Chief Financial Officer's Report to
Gas, Power and Telecommunications
2018 October 18

ISC: **UNRESTRICTED**
GPT2018-1094

Fibre Infrastructure Strategy Annual Update

EXECUTIVE SUMMARY

This report serves as the third annual update on the implementation of The City of Calgary's Fibre Infrastructure Strategy.

The City has made progress on all areas of the strategy, including:

- Connecting more City facilities and assets, avoiding costs from third-party entities;
- Building more fibre within the downtown core, while reaching more traffic controllers;
- Implementing in greenfield developments as part of the Four-Party Shallow Utility Consortium;
- Licensing out City fibre to external agencies;
- Building relationships, educating and collaborating with many internal and external agencies; and
- Continuing to participate in Canadian Radio-Television and Telecommunications Commission's policies and reviews.

ADMINISTRATION RECOMMENDATION:

That Gas, Power & Telecommunications Committee:

1. Receive for information the Fibre Infrastructure Strategy Annual Update (Attachment 1)
2. Direct that the Fibre Infrastructure Strategy Updated Risk Assessment (Attachment 3) remain confidential pursuant to Section 24(1)(a) and (b) of the Freedom of Information and Protection of Privacy Act for a period of 15 years.

RECOMMENDATION OF THE GAS, POWER AND TELECOMMUNICATIONS COMMITTEE, DATED 2018 OCTOBER 18:

That Council:

1. Receive for information the Fibre Infrastructure Strategy Annual Update (Attachment 1); and
2. Direct that the Fibre Infrastructure Strategy Updated Risk Assessment (Attachment 3) remain confidential pursuant to Section 24 of the *Freedom of Information and Protection of Privacy Act* for a period of 15 years.

Excerpt from the Minutes of the Regular Meeting of the Gas, Power and Telecommunications Committee, held 2018 October 18:

"**Moved by** Councillor Davison

That Gas, Power and Telecommunications Committee **recommend that Council:**

1. Receive for information the Fibre Infrastructure Strategy Annual Update (Attachment 1) **at the 2018 November 12 Public Hearing Meeting of Council;** and

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2. Direct that the Fibre Infrastructure Strategy Updated Risk Assessment (Attachment 3) **and closed meeting discussions** remain confidential pursuant to Sections **17 and** 24 of the *Freedom of Information and Protection of Privacy Act* for a period of 15 years.

MOTION CARRIED"

PREVIOUS COUNCIL DIRECTION / POLICY

In 2015 September, Council approved the Fibre Infrastructure Strategy (GP2015-0485) with an annual update.

BACKGROUND

For the last 18 years, The City of Calgary Information Technology (IT) business unit has been leveraging capital works projects to take advantage of economies of scale to deploy fibre optic to support City services. The Fibre Cable Duct and Wireless (FCDW) Steering Committee was established in 2002 to provide governance for The City's fibre infrastructure. Membership of the FCDW committee includes the Directors of Transit, Roads, Water Services, Transportation Infrastructure, Facility Management and IT. This has enabled over 450 kms of fibre optic to be deployed throughout Calgary.

The primary focus is to connect all City buildings, facilities and assets. The excess capacity in City fibre optic has been licensed to civic partners, universities, school boards, businesses and carriers. All revenue is transferred to the Information Technology Reserve for future fibre builds for City services and to support operating costs.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

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To provide an annual update on the elements of the fibre strategy with key elements including:

- Monitoring and participating in regulatory and/or policy related events with the top concern being the federal announcement of The Modernization of the Telecommunications, Broadcasting and Radiocommunications Act. Changes to this suite of legislation can impose restrictions on how municipalities govern their rights-of-way and assets, such as poles and facilities, and these sweeping changes could last for decades.
- The general progress of connecting City assets to the fibre network and the estimated cost avoidance achieved.
- The City operates as a fibre-optic provider and City IT licenses out excess fibre-optic capacity to other public-sector organizations, businesses or carriers. Revenues are transferred to the IT Reserve - Fibre Optic Program #751 to fund fibre deployments for City services and cover operating costs of the fibre plant.
- Supporting our local Internet Exchange (IX). IXs are found in the most prominent business centers in Canada such as Toronto and Vancouver. An IX supports fast, affordable internet and enables new business capabilities. The Calgary Internet Exchange (YYCIX) began in 2012 and is a non-profit organization run by volunteers. It is

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growing and gaining momentum and The City has been supporting the YYCIX by providing fibre and hosting equipment in one of The City's communication rooms.

- An updated risk assessment and mitigating strategies.

Stakeholder Engagement, Research and Communication

Governance for The City's fibre infrastructure is provided by the FCDW Steering Committee, which includes representatives from Transit, Roads, Water Services, Transportation Infrastructure, Facility Management and IT.

The City's Fibre team is continually researching the field of Information Communication Technology.

Information about The City's Fibre Strategy is available to cities and communities across Canada through press releases and regulatory interventions.

Strategic Alignment

The Fibre Infrastructure Strategy is aligned with Council Priorities, the Corporate Services 2015-2018 Action Plan, IT's 2015-2018 Business Plan and IT's future One Calgary Service Plan.

Alignment with Sustainability Direction 2020

Prosperous Economy
Objective: A city that attracts, develops and retains

Sustainable Environment
Objective: Existing developments (Existing development remediation and redevelopment support efficient land use and environmental protection in Calgary)

Smart Growth and Mobility Choice
Objective: Provide safe, reliable and affordable public infrastructure

Financial Capacity
Objective: Cost efficiency & risk management

Sustainable Corporation
Objective: Efficiency, infrastructure management, effective service delivery

Social, Environmental, Economic (External)

Social: City business units rely on connectivity to deliver services to the citizens. Fibre optic is the path that information takes to reach the desired endpoint whether that is a building, like the Emergency Operation Center (EOC), or a server for analytics. City services play an important role in the social well-being of the community.

Environmental: City fibre optic has a positive effect on the environment through a number of channels. Through smart infrastructure and highly-connected devices, The City can better manage assets and increase the performance of services like intelligent traffic systems. By licensing dark fibre, companies have an option to obtain fibre services without building their own – reducing disruptive construction activities. Many utilities and organizations require fibre connectivity to deliver enhanced services to manage efficiency like smart grids or intelligent building management systems. All these contribute to a better environment.

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Economic: The digital economy is dependent on connectivity infrastructure, like fibre optic, as the fundamental infrastructure to support it. This enablement allows the community to prosper through equal access and inclusion. The City of Calgary's fibre infrastructure strategy focuses on providing fibre for City services and leasing excess capacity to other organizations.

Financial Capacity

Current and Future Operating Budget:

Current

The 2018 annual operating expenditure budget for the City Fibre Team is $1.9 million.

Future

Future additional operating costs are estimated to be approximately two per cent of construction costs. Revenues derived from dark fibre licenses are applied to the operating funding source and are directly related to the capital funds allocated to build fibre to customers. Due to capital budget constraints in 2019-2022, new fibre builds and revenue are expected to level off. Modest increases in revenue are expected, but self-funding is no longer anticipated as previously forecast.

Current and Future Capital Budget:

Current

Total capital budget approved for 2016-2018 was $19.1 million.

These funds were committed for new fibre projects such as intelligent intersections, stranded facilities and next-generation City infrastructure.

Future

Due to capital budget constraints going into the 2019-2022 business cycle, capital will be sourced through the IT Technology Reserve of $1 million annually and leveraging capital projects. See Attachment 2 – Project Cost and Funding Sources.

Risk Assessment

Through the Integrated Risk Management process, additional risks were identified along with mitigating strategies. See Attachment 3 - Fibre Infrastructure Strategy Risk Assessment.

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REASON(S) FOR RECOMMENDATION(S):

The telecommunications environment is constantly evolving, and the annual report serves to keep Council apprised of the progress, challenges and future strategic directions regarding the City's fibre infrastructure.

ATTACHMENT(S)
1. Attachment 1 – Fibre Infrastructure Strategy Annual Update
2. Attachment 2 – Project Cost and Funding Sources
3. Attachment 3 – Fibre Infrastructure Strategy Risk Assessment - CONFIDENTIAL