Methven Futura FT Shower Mixer is the standard mixer to be used. A soap dish with a hook should be fitted (for body wash). A hook for a towel must also be installed, out of the way of the shower spray. There must be adequate ventilation and lighting in shower rooms. Ventilation must be at an absolute minimum 25 litres per second per device (meaning toilets and showers).

Changing and drying facilities

Changing and drying facilities for cyclists will be included in any plans for new showers. Changing areas must include adequate space and facilities to hang or store clothing and equipment whilst changing and showering, for example a bench seat and/or hooks.

Both male and female users need to be catered for i.e. either gender specific, shared facilities or individual changing cubicles in mixed use areas. Toilet cubicles cannot be considered changing areas. Where showers are unisex, the changing rooms attached to them must be twice the area of the shower, i.e. a minimum of 2m^2. The changing area should have a large mirror, and at least four wall mounted hooks.

Changing facilities should also include a fold down ironing board and an iron so that work clothes packed in a pannier or back pack can be made suitable for the work environment.

Drying facilities allow people to dry out their towels after showering and their clothes if they are damp from cycling or if it has been raining. Drying rooms can come in many different forms and can be incorporated into changing rooms by ensuring there is adequate space for people to hang items to dry out for the day while not impeding others from using the space for changing. Multiple racks to hang clothes and towels are the key requirement. There must also be adequate ventilation to allow damp air to escape, and the floor surface will need to be resistant to drips. The room needs to be heated.

Lockers

The call for more lockers on campus has been consistent for a number of years and, again, this is being addressed through the remediation and betterment programme. Students are asking for lockers that are conveniently placed and that have charging points for laptops, cell phones and other devices. Previously the main locker areas were in the James Hight Library and Science Lecture Block (the latter has since been demolished). **The loss of the 400 lockers in James Hight has not been compensated for – only 80 have been put back. Lockers have been included into the History and Law betterment works (around 110 combined). The only other lockers on campus are in Otakaro (Dovedale)**. The District Plan review requires that 1 locker be provided for every cycle park provided, meaning 3952 lockers are needed in total. The minimum internal dimensions of a single locker shall be: 85cm (height) x 45cm (depth) x 20cm (width).

Lockers should be close to changing areas.

Bike maintenance hubs

There were calls through the 2012 Travel Survey for a bike shop or bike maintenance hub. These are not uncommon in university campuses and are sometimes run by the students' associations and sometimes by the universities.

This plan recommends the inclusion of bicycle maintenance tools (potentially on chains or similar: there is a proprietory device along these lines already installed in Christchurch's CBD) in all secure cycle stands. New bicycle pumps are also required, but due to the poor performance of the current manual pumps it is recommended that air compressors be trialled as well. The plan also recommends a more central bicycle maintenance hub which could include a bike shop and also provide space for a service akin to Dr Bike.

Signage

It is highly recommended that preferred cycle routes be clearly marked, and that the cycle facilities noted above are clearly sign-posted. The Christchurch City Council's Cycle Design Guidelines (2013) state that good signs and markings (independent to road signs) need to identify cycle lanes for both visitors and locals. Signs or markings 'should help direct cyclists to key destinations around the city with short, clear messages or maps.' Examples of signage are shown in Figures 24 and 25.

Free or Cheap Use of a Bike

Figures 24 and 25: examples of upright signage and road markings for cyclists.

We know that a large proportion of students would cycle to university if they had access to free or cheap use of a bike. Therefore, any bike hire or sharing scheme should be encouraged. UC Security currently holds about 15-20 bikes per year that have been abandoned on campus. In 2013, a pilot project with UC Bike club demonstrated that, restored, there was good student demand for these bikes.

In 2014, the UCSA is developing a project building on this work, using the restored bikes in a Green Bike hire scheme. This is to be strongly encouraged as it both addresses an issue of waste as well as supporting students to overcome a key barrier.

Water Fountains

There has been a strong call across campus for water fountains and/or water bottle refill stations. Currently the UC community consumes approximately 100,000 units of bottled water annually. This adds cost to our recycling system and these bottles are an environmental problem internationally. The City of San Francisco recently banned the sale of bottled water. Water refill stations combined with water fountains can be purchased, such as the Aquafil Filtered Water Fountain and Bottle Refill Unit (Figure 26). These need to be considered as part of the overall plan for cycle routes and parking facilities.

	Short term (2014-15)	Med term (2015-18)	Long term (2018-2022)
Showers	Upgrade existing showers and install new showers as possible		Include showers in some or all of the newly constructed secure cycle stands, potentially utilising solar hot water

Figure 26: Aquafill water bottle refill stations and drinking fountains are becoming increasingly popular in Australian and New Zealand university campuses and throughout cities

Changing and drying rooms		Include changing and drying rooms in remediated buildings as practicable	Include changing and drying rooms in secure stands
Lockers	Expand provision of lockers through remediation and betterment process		Include lockers in all of the secure cycle stands
Bike maintenance hub/s	Upgrade existing puncture repair kits and bike pumps		Include bike maintenance facilities in secure cycle stands. Develop a centralised bike maintenance hub that could include a bike shop and space for .
Signage		Install signs as facilities are improved	Continue to install signs as facilities are improved.
Bike hire	UCSA pilot a Green Bike hire scheme using bikes abandoned on campus	Assess effectiveness of scheme. Continue if appropriate	If successful consider incorporating hire stations into other UC bike facilities and expand programme
Water Fountains	Identify which kinds of fountains are needed and where are the best locations	Trial water fountains in areas of high use	If appropriate, install further water fountains.

Future Engagement for Cyclists and Potential Cyclists

Dr Bike

Bike maintenance sessions need to be continued as this helps overcome a key barrier for people to switch to cycling. It is recommended that a small budget be found to support this in the short term and potentially in the medium term this work could be picked up as a core function of a new student club, or continued as a partnership with UC Bike. Ultimately, bike maintenance sessions could be run from a central bicycle hub.

Community engagement

There is a long tradition of large events on campus promoting cycling, and it is recommended that efforts be made to create student projects through a variety of 'service learning' and internship courses that result in such events being continually improved and executed.

Cycle safety courses

These have been run in various forms before, and we know that one key reason that some people choose not to cycle is that they lack confidence. It is recommended that such sessions be run as capacity to offer them becomes available. This may be in the form of a project of a student club, such as the one suggested below.

Commuter Cycle Club

There are a number of organisations in Christchurch that promote commuter cycling, such as Spokes, Frocks on Bikes and Tweeds on Bikes. Critical Mass

Figure 27: UC Cycle Runway

also promotes commuter cycling. Depending on the direction taken by the UC Bike club, there may be a desire for a club on campus specifically focusing on commuter cyclists, and support should be forthcoming from the Sustainability Office to help establish such a club or network. Such a group could be a reactivation of 'BUG'. This would be a key organisation to help deliver Dr Bike, safety courses and events.

	Short term (2014-15)	Med term (2015-18)	Long term (2018-2022)
Dr Bike	Pay a student or students to run Dr Bike, in collaboration with UC Bike.	Pay a student or students to run Dr Bike. Run Dr Bike in tandem with UC Bike, or a new student commuter cycle club.	Regular bike maintenance sessions available in a central bike hub.
Community Engagement Events	Run at least one large event raising the profile of cycling on campus. Perhaps do this as an internship project (eg ARTS395) or as a student project for SUST201 in 2015.	Link profile raising events more directly into the emerging interdisciplinary curriculum, for example by collaboratively bringing together Traffic Engineering, Geography, Arts Interns etc on a single project.	Institutionalising a 'Bike Breakfast', 'Commuter Challenge' or other at UC, building on prior student work.
Cycle Safety			Sessions on cycle

Courses			safety run, supported by the Sustainability Office in tandem with a new student club.
Commuter Cycle Club established on campus (eg 'BUG' or 'Critical Mass'		Work to launch a 'BUG' Critical Mass or similar club	Support this club to assist with Dr Bike, cycle safety sessions and events.

Next Steps

This Plan has outlined what needs to be done in order for the University of Canterbury to achieve its goal of being a highly cycle and pedestrian friendly campus.

It is important that the specific instructions and general principles contained in this plan feed into both the immediate remediation works being undertaken, and also the future-focussed Campus Masterplan.

There will almost certainly be a need for specialist advice regarding implementing the ideas contained in this Plan, particularly with regards to the specific placement of stands and routes, but also to the total package so that we end up with a unified design that is legible to cyclists. This package should complement other transport infrastructure at UC.

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UC Cycle Stand Schedule 2013-14

Location	# slots available	actual capacity	current situation	comments
Erskine	82	82	0	
Student serices	50	50	50	
Rutherford	64	64	64	
Rutherford and Science Road	10	20	10	
Von Haast	44	44	44	
Von Haast and S Block	13	22	13	
Von Haast walkway	12	14	12	
Old Maths Secure	90	90	0	
Von Haast and Eng	28	56	28	
E8/E9	10	10	10	
Engineering/SBS	116	144	116	
Engineering/Creyke Rd (incl NZi3)	54	74	54	
Engineering secure	80	80	80	
Chem/Process	12	12	12	
Forestry	33	36	33	
Geography	98	98	98	
Back of Central	164	164	164	
Central Secure bike stands			0	
Shilling Club	44	44	44	
Registry quad	24	24	24	
UBS	14	14	14	
James Hight sth	33	66	33	
Arts Quad/1894	65	130	65	
North Arts	36	36	0	
South Arts	0	0	0	
Café 101	22	22	22	
HIST/LAW open	156	156	156	
HIST/LAW secure	50	50	0	
Music/Arts	7	24	7	
Kirkwood	152	170	152	
Rec Centre (back)	4	4	4	
Rec Centre (locked off)	20	20	0	
Rec Centre (front)	42	42	42	
Health Centre	5	10	5	
Old UCSA	36	36	36	
Dovedale (Music)	39	58	39	
Dovedale (CCEL)	60	72	60	
Dovedale (Wairarapa)	22	44	44	
Gym	14	28	14	
College Office	24	34	24	
Dovedale Village	34	34	34	
Waimairi Village				
Te Ao Marama	19	24	19	
Law Secure Stands	50	50	50	
Fine Arts	18		18	
Undercroft	500	500	0	
ICTS	18	18	10	
TOTALS	2468	2770	1704	
Loss of available bike stands since 2010 (ie slots available - current situation)		**764**		

New bikestand placements (tbc)

Location	# additional bikestands	# additional bikes	comments
Registry concourse	2	24	temporary only until Registry opens (August) should have signage stating this
Sth James Hight		33	bike stands to be turned around to double usability
East James Hight (yellow brick rd)		60	bike stands to be turned around to double usability - requires small pathway extension into landscaping
1894 Courtyard	1	10	bike stands to be repositioned to increase usability, and at least one additional stand placed (check if more would be allowed)
Nth Geography (C Block)	8	96	carparking to be replaced with bike stands. Also option of putting trombone bike stands along low fence outside that entrance to C Block
East Geography (opposite commerce)			stands to be repositioned to enhance usability
Science Lawn	2	24	requires additional hard stand next to existing bike stands
UBS	2	24	
ICTS	1	10	need something here but solution to be determined. Plan shows reduction of 8 bike barks, to 10
PSYCH/HIST	4	48	remove seating along PSYCH and place bike stands adjacent to building
LAW	1	12	hardstand by landcaping by Emergency tower T9
Student Services/Eng Rd			Rearrange the stands and fix them down to increase capacity.
Rutherford/Student Services			Move stands off grass back to asphalt and fix down.
Rutherford east	1	12	put single sided stands by the wall
Old Maths			
E8/E9	5	60	Need to do works around removing rocks, and possibly putting down hard stand
Von Haast/SBS/Eng	4	24	replace existing double sided racks with single sided - also space for motor cycles
Von Haast/SBS/Eng		24	reposition bike stands outside Von Haast
Von Haast/SBS/Eng		28	reposition and pin down bike stands outside Engineering entrance
Chemical and Process - nth	5	70	single sided and two double sided to be installed by chem wall. Plus one by the manhole and one in front of the Eng Library
Electrical and Computer - loading bay	1	24	extend hard stand from stairs
Forestry			
Kirkwood	4	48	
South Arts Lecture Theatres	3	36	
North Arts Lecture Theatres	3	36	
Registry	10	100	

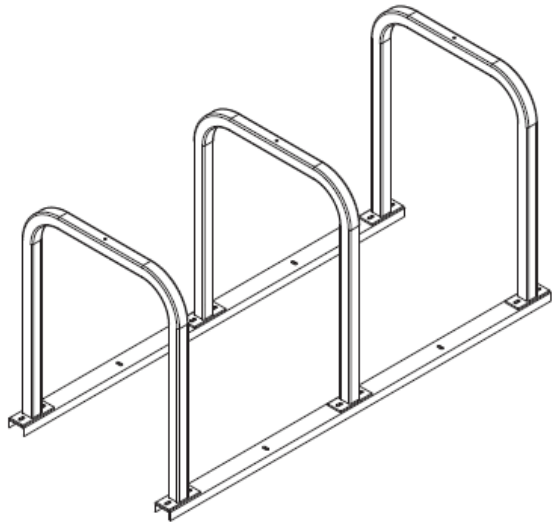
Total	**803**
new stands	648
repositioned existing stands	155

RAIL MOUNTED OPTIONS

Rail mounted Downtown Racks are standard foot mounted Downtown Racks attached with bolts to a rail as in the diagram at left. Rail mounted racks provide more flexibility than other mounting options while providing the same degree of security.

Rail mounted Downtown Racks can be left freestanding, or they can be anchored to the ground using several anchors. This option allows for easier snow removal and sweeping. Installation of Rail mounted Hoops is also much less expensive than embedding the racks into the ground.

* Note: Though racks may be painted, the rails will remain with only a galvanized finish



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