#SMARTER TOGETHER

A Smart Cities Perspective

May 2019

Technology is transforming cities…

1784 -- 2017
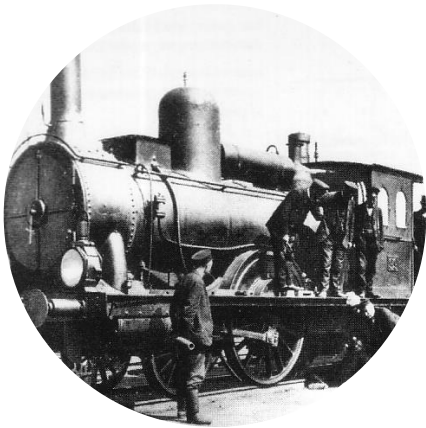
STEAM REVOLUTION
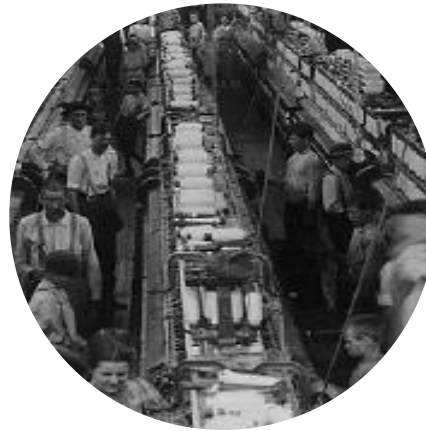
ELECTRICITY REVOLUTION

AUTOMOBILE REVOLUTION

DIGITAL TECHNOLOGIES

... and redefining our region

Becoming smart takes time

DIGITAL MATURITY

Digital Strategy 1.0
2013 - 2016

Technology Transformation
2017 - 2018

Foundational
Focus: Digital Maturity, Early Business Transformation

Smart, Intelligent, Connected, Green City
2019 - 2022

Evolving
Focus: Connectivity and Data

FINALIST
$50M

Future City
2022 +

Optimized
Focus: Interoperability

Scalable and Resilient
Focus: Interoperable by default

What makes a city Smart?
Hint: It's not the technology

- Governance
- Process Optimization
- Organizational Maturity
- A Robust Infrastructure
- Goals and Vision
- Agility
- Collaboration
- Leadership Commitment
- Community Orientation

- Structure to Identify Value in Investments
- Engaged Communities
- Digital Platforms
- Advanced Data and Analytics
- Enterprise Level Coordination
- Industry Partnerships
- Links to Academia
- Innovative Business Models
- Flexible Frameworks

We are constantly evolving

- The #SmarterTogether bid was the culmination of a multi year journey

- Digital transformation was a key enabler

- Community engagement was reinvented to co-develop the proposal with the community

- Rich content from industry world wide pointed to an advanced role for the City within the Smart City ecosystem

The Smart Cities Challenge

Two Cities ready for this moment

- Two leading cities
- Established strategies, when it comes to digital maturity, technology transformation and smart city innovation
- Common problems
- Understand the benefits of collaboration
- Similar abilities to implement and working together can develop scalable Canadian solutions
- Working relationships that will endure beyond the smart cities challenge
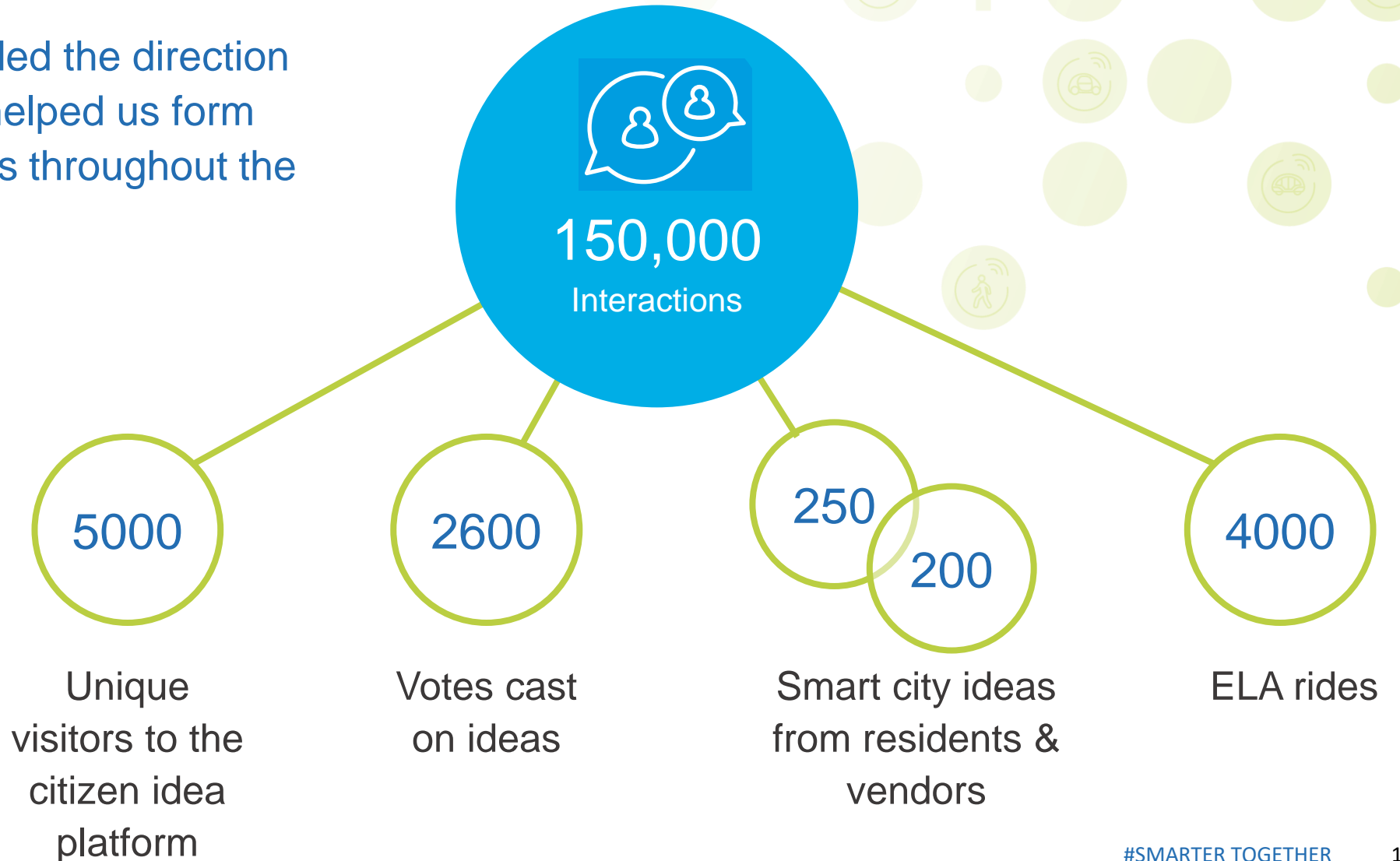- MOU for a common Smart City approach

Re-inventing Engagement

Community feedback

Our communities provided the direction for our challenge, and helped us form the solution components throughout the process.

150,000 Interactions

5000
Unique visitors to the citizen idea platform

2600
Votes cast on ideas

250
200
Smart city ideas from residents & vendors

4000
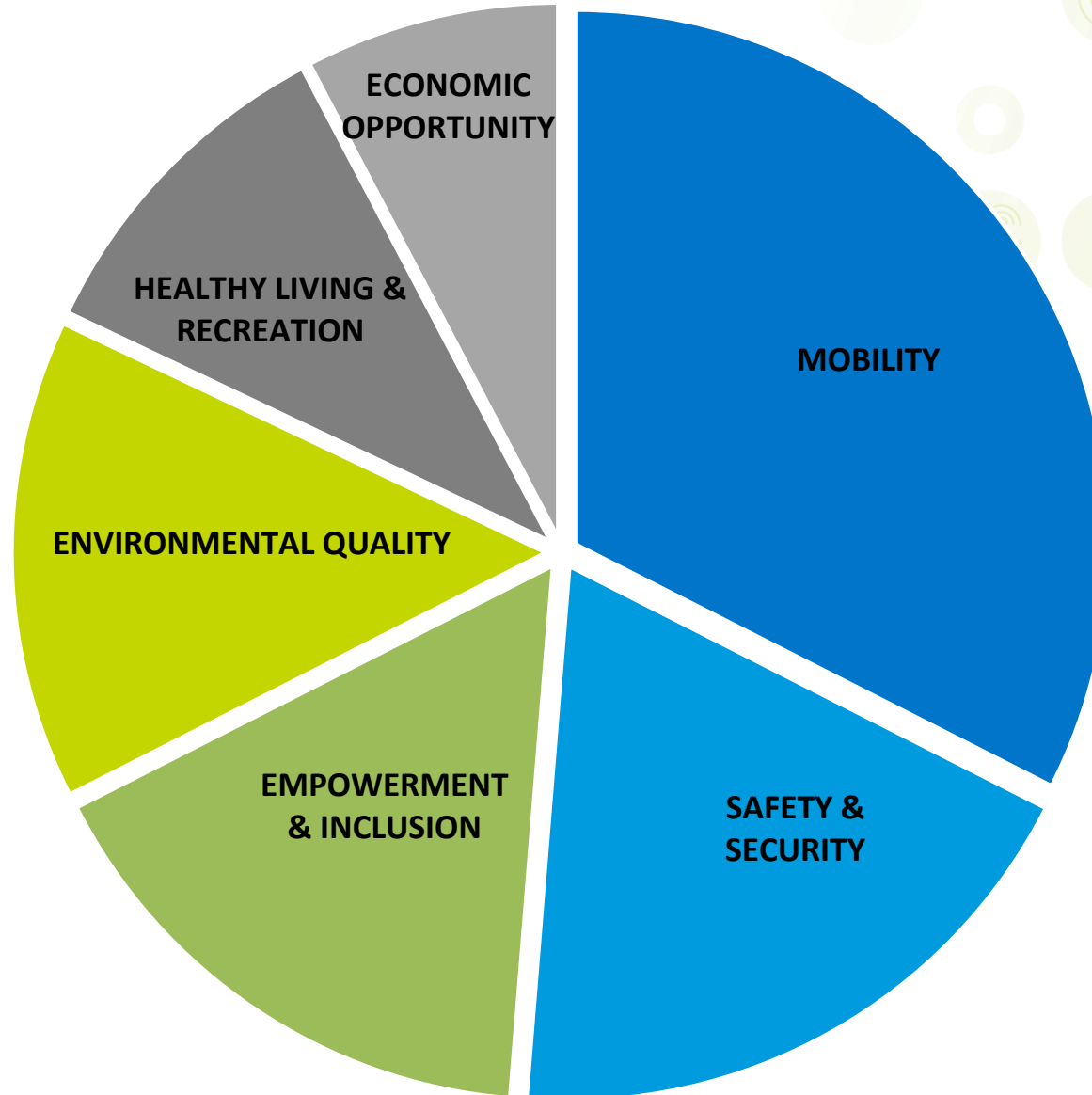ELA rides

Community touchpoints

Developing the Smart Cities Challenge bid included extensive community engagement including:

- Greater Vancouver Board of Trade information sessions
- Street teams
- Stakeholder workshops
- VANquish collisions hackathon
- Civic Tech YVR
- AV perception survey
- Mission Possible event
- ELA demo

A clear community priority emerged.

ECONOMIC OPPORTUNITY

HEALTHY LIVING & RECREATION

MOBILITY

ENVIRONMENTAL QUALITY

EMPOWERMENT & INCLUSION

SAFETY & SECURITY

Building a Vision

Choosing a measurable goal involving Mobility and Safety & Security

Each year in Vancouver and Surrey on average we see:

77,000 collisions

450 serious injuries

35 fatalities

22,800 minor injuries

Innovation Corridor...2 ways
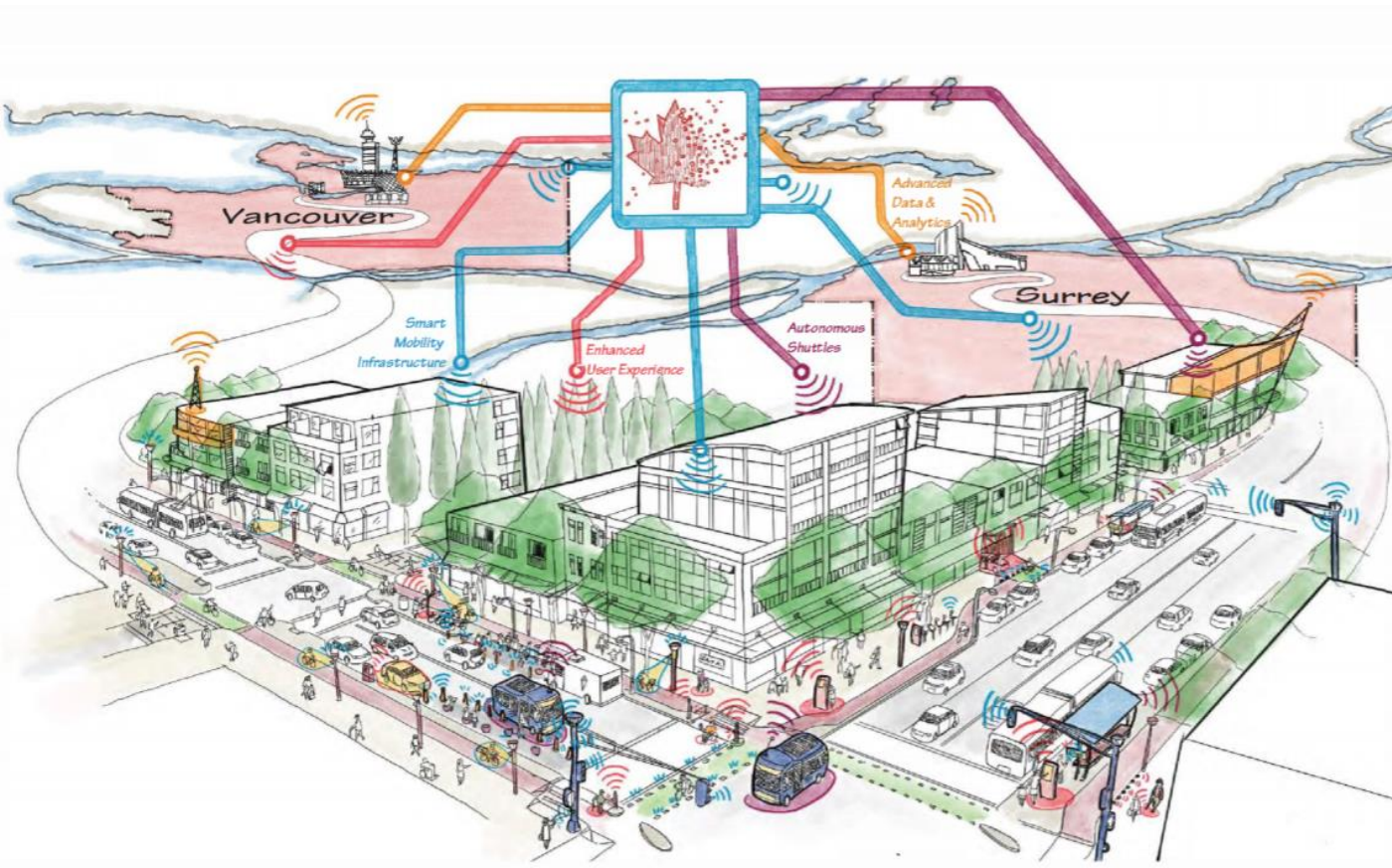
- Two corridors in different urban contexts:
  - A busy urban area in Vancouver
  - A densifying suburban area in Surrey
- Powered by the same smart mobility technology to achieve similar outcomes
- Scalable to Canada and the world

CITY OF VANCOUVER

#SMAR

CITY OF SURREY
the future lives here.

Identifying outcomes to achieve through advanced data and technology

- Improved safety
- Reduced emissions
- Healthier communities
- Increased availability of mobility options
- More socially connected communities
- Increased accessibility to the community
- Higher people-moving capacity
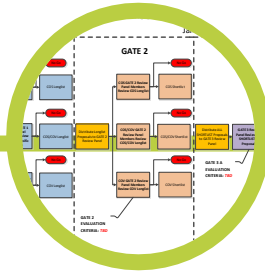- Enhanced travel experience

From vision to a program plan

The #SmarterTogether program is the result of unprecedented collaboration and joint engagement.

Community engagement

- 150,000 interactions
- 200 vendor ideas
- 250 citizen ideas
- 5000 votes cast to prioritize ideas
- 4000 rides in our AV shuttle demo

Innovative procurement

- 172 vendor submissions
- Agile evaluation process
- 55+ partners
- 81+ projects

Collaboration and co-design

- Partnership of government, education, industry and communities
- Scalable program & portfolio model
- City as a Platform innovation program

A practical delivery plan for our two Cities

- 5-year project roadmap
- Milestones mapped to measurable community outcomes
- $36.5m in Vendor contributions
- $15m City contributions

A bigger role for the City in the Smart City ecosystem

Technically complex ecosystem

So many ideas...

SMART LIGHTING

AUTONOMOUS VEHICLE SHUTTLE

KIOSKS

CAMERAS

SMART TRAFFIC SIGNALS

PARKING STATUS

SHARED BIKES

ENVIRONMENTAL SENSORS

SMART CROSSWALKS

CHARGING INFRASTRUCTURE

PUBLIC MARKET
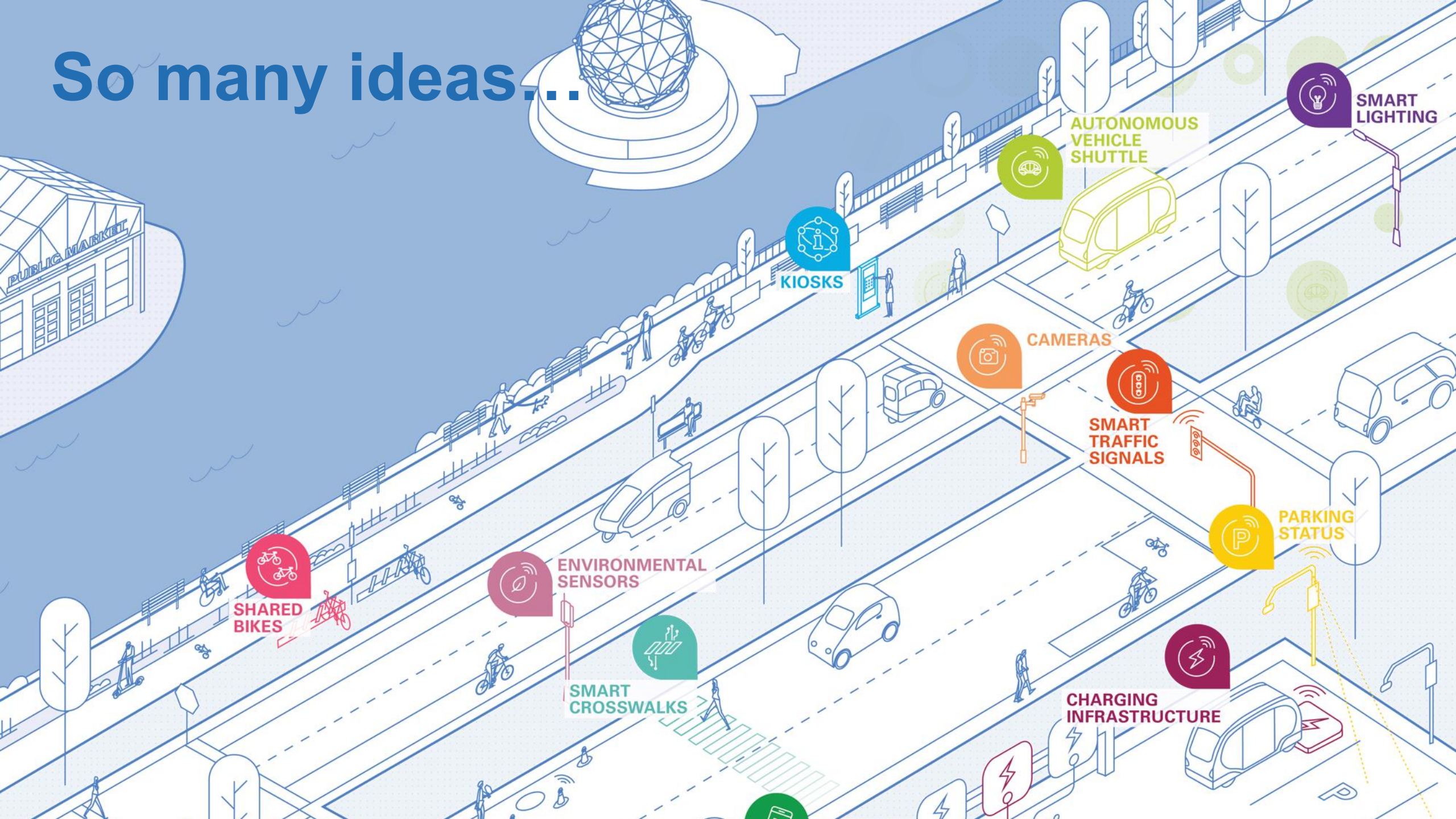
So much data and technology

ENVIRONMENTAL SENSORS

KIOSKS

SMART LIGHTING

AUTONOMOUS VEHICLE SHUTTLE

SHARED BIKES

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MOBILITY APPLICATIONS

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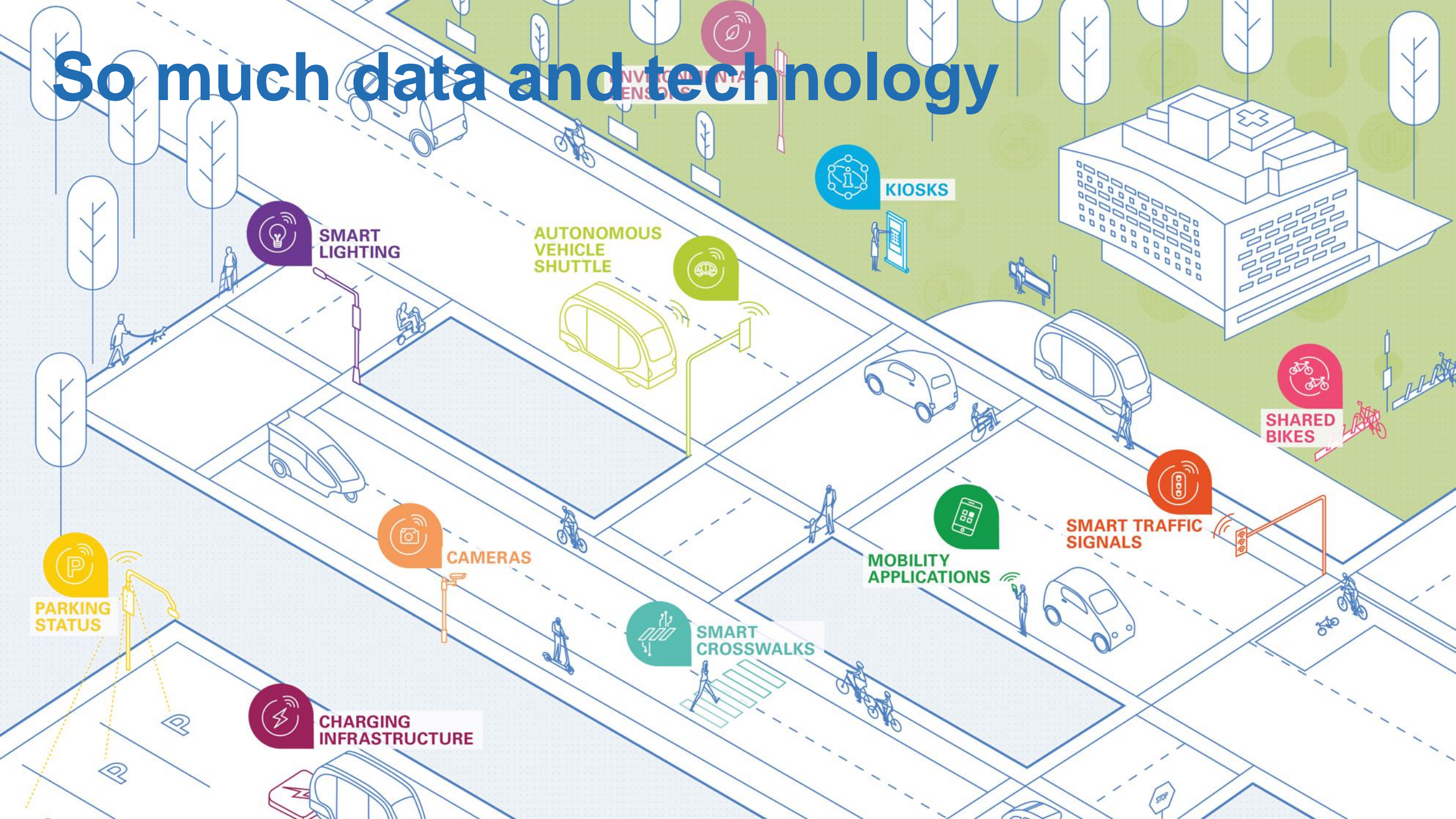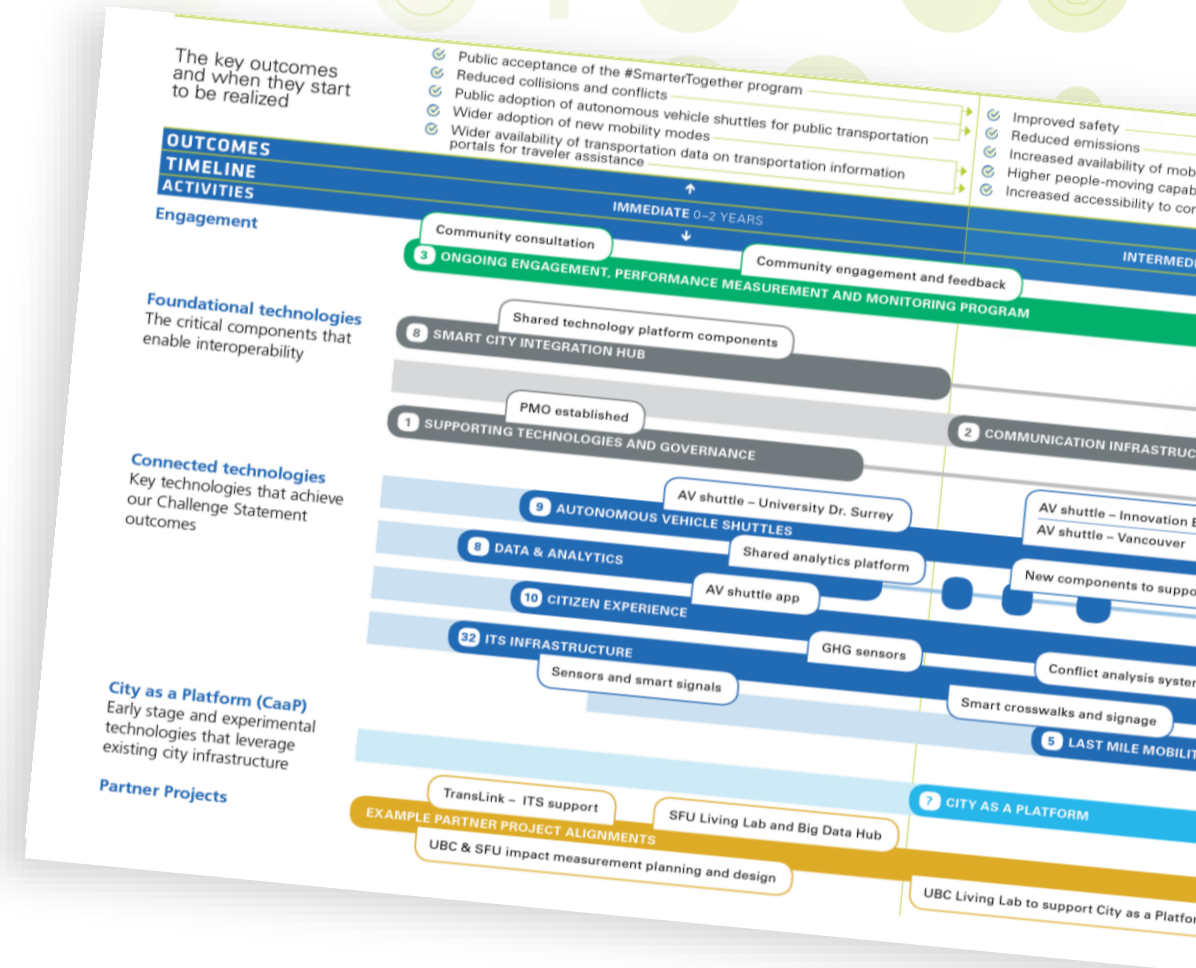
Overall program highlights

Unprecedented effort to build a technical proposal:

- ✓ 81 project proposals from 55 partners

- ✓ $36.5 million in potential private sector contributions

Program technology highlights

The Smart City Integration Hub

A software platform that represents the cornerstone of corridor security, privacy, and interoperability.

Autonomous vehicle shuttles and last mile mobility options

Equipment that ensures safe travel and provides abundant and accessible mode shift opportunities for all residents.

Intelligent traffic system devices

Including sensors and controls embedded in traffic infrastructure that collect data and enable real-time responses to specific traffic situations.

Checking in with Communities

"I live here with my wife and baby daughter and we have watched your little shuttle go back and forth and it makes us smile!

You have my support for anything that moves people quietly, without pollution, slowly, safely, through our neighbourhood!"

Darren S.

Vancouver resident commenting on our ELA demonstration

Immense scale

#SmarterTogether governance model

1

Engagement

A program for open, diverse and inclusive community, stakeholder and partner engagement and performance measurement

2

Foundational technologies

- Smart City Integration Hub
- Communication infrastructure

3

Connected technologies

- ITS infrastructure
- AV shuttles
- Citizen experience
- Last mile mobility
- Data & analytics
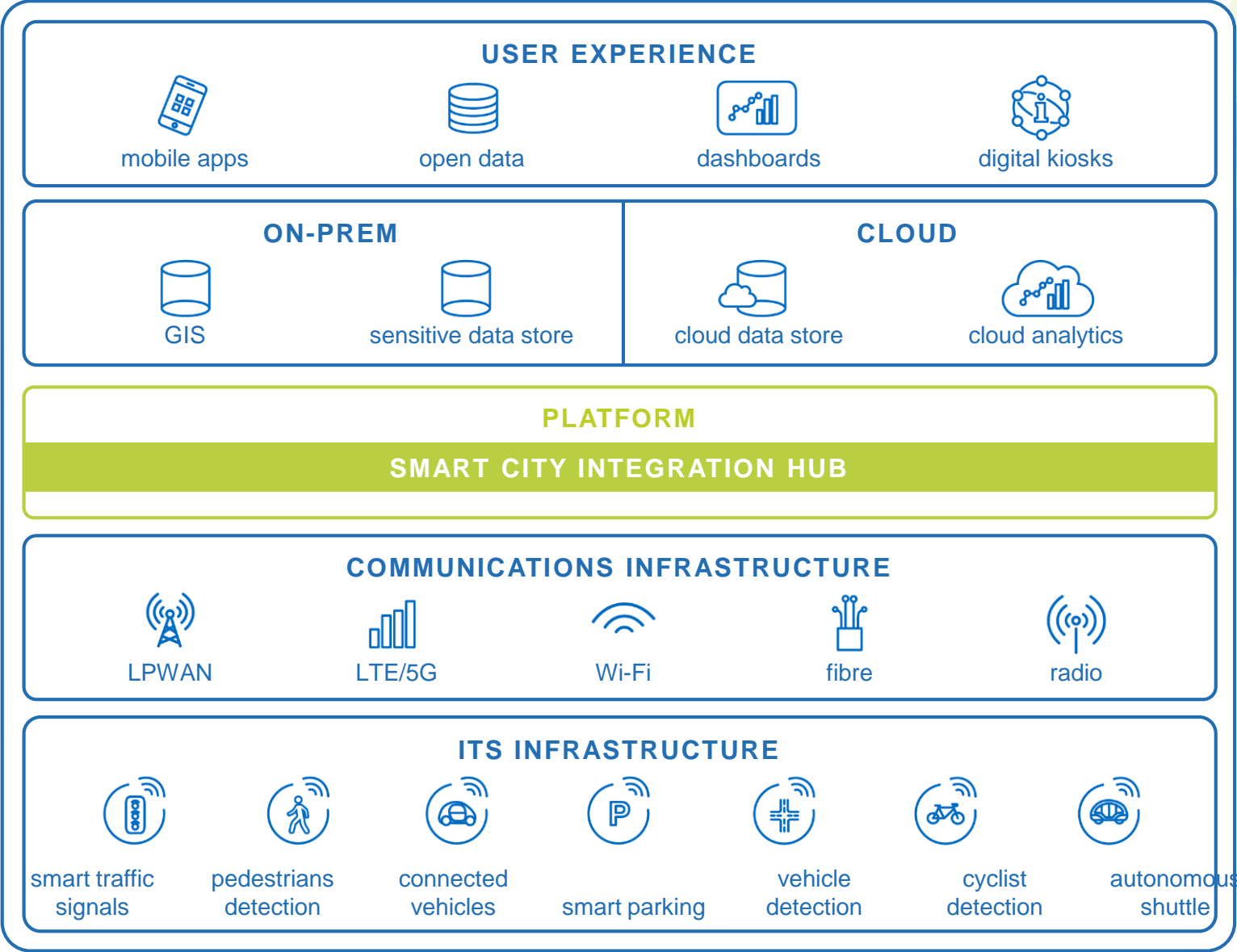
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City as a Platform

Program to develop early stage and experimental technologies that leverage existing city infrastructure

5

Supporting technologies

Technology that support regulation, resilience, and engagement efforts

Architecting a Smart City Integration Hub

USER EXPERIENCE
- mobile apps
- open data
- dashboards
- digital kiosks

ON-PREM
- GIS
- sensitive data store

CLOUD
- cloud data store
- cloud analytics

PLATFORM

SMART CITY INTEGRATION HUB

COMMUNICATIONS INFRASTRUCTURE
- LPWAN
- LTE/5G
- Wi-Fi
- fibre
- radio

ITS INFRASTRUCTURE
- smart traffic signals
- pedestrians detection
- connected vehicles
- smart parking
- vehicle detection
- cyclist detection
- autonomous shuttle

#SmarterTogether represents a commitment to managing complexity through collaboration

Smart City is a state of mind not an end state

- Governance is key to a successful program design

- Digital maturity is a key enabler

- Working with two cities helped create a blueprint for other cities to follow

- Engaging citizens, stakeholders and industry in collaboration resulted in better outcomes

- Beyond Smart Cities, this collaborative approach is a model for tackling other challenges together

- **We didn't win but the future is still coming**