

17 January 2007

Feasibility Report
into a Bike Station
for Auckland's CBD



Bicycles need no fuel, give off no fumes and make almost no noise. In fact, the bike is still the most energy efficient vehicle invented

Auckland Regional Cycling Strategy, July 2002

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Executive Summary

A bike station is a secure urban cycle parking facility that includes:

- Services and amenities, such as showers, restrooms, bike repair, information and a cafe.
- The facility combines functionality and aesthetics to create a pleasant place for cyclists to utilise.
- A central bike station is ideally situated at a major transport terminus with future satellite bike stations placed at strategic suburban locations to form a bike network.

It is well-documented that bicycles reduce air pollution, vehicle congestion and mitigate the effects of car dependent urban sprawl, thus enhancing the quality of life for residents.

Bike stations can play a key role in improving the connectivity between cycling, public transport, and workplaces by providing one of the most cost-effective, equitable, efficient, and environmentally beneficial means of addressing urban transportation challenges.

Major cycle parking facilities at public transport nodes are now commonplace in the US, Japan and Europe, where facilities that house and park over 3,000 bicycles per day are not uncommon.

It is estimated that a bike station would cost \$340,000 to establish within the Britomart Transport Centre and approximately \$798,000 for a purpose built building. In terms of operating cashflow, the bike station is forecast to show a surplus from year one.

As a result of this feasibility report, the author Phil Hurdle has been commissioned by Heart of the City to continue with Stage II, see the conclusion on pg 16 for details of what this stage will cover.







Bike Station at Long Beach, California, USA

What is a bike station?

The primary purpose of a bike station is to provide secure indoor bike parking, which a cyclist can access for free during attended hours, or after hours for a low membership fee. A bike station may also provide additional services and amenities such as:

- restrooms, changing rooms, and/or showers
- bicycle repairs
- personal lockers and an overnight dry cleaning service
- café and internet access

- free air and self-repair stand
- transit and bicycling information and/or ticket sales
- retail accessories
- bicycle rentals
- electric bicycle charging station
- bicycle tours
- community meeting space
- water fountain
- cycle training programs, including community rides and maintenance courses

	Secure Bicycle Parking
	Showers & Lockers
	Bicycle Rentals
	Bicycle Repair
Summary of services offered by Chicago's bike station	

A central bike station should ideally be located at a transport terminus in a prominent place with easy access and in close proximity to places of work and leisure. The presence of the facility will increase the catchment area of the station and result in more public transport journeys. Satellite facilities can be placed at strategic points in the suburbs such as railway stations, park-n-ride facilities. Members are granted access to all bike stations in the network, as well as discounts on repairs, sales, and rentals provided by the station.

The cycle capacity of a station should suit the location and potential users. A modular design which could expand if necessary may be advantageous.

The design of the facility should be functional and aesthetic to please cyclists and non-cyclists alike. A prominent structure or building can provide opportunities for brand visibility or naming rights for corporate sponsors.



Bicycle storage in Bike Station Seattle

Benefits to Auckland

The benefits of providing a bike station facility in central Auckland would include:

- **Make cycle commuting more accessible.** Many workplaces in the downtown CBD do not have suitable or adequate facilities (such as showers, lockers and suitable cycle parking).
- **Give commuter cycling a higher profile:** A prominent attractive modern bike station will help popularise cycling. Provision of cycle parking could stimulate demand for other cycling facilities, particularly on-road provision of safe cycling conditions.
- **Tourism and recreation:** Auckland is New Zealand's gateway and many tourists pass through the city. The bike station will allow visitors to Auckland, and those Aucklanders who do not own bicycles to enjoy cycling along the waterfront and the 50 km cycle route.
- **International credibility:** Anticipating future norms and setting the new expectations for sustainable transport choice. This would help with New Zealand's Kyoto protocol compliance by achieving reduced emissions targets.
- **Flow-on effects:** increased cycling → supports increased provision of facilities → 'safety in numbers effect → increased cycling... creating a virtuous circle.
- **Fewer car journeys:** Less pollution (air, land and water) and related health issues, less traffic congestion, less demand to increase the size of roads which damage urban communities. Overall a more attractive city to live in.
- **Active transport health benefits:** Cycling as an active mode of transport is very health beneficial (both to the individual as a cyclist and the state who funds health care)

International examples of bike parks

Cycle parking facilities in urban centres are proliferating worldwide, with major facilities across Europe, America and South-East Asia. Many facilities have capacities for several thousand bikes and are fully utilized on a daily basis. Striking architecture is often employed to create an urban focus point. Some examples are pictured below:



'Bike ramp' Amsterdam can hold 7000 bikes. This facility is typically full to over-flowing on a daily basis.



<http://www.muenster.de/stadt/livcom/index256.htm>
Munster bike station, Germany 3500 bikes

Munster is the self-proclaimed cycle capital of Germany. An estimated 60% of the population use public transport, bike or walk.



Bike Station in Seattle, WA, USA

How does a bike station fit with existing transport policies?

From the United Nations to national government to local bodies, emerging policy is advocating 'green' initiatives: sustainable transport solutions; carbon neutrality; reduced emissions etc. The bike station concept aligns neatly into much of this policy. For example:-

Auckland City Council – Cycling Strategy 2002

....Intermodal integration also offers opportunities to increase the levels of cycling and walking. The majority of the isthmus population could combine a 7.5-minute walking or cycling journey with a rail or ferry trip. There is a great potential to increase cycle use by installing bike racks on buses. Many metropolitan areas overseas (eg Portland, Oregon) are currently providing for cyclists in this way.....
www.aucklandcity.govt.nz

See **Appendix I** for more examples

Existing legislation supporting cycle initiatives

Auckland City Council's Cycling and Walking Strategy
RMA (1991)
Land Transport Act (1998),
National Cycling Strategy
Auckland Regional Land Transport Strategy
Transit NZ act (1989)
Transfund Project Evaluation Manual
Land Transport Management Act 2003
National Land Transport Fund
National Energy Efficiency & Conservation Strategy
National Land Transport Programme

Potential locations for a bike station in Auckland's CBD

The preferred location for a bike station in Auckland's CBD is in (or near) the Britomart transport centre.

This is based on the following reasons:

- It is a hub of tourist, business and leisure journeys, with trains, buses and ferries all converging at this point.
- A cycle facility here would provide convenient connectivity for cycles with all existing transport modes, in particular the ferry and bus services.
- It could be a highly visible location, giving cycling a high profile.
- Many tourists will be in the vicinity of Britomart providing potential for bike hire/ retail/ repair.
- There is also a significant amount of off-road riding directly from Britomart, such as Auckland City's 50 km route and the waterfront in both directions.
- The opportunity to host related services, eg: Heart of the City's Jafacabs or Police on bikes.

Four potential sites:

- Scenario #1. The Pavilion is attractive, a strikingly modern design, is of appropriate size and perfectly placed for a bike station, with large areas of open paving around for testing/fitting bikes etc.



Scenario #1: Britomart pavilion

- Scenario #2. The east concourse (below ground level) is within the station and has an area of approximately 850m². It currently has an un-utilised space. See figure 1 below for possible layout.



Scenario #2: Britomart east concourse (below ground)

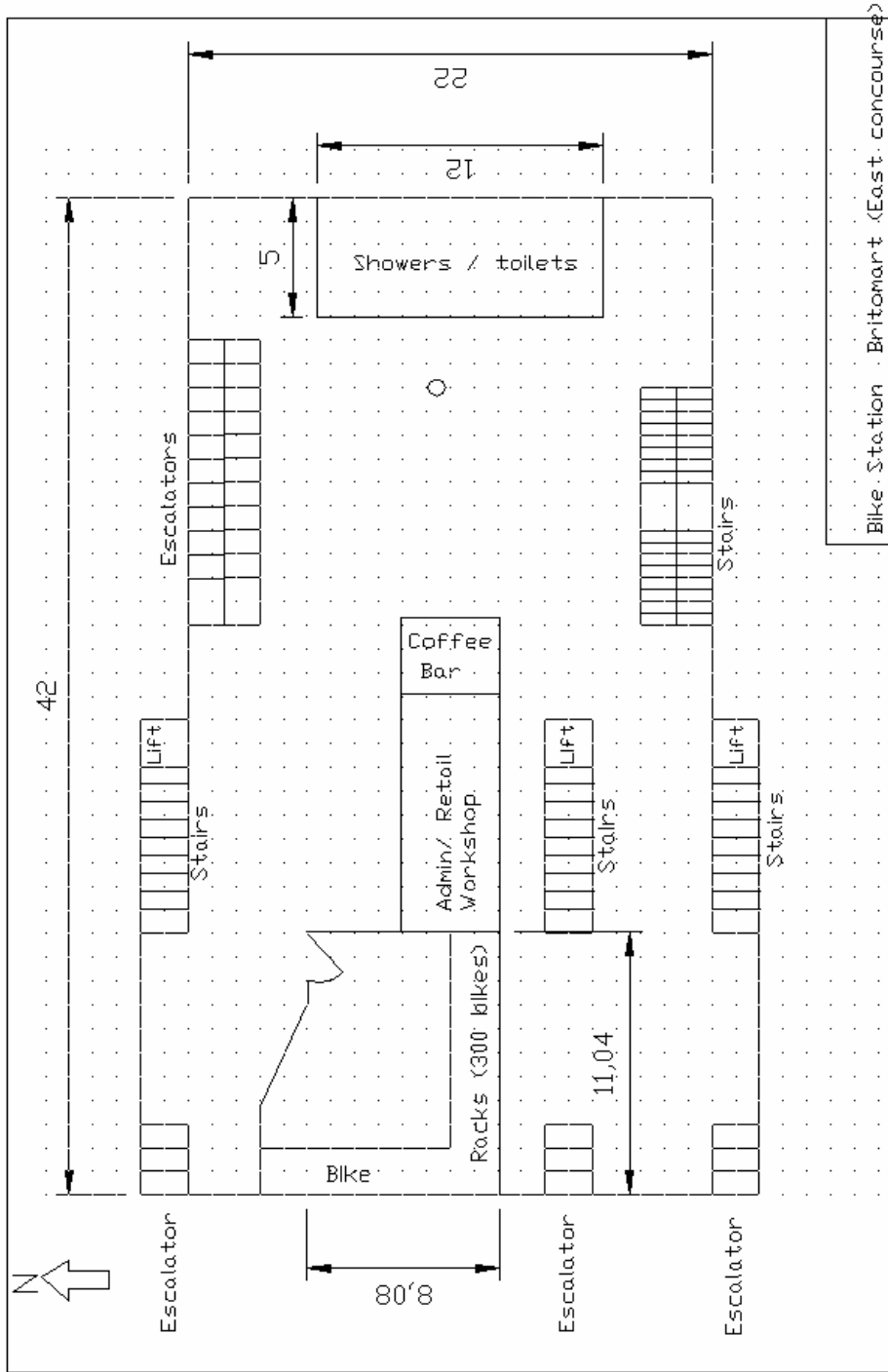


Figure 1. Bike station floor plan within east concourse

- Scenario #3. The station main concourse has retail space on the north side which could be used to accommodate the bike station. This area has high visibility, and there are existing facilities including security, a café, information and ticketing.



Scenario #3: Britomart station – main concourse

- Scenario #4. There are also sites where a new building could be built. Potential sites include the car park area to the east of the main structure.



Scenario #4: Britomart east entrance

Eventually, suburban versions of the bike station can subsequently be placed at several key suburban points, such as Park'n'Ride nodes or railway stations. A bike station at a transport node will increase the catchment area of that node significantly.

Possible locations include Albany Park'n'Ride, Manurewa train station, Henderson train station, Botany Park'n'Ride and the future new rail/bus interchange at Manukau City Centre. 11

This feasibility report has been funded by the HSC's Bike Wise Community Partnership Programme. Please send any feedback to Phil Hurdle: philjump@woosh.co.nz by Feb 7.

Funding

The amount of funding will depend on the scale and amenities of the facility, and whether it is placed within an existing building or a new building is constructed.

The costing estimates for a bike station capable of storing 300 bicycle with the following assumptions:

1. The Bike Station will provide free secure parking from the hours of 7am to 6pm (Mon to Fri) and 9am to 5pm (Sat). Sunday opening is costed into years 2 & 3. A bike mechanic would be on-site Monday to Saturday (morning).
2. The annual membership of \$49 would allow members to use the additional services which would otherwise be charged for, eg: showers, lockers, 24 hour cycle parking, free bike loan for repairs, 10% discount on repairs and purchases.
3. Marketing cost are highest in the first year to allow for extra promotion work on opening
4. This forecast does not include potential income from sponsorship and services such as café, dry cleaning, internet access, use of showers by casual users, etc.
5. Depreciation and any finance costs are excluded.

The estimates used are GST exclusive and are mid-range (between worst case and best case). More detailed costings will be prepared in Stage II when a preferred location has been identified.

The funding requirements fall into two categories:

- **Capital Funding:** building, bike racks, construction of bathroom facilities, office equipment, information racks, hire bikes, and café fit-out. Capital funding costing estimates are provided for two scenarios of building the bike station:
 1. in an existing space and
 2. in a purpose-built building
- **Operating Costs:** insurance, banking and merchant systems, marketing, stationery, staff salaries, and utility bills. Costing estimates for the first three years of operation are provided on the following pages.

Capital Funding cost estimate 1: in an existing structure

Eg: within the Britomart concourse, (see Diagram 1)

Capital costs	NZ\$
Architect fees	30 000
Resource consent	15 000
Engineering fees	10 000
Project management	30 000
Construction	
Bike Racks 300 bikes	50 000
Ablution block (60 m ²) \$1675/m ² x 60	100 500
Retail outlet (52m ²) \$1050/m ² x 52	54 600
Fit-out of Bike station repair shop	12,000
Purchase of bike station hire bikes	8,000
Contingency	28,000

	\$338,100

Capital Funding cost estimate 2: in a purpose built building.

Capital costs	NZ\$
Architect fees	60 000
Resource consent	15 000
Project management	50 000
Engineering fees	20 000
Construction	
Building (800m ²) @ \$500/m ²	400 000
Bike Racks 300 bikes	50 000
Ablution block (60 m ²) \$1675/m ² x 60	100 500
Retail outlet (52m ²) \$1050/m ² x 52	54 600
Fit-out of Bike station shop and repair station	12,000
Purchase of bike station hire bikes	8,000
Contingency	28,000

	<u>\$798 100</u>

(Building costs based on information from Rawlinsons NZ Construction Handbook 2005)

Operating Cashflow:

The following annual figures show income ramping up to the described targets for year 3. A ten forecast cashflow (worst case and best case) can be prepared in Stage II when a preferred location has been identified.

The bike station appears financially feasible given the surpluses indicated for each year.

Income (estimated annual)	Year 1	Year 2	Year 3
Bike rental Year 3: 20 rental bikes @ \$25/day for 220 days	\$65,000	\$88,000	\$110,000
Repairs Year 3: \$300 gross margin/day	\$74,000	\$92,000	\$108,000
Retail sales Year 3: Gross margin of \$100/day	\$24,000	\$30,000	\$36,000
Membership Year 3: 250 members @ \$49 pa	\$6,300	\$8,500	\$12,250
Total Income	\$169,300	\$218,500	\$266,250

Operating costs (estimated annual)

Rent (800m ²) fully subsidised	\$0	\$0	\$0
Staff wages 2.5 staff	\$119,000	\$145,000	\$155,000
Administration & Marketing	\$35,000	\$25,000	\$25,000
Utility Bills	\$7,000	\$8,000	\$11,000
Cleaning/ maintenance/equipment replacement	\$6,000	\$7,000	\$28,000
Total operating costs	\$167,000	\$185,000	\$219,000

Net surplus/deficit	\$2,300	\$33,500	\$47,250
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Potential sources of funding:

Corporate Partners

- Corporations seeking a sustainable image
- Bike shops
- Gyms

Non-corporate partners

- Auckland City Council
- Transit NZ
- ARTA
- LTNZ
- Heart of the City
- YMCA
- Health Sponsorship Council
- SPARC
- Cycle Action Auckland
- Lotteries commission
- NZ Police
- EECA

Operating funding can come from various sources:

- fee-for-service charges, such as bike hire and repair
- product sales
- operating subsidy by corporate or local council agencies

Potential benefits to partners /sponsors include

- Naming rights
- High profile brand exposure
- Opportunity to align themselves with sustainable living ideals/ clean, efficient transport, health consciousness.

Operational structure

The administration may be modelled on a existing system already well-established in the US. Bikestation^R (www.bikestation.org) is a not-for-profit organization that has been set up to assist urban communities to plan, develop and operate bike-transit centres and related infrastructure to enable cycling to be an integral part of the transportation system.

Typically, partnerships are formed between Bikestation^R and interested local parties, based on the needs and resources of the local area. Corporate sponsorship is a possible avenue for funds as demonstrated in Chicago where a new high-profile bike facility is sponsored by McDonalds.

The US model is worth considering since several cycle facilities have been successfully introduced in the last ten years into communities that, like Auckland, are heavily car dependent.

Appendix 2 provides an example of marketing material for a bike station in Long Beach, California.

A well known cyclist/ sports-person/ celebrity may be prepared to be the patron.

Possible options for the ownership of the Bike Station include a charitable trust, joint venture, corporate or council ownership, these will be more fully explored in Stage II.

Conclusion (and where to from here)

The provision of an appropriate bicycle station facility located in the Auckland CBD can lead to increased cycle use by Auckland commuters, which provides the following benefits:

- Reduced car use, resulting in less air pollution and greenhouse gas emissions
- Providing more active transport options thus mitigating the issues of obesity and diabetes
- Support for increased construction of bicycle infrastructure.
- Flow on effects of more cycling, such as the ‘safety in numbers’ factor and creating more livable communities

An attractive, modern cycle parking facility, in a prominent location, will be an asset to Auckland city and a catalyst to the provision of a world-class urban cycle network.

As a result of this feasibility report, the author Phil Hurdle has been commissioned by Heart of the City to continue with Stage II, being:

- Publish this feasibility report for feedback
- Meet with potential partners and stakeholders
- Investigate funding options
- Select the specific site
- Develop costings based on chosen site and type of services to be offered. This should include capital cost investment, working capital, operating costs and cashflow
- Determine the appropriate ownership structure and sponsorship arrangements

The subsequent stages are expected to be:

Stage III: design and consultation

Stage IV: construction phase

Stage V: operational phase

Appendix One: Supporting policy and legislation

Auckland City Council – Cycling Strategy 2002

...Intermodal integration also offers opportunities to increase the levels of cycling and walking. The majority of the isthmus population could combine a 7.5-minute walking or cycling journey with a rail or ferry trip. There is a great potential to increase cycle use by installing bike racks on buses. Many metropolitan areas overseas (eg Portland, Oregon) are currently providing for cyclists in this way.....
www.aucklandcity.govt.nz

Auckland Regional Council – Cycling Strategy:

....Cycling has not received as much attention as other transport modes in the Auckland Region considering the benefits the mode has to a sustainable land transport system...www.arta.co.nz

Auckland Regional Council – The Situation:

Despite the benefits of cycling, the number of Aucklanders cycling is declining. This decline is the result of a number of interrelated and compounding factors. The lack of regular and reliable information relating to cycle activity and the needs of cyclists mean it is all too easy to by-pass cycle improvements in favour of funding more visible transport modes. This in turn contributes to reduced numbers cycling, which in turn increases the safety risk for those who do, which in turn leads to a poor safety image and unfavourable public perceptions of the desirability and suitability of cycling as a means of transport.

Factors contributing to the “Spiral of decline” for cycling:

Lack of information & data - Less people cycling - Lack of awareness - Lack of funding - Lack of infrastructure

Auckland Regional Council – Vision by 2020

... public transport operators having the capacity to carry cycles, in particular on trains and ferries....

Auckland Regional Cycling Strategy

Decreasing New Zealand’s reliance on the car will be an important part of meeting the requirements of the National Energy Efficiency and Conservation Strategy and New Zealand’s Kyoto Protocol targets. Increased cycling, particularly if replacing short trips and “cold starts” by car, offers an immediate benefit in improving our local air quality.

Auckland Regional Cycling Strategy May 2002:

Bicycles need no fuel, give off no fumes and make almost no noise. In fact, the bike is still the most energy efficient vehicle invented

It costs far less to provide cycle infrastructure than to provide motorways or roads . Research overseas has demonstrated that replacing short trips by car with trips by bike produces significant savings both to the individual and to the government in areas such as health care.

Cycle tourism can benefit the economy and overseas research shows that cyclists stay longer and spend more money than tourists using other modes. Improved cycle infrastructure would help to retain tourists on cycling holidays in Auckland for longer.

...A primary mechanism for encouraging cycling is the provision of well connected, visible on and off

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road cycle facilities. These facilities will provide access to key locations (public transport stops and town centres for example) and will be convenient, safe and secure. In addition, it is important that cycle parking, lockers and showers are provided....

....The provision of cycle infrastructure not only provides space for cyclists it also raises the profile of cyclists and cycling in the Auckland Region.

....At least ten PT nodes and / or main destinations to provide cycle facilities....

United Nations Conference on Environment and Development in 1992:

Agenda 21 was the main outcome of the United Nations Conference on Environment and Development in 1992, and provides a common framework of action for all countries to achieve sustainable development. It has the commitment of 180 countries, including New Zealand. In the promotion of sustainable energy and transport systems, Agenda 21 highlights the need to encourage non-motorised modes of transport by providing safe cycleways and footpaths in urban and suburban centres as appropriate

Transfund – Principle objectives


Transfund's objective is to allocate resources in a way that contributes to an integrated, safe, responsive and sustainable land transport system

ARTNL Mission statement


To build and operate integrated, safe, cost effective and reliable passenger transport facilities for the Auckland region

Appendix Two: Bike Station Long Beach marketing material

A PARK & RIDE FOR CYCLISTS.



PARK, FIX, BORROW & BUY




PARK

INDOOR ATTENDED BICYCLE PARKING- Free

- Available during regular business hours

24-HOUR BICYCLE PARKING

- Members only access




FIX

BICYCLE REPAIRS

- Quality maintenance at reasonable prices

AIR STOP

- Quick air fill-ups at no charge




BORROW

BICYCLE RENTALS

- Explore Long Beach by bike

24-HOUR BICYCLE LOANERS

- For members only




BUY

BIKE SHOP

- Lights, locks, gear & more


SNACK BAR

- Refreshments on-the-go



INFORMATION

- Maps, permits, clinics & more




HOURS OF OPERATION

<p>MONDAY - FRIDAY</p> <p>7 a.m. to 6 p.m.</p>	<p>SATURDAY & SUNDAY</p> <p>9 a.m. to 5 p.m. weather permitting</p>
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WWW.BIKESTATION.ORG

MEMBERSHIP INFO
SIGN UP TODAY!

ONLINE AT WWW.BIKESTATION.ORG OR ON-SITE





MEMBERS RECEIVE:


- 24-hour access to bicycle parking
- 24-hour access to bicycle loaners*
- More than 50% off bicycle rentals for family and friends*
- 10% off retail purchases
- Discounts on clinics
- Changing room/restroom
- Bicycle parking network privileges
- A tax deduction


* Bike loaners and rentals require a valid credit card and driver's license.


PUBLIC TRANSPORTATION LINKS


BUS


METRO


SHUTTLE



AQUA FERRY



BIKESTATION LONG BEACH

221 East First Street, Long Beach, CA 90802
562.436.BIKE (2453) • www.bikestation.org

BECOME A MEMBER AND BE A PART OF THE SOLUTION TO CLEANER AIR, LESS CONGESTION, AND A HEALTHIER COMMUNITY.



Appendix 3: Web based reference material

US. Bikestation^R

www.bikestation.org

International examples of bike stations

<http://www.velomobiling.com/gallery/TransportationStrategy/TransportSolutions/BikeFacilities/parking/>

McDonald Cycle Center (Chicago, USA)

<http://www.chicagobikestation.com/>

http://www.aia.org/aiarchitect/thisweek05/tw0325/0325pw_bike.htm

Munster bike station, Germany

<http://www.muenster.de/stadt/livcom/index256.htm>