CORPORATE REPORT

NO: R027 COUNCIL DATE: February 6, 2017

REGULAR COUNCIL

TO:	**Mayor & Council**	DATE:	**January 30, 2017**
FROM:	**General Manager, Finance & Technology** **General Manager, Engineering**	FILE:	**0620-20; 1400-01**
SUBJECT:	**Smart Surrey Broadband Strategy**		

RECOMMENDATION

The Finance & Technology Department and the Engineering Department recommend that Council:

1. Receive this report as information; and
2. Approve the Smart Surrey Broadband Strategy described in this report and Appendix "I".

INTENT

The purpose of this report is to provide an update to Council on the Smart Surrey Broadband Strategy and to obtain Council approval of the Smart Surrey Broadband Strategy.

BACKGROUND

Cities around the world are recognizing the growing need for access to faster and cheaper internet access (broadband) so they can succeed in the digital economy. High-speed broadband is being increasingly accepted as the new essential utility alongside core utilities such as water, sewer, and electricity. It transforms the way we live, work and play by fueling economic, social and environmental benefits for an improved quality of life.

What is Broadband?

There is no single, standardized worldwide definition for broadband. Broadband is the common term for a very fast connection to the internet that can receive and send large amounts of data in a very short period of time. It is common for broadband to be characterized by minimum download and upload speeds. Targets for adequate broadband speed are frequently evolving. In Canada, the target set by the Canadian Radio-television and Telecommunications Commission (CRTC) of 5 Mbps for downloads and 1 Mbps for uploads, had quickly become insufficient due to continuously increasing requirements to facilitate the effective use of advanced telecommunications capabilities. In December 2016, the CRTC declared broadband Internet access services as basic telecommunications services. The CRTC also increased its target criteria by tenfold, to access speeds of at least 50 Mbps for downloads and 10 Mbps for uploads. In the United States, the Federal Communications Commission defines minimum broadband speeds as

25 Mbps for downloads and 3 Mbps for uploads. In addition to broadband speed, other factors such as scalability and quality are of equal importance.

High-speed broadband, particularly that delivered via fibre technology, offers abundant, scalable, reliable connectivity, which is far superior to the alternative copper and cable networks currently being relied on by much of the region. Fibre networks offer capabilities that readily accommodate the growth and change, that have become synonymous with technology and innovation.

Why Broadband Is Important

High-speed broadband provides opportunities to foster economic prosperity; enhance the City's ability to attract and retain new businesses; improve healthcare outcomes; improve educational performance and learning outcomes; facilitate enhanced public safety; improve transportation effectiveness; create government operational efficiencies; increase civic engagement and citizen involvement; reduce greenhouse gas emissions; and keep Surrey competitive so that our workforce can rapidly grow in today's modern world.

High-speed broadband is also a catalyst to leverage future innovation opportunities such as big data analysis, cloud computing, social media, mobility, consumerization of technology, and Internet of Things.

DISCUSSION

Strategy Background

The Smart Surrey Strategy, adopted by Council on July 7, 2014, identified the need for Surrey to establish a broadband strategy to provide a road map for the City to meet its current and future broadband needs. This strategy has been developed together with department stakeholders and has been named the "Smart Surrey Broadband Strategy".

Staff presented the Smart Surrey Broadband Strategy to the Investment and Innovation Committee on January 25, 2017. The Committee confirmed that staff proceed with a Corporate Report as a next step for seeking Council's approval on the Smart Surrey Broadband Strategy.

Consideration of whether the City should own and operate a citywide high-speed fibre network, was analyzed by staff. It was determined that this approach would not be financially practical for Surrey because of several factors including its vast geography and the absence of a City owned power utility to provide existing overhead access rights.

Another consideration that has influenced the Broadband Strategy is the CRTC ruling announced July 22, 2015, which introduced measures to foster competition among telcos who offer broadband Internet services. This ruling means that telcos have to make their fibre infrastructure, such as fibre-to-the-home, available at regulated wholesale rates for their competitors. CRTC is implementing these measures to stimulate industry competition. It is in the City's best interests to further stimulate this competition, thus providing its residents, businesses and institutions with a greater choice in internet service at more reasonable prices; the City will therefore continue to monitor the progress of the CRTC's ruling and its multi-year implementation process.

With this information and insight, it was concluded that, rather than build, own, and operate an extensive city-wide high-speed fibre network, Surrey should focus its efforts on opportunities to

influence and act as a catalyst in support of accelerating private sector broadband investment in the City. These opportunities have been assessed and the relevant items have been formulated into strategic initiatives for the City's action.

Broadband Vision & Strategy

The vision for broadband in Surrey is "a world-class connected City with widespread affordable, reliable, scalable high-speed broadband access, which enhances economic prosperity and supports a high quality of life." The Smart Surrey Broadband Strategy focuses efforts on maximizing collaboration, both internally among City departments, as well as externally with public and private sector partners, to support the City in achieving this broadband vision.

The Smart Surrey Broadband Strategy document, attached as Appendix "I", includes seven key strategies of action. Within each area there are a collection of specific initiatives that help support the overall vision. Each initiative is summarized with a short description. This vision will be realized by achieving the following four goals:

- Residents, businesses and institutions have high quality, affordable high-speed broadband service and coverage.
- Fibre broadband infrastructure deployment is accelerated so that over 90 per cent of homes and businesses have access to gigabit-capable internet by 2021.
- All residents have ready access to broadband technologies and the skills to use them regardless of socio-economic status.
- City utility programs are modernized to include telecommunications infrastructure as a core utility.

One of the most significant of the seven key strategies is the recommendation to adopt an internal 'dig once' approach with existing City construction plans. Over the next decade, as Surrey builds its City Centre from the ground up, a series of construction opportunities will arise to install fibre conduit infrastructure at significantly reduced costs. For instance, when construction is underway to build out district energy infrastructure, the City will install fibre conduit at the same time, thus avoiding a possible second round of costly construction when installing fibre at a later date. With the fibre conduit already in place, broadband service providers will avoid costly construction costs to install it themselves, which will incentivize them to invest in fibre networks in the City. Additional proposed 'dig once' opportunities exist within planned LRT construction. There are additional locations within the City that will be assessed further for 'dig once' opportunities and or joint builds. A map is being maintained to communicate priority routes of value for the City. These opportunities will be assessed annually for alignment with City Engineering capital project plans. Adopting the 'dig once' approach will entail financial investment on the part of the City. These investments will each require subsequent corporate reports as opportunities arise. Specifics on approach, expected benefits, costs, partnering options and funding sources will be assessed and included in these corporate reports for Council approval.

Financial Considerations

To reach these strategic locations the strategy suggests installing City-owned fibre optic infrastructure on a case by case basis. One reason for this is the highly variable and evolving market rates. Example cost factors include:

- Trenching $300-$1,000 / metre;
- Fibre Optic Cable Lifespan 20-30 years;
- Fibre conduit leasing $1-$14 metre/year;
- Fibre strand leasing $1-$8 strand/metre/year; and
- Maintenance & support $1.80 - $2.05 /metre/year independent of fibre count

When we average these numbers, we expect a return on investment for fibre conduit to be approximately 14 years within City Centre with one customer. City staff are recommending that annual revenue from small cell licensing fees be applied to support the City's annual investment in placing City-owned fibre infrastructure. The City will rely on industry expertise for its business casing and to make recommendations on its future investments in strategic locations. We are also exploring innovative deployment methods for reducing costs – such as pipe in pipe installation.

Strategy Outcomes

The high-speed broadband environment is still in its infancy which makes establishing benchmarks challenging. Data on broadband usage at a local level is not being collected in a way that makes it easily accessible. City staff is currently working with the Intelligent Communities Forum Canada (ICF Canada) and the Canadian Internet Registration Authority to explore how data can be captured to establish industry benchmarks and measurements.

As broadband measurement standards evolve in Canada, capturing insights such as percentage of businesses and residents with access to fibre broadband, and number of internet connections per 100,000 people, will eventually provide meaningful benchmarks for measuring Surrey's broadband goals.

Highlights of expected outcomes include:

- Fibre broadband infrastructure deployment will be accelerated so that over 90 per cent of homes and businesses have access to fibre broadband by 2021;
- Free public Wi-Fi across the City will increase;
- Broadband connections to core civic facilities will be more cost effective;
- Wireless services in underserved areas will increase;
- Digital literacy will increase through low-cost and free programs and services;
- Fibre broadband deployments will be accelerated using innovative technologies;
- City owned telecommunications assets will be efficiently managed to maximize broadband opportunities and benefits;
- Health technology development and adoption will be accelerated by researchers and innovators connected to data and tools, utilizing ultra-high-speed network access;
- The City's ability to attract and retain new businesses will be enhanced;
- The City's Economic Diversification Strategy priority sectors will be supported with high-speed broadband access; and
- Public safety will be enhanced.

SUSTAINABILITY CONSIDERATIONS

The Smart Surrey Broadband Strategy will assist in achieving the goals of the City's Sustainability Charter. This report relates to the Sustainability Charter themes of Infrastructure, Inclusion, Economic Prosperity and Livelihoods, Health and Wellness. Specifically, the Smart Surrey Broadband Strategy supports the following Desired Outcomes and Strategic Directions:

- Telecommunications DO21: The city has excellent communications infrastructure that provides affordable and effective connectivity across the community.
- Economic Prosperity and Livelihoods DO14: Surrey is the region's innovation hub, focusing on health and clean technologies, and creating significant local and regional economic impacts.
- Education and Culture DO6: Surrey is a provider of advanced education, producing cutting-edge research and cultivating leaders in innovative practices.
- Telecommunications SD15: Enable faster deployment of fibre-optic telecommunications infrastructure, including concurrently with City utility excavations.
- Telecommunications SD16: Advance improved high speed wireless services.
- Inclusion SD6: Create, enhance and increase awareness of services that support people with economic barriers.
- Inclusion SD7: Increase access to education, training and work opportunities for people who face barriers to employment.

CONCLUSION

Based on the above discussion, it is recommended that Council approve the Smart Surrey Broadband Strategy. The Smart Surrey Broadband Strategy will serve as a guide in building a world-class connected City that is well-positioned to meet and leverage opportunities now and in the future.

Vivienne Wilke, CPA, CGA
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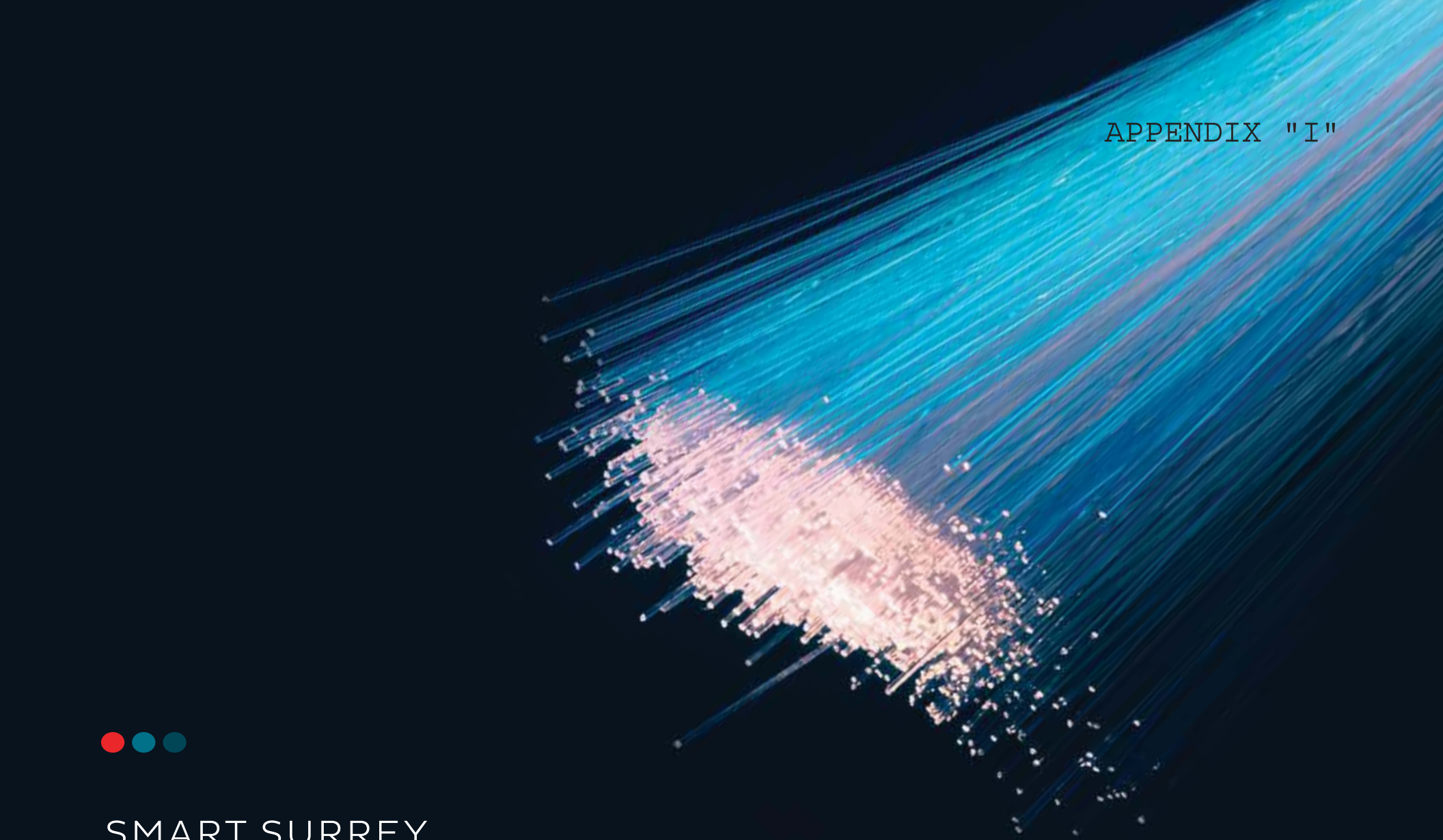
Engineering

Appendix "I" - Smart Surrey Broadband Strategy

APPENDIX "I"



SMART SURREY

BROADBAND STRATEGY

BUILDING A WORLD-CLASS CONNECTED CITY

CITY OF SURREY

Message from the Mayor

Surrey is the fastest-growing city in BC and the third fastest-growing population centre in Canada. Innovation and a commitment to service are hallmarks of Surrey's governance model. This commitment has enabled Surrey to evolve from a relatively small, bedroom community of the 1960s, into a thriving community of more than half a million people.

In our digitally connected world, keeping pace with the increasing need for accessible, affordable high-speed broadband has become vital to the economic health and well-being of communities. Residents, businesses and institutions rely heavily on reliable broadband access in daily life; in fact, high-speed broadband is increasingly becoming regarded as an "essential core utility", alongside water, sewer and electricity.

Continual, rapid changes to broadband technology mean that decisions of today must assume that our needs will change and grow tomorrow. With this in mind, I am pleased to present the Smart Surrey Broadband Strategy to serve as a guide in building a world-class connected city that is well-positioned to meet and leverage opportunities now and in the future.

Sincerely,

Linda Hepner

Linda Hepner, *Mayor*

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Executive Summary

Cities around the world are recognizing the growing need for access to faster and cheaper broadband[1] so they can succeed in the digital economy.[2] Increasingly being accepted as the new essential utility alongside water, sewer and electricity, high-speed broadband has the power to transform the way we live, work and play by fuelling economic, social, and environmental benefits.

The vision for broadband in Surrey is "a world-class connected city with widespread affordable, reliable, scalable high-speed broadband access, which enhances economic prosperity and supports a high quality of life"; this vision will be realized by achieving the following four goals:

FOUR GOALS	
1. Residents, businesses and institutions have high quality, affordable high-speed broadband service and coverage.	2. Fibre broadband infrastructure deployment is accelerated so that over 90 per cent of homes and businesses have access to gigabit-capable Internet by 2021.
3. All residents have ready access to broadband technologies and the skills to use them regardless of socio-economic status.	4. City utility programs are modernized to include telecommunications infrastructure as a core utility.

Building fibre infrastructure is critical to preparing Surrey for its future broadband needs. Networks delivered via fibre technology offer abundant, scalable, reliable connectivity, which is far superior to the alternative copper and cable networks currently being relied on by much of the region. Fibre networks offer capabilities that readily accommodate the growth and change that have become synonymous with technology and innovation.

Over the next decade, as Surrey builds its City Centre from the ground up, a series of construction opportunities will present to install fibre conduit infrastructure at significantly reduced costs. With this in mind:

- A key component to Surrey's Broadband Strategy is to adopt a 'dig once' approach by installing fibre conduit in conjunction with existing construction plans.
- Additional strategies include: building strategic partnerships to accelerate high-speed broadband accessibility; expanding free public Wi-Fi; improving high-speed wireless in under-served locations; advancing in low-cost and free digital literacy programs and services; researching innovative and disruptive technologies to accelerate fibre broadband deployments; and formalizing a City telecommunications asset management program to oversee the City's growing number of City owned telecommunications assets.

[1] Broadband is the common term for a very fast connection to the Internet that can receive and send a large amount of data in a very short period of time. There is no single, standardized worldwide definition for broadband. For the purpose of this Strategy, the reference of 'high-speed' is indicating a broadband speed that is well positioned to facilitate the effective use of advanced telecommunications applications and services.

[2] The 'digital economy' refers to an economy that is based on digital computing technologies; it is also known as the 'Internet Economy'.

Vision: Surrey is a world-class connected city with widespread affordable, reliable, scalable high-speed broadband access, which enhances economic prosperity and supports a high quality of life.

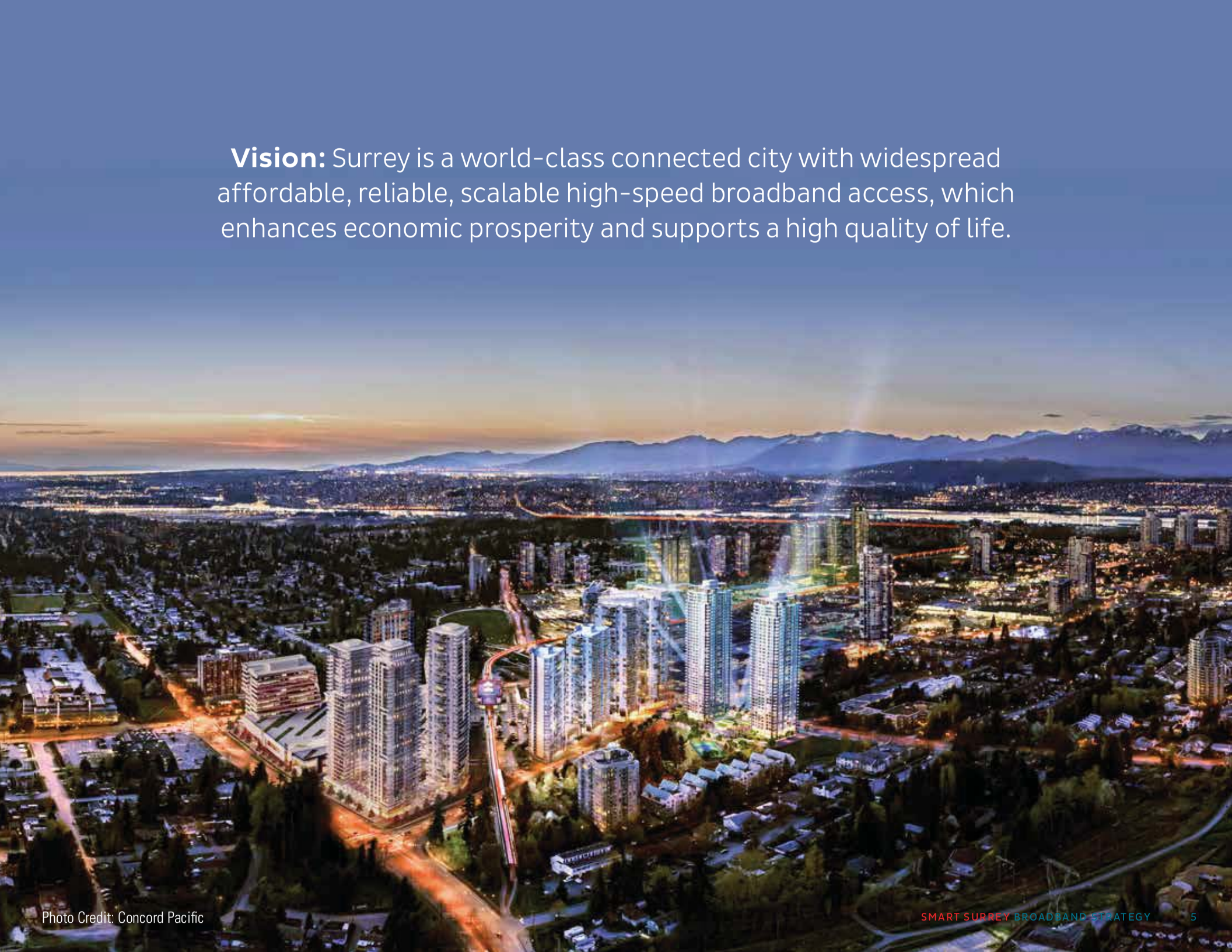


Photo Credit: Concord Pacific


City Centre Library
10350
Mixed Containers

Introduction

The City of Surrey is a place of innovative transformation and accelerated growth. Opportunity lies in Surrey to build a sustainable city where residents live, work and play, and enjoy a high quality of life. In order to accomplish this goal, the City must be forward-thinking to ensure that the infrastructure, the economy, and its communities are built to best serve its growing population.

The 'Smart Surrey Broadband Strategy' supports the principles of Surrey's guiding documents: the Official Community Plan, the Sustainability Charter, and the Smart Surrey Strategy:

The **Official Community Plan** sets out the vision for Surrey 2041 as "a city which will continually become greener, more complete, more compact and connected, that is resilient, safe, inclusive, healthier and more beautiful."

Building on the vision from the Official Community Plan, the **Sustainability Charter 2.0** articulates a refreshed vision statement of "a thriving, green, inclusive city," and contains goals for eight community themes: Inclusion; Public Safety; Ecosystems; Health and Wellness; Infrastructure; Education and Culture; Economic Prosperity and Livelihoods; Built Environment and Neighbourhoods.

The **Smart Surrey Strategy** seeks to guide Surrey's growth from an innovation and technological perspective. It strives for excellence and deployment of international best practices using technological advancements and innovation to enhance life and work within Surrey. Using new and existing technologies and information, it identifies and implements systems and programs to inform decision-making, create efficiencies and optimize the effectiveness of City resources. *A foundational component supporting the Smart Surrey Strategy is high-speed broadband.*

The City must be forward-thinking to ensure that the infrastructure, the economy, and its communities are built to best serve its growing population.

What is Broadband?

There is no single, standardized worldwide definition for broadband. Broadband is the common term for a very fast connection to the Internet that can receive and send large amounts of data in a very short period of time. It is common for broadband to be characterized by minimum download and upload speeds.

Targets for adequate broadband speed are frequently evolving. In the United States, the Federal Communications Commission defines minimum broadband speeds as 25 Mbps for downloads and 3 Mbps for uploads. In Canada, the target set by the Canadian Radio-television and Telecommunications Commission (CRTC) of 5 Mbps for downloads and 1 Mbps for uploads had quickly become insufficient due to continuously increasing requirements to facilitate the effective use of advanced telecommunications capabilities. In December 2016, the CRTC declared broadband Internet access services as basic telecommunications services. The CRTC also increased its target criteria by tenfold, to access speeds of at least 50 Mbps for downloads and 10 Mbps for uploads.

Considerations of other characteristics such as scalability[1], symmetry, and quality are additionally important indicators. In addition, the industry has descriptors for broadband such as 'ultrafast', 'super fast', 'ultra-high-speed' and 'high-speed' broadband, yet there are no standardized, quantifiable definitions for these.

Why is Broadband Important?

High-speed broadband is important for businesses, institutions and citizens. In industry, most medium-to-large sized businesses, and virtually all technology-related businesses, require high-speed broadband as a part of their business models to maximize productivity. For example, high-speed broadband would be essential for an animation company with offices in more than one city so it could easily transfer files among its locations. Institutions such as hospitals and universities rely on it to support information sharing. Citizens are also demanding faster broadband in their homes to facilitate entertainment activities such as movie downloads and video gaming, and widespread Wi-Fi so that they can access the Internet no matter where they are in the city.

Because of its pervasive demand, high-speed broadband is increasingly being accepted as an essential utility alongside core utilities such as water, sewer, and electricity. It provides opportunities to drive innovation; improve healthcare, educational and learning outcomes; facilitate enhanced public safety; improve transportation; create government operational efficiencies; increase civic engagement; reduce greenhouse gas emissions; and keep cities competitive so that our workforce can rapidly grow in today's modern world. It is also critical for capitalizing on digital world transformational opportunities offered by cloud computing, big data analysis, social media, mobility, consumerization of technology, and Internet of Things (IoT). Cities therefore must plan strategically to keep pace with increasing broadband demands to stay competitive in the digital economy, and ensure a continued high-quality of life for citizens.

[1] 'Scalability' is the capability of a system, network, or process to handle a growing amount of work, or its potential to be enlarged in order to accommodate that growth.

[2] The 'digital economy' refers to an economy that is based on digital computing technologies; it is also known as the 'Internet Economy'.

Citizens are demanding faster broadband in their homes to facilitate entertainment activities such as movie downloads and video gaming, and widespread Wi-Fi so that they can access the Internet no matter where they are in the city.


CENTRAL CITY

Vision

"Surrey is a world-class connected city with widespread affordable, reliable, scalable high-speed broadband access, which enhances economic prosperity and supports a high quality of life."

FOUR GOALS

1. Residents, businesses and institutions have high quality, affordable high-speed broadband service and coverage.
2. Fibre broadband infrastructure deployment is accelerated so that over 90 per cent of homes and businesses have access to gigabit-capable Internet by 2021.
3. All residents have ready access to broadband technologies and the skills to use them regardless of socio-economic status.
4. City utility programs are modernized to include telecommunications infrastructure as a core utility.

Strategies

The following seven strategies provide insight, guidance and action for the City to follow over the next decade to ensure the opportunities offered by high-speed broadband are realized and offer maximize value for citizens, businesses, institutions and the City as an organization.

Building fibre infrastructure is critical to preparing Surrey for its future broadband needs. Networks delivered via fibre technology offer abundant, scalable, reliable connectivity, which is far superior to the alternative copper and cable networks currently being used throughout much of Surrey. Fibre networks offer capabilities that readily accommodate growth and change that have become synonymous with technology and innovation.

Over the next decade, as Surrey builds its City Centre from the ground up, a series of construction opportunities will present to install fibre conduit infrastructure at significantly reduced costs.

With this in mind, a key component to Surrey's Broadband Strategy is adopt a 'dig once' approach by installing fibre conduit infrastructure in conjunction with existing construction plans at priority locations.

STRATEGY

1

Build strategic partnerships with private and public entities to accelerate high-speed broadband accessibility.

Create an incentivized environment for prospective strategic partners to support accelerated investment in broadband infrastructure.

1.1

Connect Innovation Boulevard to CANARIE.

Innovation Boulevard is an agile partnership of health, business, universities and government to facilitate the development of new health technologies that are strategically located between Surrey Memorial Hospital (SMH) and Simon Fraser University (SFU). City owned fibre has been installed in the area, and is awaiting utilization.

CANARIE is Canada's advanced research and innovation ultra-high-speed fibre optic network that connects researchers and innovators to data, tools, colleagues, digital labs and classrooms. Connection to CANARIE is considered critical to the delivery of education and research to health professionals.

Via BCNET partnership (a BC-based not-for-profit, shared information technology services organization for higher education and research in BC), CANARIE will be connected from SFU Surrey to the Surrey Memorial Hospital campus, and into Innovation Boulevard to provide access to researchers and innovators to accelerate health technology development and adoption.

1.1.1

Explore opportunities to extend CANARIE to the Jim Pattison Outpatient Care and Surgery Centre, City Centre 1, City Centre 2 and City Centre Library locations.

Foster the extension of the CANARIE network to connect other research and innovator facilities with the aim to drive health care advances through technology-based business growth and research programs.

1.2

Find opportunities to lease fibre conduit and excess Innovation Boulevard fibre capacity (known as “dark fibre”) to public and private entities in support of innovation and entrepreneurship. Identified potential partners:

- Internet Service Providers (ISPs)
- Telecoms
- Post-secondary institutions: SFU, KPU, UBC
- Fraser Health
- Surrey School District
- TransLink
- Studio Production industry, a new and growing business sector
- Private sector technology businesses
- Other regional municipalities

1.3

Partner with Telecoms, private and public entities to accelerate fibre deployments in Surrey.

A key factor to ensuring partnership success will be to collaborate across City departments to streamline processes and permitting associated with broadband infrastructure investment.

1.4

Foster and champion idea generation with Telecoms for better wireless coverage.

Explore alternative antenna design such as small cells to eliminate ‘dead zones’ or areas of limited coverage.

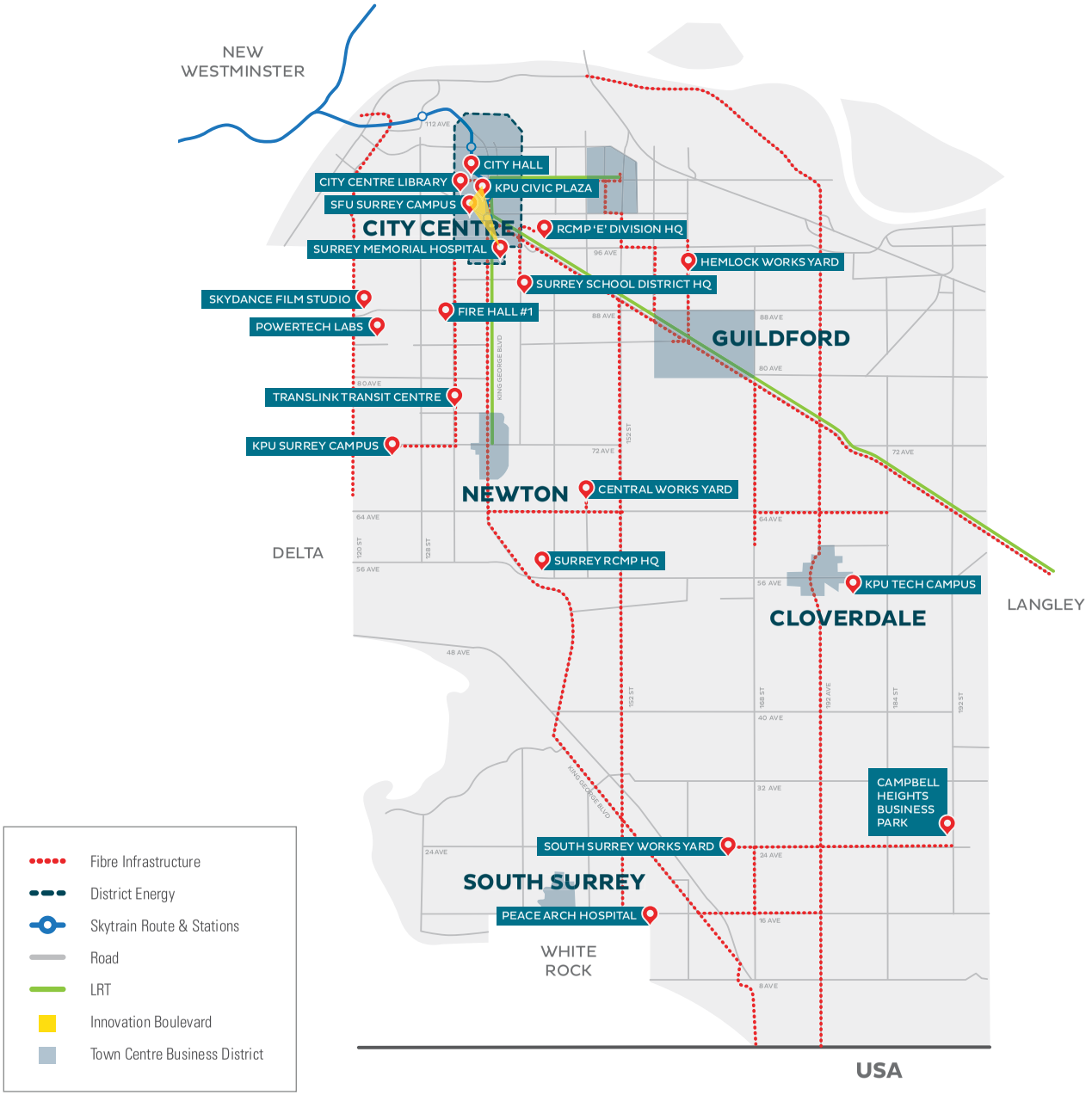
Fibre connectivity delivers high-speed broadband between the City of Surrey's state-of-art Traffic Management Centre (TMC) and the Ministry of Transportation's Regional Transportation Management Centre (RTMC). This partnership between the two centres allows for the sharing of traffic information to monitor and manage traffic incidents more effectively as well as the provision of real-time information to the public.

STRATEGY

2

Coordinate telecommunications fibre infrastructure placement during upcoming City capital construction projects – i.e. ‘dig once’.

A ‘dig once’ approach will significantly reduce costs by ensuring that the City only has to ‘dig once’ to achieve completion of both its priority telecommunications infrastructure and capital construction plans. It is a cost-effective approach to establishing an environment that fosters accelerated fibre deployment.



There are three key project areas that will present 'dig once' opportunities for consideration in the next ten years:

1. District Energy System construction throughout the City's downtown core.
2. 27 km of light rail transit (LRT) construction proposed along three major corridors originating from downtown.
3. Road construction projects comprised in the City's Engineering 10-year Servicing Plan.

Key benefits created by a 'dig once' approach are:

- Accelerating high-speed broadband deployment
- Promoting high-speed broadband competition
- Reducing costs for high-speed broadband deployment
- Decreasing road related costs from repeated excavation
- Minimizing traffic disruption


WHALLEY

2.1

Establish and adopt prioritization guidelines for 'dig once' opportunities.

Prioritize the construction opportunities for fibre infrastructure placement by creating a set of criteria that support the goals of the strategy.

2.2

Develop fibre infrastructure planning maps to identify the conduit routes and areas where the potential benefit is greatest.

Maps are an excellent aid to offering greater transparency to stakeholders for collaborative planning, exploration of joint builds, fibre swaps and future connectivity options.

2.3

Create a tool kit to guide the execution of 'dig once' opportunities.

Cross departmental collaboration with stakeholders from Information Technology, Engineering Utilities, Engineering Operations, District Energy, Transportation, Design & Construction, GIS, and Planning & Development is essential for creating a tool kit containing:

- Technical specifications for coordinated infrastructure placement
- Project prioritizing criteria
- An incremental cost estimating template

3

STRATEGY

Expand free public Wi-Fi across the City.

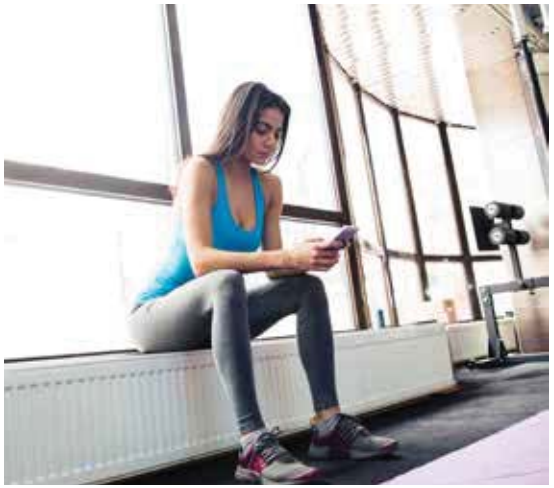
Free Wi-Fi access is especially important for economically disadvantaged residents. With consideration of the digital divide, access to free public Wi-Fi is a significant enabler for assisting individuals to have convenient access to critical information and services. Expanding free public Wi-Fi across the City supports universal Internet access.

3.1

Build on free Wi-Fi services with public-private-partnership approach.

The City has partnered with Shaw Communications to expand Wi-Fi service coverage citywide at libraries, recreation centres, parks, civic buildings and public spaces. The goal is to grow this service to be offered free of charge at more than 50 locations throughout Surrey.

The agreement between the City and Shaw is non-exclusive, meaning that other telecommunication companies are also able to provide Wi-Fi services jointly with the City.



3.2

Expand City-owned free public Wi-Fi at City facilities.

Grow the City-owned free public Wi-Fi service to be offered at recreation centres, civic buildings, arenas, indoor pools and public locations to improve citizens' experiences and better cover under-served areas. Extend Wi-Fi for the City's mobile workforce to access at various city facilities.

3.3

Leverage opportunities to integrate free Wi-Fi along LRT routes as they are built.

Collaborate with Light Rail Transit (LRT) construction planners and TransLink to integrate the delivery of fibre infrastructure for future services such as free public Wi-Fi service to be effectively offered along LRT routes.

4

STRATEGY

Improve high-speed wireless services in underserved areas.

Expanding access to technology and information is essential to creating equal opportunities for all Surrey residents.

4.1

Wireless antenna systems on street light poles.

The secondary use of street light poles for the installation of wireless transmission equipment supports the City and Industry Canada policy and guidelines. Revitalizing and leveraging the results of the City's 2013 pilot program for the installation of wireless antennae provisioned on street light poles will serve to broaden wireless coverage in underserved areas.

4.2

Foster innovative wireless opportunities.

With the city's rapid downtown growth, high-rise in-building wireless coverage innovation is essential; evolving and emerging wireless calling coverage, such as Wi-Fi calling and voice-over LTE (VoLTE) will be explored to ensure buildings have adequate coverage.

4.3

Foster accelerated deployment of fibre networks for improved capacity and scalability of wireless services.

Historically, a small number of taller cellular towers provided sufficient coverage and capacity to serve the needs of residents and businesses. The significant increase in wireless data usage has placed immense strains on existing telecommunications infrastructure.

Surrey's vast land base and topography present telecommunication companies with significant challenges for delivery of highly reliable wireless services throughout all areas of the City. As the demand for wireless services grows, there are increasing requirements for the use of fibre to provide back-haul from cell sites to mobile carrier switching facilities.

5

STRATEGY

Advance low-cost and free digital programming and services.

Ensure that all Surrey residents, regardless of socio-economic status, have access to high-speed broadband Internet, computer devices, relevant content and the skills needed to use the Internet effectively.

5.1

Device Accessibility

Free access to computers, high-speed broadband (wired and wireless), and software is available at Libraries, City Hall, and other central community locations.

Equipment provisioning and donations are made using retired computing assets (computers, laptops, tablets and smartphones) to local agencies that support residents in need.

Work with private partners to explore opportunities for community broadband subsidy programs.

5.2

Computer Training

Classes and one-on-one assistance are offered at Libraries to citizens, including introductory social media, and cyber safety classes. Special topic classes such as photo editing, digital news magazines, video conferencing and more are also offered.

Explore opportunities for advancing digital skills training in multiple languages.

5.3

Community Services Portal

Implement a Community Services Portal offering convenient access to comprehensive, relevant information to services that support vulnerable populations in Surrey.

The Community Services Portal will support vulnerable people in connecting with the services they need to achieve better health and other well-being outcomes.

5.4

Digital Literacy for Children

Providing children and youth with opportunities to access and learn current technology is key to building a knowledge workforce.

iPads are available in Libraries for use by families who do not have the means to access digital technology in their homes.

STRATEGY

6

Research innovative and disruptive technologies to accelerate fibre broadband deployments.

The City is assessing the use of innovative and disruptive technologies to be adopted as acceptable construction practices in Surrey when specific criteria is met. These technologies may assist the acceleration of fibre deployments and reduce deployment costs.

There are excellent opportunities to collaborate with industry experts and learn from other progressive countries and cities' experiences. Areas of the world such as Europe and Asia have been leaders in the space.

6.1

Explore installation of fibre optic cables within existing functional water and sewer utility pipe infrastructure to significantly reduce fibre installation cost.

Water and sewer utilities are ideal since these infrastructure grids already exist and most properties are tied into these utilities.

6.2

Explore feasibility of 'micro-trenching' where fibre cable is laid just under-surface as opposed to deeply beneath roads and sidewalks.

Micro-trenching is achieved by creating a slot in the groundwork to create a path or trench for the installation of fibre optic cable lines. It is attractive for certain applications because it is less expensive and a faster method to install fibre; its downside, however, is that its near-surface location is higher risk for being damaged.

6.3

Collaborate with other regional Vancouver municipalities and industry experts to determine best-practice engineering specifications for new technologies.

Collaborate to develop and adopt best-practice engineering specifications practical for accelerating and sustaining fibre broadband deployments utilizing new advanced technologies.

7

STRATEGY

Formalize a City asset management program to oversee City owned telecommunications assets.

The establishment of a formalized internal telecommunications asset management program is necessary to maximize current and future opportunities and benefits. Steps have been taken to begin this process, including the creation of a shared repository area for cross-departmental access. Additionally, actions are being taken to integrate the city's telecommunications infrastructure information to be part of the City's existing utility infrastructure management process.

7.1

Review and streamline City permitting and construction process.

Ensure that City processes efficiently support the scope and pace of the planned 'Dig Once' construction, and other high-speed broadband related initiatives.

7.2

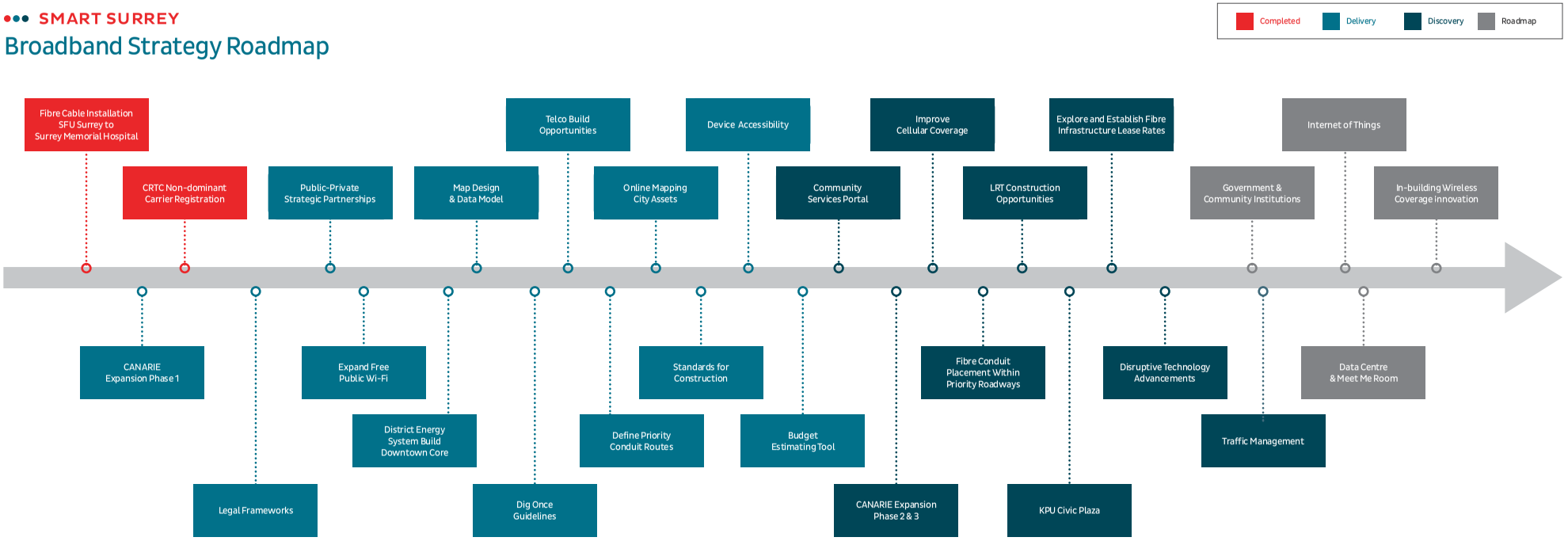
Digitize the City's fibre assets into a centralized digital mapping system.

The City hosts a comprehensive online mapping system known as COSMOS. COSMOS is an important resource for information, planning and decision-making, used by City staff and as well as external stakeholders. It comprises maps detailing zoning land use, utilities, civic community facilities, universities, schools, and parks.

City fibre infrastructure will be integrated into COSMOS to facilitate information sharing, stakeholder collaboration, and future planning.

SMART SURREY

Broadband Strategy Roadmap



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