Preparing for the Internet of Things (IoT) with a smart connectivity network

What does IoT mean?

At Yarra, IoT simply describes a collection of our physical things that are connected to each other via smart sensors. The physical things could include our council buildings, fleet cars, streetlights, drainage pipes or even things like the play equipment in our parks. The smart devices collect and track information about our physical things and sends this data to us via the cloud... similar to how a phone sends an sms.

We can use this data to make more informed decisions, manage our physical things more efficiently and deliver more targeted or completely new services to the community. As we work towards our smart city vision, our use of smart sensors will increase, and the volume of data we collect and transmit each day will grow. We will need to move minute levels of data from our smart sensors in a quick, efficient and cost-effective way.

Our approach

We installed a Thinxtra Sigfox network at 14 council sites across Yarra. This was our first step in IoT connectivity and provided us with access to a low power, low-use network backed by the Australian Government's Clean Energy Finance Corporation. Yarra's water quality sensors were the first to use the network. These sensors monitor water pH levels, dissolved oxygen levels and temperature.

The network is also supporting Yarra Science Play, our STEM program helping primary students build skills for their future. The network may also be used as part of intelligent street lighting, traffic and pedestrian counting, smart signage and environmental sensors.

As we progress our smart city approach and our use of smart technologies grow, we may expand our IoT network infrastructure to support our changing needs and requirements.

Benefits of the IoT network

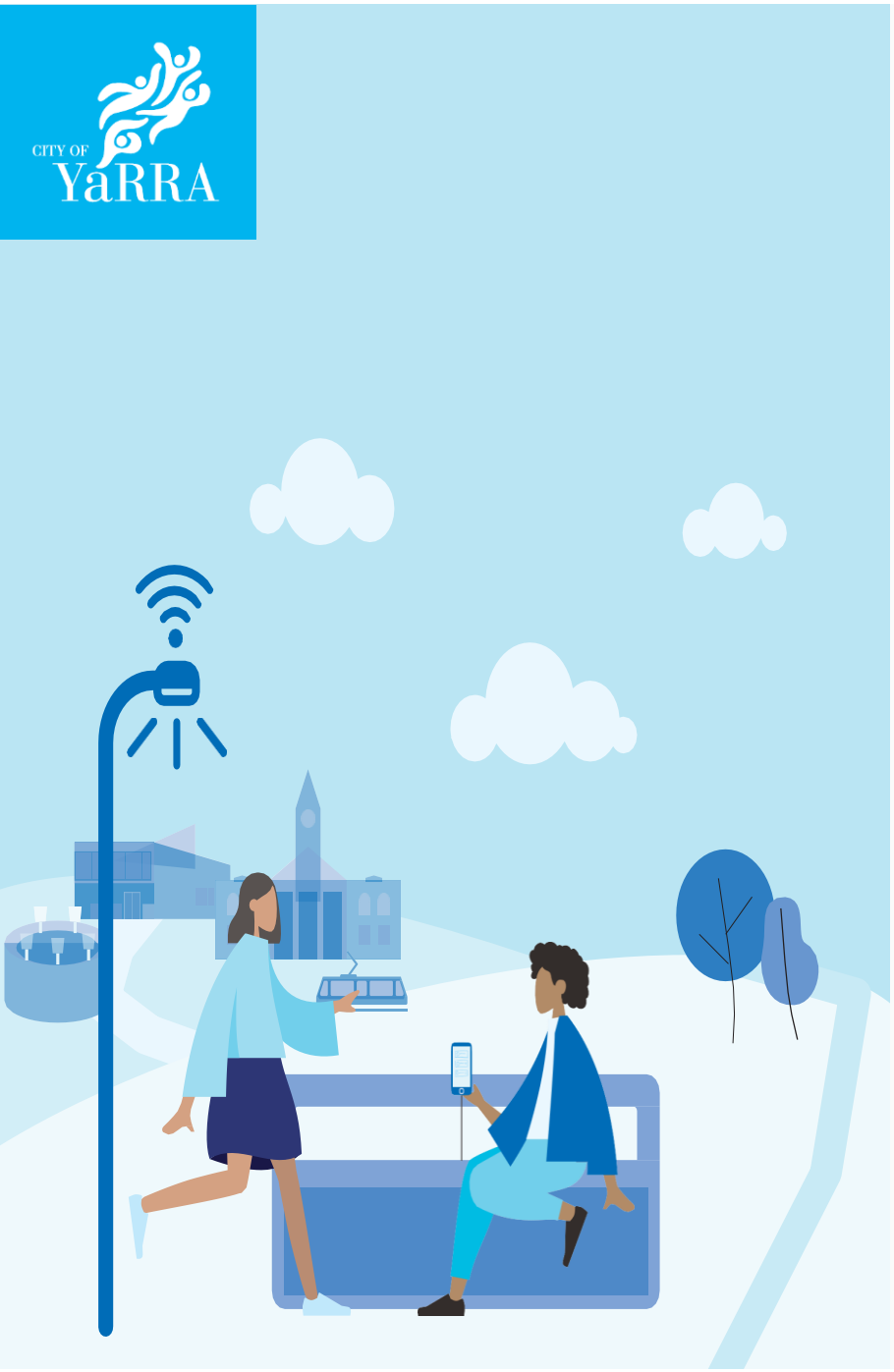|	
Uses less energy than a lightbulb (<80 watts)	Data security measures including encryption, firewall and VPN
Low impact transmitting 10-40x less power than a standard WiFi router	Enables data informed insights for better use of resources
Service efficiencies for economic sustainability	Future proofs Yarra with smart infrastructure

CITY OF YARRA

Internet of Things (IoT) Process
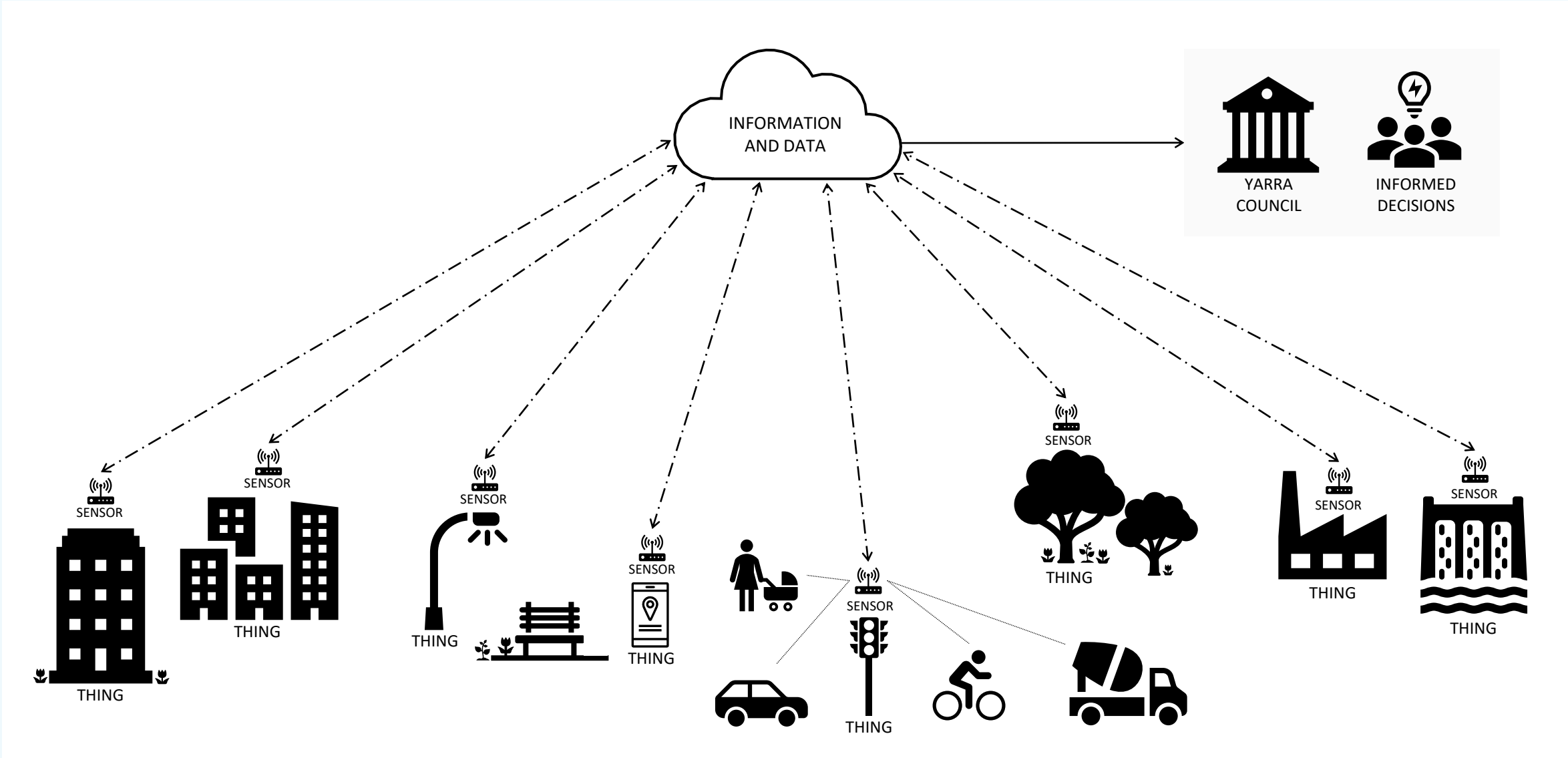
This is a smart partnership project involving

- Advocacy and Engagement
- City Works
- Thinxtra (external partner)
- Traffic and Civil Engineering
- Yarra CityLab