THE CITY OF
GREATER GEELONG

SMART CITY STRATEGIC FRAMEWORK

—

MARCH 2021

CITY OF GREATER
GEELONG

OUR SMART CITY WILL CONNECT TECHNOLOGY, DATA AND INNOVATION TO CREATE A MORE LIVEABLE, SUSTAINABLE AND THRIVING GREATER GEELONG.

The City of Greater Geelong acknowledges the Wadawurrung People as the Traditional Owners of this land. It also acknowledges all other Aboriginal and Torres Strait Islander People who are part of the Greater Geelong community today.

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MAYOR'S FOREWORD

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Greater Geelong has always been a creative and innovative region. With a long history of pioneering industry, manufacturing and design, we have the foundations to create the sustainable 'clever and creative' future our community aims for. Now, as we strive toward that vision, the way we use intelligent technology and data will be vital.

This document is the very first Smart City Strategic Framework for Greater Geelong. It has been developed with ideas and input from the community, and gives us a shared vision for the way we use smart technology, data and innovation in this region. The world is transforming right now and cities that are well prepared have the opportunity to make the most of the rapid advances in technology that are taking place.

This framework will help us become more environmentally, financially and socially sustainable, shaping the way we plan for our growing population and putting people at the centre of our decision making. It'll help us understand what we're doing well and where we can improve, assisting us to become more dynamic, agile and responsive. And it'll guide us as we work to make sure everyone in the community has access to the digital services they need, as well as the skills and confidence to use them.

The framework is a partnership with our community, so whether you live, learn or work in Greater Geelong – or even if you're an occasional visitor – we encourage you to get involved. We also pledge to use data and technology responsibly at all times, upholding the highest standards of ethics and transparency. The seven guiding principles in the framework, designed in partnership with the community, will keep us on track.

Our smart city has achieved so much already – we are excited by what the future holds.

CR STEPHANIE ASHER
Mayor, City of Greater Geelong

THE WORLD IS TRANSFORMING RIGHT NOW AND CITIES THAT ARE WELL PREPARED HAVE THE OPPORTUNITY TO MAKE THE MOST OF THE RAPID ADVANCES IN TECHNOLOGY THAT ARE TAKING PLACE.

INTRODUCTION

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Smart cities improve quality of life for citizens by embracing digital technology, leveraging data and fostering innovation.

They are inclusive, connected, sustainable, resilient and prosperous. They address persistent problems, deliver improved community experiences and provide more efficient services. Ultimately, they are better places to live, learn, work and visit.

We believe becoming a smart city is critical to achieving our community's clever and creative vision (see box inset). The purpose of this Framework is therefore to deliver a shared vision for the future of smart technology, data and innovation within our region.

Working closely with both citizens and stakeholders, we've identified seven guiding principles and five strategic pillars we'll focus on.

By building on our existing strengths and making the most of emerging and future opportunities, we want to enable everyone in our smart city ecosystem to participate and align efforts for the best possible outcomes.

OUR CLEVER AND CREATIVE VISION

By 2047, Greater Geelong will be internationally recognised as a clever and creative city-region that is forward-looking, enterprising and adaptive and cares for its people and environment.

SMART CITIES ARE BETTER PLACES TO LIVE, LEARN, WORK AND VISIT.

SMART CITY ECOSYSTEM

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ELEMENTS, SYSTEMS AND ENABLERS

New technologies on their own do not make for an intelligent, high-functioning city.

A smart city is a system of connected elements and enablers working together to create a more liveable, sustainable and connected community.

To achieve this holistic and integrated approach we require a commitment to governance, innovation and collaboration, as illustrated by Figure 1.

Figure 1: Elements and enablers of a smart city

SMART CITY ECOSYSTEM

CITIZEN SERVICE EXPERIENCE
- Accessibility and usability
- Digital service enhancement
- 24/7 access to services
- Digital literacy and democracy
- Cyber and physical safety
- Vibrancy and liveability
- Citizen empowerment

INNOVATION AND CO-DESIGN
- Collaboration networks
- Living Labs
- Education programs
- Design thinking challenges

GOVERNANCE AND POLICY
- Leadership
- Transparency
- Digital policy
- Funding

PLACE
- Green economy
- Sustainable infrastructure
- Smart planning
- Renewable energy
- Smart meters/sensors

DATA INTEGRATION AND PLATFORMS
- Open data sharing
- Dashboards and data analytics
- Connected platforms and systems
- Cyber security and privacy
- Artificial Intelligence (AI)

DIGITAL URBAN INFRASTRUCTURE
- Optical fibre
- 4G/5G
- Public WiFi
- Internet of Things
- Immersive Technologies: AR, MR, VR
- Connected assets and infrastructure

GEELONG IN 2020

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WHY DO WE NEED TO BE A SMART CITY?

A smart Greater Geelong will harness data and insight to keep track of the health of our city, and the needs of our citizens. In the face of rapid societal, environmental and technological changes, we will be considered, proactive and prepared for our future.

Greater Geelong is experiencing record rates of population growth. By 2036 our population is expected to increase to 387,000 – an annual growth rate of 2.5%. At the same time, we're facing a number of significant environmental challenges, many of which are related to global climate change. To manage these challenges effectively, we need new ideas and solutions.

Smart technology helps us understand and respond to these challenges at the local level. Using our network of sensors (Internet of Things), we'll be able to 'switch on' objects in our physical and natural environment so they can draw valuable information. These insights will help us use resources in a smarter, more sustainable way, safe-guarding the liveability and prosperity of our region.

OUR SMART STARTING POINT

We launched the *Digital Geelong Strategy* in 2015 in anticipation of new and emerging digital technologies and to ensure our organisation, the community and businesses were broadband-ready and digitally-enabled. While we've been working to fulfil the recommendations since then, the rapid pace of digital development means it is time for us to reconsider our priorities.

WAYS THAT WE'RE ALREADY HARNESSING DATA AND INSIGHTS TO KEEP TRACK OF THE HEALTH OF OUR REGION AND THE NEEDS OF OUR CITIZENS INCLUDE:

Pedestrian sensors help us understand foot traffic and the use of public spaces and community services, so we can make data-driven planning decisions.

Soil sensors in our parks and gardens enable better water management, greener public spaces and enhanced biodiversity.

SMART CITY INITIATIVES

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The diagram below presents a snapshot of current smart city initiatives, pilots and projects now underway or completed in Greater Geelong.

Looking at these initiatives collectively helps us see how technology and innovation is improving the liveability, functionality and resilience of our region. This list will continue to grow and develop in the coming years as we work alongside our smart city partners, networks and stakeholders.

KEY

- Free Public WiFi
- CCTV network
- Smart lighting
- Customer Experience & Digital Modernisation Program
- AR Bollards
- IoT (Internet of Things)
- Smart nodes

CITY-WIDE INITIATIVE

- 3D Digital Twin
- Geelong Data Exchange
- Geelong City Deal
- UAV trials
- Clean tech

FREE PUBLIC WIFI
Helping bridge the digital divide.

CCTV NETWORK
Improving perceptions of safety and preventing crime.

SMART LIGHTING
Replacing 26,000 streetlights with LED and smart controllers.

CLEAN TECH
Clean, innovative technologies, including smart soil sensors.

AR BOLLARDS
'Activate Geelong' augmented reality (AR) App, bringing our famous bollards to life for residents and visitors.

GEELONG CITY DEAL
10-year plan to continue revitalising our City, including investment in smart technologies.

GEELONG DATA EXCHANGE
Making it easy for anyone to view, obtain, use and reuse city data.

SMART NODES
Super-smart digital infrastructure provides free WiFi.

CUSTOMER EXPERIENCE & DIGITAL MODERNISATION PROGRAM
Improving our internal systems and process for better community services and customer experience.

3D DIGITAL TWIN
A virtual 3D city model representing terrain surfaces, buildings, vegetation, infrastructure and other objects in our urban space.

UAV TRIALS
Drone trials to help the city deliver faster, smarter and safer services for our community.

IOT (INTERNET OF THINGS)
Our network of internet-connected things and assets that are helping us collect valuable information and insights.

ENVIRONMENTAL MONITORING
Climate sensors monitoring pollution, noise, light, temperature and humidity.

SMART PARKING
Sensors placed in parking bays monitor vehicle occupancy to give us a detailed picture of parking behaviours and needs.

PEDESTRIAN PATTERNS
Sensors counting WiFi-enabled devices to better understand how people move about our city and use different locations at different times.

SMART WASTE
Ultrasonic sensors monitoring waste volume and temperatures to help inform collection frequency, optimise vehicle routes and provide insight into public space use.

SMART PARKS AND GARDENS
In-ground sensors generating data on soil and plant health and enable better water management.

OUR COMMITMENT TO COLLABORATION

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A city that prioritises people is a city that enables healthy and vibrant communities. This Framework was co-created with our community to help realise this aspiration.

HOW WE ENGAGED

Our community and stakeholders have been informing our smart city focus since early 2019 and in May 2020 a dedicated engagement process began. A series of online workshops were held with diverse stakeholder groups to raise awareness and discuss key priorities, concerns and opportunities to be addressed by the Framework. Surveys were also shared.

This revealed that our community are invested in and excited by the opportunities smart cities offer, although there is only moderate-low awareness of current smart city initiatives and efforts.

The infographic in Figure 2 describes the themes we uncovered during the consultation.

Figure 2: Smart city community consultation themes

WHAT WE HEARD

COMMUNITY ENGAGEMENT

Stakeholder engagement revealed the need for the Smart City Strategic Framework to have a strong commitment to community engagement, education and training. There are some misunderstandings about the principles, opportunities and benefits of a smart city that need to be addressed. The vast benefits and high-value outcomes of smart cities needs to be clearly communicated to the citizens of Greater Geelong.

INNOVATION & CHANGE

As engagement was conducted at a time of peak restrictions for COVID-19, a significant point of discussion was economic recovery and the chance to use COVID-19 as a means for positive change. Innovation is inherent in the concept of a smart city, and Geelong's stakeholders are ready to embrace and engage with innovation and change.

INCLUSION, ACCESSIBILITY & EQUITY

A core theme from stakeholder engagement was inclusion, accessibility and equity of smart initiatives and services. Both the community and Council staff showed strong support for smart initiatives that are accessible for all citizens, regardless of ability, circumstance or background.

PRIVACY, SECURITY & SAFETY

The most significant stakeholder concern was the privacy and security of smart city data. Geelong's Smart City Framework should aim to outline the key standards, frameworks and processes that will ensure all data is secure and that the privacy of citizens is protected.

TRANSPORT & MOBILITY

The top voted service priority from the Council staff survey was transport. The community survey also shared this sentiment for smart city development to enhance Geelong's public transport, parking, and 'walkability' outcomes.

ENVIRONMENT & SUSTAINABILITY

A recurring theme from the digital workshop sessions was environmental protection, and the use of smart technology to enhance resource-use-efficiency. Geelong's green spaces and parks offer liveability outcomes that stakeholders believe can be enhanced through smart technology.

PARTNERSHIP & COLLABORATION

One of the most discussed topics of the digital workshops was smart city partnership and collaboration opportunities. Stakeholders understand that smart city success relies on collaboration, but the frameworks and mechanisms for smart city partnerships needs to be clearly defined. Ongoing engagement with Council executives and Councillors is also a high priority.

BRANDING & AWARENESS

Geelong is not starting from 'square one' in their smart city development, despite stakeholder engagement revealing a moderate-low awareness for smart city initiatives and efforts. Stakeholders suggsted that stronger branding and communications about smart city development would help to increase awareness, buy-in and understanding of the benefits of smart cities.

PARTNERSHIPS AND PARTICIPATION

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A smart city requires commitment and collaboration. While Council may lead and guide these efforts, all members of our community will be valuable contributors – those who live, learn, work and visit Greater Geelong.

Examples of our key stakeholder groups and their opportunities for particpation and partnering are presented in Figure 3.

These relationships, and others, will be the key to our success moving forward.

Figure 3: Stakeholder groups and participation opportunities

COUNCIL	COMMUNITY	EDUCATORS & ACADEMICS	DEVELOPERS
Build understanding, awareness and support for goals and initiatives	Share ideas about key projects that can enhance liveability	Share ideas and knowledge, challenge assumptions	Identify opportunities to retrofit existing infrastructure with smart technology
Establish and communicate strategic direction	Participate in the co-design of smart projects	Develop students, researchers and academics that are smart city thinkers and innovators	Implement smart technology requirements for all new developments
Support and enable innovation, creativity and design	Provide feedback on current initiatives and projects	Participate in co-design and collaboration of smart city programs	Provide blueprints and frameworks for smart planning
Establish guidelines, policies, tools and resources	Empower vulnerable groups to engage with smart technology	Market Greater Geelong as a smart city that fosters creativity and innovation	Enable resource efficiency, sustainable practices, green energy and microgrids etc.
Foster champions, advocates and influencers	Working together to support new ideas and solutions to local issues	Use smart city data and tools in education and learning programs	
Involve citizens, businesses, innovators and academics in key initiatives		Develop programs or services which improve or enhance digital literacy and learning	
Share knowledge, learnings and progress			

PHOTO BY: Stacey Katsaros, Geelong After Dark, 2017

OTHER GOVERNMENTS

Collaborate to identify interconnectivities and synergies

Share ideas and insights into smart city development from other perspectives

Pool funding for smart projects that can provide far-reaching benefit across jurisdictions

BUSINESSES

Use data to identify problems, measure outcomes and drive continuous improvement

Investigate opportunities for smart technology use, for the improvement of services and customer experiences

Use sensors to understand environmental impacts and seek sustainable solutions

Engage with customers using innovative and digital tools and services

Participate in work to foster a new and modernised digital economy

Support the creation of immersive experiences for communities to use technology to creatively interact with the physical landscape and with each other.

UTILITIES

Advocate and support the uptake of smart meters and monitors

Collaborate on shared asset management, such as smart poles for multiple technologies

Gather important utility usage data to inform our decision making and future efforts

INDUSTRY & ASSOCIATIONS

Use local expert knowledge and expertise in smart technology

Share international best practice in smart city development and action

Collaborate on agile and outcomes-based procurement

Establish shared asset management agreements for implemented smart technology

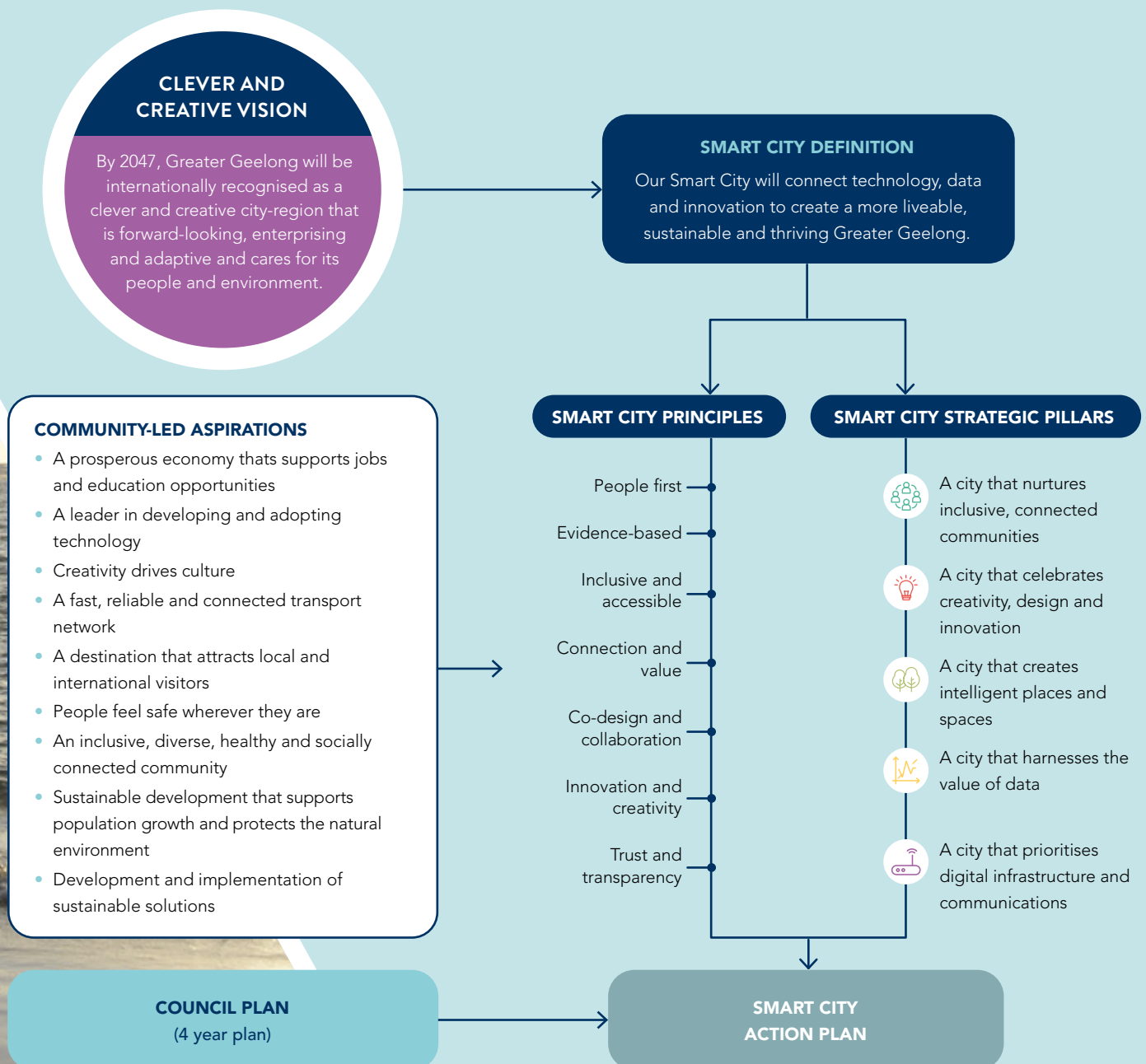Improve the visibility and reach of flagship smart city projects

THE FRAMEWORK

As Figure 4 shows, this Framework is designed to support our clever and creative community vision. A smart city relies on a clever and creative future, and vice versa. Using clever technology and innovation will also help us achieve our goals in the most efficient, effective and sustainable manner.

By aligning our principles and pillars to the community-led aspirations described in the vision, it will help us use smart-city thinking in a way that will bring about the change our community wants to see.

A four-year action plan will outline key projects and actions and integrate with our Council Plan. This action plan will be regularly updated to futureproof our efforts and help us keep pace with changing technologies and growth. This is particularly important when it comes to environmental protection and sustainable development.

Figure 4: Smart cities and our strategic planning framework

CLEVER AND CREATIVE VISION

By 2047, Greater Geelong will be internationally recognised as a clever and creative city-region that is forward-looking, enterprising and adaptive and cares for its people and environment.

SMART CITY DEFINITION

Our Smart City will connect technology, data and innovation to create a more liveable, sustainable and thriving Greater Geelong.

COMMUNITY-LED ASPIRATIONS

- A prosperous economy thats supports jobs and education opportunities
- A leader in developing and adopting technology
- Creativity drives culture
- A fast, reliable and connected transport network
- A destination that attracts local and international visitors
- People feel safe wherever they are
- An inclusive, diverse, healthy and socially connected community
- Sustainable development that supports population growth and protects the natural environment
- Development and implementation of sustainable solutions

SMART CITY PRINCIPLES

- People first
- Evidence-based
- Inclusive and accessible
- Connection and value
- Co-design and collaboration
- Innovation and creativity
- Trust and transparency

SMART CITY STRATEGIC PILLARS

- A city that nurtures inclusive, connected communities
- A city that celebrates creativity, design and innovation
- A city that creates intelligent places and spaces
- A city that harnesses the value of data
- A city that prioritises digital infrastructure and communications

COUNCIL PLAN
(4 year plan)

SMART CITY ACTION PLAN

SMART CITY DEFINITION

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Our Smart City will connect technology, data and innovation to create a more liveable, sustainable and thriving Greater Geelong.

PRINCIPLES

These seven principles will guide our decision-making and remind us of what's important in a smart city. Shaped by our community engagement process, they are designed to remain stable in the face of changing and advancing technologies.

1 PEOPLE FIRST

- Our smart city will put people first. We want our citizens to feel happy, safe and connected.
- We will take the time to listen and understand the needs and aspirations of our citizens before jumping to solutions.
- Technology will be used as an enabler only if it makes a meaningful difference to people's lives.

2 INCLUSIVE AND ACCESSIBLE

- Our smart city will be inclusive and accessible to all. Everyone should be able to access, participate and benefit from smart initiatives.
- We will take special care to ensure our most vulnerable community members are not further disadvantaged, with a focus on bridging the digital divide.

4 EVIDENCE-BASED

- When data is available, valuable and shareable, decisions and solutions can be grounded in evidence.
- Data will help us uncover the real challenges and opportunities unique to our city, as well as the smartest allocation of effort.
- We are committed to open data as it puts information in the hands of the people.
- An evidence-based smart city should be focused on measuring and sharing progress, outcomes and benefits.

5 CONNECTION AND VALUE

- The applications, platforms and systems we choose will be integrated, connected and truly smart.
- We will avoid relying on single technologies, tools or vendors.
- A whole-of-city approach to technology acquisition means we will prevent inefficiency, silos and lock-ins. Most importantly, it will enable us to be strategic, flexible and focused on the bigger picture.

3 CO-DESIGN AND COLLABORATION

- Our smart city will seek to collaborate and co-create with our citizens, businesses, start-ups, schools and universities.
- Strong partnerships will ensure a diversity of knowledge, skills, perspectives and resources.
- We can't do this alone – we need to work together to deliver the best possible outcomes.

6 INNOVATION AND CREATIVITY

- We want our smart city to be inherently innovative, overcoming persistent challenges by uncovering new insights and solutions.
- We'll work hard to ensure our internal policies open doors to innovation and new approaches. This will include a focus on culture, leadership and agility.
- Our designation as a UNESCO City of Design will further support and foster creativity, imagination and new ideas.

7 TRUST AND TRANSPARENCY

- We will build trust and confidence in our smart city through clear, honest and open dialogue with our citizens.
- We will adopt a 'privacy by design' approach, supported by transparent policies which stipulate how we collect, use, store and share public data.
- Clear governance arrangements will hold us to account and challenge us to be our best.

STRATEGIC PILLARS

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Our strategic pillars articulate five areas of focus. Each pillar contains key priorities to inform our action plan, including opportunities for further exploration and development.

They build on the initiatives already underway and leverage the strengths and opportunities unique to our region. They were further shaped by the feedback and insight received during community engagement.

We have also drawn on the growing body of smart city research, which outlines essential elements for smart city success. For more, see best practice and standards on page 29.

## PILLAR 1   A CITY THAT NURTURES INCLUSIVE, CONNECTED COMMUNITIES

The City of Greater Geelong will be a place where people are at the centre of planning, service delivery, and decision-making. We will create an inclusive, diverse and socially connected community through digital technology and innovation. We will drive creativity, foster new ideas, and develop the skills, confidence and capability of our people.

PRIORITIES

1.1 Enhance the digital literacy and capability of our community to improve connectedness and digital maturity.

1.2 Improve online safety, confidence and trust in digital tools and services.

1.3 Enhance digital inclusion and the accessibility of digital services.

1.4 Create opportunities for people from all sectors, backgrounds and ages to connect and participate in activities and events that foster knowledge, creativity and community.

1.5 Ensure the ongoing respect for digital rights – confidentiality, security, anonymity, and sovereignty.

OPPORTUNITIES

- Digital inclusion will ensure that the Geelong community are engaged and aware of smart initiatives. Equal access to smart services will help to develop and support a culture of inclusion and trust in our community.

- With a strong education sector, Geelong can leverage researchers, educators and students to help develop innovative initiatives and projects, and drive smart partnerships and co-design.

- Smart city education and skills development is essential for long-term success. People are at the centre of a smart city, and as such, they need to be informed, aware and engaged in all smart initiatives.

- Upholding digital human rights principles of privacy, security, freedom of expression and democracy will enable our community to fully participate and benefit from trustworthy and secure digital services and infrastructure.
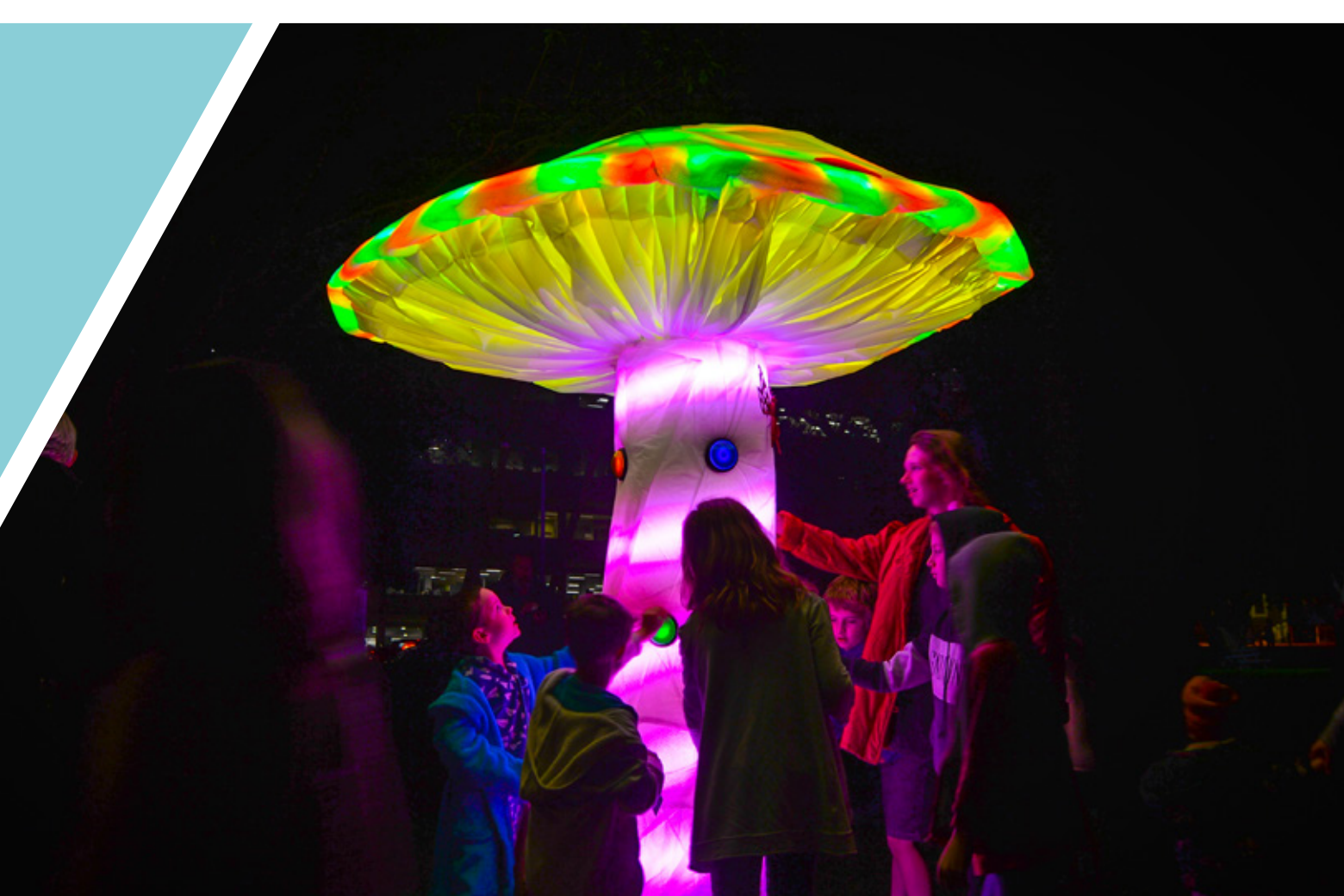
PILLAR 2 — A CITY THAT CELEBRATES CREATIVITY, DESIGN AND INNOVATION

The City of Greater Geelong will strive to develop a diverse and prosperous economy, that supports innovation, attracts investment, and drives creativity across the region. Greater Geelong will be a place that attracts and fosters talent to stimulate the knowledge economy and a dynamic culture of innovation. We will create a city that is renowned for creativity, design and collaboration.

PRIORITIES

2.1 Enable new digital jobs and industries to increase opportunities for local businesses and residents.

2.2 Foster local innovation capacity and activity to support and grow local businesses.

2.3 Establish new smart city partnership models that actively support collaboration between stakeholders and the City.

2.4 Leverage Geelong as a UNESCO city of design to support innovation and grow the City profile.

2.5 Establish an improvement culture that supports the trialling of new approaches, technologies and procurement methods.

OPPORTUNITIES

- Our city is forever changing. Clear frameworks and mechanisms for engaging with innovation and active change management will allow Geelong to adapt to the dynamic needs of the community and economy.

- Smart and remote working has increased since the COVID-19 pandemic and will continue to be a central aspect of Geelong's economy. Support for smart working will ensure Geelong's local economy is sustainable, resilient and vibrant.

- Geelong is a member of the UNESCO Creative City Network and is Australia's first and only 'City of Design'. The City of Design designation is about using creativity and innovation to build more sustainable, resilient and inclusive communities. Leveraging this international network, our aim is to make creativity an essential driver for sustainable urban renewal and development.

PILLAR 3 — A CITY THAT CREATES INTELLIGENT PLACES AND SPACES

Greater Geelong will be a place that promotes sustainable development, ensures the safety of its citizens, and seamlessly integrates digital technology into physical infrastructure. We are committed to developing smart places that are sustainable and safe through smart planning, design and deployment of technology.

PRIORITIES

3.1 Improve data-driven decision making by increasing access to data and insights for monitoring, prediction and management of city assets and the local environment.

3.2 Improve appropriate technology deployment to ensure that our people feel safe in public spaces (e.g. CCTV and smart lighting).

3.3 Enhance citizen mobility using a connected and integrated parking and transport system that provides real-time information about movements and availability.

3.4 Increase the sustainability of our City through the use of smart technology to reduce emissions, resource consumption and environmental impacts.

3.5 Support the development of smarter suburbs by embedding innovation and smart city principles into procurement and planning activities.

OPPORTUNITIES

- Smart technology, such as smart meters and environmental monitors, can provide vital data to improve resource-use-efficiency. Smart meters and monitors also help to increase awareness of climate change initiatives and to develop a culture of sustainability within businesses and the community

- Building upon a well-established CCTV network, supplementary smart technologies in our public spaces will enhance the sense of safety and support crime prevention. This includes smart CCTV, smart lighting, speakers, noise sensors, predictive analytics and 'push to talk' emergency systems.

- Integrating different modes of transportation and infrastructure can make transport safer, cleaner and more efficient. Smart mobility uses IoT to facilitate communication between modes of transportation and user interfaces via a wireless network. Through real-time route planning for vehicles, parking availability sensor networks and smart traffic signalling, we can better manage congestion and improve mobility. This can further enable ride-sharing, e-scooters and bike-sharing which bring environmental and community health benefits.

PILLAR 4 — A CITY THAT HARNESSES THE VALUE OF DATA

The City of Greater Geelong will improve decision making and knowledge sharing through increased collection, access and interoperability of data. We will be leaders in developing and adopting new technology that can be leveraged to inform new policies, collect community insights, and assist in the development of solutions to local problems.

PRIORITIES

4.1 Further develop and promote open data and data platforms, which make it easy for community and business to draw insights and create value.

4.2 Embed a data-driven culture within our organisation and community.

4.3 Advocate for the widespread collection and sharing of interoperable data to ensure quality data is collected from all sources with permission from data owners.

4.4 Collaborate with the academic sector to create agile and innovative data partnerships.

4.5 Enable real-time, integrated data visualisation to further 'activate' data for deeper insight.

OPPORTUNITIES

- Data is inherent in the idea of a smart city. Effective data management and risk mitigation will foster trust from the community, and ensure all smart technology is safe and secure.

- Data collection, analysis and sharing is central to the value-creation potential of a smart city. The mechanisms through which data is shared, viewed and collected will affect the trust, benefit and service improvements for the community and local business.

- The "Digital Twin"– a 3D virtual representation of the city, creates new possibilities for understanding, planning and modelling proposed infrastructure and development. Through the combination of digitised built environments, IoT advanced analytics and greater sophistication of 3D visualisation and immersive environments, we can identify challenges, provide accurate predictions and find the best solutions to emerging issues.

PILLAR 5 — A CITY THAT PRIORITISES DIGITAL INFRASTRUCTURE AND COMMUNICATIONS

Through the integration of digital urban infrastructure, the City of Greater Geelong will ensure that the community, businesses and industry are better equipped to achieve our vision for a clever and creative future. Greater Geelong will be leaders in adopting and integrating technology into the physical environment to activate public spaces and increase the interconnectivity of our region.

PRIORITIES

5.1 Increase connected public spaces to allow people to work and study in more places, boosting access to education and employment opportunities.

5.2 Ensure that all new technology and systems are interoperable and unlock new efficiencies in processes and services.

5.3 Advocate for increased quality and coverage of mobile data and internet connectivity across our region.

5.4 Seek to integrate new technologies into existing assets to minimise technology clutter and avoidable costs.

5.5 Ensure that our physical environments are able to effectively use smart technology and can adapt to changing requirements in the future.

OPPORTUNITIES

- Increased investment in smart city infrastructure, such as broadband and free public Wi-Fi, can assist in increasing the quality and accessibility of internet connectivity in the regions around the City of Greater Geelong.

- Embedding smart technology into the design of new or upgraded infrastructure will enable our public assets to sense, measure and report on their health, performance and effectiveness. This includes understanding the health of our trees and green spaces, to monitoring water quality in drinking fountains or having our roads and footpaths tell us when they need repairing.

- A free and open IoT Network will enable our community to utilise and benefit from sensor technology. Supporting local industry, organisations and businesses to embrace new and emerging technologies will help them to grow, strengthen and diversify. This also attracts new industries and investors to our region which supports local jobs and economic opportunity.

KEYS TO SUCCESS

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LEADERSHIP AND GOVERNANCE

In order to embed smart city thinking and action, we will establish clear governance arrangements. This will help us remain focussed on achieving our goals while we're learning and collaborating with stakeholders. As an organisation we will lead by example, championing the value of smart cities, developing awareness and understanding, breaking down siloes and building influencers and advocates.

FOUR-YEAR ACTION PLAN

This Framework is an overarching and guiding document. We will develop a dedicated action plan to outline the specific, measurable objectives and actions we will focus on during each council term.

The action plan will be reviewed annually to ensure efforts remain aligned with current local context, resourcing and global trends.

OPTIMISING INVESTMENT

Identifying and attracting high value investments and financing strategies are critical to achieving a smarter City of Greater Geelong. We want to open doors to new opportunities, partnerships and business models to generate efficiencies, deliver community benefit, and create economic value.

Smart investment includes the pooling of resources through funding partnerships, and the effective use of existing budgets towards smart city outcomes. An example of such a process is the identification of smart city opportunities in organisational contract renewal, which is conducted within existing budgets, but allows smart city thinking to permeate into local businesses and the community.

Figure 5 shows the key action areas we will employ to optimise and maximise the benefit from smart city investment.

Figure 5: Optimising smart city investment and funding

Measure the value, returns and outputs from smart city investment.

MEASURE

Align investments with existing projects and programs focused on local challenges and priorities.

ALIGN

Prioritise projects that increase both service efficiency and service quality, providing value to the community.

PRIORITISE
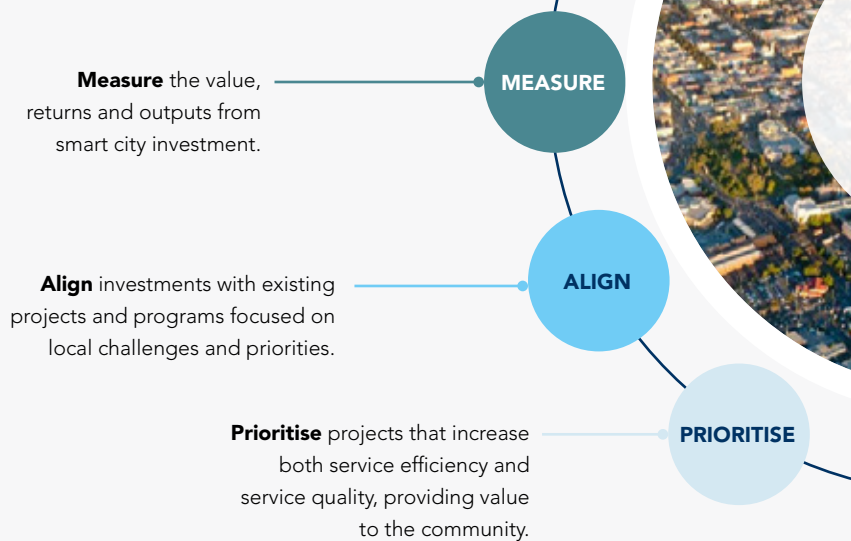
MEASURING PROGRESS

To track progress, promote accountability and fine-tune our approach we will implement a holistic smart city performance framework. This will cover performance metrics and indicators, data collection and analysis, progress reporting, continuous improvement and project evaluation.

To promote smart city performance, measurement and reporting we will:

- leverage the Australian Standards for measuring smart city progress (ISO 37120, 37123, 37101)

- align our performance framework with the Global Reporting Initiative (GRI) Standards and ensure alignment of its activities with the United Nations Sustainable Development Goals (SDG's) [Goals 3, 4, 5, 7, 8, 11, 12, 16, 17]

- set clear objectives and performance metrics for all smart city projects that support our community clever creative future and council plan priorities

- develop a program of smart city evaluations to assess and improve performance

- report progress and key indicators on our website.

OPTIMISING INVESTMENT

SEEK

Seek state and federal Government funding sources.

ATTRACT

Attract private investment through identifying opportunities to progress outcomes.

PARTNER

Partner with industry and developers to identify opportunities for investment.

ENABLE

Enable new and innovative funding and financing models through policy and projects.

SUPPORTING INFORMATION

SMART CITY CONTEXT AND TRENDS

Below is a summary of the broader context surrounding this Framework – from global initiatives and standards, right down to specific strategies and policies employed by the City of Greater Geelong.

INTERNATIONAL SMART CITY CONTEXT	
UNESCO: Creative Cities Network	Geelong is a member of the UCCN, which supports cities across the world to use creativity and innovation to build more sustainable, resilient and inclusive communities. The UNESCO City of Design designation fits seamlessly with Geelong's 30-year clever and creative vision.
United Nations: Sustainable Development Goals	The Sustainable Development Goals (SDGs) are the blueprint to achieve a better and more sustainable future for all. Geelong is committed to upholding the values of the SDG's and addressing the main challenges of poverty, climate change, peace and injustice.
AUSTRALIAN SMART CITY CONTEXT	
Australian Government: Smart Cities Plan (2016)	This Plan outlines the need for Australian cities to remain productive, accessible and liveable. The Plan represents Australia's national agenda for smart city development and guides cities across the country in achieving higher levels of city performance.
Australian Government: Smart Cities and Suburbs Program	This Program offered government funding to cities and towns across Australia to support projects that improve liveability, productivity and sustainability outcomes. In round two of the Program, Geelong was awarded funding to develop 'Clever and Creative Geelong,' which supports the implementation of technology to gather data for enhanced evidence-based decision making within our organisation.
LOCAL POLICIES & STRATEGIES	
Greater Geelong: A clever and creative future	A product of engagement with over 16,000 community members and a sister document to this Framework, it captures the aspirations of the community until 2047. The vision itself states: "By 2047, Greater Geelong will be internationally recognised as a clever and creative city-region that is forward-looking, enterprising, and adaptive, and cares for its people and environment."
Sustainability Framework	This Framework provides the foundation for a consolidated approach to addressing issues of sustainability across Council and the community. It aims to accelerate the development of a culture of sustainable practice, and of engagement with social, environmental, economic and governance risks (refer to complete list of City of Greater Geelong strategies which have informed the development of this Framework on page 31).
G21 Regional Alliance	The five G21 member municipalities have endorsed the G21 Geelong Region Plan, which provides a long-term shared vision for the region centred around the following pillars: Arts, Heritage & Culture; Economic Development; Education & Training; Environment; Health & Wellbeing; Planning & Services; Sport & Recreation; and Transport.
Liveability Victoria International	Liveability Victoria International promotes Victoria's liveability capabilities internationally and connects Victorian businesses with targeted overseas markets to share Victoria's leading services and expertise.
Digital Victoria Guidelines	The Victorian Government offers a suite of digital guidelines, policies and standards that enable the effective integration of best practice across Victoria. The guidelines are endorsed by the Victorian Government Chief Information Officer.

BEST PRACTICE & STANDARDS

Adapting and adhering to best practice principles and standards will ensure Greater Geelong's smart city development is aligned with international smart city leaders.

International Organisation for Standardisation (ISO) Smart City Standards

ISO 37106:2018 is the international smart city standard, and contains three main components: Strategy management; Citizen-centric service management; and Digital & physical resource management.

Standards Australia: Sustainable Cities & Communities – Indicators for Smart Cities

AS ISO 37122:2020 is a set of indicators, definitions and methodologies for developing sustainable, smart and efficient cities in Australia.

Smart Cities Council Australia & New Zealand (SCCANZ) – Code for Smart Communities

The Code was created by SCCANZ to help guide urban development practices through embracing technology, data and smart planning, as a catalyst for positive transformation and change (from the bottom-up) in our cities.

DEFINITIONS

The following table presents definitions of common smart city terms and phrases

Co-creation/ co-design	Process of working with community to collaborate, design and create services and solutions.
Co-working	Model of working where a mix of individuals, innovators and organisations work in the same physical location, sharing space, ideas and technology.
Data analytics	A computer process that examines data for patterns, extracting meaning and drawing conclusions.
Digital divide	The gap in opportunities experienced by those with limited access to technology and the internet.
Data-driven	A process or system activity that uses data and analysis to drive planning and decision making.
Digital literacy	The skills and capabilities to effectively use and benefit from digital technology.
Digital Twin	A digital (3D) replica of the city representing terrain surfaces, buildings, vegetation, infrastructure and other objects or assets.
Interoperability	The ability for technology and systems to integrate and work in conjunction with each other.
Internet of Things (IoT)	A network of things, objects or assets which are connected to the internet with sensors and software. This enables 'things' in our physical and natural environment to collect valuable insights.
Innovation ecosystem	Network of people, institutions, programs, regulations, culture and resources that work to promote innovation.
Living Lab	The use of city space to test and evaluate new technology, services and ideas to promote innovation, dialogue and outcomes.
Open data	Data that is publicly available for anyone to view, obtain, use and reuse.
Sensors	Technology that monitors and measures inputs from the environment (motion, moisture, light, noise, temperature, location, pressure) and reports for analysis and decision making.
Smart city	A city that harnesses digital technology, data and innovation to enhance liveability, sustainability, creativity and productivity.

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City of Greater Geelong vision and strategies

- Greater Geelong – A Clever and Creative Future. 2017
- Council Plan 2018 – 2022
- Geelong UNESCO City of Design. 2020
- Environmental Strategy 2020-2030
- Social Infrastructure Plan 2020-2023
- Zero Carbon Emission Strategy 2017-2020
- Sustainability Framework 2020
- Digital Geelong Strategy 2015-2018

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