Newton - King George **Boulevard Plan**

Envisioning Surrey Together

CITY OF SURREY

Surrey is situated on the unceded and ancestral lands of the Salish peoples, including the se'mya'me (Semiahmoo), ḳiċəy̓ (Katzie), ḳʷɑ:ṅƛəṅ (Kwantlen) sċəwaθən məsteyəxʷ (Tsawwassen), and qiqéyt (Qayqayt) Nations.

It is on their lands that our communities now live, work, and play. They were the first peoples to reside in the area. They are and will continue to be active in shaping the future of the neighbourhood and the City of Surrey.

We strive to forge new positive relations.

What's a land use plan?

Land use plans designate what can be built and where. They guide the height, use, and look of new buildings, as well as locations and funding for new streets, parks and other public services.

How will the plan improve the neighbourhood?

Many public facilities and services are used daily by residents. These include community centres, cultural spaces, childcare facilities and libraries. When new development and rezoning occurs in an area with a land use plan, developers must make contributions to help fund these amenities. They are also required to upgrade sidewalks and other infrastructure.

Newton - King George Boulevard Plan

Planning and Development, Engineering, and Parks, Recreation and Culture

City of Surrey
13450 104 Avenue
Surrey, British Columbia V3T 1V8

Approved By Council _____.

CITY OF SURREY

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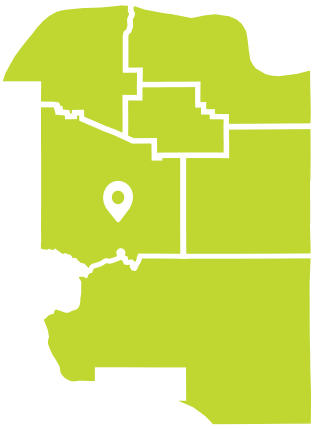


The Newton–King George Boulevard Plan presents a vision for the area to support transit expansion and redevelopment.

The Plan includes land use, transportation, and parks & open space plans. It includes an engineering servicing strategy and a financing strategy to ensure the delivery of community amenities and infrastructure. This produces sustainable, responsible, and intentional redevelopment within the existing neighbourhood.

What is a Land Use Plan?

The City creates land use plans for areas that are experiencing growth and development pressure. A plan ensures redevelopment occurs in a logical way that reflects the community's vision for the future. It also requires developers to contribute to the neighbourhood's infrastructure and amenities.

How does the Plan work?

The Plan gives every property a ***land use designation***. The land use designation is simply an indication of what could be built if the landowner wanted to go through a rezoning and development application process.

The Plan also considers what the future long term population of the area will be if all the land is redeveloped to match the land use designations. From this, the Plan calculates infrastructure and amenity improvements needed to serve the growing population and levies this cost onto developers.

What does the Plan mean for current residents?

Existing landowners are not forced to redevelop, move, or sell. The Plan will build out slowly over many decades when there are willing buyers, sellers, and developers. Eventually, current owners may consider redeveloping their property or selling.

The Plan does not change what can or cannot be built under a property's zoning. Landowners can rebuild under their property's existing zoning regardless of the future land use designation shown in the Plan.

Newton-King George Boulevard | **Plan Summary**

VISION

"Newton is celebrated as a safe, family-oriented community, home to people of all ages, cultures, and backgrounds. It is an accessible neighbourhood. Residents have access to convenient public transportation and an affordable range of housing choices. Residents can meet most of their daily needs close to home, with a variety of shops, gathering spaces, parks, and natural areas a short walk or bike ride away."

PLANNING PRINCIPLES

Active
Enhance neighbourhood connectivity to ensure that everyone can quickly and easily access everything their neighbourhood has to offer.

Inclusive
Foster a welcoming and inclusive community with local amenities and spaces for all cultures, ages, and abilities.

Transit Supportive
Support future RapidBus expansion by bringing residents and destinations to the areas nearest transit stops.

Affordable
Provide a mix of housing types that addresses housing affordability and need.

Local Necessities
Make sure food and basic necessities are available locally.

Natural Areas
Protect and enhance biodiversity, ecosystems, and natural areas.

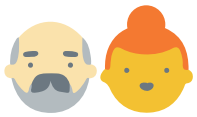
Safe
Design safe and welcoming public spaces that enable positive social interactions and foster community.

Climate Resilient
Transition to a net zero carbon community that can adapt to climate change.

Newton-King George Boulevard | **Plan Summary**

POPULATION PROJECTIONS

The Plan proposes redevelopment and densification along the frequent transit network. This will result in modest population growth over the next 20-30 years. The Plan is expected to yield an estimated total population of 17,149 residents, an increase of 10,962 from today's existing population of 6,187 residents.



Existing	Projected
6,187	17,149

HOUSING PROJECTIONS

The Plan will result in the conversion of existing single-detached housing into a mix of apartments, townhouses, and more diverse and affordable housing forms (such as duplexes, rowhouses, small lot single-detached dwellings. In total, the number of dwelling units will increase from the existing 1,891 up to 5,498 at full build-out.

Existing	Projected
1,891	5,498

EMPLOYMENT PROJECTIONS

The Plan strengthens local business by adding residents and providing new commercial space. Mixed-use development will provide retail and/or service units at street level with potential office uses above. Total jobs within the Plan Area will increase from the existing 338 up to 1,001 at full build-out.

Existing	Projected
338	1,001

PARKLAND PROJECTIONS

Four park expansions and riparian protection areas will result in 6.03 hectares (14.91 acres) of parkland. Additional protected natural and riparian areas will be provided by development.

Existing	Projected
4.53 ha	6.03 ha

STUDENT PROJECTIONS

It is estimated that between 2,742 elementary students and 2,747 secondary students will be enrolled in the public-school system from the Plan Area once it is fully built out.

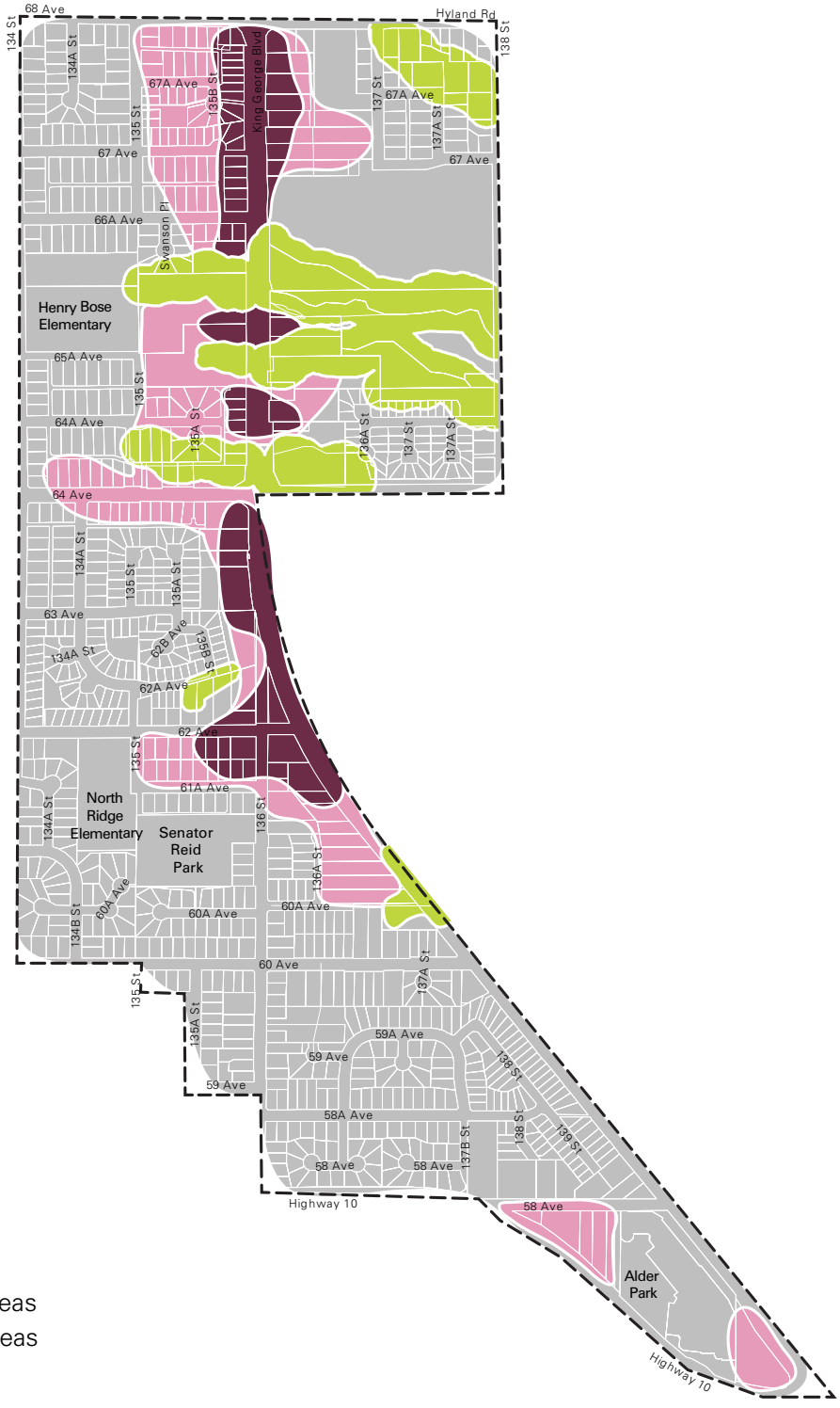
Elementary		Secondary	
Existing	Projected	Existing	Projected
1,904	2,742	1,632	2,747

Newton-King George Boulevard | **Plan Summary**

GROWTH STRATEGY

The Plan recognizes a balanced growth approach that allows a mix of apartments and townhouse with some single-detached housing to remain.

The Plan focuses density and commercial uses along King George Boulevard nearest to anticipated future RapidBus stops. Densities transition to two-storey attached and detached housing forms at the Plan Area's periphery and within more recently developed neighbourhoods in the Plan Area's south.



LEGEND

- Mixed-Use Redevelopment Areas
- Residential Redevelopment Areas
- Infill Areas
- Natural Areas

Newton-King George Boulevard | **Plan Summary**

LAND USE STRATEGY

The Plan recognizes King George Boulevard as an important commercial and transportation corridor. The majority of commercial and residential redevelopment is concentrated along King George Boulevard nearest to future rapid transit stops.

The Plan's land use strategy assigns land use designations to outline general development expectations and parameters. Development is expected to occur in accordance with these designations through the implementation of applicable zoning and development permit application processes.

New and existing roads are shown in white.
Future long Term Roads are shown with a dashed line.

LEGEND

- Low-Rise Mixed-Use
- Low-Rise Mixed-Use Cluster
- Commercial
- Low-Rise Residential
- Townhouse
- Low Density Residential
- Parks & Open Space
- School
- Riparian Area
  Refer to Section 6.3
- Detention Pond
- RapidBus
  Proposed Route and Stops

Newton-King George Boulevard | **Plan Summary**

TRANSPORTATION STRATEGY

The Plan's transportation strategy reflects community values of safety, sustainability and inclusivity. New road connections will establish the foundations for a grid network and with gaps in infrastructure being completed through development or capital projects to provide a comprehensive continuous network.

The Plan prioritizes active and sustainable modes of transportation to improve alternatives to automobile travel.

LEGEND

- RapidBus
  Proposed Route and Stops
- New Roads
- New Lanes
- Protected Cycle Track
- Pedestrian Connection
- Shared Street Bikeway

PARKS & OPEN SPACE STRATEGY

The Plan's open space strategy provides a connected network of public parks, natural environment, protected riparian areas, and pathways. These areas are complemented by private open space such as plazas, landscaped setbacks, and school playfields. Together they support a range of amenities, access to nature, healthy ecosystems, and climate resiliency.

The Plan designates expansions to four existing parks. Park expansions strategically increase the utilization and function of existing parks. This allows for new active park amenities focused in areas where higher densities are proposed. Four park expansions and riparian protection areas will result in 6.03 hectares (14.91 acres) of parkland. Additional protected natural and riparian areas will be provided by development.

The City will acquire parkland over time and will continue to work with the community to plan future amenities.

LEGEND

- Existing Parks & Open Space
- Future Parks & Open Space
- Schools
- Pedestrian Connections
- Detention Pond
- Riparian Buffer
- Watercourse (A-Class)
- Watercourse (B-Class)

"Let's make Newton a central hub for great things that all communities need and thrive on. Make people proud to be from here."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

Introduction

I Why a plan for Newton-King George Boulevard?

The Newton - King George Boulevard Plan has been developed through community consultation, with support from residents, stakeholders, agencies, and City staff.

The Plan envisions a compact, sustainable, transit-supportive corridor. It focuses growth along established rapid transit corridors while presenting updated infrastructure and amenities to the broader community.

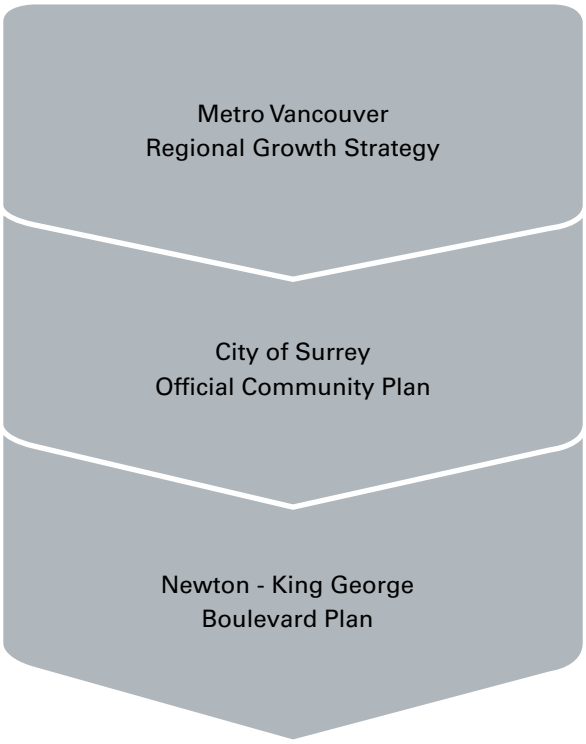
The plan is organized into the following sections:

- Background & Context
- Plan Framework
- Land Use
- Urban Design
- Transportation
- Parks & Open Space
- Community Amenities
- Utilities & Servicing
- Implementation

Policy Context

Planning and development in Surrey is guided by social, environmental, and economic contexts. The Official Community Plan (OCP) and Sustainability Charter, together with the City's climate targets and plans, provide the policy framework for sustainable growth. Together they implement broader direction from Metro Vancouver's Regional Growth Strategy (RGS). Other Strategic plans, such as Surrey's Biodiversity Conservation Strategy (BCS); Parks, Recreation, and Culture (PRC) Strategic Plan; and the Transportation Strategic Plan frame the provision of natural and built infrastructure.

FIGURE I: PLAN HIERARCHY



The Official Community Plan

"The City of Surrey will continually become a greener, more complete, more compact and connected community that is resilient, safer, inclusive, healthier and more beautiful."

Surrey is facing challenges with population growth and housing affordability; transportation and mobility; community amenities; and the climate crisis. The OCP identifies five long-term sustainability goals to help address the challenges of urban growth, climate change and demographic shifts.

The OCP also contains the City's target to reduce community greenhouse gas (GHG) emissions to net zero before 2050. These goals are embodied within the Newton - King George Boulevard Plan.

FIGURE II: OCP SUSTAINABILITY GOALS

Long-Term Sustainability Goal 1
Accommodate population growth by maximizing the efficient use of urban land while minimizing the impacts of change in existing neighbourhoods.

Long-Term Sustainability Goal 2
Improve the balance of local jobs to population to reduce commuting time, traffic congestion, greenhouse gas emissions, and the burden of property taxes on residential properties by diversifying the local tax base.

Long-Term Sustainability Goal 3
Reduce automobile reliance by re-orienting land use patterns to include higher density, mixed-use developments with access to transit, cycling and walking.

Long-Term Sustainability Goal 4
Promote a compact urban form that supports transit while reducing costly infrastructure extensions and avoiding development in environmentally sensitive areas.

Long-Term Sustainability Goal 5
Serve the needs of the city's population by providing housing diversity and community programs to support all ages and socio-cultural groups.

Climate Context

The global and local impacts of climate change are increasing in severity. In November 2019, the City joined other BC municipalities and declared climate change as an emergency. In March 2020, Council adopted targets to reduce community GHG emissions to net zero and corporate emissions to absolute zero, before 2050.

The City is creating a new Climate Change Action Strategy (CCAS), which will identify strategies for community and corporate emissions reduction to reach these targets. The CCAS will also include strategies for addressing climate adaptation. Also under development is a city-wide Urban Forest Management Strategy (UFMS). Surrey's urban forest and tree canopy is integral to increasing the resilience of Surrey's communities to the expected changes in the local climate.

Land use has a particularly significant role to play in meeting these goals. Designing communities with a variety of forms of housing and a mix of amenities within a short walk, cycle, or roll from home, and connected by frequent transit, can enable reduced transportation emissions (see **Figure III**) while also supporting biodiversity, health and social connections. Meanwhile, policies to support more efficient, compact and low-carbon buildings can help to reduce the second largest source of emissions in the city – heating space and hot water in buildings (see **Figure IV**).

Ultimately, focusing growth in compact, transit-supported areas helps reduce the environmental impacts and servicing costs associated with suburban sprawl.

FIGURE III: TRANSPORTATION MODE HIERARCHY

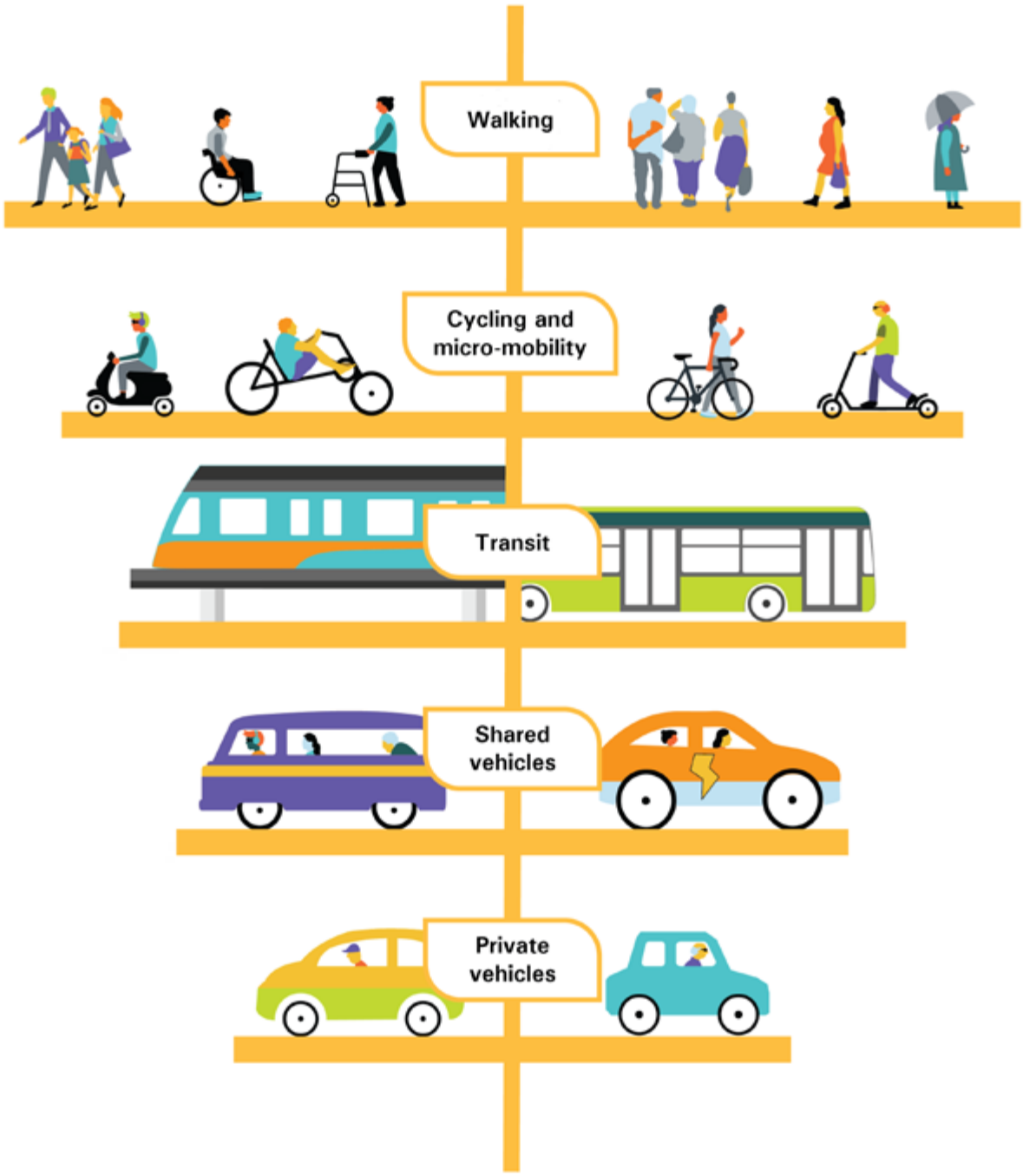
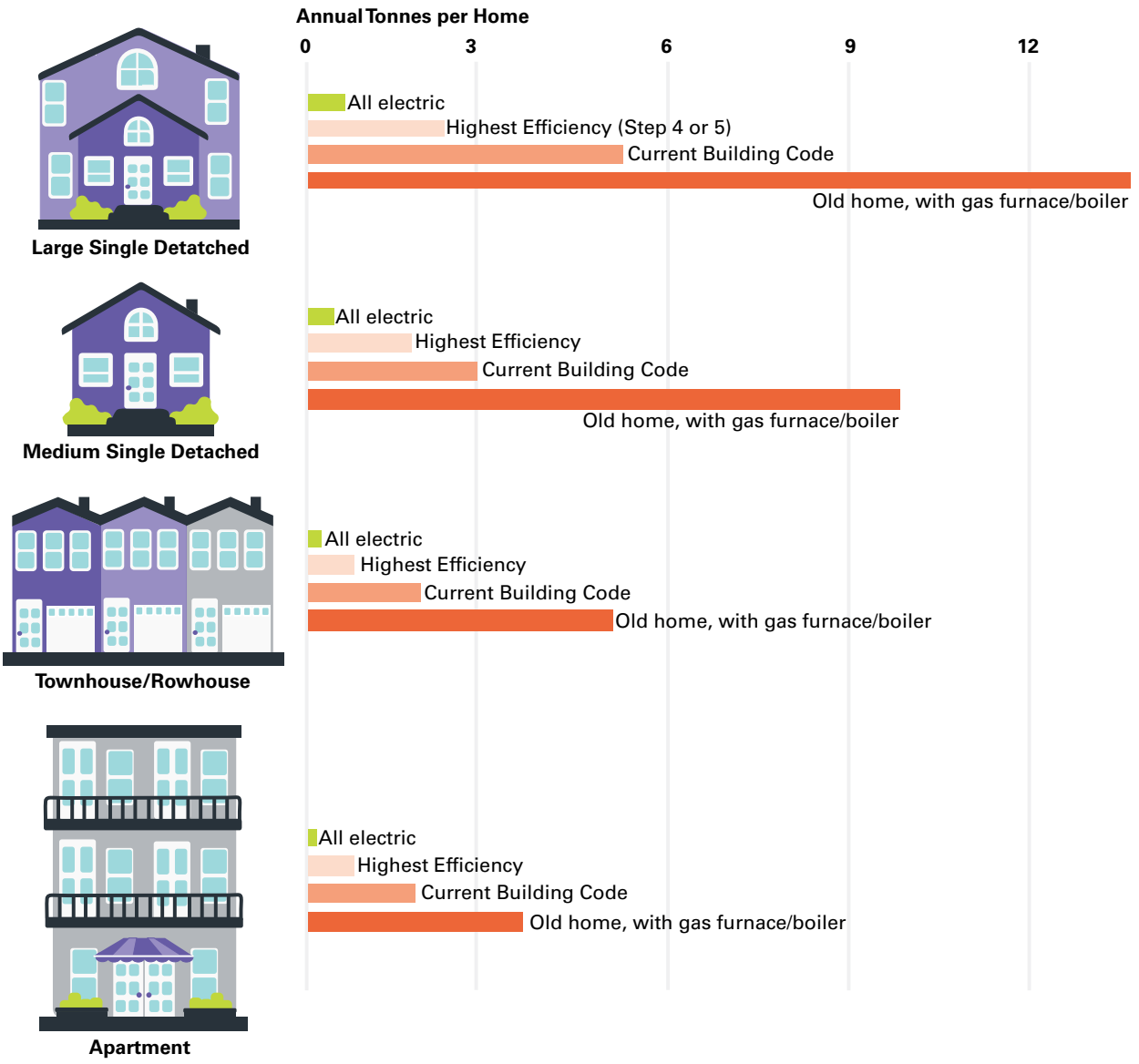


FIGURE IV: ANNUAL GHG EMISSIONS PER BUILDING TYPE



GHG Emissions Calculations

GHG emission calculations are based on the emissions factor for electricity purchased from BC Hydro, from the Province's *Methodological Guidance for Quantifying Greenhouse Gas Emissions for Public Sector Organizations, Local Governments and Community Emissions*.

Sustainability Charter 2.0

The Sustainability Charter provides the City's overarching policy framework of goals, desired outcomes and strategic directions, and a vision of Surrey as a thriving, green, and inclusive city. Indicators are reported publicly on the Sustainability Dashboard to help staff and the community gauge the City's progress. Land Use Plans, such as this one, play a critical role in achieving the desired outcomes and vision of the Charter, with key deliverables that touch on each of the eight themes: Inclusion; Built Environment and Neighbourhoods; Public Safety; Economic Prosperity and Livelihoods; Ecosystems; Education and Culture; Health and Wellness; and Infrastructure.

Biodiversity Conservation Strategy

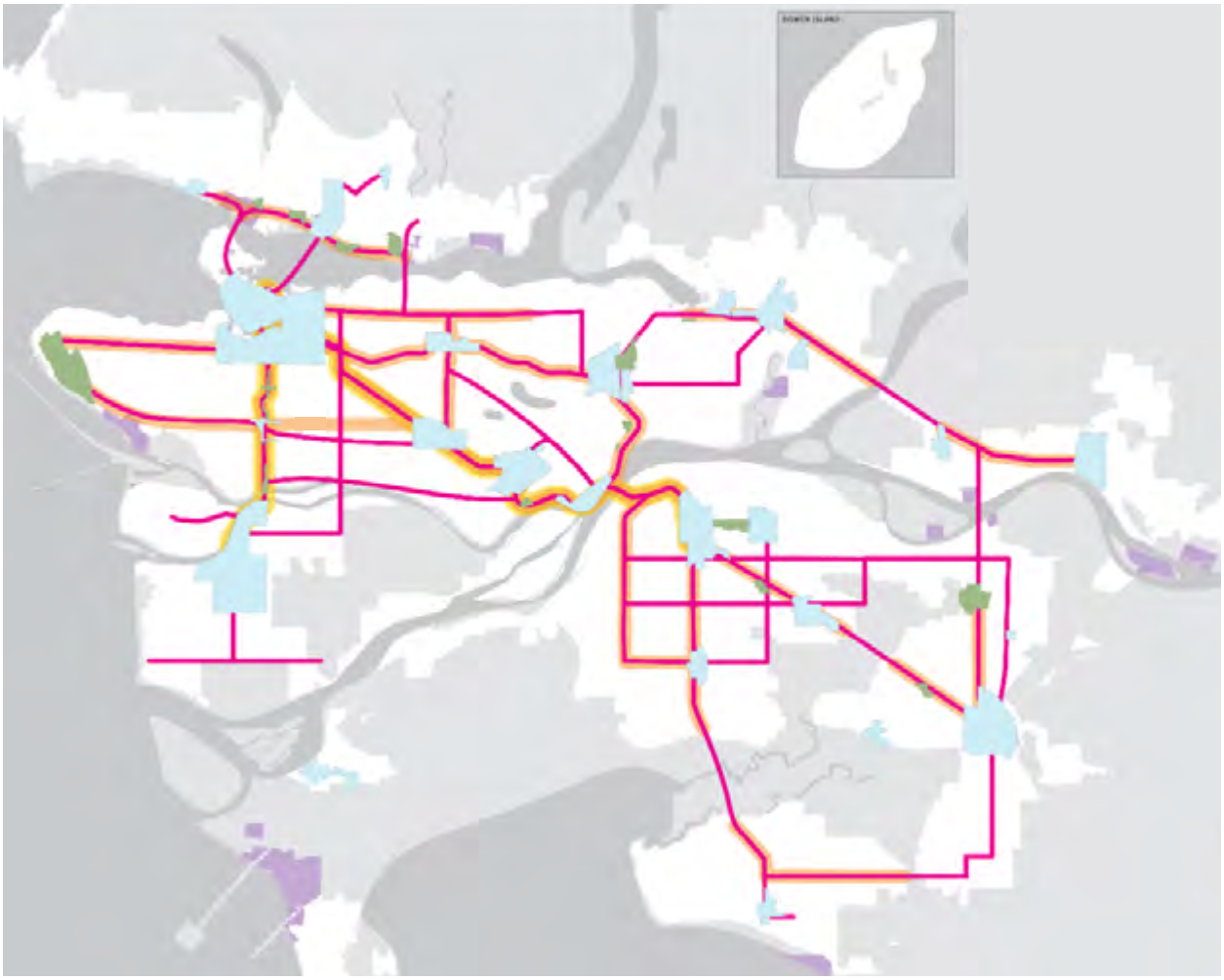
Biodiversity is the variety of life on earth. Healthy, diverse ecosystems provide a range of services including clean drinking water, nutrient-rich soil to grow our food, and the greenspaces we love to live near and play in.

The Biodiversity Conservation Strategy (BCS) recognizes Surrey's existing biodiversity as a key foundation of a healthy, livable, and sustainable community. The Newton – King George Boulevard Plan Area forms part of what the BCS refers to as the "urban matrix". These reflect high density, developed areas adjacent to the BCS's Green Infrastructure Network or GIN (large interconnected natural areas, green corridors and open space that are the backbone of the BCS). While they may be heavily developed or have reduced natural areas, lands within the urban matrix provide important opportunities for innovative greening approaches that can increase biodiversity values at the site and streetscape level. Applying the City's Biodiversity Design Guidelines (BDGs), developed as an extension of the BCS, is a way to achieve these objectives.

Rapid Transit Context

King George Boulevard is part of the Major Transit Network. TransLink's Regional Transportation Strategy, *Transport 2050*, supports King George Boulevard through Newton as a Major Transit Growth Corridor, in line with *Metro 2050*, Metro Vancouver's Regional Growth Strategy. As part of *Transport 2050*, TransLink has re-imagined express bus services in the region and introduced RapidBus. The Mayor's Council "10-Year Vision for Metro Vancouver Transportation" also identified the extension of the R1 King George RapidBus from Newton Exchange to Semiahmoo Town Centre through the Newton - King George Boulevard Plan Area. Future RapidBus service along with transit-oriented densities within this Plan Area will lay the foundation for additional rapid transit opportunities in the long term.

FIGURE VI: MAJOR TRANSIT GROWTH CORRIDORS (METRO 2050)



LEGEND

- Major Transit Network
- Major Transit Growth Corridors
- Urban Centres
- Frequent Transit Development Areas
- First Nation Reserves and Tsawwassen Treaty Lands
- Urban Containment Boundary
- Non-Urban Land

First Nations Context

This plan acknowledges the impact European settlement had and continues to have on First Nations' ways of life. There is an ongoing legacy of colonialism. The limiting of cultural practices, loss of access to traditional territories, and concentration onto limited reserve lands severely diminished traditional ceremonial and cultural practices.

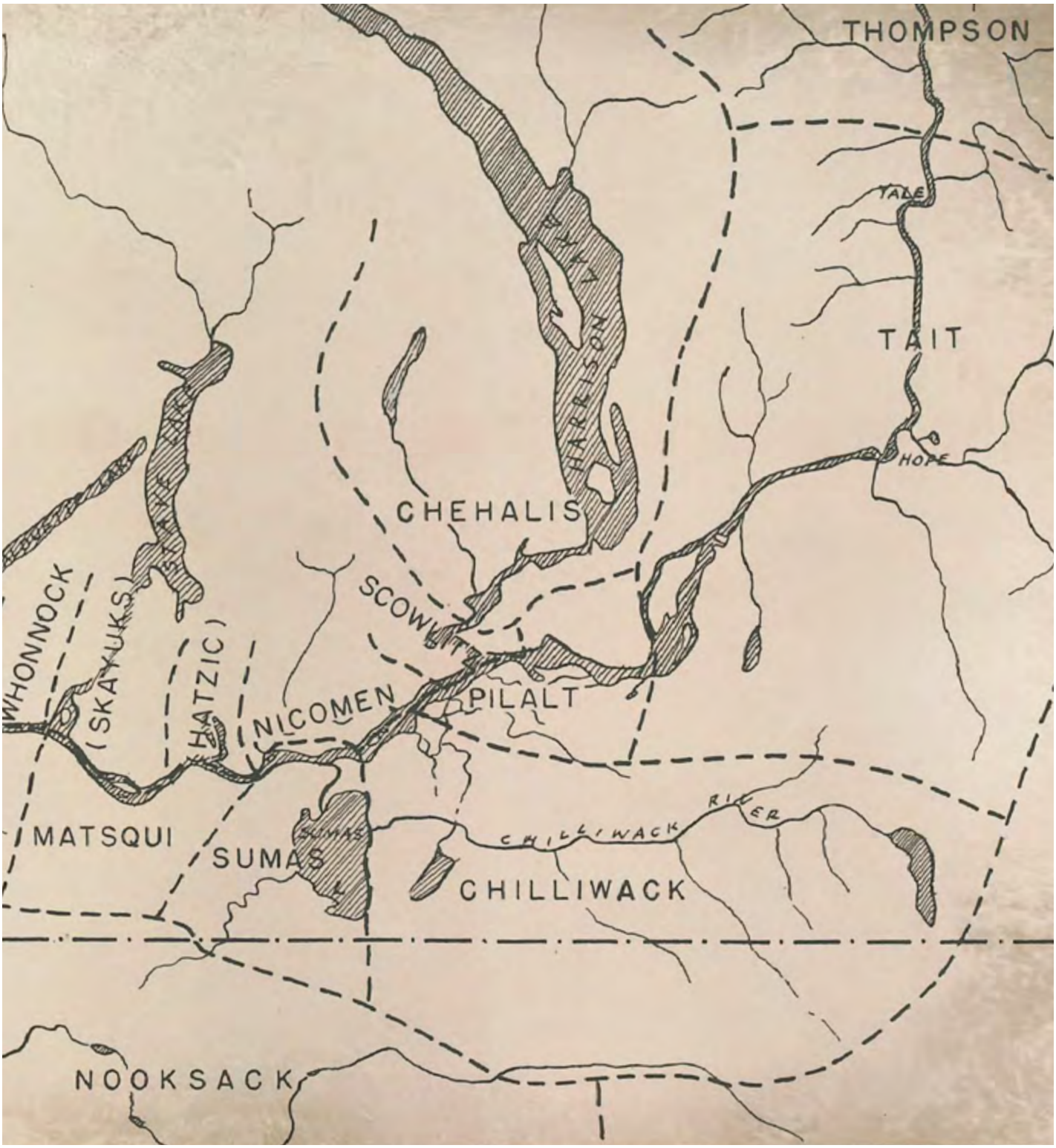
The City of Surrey recognizes the need to reconcile this legacy and forge new positive relations. The Plan seeks to reaffirm the deep, intrinsic connection between First Nations and the land.

FIGURE VI: MAP OF TRADITIONAL TERRITORIES

Map of Traditional Territories

This famous 1952 map - with Surrey highlighted - is based on research by archaeologist Wilson Duff for the Provincial Museum of British Columbia in 1949 and 1950. It shows the ancestral territories of First Nations of the Fraser Valley as described by community elders. Today the contents of the map have shifted somewhat: many nations are in discussions to define their overlapping territories, some nations have returned to using their traditional names, and tribal affiliations in the eastern Fraser Valley have become more nuanced than the map describes.

As quoted in "Surrey: A City of Stories" by K. Jane Watt (2017). Map image from Anthropology in British Columbia: Memoir No. 1, page 20.


THOMPSON
YALE
TAIT
HOPE
HARRISON
CHEHALIS
SCOWLITZ
WHONNOCK
(SKAYUKS)
HATZIC)
NICOMEN
PILALT
MATSQUI
SUMAS
CHILLIWACK RIVER
CHILLIWACK
NOOKSACK

"A place that is pleasant and safe for seniors, children, young adults and adults. A place with a deep sense of community where people of all ages, races and beliefs know each other and care for each other."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

1 Background

I How We Got Here

The foundation of any land use plan is its context. Geography, history, and people frame and define the area. They also set the stage for the future and support the direction of the Plan. This section provides background on the Plan and provides a profile of the existing community.

Above: Construction on 64 Avenue and 138 Street, Jan. 1974. Surrey Leader Collection.

1.1 Plan Area

The Newton – King George Boulevard Plan Area comprises approximately 140 hectares (350 acres) of land between Highway 10 and 68 Avenue. Centered on King George Boulevard, the Plan Area is bounded by 68 Avenue to the north, Highway 10 to the south, 134 Street to the east and 130 Street to the west as shown in **Figure 1.1**.

In 2004, plans were approved for the neighbourhoods immediately adjacent to the Plan Area: the South Newton Neighbourhood Concept Plan (NCP) to the east and the West Newton / Highway 10 NCP to the west. Newton Town Centre Plan (TCP) was approved for the area to the immediate north of the Plan Area in 2020.

FIGURE 1.1: PLAN AREA

1.2 Landscape

The topography of the Plan Area descends from west to east, comprising the headwaters of several Class A watercourses, including Hyland Creek, Henry Bose Creek, Archibald Creek, and associated Class B tributaries. These watercourses originate near King George Boulevard and flow east. Several of the watercourses' riparian areas are on private property. All riparian areas are protected by the City's Zoning By-Law and Sensitive Ecosystem Development Permit Area. Many watercourses are confined within steep ravine areas and fall within the City's Hazard Lands Development Permit Area. There are several ecologically significant forested areas including Alder Park and Hyland Creek Park.

Watercourse Classification

Surrey has approximately 1,400 kilometres of urban watercourses that provide spawning and rearing habitats for 5 species of salmon and trout, a variety of wildlife, other freshwater fish populations local to British Columbia as well as other aquatic species.

Surrey developed its first Watercourse Classification Map in 1995 to classify streams based on their value as fish habitat for salmon and trout, collectively these are called 'salmonids.' Class A (red-coded) watercourses are inhabited or potentially inhabited by salmonoids year-round. Class A(O) (dashed-red-coded) are inhabited or potentially inhabited by salmonoids primarily during the over-wintering period during the over-wintering period with access enhancement. Class B (or yellow-coded) watercourses have significant food/nutrient value but no fish present. Class C (or green-coded) watercourses have insignificant food/ nutrient value and no fish present.

1.3 History

The Newton - King George Boulevard Plan does not include a comprehensive heritage review. While oral history and archeological record speak to the early Indigenous presence in Surrey and in the Plan Area, the formal recorded history of European settlement disproportionately outweighs that of the local Indigenous peoples. This section provides a narrow overview of the history of the Plan Area, which is the ancestral and unceded territories of the Coast Salish Peoples, including the se'mya'me (Semiahmoo), q̓iċəy̓ (Katzie), q̓ʷɑ:ńƛ̓əń (Kwantlen) sċəwaθən məsteyəxʷ (Tsawwassen), and qiqéyt (Qayqayt) Nations.

Cloverdale Paint (Page 31)

At the time this photo was taken, Cloverdale Paint had already been around for 35 years. It became a local landmark when it moved to King George Highway in Newton.

Historic Background

The land upon which Surrey was established is the traditional land of the Coast Salish, including the Semiahmoo, Katzie, and Kwantlen, Qayqayt and Tsawwassen First Nations. Within this ancient place, its first peoples have existed since time immemorial. The Katzie First Nations, Semiahmoo First Nations, and Kwantlen First Nations have had permanent and continuous habitation of the land upon which Surrey was founded extending back thousands of years.

The land on which Surrey was established was shaped for millennia by natural geologic, climatic and hydrologic forces. Approximately 10,000 years ago the last glacial episode retreated from the coast and sea levels stabilized. The evidence found at archaeological sites, such as the Glenrose Cannery near the Surrey/ Delta border, holds evidence of a time when Panorama Ridge was the westernmost point of the mainland, an inhabited peninsula that overlooked the Salish Sea. The Plan Area was historically sown with Hemlock, Cedar, Pine species, Alder, Douglas Fir, Maple, Cherry, Hazel and Ferns.

In the late nineteenth century, newcomer settlement began. Trees were cleared for resource use, houses, farms, and roads. The Sullivan and Hyland Lumber company operated in Newton during the early twentieth century. The logging camp was located near today's 152 Street and 64 Avenue. Several properties within the Plan Area were used for logging. Newton, named after Elias John Newton, had its name more firmly recognized in 1910 following the establishment of Newton Station on the B.C. Electric Railway line.

In 1897, the first major South Asian migration to Canada began. In 1908, an indirect ban on South Asian British Subjects was placed as the Government of Canada passed an amendment to the Immigration Act, which banned any immigrants who had come to Canada otherwise than by continuous journey from the country of which they are natives or citizens. South Asian men were banned from voting and professional employment. They worked as farmers, construction workers, millworkers, and brick workers, and played a large role in building what is now Surrey.

The growth of the regional transportation networks was a significant force in shaping the Plan Area. Surrey's Indigenous peoples established numerous trails throughout the City. Both documented and extrapolated Indigenous travel routes existed in Newton. These travel routes were later erased by newcomer settlement. In 1934, the opening of the north-south Peace Arch Highway followed by the opening of King George Highway in 1940 shaped the movement and settlement of people in Surrey. Following the 1939 royal visit of King George VI and Queen Elizabeth, Surrey Council approved the renaming

Above: Cloverdale Paint, Feb. 1969. City of Surrey Archives.

of Peach Arch Highway to "King George VI Highway" in April 1940. As commemoration of the coronation of King George VI in 1937, both sides of King George Boulevard from the Pattullo Bridge to the Peace Arch were planted at approximately 100-foot intervals with English Oak trees imported from Great Windsor Park, England. Disease and the development of lands along King George Boulevard have claimed many of these trees. The remaining concentration is located in South Surrey between the Nicomekl River and 8 Avenue; however, some maple and other species of trees that were part of this same planting plan are located north of Highway No. 10 towards Newton.

In 1952, the Pattullo Bridge toll was removed, allowing free passage to and from Surrey. This was the beginning of Surrey's population growth, as people moved to Surrey for affordable real estate. The population in the Plan Area remained low into the 1960s, especially compared to North Surrey. The 1970s saw a demographic shift, as dense residential areas began to develop in the Plan Area, accelerating in the 1980s into a development pattern similar to today. The corner of 64 Avenue and King George Boulevard was the high-profile corner. In 1956, Cloverdale Paint opened in the former roller rink, becoming a local landmark until it closed in 1973. A public market followed, operating from the mid 1980s until the late 1990s.

Above: Mohawk Gas Station located on located on the southwest corner of King George Highway and 62 Avenue, 1973. Surrey Leader Collection

The Quota Immigration System, in place from 1951 to 1962, limited the annual immigration of South Asians to 150 Indian, 100 Pakistani, and 50 Ceylonese. In 1967, the Points-Based Immigration System was introduced, replacing the Quota System. This resulted in a wave of South Asian immigration to Surrey in the 1970s, with 12 times more immigration to Canada. South Asian newcomers faced culturally targeted policies, such as headwear policies, that prohibited Sikh peoples from entering certain establishments while wearing their turbans. Many South Asian newcomers worked to break down cultural barriers, some cut their hair, and stopped wearing their turban and traditional clothes. People of South Asian descent are now the most common ethnic group in the Plan Area, comprising 60% of the population, an increase from 45% in 2006.

Throughout the building of what is now Surrey, newcomers benefited from colonization, while Indigenous peoples and their lands were profoundly affected. They were impacted by disease, and deprived of their lands, resource sites, and cultural and spiritual practices. The loss experienced was irreversible, not only through the loss of life, but also the loss of knowledge, language, traditional practices, and territory.

1.4 Community Profile

Demographic data was collected from local and adjacent Census dissemination areas to develop a community demographic profile.

The Plan Area is one of the most diverse in the City. People of South Asian descent are the most common ethnic group, making up 60% of the population in 2016 (compared to 32.1% citywide). A quarter of the Plan Area's population speaks Punjabi at home (20.7% citywide). The area also has a high proportion of immigrants. As of 2016, 50% of the area's population were immigrants (43% citywide).

The Canadian government defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour". A review of 2006, 2011, and 2016 Census data shows that percentage of the population defined as "visible minorities" living in the Plan Area has increased from 57% in 2006 to 76% in 2016. Of the existing (2016) visible minority population, 79% are South Asian.

South Asian Immigration to Canada

The first major South Asian migration to Canada occurred in 1897. Throughout the early twentieth century, South Asians were critical in the building of British Columbia, working as farmers, construction workers, millworkers, and bricklayers.

From 1951-1962, the Quota immigration system was in place. This system limited annual immigration to 150 Indian, 100 Pakistani, and 50 Ceylonese. When the Quota immigration system ended in 1962, almost all racial and national restrictions were removed. In 1967 the Points-Based Immigration System was introduced. The new system replaced the quota system and resulted in 12 times more immigration.

Throughout the later half of the twentieth century South Asians became more represented in Canadian culture, activism, business, and government.

Today, Canada contains the world's eighth largest Indian diaspora. With just over 20% of the entire Indian Canadian community residing in the Lower Mainland, 33% of the City of Surrey is of South Asian descent.

FIGURE 1.4A: CENSUS DISSEMINATION DISTRICTS

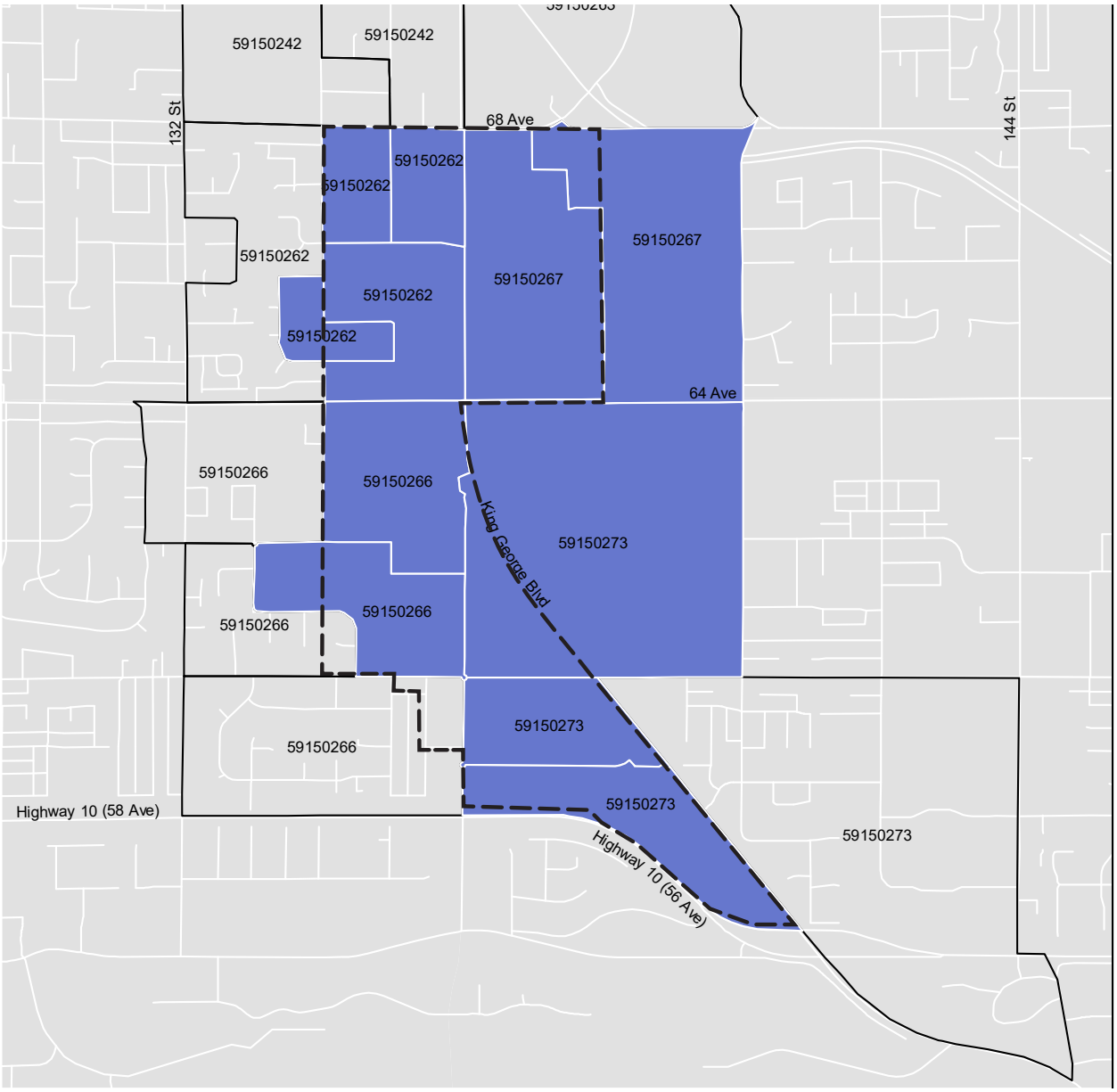
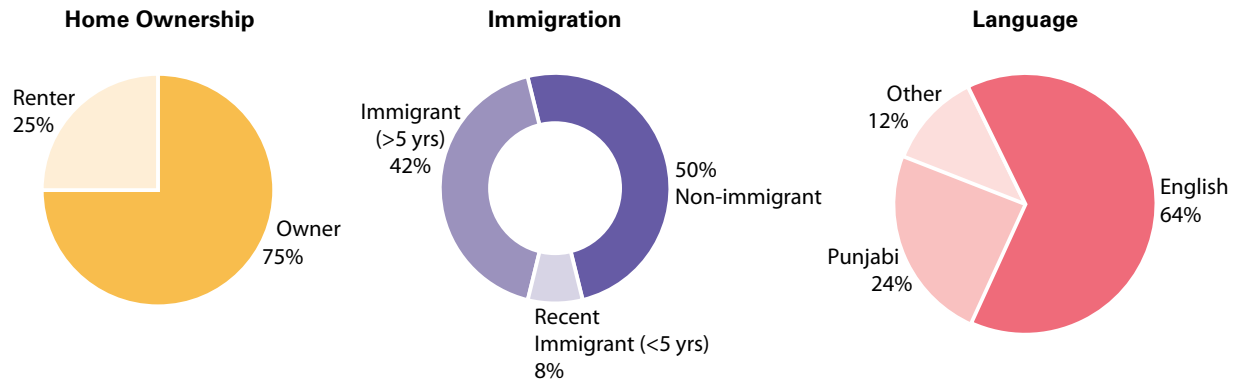


FIGURE 1.4B: DEMOGRAPHIC PROFILE



1.5 Planning Process

In October 2019, Council initiated the planning process for Newton-King George Boulevard. Following initial studies and background work, over 1400 survey participants advised staff in July 2020 on priorities and ideas to improve their neighbourhood .

From residents' input, Staff developed the Vision, Plan Objectives, Growth Concept and revised the plan boundary. A follow up survey released in May 2021, gave residents the opportunity to review and provide feedback on the draft land use, transportation and parks concepts.

On June 28, 2021, Council endorsed the Stage 1 Plan, including the Land Use, Transportation, and Parks and Amenities Concepts. Council also directed staff to continue working on the Stage 2 (final) Plan.

Throughout the latter half of 2021 and early 2022, Staff developed urban design guidelines, road cross sections, public realm designs, a community benefit strategy, and detailed engineering and financing.

The final draft Stage 2 Plan was released for public review in a survey in June 2022.

1.6 Community Engagement

Due to the ongoing COVID-19 pandemic, community engagement has been conducted remotely over the past three years.

The Newton-King George Boulevard Plan Engagement strategy has included a focus on one-on-one stakeholder conversations with staff via email, phone call, or online meeting. Large scale mail-outs of postcards and letters were used to notify and raise awareness of the planning process. Residents and property owners were encouraged to participate in surveys and contact Staff for further discussion.

Surveys were the primary tool utilized to gauge stakeholder feedback and concerns. Key plan components including the Plan Boundary, Vision, Plan Objectives, and Growth Concept were derived directly from input received from surveys.

The Newton-King George Boulevard Plan is the product of three years of engagement and over 9,750 voices. The resulting Plan is supported by the majority of area stakeholders.

FIGURE 1.6: COMMUNITY ENGAGEMENT

By The Numbers...

Approximately,

2,475 Engaged Residents

An engaged resident is defined as an individual or group that has contributed to the project website, attended a pop-up event, connected through phone or email, completed the survey or attended a stakeholder meeting.

Residents were engaged through:

2,175 Completed Surveys

300+ Emails and Phone Calls

Approximately,

7,275 Informed Residents

An informed resident is defined as an individual or group that has made at least one single visit to the project website, received a postcard, or engaged in the project through social media.

Residents were informed through:

7,275 Mail Out Postcards to Plan Area Residents

"If we build thoughtfully and creatively we can really make our city unique and more desirable to live in"

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

2 Plan Framework

I How We Got Here

This section outlines the framework that envisions the transformation of the Newton-King George Boulevard area into a walkable, transit-oriented community. The vision and principles were established through community engagement.

This framework was revisited throughout the planning process to ensure it reflected the values and priorities of residents and stakeholders, as well as the City's growth and sustainability goals.

2.1 Vision

The Plan is based on the enduring vision and themes that emerged through community and stakeholder consultation, supported by the City's growth and sustainability goals:

> **"Newton is celebrated as a safe, family-oriented community, home to people of all ages, cultures, and backgrounds. It is an accessible neighbourhood. Residents have access to convenient public transportation and an affordable range of housing choices. Residents can meet most of their daily needs close to home, with a variety of shops, gathering spaces, parks, and natural areas a short walk or bike ride away."**

2.2 Planning Principles

Building from the vision, the Plan is framed around eight planning principles. These principles drive the strategic direction, policy framework, and implementation strategies that shape growth. They are enshrined within the growth concept and support transformation of the area over the next generation.

Active
Enhance neighbourhood connectivity to ensure that everyone can quickly and easily access everything their neighbourhood has to offer.

Inclusive
Foster a welcoming and inclusive community with local amenities and spaces for all cultures, ages, and abilities.

Transit Supportive
Support future RapidBus expansion by bringing residents and destinations to the areas nearest transit stops.

Affordable
Provide a mix of housing types that addresses housing affordability and need.

Local Necessities
Make sure food and basic necessities are available locally.

Natural Areas
Protect and enhance biodiversity, ecosystems, and natural areas.

Safe
Design safe and welcoming public spaces that enable positive social interactions and foster community.

Climate Resilient
Transition to a net zero carbon community that can adapt to climate change.

2.3 Growth Strategy

The Plan recognizes a balanced growth approach that allows a mix of apartments and townhouse with some single-detached housing to remain.

The Plan focuses density and commercial uses along King George Boulevard nearest to anticipated future RapidBus stops. Densities transition to two-storey attached and detached housing forms at the Plan Area's periphery and within more recently developed neighbourhoods in the Plan Area's south. This growth concept is illustrated in **Figure 2.3 Growth Strategy**.

Mixed-Use Redevelopment Areas

The Plan extends commercial development along King George Boulevard, between 68 Avenue and 62 Avenue. It also includes a neighbourhood-oriented mixed-use commercial node at 62 Avenue. Mixed-use redevelopment will provide opportunities for neighbourhood-serving local business (shops, grocery, restaurants, etc.). Mixed-Use buildings provide commercial at-grade with apartments above. The mix of residential and commercial uses provides a critical mass of customers for businesses to thrive and promotes neighbourhood walkability.

Residential Redevelopment Areas

New multi-family residential (apartments and townhouses) development is focused in the areas best served by frequent transit and future walkable commercial. Apartments are proposed adjacent to commercial areas, or as part of mixed-use designations. Townhouse redevelopment is intended to provide a transition between new residential apartments and existing single-detached housing in the periphery of the Plan Area.

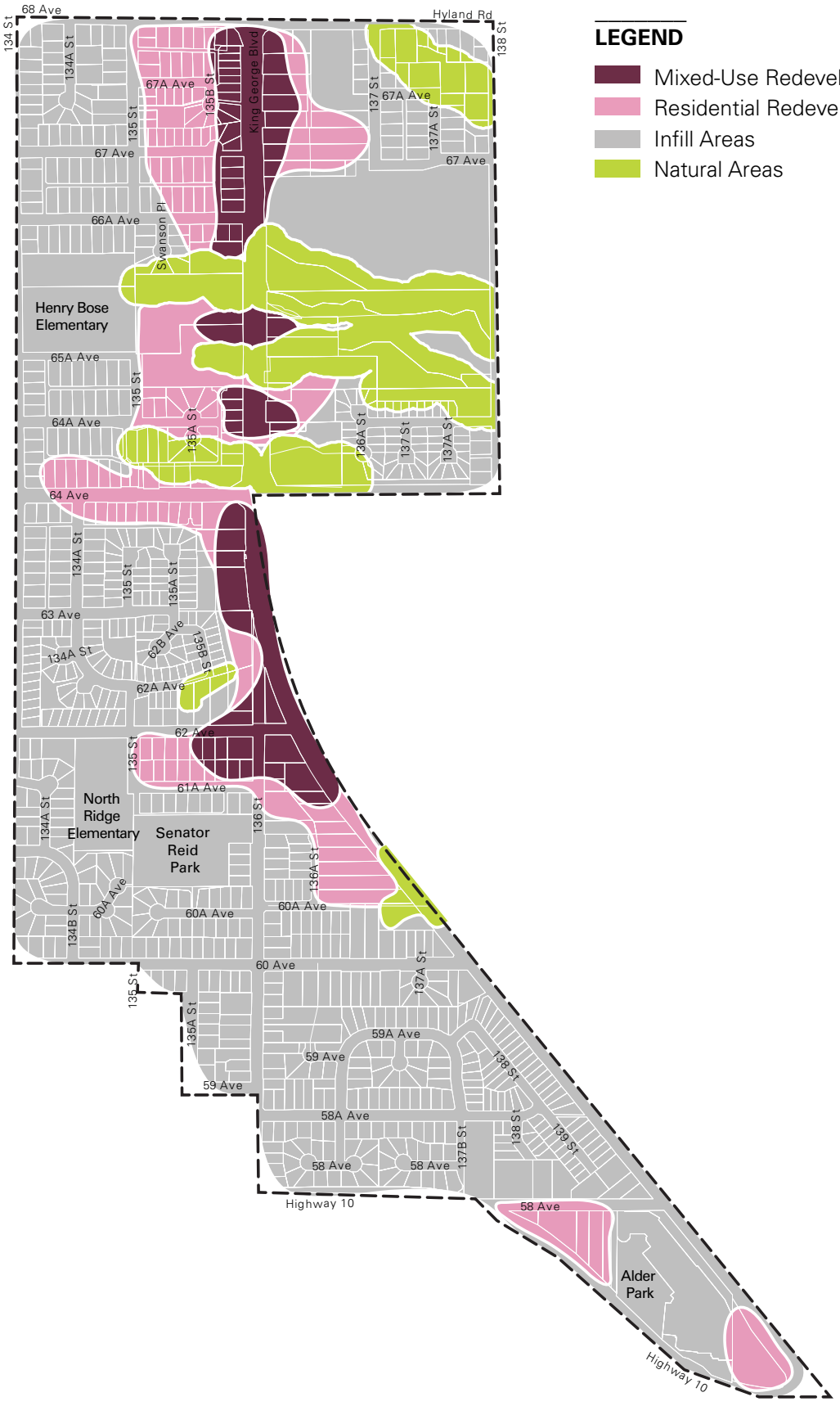
Infill Areas

Infill and low-density redevelopment options are permitted in established neighbourhoods and towards the periphery of the Plan Area. In most cases, existing single-detached houses and low-density townhouse sites will remain as they are today. Property owners may consider low density urban residential redevelopment options such as building new small-lot single-detached houses with secondary suites or low-density attached houses (duplex and row-houses). Infill areas will see enhancements to walkability and open space access with new road connections/improvements and expansion of existing parks.

Natural Areas

Over a quarter of the Plan Area is identified as fish-bearing watercourses and riparian ecosystems. These areas are protected through Federal, Provincial, and Municipal regulations. As such, the proposed land use plan limits redevelopment and seeks to protect and restore these areas. Where some development is possible on impacted properties, the Plan outlines specific lot-consolidation requirements to produce viable development opportunities while limiting encroachment into environmentally sensitive areas. The Plan increases the amount of protected greenspace and natural area within the neighborhood. In the long term, these areas provide opportunities for ecological restoration and areas for residents to enjoy nature through appropriately designed access (trails, rest areas, viewpoints) that minimize impacts on sensitive ecosystems.

FIGURE 2.3: GROWTH STRATEGY



2.4 Growth Projections

2.4.1 POPULATION PROJECTIONS

The Plan proposes redevelopment and densification along King George Boulevard. This will result in modest population growth over the next 20-30 years. Although urban areas such as this are never truly finished, the Plan is expected to yield an estimated total population of 17,149 residents, an increase of 10,962 from today's existing population of 6,187 residents. To accommodate this increase in population the Plan designates additional parkland and envisions new community amenities.

Existing	Projected
6,187	17,149

2.4.2 HOUSING PROJECTIONS

The Plan supports housing diversity within Newton. Redevelopment will result in the conversion of existing single-detached housing into a mix of apartments, townhouses, and more diverse and affordable housing forms (such as duplexes, rowhouses, small lot single-detached dwellings).

All future development within the Plan Area will be within walking distance of shops, parks, services, and public transit. Combined, the Plan enables a variety of housing types that support a broad housing need. In total, the number of dwelling units will increase from the existing 1,891 up to 5,498 at full build-out.

Existing	Projected
1,891	5,498

2.4.3 EMPLOYMENT PROJECTIONS

The Plan strengthens local business by adding residents and providing new commercial space. Mixed-use development will provide retail and/or service units at street level with potential office uses above. Total jobs within the Plan Area will increase from the existing 338 up to 1,001 at full build-out.

Existing	Projected
338	1,001

2.4.4 PARKLAND PROJECTIONS

The City strives to provide all residents with access to a park within 500 metres (a 5 to 10-minute walk). Four park expansions and riparian protection areas will result in 6.03 hectares (14.91 acres) of parkland. Additional protected natural and riparian areas will be provided by development. This is a substantial increase from the existing 4.53 hectares (11.9 acres) of active neighbourhood parkland and protected natural and riparian areas within the Plan Area.

Existing	Projected
4.53 ha	6.03 ha

2.4.5 STUDENT PROJECTIONS

It is estimated that between 2,742 elementary students and 2,747 secondary students will be enrolled in the public-school system from the Plan Area once it is fully built out. However, full build out in this context is gradual and over many decades.

Elementary

Existing	Projected
1,904	2,742

Secondary

Existing	Projected
1,632	2,747

"We need coffee shops, small grocers, etc. The kinds of businesses that provide a sense of neighbourhood for everyone."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

3 Land Use

I What We Are Doing

The land use strategy reflects the vision and principles of the Plan, providing direction on the form and character of new development in the Plan Area. Land use designations and policies outline where and how homes, shops, pathways, and community spaces fit together to create a complete community. They also identify where major redevelopment and change is not expected.

Council, staff, and residents expect future development proposals to correspond with the land uses and design direction of the Plan.

3.1 Land Use Strategy

The Plan recognizes King George Boulevard as an important commercial and transportation corridor. The majority of commercial and residential redevelopment is concentrated along King George Boulevard nearest to future rapid transit stops.

The Plan assigns land use designations to outline general development expectations and parameters. Development is expected to occur in accordance with these designations through the implementation of applicable zoning and development permit application processes.

MIXED-USE DESIGNATIONS

LOW-RISE MIXED-USE

Establishes commercial service and retail along King George Boulevard and within a neighbourhood serving commercial node at 62 Avenue.

LOW-RISE MIXED-USE CLUSTER

Provides commercial on prominent sites along King George Boulevard. Restores and protects undevelopable riparian ecosystems.

COMMERCIAL

Maintains existing commercial on challenging sites along King George Boulevard.

RESIDENTIAL DESIGNATIONS

LOW-RISE RESIDENTIAL

Provides more affordable housing options and transit supportive density near King George Boulevard.

TOWNHOUSE RESIDENTIAL

Provides a buffer between low-density residential neighbourhoods and the Plan's designated higher growth areas

LOW DENSITY RESIDENTIAL

Maintains established low-density neighbourhoods while allowing for urban infill redevelopment.

OTHER DESIGNATIONS

PARKS & OPEN SPACE

Provides active and natural open space for community enjoyment.

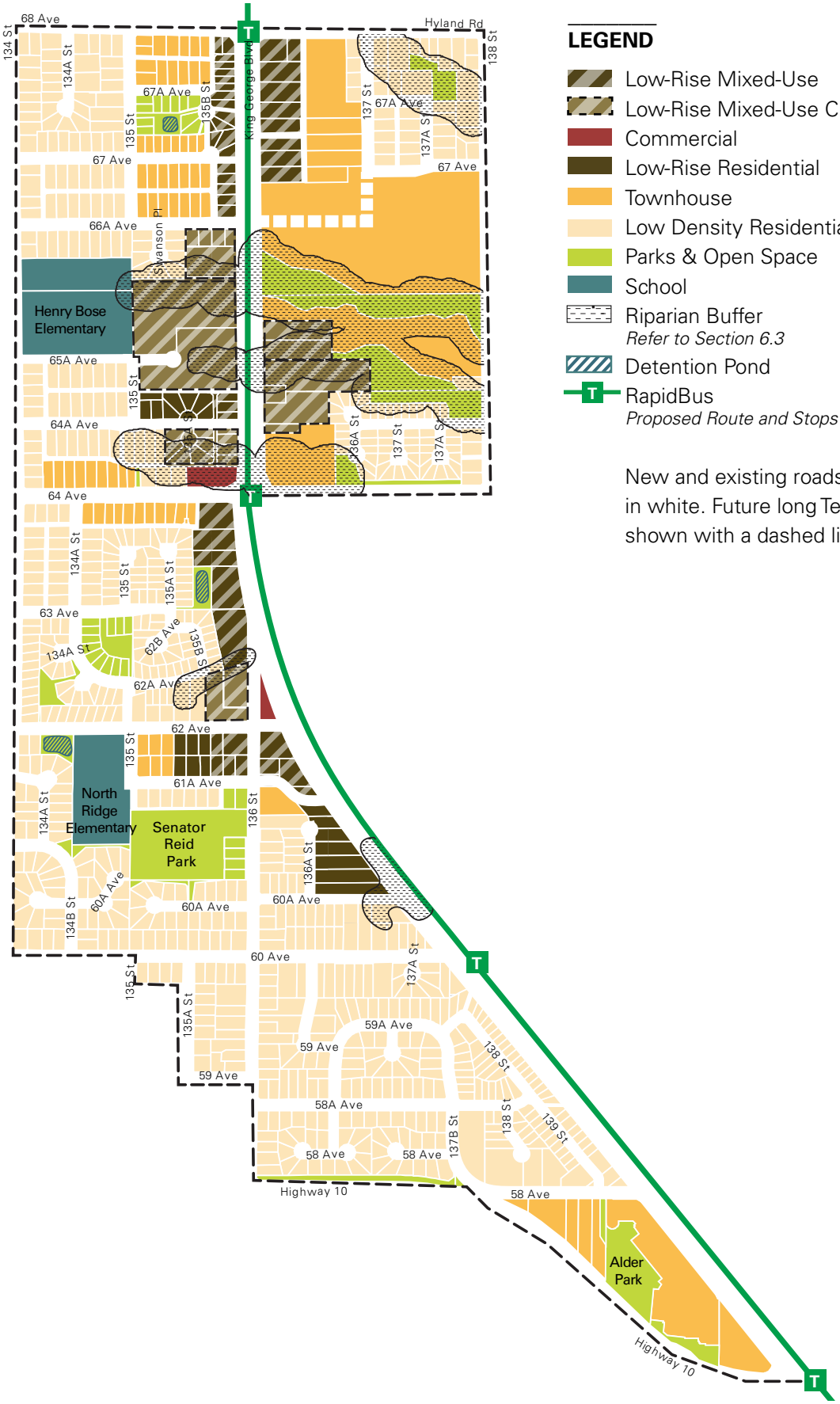
RIPARIAN AREA

Protects streams and riparian ecosystems.

SCHOOL

Maintains existing school sites.

FIGURE 3.1: LAND USE STRATEGY



3.2 Mixed-Use Designations

3.2.1 LOW-RISE MIXED-USE

INTENT

Development within this designation is intended as low-rise buildings with street-level active commercial and service uses. Additional storeys above ground level may contain office, residential, and/or less active commercial.

DEVELOPMENT PARAMETERS

Base Density	2.0 FAR*
Building Height	Minimum 4 storeys. Maximum 6 Storeys.
Building Spacing	Minimum 20 m face-to-face when one of the buildings is 50 m wide or less; or a minimum of 24 m wide when one of the buildings is more than 50 m wide; 12 m end-to-face; 9 m end-to-end
Building Depth	Maximum 20 metres for residential uses. To support viable commercial spaces with adequate space for service and function, a minimum depth of 12 metres is recommended. Additional depth encouraged for office uses.
Interfaces	Refer to **Figure 4.3 Ground Floor Use in Mixed-Use Areas**
Unit Mix	A minimum of 30% of new multi-family housing units should be family-oriented 2-bedroom or greater, and at least 10% as 3-bedroom or greater**
Parking	Underground only
Design	Development is subject to urban design approval to ensure appropriate interface treatments, consistency with design guidelines and land use designation intent (see **Section 4.0**).

Additional density may be considered where community amenities contributions are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see **Section 9.1.6). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

*** See Section **9.1.2 Housing Policies**.*

3.2.2 LOW-RISE MIXED-USE CLUSTER

INTENT

Development within this designation is intended to provide significant protection of on-site environmental features while allowing low-rise buildings with street-level active commercial and service uses outside of riparian setback areas. Additional storeys above ground level may contain office, residential, and/or less active commercial. Minimum lot consolidations are required to produce viable development sites and minimize encroachment into riparian areas.

DEVELOPMENT PARAMETERS

Base Density	1.5 FAR (Gross Density)* , **
Building Height	Minimum 4 storeys and maximum 6 Storeys
Building Spacing	Minimum 20 m face-to-face when one of the buildings is 50 m wide or less; or a minimum of 24 m wide when one of the buildings is more than 50 m wide; 12 m end-to-face; 9 m end-to-end
Building Depth	Maximum 20 metres for residential uses. To support viable commercial spaces with adequate space for service and function, a minimum depth of 12 metres is recommended. Additional depth encouraged for office uses.
Interfaces	Refer to **Figure 4.3 Ground Floor Use in Mixed-Use Areas**
Unit Mix	A minimum of 30% of new multi-family housing units should be family-oriented 2-bedroom or greater, and at least 10% as 3-bedroom or greater**
Parking	Underground only
Design	Development is subject to urban design approval to ensure appropriate interface treatments, consistency with design guidelines and land use designation intent (see **Section 4.0**).

** This designation has a maximum base density calculated on gross site area. Undevelopable areas as defined by the Zoning By-law are to be excluded from the density calculation. In riparian settings, the area 5 metres inland from Top of Bank and the area below are considered undevelopable area.*

***Additional density may be considered where amenities are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see **Section 9.1.6**). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

**** See **Section 9.1.2 Housing Policies.***

3.2.3 COMMERCIAL

INTENT

Development within this designation is primarily intended as commercial. This may include retail, service, and office development.

DEVELOPMENT PARAMETERS

Base Density	1.5 FAR*
Building Height	Maximum 4 Storeys
Parking	Underground only
Design	Development is subject to urban design approval to ensure appropriate interface treatments, consistency with design guidelines and land use designation intent (see **Section 4.0**). Reduced setbacks may be permitted to optimize site area and geometry

Additional density may be considered where community amenities contributions are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see **Section 9.1.6). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

3.3 Residential Designations

3.3.1 LOW-RISE RESIDENTIAL

INTENT

Development within this designation is intended for low-rise residential buildings between 4 to 6 storeys. Limited ground level commercial (retail) uses are permitted, subject to an appropriate neighbourhood interface.

DEVELOPMENT PARAMETERS

Base Density	1.5 FAR*
Building Height	Minimum 4 storeys and Maximum 6 Storeys
Building Spacing	Minimum 20 m face-to-face when one of the buildings is 50 m wide or less; or a minimum of 24 m wide when one of the buildings is more than 50 m wide; 12 m end-to-face; 9 m end-to-end
Building Depth	Maximum 20 metres for residential uses.
Unit Mix	A minimum of 30% of new multi-family housing units should be family-oriented 2-bedroom or greater, and at least 10% as 3-bedroom or greater**
Parking	Underground only
Design	Development is subject to urban design approval to ensure appropriate interface treatments, consistency with design guidelines and land use designation intent (see **Section 4.0**).

This designation has a maximum base density based on a gross site density calculation. Density within this designation may be calculated on the entirety of the site and transferred to the developable portions of the site. No development will be permitted in environmentally sensitive areas. Additional density may be considered where amenities are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see **Section 9.1.6). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

*** See Section **9.1.3 Housing Policies**.*

3.3.2 TOWNHOUSE

INTENT

Development within this designation is intended for multiple family attached townhouses. The designation supports traditional ground-oriented townhouses and stacked townhouses with underground parking.

DEVELOPMENT PARAMETERS

Base Density	1.0 FAR*
Design	Development is subject to urban design approval to ensure appropriate interface treatments, consistency with design guidelines and land use designation intent (see Section 4.0).
Traditional Townhouse	
Building Height	3 Storeys
Building Depth	Maximum 12 metres
Building Length	Maximum 42 metres
Building Spacing	Minimum 11 metres face-to-face, 8 metres end-to-face, 3.5 metres end-to-end, 1 metre drive aisles
Clustering	Minimum 2 attached units. Maximum 6 units per building
Parking	Vehicle access restricted to internal driveway or rear lane. Enclose resident parking spaces and minimize surface parking. Garages should not face the public realm. Drive aisles to be accompanied with trees. Parking may be provided underground.
Stacked Townhouse	
Building Height	4 Storeys
Building Depth	Maximum 12 metres
Building Length	Maximum 42 metres
Building Massing	Step back upper-most storey a minimum of 3 metres
Building Spacing	Minimum 12 metres face-to-face, 8 metres end-to-face, 3.5 metres end-to-end
Clustering	Minimum 4 units per building, maximum 12 units per building. Back-to-back units are not permitted.
Parking	Underground only

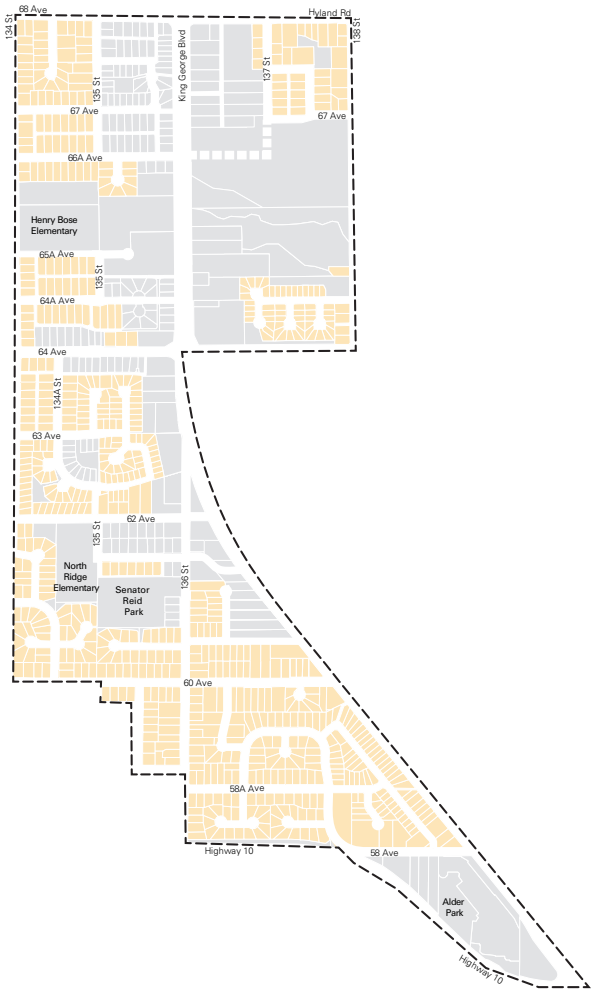
Additional density may be considered where amenities are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see **Section 9.1.6). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

*** See **Section 9.1.3 Housing Policies**.*

3.3.3 LOW DENSITY RESIDENTIAL

INTENT

Development within this designation is intended for modest redevelopment and infill while keeping with the existing character of the single-detached neighbourhood. The designation supports a range of 2.5-storey urban residential uses, including single-detached dwellings, duplexes, and/or lane-serviced rowhouses and coach houses.



DEVELOPMENT PARAMETERS

Base Density	Detached	Up to 29 UPH (10/13 UPA)*
	Duplex	Up to 37 UPH (13/15 UPA)*
	Rowhouse	Up to 57 UPH (20/23 UPA)*
Building Height	Up to 9.0-9.5 metres	
Design	Detached	Approved building schemes will be required at the time of subdivision to control housing designs.
	Duplex	
	Rowhouse	Minimum 2 attached units. Maximum 6-unit width per building. RM-23 zoning should refer to Townhouse Design Guidelines.

**Additional density may be considered where amenities are provided in accordance with Schedule G of the Zoning By-law. A future update to Schedule G of the Zoning By-law may include density provisions ("Zero Carbon Incentive") to encourage the construction of buildings that limit their contribution to climate change (see Section 9.1.6). Where additional density is provided, development should not exceed the above noted non-density related Development Parameters.*

Development within this designation should conform with the density requirements of applicable fee simple zoning within the Surrey Zoning By-law, 1993, No. 12000.

3.4 Other Designations

3.4.1 PARKS & OPEN SPACE

The Parks and Open Space designation identifies the location of new and existing parkland. Rezoning and subdivision for the purpose of development is not permitted within the Parks and Open Space designation. See **Section 6: Parks & Open Space** for details.

3.4.2 RIPARIAN AREA

The Riparian Area designation limits development in environmentally sensitive areas. These lands will be subject to the City of Surrey Sensitive Ecosystem Development Permit Area requirements. At the time of development, the streamside protection areas will be determined by a Qualified Environment Professional (QEP) and conveyed to the City or protected in perpetuity by Combined Restrictive Covenant and Statutory Right-of-Way.

See **6.3 Riparian Areas** for information on federal, provincial, and municipal regulations.

3.4.3 SCHOOL

The School Designation accommodates existing elementary schools to be retained. See **Section 7.2: Schools** for details.

"Places for people to learn about each other, culture, and connect us."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

4 Urban Design Guidelines

Fostering A Sense Of Place

Urban design is the physical pattern and character of a neighbourhood. It is a tool to create an integrated built environment that fosters community and a sense of place. The urban design strategy will advance the vision and principles of the Plan through development. Individual buildings should be designed to integrate with the Plan, make great streets and neighbourhoods. This requires thoughtful design towards the way buildings look and work harmoniously to support the public realm.

The urban design strategy is to be read in conjunction with related documents, including the OCP Form and Character Development Permit Guidelines. Where there is a conflict between the Plan and OCP guidelines, this Plan's Guidelines take precedence

4.1 Urban Design Concept

4.1.1 A WALKABLE NEIGHBOURHOOD

The neighbourhood is an enjoyable place to be a pedestrian. A positive pedestrian experience encourages residents to walk. The urban design guidelines create a human-centric public realm to accommodate and welcome pedestrians.

a. Consider pedestrian desire-lines in site design. Increase permeability and road network connectivity by providing pedestrian access to break up block sizes and connect important neighbourhood destinations such as parks, bus stops, and commercial areas.

b. Consider universal accessibility standards in the design of walkways, plazas, building access and wayfinding to serve the safety and comfort of all users' age and abilities.

c. Place weather protection (canopies at least 1.8 metres deep) on all commercial interfaces. Depth-of-canopy to height-above-sidewalk ratio should be a minimum of 1:2 to ensure adequate protection.

d. Place trees to shade the sidewalk and driving surfaces to reduce urban heat island effect.

e. Individualize ground level units and visually scale down buildings to a length of about 30 metres.

f. Provide visual interest along streets using active building frontages, high-quality architectural details at pedestrian level and landscaping.

g. Include small scale details and fine grain textures along the pedestrian level building facade to visually stimulate and enrich the pedestrian experience.

h. Create a comfortable experience for pedestrians by including amenities and features such as visual art, drinking fountains, lighting, and street furniture.

i. Provide benches at regular intervals to provide places to rest.

j. Avoid locating mechanical vents in locations that physically or visually interrupt pedestrian spaces or disrupt the experience with drafts or noise. Locate mechanical vents away from pedestrian spaces and the public realm.

4.1.2 INTEGRATE WITH THE NATURAL ENVIRONMENT

The natural environment enriches the neighbourhood experience. The urban design guidelines incorporate natural assets and environmental features like watercourses and mature trees into site design.

a. Respect riparian ecosystems and streamside protection areas by clustering development to avoid disturbance. Adhere to Zoning By-law setbacks and streamside protection requirements.

b. On sites with riparian areas protected by Restrictive Covenant/Statutory Right-of-Way, provide Zoning By-Law required front, rear, and side yard setbacks as measured from the edge of protected areas rather than from the property line. (See Section 4.4).

c. Provide generous landscaping in alignment with the Biodiversity Design Guidelines along public realm frontages and environmentally sensitive areas and watercourses.

d. Identify, retain, and incorporate existing mature trees and vegetation in site design by clustering buildings to avoid disturbance of existing trees.

e. Incorporate existing natural features and native plants and trees (refer to the City of Surrey's Biodiversity Design Guidelines).

f. Apply tree and landscaping approaches that maximize biodiversity values while working with space and site constraints. Provide and enhance connectivity where possible.

g. Orient views towards parks and natural areas.

h. Incorporate natural hydrology in the design of on-site stormwater management infrastructure. Systems should maintain groundwater recharge and base flows to receiving streams and protect watershed health to limit risk and flooding.

i. Minimize impervious surfaces using low impact development approaches.

j. Minimize light pollution impacts, especially adjacent to greenspaces and natural areas:
   - Avoid or reduce the use of blue-tinted LED lighting which disrupts wildlife and human sleep patterns. Use yellow, orange, or red-tinted (warm) lighting which has less impact on nocturnal foraging behaviour in wildlife
   - Use downward directional lighting to orient light only where needed and preserve dark skies.
   - Avoid excessive or ornamental exterior lighting on buildings and landscaping to minimize impacts to people and wildlife.
   - Reduce LED impacts such as sky glow and lighting bleed over by employing smart technology such as motion sensitive lighting and dimming and timers.

4.1.3 SAFE PUBLIC PLACES

The built environment can contribute to creating safe and inviting places for community building.

a. Create publicly accessible open space (plazas and seating areas) at street corners.

b. Create enjoyable, multi-functional open spaces that take advantage of natural light and contribute to a pleasant microclimate, including natural vegetation and water features that provide cooling and climate resilience.

c. Provide access to parking and commercial servicing (loading) areas from lanes to minimize interruption of the public realm.

d. Promote neighbourhood safety and sociability by designing for viewpoint opportunities and activity along streets, pathways, and natural areas.

e. Increase pedestrian permeability through sites and enhance routes along the periphery.

f. Allow for additional building setbacks to accommodate pedestrian volumes, where development directly abuts a transit stop.

g. Design buildings and public spaces to encourage natural surveillance by maximizing visibility and fostering positive social interaction.

h. Orient views towards public spaces, such as sidewalks, plazas, and parks.

i. Sidewalks, plazas, and other active use public open space should be well lit. Ensure lighting is shielded and directed downward to limit glare and illuminate only the areas intended.

4.2 Ground Floor in Mixed-Use Areas

Mixed-use developments contain a range of residential, commercial, and other uses.

To facilitate pedestrian engagement and street-level vibrancy within mixed-use areas, three ground-floor use classifications (Active, Less Active, and Residential) specify appropriate ground level interfaces. Active uses are intended for smaller format retail units that animate the public realm. All ground floor use classifications should adhere to additional interface guidelines outlined in **4.3 Interfaces**.

Active

Active frontages are required at the 62 Avenue commercial node and on prominent corners along King George Boulevard. These uses will generate a high degree of pedestrian street activity. In these areas, as illustrated **Figure 4.2: Ground Floor Use in Mixed-Use Areas**, "active" ground floor uses are required, including:

- Food and beverage uses such as restaurants, cafés, pubs, and coffee shops.
- Retail commercial uses such as clothing stores, jewelers, florists, and general retail.
- Personal service uses such as hairdressers, beauty parlors and shoe repair shops.
- Retail professional services, such as travel agencies, notary public, optical and insurance sales.
- Entertainment uses that generate demand during evening and weekends.
- Interactive uses that animate the streetscape, such as outdoor café spaces and merchandise displays (e.g., patios, flowers or produce).
- Includes small unit storefronts with flexible space.

Less Active

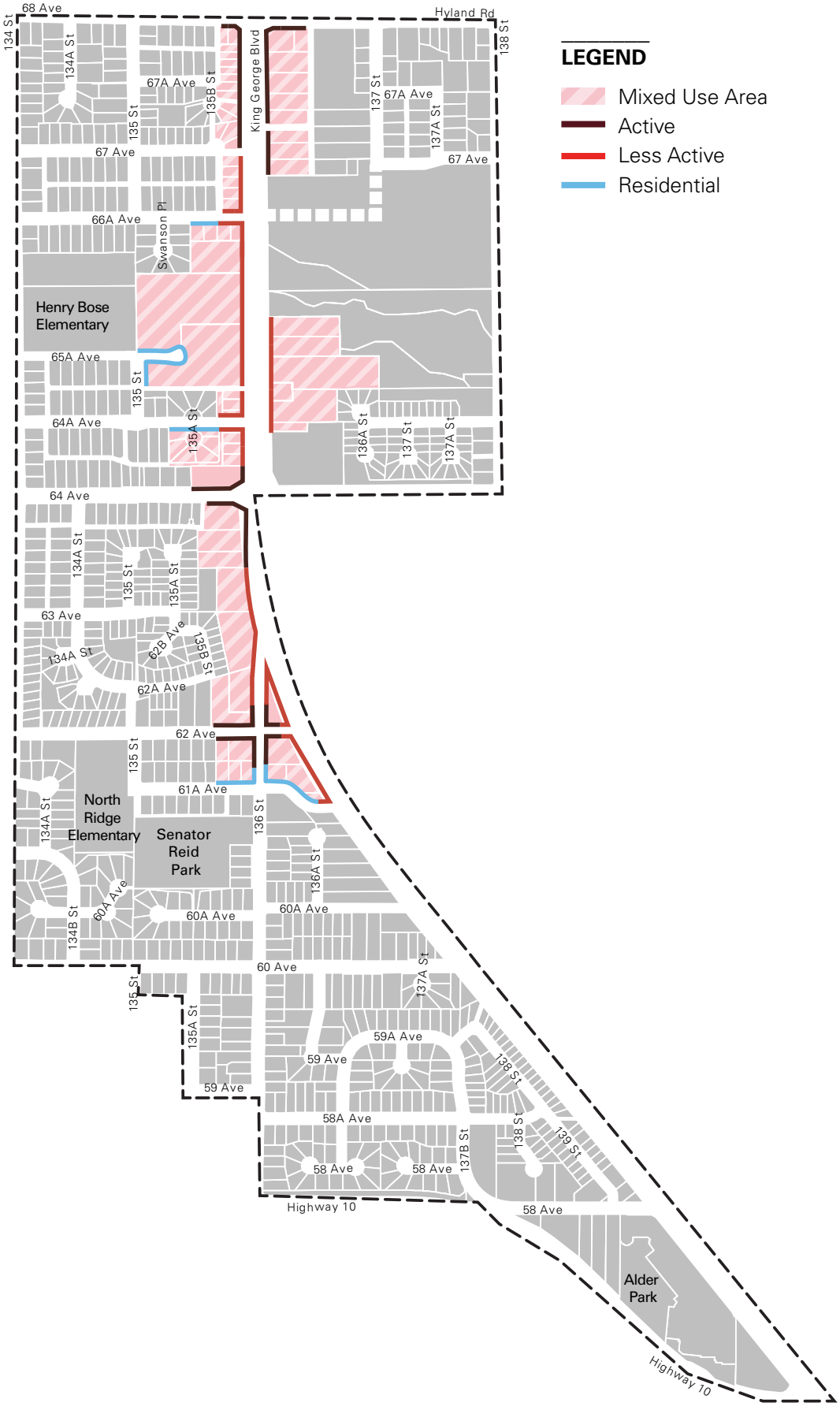
Areas along King George Boulevard with lower pedestrian volumes can be considered for less active ground floor uses. In these areas, as illustrated in the **Figure 4.2: Ground Floor Use in Mixed-Use Areas**, "active" or "less active" ground floor uses are required, including:

- Any of the uses outlined above as "Active."
- Ground floor office such as lawyers, accountants, as well as general office use.
- Larger format commercial such as drug stores, grocery and liquor stores.
- Larger format service uses such as childcare, fitness studios and medical clinics.
- Entertainment uses that generate demand during evening and weekends.
- Financial institutions such as banks and credit unions.
- Institutional uses such as places of worship, care facilities, supportive housing, and other civic and institutional uses.

Residential

Interfaces on quiet residential streets are best suited for at-grade residential units. These interfaces will take the expression of ground floor townhouses or apartments with individual entrances from the street.

FIGURE 4.2 GROUND FLOOR USE IN MIXED-USE AREAS



4.3 Interfaces

The interface of a development generally refers to how the building interacts with the public realm (the street, parks, and public areas that surround it). These conditions contribute to the overall look and feel of the neighbourhood. They work to provide a human-scale pedestrian-oriented environment.

4.3.1 GENERAL INTERFACE GUIDELINES

All development within Newton-King George Boulevard Plan will adhere to the following guidelines:

a. Frame development sites with built edges against all public thoroughfares including lanes and pedestrian connections.

b. Increase connectivity of the site with common walkways to the public realm.

c. Walkways should be at least 1.8 metres wide for universal access.

d. Clearly design sites and buildings that support a safe, comfortable and attractive public realm.

e. Create street enclosure using podiums with proportional street wall height.

f. Design lower floors to be in scale with the pedestrian environment.

g. Locate vehicular access points, such as parking ramps, servicing, loading and pickup/drop off areas, from lanes to minimize interruption of streets and impact on the pedestrian environment. If no lane is available, provide a driveway from the street, separating and leading vehicles away to an access point that does not face the public realm.

h. Screen and hide views of parking ramps from the street, public realm and above. Parking ramps should be incorporated into the building envelope without visible presence to those interfaces.

i. Locate all vehicular parking and stopping areas underground.

j. Roofs of lower buildings should be greened and treated to address overlook from higher buildings.

k. Screen roof top equipment from street view and overlook from above.

l. Screen and architecturally integrate wireless communication equipment into the building.

m. Integrate signage into building architecture, so that it is complementary, and does not dominate the building elevation or site. Free-standing and monument signs are not supported.

n. Provide visual interest on buildings at public realm interfaces at ground level using an articulated mix of high-quality finishing materials.

o. Arrange building and site lighting to avoid glare, light spill, and light pollution.

p. Avoid projecting floor area past the floor below.

q. Consider architectural details of the underside of balconies and soffits.

r. Make residential entrances less prominent and secondary to commercial entrances in mixed-use developments.

4.3.2 COMMERCIAL INTERFACE GUIDELINES

Commercial interfaces within the Low-Rise Mixed-Use and Low-Rise Mixed-Use Cluster designations will adhere to the following guidelines:

a. Refer to relevant setback treatments as outlined in **4.4.1A Typical Commercial Setback** and **4.4.3A King George Boulevard Commercial Setback**.

b. Expose and connect all commercial retail units directly to the public thoroughfare and plaza.

c. Wrap ground floor retail around building corners along intersecting public thoroughfares.

d. Express each commercial retail unit individually and distinct from its neighbours on the same building or immediate vicinity.

e. Avoid colonnades or columned arcades along the public realm.

f. Minimize interrupting commercial frontages with residential lobbies, secondary entrances or exits.

g. Cover walkways and commercial frontages with weather protection canopies at least 1.8 m deep along arterial and collector roads and plazas and at least 1.5 m deep along local roads. The depth-of-canopy to height-above-sidewalk ratio should be at least 1:2 for adequate weather protection.

h. Avoid using overt security measures at storefronts, such as bars on windows or bollards; instead, integrate hidden measures into the building.

i. Incorporate at-grade street planters and ensure generous soil volumes for trees and landscaping that integrate biodiversity objectives such as pollinator-friendly planting palettes (refer to the City of Surrey Biodiversity Design Guidelines).

j. Locate parking underground. Locate any above-grade stalls (e.g. car-share, drop-off) behind buildings, away from the public realm.

Top: Commercial corner interface with landscaping and weather protection.

Middle: Multi-family Building with 2-level retaining wall and landscaping.

Bottom: Multi-family Building with landscaping.

4.3.3 RESIDENTIAL INTERFACE GUIDELINES

Development within the Low-Rise Residential designation and residential interfaces within the Low-Rise Mixed-Use and Low-Rise Mixed-Use Cluster designations will adhere to the following guidelines:

a. Refer to **4.4.1B Typical Residential Setback** and **4.4.3B King George Boulevard Residential Setback** for typical setback treatments.

b. Locate primary building entrances along higher classified public thoroughfares.

c. Design residential common entrances to be distinct from commercial entrances in mixed-use buildings.

d. Clearly articulate and express a 2 to 3 storey townhouse appearance in base of residential building frontages.

e. Express each ground floor unit's individuality with its own porch entrance and weather protection, separated from its neighbour. Avoid unit entrances sharing porches or weather protection with other units.

f. Use extended porches or recessed entries to articulate facades and reinforce a residential character.

g. Orient front doors and porches to face the street and provide direct (straight) walkway access to the public thoroughfare.

h. Set main floor elevations to be between 0.6 - 1.2 metres above the adjacent public thoroughfare grade.

i. Where raised patios are along a public thoroughfare, each tier of a retaining wall is limited to 0.6 metre high and a minimum of 1 metre horizontal staggering. Facing material should be durable, high quality and in character with the architecture of the building. Each base of the wall should include an irrigated landscape strip at least 1 metre wide and 0.5 metre at the uppermost tier. Any fence or guardrail should be visually transparent and located behind the landscape strips.

j. Provide a 3-metre patio (in addition to the walkway and landscape boulevard) for ground-floor residential units along a lane.

k. Avoid placing balconies directly above the porch to retain the sense of entry at ground level.

l. Finishing materials should include textured natural cladding materials with legible reliefs such as horizontal wood siding, or brick. The predominant use of fibre cement panels or similar is inappropriate. Vinyl siding and large areas of exposed natural or painted concrete are discouraged.

m. Natural forest colours, tones and shades are encouraged for building material palettes.

n. Diversify the streetscape by varying cladding materials from building to building. Use up to two cladding materials per building.

o. Complement individual entrances with landscaping, including a tree.

p. Locate active living spaces (such as living, dining rooms and kitchens) to face the public thoroughfare with overlooking windows. Locate private spaces (such as bedrooms) on upper floors or away from unit frontages.

q. Locate inactive spaces (indoor amenity rooms, service rooms, bathrooms, and closets) away from public thoroughfares and other public realm interfaces.

r. Locate indoor and outdoor amenity areas adjacent to ensure they can be used together.

4.3.3 TOWNHOUSE INTERFACE GUIDELINES

Development within Townhouse designations will adhere to the following guidelines

a. Refer to **4.4.4 Typical Residential Setbacks** for typical setback treatments.

b. Use soft edges (landscaping etc.) to create opportunity for more pedestrian activity and interaction. Consider shrubs and low hedges in lieu of fencing along a public thoroughfare. If fencing is proposed, limit its height to 1 metre; setback 1 metre from the public thoroughfare; and provide landscaping in front.

c. Long street frontages should have visual modulation using a variety of unified expressions across its buildings.

d. Emphasize vertical delineation, expression and identification of individual units while reinforcing a unified character.

e. Activate principle frontages with deep verandas and porches with covered private outdoor space.

f. Reinforce the residential character of each unit's individuality with its own extended or recessed porch entry with weather protection, separated from its neighbour. Avoid sharing porches or weather protection with other units.

g. Orient front doors and porches to face the street to provide direct (straight) walkway access to the public thoroughfare.

h. Where raised patios are along a public thoroughfare, each tier of a retaining wall is limited to 0.6 metre high and a minimum of 1 metre horizontal staggering. Facing material should be durable, high quality and in character with the architecture of the building. Each base of the wall should include an irrigated landscape strip at least 1 metre wide and 0.5 metre at the uppermost tier. Any fence or guardrail should be visually transparent and located behind the landscape strips.

i. Provide a 3-metre patio (in addition to the walkway and landscape boulevard) for ground-floor residential units along a lane.

j. Avoid placing balconies directly above the veranda or porch to retain the sense of entry at ground level.

k. Hidden and integrated roof top decks are encouraged within pitched roof forms.

l. Finishing materials should include textured natural cladding materials with legible reliefs such as horizontal wood siding, or brick. The predominant use of fibre cement panels or similar is inappropriate. Vinyl siding and large areas of exposed natural or painted concrete are discouraged.

m. Natural forest colours, tones and shades are encouraged for building material palettes.

n. Diversify the streetscape by varying cladding materials from building to building. Avoid overwhelming the material palette of each building by using up to two cladding materials. Variation could be achieved through material arrangement of orientation, scale and pattern.

o. Locate active living spaces (such as living, dining rooms and kitchens) to face the public thoroughfare with overlooking windows. Locate private spaces (such as bedrooms) on upper floors or away from unit frontages.

p. Locate indoor amenity rooms away from public thoroughfares and other public realm interfaces.

q. Locate indoor and outdoor amenity areas adjacent to ensure they can be used together.

r. Complement individual entrances with landscaping, including a flowering tree.

s. Provide 3.5 metre driveway aprons with trees along drive aisles between garages on the north and east side of drive aisles.

t. Integrate signage into building architecture, so that it is complementary, and does not dominate the building elevation or site. Free-standing and monument signs are not supported.

u. Set main floor elevations to be between 0.6 - 1.2 metres above the adjacent public thoroughfare grade.

Top: Individual ground level entry to multi-family units
Middle: Stacked Townhouse with private patio space
Bottom: Townhouse entry with landscaping

Above: Commercial setback with weather protection, used for seating.

4.4 Setbacks

Setbacks are measured from the lot line to the building face on private property. They provide privacy, environmental protection, and landscaping opportunities to enhance the public realm. Development should conform with the setback requirements of applicable zoning within the Surrey Zoning By-law, 1993, No. 12000 or seek an appropriate variance as supported by staff. Dimensions and details may be subject to change during review by staff for development applications.

In general, minimum setbacks are to be provided as follows:

Along Streets:

- Commercial: 4.0 metres to building.
- Residential: 5.5 metres to building and 1 metre to retaining walls and fences (7.5 m to buildings and 1 m to retaining walls and fences along King George Boulevard)

Along Lanes:

- Commercial: 4 metres to building.
- Residential: 6.5 metres to building when patios are provided or 4.5 metres to building when patios are not provided.
- Lane setbacks vary within Low Density Residential Areas as per the Surrey Zoning By-law.

- Internal property line setbacks to be determined at application.
- Additional setbacks to buildings and other structures (including retaining walls) are required for protected watercourses and ditches as per the Official Community Plan's Sensitive Ecosystem Development Permit Guidelines (See **Section 4.4.1**).
- Additional setbacks may be required along sensitive interfaces and parks (See **Section 4.5**).

4.4.1 TYPICAL SETBACKS

Typical Commercial

The typical 4.0 metre commercial setback (**Figure 4.4.1A**) will allow for a 2.0 metre weather protected merchant zone for display of goods and café seating in commercial areas. A 2.0 metre street furniture zone accommodates benches and limited in-ground landscaping.

Typical Residential

In residential areas, the typical 5.5-metre residential setback (**Figure 4.4.1B**) will provide for private amenity (patio) space at the front door and landscaping requiring a tree on private property.

Typical Lanes

Lanes complement the active transportation network and promote site permeability. As per **Design Guideline 4.3.1A**, development sites should have built edges along lanes. These interfaces may include ground level entry to units. As such, setbacks should provide a safe and enjoyable pedestrian environment with sidewalks and treed boulevards on private property. **Figure 4.4.1C** and **4.4.1D** diagram appropriate interface and setback treatments along commercial and residential lanes.

FIGURE 4.4.1A TYPICAL COMMERCIAL STREET SETBACK

FIGURE 4.4.1B TYPICAL RESIDENTIAL STREET SETBACK

FIGURE 4.4.1C TYPICAL COMMERCIAL LANE SETBACK

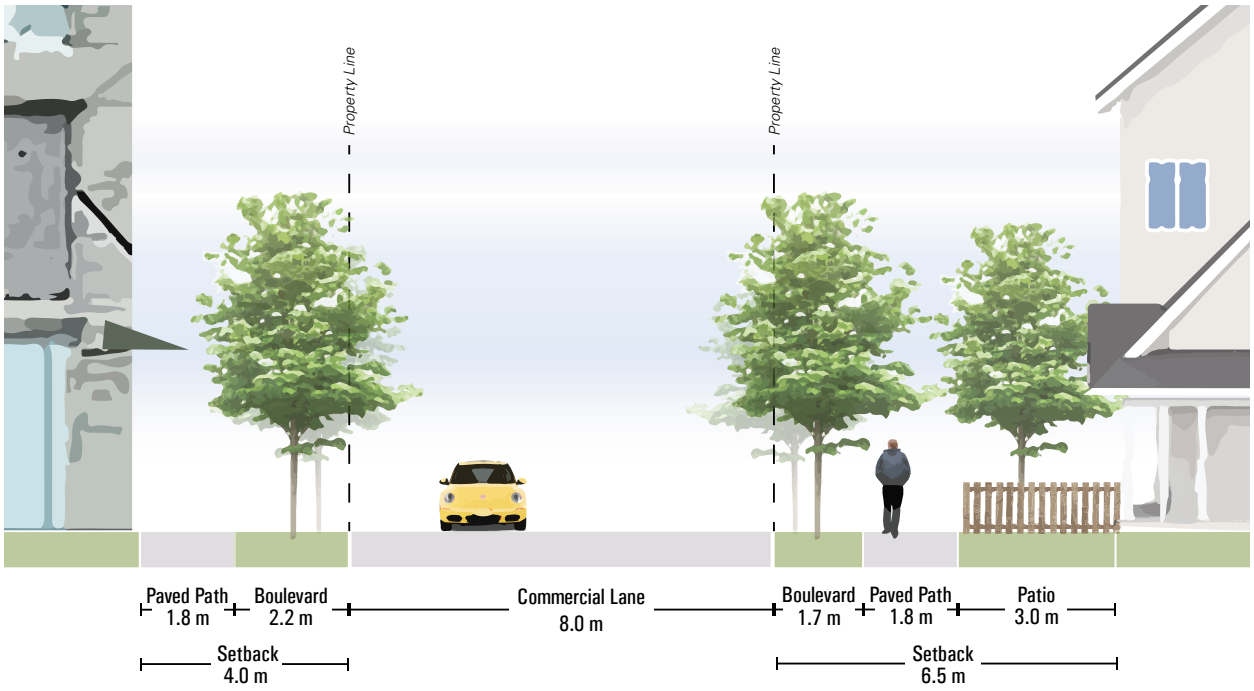
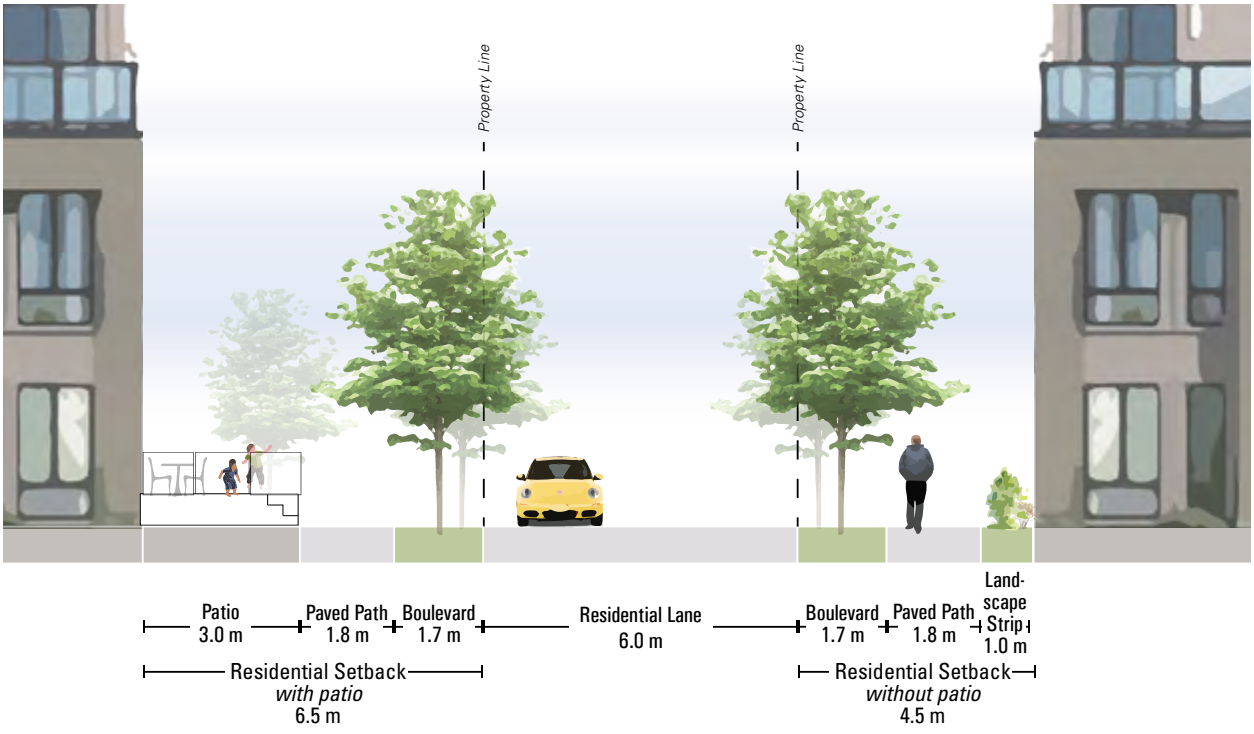


FIGURE 4.4.1D TYPICAL RESIDENTIAL LANE SETBACK



4.4.2 KING GEORGE BOULEVARD SETBACKS

Presently, as a wide, high-traffic arterial road, typical portions of King George Boulevard provide a low-quality pedestrian and public realm experience. Setbacks and landscaping will be used to mitigate negative impacts of high-volume traffic and transform the current auto-oriented corridor into an inviting, walkable environment. **Figure 4.4.2A** and **Figure 4.4.2B** outline setback requirements for commercial and residential development fronting King George Boulevard.

FIGURE 4.4.2A KING GEORGE BOULEVARD COMMERCIAL SETBACK

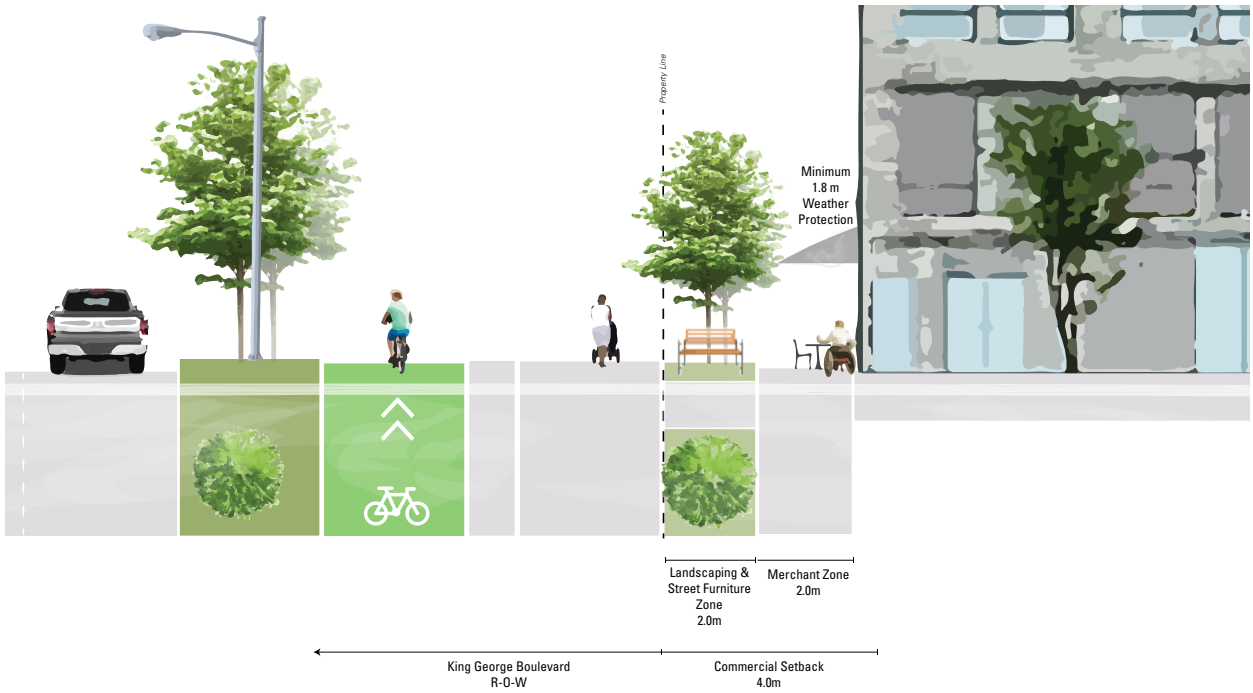
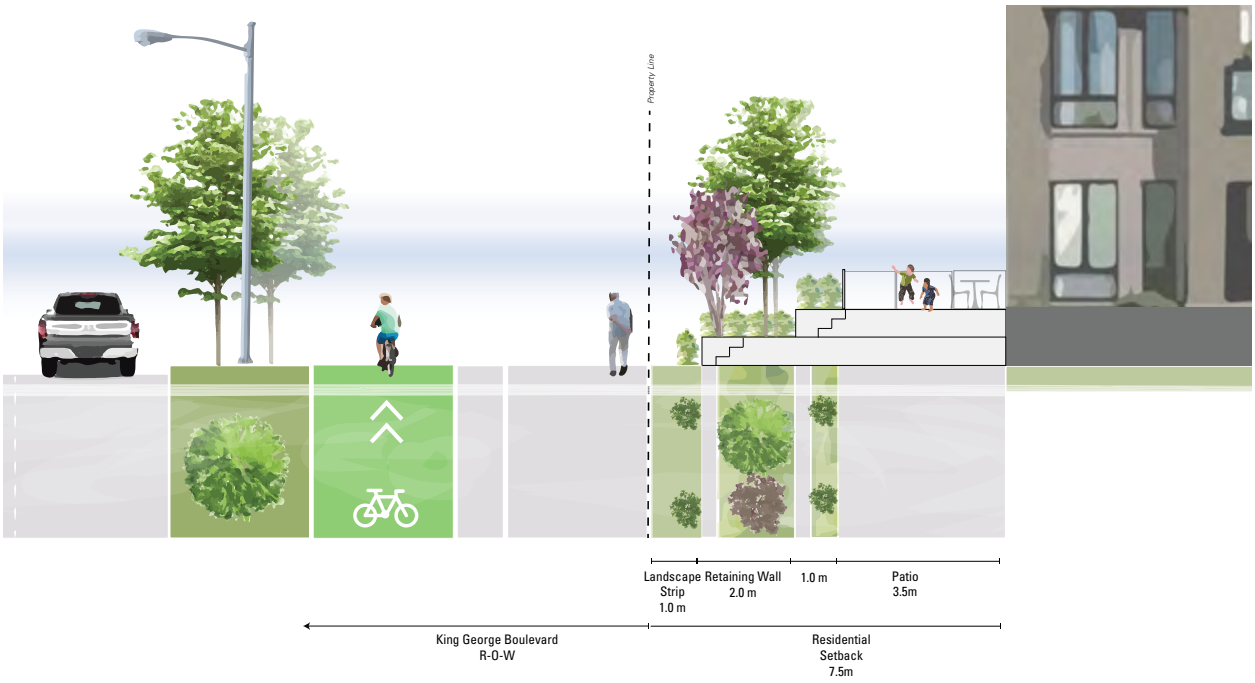


FIGURE 4.4.2B KING GEORGE BOULEVARD RESIDENTIAL SETBACK (7.5M)



4.4.3 RIPARIAN SETBACKS

All lands within streamside protection areas are subject to regulations set out by the Zoning By-law and the OCP's Sensitive Ecosystem Development Permit Process. As part of the Development Permit process, the Streamside Protection Area is established. A Qualified Environmental Professional (QEP) is required to develop an Ecosystem Development Plan, identify Top of Bank, and establish the boundary of the Streamside Protection Area as required by the Zoning By-law.

Setbacks in addition to the Streamside Protection Area are required. The additional setback area provides a buffer, landscaping, public passage, and maintenance access between development and protected environmental areas. **Figure 4.4.3A** outlines setback requirements for developments providing minimum safeguarding. **Figure 4.4.3B** outlines setback requirements for developments providing maximum safeguarding.

FIGURE 4.4.3A MINIMUM SAFEGUARDING

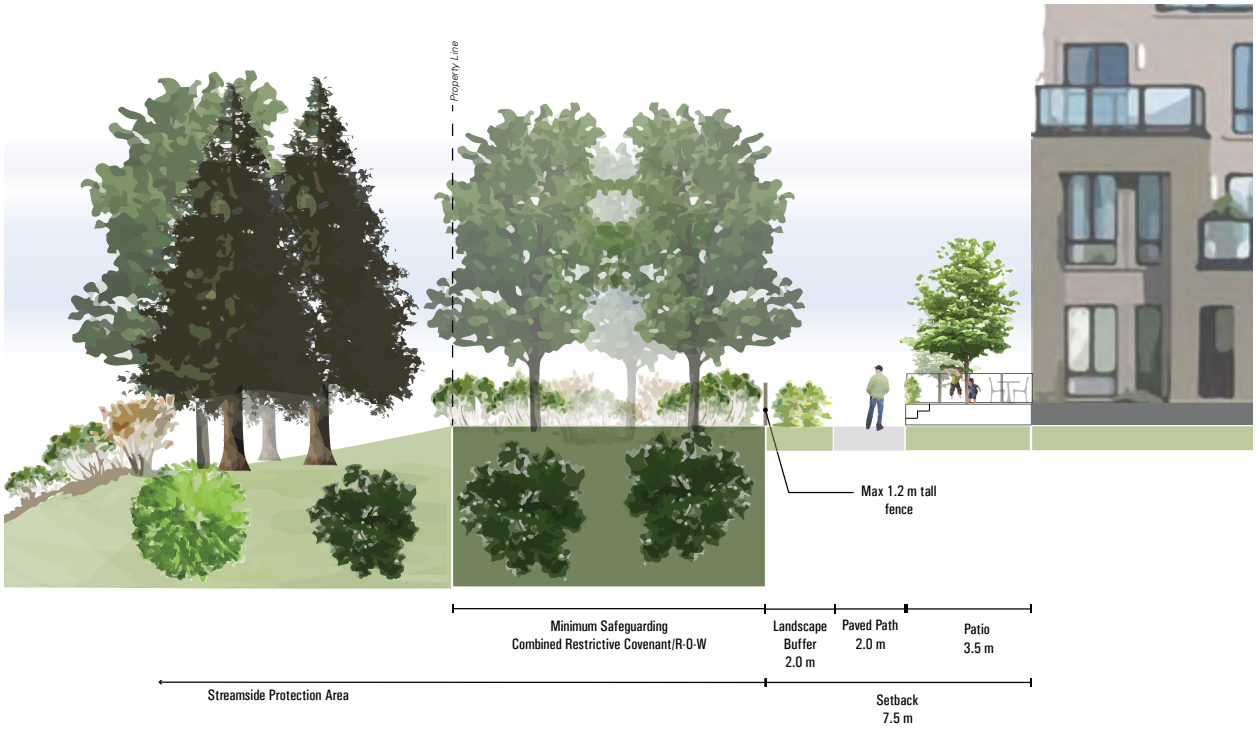
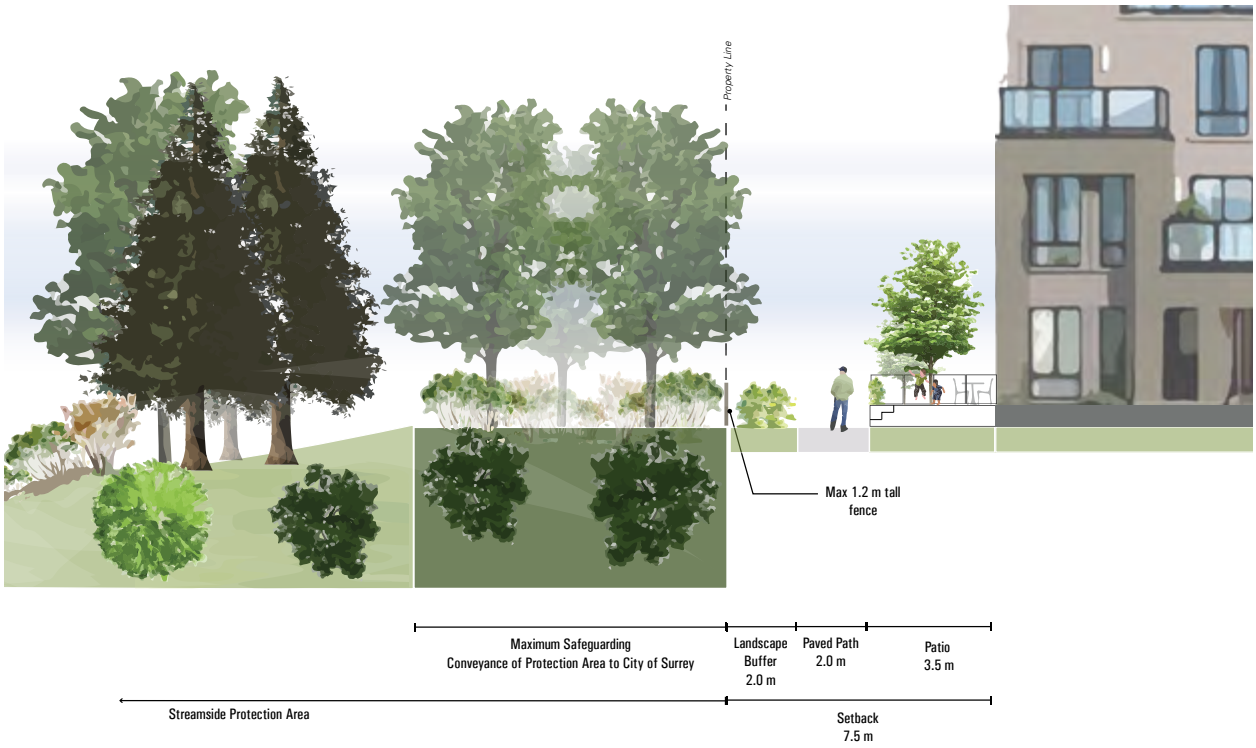


FIGURE 4.4.3B MAXIMUM SAFEGUARDING



4.4.4 SENSITIVE INTERFACES

Sensitive Interfaces refer to areas where new development abuts a property with a land use of different scale or character. These guidelines diagram how setbacks and interfaces should be considered to respond to the unique context. Developments located adjacent to parks should refer to **Section 6.2 Park Design Guidelines**.

FIGURE 4.4.4A LOW-RISE APARTMENT TO LOW-DENSITY RESIDENTIAL (REAR/FRONT OF UNIT)

FIGURE 4.4.4B LOW-RISE APARTMENT TO LOW-DENSITY RESIDENTIAL (SIDE OF UNIT)

FIGURE 4.4.4C LOW-RISE APARTMENT TO LOW-DENSITY RESIDENTIAL ACROSS A LOCAL ROAD

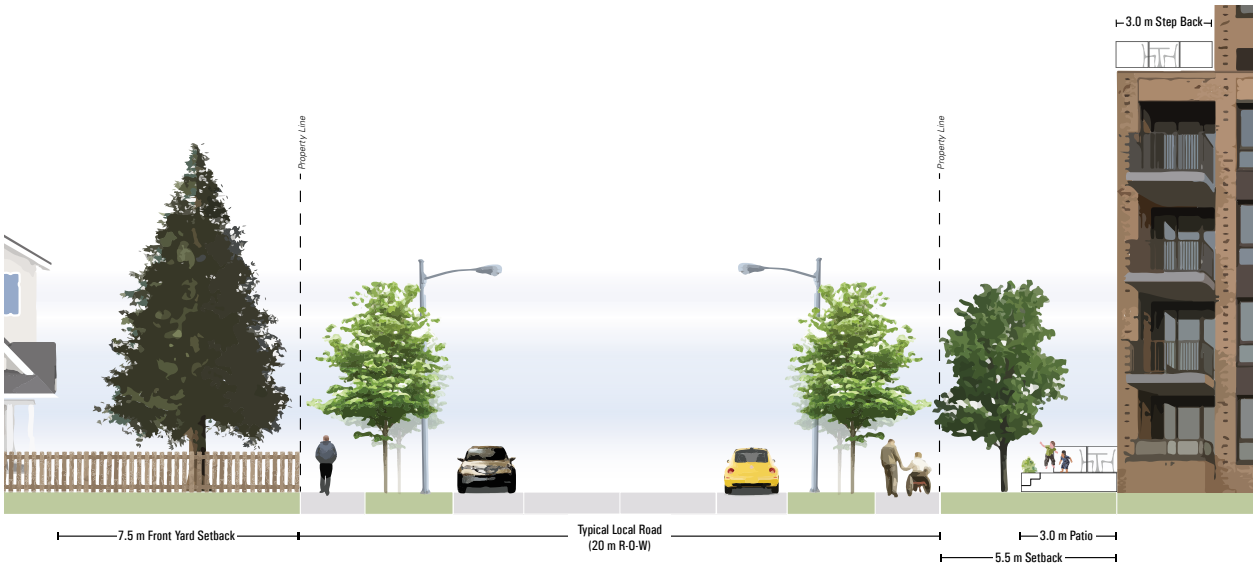


FIGURE 4.4.4D LOW-RISE APARTMENT TO SCHOOL (REAR OF UNIT)

4.4.4E LOW-RISE APARTMENT TO SCHOOL (SIDE OF UNIT)

4.5 Plazas

Plazas enhance community. They provide space for social interaction, placemaking, and cultural activities. They expand the public realm and allow for gathering, socialization, resting, eating, and commerce.

Plazas require clear visibility, access, robust design, and appropriate programming. Careful thought should be given to a plaza's principal function and its relationship with adjacent public thoroughfares, buildings and land uses. Individual plazas function best as part of a hierarchy of open spaces, serving immediate local needs.

Plazas are located within mixed-use commercial areas and within proximity to future RapidBus stops. All plazas will be secured through development as publicly accessible open space, through increased setbacks. They will abut the public thoroughfare property lines. As such they are intended to remain open to the public and not permitted to be gated or restricted to private access.

Publicly Accessible Open Space
At each intersection, mixed-use, multi-family or townhouse developments will provide publicly accessible plaza(s). At least one will be a minimum of 30 square meters in area, or larger, relative to the project's scale

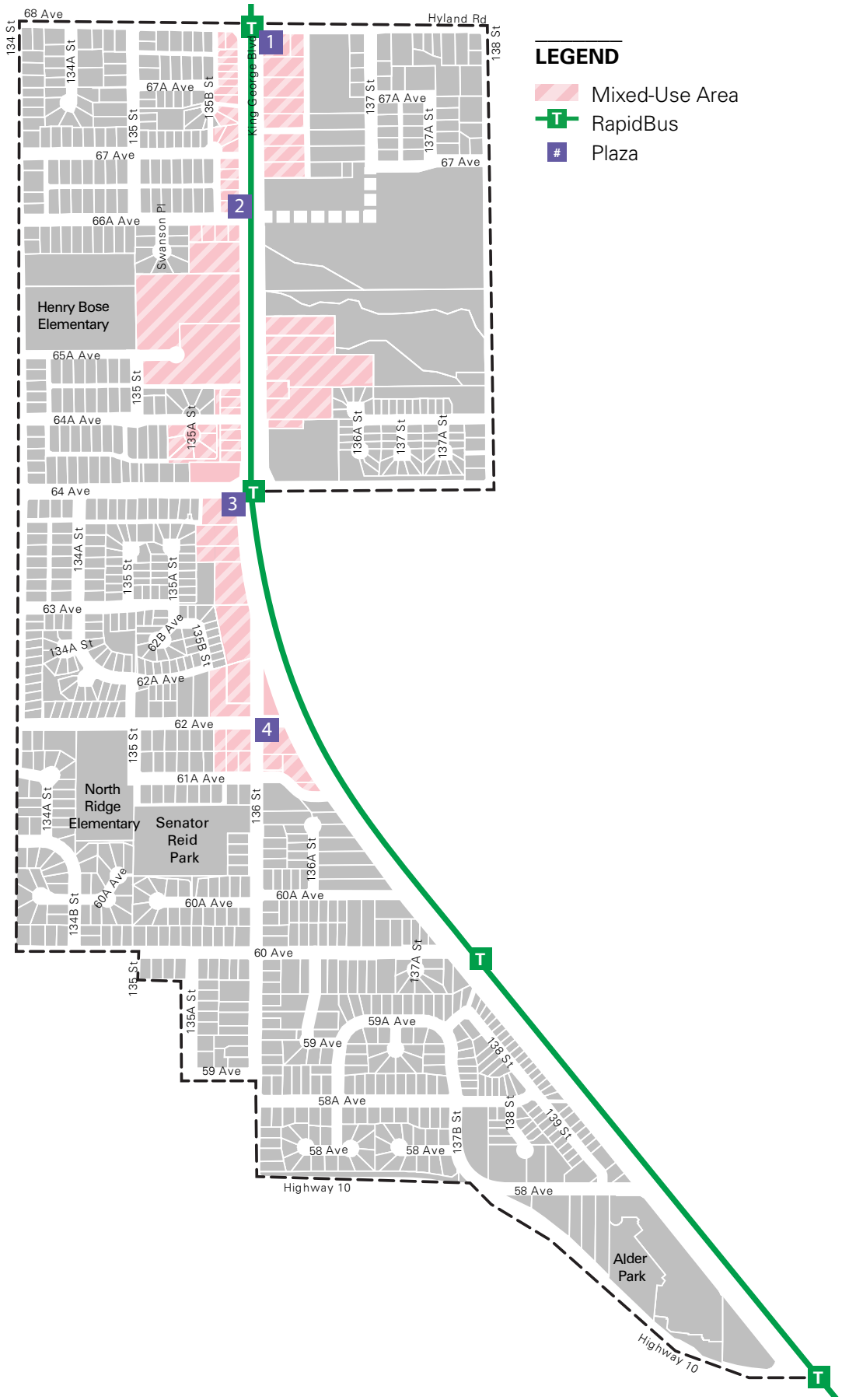
Plaza 1 (SE Corner of 68 Avenue and King George Boulevard)
Facilitate public transit and passenger queuing for future RapidBus stop at 68 Avenue, while providing seating, wayfinding and urban landscaping. Surrounding buildings should have large high-quality expansive weather protection and interconnected shopfronts. Minimum size: 90 square metres, with a 7.5-metre depth.

Plaza 2 (NW Corner of 66A Avenue and King George Boulevard)
Provide a small linear plaza along 66A Avenue with seating and landscaping to enhance the streetscape and pedestrian commerce experience. Minimum size: 90 square metres, with a 7.5-metre depth.

Plaza 3 (SW Corner of 64 Avenue and King George Boulevard)
Linear plaza fronting 64 Avenue to provide seating, wayfinding and urban landscaping. Surrounding buildings should have large high-quality expansive weather protection and inter-connected shopfronts. Orient views towards 64 Avenue. Minimum size: 90 square metres, with a 7.5-metre depth.

Plaza 4 (SE Corner of 62 Avenue and 136 Street)
This large plaza is a community hub in the heart of the neighbourhood commercial node. The plaza accommodates small community events and gatherings. It includes public art, seating, and urban landscaping (including trees). Shade elements should be integrated. Minimum size: 300 square metres, with a 15 metres depth.

FIGURE 4.5 PLAZA SITES



Linear Plaza

4.6.1 PLAZA DESIGN GUIDELINES

Plazas will be publicly accessible open space on private property, delivered through development. Plazas are to maintain visibility and unrestricted access to the public at all times to encourage street activity and public safety. Plazas and adjacent development should function together to enhance the public realm with coordinated urban design. Plaza design is subject to the Urban Design review process and endorsement by the City Architect.

a. Provide clear visibility of the plaza from the street and visibility out from the plaza.

b. Abut the plaza along at least two street property lines to increase exposure.

c. Align the edge of the plaza to blur the distinction between public and private property to expand the sense of open space.

d. Set the plaza grades flush with the adjacent municipal sidewalk and limit the amount of grade change on the plaza to allow visibility and ease of access. Avoid raising or depressing the plaza below the adjacent municipal sidewalk. Avoid the use of retaining walls or berms.

e. Maintain universal access with gentle grading and avoiding stairs or ramps.

f. Avoid obstructive landscaping, furnishing and fixed articles that block sight lines into the plaza.

g. Connect building entrances, lobbies, units, and storefronts onto adjacent plazas.

h. Furnish with a variety of amenities to encourage public usage and to create a sense of liveliness and excitement. Key amenities can include public art, seating, tables, games, drinking fountains and bike racks.

i. Orient seating towards views, streets, and parks. Place seating near building entrances and amenities.

j. Maximize accessible and comfortable seating with opportunities for weather protection from rain and sun.

k. Consider weather protection for open spaces, particularly where commercial uses line the edges. Such protection should be provided at waiting points and along major pedestrian routes.

l. Use subtle, pedestrian lighting in character with the overall site and adjacent architecture, while also providing nighttime generalized lighting to enhance safety and nighttime use.

m. Integrate landscaping with shade trees and durable plantings with sufficient soil, incorporating where practical biodiversity and climate resilience objectives (Refer to the City of Surrey Biodiversity Design Guidelines). Specify plants for the level of maintenance planned at the site, including robust and drought tolerant species wherever possible.

n. Provide natural elements which reflect seasonal change, such as deciduous trees, as well as shrubs, ground covers, and flowers in a variety of colours and textures.

o. Flush in-ground planters should be used instead of raised planters.

p. Incorporate irrigation and adequate drainage to assure plant survival over time. Integrate stormwater management into landscaping features wherever possible (e.g: rain gardens).

Top: Residential Feature Plaza
Middle: Linear Commercial Plaza
Bottom: Commercial Plaza

4.6 Heritage Buildings

Heritage Resources

Heritage value is any feature or place that has aesthetic, historical, cultural, scientific, social or spiritual importance within a community. Identifying heritage resources helps to inform the community and the City of opportunities to conserve resources that have heritage value and are important to the community.

In 1997, the City of Surrey established Surrey's Heritage Register to recognize sites that have heritage value or heritage character. Since this time, over 200 sites were added to Surrey's Heritage Register. The City will seek to identify a broad range of heritage resources that reflect the diversity of Surrey's heritage for possible addition to Surrey's Heritage Register. There are two Heritage Register sites in the Plan Area that reflect the evolution and character of the community:

- Swanson House and Barn (6571 King George Boulevard) are listed on Surrey' Heritage Register but do not have formal heritage protection. The Swanson House and Barn are valued as the last remaining farm property in the area that is still recognizable.
- King George Boulevard is listed on Surrey's Heritage Register but does not have formal heritage protection. As commemoration of the coronation of King George VI in 1937, both sides of King George Boulevard from the Patullo Bridge to the Peace Arch were planted with English Oak trees imported from Great Windsor Park, England. Some Maple and other species of trees that were part of this same planting plan are located north of Highway No. 10 towards Newton.

The development of sites listed on Surrey's Heritage Register should not occur until the protection and conservation of the sites is achieved in a manor considered satisfactory to the City. Sites listed on Surrey's Heritage Register may be eligible for development benefits in return for heritage conservation and protection. Redevelopment of the site may include an adaptive use that respects the heritage value and encourages a viable future.

Heritage Expression

In addition to the protection of heritage buildings, the Plan Area's heritage can be celebrated through expression in interpretation, art, signage, and architecture. Heritage commemoration will seek to recognize the diverse cultural contributions to the area, including Indigenous heritage recognition and diversifying the people and stories featured in heritage interpretive elements.

Top: Front of Swanson's House, 6571 King George Highway, 1932. City of Surrey Archives.
Bottom: Swanson Barn, built 1944-1945. City of Surrey Archives.

"Protected cycling lanes sounds fantastic! I will use these, especially if there are trees around."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

5 Transportation

I How We Get Around

The transportation component for the plan follows the guiding principles outlined within the City's 2008 Transportation Strategic Plan, updated Surrey Transportation Plan, and supplementary plans, including the City's Vision Zero Surrey Safe Mobility, Walking, and Cycling Plans as well as the Electric Vehicle Strategy.

Above: 68 Avenue and 138 Street, March 1982. City of Surrey Collection.

5.1 Transportation Strategy

A high-quality multi-modal transportation network will support the Plan Area. The transportation strategy outlines a more direct, connected local street network complemented by an integrated network of off-street pathways and open spaces. The transportation strategy prioritizes active and sustainable modes of transportation to improve alternatives to automobile travel. The transportation strategy is guided by the five pillars of the Surrey Transportation Plan:

1. Grow the Transportation Network to create an efficient transportation system and improve connections;
2. Prioritize Vision Zero by using a safe systems approach and applying Complete Streets;
3. Tackle the Climate Crisis by encouraging active transportation to reduce car dependency, and encouraging electric vehicles, to reduce greenhouse gas emissions;
4. Innovate through Technology and New Mobility by requiring development to provide and accommodate for variety of transportation **solutions; and,**
5. Balance Equity to ensure both new and existing residents have access to a variety of transportation choices.

Street Network

The Plan Area's transportation network reflects the automobile-centric road design principles prevalent in Surrey when much of the transportation network was developed in the 1980's and 1990's. The road network is circuitous and discontinuous. Local roads provide limited connectivity to arterials and collectors. Many roads result in dead-ends or cul-de-sacs. Both the walking and cycling networks have significant gaps. There are no protected cycling facilities to encourage safe, active and sustainable transportation.

The transportation strategy reflects community values of safety, sustainability and inclusivity. New road connections will establish the foundations for a grid network and with gaps in infrastructure being completed through development or capital projects to provide a comprehensive continuous network.

Active Transportation

Safe access to active transportation is important for growing communities to reduce traffic congestion, GHG emissions, and promote healthy lifestyles. The Plan Area is similar to many other neighbourhoods in Surrey. In the post-war era, active transportation was not prioritized and development was focused on the private automobile. As such, many roads were constructed without sidewalks and safe cycling facilities. This had led to a dependence on automobiles and unsafe conditions for pedestrians and cyclists.

The Plan seeks to re-balance the transportation network to put more emphasis on cycling, walking and transit. The sidewalk network will be completed with both development and capital projects with connections to transit, schools and other amenities being enhanced. Cycling facilities will be added to key corridors to form a continuous, connected, protected network that appeals to people of all ages and abilities. The goal of these changes is to promote active transportation as a fun and safe alternative to driving – freeing space on our roads and reducing the impact transportation has on global climate change.

FIGURE 5.1 TRANSPORTATION STRATEGY

5.2 Traffic Analysis

Currently, the Plan Area's street network includes a hierarchy of arterial and collector roads, local streets, and lanes. Key components of the street network include the arterial roads (King George Boulevard, 64 Avenue, and Hyland Road) and collector roads (60 Avenue, 134 Street). The local roads often follow a winding pattern based on historical network development. Many of the existing local roads provide limited connectivity to higher-order roads and often result in dead-ends.

The main transportation corridors in the Plan Area are 64 Avenue and King George Boulevard. No significant capital projects in or adjacent to the Plan Area are planned. King George Boulevard in the shorter term will be served by an extension of the R1 King George RapidBus service and be served in the future by Rapid Transit.

Beyond RapidBus and future Rapid Transit, no significant road widening is planned for 60 Avenue, 64 Avenue or 68 Avenue, although many intersections in the Plan Area are anticipated to need upgrading or new traffic control.

5.2.1 TRAFFIC MODELING STUDY

To evaluate the transportation impacts of the land use changes outlined in the Newton-King George Boulevard Plan a consultant, Bunt & Associates, was retained by the City to provide transportation modeling and analysis for the Plan Area.

The methodology for this work included:

- Collecting existing data related to traffic volumes for all modes, land use changes and development activity (with corresponding impacts on number of jobs and population) in the study area;
- The City's travel demand model (Surrey Sub-Area Model / EMME) was used to assess overall travel patterns through the study area as well as to forecast future growth in trip-making as a result of increased population and employment;
- The mesoscopic model (VISUM) was developed for the Newton-King George Boulevard NCP area and surrounding road network. This model uses trip volumes for origin-destination pairs generated by the Surrey Sub-Area Model and distribute the vehicular and transit trips on the road network;
- Calibration and Validation were conducted for the VISUM model using recent traffic counts data;
- The proposed network improvement outlined in Surrey's 10 Year Servicing Plan, including new traffic signals and new traffic circles were incorporated into the models for the future scenarios;
- Existing and future PM peak hour traffic conditions were analyzed using the traffic operations model (VISTRO), including Level of Service (LOS), turning movement queue lengths, traffic volumes and delay. Forecasted pedestrian and cyclist crossing volumes were incorporated in the analysis.
- Potential infrastructure improvements were identified and assessed at locations that are anticipated to have operational challenges in the future; and
- The model projected trips on all modes up to a milestone year of 2050 – in coordination with Metro Vancouver's Metro 2050 regional growth strategy and TransLink's Transport 2050 regional transportation plan.
- The results of the analysis are considered conservative and help to determine the improvements to the transportation network needed to accommodate the planned growth in traffic, pedestrian, and cycling volumes. Potential infrastructure improvements were identified and assessed at locations that are anticipated to have operational challenges in the future.

5.2.2 RESULTS

Trip Generation

The transportation analysis assumed the land use changes in the Plan Area and improvements to the transportation network outlined in Surrey's 10 Year Servicing Plan. These changes were added to the transportation model to determine their impact on the number of trips by each mode. The 2050 model assumed RapidBus to be in service on King George Boulevard with stations at Highway 10, 60 Avenue, 64 Avenue and 68 Avenue.

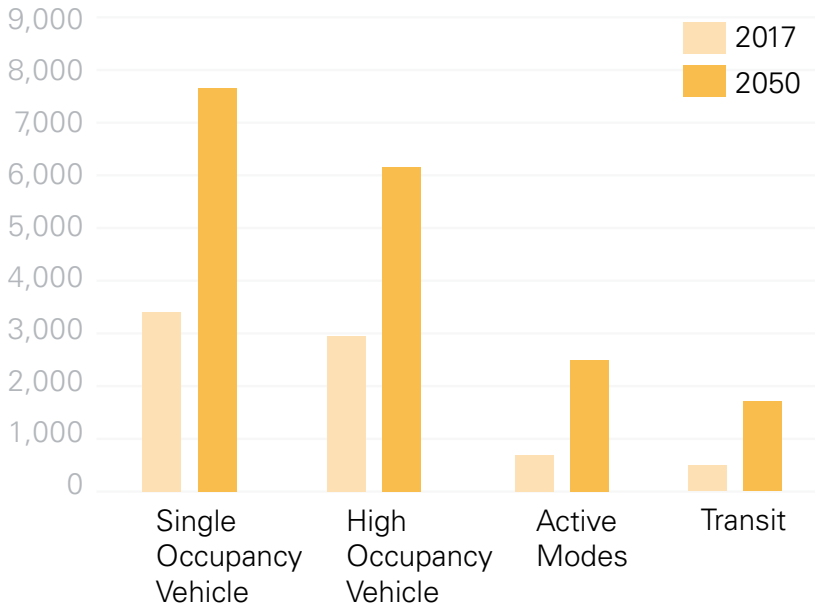
Anticipated increases in overall trip making and the differential growth rates between modes are summarized in the table below. A 140% increase in overall PM peak trips is anticipated due to the growth in the Plan Area. The model predicts higher growth rates for sustainable (walk, bike and transit) modes of travel as compared to single occupancy vehicle (SOV) and high occupancy vehicle (HOV) travel. Although the model only forecasts a 22% sustainable mode share (which is below the Surrey Transportation Plan target of 50%), the analysis suggests that the Plan will encourage a significant shift towards sustainable transportation modes and with complimentary improvements outside the plan area can work towards achieving this target.

In response to the anticipated increase in trips generated, potential network refinement mitigation measures were identified on corridors and at intersections which are anticipated to have operational challenges.

TABLE 5.2.2A FORECAST PERSON TRIPS AND MODE SHARE

	PERSON TRIPS			MODE SHARE		
	2017 PM	2050 PM	% Increase	2017 PM	2050 PM	% Change
SOV	3,402	7,666	125%	46%	43%	-3%
HOV	2,965	6,130	107%	40%	35%	-5%
Active Modes	572	2278	298%	7%	13%	5%
Transit	451	1,628	261%	6%	9%	3%

FIGURE 5.2.2B PM PEAK HOUR TRIPS BY MODE



Road Network

The transportation analysis showed no road widening is required in the Plan Area to accommodate future traffic volumes.

The analysis recommended the following road-related improvements:

- New connection of 138 Street from 64 Avenue to Hyland Road to facilitate local traffic circulation and to reduce traffic volumes at the intersection of 64 Avenue and King George Boulevard.
- Realignment of 137 Street across 68 Avenue to provide access to future development in the southwest corner of the Plan Area.

Intersections and Traffic Control

The majority of the changes recommended by the transportation analysis were for new or improved intersections. The analysis found capacity issues at many existing intersections in the study. The anticipated increase in traffic volumes generated a level of service at these locations that were below acceptable standards.

Recommended improvements include:

- 60 Avenue & King George Boulevard: Implement protected-only phasing for northbound and southbound left turns;
- 62 Avenue & King George Boulevard: Implement protected-only phasing for northbound and southbound left turns; add eastbound 30 metre right turn bay;
- 62 Avenue & 134 Street: Upgrade to roundabout;
- 62 Avenue & 136 Street: Add traffic signal and coordinate timing with signal at 62 Avenue & King George Boulevard;
- 64 Avenue & 132 Street: Add southbound right turn lane;
- 64 Avenue & 138 Street: Upgrade to full signal; implement protected-only phasing for westbound left turns;
- 64 Avenue and King George Boulevard: Add dual northbound and southbound left turn lanes;
- 66A Avenue & 134 Street: Upgrade to roundabout;
- 66A Avenue & King George Boulevard: Upgrade to traffic signal; add eastbound and westbound left turn bays;
- 68 Avenue & 134 Street: Upgrade to roundabout;
- 68 Avenue & 135 Street: Upgrade to roundabout;
- 68 Avenue & 137 Street: Upgrade to traffic signal; add northbound left turn bay;
- 68 Avenue & Hyland Road: Add a southbound left turn bay in coordination with the construction of the long-term road north of the existing cul-de-sac (envisioned in the Newton Town Centre Plan); implement protected-permissive phasing for the northbound left turn;
- 70 Avenue & 134 Street: Upgrade to roundabout.

Active Transportation

The transportation analysis showed a significant increase in walking and cycling trips in the Plan Area. These new active transportation trips require improved facilities so they are safe and comfortable for people of all ages and abilities.

The following improvements are recommended:

- 62 Avenue from 133 to 135 Street: Multi-use path on north side of avenue;
- 64 Avenue from 132 Street to 140 Street: Cycle tracks to provide connection to planned RapidBus station at King George Boulevard;
- 66A Avenue from 134 Street to 135 Street: Multi-use path on north side of avenue;
- 68 Avenue from 134 Street to King George Boulevard: Cycle Tracks
- King George Boulevard from Highway 10 to 68 Avenue: Protected cycling facilities using a combination of multi-use paths and extruded curbs to provide protection;
- 60 Avenue from 132 to 136 Street, Sidewalk on north side and two-way Cycle Tracks on south side;
- 60 Avenue from 136 Street to King George Boulevard: Sidewalk on north side and two-way Cycle Tracks on south side, and modify existing traffic circle to accommodate cyclists;
- 132 Street from 60 Avenue to 62 Avenue, Sidewalk on west side, Cycle Tracks on both sides.

5.3 Street Typologies

Roads within the Plan Area typically fall into one of three categories: arterials, collectors and local roads. Most roads within the Plan Area will follow the City's Engineering Design Criteria and Supplementary Standard Drawings. A number of unique roads and cross-sections have been identified to reflect unique conditions and environmental constraints such as riparian and environmental areas.

Climate Resilient Infrastructure

Green infrastructure such as street trees and rain gardens help to improve resilience to the impacts of climate change including heat waves and more intense rainfall events, by providing shade, evapotranspiration, and retaining and infiltrating rainwater. The addition of street trees is part of the City's Shade Tree Management Plan. These features reduce stress and promote enjoyment of the environment, encouraging mobility while enhancing biodiversity. To varying extents depending on the location, these features will be included in the design standards for all types of roads.

FIGURE 5.3 STREET TYPOLOGIES

5.3.1 ARTERIAL ROADS

Arterial Roads (King George Boulevard, 64 Avenue, 68 Avenue east of King George Boulevard and 132 Street) are the primary transportation corridors through and adjacent to the Plan Area. The main purpose of arterial roads is to move people and goods through the area and across the city. Arterials are key routes for public transit and emergency services.

Many of the arterial roads in the Plan Area were widened before current standards and may lack certain elements such as tree boulevards, wider and/or continuous sidewalks, and protected cycling facilities. Improvements are planned on all arterial roads and focus on expanding space for walking and/or cycling (sidewalks, one-way separated bike lanes, and multi-use pathways). This will encourage active transportation by providing comfortable, connected, and safe environments. Arterial roads are also planned to accommodate public transit requirements to further reduce the reliance on private automobiles.

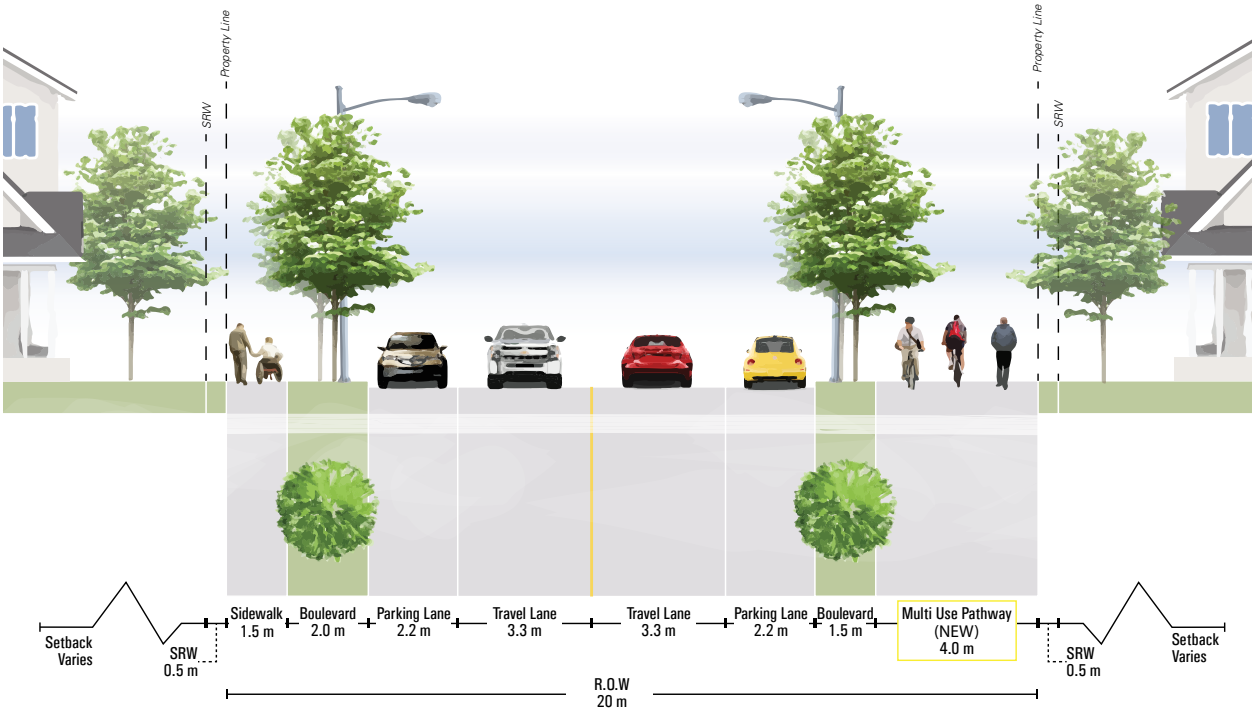
Highway 10

Highway 10 runs along the south extent of the Plan Area. Highway 10 is under provincial jurisdiction as an Arterial Highway. The design of Highway 10 and any changes or improvements to Highway 10 are planned and delivered by the Ministry of Transportation and Infrastructure (MOTI) in consultation with the City.

Arterial Roads

The arterial road standard in Surrey is a "complete streets" standard. It is planned for two traffic lanes in each direction, a landscaped median/left turn bay, grass boulevards with trees and rain gardens, sidewalks, cycling facilities, and street lighting. Through development additional road dedication will be required to bring arterial roads to current standards. Typically, these improvements are undertaken as part of City capital works and prioritized through the City's 10 Year Servicing Plan.

FIGURE 5.3.1A TYPICAL ARTERIAL ROAD (64 AVENUE & HYLAND ROAD)



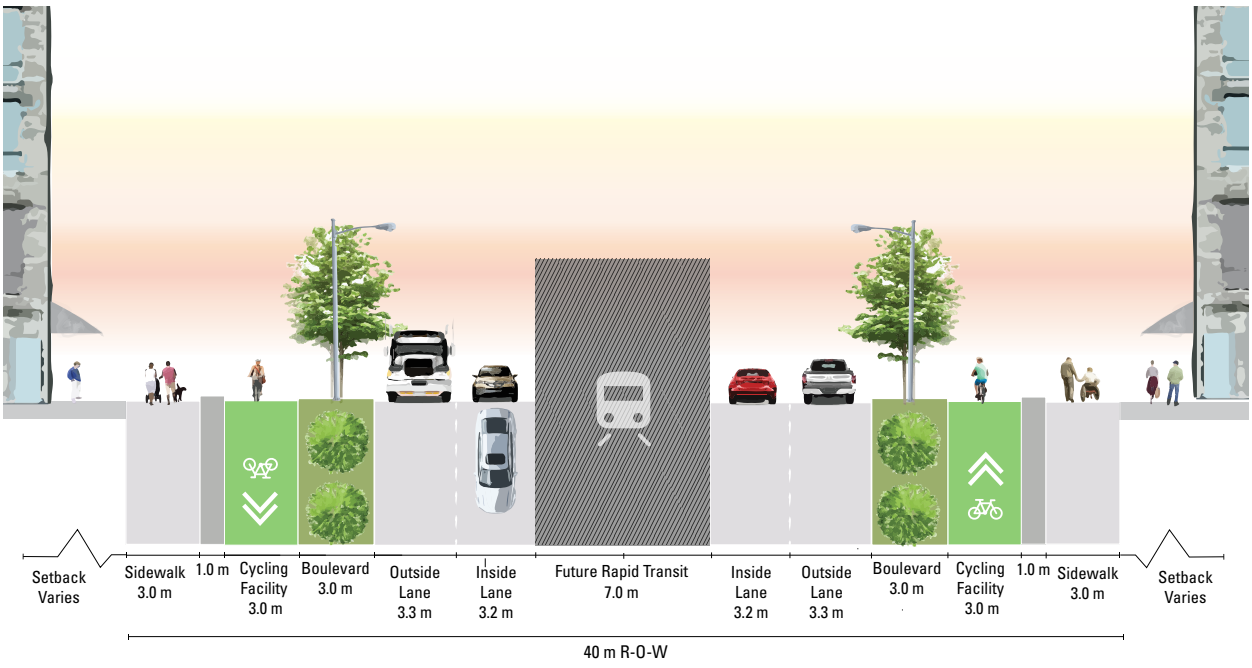
King George Boulevard

As a former provincial highway, King George Boulevard is one of the main arterial roads in Surrey. It is also part of TransLink's Major Road Network (MRN), and a designated truck route. Prior widening and improvements provide for generally two travel lanes in each direction, a median/left turn lane, bike lanes, and sidewalks. Recent improvements include adding dedicated bus lanes and/or queue jumps to support transit and safety for all road users.

King George Boulevard plays a critical role in connecting South Surrey and Newton with Surrey City Centre. This has made the corridor an ideal candidate for rapid transit. Rapid transit is considered as either 'Exclusive Corridor' where rapid transit is at-grade separated by physical barriers or 'Separated Corridor' where rapid transit is segregated above or below ground.

To maximize flexibility for either technology option a 40.0m road allowance is proposed. This cross section will include a wide median reserved for rapid transit and wide sidewalks and protected cycling facilities that will promote safe and comfortable active transportation. These components will support ridership for rapid transit and is part of the safe systems approach to Vision Zero for building complete streets.

FIGURE 5.3.1B KING GEORGE BOULEVARD



5.3.2 COLLECTOR ROADS

Collectors are multi-modal complete streets that provide connections between neighbourhoods and within communities. They collect and distribute traffic between local and arterial roads and are primary neighbourhood corridors for walking and cycling. There are several existing collector roads in the Plan Area, including 134 Street, 68 Avenue, and 60 Avenue.

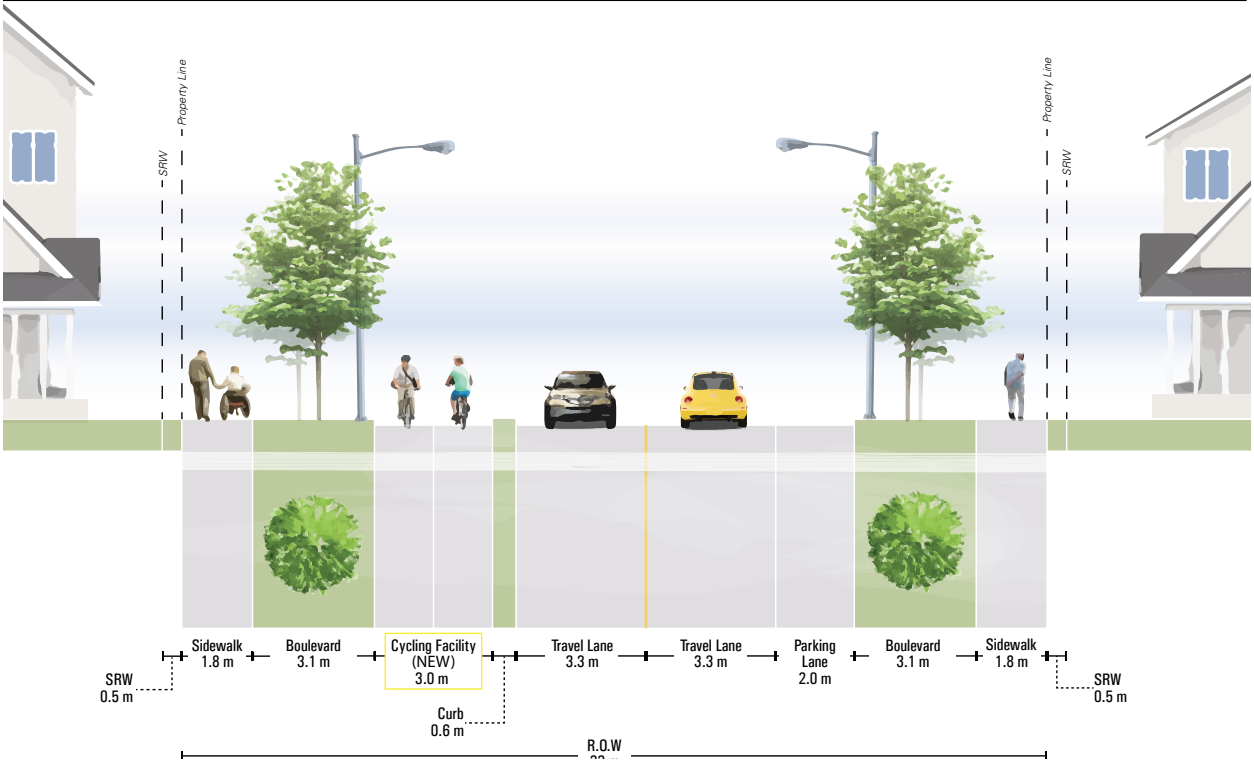
Collectors typically require a 24 metre road allowance and are planned with one travel lane in each direction, left turn lanes at key intersections, boulevards with street trees and sidewalks, protected cycling facilities, and street lighting. Outside of left turn lanes on-street parking can be provided on Collectors. Collector road improvements are typically delivered by development and funded by development to the local road standard, with DCC's funding the upsizing to the Collector Road standard.

Most of the collector roads within the Plan Area already having some infrastructure completed. For any missing infrastructure elements, unique cross sections focused on active transportation are proposed.

60 Avenue and 68 Avenue

60 Avenue and 68 Avenue were completed previously to the collector standard. To provide for improved active transportation, two-way protected cycling facilities are proposed with completion of sidewalks where required. This will help to service the growth in multi-modal trips from the Plan Area. The two facilities are proposed on the north side of 68 Avenue and south side of 60 Avenue. This will allow existing curb bulges with one side of on-street parking to remain.

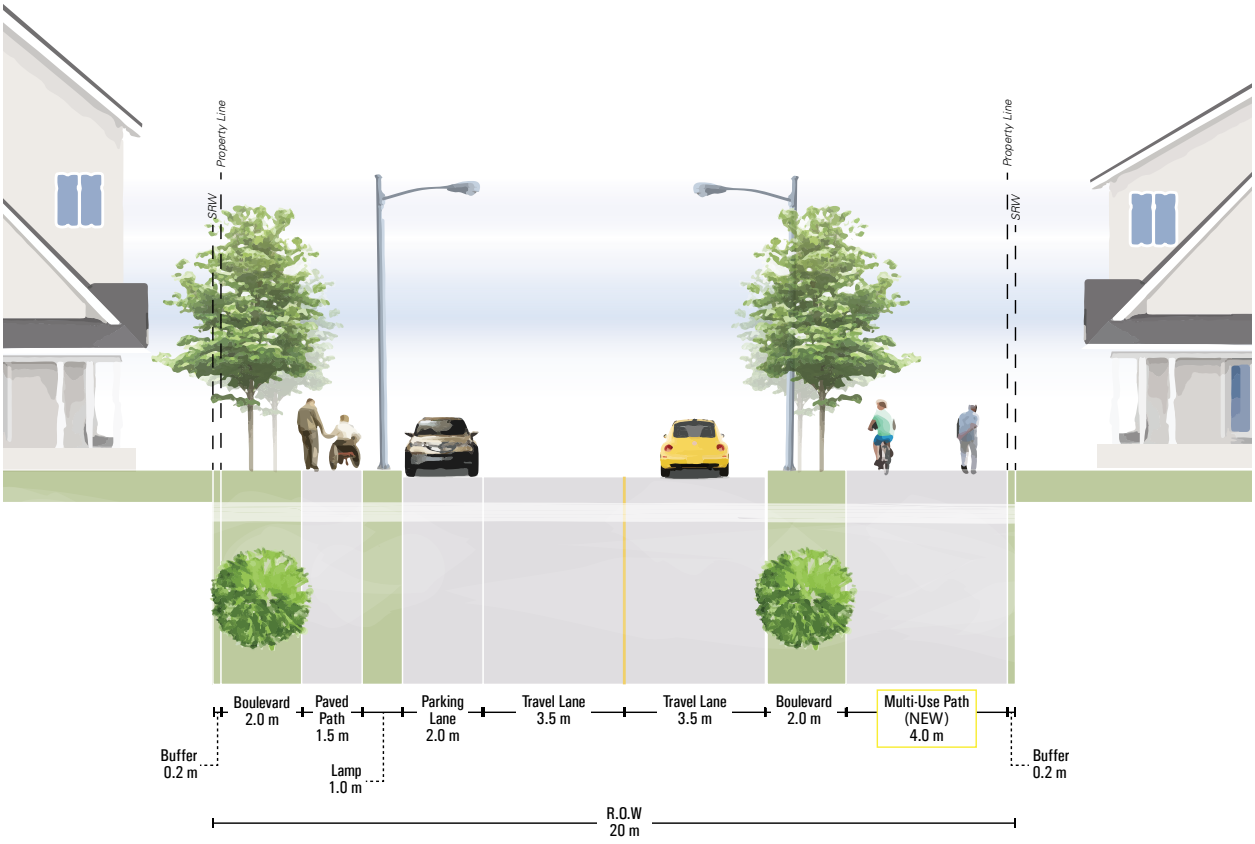
FIGURE 5.3.2A COLLECTOR WITH 2-WAY CYCLE TRACK (68 AVENUE AND 60 AVENUE)



134 Street

134 Street was completed previously to the old minor collector road standard. This collector road standard did not provide for cycling facilities. To complete connections within the Plan Area, service the increase in multi-modal trips from the Plan Area and provide active transportation to Henry Bose Elementary School, a Multi-Use Pathway is proposed on the east side of the road. To accommodate this pathway, road narrowing is required. This involves the removal of on-street parking on one side of the road.

FIGURE 5.3.2B COLLECTOR WITH MULTI-USE PATHWAY (134 STREET)



5.3.3 LOCAL AND FLEX ROADS

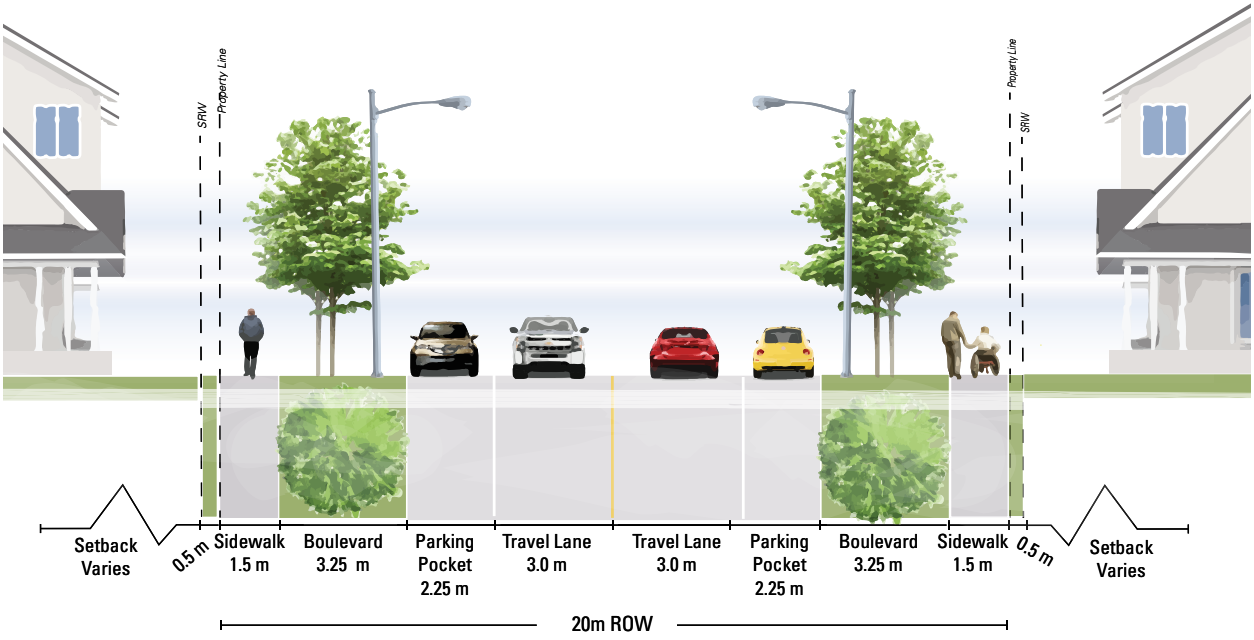
Local roads increase connectivity and access and are vital to supporting a walkable neighbourhood. Local roads are the finer grained connections in the network, and offer safe connectivity for pedestrians and cyclists, provide on-street parking, have lower design speeds, and provide access for development. Typically, local roads are planned to have one travel lane in each direction, on-street parking where possible, boulevards with trees, sidewalks, and street lighting.

As most of the Plan Area was built to a lower density only a few new local road connections are outlined within the Plan to improve walkability and traffic flow within the Plan Area.

As part of the Vision Zero safe systems approach to road design intersections with local roads will typically have curb extensions (parking pockets) to shorten pedestrian crossing distance at intersections and encourage slower speeds through the intersection, particularly turning movements. Some of these features will be designed to include raingardens.

Local road specifications are outlined in the City of Surrey Engineering Design Criteria Manual (DCM) and vary by zoning. All locals roads will be as per DCM standards unless otherwise identified as a unique local road. Local road improvements are typically built and funded by development.

FIGURE 5.3.3A:TYPICAL LOCAL ROAD



135B Street and 61A Avenue

Two new flex roads, 135B Street between 67 Avenue and 67A Avenue and 61A Avenue from 136 Street to King George Boulevard are proposed to use a modified local "flex" road standard. This is done in consideration of the important access and connectivity requirements while recognizing that a standard local road would not provide for a typical viable development parcel. The flex road will have sidewalks on both sides, and parking on one side only.

FIGURE 5.3.3B 135B STREET FLEX ROAD (67 AVENUE TO 67A AVENUE)

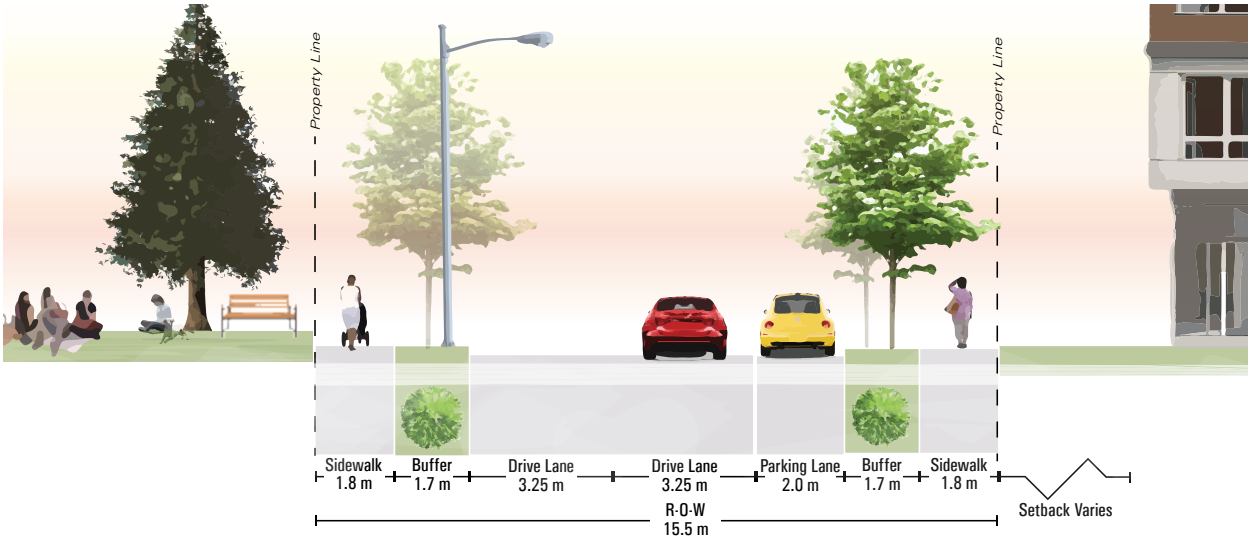
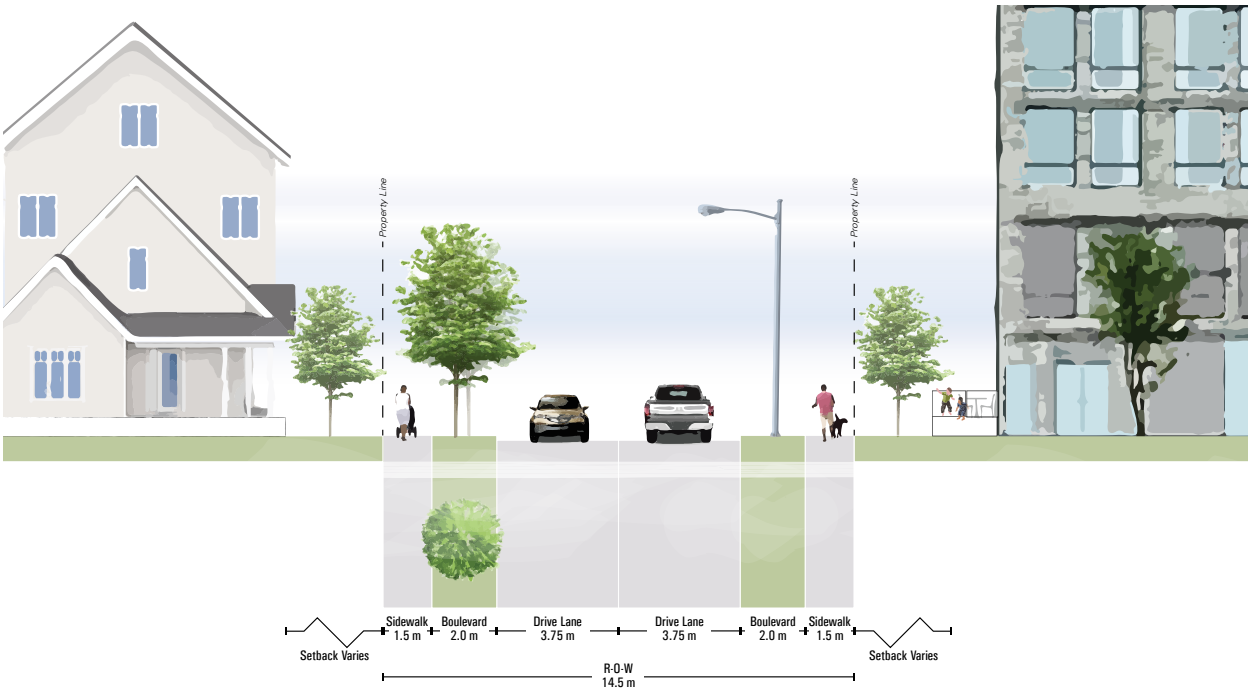


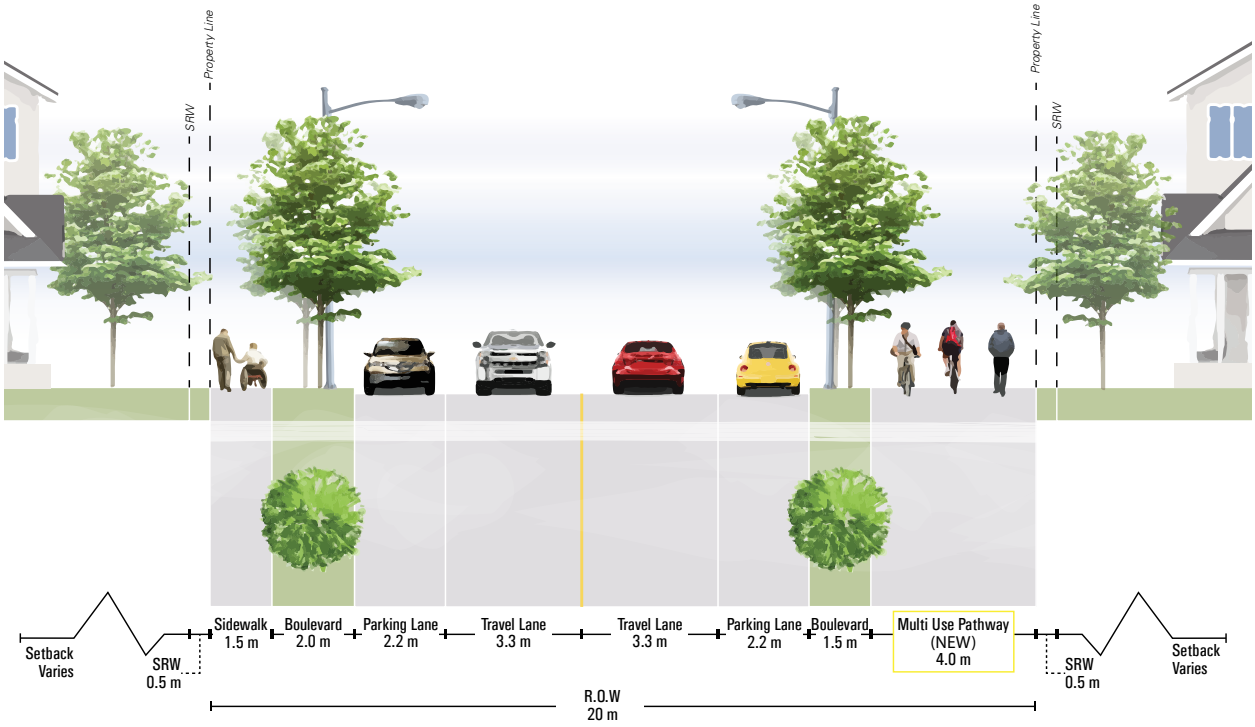
FIGURE 5.3.3C 61A AVENUE FLEX ROAD (136 STREET TO KING GEORGE BOULEVARD)



62 Avenue and 66A Avenue

These existing local roads provide a unique opportunity to improve the cycling connections within the Plan Area. As a result, a multi-use pathway is proposed on the north sides of 62 Avenue and 66A Avenue. This will help complete missing pedestrian infrastructure and provide cycling connectivity.

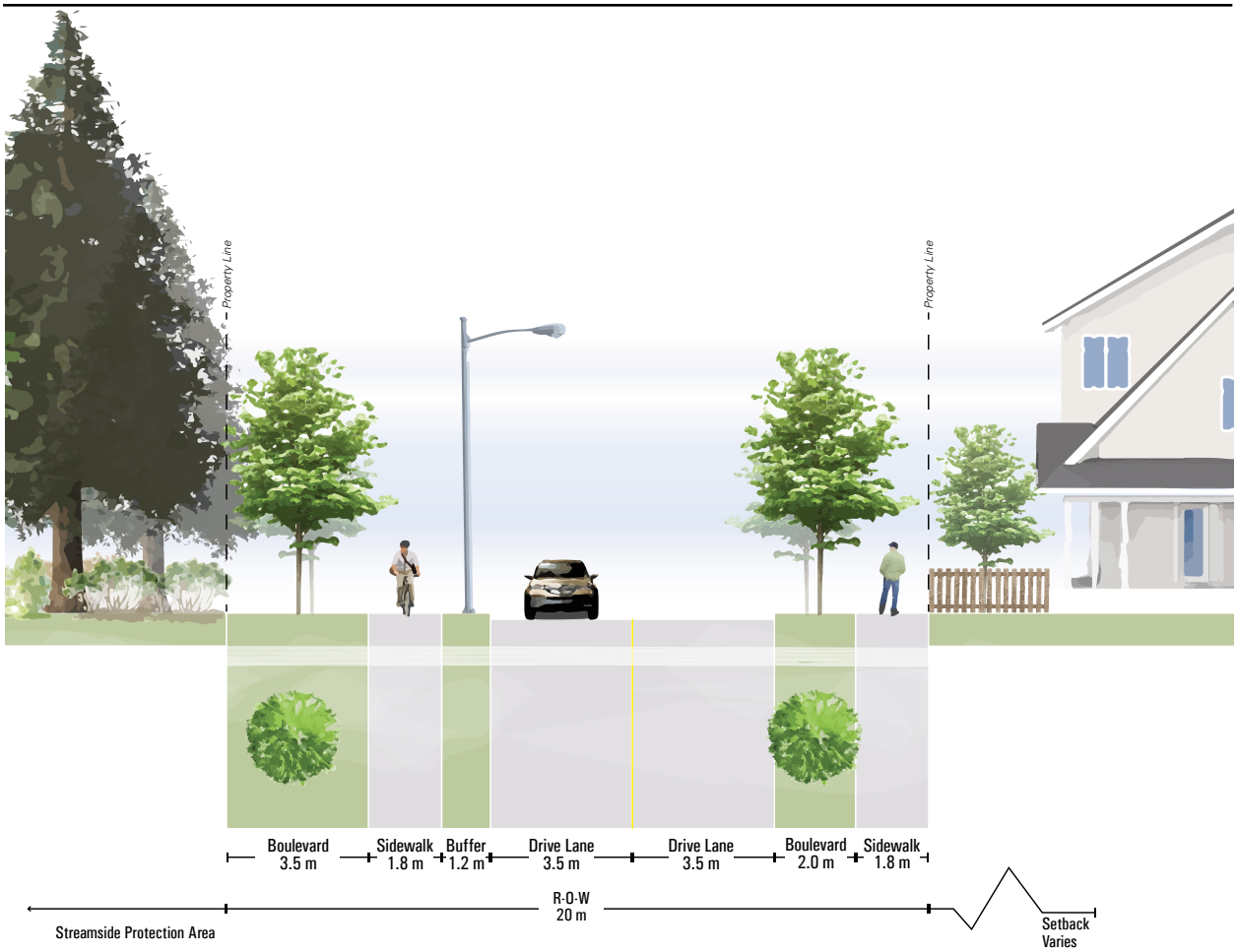
FIGURE 5.3.3D LOCAL ROAD WITH MULTI-USE PATH (62 AVENUE & 66A AVENUE)



138 Street

138 Street is currently an unopened local road between 65 Avenue and 65A Avenue with a small pedestrian bridge. Connecting the road as a complete street is critical for the Plan Area both as a function of connectivity, access and circulation but to help reduce pressure on the intersection of 64 Avenue and King George Boulevard. With this local road connection residents in the area will not be forced to use that intersection and instead will have more routing options to connect to the road network. To discourage any non-local trips from using the corridor it is anticipated that traffic calming measures will be employed as warranted. The opening of the road will be triggered based on operational pressures at 64 Avenue and King George Boulevard or nearby adjacent redevelopment. The local road will require a fisheries crossing of Henry Bose Creek and will have a unique section as shown below.

FIGURE 5.3.3E 138 STREET FRONTING RIPARIAN AREA



5.3.4 LANES

Access management will ensure the appropriate locating, spacing and designing of the driveways, median openings and road intersections for access to/ from roads and development sites. Lane access is of critical importance to commercial/mixed-use sites and sites fronting King George Boulevard and other arterial roads.

The objectives of access management are to:

- Ensure roadway safety for all road users;
- Provide for efficient transportation operations for all modes;
- Allow for reasonable access to adjacent land-uses;
- Avoid direct access to arterial, collector, and local roads for the town centre plan is also consistent with prioritizing Vision Zero and the safe systems approach to road design for all users.

LEGEND

- - - Figure 5.3.4

FIGURE 5.3.4 TYPICAL LANE

5.3.5 PEDESTRIAN CONNECTIONS

Pedestrian connections are intended to provide efficient travel routes for pedestrians and cyclists. They provide desirable pedestrian routes where full vehicular access or permeability is not necessary and complement the walking and cycling network by providing key mid-block connectivity. Pedestrian connections are to be provided by development within dedicated road allowances.

Pedestrian streets feature paved multi-use pathways and will be shared by cyclists, pedestrians and other non-motorized users. Lighting and treed boulevards are incorporated to maximize safety and comfort. Unique features may include visual markers to designate entrances and street furniture. Direct access to ground oriented residential or commercial storefronts will be encouraged to activate pedestrian streets. Additional pavement width may be required if needed for fire protection.

FIGURE 5.3.5 TYPICAL PEDESTRIAN CONNECTION

5.4 Transit

Transit maximizes mobility. It reduces greenhouse gas emissions, increases mobility equity, and facilitates more efficient use of road space for people and goods movement. An efficient transit network also encourages increased walking and cycling to complete trips.

RapidBus currently operates on King George Boulevard from Surrey Central Station to Newton Exchange. An extension of this RapidBus service is planned as part of TransLink's Transport 2050 10 Year Priorities. The proposed RapidBus extension will connect the Plan Area with Newton Town Centre and City Centre to the north, and Semiahmoo Town Centre and White Rock to the south. This makes the Plan Area an important corridor linking major employment and residential areas.

With plans for expansion of public transit services to the area, transit-oriented development is critical to the intent of the plan. The Plan's land uses and densities are transit-supportive, meaning growth will result in increased transit ridership. Over time this justifies continued investment in improved transit service levels and introduction of rapid transit in the long term.

Existing Transit Service

The Newton-King George Boulevard Plan neighbourhood is served primarily by transit services on King George Boulevard and 64 Avenue. King George Boulevard is on TransLink's Frequent Transit Network, with service being provided by the 321 Surrey Central Station/White Rock bus route and the 394 White Rock/King George Station Express. 64 Avenue is served by the 364 Scottsdale/Langley Centre.

RapidBus Expansion

As part of TransLink's Mayor's Council "Transport 2050: 10-Year Priorities," the R1 – King George RapidBus is planned to be extended from Newton Exchange to the Semiahmoo Town Centre through the Plan Area. RapidBus service is expected in the short-term and will include increased service levels (especially during peak periods), upgraded stops with real-time passenger information, and transit priority measures to improve speed and reliability. This, along with expansion of Frequent Transit Network service on King George Boulevard, will lay the foundation for future rapid transit included as part of TransLink's Transport 2050. RapidBus service will require transit priority along the RapidBus alignment (bus lanes, queue jumps, in-lane stops, etc.), likely facilitated by the reallocation of space from travel or parking lanes.

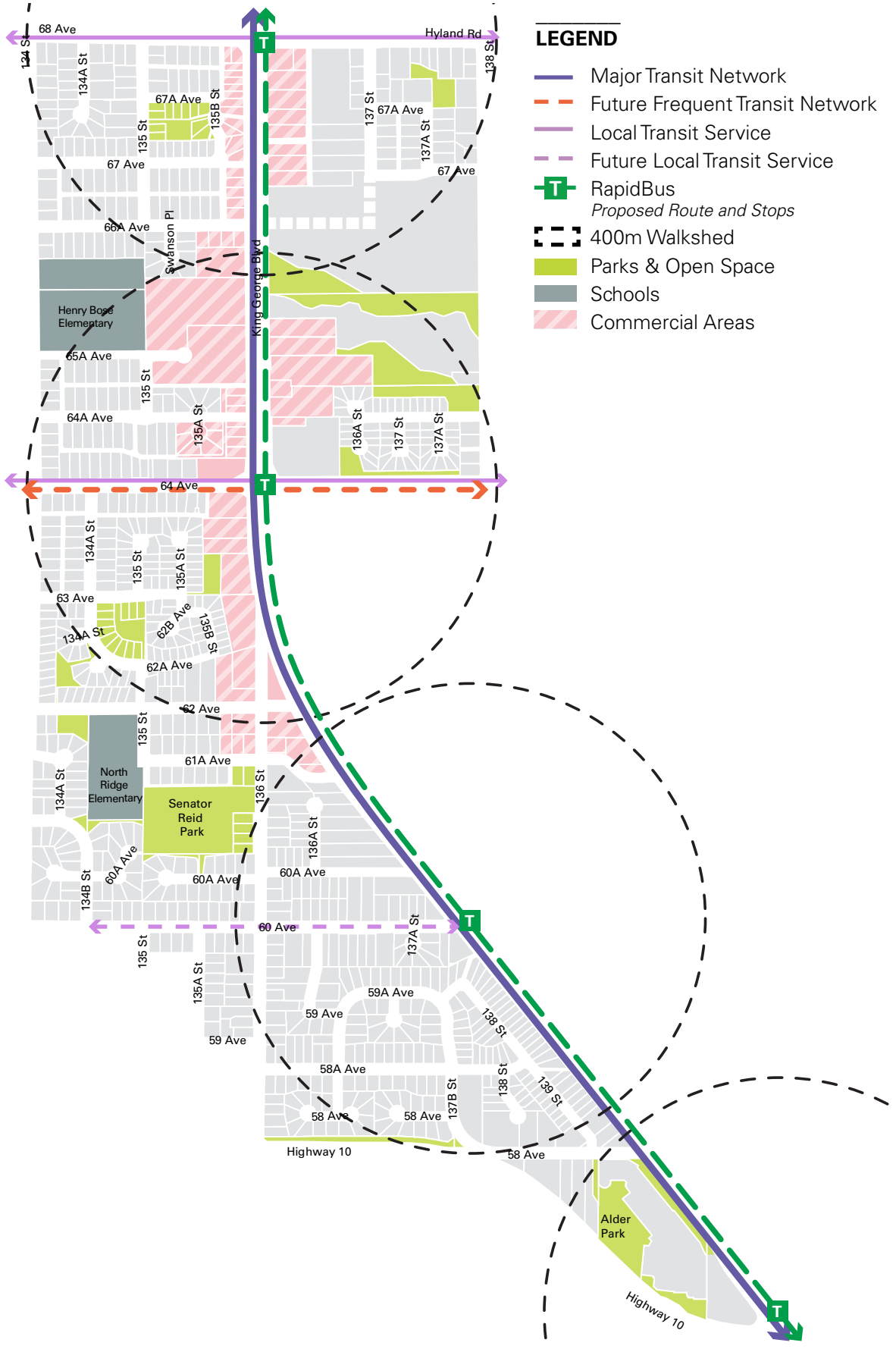
Long Term Rapid Transit

As part of TransLink's Regional Transportation Strategy–Transport 2050, Rapid Transit, as part of the Major Transit Network, has been identified on King George Boulevard. This would be a future upgrade from RapidBus to Rapid Transit as part of the Transport 2050 Reliable and Fast Transit Network (RAFT).

The recommended principles for Rapid Transit in Surrey include defining rapid transit services as operating in an exclusive right-of-way where Rapid Transit is divided by physical barriers at-grade or separated through vertical separation above or below ground. The technology, timing, and implementation of Rapid Transit along King George Boulevard is still to be determined. Transport 2050 plans for King George Boulevard to have Bus Rapid Transit, at a minimum. To provide and accommodate for multiple rapid transit technologies on King George Boulevard, a 40m road cross section is planned as outlined in **Figure 4.3.1B**.

Potential stations in the Plan Area align with proposed RapidBus stops at 68 Avenue, 64 Avenue, 60 Avenue, and Highway 10. The exact location and format of each station is flexible and will be determined as part of future development of the Rapid Transit project.

FIGURE 5.4 TRANSIT STRATEGY



5.5 Active Transportation

Existing Network

Active transportation infrastructure within the Plan Area is currently limited. Much of the existing infrastructure was built to outdated standards. These standards present challenges for pedestrians, for example, gaps in sidewalk continuity and narrow pathways that do not allow for people using mobility aids to pass each other within limited sidewalk width or existing local roads without sidewalks. The limited amount of existing cycling infrastructure fails to provide a safe and intuitive cycling network for people of all ages and abilities.

Planned Network

Improving active transportation options and comfort and safety for vulnerable road users is a key action as part of the Surrey Transportation Plan and a safe systems principle of Vision Zero Surrey. It is a value that is shared by existing community residents, who cite a need for improvements.

The Plan supports increased walking/cycling and improved safety by:

- Improving local road network connectivity with new connections provided by development;
- Utilizing a 'Complete Streets' approach to road design with all roads having sidewalks and prioritizing vulnerable road users;
- Providing a continuous and connected network of protected cycling infrastructure;
- Protecting cycling infrastructure including protected cycling intersections;
- Increasing block permeability with pedestrian-only connections through development sites;
- Enhancing multi-use pathways and/or protected cycling facilities to provide comfortable connections for multi-modal trips through parks and green spaces;
- Requiring high-quality interfaces with development that include wider sidewalks, enhanced street furniture and lighting, street trees, and boulevard landscaping; and,
- Including accessible design features.

New infrastructure will be delivered through development and City capital projects.

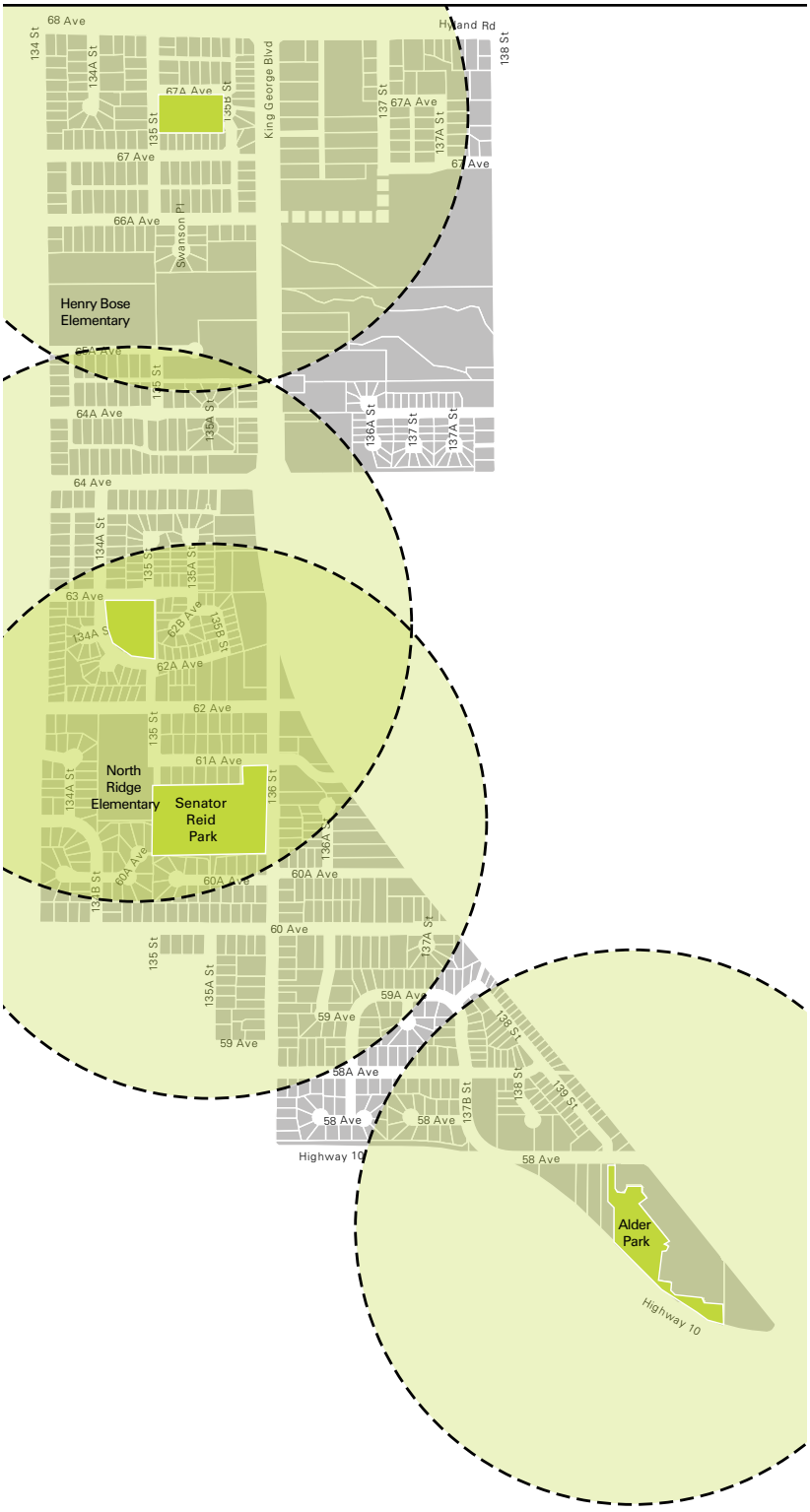
FIGURE 5.5 ACTIVE TRANSPORTATION STRATEGY

5.5.1 WALKING

Consistent with Surrey Transportation Plan the intent for the Plan Area is to ensure all residents are within a 10-15 minute walk of daily needs, including transit service. The majority of residents within Plan Area will be within a 400m walk of transit stations. Residents and the majority of employment will also be within a 500m (5 minute) walk of Parks and Open Space. Roads and off-street pathways within the Plan Area will provide safe and comfortable space for pedestrians through the following features:

- All roads include concrete sidewalks or asphalt multi-use pathways.
- Sidewalks and multi-use pathways are separated from vehicle traffic by treed boulevards.
- Pedestrian street lighting along identified multi-use pathways.
- Off-street multi-use pathways of sufficient dedication (min. 8.0m) to maintain sight lines, accommodate street lighting, and comply with Crime Prevention Through Environmental Design (CPTED) principles.
- Off-street pathways provide key connections through parks and across natural barriers.
- Encouraging lane access to minimize the number of driveway crossings.
- Applying curb bulges where appropriate at intersections to narrow pedestrian crossing distances.

FIGURE 5.5.1 500M WALKSHED FROM PARKS



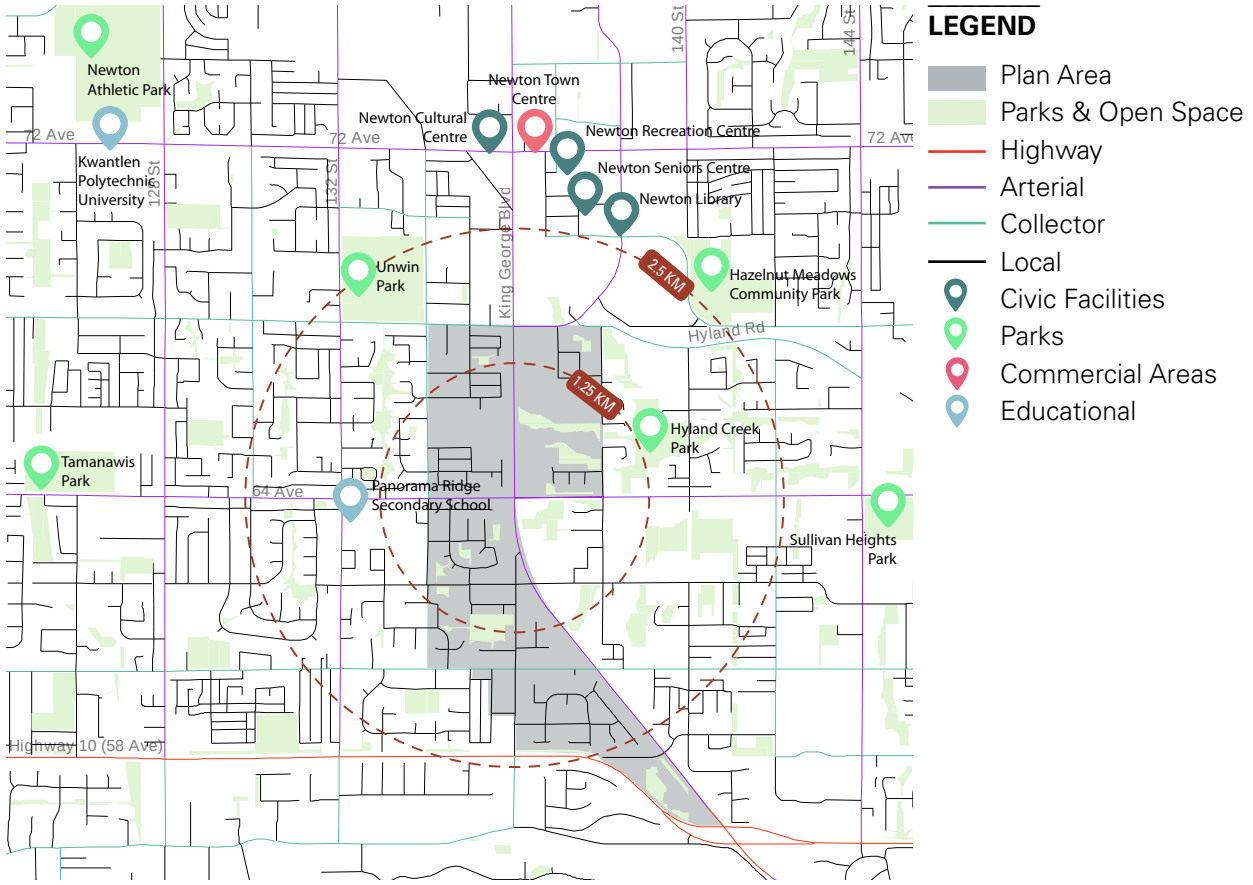
5.5.2 CYCLING

The Plan includes a network of multi-use pathways and separated cycle tracks. This infrastructure will play a significant role in providing connectivity to the broader regional cycling network.

The Surrey Transportation Plan principles include increasing the amount of safer cycling infrastructure to provide for more choice. The City has adopted this as a Vision Zero Safe Systems approach for road design. This approach identifies that separation for cyclists from vehicles reduces the severity of collisions for vulnerable road users such as cyclists. This is consistent with the Complete Streets design principles to provide physically separated cycling facilities. As a result, all collector roads and arterial roads are planned to accommodate protected facilities. Local street bikeways are envisioned to provide a safe attractive cycling corridor parallel to corridors where protected cycling cannot be accommodated.

The protected cycling facilities network will allow for all areas within the plan to be within a 10 minute, 2.5 km bike ride. The cycling network extends beyond the Plan Area connecting with the broader community. These facilities also accommodate new and innovative micro-mobility technology solutions such as electric assist bike and e-scooters.

FIGURE 5.5.2 REGIONAL CYCLING DESTINATIONS



5.6 Parking

As the Plan Area evolves, there will be a change in travel demand. Transit service will become more attractive and efficient, more people will take active modes and demand and competition for curb space between various uses will increase. With new development and additional commercial and retail spaces, parking demand will increasingly become a challenge. The City's parking management strategies are envisioned to be complementary to transit, cycling, ride-hailing, taxis, and car share services. They will work to achieve transportation, urban design, affordability, and environmental objectives including choice and equity of access.

Parking Requirements and Regulations

- Upon long-term confirmation and implementation of rapid transit, explore opportunities to right-size off-street vehicle parking requirements, as a Parking Reduction Area with supportive land uses and near rapid transit stops. This will need to be balanced with mitigation measures such as parking cash in-lieu, the provision of transportation alternatives, and an increase in multi-modal parking provisions. Parking reductions are not permitted in non-Rapid Transit areas.
- Underground all off-street parking within multi-family and higher density development.
- Allow shared use of public parking in partnership with private uses.
- Design surface lots and garage entrances to minimize their urban design impact.
- Develop sustainable design guidelines for parking facilities including surface lots.

On-Street Parking

Public streets are assets and as the Plan Area redevelops, road space for on-street parking will need to be allocated carefully. The following actions serve as the building blocks to efficiently maximize the management and use of on-street parking:

- Examine time restrictions and/or price parking to maintain optimal utilization and balance between residential, commercial, and potential transit uses.
- Ensure a mix and variety of on-street supply to support short stay, loading, and peak and off-peak uses. Regulate on-street parking spaces to favor higher priority uses and encourage turnover.
- Explore opportunities to support dedicated on-street car share parking.

Off-Street Parking

The nature of off-street parking will change as land values increase and development puts more emphasis on the efficient use of land. This will reduce the amount of surface vehicle parking and increase the amount of underground vehicle parking. Additionally, increases in person size vehicles, such as bikes, electric assist bikes, and scooters will increase the need to allocate storage for these vehicles. The following actions serve as the building blocks for off-street parking management in the Plan Area.

Car Share/Ride Share

- Encourage provision of priority parking for designated carpools, car sharing, and potentially autonomous vehicles.
- Provide access to on-street and off-street car share parking.
- Explore opportunities to support the expansion of car share operations in the Plan Area.
- Explore opportunities for development led provision of car sharing spaces.

Above: Intersection of Highway 10 and King George Highway. July 1959. Stan McKinnon Collection,

5.7 Traffic Control & Vision Zero

Vision Zero

Vision Zero Surrey is a collaborative data driven approach to road safety that aims to have zero fatalities or serious injuries on roads by valuing human life above all else in the transportation network. To create better streets for everyone, a Safe Systems Approach is used for road design that includes applying best practices in speed management, prioritizing safety improvements at intersections, and focusing efforts on protecting vulnerable road users such as pedestrians, cyclists and motorcyclists.

Based on safety analysis and site characteristics, some of the engineering measures that are implemented and that would be anticipated in the Plan Area include:

- Fully protected left turn only phases;
- Cycle tracks and protected cycling intersections;
- Leading pedestrian intervals (LPI) where pedestrians walk before traffic gets a green light;
- Removal of or redesigned right turn channelization lanes;
- Curb extensions at local road intersections;
- Speed humps, raised crosswalks and other speed management devices;
- Improved street lighting; and
- Enhanced crosswalks.

FIGURE 5.7 INTERSECTION CONTROL

Access Restrictions

Left turning movements will be restricted where traffic controls are not anticipated and consistent with the City's Design Criteria requirements for access management. These include highway-local, highway-collector, and arterial-local intersections. Right turns into and out of the local road will be permitted to improve safety and efficiency of these intersections.

Traffic Signals

Traffic signals exist at all arterial-arterial and arterial-collector intersections. Typically, traffic signals are installed on an engineering warrant basis which includes a criteria of traffic volumes, pedestrian demand, and safety assessments. Proactive planning for traffic signals will occur where road classifications warrant a higher order of intersection control. In these cases, safe access and circulation will be promoted and crossing opportunities for vulnerable road users will be provided. Additional traffic signals are anticipated to service and support the additional land uses for safe access, circulation, higher traffic volumes and increased activity. These are located at:

- 68 Avenue and 137 Street
- 66A Avenue and King George Boulevard
- 138 Street and 64 Avenue
- 62 Avenue and 136 Street

This will decrease the spacing of signals to approximately every 400 metres on these arterials which is considered to be reasonable and a function of the tighter grid road network, higher traffic volumes and the increased active transportation demand to cross busier roads. The City's Traffic Management Centre (TMC) and use of Intelligent Transportation Systems will ensure safe and efficient operations on the corridor to maintain the highest people movement capacity along the arterial roads.

Roundabouts

Roundabouts are a preferred alternative to warranted traffic signals as they are effective at reducing the number and severity of intersection collision points and are also generally more efficient. They help to lower travel speeds as well and require less operational maintenance then signals. New roundabouts will be installed as capital projects when the intersection control is warranted. They are all planned on collector roads at the following locations:

- 68 Avenue and 134 Street
- 68 Avenue and 135 Street
- 66A Avenue and 134 Street
- 62 Avenue and 134 Street
- 70 Avenue and 134 Street

5.8 Electric Vehicle Charging

To encourage the use of electric vehicles ("EV") within the Plan Area and support the City's Electric Vehicle Strategy objective of operating the largest public EV charging network in the province, on-street electric vehicle ("EV") charging infrastructure will be required by mixed-use developments in locations where on-street parking is permitted and fronting the development site. The City will designate these spaces as "EV only" and install Level 2 (240V) charging stations and anticipate that the proportions of on-street EV parking will be up to 20% of the available on-street stalls depending on the context of the location. The City also requires new development to install private EV charging infrastructure. Refer to **Section 9.1.5** for additional details

5.9 Transportation Projects

Growth and redevelopment in the Plan Area will result in increased demand on the transportation system. Many of these new trips will be by active modes (transit, cycling and walking). As such, no new road widening is required in the Plan Area. Improvements to intersections, sidewalks, and the addition of protected cycling facilities on key corridors will accommodate population growth and increased trips.

Transportation projects are show in **Figure 5.9**.These improvements will be funded through a combination of general revenue to account for the benefit to existing residents in the Plan Area and Development Cost Charges ("DCCs") to accommodate planned future growth.

FIGURE 5.9 TRANSPORTATION PROJECTS

"Lots of greenery and natural rivers and forests and public parks."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

6 Parks & Open Space

Keeping It Green

Parks in Surrey are planned and designed through the lens of various plans, strategies, and policies. These include the Parks, Recreation and Culture Strategic Plan, the Biodiversity Conservation Strategy (BCS), and the Parks Design and Biodiversity Design Guidelines, along with various sub-plans and strategies including dog off-leash areas, playgrounds, natural areas, and greenways.

6.1 Parks & Open Space Strategy

Public spaces and access to nature provide the backdrop to everyday social life. They are essential to the wellbeing and health of residents. They help meet the daily recreation and social needs of residents while fostering neighbourhood walkability. Throughout the public engagement phases, Plan Area residents consistently cited the need for more natural area parks, pathways, and green space.

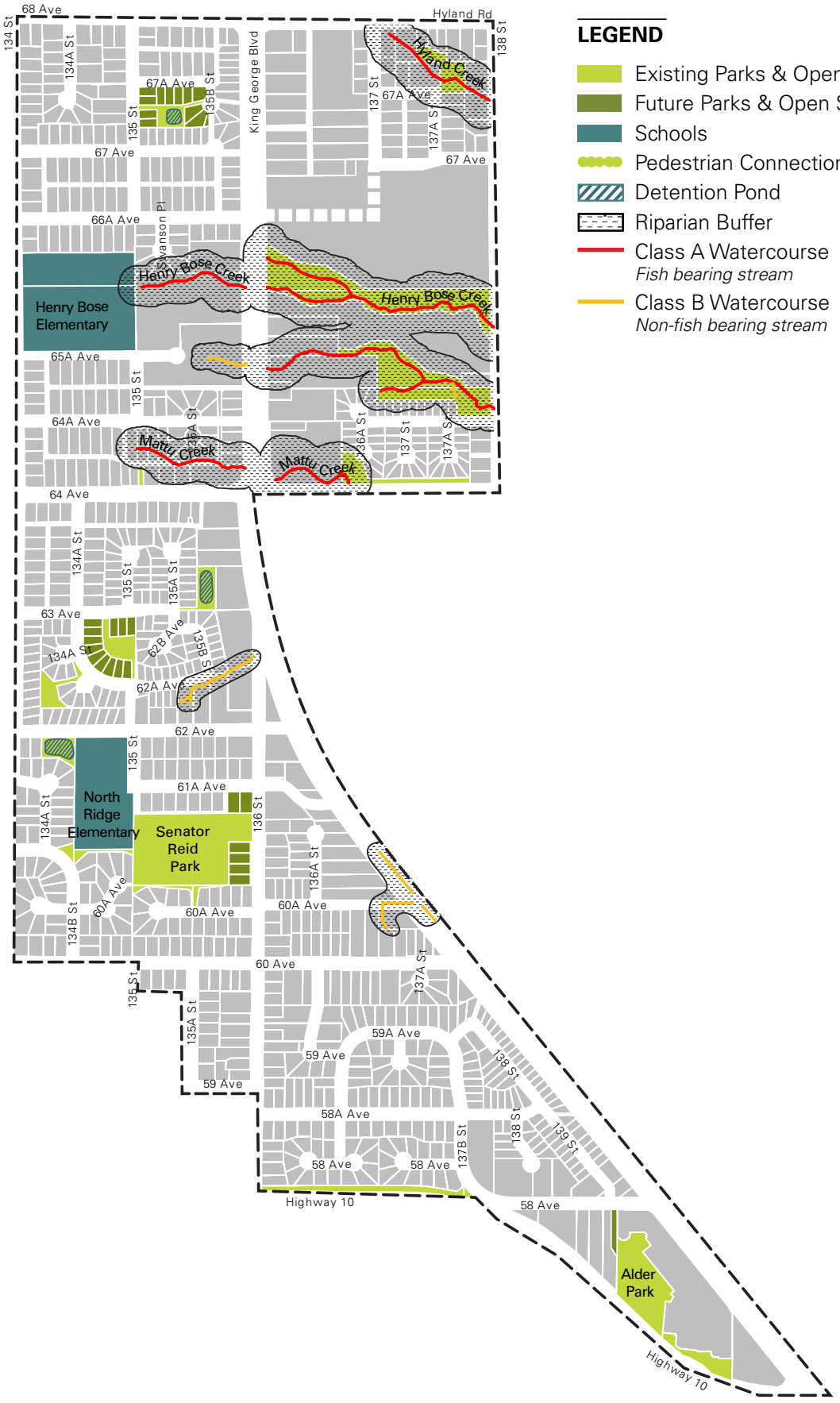
The Plan's open space strategy provides a connected network of public parks, natural environment, protected riparian areas, and pathways. These areas are complemented by private open space such as plazas, landscaped setbacks, and school playfields. Together they support a range of amenities, access to nature, healthy ecosystems, and climate resiliency.

Locations of neighbourhood parks are selected to provide residents access to a park within a 10-minute walk (500m). This ensures everyone has access to public open space for relaxation, play, and exercise in their day-to-day lives.

The Plan designates expansions to four existing parks. Park expansions strategically increase the utilization and function of exiting parks to allow for new active park amenities focused in areas where higher densities are proposed. Planned active parkland within the Plan Area totals approximately 6.0 hectares (14.9 acres).

The City will acquire parkland over time and will continue to work with the community to plan future amenities. While each park will be subject to its own public engagement and detailed design process, a general overview of the park network follows.

FIGURE 6.1 PARKS AND OPEN SPACE STRATEGY



6.1.1 PARK SITES

Park A – Expansion of Active Parkland at Unnamed Park at 67A Street

The expansion of an existing unnamed park located between 135 Street, 135B Street, 67 Avenue and 67A Avenue will require the acquisition of 12 properties. The resulting park will be 0.8 hectares (2 acres). The expanded park will have an improved public frontage and visible street interface. The additional area will allow for new amenities.

Heritage Woods Park – Expansion of Active Parkland

Expansion of Heritage Woods Park will require the acquisition of 12 properties. The resulting park will be 0.8 hectares (2 acres). The expanded park will have an improved public frontage and visible street interface. The additional area will allow for new amenities.

Senator Reid Park – Expansion of Active Parkland

Expansion of Senator Reid Park will require the acquisition of 6 properties. This will provide a prominent street presence with frontages along 61A Avenue and 136 Street, better connecting Senator Reid Park to the neighbourhood commercial node at 62 Avenue. Senator Reid Park currently contains natural areas, trails and a soccer field. The expansion will allow for new amenities. The resulting park will be 3 hectares (7.4 acres).

Alder Park – Entrance Improvements

Alder Park will be expanded to add a formal entrance to the west of the existing parkland. A minimum 10 metre wide corridor will connect the park to 58 Avenue. See **Figure 6.2.2 Alder Park Entrance Way**. Development and dedication of this parkland will be coordinated through redevelopment of the adjacent townhouse development site.

FIGURE 6.1.1: PARK SITES

6.2 Park Design Guidelines

Well-designed parks contribute to the health and wellbeing of the neighbourhood's residents. They are especially needed in urban areas where residents may not have significant private outdoor space. In addition to the benefits for humans, parks work to protect sensitive ecosystems, enhance tree canopy, provide animal habitat, and ecological connectivity.

6.2.1 CITY DEVELOPMENT OF PARKLAND

Development of parkland is guided by the following principles:

a. Provide long interfaces along streets and welcoming gateways to clearly delineate accessible public space and encourage use.

b. Create square or rectangular shaped parks where possible for efficient use of space and ease of maintenance.

c. Preserve and enhance existing natural features such as trees, watercourses, and views when selecting and constructing amenities in parkland.

d. Promote safety and deter crime by creating clear sightlines to and from public streets and minimizing blind spots within the park.

e. Engage with the community throughout the park design process to determine appropriate amenities and park features.

f. Use the City's Biodiversity Design Guidelines for developing planting plans and maintaining natural areas in parks and open spaces.

g. Work towards reconciliation with local First Nations through engagement in the planning and design of parks.

h. Increase the visibility of traditional Coast Salish place names through the naming of public spaces (parks, plazas, etc.).

6.2.2 ADJACENT PRIVATE DEVELOPMENT

Development adjacent to parkland should positively contribute to park design and function by complying with the following guidelines:

a. Multi-family development adjacent to parks should orient the front of units towards parkland and will provide a sidewalk within the private property onto which all ground-level units will front. Any fencing to delineate private property from parkland will be a maximum of 1.2 metres tall, visually permeable and located on the private side of the shared property line.

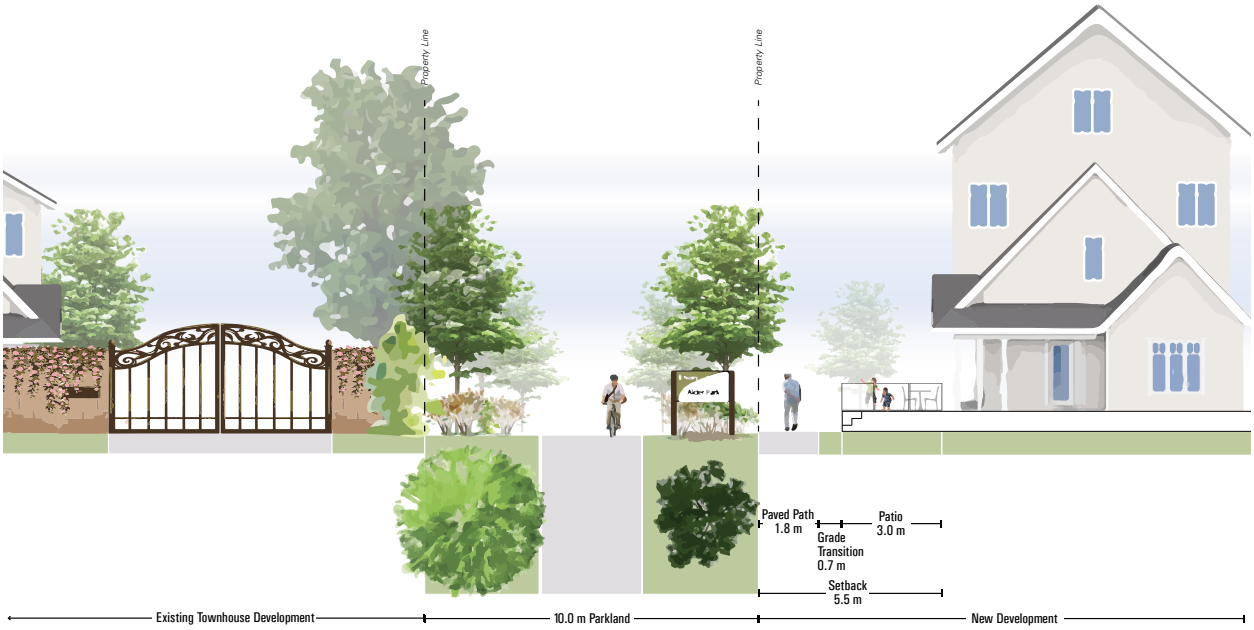
b. Design development to meet the existing natural grade of a park or plaza wherever possible. If retaining walls are required adjacent to a park or plaza, they must be entirely on private property, including any underpinning, and with all necessary setbacks required for maintenance from private property. Retaining walls are to be appropriately designed, treated, and screened to minimize their visual impact along park interfaces.

c. If rights-of-way for servicing or any other access (temporary or permanent) is required through parkland, compensation for the rights-of-way and restoration of parkland is required to Parks standard.

d. Any development adjacent to an existing or future park must submit an arborist report that includes all trees within the first 10 metres of parkland. Tree surveys and inventories may be requested further into parkland should there be significant trees that may be impacted by development. Removal of any tree of any size on parkland requires advanced written approval from the Parks Department.

e. Provide continuity and connectivity benefits and reduce disturbance to wildlife and ecological processes through landscaping, planting, and lighting/noise reduction approaches, as established in the City's Biodiversity Design Guidelines.

FIGURE 6.2.2 ALDER PARK ENTRANCE WAY



6.3 Riparian Areas

Watercourses (including wetlands, ditches, channelized streams, and natural streams) are regulated by Provincial and Federal statutes and protected under the City's Zoning Bylaw Part 7A – Streamside Protection. The Bylaw protects fisheries and biodiversity values and protects the public interest by managing flood hazards, particularly as climate change progresses and adds uncertainty to existing flood and drought conditions. As a result of the Bylaw, these riparian areas will require a prescribed setback between the watercourse and proposed development. This setback is to be protected and naturalized with native vegetation, which will aid in bank stabilization to reduce erosion and flood potential and provide habitat for fish and other wildlife. Full compliance with the Bylaw will more effectively maintain biodiversity and support wildlife populations within riparian areas.

There are several named and unnamed watercourses within and immediately downstream of the Plan Area, the most significant of which being Hyland Creek, Henry Bose Creek, Mattu Creek, Market Creek, Reedville Creek and Archibald Creek. These Class A watercourses are inhabited or potentially inhabited by fish including salmon year-round. Other riparian areas, including ditches, may provide food and nutrients to downstream fish habitat (Class B streams).

All Class A, AO, and B watercourses are critically important for fish species throughout their life cycle. Confirmation of classifications and extents of watercourses need to be completed by a Qualified Environmental Professional (QEP). The Part 7A - Streamside Protection in the Zoning Bylaw and the Sensitive Ecosystem Development Permit Area (shown in Figure 6.3 Riparian Areas) will guide development in affected areas.

FIGURE 6.3 SENSITIVE ECOSYSTEM DEVELOPMENT PERMIT AREA

"A more physically, socially and economically integrated neighborhood..."

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

7 Community Amenities

Building Community

Community facilities, services, and events provide amenities and programming that encourage active lifestyles, learning, opportunities for cultural and social interaction, and services to promote health, well-being, and community.

Community and cultural facilities and services in Surrey are planned and designed through the lens of various plans, strategies, and policies. These include the Parks, Recreation, and Culture Strategic Plan, along with various sub-plans and strategies. Schools are managed by the Surrey School District.

7.1 CIVIC FACILITIES & SERVICES
7.2 SCHOOLS
7.3 PUBLIC ART

7.1 Civic Facilities & Services

Civic facilities and services are essential components of the overall health and wellness of all residents. They provide year-round amenities and programming that encourage active lifestyles, learning, opportunities for social interaction, and the capacity to provide dynamic programming that supports all ages and abilities. Civic facilities and services welcome the entire community, and strive to serve vulnerable individuals, families, and children through fostering a sense of belonging and connection.

Civic Facilities are generally located within higher density, commercial Town Centre areas. Town Centres serve as the cultural and recreation centre for their surrounding neighbourhoods. The Plan Area is serviced by a range of amenities and facilities located nearby, within Newton Town Centre.

Approximately one-fifth of Newton Town Centre is City-owned property. This provides a variety of existing community, recreational, and cultural assets, and provides opportunity for more. Existing facilities include a recreation centre, wave pool, ice arena, seniors centre, library, and cultural centre.

7.1.1 COMMUNITY FACILITIES

The City has plans to build a new community centre in Newton at 6965 King George Boulevard. This new state-of-the-art community hub will be achieved through a multi-phase development with the potential to provide aquatic, cultural, library and recreation services to meet the demand of the fast-growing Newton community

The Newton Community Centre planning is underway with the facility anticipated to open in 2024.

7.1.2 CULTURAL FACILITIES

Newton Cultural Centre serves the greater Newton community as the headquarters for the Arts Council of Surrey. This former fire hall now holds a theatre, exhibition gallery, and meeting rooms.

It is anticipated that the Newton Community Centre will include dedicated cultural space for a variety of programs and services.

7.1.3 RECREATION FACILITIES

Community and recreation facilities and services act as community hubs that bring people together, supporting community capacity, volunteerism, and a sense of place. They will be transformational health and social service centres that, in collaboration with community partners, will make a positive impact on social issues facing the community.

Several facilities exist within Newton Town Centre, including:

- Newton Recreation Centre
- Newton Wave Pool
- Newton Seniors Centre
- Newton Ice Arena

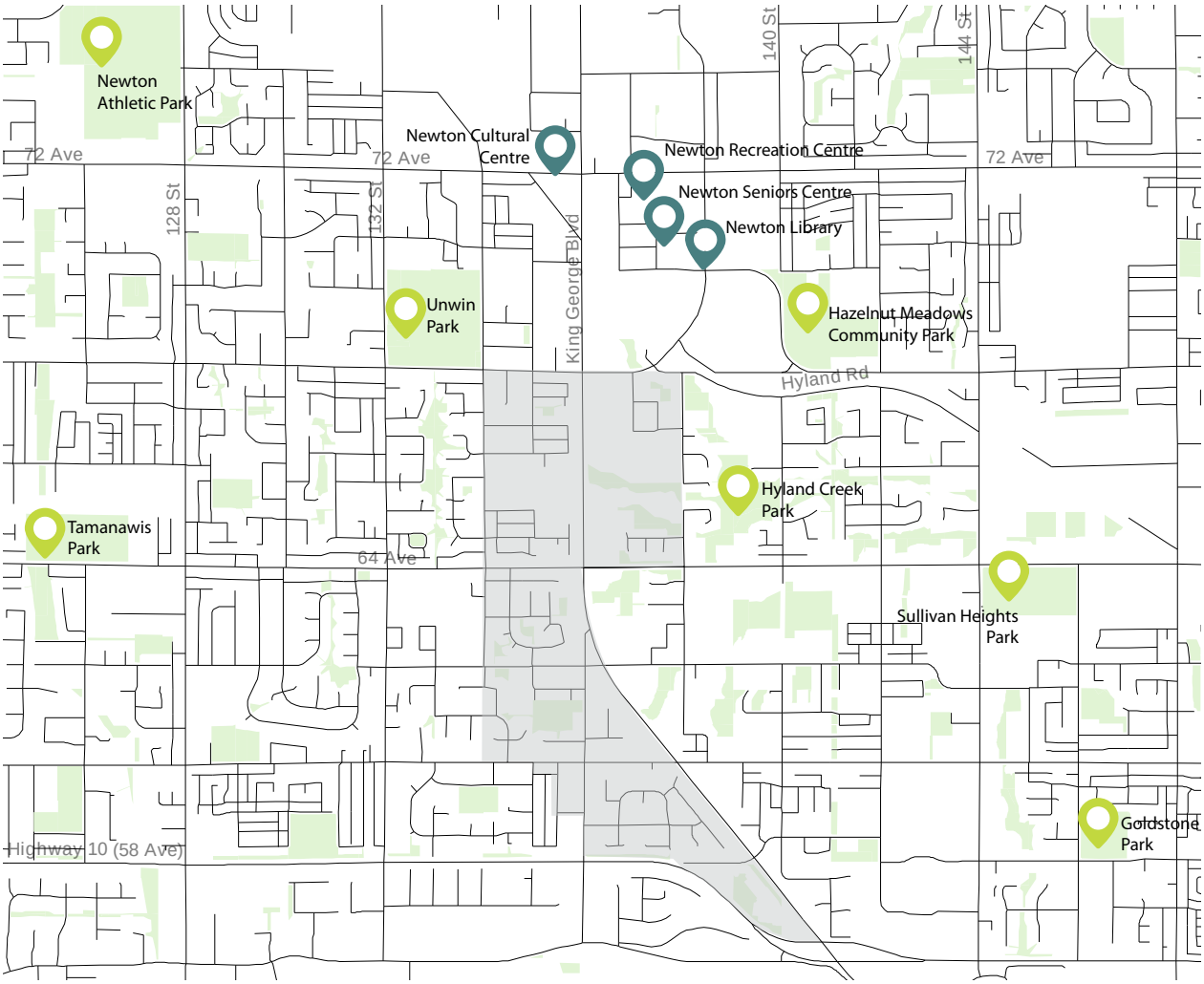
In the long term, some of these facilities may be replaced and relocated within the new Newton Community Centre.

7.1.4 LIBRARY FACILITIES

Newton is served by two branches: Newton and Strawberry Hill, which are both stand-alone branches. Although Newton is a stand-alone facility, it is located near an ice rink, recreation centre, seniors centre, and public park. Strawberry Hill is the only leased branch in the library system, part of a mall complex, and facing a lease renewal in 2025. This branch has a large Indian languages collection and has one of the highest visits per capita in the library system.

A new integrated branch as part of the Newton Community Centre is in planning stages and presents opportunities to improve and expand library service. Despite being Surrey's largest community, at an estimated 156,720 people in 2021, Newton has the second lowest amount of library space for its residents, with a sqft/capita ratio of just 0.17, which is half of the city's average. However, overall Newton receives the highest number of annual visits and the second highest concentration of visitors per sq ft out of all of Surrey's communities, meaning that the space it does have is used heavily by its residents. Following a period of rapid growth, there are new and long-time residents with diverse needs, making Newton in need of significant new public library space and resources in the city

FIGURE 7.1 CIVIC FACILITIES



LEGEND

- Plan Area
- Civic Facilities
- Parks

7.2 Schools

The Plan anticipates new growth and modest redevelopment taking place gradually over several decades. This is expected to slowly increase student numbers and school enrollment. The Plan Area is centrally located in various school catchments at both the elementary and secondary levels. The School District has confirmed that the area currently has an adequate number of schools to meet projected demand in school population.

Elementary

The Plan Area is served by three elementary schools: Northridge, Henry Bose, and Hyland Elementary. Henry Bose and Hyland Elementary are currently operating under capacity at 64% and 87% utilization respectively.

Secondary

The Plan Area is served by two secondary schools: Panorama Ridge and Sullivan Heights Secondary. An expansion to Sullivan Heights Secondary is planned for the 2022-2023 school year.

FIGURE 7.2A ELEMENTARY SCHOOL CATCHMENTS

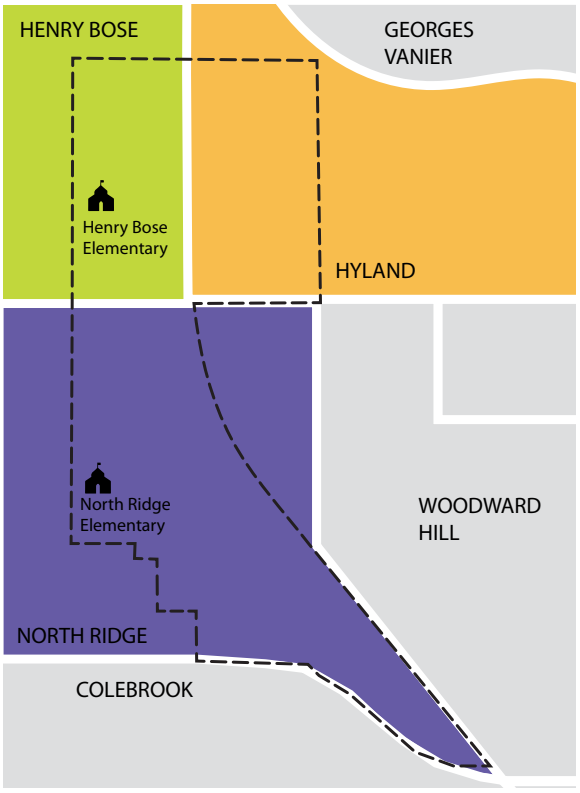
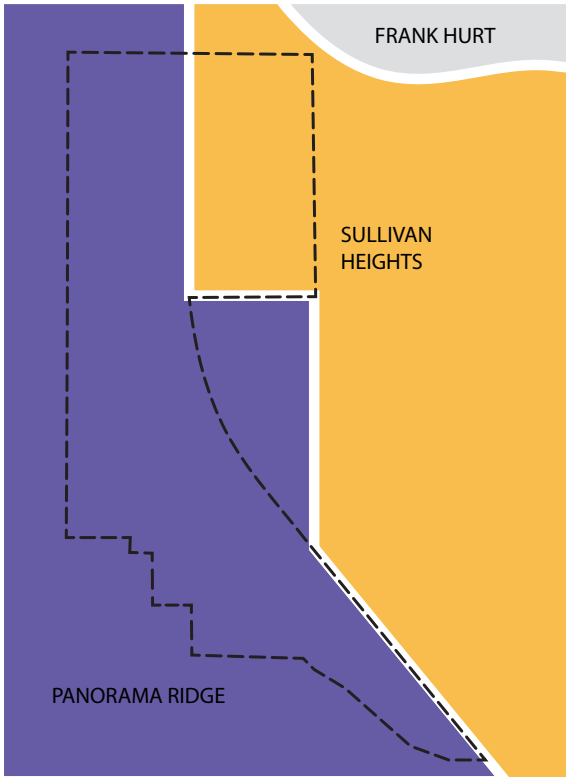


FIGURE 7.2B SECONDARY SCHOOL CATCHMENTS



7.3 Public Art

Public art installations animate the public realm and contribute to creating a memorable and unique landscape. They also engage residents in the interpretation and expression of what is important and significant to the community.

Public art features are envisioned to enhance the unique character within mixed use areas. Sites for future artworks are identified within the Surrey Public Art Master Plan and shown in **Figure 7.3: Public Art**. Plazas, outlined in **Section 4.5 Plaza**, may also provide opportunities for future public art installations.

New development is expected to contribute to public art through the City's Private Development Public Art Policy. See **Section 9.2 Community Amenity Contributions**.

FIGURE 7.3: PUBLIC ART

"A walkable, sustainable, green community"

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

8 Utilities and Servicing

The Building Blocks

An efficient and reliable infrastructure network is critical for a livable and thriving neighbourhood. Future land uses and expected growth in the plan area will require infrastructure expansion and servicing upgrades. This section outlines the utility servicing strategies that will support the Plan Area's redevelopment.

8.1 Drainage

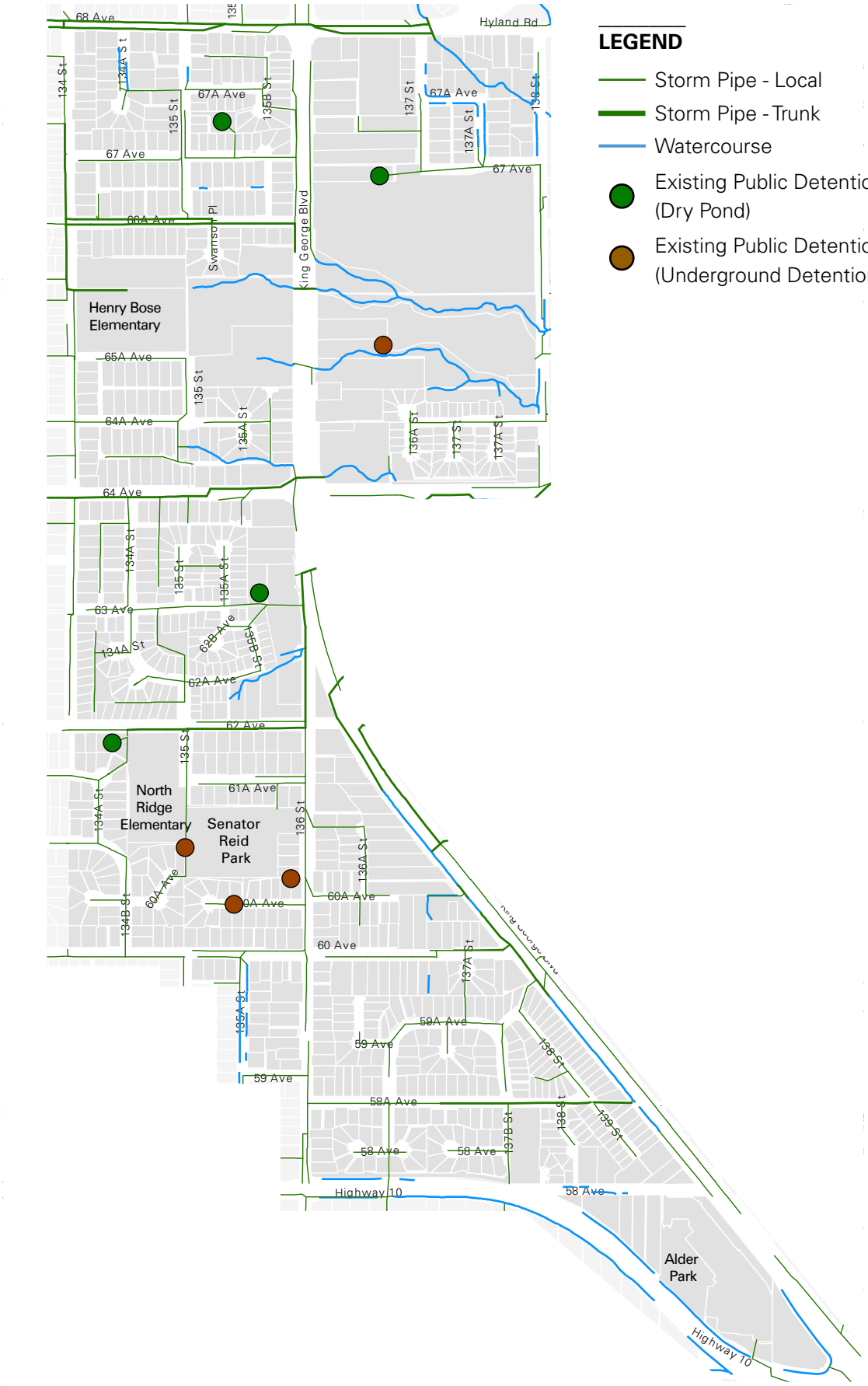
8.1.1 EXISTING DRAINAGE SYSTEM

The Plan Area is located within the Hyland Creek watershed. Stormwater generally flows from west to east through the Plan Area towards several Class A watercourses including Hyland Creek, Henry Bose Creek, Mattu Creek, Market Creek, Reedville Creek, and Archibald Creek. These watercourses converge into Hyland Creek which continues east and ultimately discharges to the Serpentine River, east of 156 Street.

Given that the Plan Area is already highly developed, there is a fully established network of drainage infrastructure present including local and trunk storm sewers, culverts and community detention facilities. The drainage system conveys stormwater runoff generated by the Plan Area as well as runoff from external areas.

The existing drainage network is shown on **Figure 8.1.1.**

FIGURE 8.1.1 EXISTING DRAINAGE SYSTEM



8.1.2 DRAINAGE UPGRADES

Redevelopment in the Plan Area will increase impervious surfaces; as a result, increased runoff rates and volumes are expected and will need to be managed to preserve the capacity of existing infrastructure and health of watercourses.

The City's Design Criteria Manual ("DCM") requires that the more stringent of the following criteria be met to protect watercourses from increased erosion:

1. Control the 5-year post-development flow rate to 50% of the 2-year post-development flow rate; or

2. Control the 5-year post-development flow rate to the 5-year pre-development flow rate.

For the Plan Area, criteria 1 is the most stringent. This criteria can be met for non-single detached land uses and public road corridors in the Plan Area using on-lot detention storage and low impact development ("LID") techniques. However, opportunities are limited to implement on-lot detention storage and LID techniques within the Low-Density Residential designation. As such, it will not be possible to meet criteria 1 across the entire Plan Area.

To address the anticipated increase in runoff volumes, all developments shall strive to capture and retain on-site (i.e., no net runoff) rainfall up to the 6-month 24-hour event as stated in the Hyland Creek Integrated Stormwater Management Plan ("ISMP"); this equates to 47mm for the Plan Area. In rare circumstances where the 47mm capture target cannot be met, a release rate of 0.25 L/s/ha is recommended in alignment with the Metro Vancouver Source Control Guidelines (2012).

On-Lot Controls

On-lot controls shall be applied as outlined in **Table 8.1.2A** below. Development shall demonstrate adherence to the stated release rates, which have been determined through analysis to ensure developments meet the criteria noted earlier for all storm durations assessed (1, 2, 6, 12, and 24-hour). Detention storage for non-single detached land uses should be achieved through source controls such as infiltration tanks, rain barrels, infiltration trenches or rain gardens with flow restrictors.

TABLE 8.1.2A:
ON LOT CAPTURE/STORAGE AND RELEASE RATE CRITERIA

Land Use	On-Lot Capture/ Storage	Release Rate (L/s/ha)
Low Density Residential	Capture (no net runoff) of 6-month 24-hour event (47mm)	N/A
Townhouse	Capture (no net runoff) of 6-month 24-hour event (47mm) 5 year detention storage = 270 m^3/ha	5-Year = 7.7
Low-Rise Mixed Use Cluster Low-Rise Residential School	Capture (no net runoff) of 6-month 24-hour event (47mm) 5 year detention storage = 290 m^3/ha	5-Year = 8.4
Low-Rise Mixed Use Commercial	Capture (no net runoff) of 6-month 24-hour event (47mm) 5 year detention storage = 310 m^3/ha	5-Year = 8.9

Road Low Impact Designs

Road Low Impact Designs (LIDs) may include any combination of rain gardens, roadside bioswales, and infiltration trenches. These types of controls should allow for either full infiltration with a reservoir where appropriate, or partial infiltration with an orifice for baseflow discharge to the storm sewer system. Where implemented, road LIDs should be a minimum of 11% of the overall road corridor area. They will be designed to maximize the available space and optimized for the site conditions. The exact layout will be determined in the detailed design phase and may be adjusted to suit changes in layout or unforeseen circumstances.

The baseflow orifice will be contained within an overflow chamber and sized to drain the road LID within 48 hours. A high level overflow will be required to allow excess runoff to be conveyed to the storm sewer system.

All pervious and impervious surfaces must be directly connected to the road LID such that no uncontrolled runoff enters the piped system.

Community Detention

A high value opportunity to expand an existing community detention facility was identified at 13859/13902 62 Avenue. The pond would service approximately 59 ha of predominantly Low-Density Residential designation. This pond, together with on-lot controls on non-single detached land uses, is anticipated to reduce post-development flows at downstream outfalls below pre-development levels.

Water Quality

Treating runoff generated by impervious surfaces on private property and public road corridors is needed to protect the health of receiving environments. Different land uses within the Plan Area should target different tiers of treatment performance to accommodate the expected pollutants generated from impervious surfaces. **Table 8.1.2B** summarizes the performance targets for water quality treatment. Developments can choose the appropriate facility type(s) to implement to meet these performance targets.

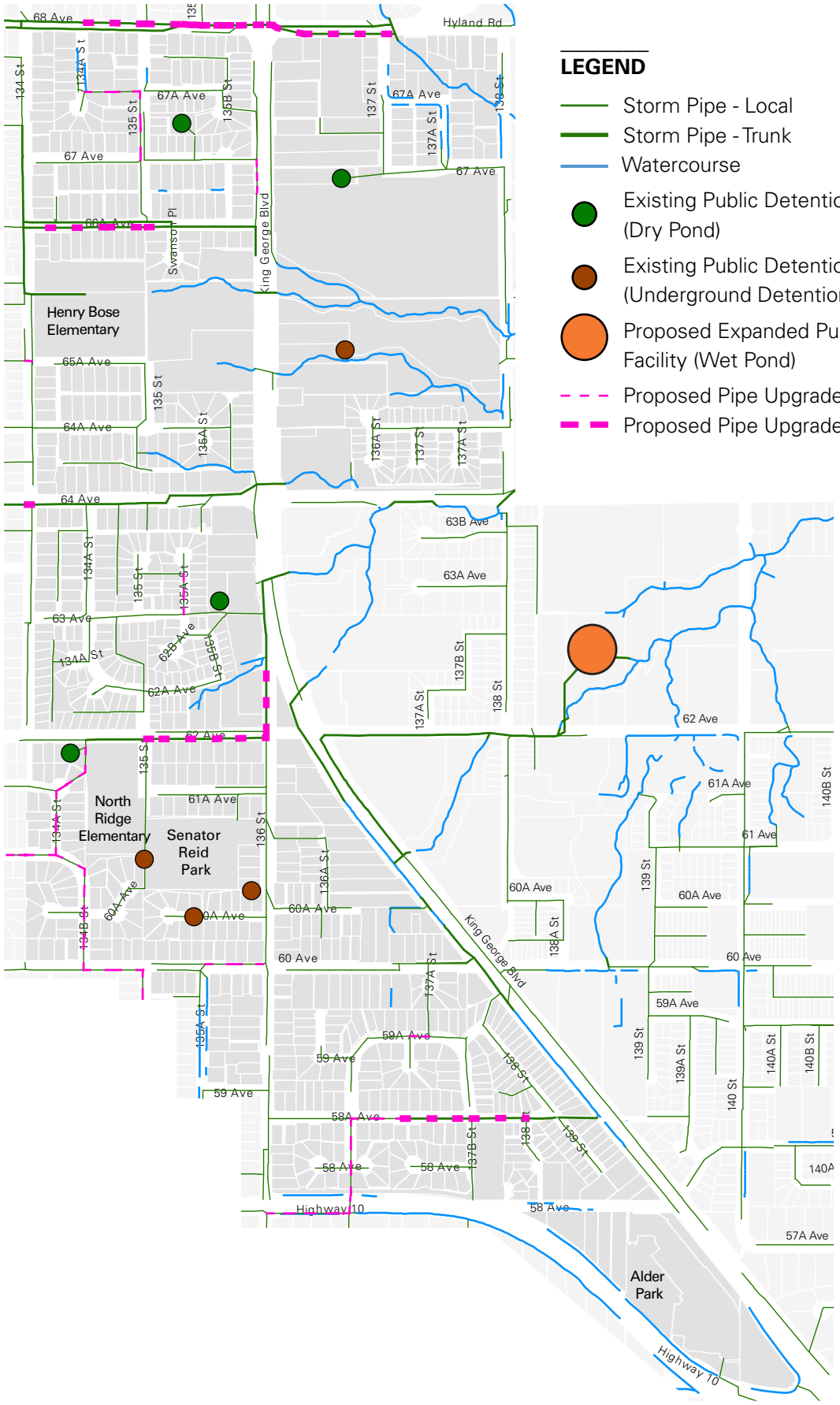
8.1.2 PROPOSED UPGRADES

Proposed drainage infrastructure upgrades to support future development in the Plan Area are summarized in Figure 8.1.2. It is noted that the trunk sewer upgrades shown are either an existing capacity constraint (i.e., due to existing development), or are recommended to prevent a pipe size reduction downstream when the existing upstream capacity constraint is addressed. None of the trunk sewer upgrades are specifically triggered by future development in the Plan Area and, as such, none are considered eligible for Development Cost Charge ("DCC") reimbursement. However, the proposed pond expansion is DCC eligible.

TABLE 8.1.2B: WATER QUALITY GUIDELINES

Type of Treatment	Performance Target	Application to Plan Area
Pre-Treatment	50% removal of Total Suspended Solids ("TSS") for an influent concentration range of 100 mg/L to 200 mg/L. For influent concentration less than 100 mg/L, the effluent should not exceed 50 mg/L TSS.	Applies to locations using infiltration-based treatment.
Oil Treatment	No ongoing or recurring visible sheen. A daily average total petroleum hydrocarbon concentration no greater than 10 mg/L with a maximum of 15 mg/L for discrete samples.	Where required for oil/grease removal.
Basic Treatment	80% TSS removal for an influent concentration range of 100 mg/L to 200 mg/L. For influent concentration less than 100 mg/L, the effluent should not exceed 20 mg/L TSS.	Applies to all land use designations and road R-O-W. For Low Density Residential land use designation, can be met using disconnected roof leaders and 450mm amended topsoil on pervious areas.

FIGURE 8.1.2 DRAINAGE UPGRADES



8.2 Sanitary

8.2.1 EXISTING SANITARY SYSTEM

The Plan Area is predominately one large sewer catchment that drains from the north and south towards 64th Avenue, and east towards the Central Valley Trunk sewer at 152nd Street. The Plan Area includes a second small sewer catchment south of 58th Avenue that flows directly to the South Surrey Interceptor and is independent of the larger catchment. The majority of the Plan Area is contiguous with the Newton Town Centre neighbourhood plan to the north, and growth in that area contributes to sanitary flow in this Plan Area.

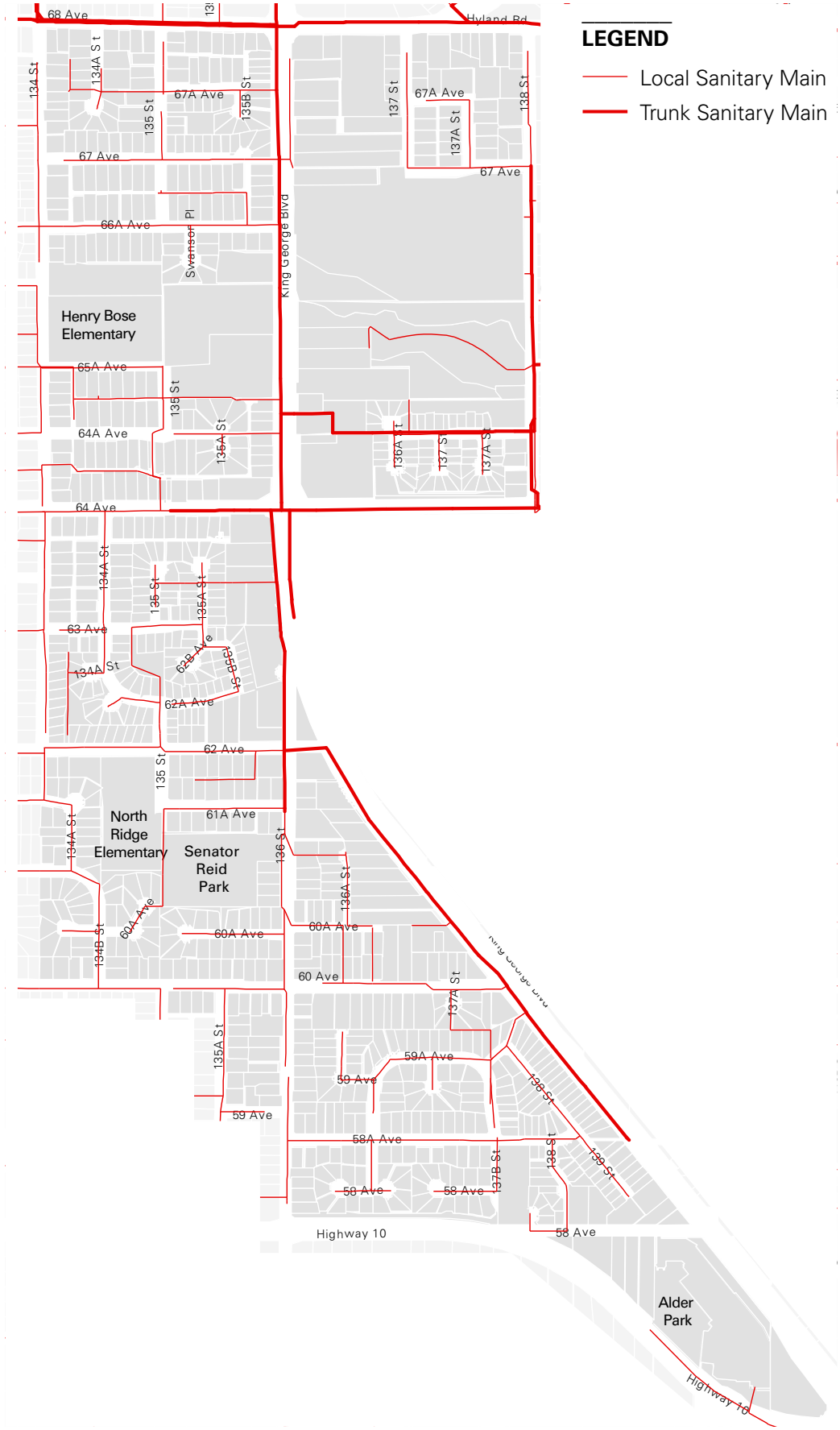
The existing sanitary sewer system is primarily comprised of PVC pipes installed in the 1980s with some asbestos cement and concrete pipes installed in the 1970s. The general direction of flow:

- south along King George Boulevard to 64th Avenue;
- north along King George Boulevard to 64th Avenue; and
- east long 66th and 64th Avenue (Hyland Creek trunk sewers) to Central Valley Trunk Sewer at 152nd Street.

PVC and concrete sewer pipes are still acceptable pipe materials and would be integrated into the Plan Area. Asbestos cement would be ideally replaced or relined as redevelopment occurred in this neighbourhood.

The Plan Area is positioned in a larger sewer catchment extending as far west as 128th Street, as far north as 76th Avenue, and as far south as Highway 10. Combined growth in Newton (including Newton Town Centre, South Newton, East Newton, and Newton Highway 10 Plan Areas) and this Plan area push existing trunk sewers constructed in the 1970s beyond current capacity, which will require replacement as development proceeds. Consequently upgrades required in the Plan Area have been considered in the larger context of the proposed growth in the sewer catchment.

FIGURE 8.2.1 EXISTING SANITARY NETWORK



8.2.2 SANITARY UPGRADES

The growth in the Plan Area is foreseen to have substantial impacts on the downstream infrastructure east of the catchment; the most significant impact is on the Hyland trunk sewers. A servicing strategy has been developed to achieve the following:

- divert all flow east at 68th Street and King George Boulevard to limit the impacts and capacity issues along the King George Boulevard corridor and along 64 Avenue;
- eliminate the current right-of-way sewer that encumbers lands in the core of the Plan Area at 64A Avenue and King George Boulevard; and
- focus capital trunk sewer upgrades along the 66 and 66A corridor that jointly serves the Newton Town Centre neighbourhood.

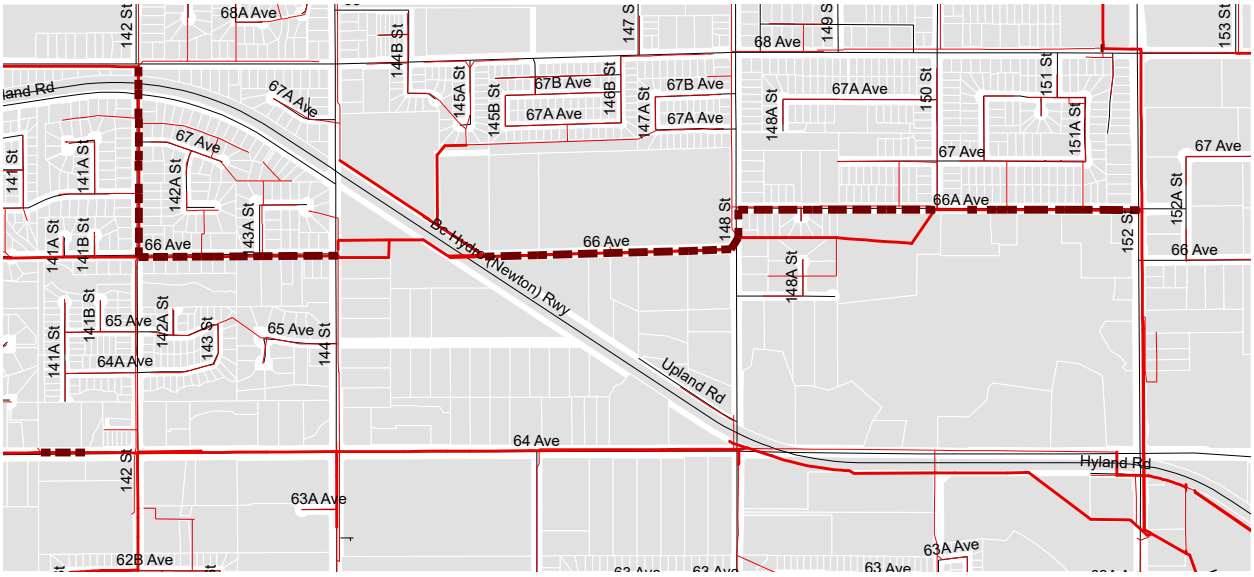
Based on the proposed servicing plan:

- a total of 2.75 km of trunk sewer needs to be upgraded and are eligible for DCC funding; and,
- a total of 0.6 km of local sewer needs to be upgraded with associated development and would not be eligible for DCC funding.

The upgrades include 1.7 km of trunk sewer along the 66 and 66A Avenue corridors, with pipe sizes ranging between 750 mm and 1200 mm diameter pipes. The remainder of the trunk sewer upgrades will be required near the intersection of King George Boulevard and 64 Avenue to provide capacity and encumber existing rights-of-way.

The proposed sanitary system is shown in **Figures 8.2.2A** and **Figure 8.2.2B.**

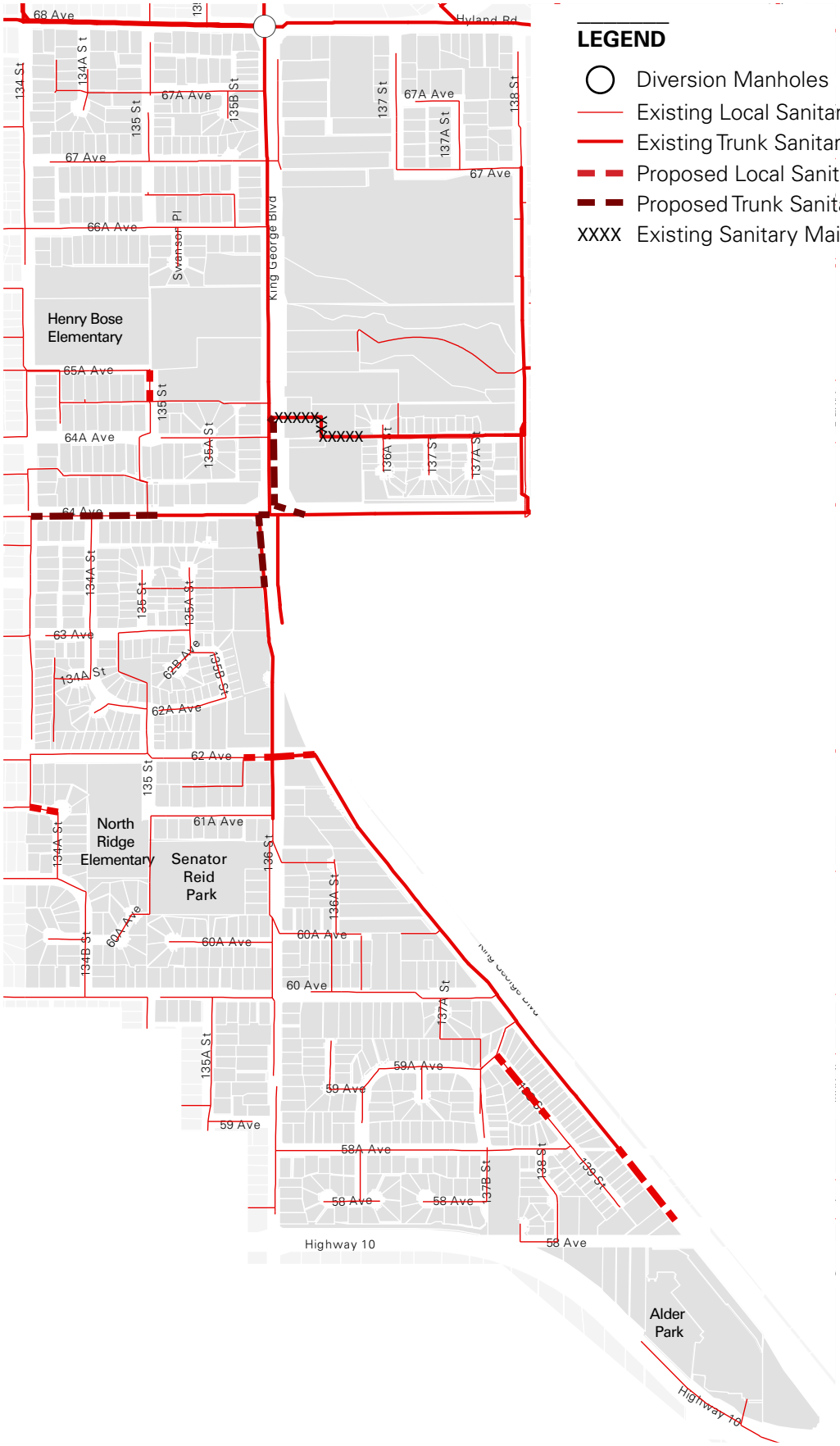
FIGURE 8.2.2A SANITARY UPGRADES OUTSIDE OF PLAN AREA



LEGEND

- Existing Local Sewer
- Existing Trunk Sewers
- Proposed Local Sewers
- Proposed Trunk Sewers

FIGURE 8.2.2B PLAN AREA SANITARY UPGRADES



8.3 Water

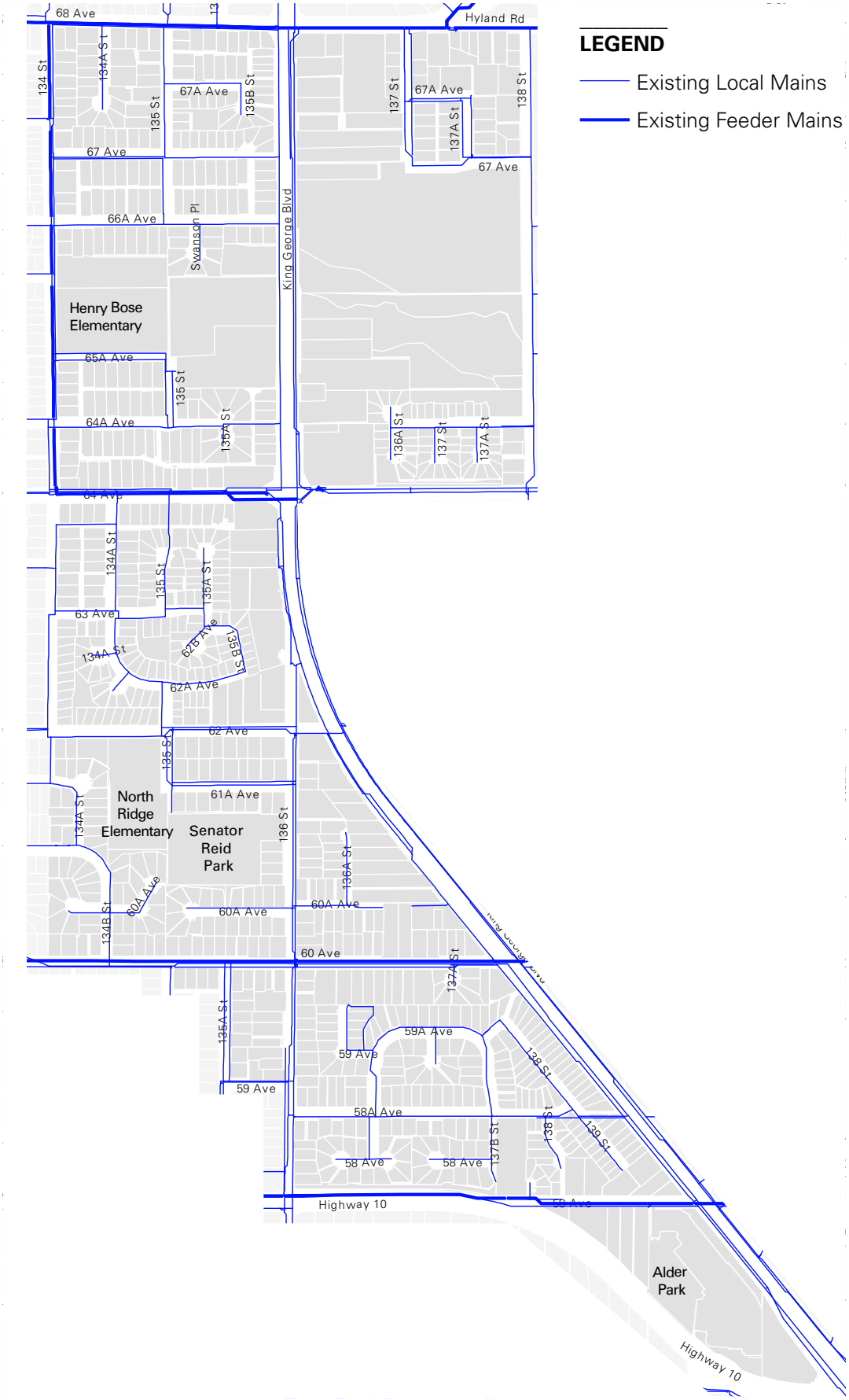
8.3.1 EXISTING WATER SYSTEM

The Plan Area is within the 135m Newton (135m) and 90m Bear Creek (90m) pressure zones. The 135m zone is supplied by the Newton Pump Station and the Kennedy Pump Station, and the 90m zone is supplied through several Pressure Reducing Valve (PRV) stations. Properties within the Plan Area are currently serviced by a combination of local and feeder mains with diameters ranging from 100mm to 500mm. There is adequate capacity to service the current domestic and fire flow demands within the Plan Area.

The City's DCM does not allow service connections made to a watermain on the opposite site along King George Boulevard. As such, watermains are currently available along both sides of King George Boulevard to service lots within the Plan Area. Existing watermain sections, with diameters less than 300mm will require up-sizing to supply the domestic and fire flow requirements of the proposed high-density developments along King George Boulevard.

The existing water distribution network within the Plan Area is shown in **Figure 8.3.1.**

FIGURE 8.3.1 EXISTING WATER SYSTEM



8.3.2 WATER UPGRADES

New water mains as well as up-sizing of several existing mains will be required to provide adequate domestic- and fire-flows to proposed developments within the Plan Area.

The development community is responsible to fund any fronting works required to service the site, which may include any up-sizing works or new watermain required to satisfy the requirements established in the City's DCM.

The proposed water distribution system within the Plan Area is shown in **Figure 8.3.2.** A phased watermain upgrade and addition strategy is recommended based on the timeline of the anticipated development.

FIGURE 8.3.2 WATER UPGRADES

"Balanced approach to redevelopment built around walkability"

Online Survey Response
Newton-King George Boulevard Planning Process, 2018-2021

9 Implementation

Making It Work

The plan will increase development intensity and population. To address the impacts of growth, funding will be required to improve local amenities and infrastructure necessary for a high quality of life.

This section of the plan outlines development policies and financing considerations required to support and implement the plan.

9.1 Development Policies

9.1.1 LOT CONSOLIDATION AREAS

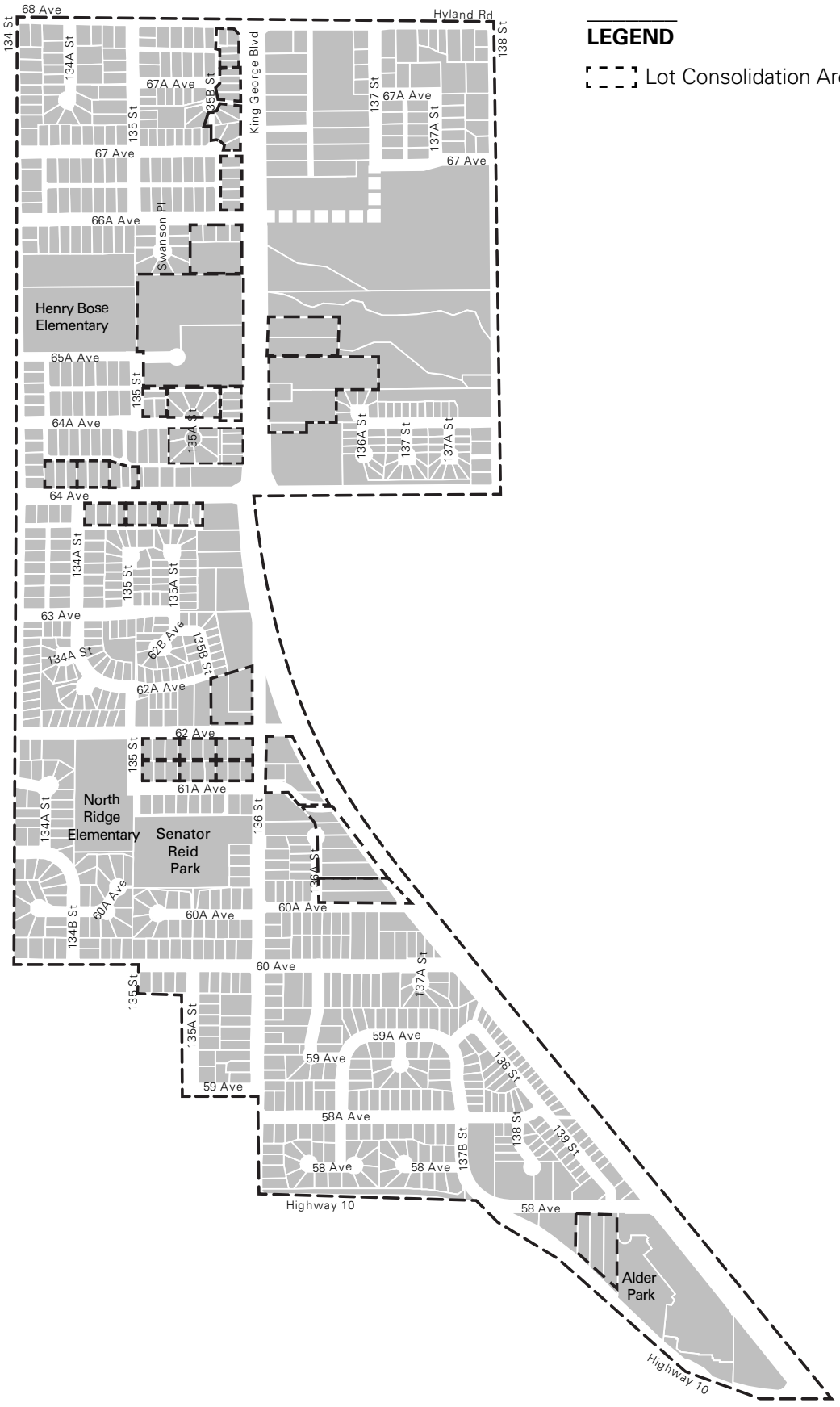
Lot consolidation requirements prevent the creation of undevelopable land remnants based on proposed land use designations. They also ensure equitable distribution of road dedication and construction costs across properties, and in some cases ensure development does not adversely impact existing residents.

Lot consolidation requirements have been generally identified in **Figure 9.1.1.** If land consolidation is proven to be unfeasible, the developer must:

- Demonstrate that the development potential of the excluded property is not compromised to the satisfaction of the City; and,
- Share any required road construction costs amongst properties shown in the land consolidation area.

In all cases of infill development, the developer must provide a concept plan for adjacent properties to prove excluded properties remain developable.

FIGURE 9.1.1 LOT CONSOLIDATION AREAS



9.1.2 HOUSING POLICIES

As a designated growth area supported by frequent transit, the Plan Area plays an important role in achieving the City's housing goals. The Plan outlines the following policies that apply to new development within the Plan Area:

HOUSING POLICY 1
A minimum of 30% of new multi-family housing units should be family oriented 2-bedroom or greater, and at least 10% as 3-bedroom or greater.

HOUSING POLICY 2
Meet the Adaptable Housing Standards in the BC Building Code for all new multi-family residential units.

HOUSING POLICY 3
Conform with the City's Rental Housing Redevelopment Policy (Policy O-61) for re-development of purpose-built rental housing .

HOUSING POLICY 4
Conform with the City's Manufactured Home Park Redevelopment and Strata Conversion Policy (Policy O-34A) for redevelopment of manufactured home parks.

HOUSING POLICY 5
For new residential developments that require a rezoning, provide a per unit contribution to the Affordable Housing Reserve Fund. The funds will be used to purchase land for new affordable rental housing projects. Refer to Schedule G - Section A of the Zoning By-law for current rates.

HOUSING POLICY 6
Exempt Non-Market Housing from Capital Community Amenity Contributions.

HOUSING POLICY 7
Support additional density and variances to development parameters including building height for developments with a significant non-market housing component.

HOUSING POLICY 9
Consider Pilot Project rezonings that will support urban infill development to provide more housing choice and new small-scale, ground-oriented housing options for properties with the "Low Density Residential" land use designation.

9.1.3 WATERCOURSE PROTECTION

The City of Surrey's Zoning Bylaw Part 7A – Streamside Protection requires that a protective buffer be established around any ditch, dyke, watercourse, or wetland that is connected to potential fish habitat. This protects wildlife and aquatic resources and provides essential protection to flood-prone areas by providing water storage and flow away from private land.

In addition to the streamside setback requirements outlined in Part 7A of the Zoning Bylaw, lands adjacent to watercourses are also subject to Sensitive Ecosystem Development Permit Area (SEDPA) DP3 requirements. Any potential development within 50 metres of a stream must be assessed by a Qualified Environmental Professional (QEP) as part of the Development Permit process. The applicant's QEP will be required to write an Ecosystem Development Plan (EDP), in which a setback will be assigned (called the Streamside Protection Area, or SPA) to the stream based on Provincial and Municipal regulation, in which no disturbance may occur. Habitat enhancement measures may be required within the Streamside Protection Area. Additional protection measures such as tree preservation or increased building setbacks may also be required outside of the Streamside Protection Area as conditions of the Development Permit.

The SPA will need to be protected by either a Registered Covenant (minimum safeguarding) or by conveying the land to the City of Surrey (maximum safeguarding), to ensure that the SPA is appropriately fenced off and maintained as a natural vegetated buffer in perpetuity.

Steeply sloped lands may also be subject to Hazard Lands Development Permit requirements. The applicant will be responsible for complying with all watercourse and geotechnical setbacks. In cases where multiple setbacks are applicable, the greatest will apply.

9.1.4 DEVELOPMENT PERMIT AREAS

Where developments are located in designated Development Permit Areas (DPA), as identified in the OCP (steep slopes, farm protection, environmentally sensitive areas, etc), as well as in the case of multiple unit residential or commercial developments, the OCP Design Guidelines will be implemented through the process of reviewing and approving the related Development Permit at the time of development application.

9.1.5 ELECTRIC VEHICLE CHARGING

As per the Zoning By-law, 100% of residential parking spaces in new residential developments are required to have an electrical outlet capable of supporting Level 2 EV charging (e.g. 220V outlet). All new commercial developments are required to provide a minimum of 20% of parking spaces equipped with an electrical outlet capable of supporting Level 2 EV charging. The Zoning Bylaw requirements provide for EV Energy Management Systems to be implemented, where power can be shared between up to four parking spaces and where the minimum performance standard is achieved.

9.1.6 ZERO CARBON INCENTIVE

The City of Surrey has committed to reducing community GHG emissions to net zero before 2050, and to improve the resilience of the community to future climate impacts. Buildings are responsible for 40% of community GHG emissions, with 96% of these emissions coming from the use of natural gas for space and water heating. To reach Surrey's target, fossil fuels must be phased out of existing buildings, and new buildings must be zero-emitting from the outset to avoid costly and disruptive retrofits.

The Zero Carbon Incentive is intended to encourage the design and construction of buildings that limit their contribution to climate change. Where applicable, this plan will enable an increase to the allowable base density of specific land use designations where zero carbon energy (electricity) is used for all on-site building operation, with no fossil fuel connections or building operation use.

Applicable developments will have the opportunity to utilize the Zero Carbon Density incentive to increase their maximum allowable base density as outlined in the Zoning By-law.

At the time this plan was approved, the above noted density provisions are not reflected in the Zoning By-law. Council is expected to consider the merits of the proposed density provisions in 2023.This text will be removed when amendments have occurred.

9.2 Community Amenity Contributions

Plan Amendments & Density Bonus Considerations

Growth and development will lead to increased demand for community amenities. An increase to population and units will impact school capacities, parkland provision, civic facilities and services, and infrastructure capacity. To address these impacts, any Plan Amendment or OCP amendment that includes a rezoning with increased density, above base plan densities, will be subject to the City's density bonusing policies and by-laws. These contributions help offset the impacts of growth and help fund new community facilities and services.

Site specific Plan Amendments will be considered carefully and weighed against their contribution towards the Plan's vision and principles. Community specific fixed Community Amenity Contribution (CAC's) rates are to be provided for residential development in accordance with Surrey Zoning Bylaw Schedule G Section C. Any Major OCP amendments will be subject to City Density Bonus Policy 0-5.

Minor adjustments to proposed lanes and local roads may be considered where appropriate and may not trigger a formal Plan Amendment on their own if supported by City Engineering department. Adjustments to lanes and local road alignment may be considered without a formal Plan Amendment if in-keeping with original intent of the plan.

There are four main categories of Community Amenity Contributions that will be applicable:

- Area Specific Secondary Plan CAC's will apply to all residential development seeking increased density in keeping with land use designation (with some exceptions), and are applicable to all proposed residential units and commercial spaces.
- Universal City-Wide CAC's apply to all density bonus rezonings/subdivisions (with some exceptions). Affordable Housing and Public Art contribution rates, exemptions and collection processes are to be provided in accordance with the applicable policy.
- Tier 1 Capital Project CAC's will apply to all residential development seeking increased density (with some exceptions) and are applicable to the portion of units that are consistent with the density of the Plan.
- Tier 2 Capital Project CAC's will apply where residential rezoning's seek increased density above the Plan. Tier 1 Capital Project CAC's are applied up to the Plan designations and Tier 2 is then applied to the portion of density above the Plan. Capital Project CAC rates, phasing, exemptions and collection process are to be provided in accordance with Surrey's Community Specific Density Bonus Policies for the South Surrey area outlined in Surrey's Zoning Bylaw #12000, as outlined in Schedule G, and Density Bonus Policy O-54.

9.2.1 AREA SPECIFIC CACS

To enact the area specific Secondary Plan CAC's noted above, the Zoning By-law will be amended to add Newton-King George Boulevard to the list of area specific Plan Areas within which monetary amenity contributions are required. The monetary contributions toward parks, arts and culture, police, fire and library materials will offset capital costs of providing services to new development and are applied on a standardized basis in all of Surrey's Secondary Plans.

The monetary contributions toward arts and culture, parks, open spaces and pathway development are based on the estimated capital costs for improvements for this Plan. The total cost is divided by the average anticipated number of dwelling units to ensure an equitable contribution.

Parkland Development

The scope of parkland development within the Plan will include the expansion of four existing parks. The estimated cost of developing park amenities is $7,434,510.00 which results in a $2,061.13 (in 2023 dollars) per dwelling unit. This is captured through the Parks Development CAC. This estimate includes the construction of on-site park amenities, such as playgrounds, washroom buildings, parking lots, sports courts, athletic fields, tree and horticultural plantings, park pathways, seating areas, viewing platforms and passive open spaces. This also includes natural and riparian area management within land acquired by Parks.

Park amenity calculations do not include riparian area works on land conveyed to the City through the development process, such as invasive species removals, fence construction, replanting and naturalization, in-stream works and any other related riparian area costs, including planning and design costs, which are to be accounted for as part of the development process and subject to the Zoning Bylaw.

Parkland Road Frontage

Park road frontage construction is not included within the Parks Development CAC. Road frontages are also not funded through the parkland acquisition DCC. The estimated cost of developing associated park road frontages, included a half road, storm sewer contribution, curb and gutter, sidewalk, boulevard and street lighting is $3,575,000. This results in a cost of $991.13 (in 2023 dollars) per dwelling unit. This is captured through the Parks Road Frontage CAC.

Library Materials

A study of library requirements has established that a contribution of $199.30 (in 2023 dollars) per dwelling unit (non-residential development is exempt) is necessary to cover the capital costs for library materials and services, which is sensitive to population growth. Consequently, a total of approximately $911,797.50 will be collected from Newton-King George Boulevard towards materials such as books, computers, and electronic media.

Fire Protection

Future development in this neighbourhood will drive the need to upgrade existing fire protection facilities. A study of fire protection requirements in Surrey has established that a contribution of $382.70 per dwelling unit and $2,296.16 per acre of non-residential development (in 2023 dollars) will cover the capital costs for fire protection. This will result in a total capital contribution from Newton-King George Boulevard of approximately $1,777,487.96 toward fire protection facilities.

Police Protection

Future development in this neighbourhood will drive the need to upgrade existing police protection facilities. A contribution of $88.58 per dwelling unit and $531.45 per acre of non-residential development will cover the capital costs for police protection. This will result in a total capital contribution from Newton-King George Boulevard of approximately $411,418.32 toward police protection facilities.

9.2.2 UNIVERSAL CITYWIDE CACS

Affordable Housing

The Plan Area is subject to Affordable Housing CAC's for future rezonings, as identified in Schedule G of Surrey's Zoning Bylaw. The (2021) Affordable Housing contribution rates are $1,000 as outlined in Schedule G of the Zoning Bylaw. Proposed development will provide the bylaw rates that are applicable at the time the future Building Permit is issued. This may result in a total affordable housing contribution from Newton-King George Boulevard of approximately $4,575,000 toward civic affordable housing projects in the Newton area. This total will be lower should any of the planned growth be purpose built rental housing.

Public Art

The Plan Area is subject to Public Art Contributions. Any re-zoning that includes more than 10 dwelling units, and/or any rezoning for Commercial with a total floor area of greater than 1,000 m^2, will be subject to Public Art Contributions. The rate of contribution is guided by the City's Public Art Policy. In 2021 the Public Art contribution is a fixed rate of 0.50% of the total project construction cost.

9.2.3 TIER 1 CAPITAL PROJECT CACS

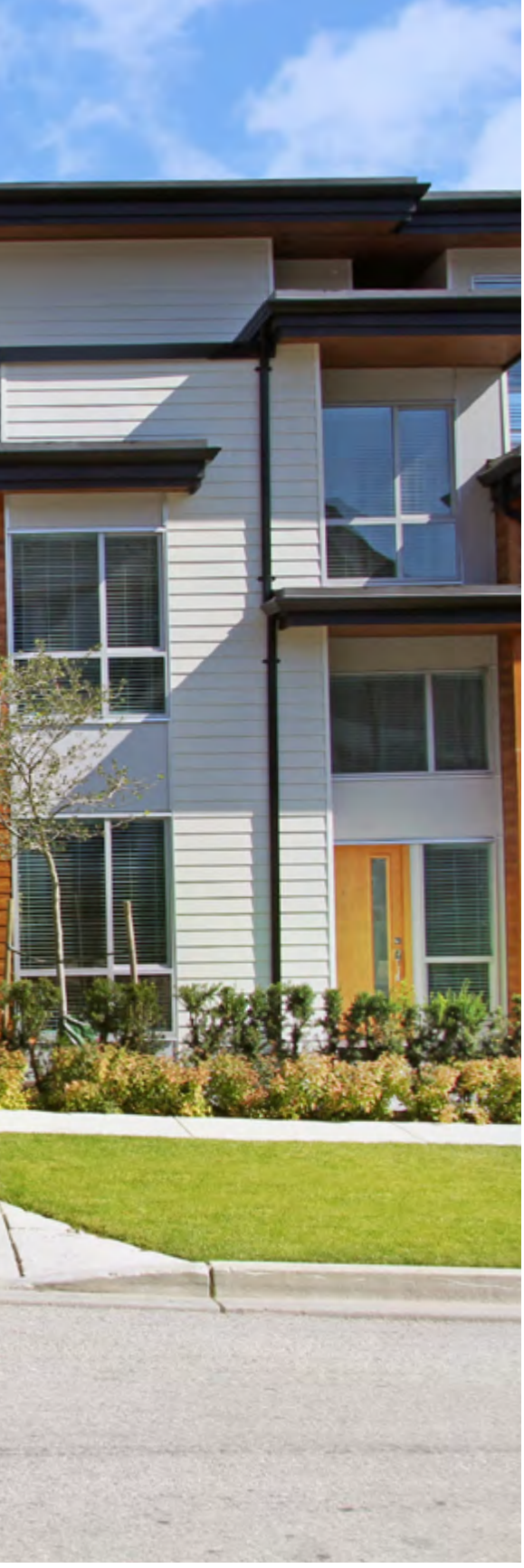
The Plan Area will be subject to Tier 1 Capital Plan Project CAC's for future rezonings, as identified in Surrey's Zoning Bylaw #12000. The Capital Project contribution rates are $2,000 per applicable dwelling unit from January 1, 2022 as outlined in Section B.4 of Schedule G of the Zoning Bylaw. The proposed development will provide the zoning bylaw rates that are applicable at the time the future Building Permit is issued. This will result in a total capital contribution from Newton-King George Boulevard of approximately $9,150,000 (2022 rate) toward civic projects such as cultural, sport or recreation facilities within the Newton area.

9.2.4 TIER 2 CAPITAL PROJECT CACS

The Plan Area is also subject to Community Specific Tier 2 Capital Project CACs. It is applicable for any rezoning proposing bonus density where the proposed increase is greater than the maximum density allowed in the Plan. Where applicable the CAC applies after the additional density of the Zero Carbon Incentive bonus. Any plan amendments proposed by future development will provide the Zoning Bylaw #12000 - Schedule G Community Specific Rates for South Surrey paid before Zoning Bylaw is adopted.

Community specific fixed rates for Newton are charged on a per square foot basis for apartments, and on a per dwelling unit basis for single family and townhouses that exceed the plan limits. The Newton Community Specific contribution rates are $15,000 per dwelling unit from January 1, 2022 for townhouse and single detached dwellings, and $10/ sq. ft for apartments, as outlined in Section C of Schedule G of the Zoning Bylaw.

Swanson's barn and adjoining chicken house, no date. City of Surrey Archives.



9.2.5 CAC SUMMARY

The estimated (2022 Rate) CAC's and total projected revenues from development in Newton-King George Boulevard is over $30 million. The specific CAC's for Newton-King George Boulevard Plan Area are summarized below and are documented in **Table 9.2.4**.

TABLE 9.2.4: CAC SUMMARY

COMMUNITY AMENITY CONTRIBUTION (CAC)	*PER UNIT CONTRIBUTION	PER ACRE CONTRIBUTION ALL NON-RESIDENTIAL	ANTICIPATED TOTAL CAC REVENUE
Plan Area Specific Amenity Contributions			
Police Protection	$88.58	$531.45	$405,253.50 (Residential) $6,164.82 (Non-Residential) Sub Total: $411,418.30
Fire Protection	$382.70	$2,296.16	$1,750,853.50 (Residential) $26,635.46 (Non-Residential) Sub-Total: $1,77,488.96
Parkland Development Park Road Frontage	$2061.13 $991.13	N/A N/A N/A	$7,434,510.00 $3,575,000.00
Library Materials	$199.30	N/A	$911,797.50
Citywide Amenity Contributions*			
Capital Projects (Tier 1)	$2,000	N/A	$9,150,000.00
Affordable Housing	$1,000	N/A	$4,575,000.00
Total Contribution Revenue	**$6,722.84**	**$2,827.60/acre**	**$30,789,793.17**

** will be lower should any of the planned growth develop as purpose built rental housing.*

9.3 NCP Cost Recovery Surcharge

Several consultants were retained to assist with the preparation of the Newton-King George Boulevard Plan, including watercourse, transportation, and drainage servicing studies. The total cost of consultant services to the City was $180,029.24. The Fee Imposition By-law is to be amended to provide for the recovery of these plan preparation costs through the payment of application surcharge fees at time of development.

A surcharge fee will be based on the anticipated developable area and will result in a fee of $967.12/acre ($2,389.87/hectare).

TABLE 9.3: NCP SURCHARGE SUMMARY

CONSULTANT STUDY	STUDY COST	NCP SURCHARGE
Watercourse Assessment	$21,477.63	$115.38/acre
Transportation Modeling	$78,000.00	$419.02/acre
Drainage Assessment	$80,551.61	$967.12/acre
Total	**$180,029.24**	**$967.12/acre**

9.3 Infrastructure Financing

New and upgraded infrastructure is required to support development of the Plan Area. **Table 9.3A** summarizes the projected DCC revenues and eligible costs for each of the major infrastructure systems that will be needed to support build-out.

Revenues are based on the DCC rates that came into effect on May 15, 2022 and include the DCC municipal assist factor for all DCC-Eligible Costs attributable to the Plan for each asset, as summarized in **Table 9.3B**.

With the adoption of the Newton-King George Boulevard Plan, growth will result in approximately $112,574,000 in total DCC revenues. However, using the original land use projections per the OCP, DCC revenues at full buildout would have been in the order of $57 million (including a 1% Municipal Assist Factor). Therefore, the additional growth that will result from the Newton-King George Boulevard Plan will result in $55 million more in DCC revenues than estimated using the original OCP land use projections.

The positive differences between the DCC eligible costs and estimated revenues for Water, Drainage, Arterial Roads, and Collector Roads will be used to help fund various growth projects adjacent to and/or near the Plan Area. Examples include up-sizing of a water feeder main along 60 Avenue between 128 Street and King George Boulevard, storm sewer trunk upgrades on 68 Avenue near 140 Street, and Arterial widening improvements on 132 Street.

TABLE 9.3A: PROJECTED DCC REVENUES AND CONSTRUCTION COSTS FOR MAJOR INFRASTRUCTURE

SERVICE	ESTIMATED DCC REVENUES*	DCC ELIGIBLE COST ATTRIBUTABLE TO NEWTON-KING GEORGE BOULEVARD	DIFFERENCE
Drainage	$4,999,000	$3,000,000	+$1,999,000
Sanitary Sewer	$9,313,000	$15,075,500	-$5,762,500
Water	$6,386,000	$1,900,000	+$4,486,000
Arterial Roads	$37,192,000	$16,551,000	+$20,641,000
Collector Roads	$8,696,000	$7,262,000	+$1,434,000
Parkland	$45,988,00	$46,960,000	-$972,000
TOTAL	**$112,574,000**	**$94,948,500**	

TABLE 9.3B: MUNICIPAL ASSIST FACTOR FOR ENGINEERING INFRASTRUCTURE

SERVICE	MUNICIPAL ASSIST FACTOR	COST OF THE MUNICIPAL ASSIST FACTOR
Drainage	1%	$49,990
Sanitary Sewer		$93,130
Water		$63,860
Arterial Roads		$371,920
Collector Roads		$86,960
Parkland		$459,880
TOTAL		**$1,125,740**

9.3.1 DCC SHORTFALLS

For Sanitary, the negative difference between the DCC eligible costs and estimated revenues is anticipated to be recovered through the use of surplus Citywide DCC's generated from the adjacent Newton Town Centre Plan. Therefore, development within the Newton-King George Boulevard Plan will be subject to Citywide DCCs for Transportation and Utilities.

The negative difference between the estimated DCC eligible costs and estimated revenues for Parkland is relatively small, and the difference between the two is within an acceptable range when considering fluctuating land values over time.