Report to Council

Date: August 24, 2020

To: Council

From: City Manager

Subject: ModelCity Infrastructure Tool

Department: Development Planning Department

Recommendation:

THAT Council receives, for information, the report from the Development Planning Department, dated August 24, 2020, regarding the ModelCity Infrastructure tool.

Purpose:

To receive information regarding the ModelCity Infrastructure analysis tool.

Background:

In 2018, staff presented Council with a report on the City's long-term infrastructure deficit – the net difference between the revenue and costs required fund the operation, maintenance and renewal of the City's infrastructure assets. Using this information, Council has made several important decisions that begin to tackle the deficit, including implementing new funding tools, such as the Infrastructure Levy.

While there are many important methods of addressing the infrastructure deficit *downstream* (i.e.: after the infrastructure has been inherited), tackling the issue *upstream* (i.e.: before the infrastructure is inherited) is also important. To this end, staff have been exploring the important connections between land use planning and the management of our long-term infrastructure assets.

ModelCity Infrastructure (MCI) is a new analysis tool developed to assist staff, Council and the public as they consider the long-term infrastructure implications of critical land use decisions. Essentially, the tool enables the evaluation of the long-term financial performance of Kelowna neighbourhoods by comparing how much the City spends on long-term infrastructure in different neighbourhoods with the tax revenue and utility fees collected from them.

The Land Use – Infrastructure Link

Many of the land use decisions that Council makes on a regular basis have profound and long-lasting impacts on the community. Understandably, these decisions are often complex and involve weighing many different, and sometimes competing objectives. Traffic, parking, height, density, environmental impact, affordability and character, are just a few of the many considerations regularly examined.

While infrastructure costs are one of the most discussed and debated items for new development, historically the discussion is typically focused on the up-front capital cost – the cost of building new infrastructure. Less time is spent discussing the cost of infrastructure after it is built – the cost of operating, maintaining, and ultimately replacing infrastructure. Understanding the broader life cycle costs is vital, as it better reflects the long-term financial impacts of servicing development, impacts which are felt entirely by the local government.

This point is made even more important for local government land use for two reasons. First, land development functions on the basis that "development pays for itself". Essentially, new development should cover the up-front cost of the infrastructure needed to support service delivery. This raises a critical risk. Inheriting new infrastructure from land development at no up-front cost can obscure the careful examination of the long-term life cycle costs (i.e.: operating, maintenance, and replacement) of that infrastructure. Secondly, once the local government inherits the infrastructure, regardless of who paid for its construction, it must maintain that infrastructure, for the most part, in perpetuity. The infrastructure cannot simply be sold or eliminated when it proves too costly.

In addition, the largest share of new infrastructure that local governments take on occurs through the land development process. But, along with the new infrastructure and the benefits of additional roads, sanitary, water, drainage and parks, comes new obligations (operations, maintenance and replacement), making it vital for local governments to understand the long-term infrastructure impacts of their land use and development decisions.

The question, then, becomes whether different forms of development and settlement patterns bring different infrastructure obligations. And, if so, whether local governments can become more financially sustainable through improved land use decision-making.

ModelCity Infrastructure (MCI) was developed to analyze this information up front to help inform land use decision making. MCI is an extension of the ModelCity initiative that was introduced to Council recently. It allows staff to use the information about the City's assets generated through our asset management program to create the MCI tool. Equipped with that information, staff, Council and the public are able to apply it as one lens (of many) to future land use applications and long-term planning initiatives.

Methodology:

MCI looks at the revenues and costs associated with four primary infrastructure systems: parks, roads, sanitary and water services. The revenues considered include property taxes, utility fees and the infrastructure levy. Costs considered include operations, maintenance and renewal costs within a 10-year time horizon.

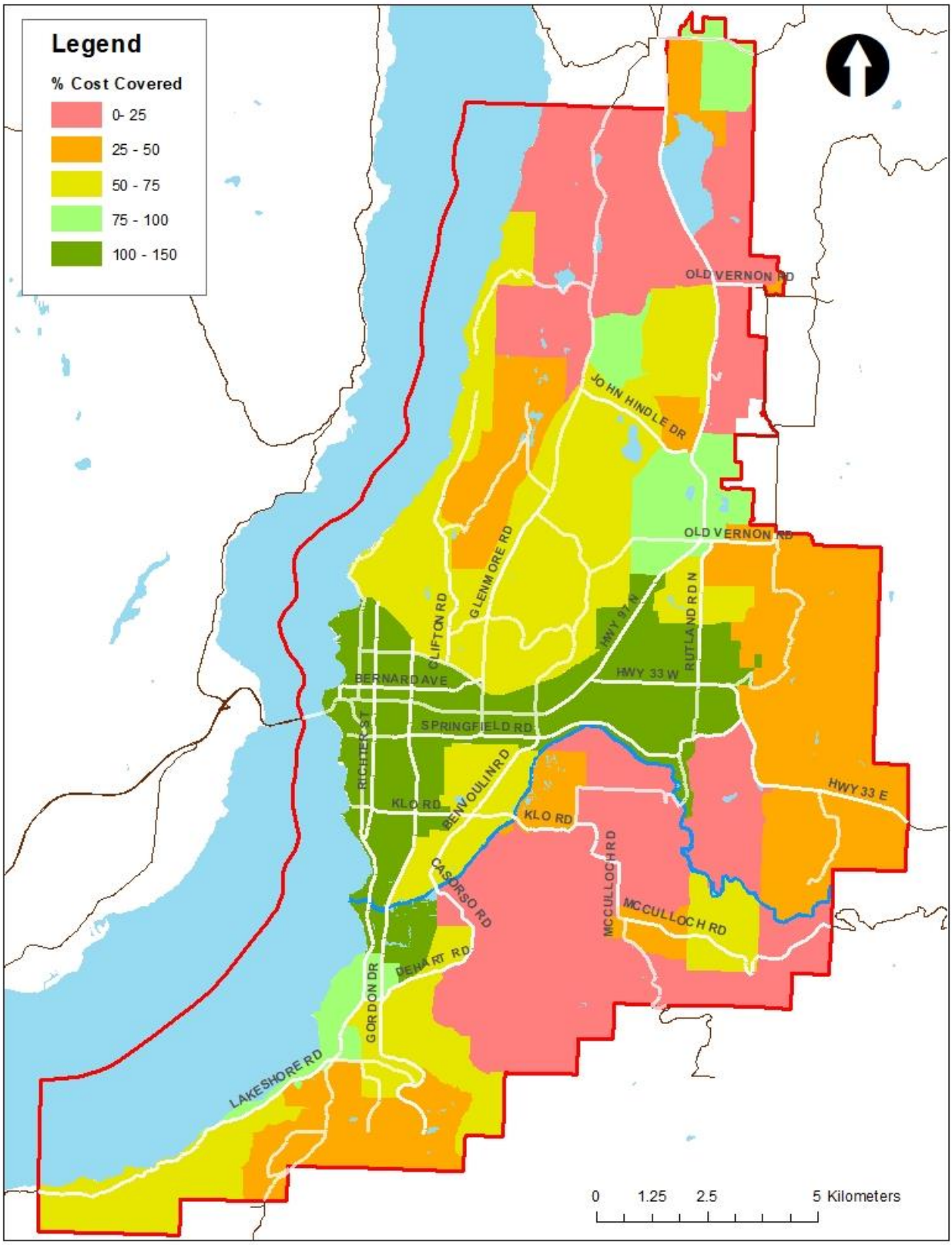
Each neighbourhood is assigned its share of infrastructure systems based on usage. In short, if you use a piece of infrastructure, you are assigned a share of its costs. For instance, local roads used for local access only are the responsibility of that neighbourhood alone; whereas, major roads that everyone relies on, such as Springfield Road, are the responsibility of all residents. The same logic applies to the other infrastructure systems.

Importantly, MCI tool does not focus on up-front capital costs of infrastructure. This is because development – regardless of type – is required to pay for its own up-front capital infrastructure impact. MCI instead focuses on the long-term financial implications of development once the City inherits in the infrastructure.

Discussion:

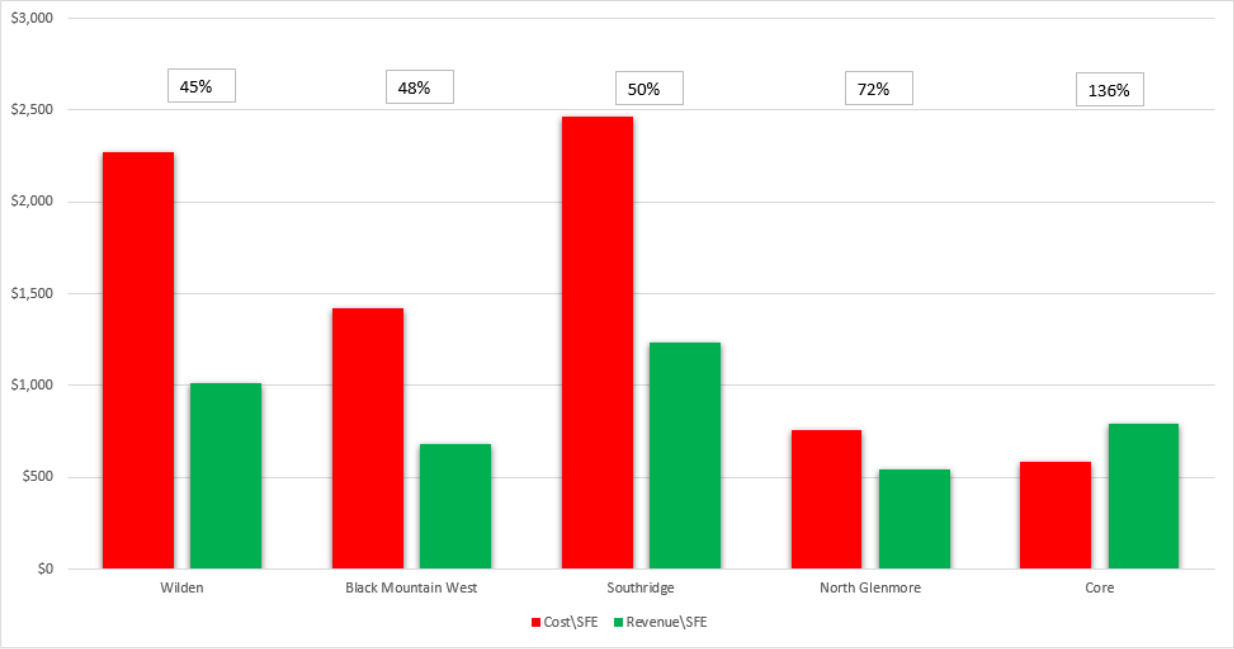
Using the MCI tool, it becomes very clear that different land use types have very different infrastructure impacts. Two factors appear to drive cost: proximity to the city's Core Area, and residential density of a neighbourhood. That is to say, the more central a development is and the more dense a development is, the better it performs from a financial sustainability perspective. *Figure 1* shows the per cent of long-term costs covered by each neighbourhood.

Figure 1: Per cent of long-term infrastructure costs covered by revenue



Costs have been expressed in relation to the share (percentage) of long-term infrastructure costs covered by the revenue generated. For example, where the map identifies a neighbourhood at 25-50%, that means that MCI tool is estimating that the revenue generated by the neighbourhood will account for approximately 25-50% of its cost burden. *Figure 2* shows a selection of Kelowna neighbourhoods with different land uses and compares their performance *per capita*[1]. The revenues and costs used in *Figure 2* are annualized averages over a 10-year period. Generally, the city's low-density suburbs perform the worst financially, where dense, mixed-use neighbourhoods in the Core Area perform the best.

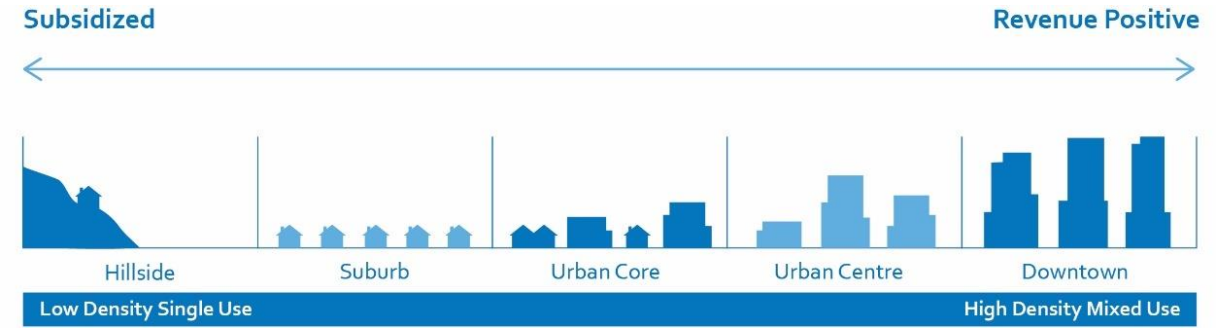
Figure 2: Long-term infrastructure costs and revenues in selected neighbourhoods (per capita)



Using MCI, staff have observed that there is a range of net costs of development over the long-term. For ease and clarity, staff have designed *Figure 3*, illustrating the range of land use types along a continuum of long-term cost burden. The long-term cost burden is expressed in a range from 'subsidized' where revenues fall significantly short of costs, to 'very positive' where revenues exceed costs.

[1] *Per capita* here refers to the use of SFE's (single family equivalents) to normalize total costs in different neighbourhoods, enabling us to compare "apples to apples" on an equivalent unit basis.

Figure 3: Life Cycle Infrastructure Costs by Development Form



In addition to proximity to the core and density, one of the key financial drivers is the presence of commercial and industrial development. As we consider forms of residential development, those that include commercial components are the best performers.

Conclusion and Next Steps:
Using the ModelCity Infrastructure tool, it has become clear that different land use decisions have very different long-term cost impacts. In short, the more low-density suburban development that is undertaken, the greater the long-term financial commitment. This conclusion supports efforts to curb suburban sprawl through broader transportation, climate change, social and environmental strategies and reflects the community's *Imagine Kelowna* goal of limiting sprawl.

Moving forward, the MCI tool will be applied with more frequency to major new development applications, such as OCP amendment applications and Area Structure Plan (ASP) applications. This additional information will allow staff, Council and the public to have a clear estimate up front about the long-term financial impacts of these major land use decisions.

Critically, the information generated by MCI is only one of many important factors that needs to be considered when evaluating major land use applications. It simply provides an important piece of information that has not been available to date. This new information should be considered alongside other important factors, such as environmental impact, social or historical impact.

Internal Circulation:
Infrastructure Engineering
Data Services & Analytics
Policy & Planning
Financial Services
Development Engineering
Communications

Considerations applicable to this report:
Existing Policy:
2030 Official Community Plan (bylaw 10500)

Chapter 7: Infrastructure

> **Objective 7.1.** Apply sustainable decision-making approaches in infrastructure planning and procurement.

Objective 7.2. Design infrastructure to deliver maximum benefit

Chapter 5: Development Process

Policy 5.3.2. Compact Urban Form. Develop a compact urban form that maximizes the use of existing infrastructure and contributes to energy efficient settlement patterns. This will be done by increasing densities (approximately 75-100 people and/or jobs per ha located within a 400 metre walking distance of transit stops is required to support the level of transit service) through development, conversion, and re-development within Urban Centres (see Map 5.3) in particular and existing areas as per the provisions of the Generalized Future land Use Map 4.1.

Considerations not applicable to this report:

Legal/Statutory Authority:
Legal/Statutory Procedural Requirements:
External Agency/Public Comments:
Financial/Budgetary Considerations:
Communications Comments:

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