MOVE MY WAY
A RESOURCE FOR LOCAL GOVERNMENT

ASTROLABE GROUP

Lessons for using transport and mobility data assets to improve outcomes for councils and their communities

March 2021

About this document

This project was supported by funding from iMove and Local Government NSW, and in-kind contributions from Willoughby City Council. Astrolabe Group provided project management and UNSW gave technical expertise and are hosts of the portal.

In preparing this document, Astrolabe Group has made every effort to ensure the information included is reliable and accurate. Astrolabe is unable to accept responsibility or liability for the use of this report by third parties.

Acknowledgements

Thank you to all project participants who talked with Astrolabe Group and shared their insights and learnings from the project to develop this playbook.

Acknowledgement of Country

We acknowledge the Traditional Custodians and First Peoples of this Land and pay our respects to Elders, past, present and emerging.

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Why this Playbook was created

Car-related congestion wastes time, creates emissions and reduces the appeal of places and spaces.

Providing real time data that allows workers, shoppers and visitors to make more informed transport choices can reduce congestion and improve the social and economic amenity of place.

Using data to deliver impact

This resource was developed to help councils develop a data platform to enable and encourage sharing of information by public and private providers to tackle transport and mobility issues.

While this resource focuses on transport and mobility data, the principles outlined to set up a data-driven solutions platform is broadly replicable .
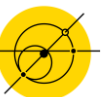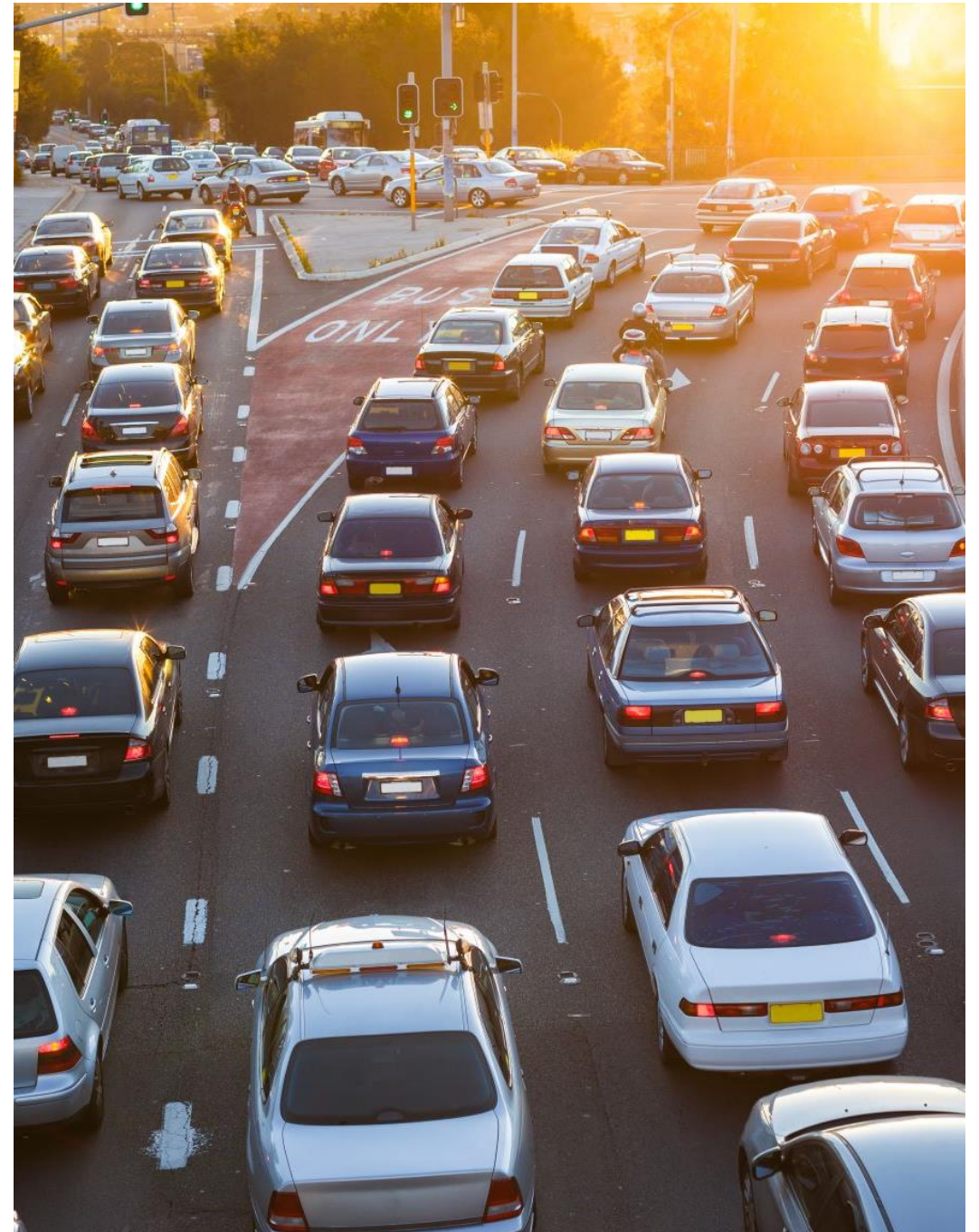
Introducing data-driven mobility resources

Congestion in our local centres can cost local communities many millions of dollars in lost productivity, car running costs and vehicle exhaust emissions.

By enabling better informed community choices we can:

- Reduce the reliance on private motor vehicles and improve use of public transport, shared transport and active transport

- Reduce emission related pollution and improve the attractiveness of local centres promoting visitation and local commerce

- Communicate congestion and capacity constraints to encourage those who have flexibility in movement options to avoid problem areas and times

- Develop a data driven approach to transport planning, regulatory reform and investment to support the implementation of future focussed technologies such as electric vehicle charging stations, autonomous vehicle zones, shared and on demand transport.

Through a pilot project focussing on the Chatswood CBD, a local transport data community was developed, with appropriate privacy and sharing policies to protect the rights of participants and the community. Research methodology was developed by the iMOVE Co-operative Research Centre, supported by partner universities and Willoughby Council to create the Move My Way project.

Move My Way has created an open source, real-time data catalogue and analytics toolkit that will be made available to the community, businesses, software developers and researchers to develop products and services to promote better transport choices.
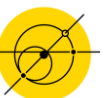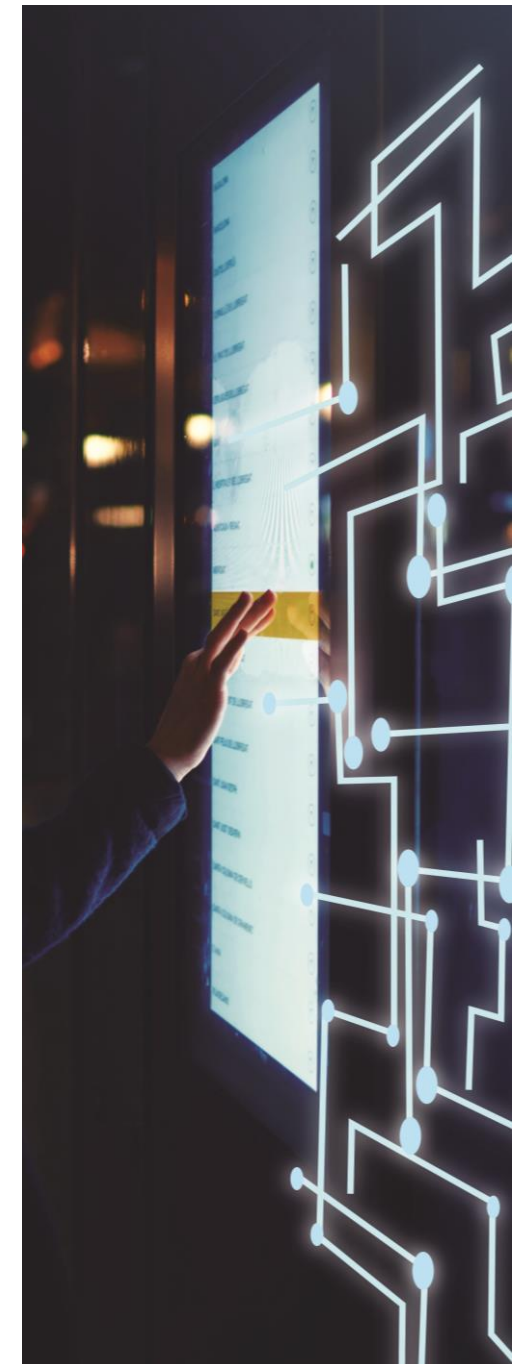
About iMove

iMOVE is a consortium of 44 industry, government, and research partners engaged in a concerted 10-year effort to improve Australia's transport systems through collaborative R&D projects.

iMOVE was established as a Cooperative Research Centre for the transportation and mobility sector. iMOVE helps businesses and governments tackle transport-related challenges by connecting and activating ideas, people, and resources to get things moving. iMOVE's extensive network across industry and government helps partners exploit great ideas to develop new transport products, services and systems to improve the movement of people across Australia and within our cities.

iMOVE's research acknowledges a person's decision to drive is often made without an understanding of:

- all of the transport options available to them,

- the congestion likely to be experienced on their journey and

- the availability of parking at their destination.

How can data help?

In its work with the community, Willoughby City Council has identified access to the Chatswood CBD as a significant pain point and addressing it is a high priority for residents, workers, and visitors. Council sought to use a design thinking process to test ideas to improve both actual and perceived access issues, with a view to attract and retain commerce in the Chatswood CBD.

As Chatswood becomes increasingly popular as a mixed use centre, it risks becoming unacceptably congested and harder to access. This project seeks to develop a data driven approach to improving mobility, empowering the community to access multiple data sources to make better informed choices that suit their individual needs. The success of the project relies on the people who engage with the data.

A key driver for a data-driven approach to transport and mobility was recognising there is a problem with congestion, that there is no readily available solution but that there are myriad data sources that could help inform solutions and help to solve the issue including public and private information in a variety of formats.

Without a data portal to enable data sharing across stakeholders, unlocking the potential of a data-driven solution is challenging. Establishing a data portal is the first step in creating a platform to develop new solutions and provide information that can be used by a range of participants to design solutions.

A challenge for the project was despite understanding the potential benefits, the outcome can't be determined from the start and relies upon the cooperation of data owners to succeed through creating a wholistic picture. However, the key deliverable – the data portal – is an enabler for data solutions to mobility issues, and can be as limited or unlimited as the partners who engage with the information. This can make it difficult project to explain initially, however, the very real potential to address one of the most common pain paints for communities warrants investigation.

How do you start?

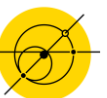There are four key actions needed to establish a data sharing portal.

1. Clarify the problem to be addressed	3. Collate all available data
2. Get the right team together	4. Create collaborative on-line spaces to work together

How do you start?

1. Clarify the problem to be addressed

The first step is articulating the aim of the project in as precise a way as possible. This should set out that arriving at data-driven solutions requires a two-phase process. Specifically, data-driven solutions are not possible without setting up a data portal, and the data portal is not the solution but rather the tool or environment that allows Council and other partners, to arrive at solutions. These solutions may be as simple as the provision of information that creates education and awareness about causes of congestion and steps that can be taken to avoid or minimise it.

Establishing the project aim early needs to recognise that setting up a data portal can happen very quickly. Staff and stakeholders need to be ready to respond.

3. Collate all available data

The first step of a data-driven project is understanding the full suite of data available and any gaps that may exist. A good starting point is bringing together all geo-coded data to start building an understanding of what is happening by place. Being able to see the full suite of data that is available creates a strong starting point to explore what might be possible.

2. Get the right team together

The 'Move My Way' project set up a team that prioritised data technicians at UNSW, staff at Willoughby City Council and representatives from the digital products team at Transport for NSW.

Bringing together the internal Council team at the project outset is critical, including an internal project champion and representatives from the IT teams who understand the technical requirements for on-line portals and data sharing.

Using UNSW to develop and host the data platform allowed for faster delivery than would otherwise be the case. It also gives access to a diverse range of skills.

External project management also facilitated faster delivery for the project, with clear line of sight and expedited liaison between partners.

4. Create collaborative on-line spaces to work together

Creating spaces for stakeholders to meet remotely, and share information and data, facilitates project delivery. This can mean checking that local IT systems support the software used to hold meetings or share information, or setting up appropriate alerts so everyone knows what is happening.

Essential ingredients for a good project

Engage all stakeholders early

Develop use cases

Data provision and access

Engage all stakeholders early

- As a large organisation with multiple touchpoints, make sure everyone who will be involved with the project is engaged early and understands the aims of the project. Clear communication about the two-phase approach needed to deliver data-driven solutions will help explain where the project is up to.

- Engage the IT team early. Developing a data portal and data-driven solutions is heavily reliant on the IT team because this team has to approve security and make sure data sharing protocols are in place.

- Engage the communications team early to develop a clear narrative about aspirations to encourage stakeholders who will use the data to create solutions, as well as share project progress with staff across Council and community members. This is a different type of project than is often seen in local government so different communication strategies may be needed. There is also a win for Council in being seen to take action on an issue that is of high interest to local communities.

- Document responsibilities of everyone involved early in the project (those both within council and external stakeholders).

- Communicate the value of data sharing across the internal project team as well as Council more broadly. Good examples of this are open data hubs from the City of Sydney and Transport for "NSW. NSW Government recognise this in their *Digital* Strategy, which reads, "There is no asset more critical than usable, accessible data that enables insights and informs decisions." Using the data held by an organisation while respecting privacy requirements, can be used to drive data-informed change in legislation, policies and processes.

- Advocate data literacy across all Council staff to support a data sharing culture.

- Identify any shortcomings in data availability and consider addressing this by installing sensors or other measures where possible to create a fuller picture.

Develop use cases

- Establishing the data platform is the first step to developing solutions to mobility and transport issues. Working out specific use cases for the data on the platform will help test new ways of using the data as well as how to communicate what might be achieved.

- Use design thinking tools to articulate use case and expected outcomes (see Appendix 1) . This is the opportunity to delve into as much detail as possible working out what the key challenges are, who they affect the most and how.

- Even once initial use cases are worked out, continue to generate ideas about how the data can be used. This is an ongoing activity and becomes easier the more data there is in the portal.

- Find someone who can be the translator between community needs and the technicians responsible for building the data portal and facilitating data sharing.
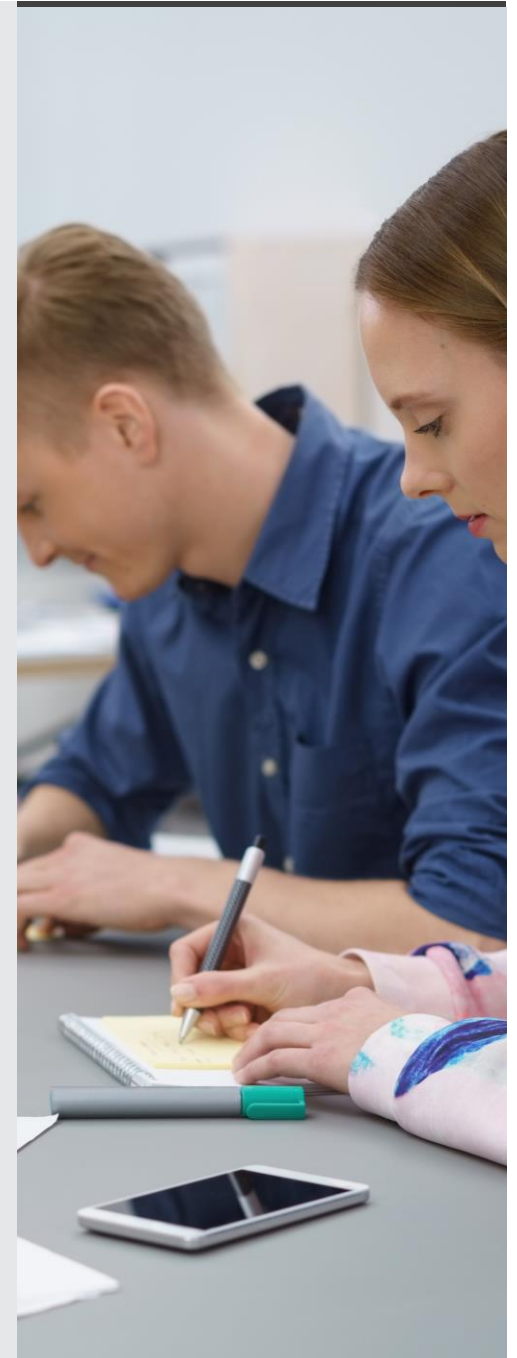
Data provision and access

- Data is at the heart of this project so having someone on staff, or someone who can provide robust advice, on the legal and privacy requirements for data sharing is important. Council needs to understand the impact of data hosting and data sharing on different parts of the business and ensure that privacy policies and insurance requirements are met in line with adopted policies and procedures around data

- There may be a need to ensure data sharing policies are in place, ensuring personal data is protected, and shared in a way that can be documented and accounted for (see Appendix 2). The 'Move My Way' project needed a privacy policy developed before the project started.

- Set up a process for all data to be provided in a timely way. This should not restrict the type of data that should be provided as one of the things to be explored is how diverse data sets can be brought together to provide new insights. One way to do this easily is setting up a site where data files can be uploaded via the Cloud.

- Part of successful project roll out is setting up a process for collecting and updating data in the portal. This could include setting up live feeds, or an API to do a weekly or monthly update of static data.

- Start producing insights from the data as soon as possible to show what's possible and encourage other data providers to share their data.
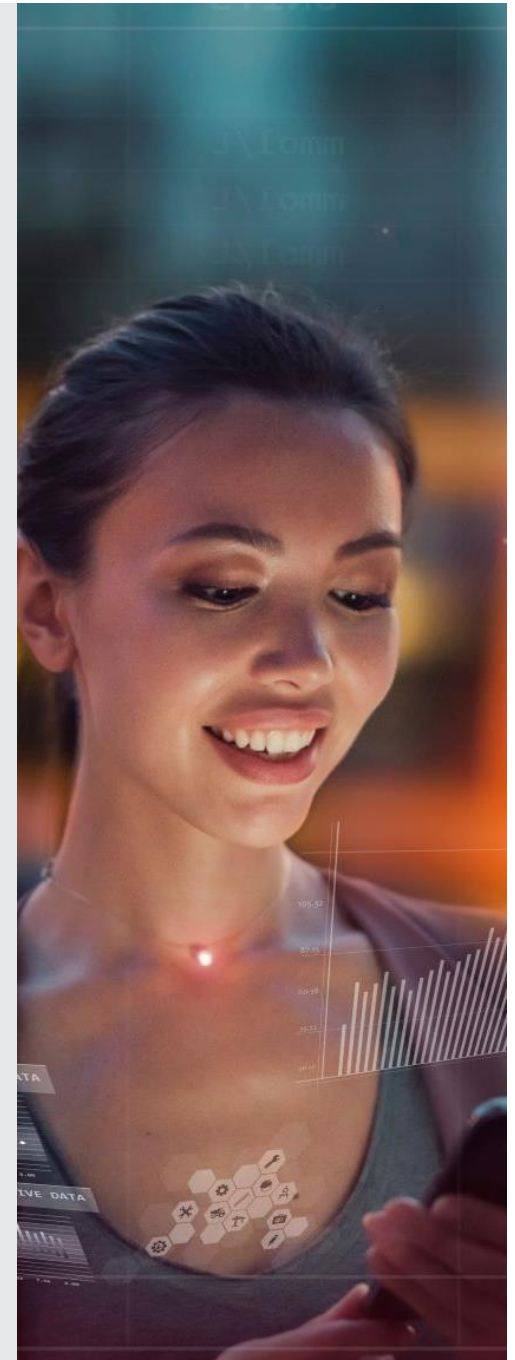
Challenges for setting up a data portal

There are two key challenges for setting up a data portal and moving to data-driven solutions to city challenges:

- Getting the data you need

- Communication about the purpose of the project and how data can help.

Bringing together data from a range of users provides greater opportunities to develop solutions to key problems. There is data held by private operators (for example, shopping centres or private parking providers) but commercial sensitivities can create barriers for data sharing. Addressing this challenge should be explored at the project outset and identify a use case that could benefit all data providers. Clear protocols for data sharing and different levels of access for different users is also critical here.

Early and ongoing communication is key to successful project delivery. This includes a champion within Council who can share the project vision and its stepwise implementation, and someone who can translate highly technical aspects related to the portal engage with those who are not technical. There also needs to be a way of assessing if data tools are fit for purpose, for example, predictive modelling of available car spaces may not need to be highly accurate for mapping of demand by time of day.

Sharing the Learning

Transport and mobility applications don't stop at LGA boundaries and there is an opportunity to develop cross-border solutions to mobility and transport problems.

Importantly, the systems and tools are now in place to scale the data portal and potential customer facing solutions. The portal design work has been done and is easy to replicate by City Futures, UNSW.

Willoughby City Council want to share the development process from a Council perspective to enable other Councils to use the portal. iMove and TfNSW have links across industry to support the increased use of mobility data for analysis. Moreover, the more data from across different councils and other data providers available in the data store, the better the solutions that are likely to evolve.

This platform allows data to be shared in a safe place that now will allow developers to explore building apps to solve problems for people trying to move around places in different ways, and to look at how predictive modelling can help with macro level planning or micro level decision making.
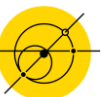
Tools

Design Thinking

Data Sharing

Tool 1: Design Thinking processes

A design led approach enables a methodology for innovative problem solving, allowing your solutions to be both strategic and creative.

This approach can support developing data solutions to key challenges, providing processes and tools to support collaboration across organisations, subject matter experts and end-users.

Design is human centred, has a bias towards action, embeds a culture of prototyping and experimentation.

A design approach helps us:

- Understand challenges before designing solutions so they target a specific problem statement

- Iterate and experiment with low-fidelity prototypes, testing solutions early to improve

- Speak to the people we are designing for – end-users and the community

Design thinking starts with empathy and builds on this to define your key challenges, identify potential solutions, quickly develop prototypes and test. Throughout your project, you will circle through phases of this process as you continue to refine your solution.

There is a wealth of design thinking process and tools available to support this approach. One such approach that influenced this project is from the d.School at Stanford University (image on right). Details of the process are described on the following page.

Empathy

Define

Ideate

Prototype

Test
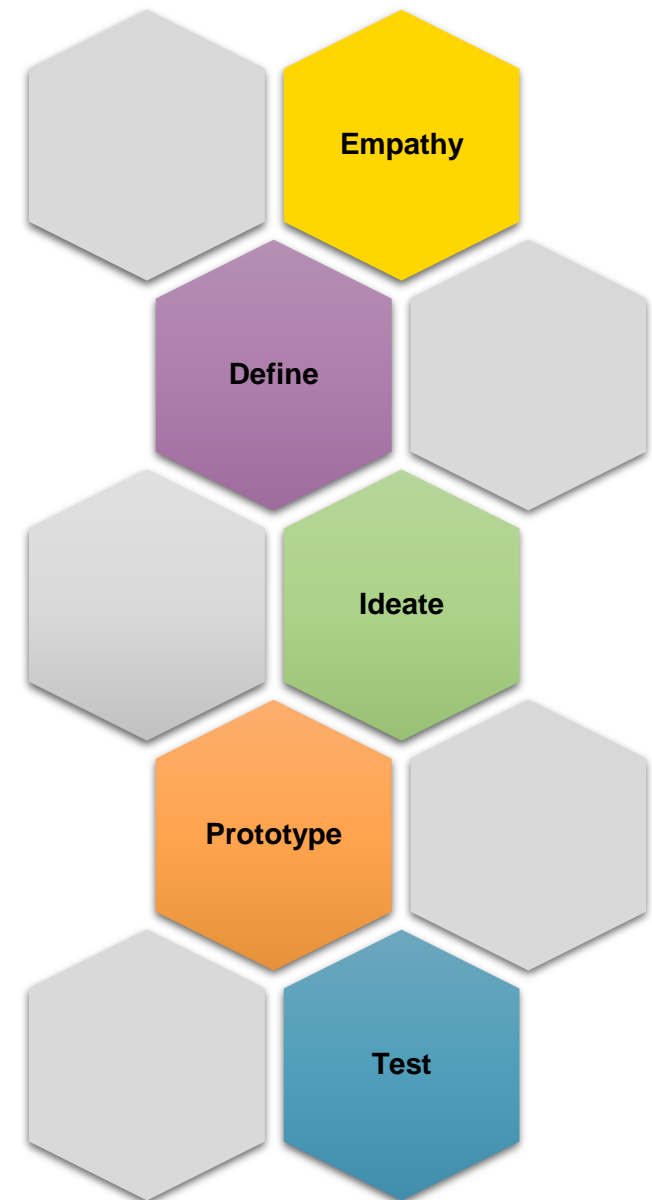
Stages in design thinking

Empathy

Understand the end users of your solution by building your empathy of transport and mobility in a particular place using a deep dive into the data, observations and engagement. Build personas of who we are designing solutions for. Think about what people say, think, feel and do.

Define

Think about what users need based on what you have heard, what you have observed and what the data tells us about people's actions. Identify the blockers to users doing what they want to do and think about what this means. Define your problem that you will be designing your solution around. Unpacking what users need and identified blockers allows us to explore intervention points. Ask, "how might we …" questions – how might we help drivers find available carparks? How might we make it nice to walk about the CBD?

Ideate

This is the stage to come up with as many ideas as possible – brainstorming is the best way to do this. Brainstorming creates a distinct segment of time when you are intentionally generating ideas and not evaluating them. This is when you should generate many wide ranging ideas, and not just ideas that you know are safe or viable.

Prototype

This allows for the active generation of low-fidelity artefacts that allow different aspects of a solution to be explored and tested. This can be done with pen and paper drawings of wire frames, digital examples of how data could be used (using snapshot data instead of live data, or static visualisations), or mock-ups allowing users to test using a device or app.

Test

An important part of this phase is capturing feedback on the use of your solution using prototypes. Observe people as they use the prototype, have them talk through their experience and ask them questions. Capture feedback about what's working, what could be improved, any questions people raise and new ideas users might have.

Iterate to your solution

Continue circling through the design process to refine the solution. This could be when the prototype is made, or after a solution has been put in place where feedback is being collected on what users think.

A solution should not be a 'set and forget' but evolve to respond to users' needs. This is the key advantage of data-driven solutions, that they can evolve as more data becomes available.
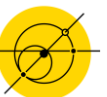
Tool 2: Practical data sharing

There are some practical steps that can be taken to build a data sharing framework by local government.

This includes a framework that supports the five safes:

- **Safe Outputs** - the residual risk in publications from sensitive data

- **Safe Data** - primarily the potential for identification in the data. It could also refer to the sensitivity of the data itself.

- **Safe People** - the knowledge, skills and incentives of the users to store and use the data appropriately. In this context, 'appropriately' means 'in accordance with the required standards of behaviour', rather than level of statistical skill.

- **Safe Projects** - the legal, moral and ethical considerations surrounding use of data. Often specified in regulations or legislation, typically allowing but limiting data use to some form of 'valid statistical purpose', and with appropriate 'public benefit'.

- **Safe Setting** - the practical controls on the way the data is accessed. At one extreme researchers may be restricted to using the data in a supervised physical location. At the other extreme, there are no restrictions on data downloaded from the internet.

We also add three additional safes:

- **Safe Organisation** – The credibility of an organisation.

- **Safe Outcomes** – The ultimate use of the output.

- **Safe Lifecycle** – The time sensitivity of the data.

We propose a three step approach to creating a data sharing framework:

1. **Data Sharing Policy**
- Links to the vision for the Council
- Sets out the framework for sharing and opening data
- Positions Council to enable innovation

2. **Data Sharing Procedure**
- The practical processes for managing data
- Lifecycle management
- Roles and responsibilities

3. **Data Sharing Assessment Template**
- Tools for assessing every data set and use case
- Supports decision making about openness
- Managing accountability
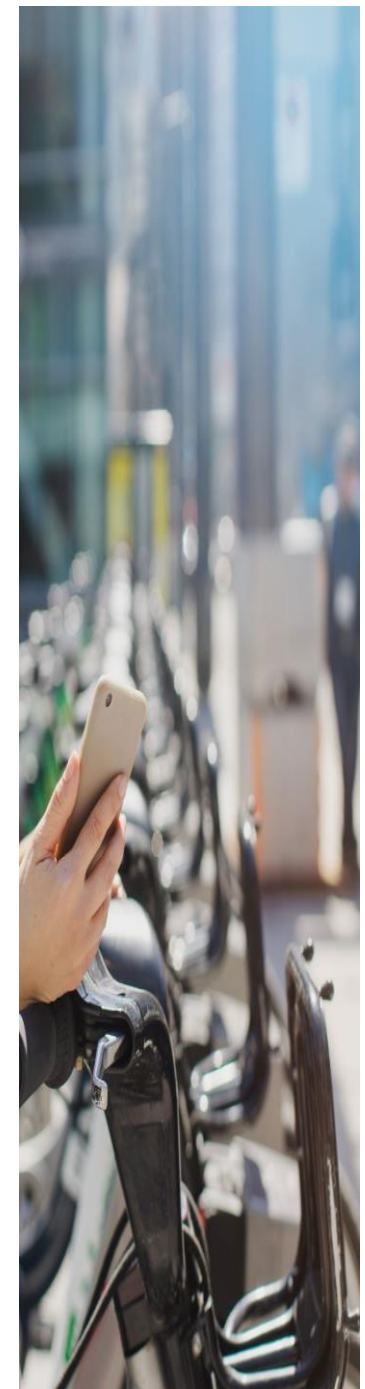
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We create change with empathy.

Astrolabe Group are the recognised experts in urban growth and change management with a uniquely empathetic approach to client and community.