

Crossings

BMW YOURMELBOURNE 2023

Proposal Presentation

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CROSSINGS

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We respectfully acknowledge the Traditional Owners of the land on which we will live and work, the Wurundjeri Woi-wurrung and Bunurong Boon Wurrung peoples of the Eastern Kulin, and pay respect to their Elders past, present and emerging.

We acknowledge and honour the unbroken spiritual, cultural and political connection the Wurundjeri, Bunurong, Dja Dja Wurrung, Taungurung and Wadawurrung peoples of the Eastern Kulin have to this unique place for more than 2000 generations.

This project will work closely with first nations people in all aspects of the transition to a more mobile 2030. Culturally appropriate design will be implemented and cultural facilitation will be held throughout.

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What is a crossing?

Def. 'Crossing': A traversing or travelling across.

We cross roads, tramlines and bike paths, rushing past them over the course of our day. Some crossings are spaces, like stations, that may be a crossing of people coming to or going from their destination. These crossings are only becoming larger as Melbourne grows. Lots of work is being done to smooth ease of travel, but what else is happening at these crossings?

Our mobility is deeply connected to our lived experience. The way we interact with the world is dictated by how we move. Often mobility can be a senseless action, moving through the city as quickly as possible—headphones in and blinkers on.

In 2030 we envisage crossings to be a place of people, culture, community and biodiversity. Through this project we work toward improving the mobility of the people of Melbourne in an environmentally, socially and culturally sustainable way.



Can mobility increase biodiversity of urban areas?

Can mobility foster social inclusion and community?

Can mobility develop cultural understanding and creativity?

Guided by these questions, this project looks to create crossings between Melbourne's people, infrastructure and the environment.



Context

Our Project

In 2023, the climate crisis is already here. Above all else, sustainable futures need to be feasible, realistic and actionable. This project focuses on a highly mobile and environmentally sustainable way for Melbourne to exist in 2030, without imposing utopian ideas.

We have created a possible future of mobility in 2030 that considers the 17 Sustainable Development Goals. Though, for this to be feasible and be achieved thoughtfully and with care, it will take time. For this reason, we propose a set of stages that transition Melbourne to this future over the course of seven years. We believe that an evolving project, with the ability to adapt built in, will create a more sustainable future than a project focused on the result and not the process.



Our Proposal

A step by step transitional project (over the next seven years) that develops Melbourne's crossings into a web of mobility that provides for Melbourne's people and nourishes environmental, social and cultural opportunities.

Progress is made slowly and requires motivation, engagement and support. Our project starts with these pillars by working with communities to have more agency over their own mobility and improve links into planned infrastructure works. In the same way *Victoria's Big Build* is looking to connect Melbourne using larger infrastructure (train lines, airport links, and roads), our project looks to improve the hyperlocal links to provide better access and reduce environmental impacts.



Proposal

Project Stages

To slowly transition areas and communities of Melbourne to this hyperlocal network, we propose using pilot suburbs as testing grounds. The proof of concept of this project will come from an initial pilot suburb, where all stages will be implemented over time. Community feedback will be essential in understanding how this project should roll out across Melbourne. It's crucial that this project understands how local cultural contexts need to be considered as this proposal is not one size fits all, it is designed to accommodate differences and local needs.

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Policy Change in LGAs

How do we begin to get Melbourne moving at a local scale, without adding any additional infrastructure?

The first stage of this transition will be based around policy change in the Local Government Areas (LGAs) to make the most out of existing infrastructure. Our project has looked to a number of cities made more mobile through the use of bikes and bike networks. Though cycling is a hobby for some in Melbourne, it's not considered a safe or reasonable mode of transport for most people. We seek to change this, starting with incentives for Melbournians to own their own bike and followed up with infrastructure to encourage bike use.

Stage 1

Initial steps of this transition include:

- A ride-to-work/ride-to-school scheme to be implemented in the LGA which encourages people to buy a bike for a tax benefit or rebate. This is inspired by an existing and successful program model that is already running in the UK (CycleScheme 2022).
- An important part of any successful project is to understand the response and metrics of change after implementation through accurate data recording. Key bike path thoroughfares will start to be surveyed for usage. An important aspect to this early stage of the project will be understanding when and why cyclists choose not to use bike paths to track where they can be improved. Depending on the time of year, seasonal indexes will need to be introduced to the data (temperature and rainfall for example).
- Use of pedestrian paths and cycle networks are already surveyed by the *Bicycle Network* (Bicycle Network 2019) this organisation will be approached to consult with Crossings to establish an autonomous data collection system, which will be used for strategy and development at later stages of the project.
- Engagement programs in schools and workplaces will begin to educate the community on bike usage and identify most problematic areas.
- Biodiversity offsets and carbon credits will be budgeted for in this project to ensure a net zero impact of the project. *Cassinia Environmental* will be engaged to manage these biodiversity offsets through their ongoing program *Wilderlands* (Cassinia 2023).



Stage 1

Bike-led Superblocks

If you can ride to work but don't feel safe riding to the shops are you living with ease of mobility?

A superblock is a section of multiple city blocks that are combined into one larger urban block, bounded by arterial roads. Within the superblock, the local road network is designed to service the community and local needs only. Barcelona is currently testing a series of superblocks across the city to bring life back into their local neighbourhoods. We propose using this concept of superblocks to connect with other existing transport infrastructure and bring commuters closer to train lines, bus and tram services with safe and accessible local block connections. By incorporating a superblock-like approach into a connected bike path grid, Melbournians will be more mobile in their local area and rely less on using cars to move about their immediate suburb.

Our proposed interventions for this stage are as follows:

- Create defined superblocks (approx 400m x 400m - 1km x 1km) with the intention of providing residents access to a bike network that connects them to their basic needs (shopping, school, work, health, leisure). By making mobility easier and safer within these areas, we are setting the foundations for later transitions.
- Implement road dieting (shrinking of non-essential roads) to incorporate bike thoroughfares that better connect suburban streets to the existing bike path network around Melbourne.
- Engage local native nurseries to consult on planting out alongside existing bike paths where possible. As the bike web grows, a nature corridor will grow with it, giving better mobility to fauna.



Stage 2

Crossing Hubs

Can mobility become a way to build community and connect us?

Inspiration for our *Crossings Hubs* comes from Copenhagen's *Superkilen* (Superflex 2012), a communal space along a bike path where play, creativity, culture and community is encouraged. A bike-led multi-use community space is central to the next stage in our mobility design. It will be designed to facilitate environmental net-gain with the planting of endemic species that foster native wildlife. This space can be created closely with the community and can house community batteries, bike service centres or exhibition spaces. For this to be possible, we must identify key crossing areas within the network and look to find disused or brownfield spaces to develop into crossing hubs.

Each hub may incorporate:

- A community battery which will aim to power the local community with renewable energy. Harvested from solar PV systems mounted on hub structures. The local community will be able to opt-in to a rebate scheme which stores their excess rooftop solar in the community battery, providing decentralised power (City of Melbourne 2021).
- A bike storage and service space. As the hubs will be at major crossing places, many will be near major infrastructure which commuters can use after their initial bike ride.
- Diverse planting of native species endemic to the area to increase biodiversity. Nest boxes will be added to existing trees in the area to provide protected habitat for native fauna.
- A public open space for the community to use. Picnic, play, and toilet facilities. The toilet system will be a gender neutral composting system and waste from these toilets will be sent to project partner, *Cirque du Soil* (Cirque du Soil 2023). After compost is processed with other food waste compost it can be used on gardens in the project.
- A community garden space with water collection and tool storage boxes. These will be rented by local people or businesses which can supplement the maintenance of the network.
- A cultural space where local artists, actors and musicians can exhibit their work or hold community events.
- Traditional Indigenous Owners will be consulted and have a voice in the design and creation of these spaces.



Stage 3

Development

Building upon our early stage foundations

This project is based around the bike, human or electric powered, but is everyone able to ride a bike? An ongoing issue with bike paths in 2023 is their size, can development of existing bike networks give opportunity to more people. Mobility scooters, wheelchairs, recumbent bikes and other alternative transport options must be considered in this stage of *Crossings*. By developing existing bike paths we also will be able to increase the flow capabilities, allowing more people to use the network. During this phase, data collected from Stage 1 will be used to better understand high traffic areas and develop multi-lane sections. In these sections a roof structure will be built over the path, in order to give shelter to users. The roofs will be used as the main power collection space for the community batteries, mounted with solar panels.



Stage 4

Connection & Expansion

Mobility for all

This stage will ensure that *Crossings* achieve what it sets out to—looking at mobility in an environmentally, socially and culturally sustainable way. This requires constant review and reflection of the project to adapt to any community feedback or major design issues. This stage moves *Crossings* from LGAs to a wider network, further developing the mobility of Melbournians and beginning to create a network which spans across the city.

This will be done through:

- Improved connectivity of the *Crossings* network to incorporate large scale infrastructure (train stations, bus lines, trams, airport links and ridesharing).
- New high traffic bike paths which will connect the superblock style local grid into a wider network.
- Use data from early stages of the program to find any high traffic areas in need of development to accommodate more bikes.
- Expand the program to other LGAs in regional areas of Victoria.



Stage 5

Refinement

Can we make mobility circular?

The final stages of the project looks at incorporating additional schemes to make mobility as circular in its systems design as possible.

To do this we have included:

- Inspired by Taiwan's *Gogoro Network* (2020), we proposed an electric bike battery bank scheme where subscribers will have access to a battery bank for electric bikes which are charged via 100% renewables. The subscription fee for access to this bike battery bank pays for the upkeep of batteries and charging banks.
- Evaluate the materials used and investigate potential of using the wood grown in the initial phases as a material for future phases, with replanting of harvested wood essential.
- Investigate a bike trading system to give new users access to cheaper bikes as experienced riders decide to upgrade.



Stage 6

2030

A possible future of mobility

This project has been based on a seven year transition to 2030. Upon completion, with community, Government and industry support, we will have a hypermobile urban network facilitating the 17 Sustainable Development Goals and will be actively working together toward a better future.

Stage 7

Outlined below are the positive impacts of Crossings across the 17 SDGs:

- **Poverty:** This project works to provide fair and equal access to transport, and will work to reduce the cost of mobility across the city. By increasing the independence of the community (less need to travel outside the LGA) more jobs will be available which may help to combat poverty. There may also be jobs created through the *Crossings* project itself.
- **Hunger:** Community gardens will help to educate locals about food growth, and they may be able to provide affordable food for the community.
- **Health and wellbeing:** Central to *Crossings* is mobility via human-power. The increased levels of safe bike paths will encourage individuals and families to move via bike, rather than car. This will aid in overall physical activity and health.
- **Education:** *Crossings Hubs* are a place for the community to learn and play. By providing a space where people can come to learn through engagement (via art projects, gardening, etc...) the overall education of the community may grow.
- **Gender equality:** This project facilitates equality amongst genders by encouraging an inclusive and welcoming approach to mobility and access. *Crossings* welcomes all to be a part of the project at local and city levels and does not discriminate. The facilities included in our planning allows for gender neutral use (eg. gender neutral toilets).
- **Clean water:** *Crossings* collects its own water from built structures for all bathrooms and gardens and also incorporates a composting toilet system. This means there is no risk of water pollution to nearby waterways.
- **Affordable and clean energy:** Community batteries are central to this project, accompanied by solar roofed bike paths that power the local community in a clean and affordable way. The local communities can opt in for a rebate when using their own excess rooftop solar to charge the community batteries.
- **Decent work and economic growth:** Increased mobility provides better opportunities for people to work in a more varied geography. This project will also increase mobility of delivery based workers which may help local business and allow others to establish businesses that make use of this new infrastructure (eg. the gig economy).
- **Industry innovation and infrastructure:** *Crossings* is a platform for others to innovate between and around. The project works to lay foundations to get Melbourne more mobile on a local level to better connect them to larger infrastructure established by mobility providers across Melbourne. This may provide new opportunities to mobility providers to add to their existing infrastructure or innovate new plans.
- **Reduced inequalities:** People of all backgrounds across Melbourne will benefit from this project. It may particularly benefit those who are in less accessible pockets of the city, or those who may not have access to a car. This project has also worked to reduce the cost of mobility and the monetary value attached to improved mobility (like having to pay for petrol).

- **Sustainable cities and communities:** *Crossings* works to involve communities on as many levels as possible throughout the project, working directly with them to increase the sustainability of Melbourne.
- **Responsible consumption and production:** This project removes the need for people to drive to work, wasting petrol when they are the only car user. It also connects them to larger transport infrastructure, removing the need for them to drive to as many places. This should reduce the need for development of train station parking, which is a more responsible use of materials.
- **Climate action:** *Crossings* demonstrates easy ways that Melbourne can adapt to become a more climate aware city. It encourages climate action, as people who use this network will become better educated about the benefits of a sustainably minded project .
- **Life below water:** This project works to protect life below water by removing cars from the road network and thus reducing pollution.
- **Life on land:** In 2023, mobility ignores life on land and builds infrastructure that is damaging to habitat. Our solution looks for ways the city can create more space for wildlife whilst increasing overall mobility.
- **Peace, Justice and Strong Institutions:** *Crossings* allows people and companies to get involved in moves forward for our community and the environment.
- **Partnerships for the goals:** This project encourages a more environmentally aware commuter/traveller/company/entrepreneur and actively partners with sustainable businesses.



Stage 7

Material List

This project seeks to use sustainable materials in its execution. Keeping in mind our environmental footprint, we have sourced local materials from environmentally aware businesses across Victoria where possible.

Paths

All asphalt used in this design will apply a lignin supplemented mix, a more sustainable paving material. Lignin is a suitable mixing supplement in asphalt and is a natural bi-product of the paper industry. It is the second most common biopolymer on earth and therefore is essential to be used to offset the normally required amounts of oil-based asphalt (Gaudenzi E et al. 2023).

Structures

Where possible wood will be used when building structures in this project. As trees grow they sequester carbon from the atmosphere and store it as cellulose. By using wood throughout this project, we will be locking up the carbon which would be lost back to the atmosphere if the wood was burned or placed in landfill. In order to do this project sustainably, reclaimed wood will be used as often as possible. *Revival* (2023) is a local Melbourne sustainable materials supplier which sources wood from demolished projects and finds new uses for it.

When reclaimed wood cannot be used in this project, wood will be sourced from the *Bambra Agroforestry Network*, a group of environmentally minded farmers seeking to sequester carbon and have a biodiversity net positive impact on the local surroundings (Reid 2021).

Rainwater collection

Rainwater collection systems will be in place on all built structures for use in bathrooms and gardens. Composting toilets are to be implemented in bathrooms to reduce water use.

Compost

Crossings will work closely with the Brunswick based company, *Cirque du Soil* (2023). A local non-for-profit which harvests food waste from restaurants which would normally end up in landfill and produces highly fertile compost. By partnering with this equal opportunity, environmentally conscious business, Crossings will be able to better use the waste from composting toilets and increase fertility of its gardens. This is a circular minded system.



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