

NO: R026

COUNCIL DATE: February 6, 2017

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **January 27, 2017**

FROM: **General Manager, Engineering** FILE: **5260-07**
General Manager, Parks, Recreation & Culture XC: **3150-01**
General Manager, Planning & Development

SUBJECT: **10-Year (2017-2026) Servicing Plan and 2017 Development Cost Charge Bylaw**

RECOMMENDATION

The Engineering Department, the Parks, Recreation & Culture Department and the Planning & Development Department recommend that Council:

1. Approve the proposed 10-Year (2017-2026) Servicing Plan (“10-Year Servicing Plan”) that is attached as Appendix “I” to this report;
2. Authorize the City Clerk to bring forward for the required readings the Development Cost Charge Bylaw (“the Bylaw”) attached as Appendix “II” to this report, which if adopted will provide necessary DCC rate adjustments to fund the 10-Year Servicing Plan and the Parkland Acquisition Program;
3. Subject to the Bylaw being given the required readings, authorize staff to forward the Bylaw to the Provincial Ministry of Community, Sport and Cultural Development for approval prior to its final adoption by Council; and
4. Subject to the approval of the 10-Year Servicing Plan, amend *Surrey Official Community Plan Bylaw, 2013, No. 18020*, as described in this report and the document in Appendix “III”, as well as to authorize the City Clerk to bring forward the necessary Official Community Plan amending Bylaws for the required readings and to set a date for the related Public Hearing.

INTENT

The purpose of this report is to obtain approval of an updated 10-Year Servicing Plan and to have the related Development Cost Charge Bylaw be given the required readings so as to allow the Bylaw to be submitted to the Ministry of Community, Sport and Cultural Development for approval prior to its final adoption by Council.

BACKGROUND

The 10-Year Servicing Plan establishes the City’s capital expenditure plan for the construction of engineering infrastructure to service existing neighbourhoods and to support new growth across the City. Together with the Parkland Acquisition Program, it also forms the basis for establishing the City’s Development Cost Charge rates (DCCs).

Each year since 2006, staff have undertaken a review of the Servicing Plan and recommended appropriate adjustments to the Plan and the related DCC rates.

In 2016, Council adopted the current 10-Year (2016-2025) Servicing Plan and related DCC rates. As part of the rate discussion process, in order to add the projects needed to support the anticipated growth in future years as outlined in the proposed 2017-2026 10-Year and Parkland Acquisition Program update and the proposed 2018-2027 10-Year and Parkland Acquisition Program update, annual DCC rate increases were forecasted for both 2017 and 2018.

The total cost of each phased edition of the proposed 10-Year Servicing Plan over the next three years was estimated as follows:

Proposed 10-Year Plan	Complete Growth Component (DCC Eligible)	Proposed Growth Component (DCC Eligible)	Difference from Complete
2016 – 2025 Update	\$718,529,191	\$589,592,449	-18%
2017 - 2026 Update	\$718,529,191	\$645,704,442	-10%
2018 – 2027 Update	\$718,529,191	\$718,529,191	0%

The total cost of each phased edition of the Parkland Acquisition Program over the next three years was estimated as follows:

Proposed Parkland Acquisition	Targeted Growth Component (DCC Eligible)	Proposed Growth Component (DCC Eligible)	Difference from Target
2016 – 2025 Edition	\$355,803,644	\$286,003,644	-20%
2017 - 2026 Edition	\$355,803,644	\$319,742,045	-10%
2018 – 2027 Edition	\$355,803,644	\$355,803,644	0%

DISCUSSION

Since the last 10-Year Servicing Plan update, in addition to the works planned for inclusion in 2017, a number of planning and engineering studies have been completed that identify future infrastructure needs across the City. These include:

- The Stage 2 component of the City Centre Neighbourhood Concept Plan (NCP);
- The Abbey Ridge Local Area Plan (LAP);
- The Fleetwood Town Centre Plan;
- The Fleetwood Integrated Stormwater Management Plan;
- Various sewer and water model updates; and
- Traffic/transportation updates.

Many of the infrastructure elements identified in these studies and plans have been incorporated into the proposed 10-Year Servicing Plan.

The proposed 10-Year Servicing Plan builds on the previous 10-Year Plan. Projects that have been completed have been deleted and new projects that are needed to support new development over the next 10 years have been added. In addition, project cost estimates have been updated to reflect current construction prices. The proposed 10-Year Servicing Plan is not a commitment to constructing all of the identified projects, but rather projects that will be constructed on a year-to-year basis as funding becomes available either through DCCs that are collected on new development, City annual budgets and from utilities and/or from other agencies.

Engineering’s 10-Year Servicing Plan

The estimated total cost of all of the projects that are recommended to be included in each of the various categories of infrastructure in the proposed 10-Year Servicing Plan are listed in the following table:

Program	Growth Component (DCC Eligible)	Non-Growth Component	External and GVTA Funding	Total
Arterial Roads	\$325,826,750	\$341,116,800	\$155,182,200	\$899,651,000
Non-Arterial Roads	\$77,525,250			
Drainage	\$87,383,912	\$148,197,747	\$10,400,000	\$245,981,659
Sewer	\$79,583,807	\$66,669,311	\$0	\$146,253,118
Water	\$71,129,451	\$130,025,180	\$0	\$201,204,631
TOTAL	\$641,449,170	\$686,009,038	\$165,582,200	\$1,493,040,408

Notes: City-wide costs exclude Campbell Heights, Highway 99 Corridor and Anniedale-Tynehead Build-Out Plans and additional DCC rate components for developments in the West Clayton NCP area and the City Centre NCP area.

The “Non-Growth Component” of the Roads infrastructure is funded by a combination of general revenue, the Road and Traffic Safety Levy, and a portion of the revenues generated through the Secondary Suite fee for transportation infrastructure, while the “Non-Growth Component” of the other listed infrastructure is funded from the utility fees for sewer, water and drainage, with some limited external funding. The “Growth Component” is funded, apart from a small amount through a municipal assist factor (currently at 5 to 10%), from revenues generated through DCCs.

Park, Recreation & Culture Department’s Parkland Acquisition Program

The Parkland Acquisition Program is funded through several sources including DCCs, Cash-in-lieu of Park Dedication and the City’s Municipal Assist Factor, presently set at 4%. Additional parkland is acquired through the Federal Eco-gift Program and other gifts of land to the City. The majority of new park acquisition is funded from Park DCCs. Funding for the current Parkland Acquisition Program is very challenged due to dramatic increases in land costs. An adjustment to the Park DCC is required to fully fund the current program and allow for the reduction of the Parkland Municipal Assist Factor from 4% to 3%. Subsequent reviews will target declining provision of Neighbourhood category parks, further reducing the Parkland Municipal Assist Factor, as well as increasing funding available for park development.

Strategic Property Acquisition in the City Centre

The creation of a finer grain road network is a cornerstone of vibrant and successful downtown cores throughout North America. Small blocks encourage high-quality, mixed-use development where numerous commercial, cultural, civic and social activities are within convenient walking distance. The City Centre NCP Plan establishes block sizes in the range of 80 – 100m, which are considered a maximum for walking in a downtown environment.

In order to achieve the finer grain road network, a number of key properties need to be acquired. It is unlikely that these key properties will be dedicated to the City through a normal rezoning process, as there are a number of key properties where full takes are needed to deliver local roads in the finer grain road network in City Centre.

The estimated cost to acquire these properties is \$55 million. The cost of these acquisitions are not included in the in the 10-Year (2016-2025) Servicing Plan. In order to acquire all of these key properties to achieve the finer grain road network, Council at its Regular Council Meeting on January 16, 2017 as part of Corporate Report R001;2017 supported the establishment of an area specific DCC rate for all new development in the City Centre.

The proposed area specific DCC rate accounts for a DCC rate increase of \$1.76 to \$2.83 per square foot of area. With the proposed area specific DCC rate component, the total DCC rate for low rise and high rise residential development within the City Centre still remains lower than the total DCC rate for comparable low rise and high rise residential developments outside of the City Centre.

2017 Development Cost Charge Rates

The proposed DCC rates are based on the following municipal assist factors, which represent the City's financial contribution to support growth.

DCC Component	Municipal Assist Factor (MAF)		
	Minimum Required	Existing DCC Rate	Proposed DCC Rate
Drainage	1%	10%	10%
Sewer	1%	10%	10%
Water	1%	10%	10%
Transportation	1%	5%	5%
Parkland	1%	4%	3%

The proposed DCC rates, based on the adjustment to the Parkland MAF, are summarized below:

City-Wide DCCs

Zone	Existing DCC Rate	Proposed DCC Rate	Rate Change \$	Rate Change %
SF (RF, RF-12, RFC) (per lot)	\$32,300	\$36,301	\$4,001	12.4%
SF Small Lot (RF-9, RF-SD) (per lot)	\$28,096	\$31,712	\$3,616	12.9%
RM-10, RM-15 and RM-30 (per sq. ft.)	\$17.06	\$19.14	\$2.08	12.2%
RM-45 and RM-70 (per sq. ft.)	\$19.02	\$21.38	\$2.36	12.4%
RM-45 and RM-70 in City Centre (per sq. ft.)	\$14.20	\$18.54 *	\$4.34	30.6%
RM-135 and RMC-150 (per sq. ft.)	\$18.74	\$20.96	\$2.22	11.8%
RM-135 and RMC-150 in City Centre (per sq. ft.)	\$12.38	\$15.88 *	\$3.50	28.3%
Commercial (ground floor) (per sq. ft.)	\$9.92	\$10.92	\$1.00	10.1%
Industrial (per acre)	\$79,079	\$85,841	\$6,762	8.6%

Notes:

* Includes the area specific DCC rate component for Strategic Property Acquisition in the City Centre

Campbell Heights DCCs

Zone	Existing DCC Rate	Proposed DCC Rate	Rate Change %
All Zones (per acre)	\$143,373	\$143,781	0.3%

Highway 99 Corridor DCCs

Zone	Existing DCC Rate	Proposed DCC Rate	Rate Change %
All Commercial Zones (per acre)	\$227,011	\$226,146	-0.4%
All Industrial Zones (per acre)	\$106,436	\$105,561	-0.8%

Annedale-Tynehead NCP Area Specific DCC Rate

No increases to the DCC rates for developments in the Annedale-Tynehead NCP area are being recommended at this time, although servicing costs have increased since the area-specific DCC rate for this NCP area was introduced. Staff are planning to undertake a review of both the sewer and water servicing strategies in the NCP area this spring in an effort to see if there are opportunities to reduce some of the proposed improvements given the recent development of servicing strategies for both the West Clayton NCP area and the Abbey Ridge LAP area. Staff are hopeful that this review will mitigate the need for a significant change in DCC rates in the future for developments in this NCP area.

2018 Development Cost Charge Rates

In order to add the projects needed to support the anticipated growth in future years as outlined in the proposed 2018-2027 10-Year and Parkland Acquisition Program update, a DCC rate increase is forecasted for 2018. Last year, the DCC rate increase for 2018 was projected at 10% and current projections continue to indicate 10% will be required in 2018.

Public Consultation

Staff held two joint meetings with 33 representatives from the Development Advisory Committee and Urban Development Institute on the Engineering Servicing Strategy and Related Financial Strategy for the City Centre Plan. At the first meeting on June 28, 2016, staff presented the recommended servicing strategy and the need to establish a Strategic Property Acquisition Charge. On September 19, 2016, staff subsequently presented the proposed Strategic Property Acquisition.

The development community has indicated their support for the proposed Strategic Property Acquisition Charge.

Information on the proposed Servicing Plan and the proposed DCC rates along with a consultation section were provided on the City's website at www.surrey.ca/DCCs and advertisements were placed in the local newspapers that notified the community of the availability of this information. Staff also hosted a Public Open House on January 24, 2017. The Public Open House was attended by two individuals. There was support for the proposed DCC rate increases, and there was interest that the scope of the DCC program be expanded in infill areas to include opportunities for neighbourhood improvements, such as sidewalks and street lights.

The Urban Development Institute, the Commercial Real Estate Development Association (NAIOP Vancouver) and the City's Development Advisory Committee (DAC) were also consulted. In general, no concerns were expressed, as the extent of the proposed rate increase was consistent with the projected rate increase provided last year. It was suggested that longer DCC rate grand parenting provisions be provided. Staff are of the opinion that the current DCC rate grand parenting provisions are adequate and that the City, by consulting with the development community on the proposed DCC rate increases for 2017 and 2018 beginning in the fall of 2015, has provided the development community significant advance notice of these increases.

The DAC also requested that staff work to review the opportunity to introduce a new DCC for single-family homes that undergo development. Staff have completed some research on this approach and have not found any examples of any community seeking to collect a DCC when an existing home is replaced with a larger home. Staff will continue their research this spring in an effort to develop a simple and equitable approach.

NAIOP Vancouver has yet to provide any comments.

Implementation

The proposed Servicing Plan and the related DCC rates, as proposed, are to be implemented in accordance with the following schedule:

February 2017:	Corporate Report to Council for approval of the 10-Year (2017-2026) Servicing Plan and initial readings of the related 2017 DCC Bylaw
March-April 2017:	Ministry of Community and Rural Development approval of the 2017 DCC Bylaw
May 8, 2017:	Final Adoption of 2017 DCC Bylaw
May 16, 2017:	2017 DCC Rates Take Effect for all applications not in-stream
May 16, 2018:	2017 DCC Rates Take Effect for all in-stream applications that have yet to be completed

Impact on the Five Year (2017-2021) Financial Plan

The 2017 Five Year (2017-2021) Financial Plan – Utilities and Other Self-Funded Programs, which was approved by the Finance Committee on November 28, 2016, reflect the proposed 10-Year Servicing Plan as documented in this report.

The 2017 The Five Year (2017-2021) Capital Plan, which was approved by the Finance Committee on December 5, 2016, reflect the proposed 10-Year Servicing Plan as documented in this report.

The 2017 The Five Year (2017-2021) General Operating Financial Plan, which was approved by the Finance Committee on December 12, 2016, reflect the proposed 10-Year Servicing Plan as documented in this report.

Official Community Plan

Policies – Theme C: Infrastructure and Facilities of the Official Community Plan (OCP) include a map that identifies all existing sewer, water, drainage and road infrastructure, as well as all planned infrastructure included in the 10-Year Servicing Plan as required by Section 473 of the *Local Government Act*. With the adoption of the new 10-Year Servicing Plan, it is recommended that the OCP be revised to reflect the newly adopted sewer, water and drainage infrastructure components of the Plan.

In addition to the updates to the sewer, water and drainage infrastructure plans, it is recommended that a new figure be added to the OCP to include existing and planned district energy infrastructure, as at present these works are not detailed in the OCP.

Staff are currently working on further changes to the road allowance map; therefore, a future revision to the OCP will be required to reflect the newly adopted transportation infrastructure components of the Plan.

Legal Services and Finance Review

This report and the related Bylaw have been reviewed by each of the Finance & Technology Department and the Legal Services Division.

During this review, the Legal Services Division recommended some changes to the layout of the Bylaw to ensure that applicants clearly understood the rates applicable to their development. The Bylaw attached in Appendix “II” incorporates these changes.

Next Steps

Staff will continue to regularly review construction costs and servicing requirements to determine when future adjustment to the Servicing Plan and DCC rates are required to ensure that there is sufficient DCC revenue to fund the infrastructure works and parkland acquisition required to support planned and orderly development in the City.

SUSTAINABILITY CONSIDERATIONS

A properly developed and adequately funded 10-Year Servicing Plan helps to ensure continued planned and orderly development in Surrey, which supports the objectives of the City’s Sustainability Charter. In particular, the Plan supports the Sustainability Charter themes of Infrastructure, Built Environment and Neighbourhoods, Ecosystems, and Public Safety. Specifically, a properly developed and adequately funded 10-Year Servicing Plan supports the following Desired Outcomes:

- All Infrastructure DO1: City facilities and infrastructure systems are well managed, adaptable and long lasting, and are effectively integrated into regional systems;
- All Infrastructure SD1: Proactively manage community assets to maintain them over the long-term in a state of good repair;
- Energy and Climate DO6: The City anticipates changing weather patterns and sea level rise as a result of climate change, and implements appropriate infrastructure, land use planning and emergency response solutions that will be resilient over the long term;
- Neighbourhoods and Urban Design SD 8: Strengthen and promote community engagement and programming in public spaces; and
- Green Infrastructure DO12: Surrey protects ecosystem services and manages natural assets in order to create resiliency to adapt and thrive in a changing climate.

CONCLUSION

Based on the above discussion, it is recommended that Council:

- Approve the proposed 10-Year (2017-2026) Servicing Plan (“10-Year Servicing Plan”) that is attached as Appendix “I” to this report;
- Authorize the City Clerk to bring forward for the required readings the Development Cost Charge Bylaw (“the Bylaw”) attached as Appendix “II” to this report, which if adopted will provide necessary DCC rate adjustments to fund the 10-Year Servicing Plan and the Parkland Acquisition Program;

- Subject to the Bylaw being given the required readings, authorize staff to forward the Bylaw to the Provincial Ministry of Community, Sport and Cultural Development for approval prior to its final adoption by Council; and
- Subject to the approval of the 10-Year Servicing Plan, amend *Surrey Official Community Plan Bylaw, 2013, No. 18020*, as described in this report and the document in Appendix “III”, as well as to authorize the City Clerk to bring forward the necessary Official Community Plan amending Bylaws for the required readings and to set a date for the related Public Hearing.

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Appendix “I” - 10-Year (2017-2026) Servicing Plan
Appendix “II” - Proposed Development Cost Charge Bylaw
Appendix “III” - Proposed Amendments to Surrey Official Community Plan

2017 - 2026

TEN YEAR SERVICING PLAN



**City of Surrey
Engineering Department**

10-YEAR SERVICING PLAN (2017-2026)

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1. OVERVIEW OF THE PLAN

The objective of the 10-Year Servicing Plan (the “Servicing Plan”) is to establish a program of municipal engineering infrastructure works and services that are required to meet the needs identified under the Official Community Plan and Neighbourhood Concept Plans approved by Council.

The Servicing Plan identifies the costs to provide transportation, drainage, water, and sanitary sewer services for both the existing population and the projected growth in population over the next 10 years (2017-2026).

The Servicing Plan is developed based on the following plans and documents:

- Official Community Plan (OCP);
- Neighbourhood Concept Plans (NCPs);
- Sustainability Charter;
- Previous 10-Year Servicing Plan (2016-2025);
- Transportation Strategic Plan;
- Walking and Cycling Plans;
- Integrated Stormwater Management Plans;
- Serpentine/Nicomelk Strategic Plan for Lowlands Flood Control;
- Metro Vancouver’s Integrated Liquid Waste Resource Management Plan; and
- Metro Vancouver’s Drinking Water Management Plan.

The needs identified in the Servicing Plan are used by the Finance and Technology Department to prepare future 5-Year Capital and Operating budget plans. The identified growth related components in the Servicing Plan are used to determine the Development Cost Charges (DCCs) for engineering infrastructure.

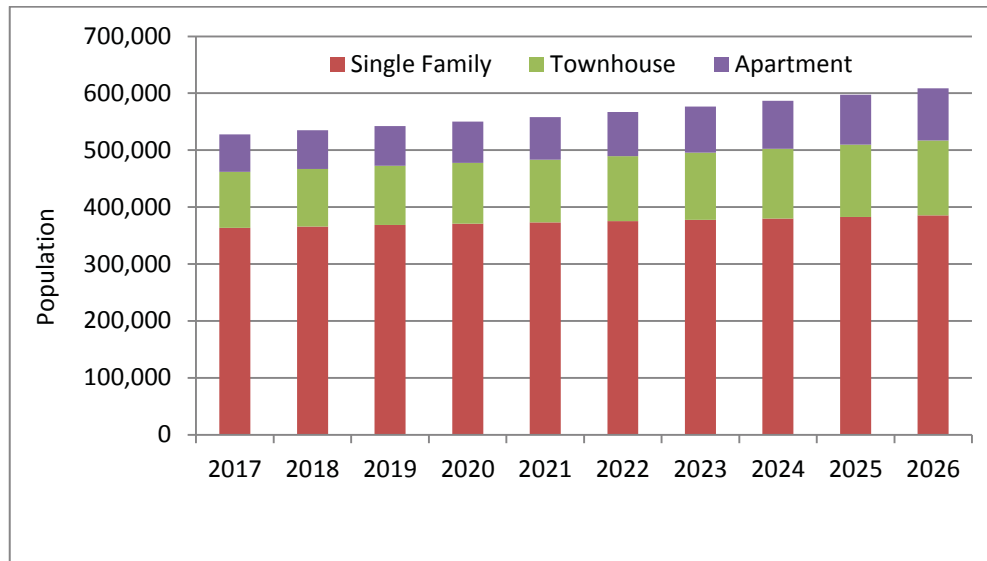
1.1 Servicing Plan Programs

The needs included in the Servicing Plan are divided by the type of asset: transportation, sanitary sewer, water, and stormwater. They are then further divided into programs under each asset type. Programs seek to associate projects of similar works and services.

The Engineering Department revised its capital and operating program structure in 2009 to differentiate operation/maintenance programs and capital programs as part of its Public Sector Accounting Board PS3150 reporting requirements; therefore, some projects included in the Servicing Plan under specific programs may be contained in different programs as compared to previous Servicing Plan editions. Although projects may have changed programs, the activity and funding requirements of the projects generally will remain the same.

1.2 Population Projections

Growth related needs are primarily driven by the increase in population. The Servicing Plan is developed based on the population projections estimated by the City’s Planning and Development Department. The City’s population, for the purposes of engineering services, is estimated to increase by approximately 88,000 residents over the next 10 years.

Figure 1.1 - Population Projections

The principles behind the methodologies used in the development of this plan are classified under three categories, and they are:

- Infrastructure required to support the existing population (Non-Growth);
- Infrastructure required to support future development (Growth); and
- Infrastructure required to support both the existing population and future development.

1.3 Infrastructure Required to Support the Existing Population (Non-Growth)

A portion of the servicing requirements included in the Servicing Plan are to support the City's existing population (non-growth). In addition to maintaining the serviceability of the existing infrastructure, this category of requirements includes works to overcome deficiencies within already developed areas. These servicing requirements are funded by the existing residents and businesses through their utility rates.

Examples of non-growth related works included in the Servicing Plan are:

- repaving of roads;
- new sidewalks and street lights for developed areas;
- local improvements in developed areas;
- resolutions to existing drainage problems;
- drainage main, water main, and sanitary sewer main replacements; and
- climate change adaptation.

1.4 Infrastructure Required to Support Future Development (Growth)

A portion of the servicing requirements included in the Servicing Plan are to support future development (growth).

To ensure that growth related projects are cost-effective, the following were considered in the sizing of infrastructure and the timing of works:

- life cycle of mains, pipes, and other materials used in the construction of municipal services (typically spans 50 to 100 years);
- incremental costs for upsizing trunk sewers or feeder mains that are relatively small compared to the total construction cost, or to the cost of further relief work at a future date;
- extent and effect of disruptions caused by phased and/or sectional improvement works; and
- strategy of interim upgrading of roads to reach full urban standards over, or even beyond, the life of the Servicing Plan.

1.5 Infrastructure Required to Support the Existing Population (Non-Growth) and Future Development (Growth)

Some projects support the existing population, as well as future development. An example of this type of project is replacement of a water main that is also upsized to provide additional capacity. In this case, the replacement cost would be assigned to non-growth needs and the upsizing cost to growth needs.

1.6 Cost Estimates

All costs quoted in the Servicing Plan are in 2017 dollars. The majority of these costs are indicative (Class D) level estimates. More detailed cost estimates have been used where available.

For annual projects, the total cost of the project over 10 years is provided.

1.7 Financing Infrastructure to Support Future Development (Growth)

There are a number of financial strategies available for front-ending developers or property owners to recover an appropriate share of costs to service growth. Examples of these are:

- DCC Front-Enders Agreements;
- Developments Works Agreements; and
- Latecomer Charges Agreements.

Financing strategies for major servicing elements included in the Servicing Plan allow for a cooperative approach between the City and developers to use DCCs generated in respective developing areas.

1.8 Financing Strategies for Servicing Industrial Areas

The Servicing Plan includes major servicing requirements for industrial lands in South Westminster, East Bridgeview, South Cloverdale, Highway 99 Corridor, East Newton, and Campbell Heights. The City's ability to directly provide, or facilitate developers to provide, for servicing these requirements supports the City's goal to increase economic development activity.

The Highway 99 Corridor, Campbell Heights, and Anniedale-Tynehead areas have been treated as specific areas from the overall City-wide DCC-funded Servicing Plan due to the higher costs of providing services to these areas. This has allowed greater flexibility in the financing of services through the use of specified area charges and public-private partnerships. Servicing requirements and associated growth projections for these areas are included in separate Sections.

1.9 Projects Constructed Under DCC Front-Enders Agreement

Some projects identified in the previous 10-Year Servicing Plan (2016-2025) have been constructed and financed by developers through DCC Front-Enders Agreements. These agreements allow DCCs collected in the benefiting catchments to be refunded to the respective front-ending developer, to the limit of the cost of the project as development occurs.

1.10 Timing of Projects

The tables of works are based on the anticipated pace and expected locations of future growth. Should development and growth occur differently, then the timing of individual projects may have to change as well; therefore the projects, and in particular their timelines and extents of work shown, should be regarded as conceptual and subject to change.

The estimated project timeline ranges within the Servicing Plan are classified as follows:

A	-	Annual	Every year
S	-	Short Term	1 - 3 years
M	-	Medium Term	4 - 6 years
L	-	Long Term	7 - 10 years
N	-	NCP dependent	Timing depends on development within NCP area
U	-	Upsizing Contribution	No fixed time; project carried out as required

1.11 Public Consultation

The majority of studies and plans that identify the various infrastructure requirements included in the Servicing Plan have received considerable public input. This input ranges from public opinion surveys, public open houses, citizen advisory committees, and the various Committees of Council such as the Environmental Sustainability Advisory Committee, the Development Advisory Committee, the Transportation and Infrastructure Committee, and the Agricultural and Food Security Advisory Committee.

1.12 Summary of Funding Requirements

Based on the activities detailed under each City-wide program and area specific programs on Highway 99, Campbell Heights, and Anniedale-Tynehead servicing, the Servicing Plan funding requirements are as follows:

Table 1.1 - 2017-2026 10-Year Servicing Plan Cost Summary

Program	Growth (\$)	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
Transportation Arterial	380,338,750	341,116,800	65,795,000	89,387,200	954,163,000
Transportation Non-Arterial	77,525,250				
Water	71,129,451	130,025,180	0	0	201,204,631
Sewer	87,583,807	66,669,311	0	0	154,253,118
Drainage	92,483,912	148,197,747	10,400,000	0	249,141,537
Campbell Heights	133,276,552	0	35,937,500	16,875,000	186,089,052
Highway 99 Corridor	45,956,117	0	14,250,000	3,250,000	63,456,117
Anniedale-Tynehead	200,430,000	0	116,275,000	25,560,000	342,265,000
Total	1,088,723,839	686,009,038	242,657,500	135,072,200	2,150,572,455

2. TRANSPORTATION SERVICING REQUIREMENTS

The City's Transportation Strategic Plan has set a vision and established principles aimed at developing a balanced transportation system that caters to all mobility needs including the movement of goods and services associated with a successful economy. The six fundamental principles are:

1. Effective and Efficient Network Management
2. More Travel Choice
3. Safer, Healthier Communities
4. Successful Local Economies
5. Protection of our Built and Natural Environment
6. Transportation Integration

Development of the City's road network remains a significant component of the Transportation Strategic Plan. However a balanced transportation system helps to integrate with other City plans for the environment, health and safety, economic development, and land development. This provision of greater travel choices improves access to jobs, education, health and recreation for all users. The transportation section of the Servicing Plan reflects the on-going development of a multi-modal transportation system and increases multi-modal funding from the previous Servicing Plan. Although funding has always been allocated to transit and walking programs, this is the first Servicing Plan that has clearly identified project lists for these transportation modes.

The serviceability of Surrey's transportation networks are fundamental to the continued growth of the City. The projects outlined in this Servicing Plan will maintain, improve and expand to meet the mobility needs of our communities and businesses, safely and efficiently.

2.1 Road Classifications & Transportation Inventory

Four classes of roads enable traffic to travel within and through Surrey: Provincial Highways, arterial roads, collector roads and local roads. Heavy truck travel is restricted to the City's designated truck routes, which are primarily Provincial Highways and arterial roads.

The Provincial Highways form an important role in the overall transportation network for the region. Funding of capital works on Provincial Highways is typically provided by the Province. The City may also take part in cost-sharing for specific infrastructure improvements associated with highway interchanges and intersection improvements.

Arterial roads are the main transportation corridors for the movement of all vehicle classes, both through and within the City. Collector roads are primarily intended to collect and distribute traffic between local and arterial roads, with local roads providing access to properties. The width and classification of the City's arterial and collector road network are identified in the Major Road Allowance Map and the Road Classification Map (R-91), which are both contained within Surrey's Subdivision and Development By-Law.

In April of 1999, the Province declassified (devolved) three Provincial Highways within the City: King George Highway, Fraser Highway and Scott Road. A new road network category called the "Major Road Network" (MRN) was established by TransLink for these devolved roads. TransLink addresses the regional transportation needs on the MRN roads and select City arterial roads.

In conjunction with the highway downloading, several City arterial roads were “uploaded” to become part of the new MRN. The City assumes maintenance and capital construction responsibilities for these devolved roads, while TransLink provides the maintenance funding. For the purposes of this Plan, funding for capital works projects on the MRN are assumed to be a split of 50/50 between TransLink and the City.

Provincial Highways, City arterial (both MRN and non-MRN), and collector roads within the City are shown on the next page in **Figure 2.1**. The City's current inventory of roads and a sample of supporting infrastructure are summarized below in **Table 2.1**.

Table 2.1 – Transportation Infrastructure Summary

Roads - Centreline Length	
Arterial Roads (including MRN roads)	407 km
Collector Roads	273 km
Local Roads	1409 km
<u>Lanes</u>	<u>211 km</u>
Total Surrey Roads	2300 km
Provincial Highways	99 km
Total Surrey & Provincial Roads	2399 km
Lane Kilometre Length	
Major Road Network	4871 km
City Arterials	5681 km
Collectors	5441 km
Supporting Infrastructure	
Multi-use Pathways	87 km
Bridges and Structures	50
Street Lights	29,000
Traffic Signals	320
Traffic Signs	80,000

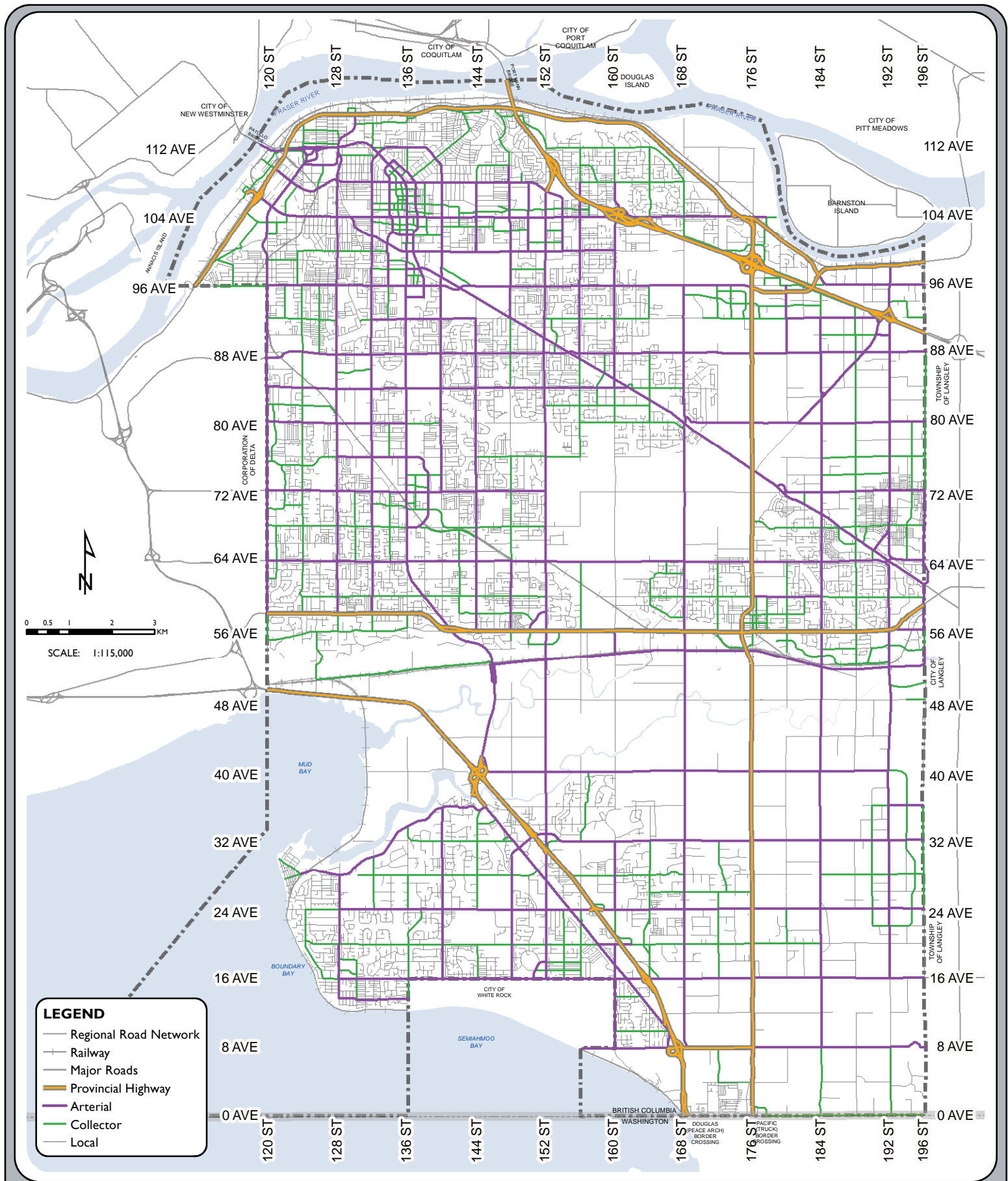


FIGURE 2.1 - ROAD NETWORK

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

2.2 Road Network Plan Needs – Growth and Non-Growth

As urban development and growth occurs within the City, transportation demands increase. The growth related aspect of the Servicing Plan covers works to construct new sections as well as widen and upgrade the arterial and collector road network in Surrey. The growth component of the plan also covers works related to regional projects, strategic local roads, safety and transit, cycling and walking facilities.

The non-growth related aspects of the Servicing Plan are focused on the operations and maintenance of the road network. This includes arterial, collector and local road repaving, and infrastructure replacement, as well as the completion of some local road and sidewalk works, and program management.

2.3 Road Servicing Program

Program 1000 – New Arterial Improvements

The New Arterials Improvements Program is based on completing strategic and planned arterial connections in the City's road network that are identified as part of concept plans and included in the City's Road Classification map. These important connections facilitate improved distribution of traffic to help relieve congested intersections and corridors, and improve the ability for cycling, walking and transit movement through the City.

Program 1002 – Arterial Improvements – 5 Lane

Growth related improvements are determined from a process that includes using traffic model projections, growth trends due to development in Neighbourhood Concept Plans (NCPs) and where current and/or projected vehicle volumes exceed capacity. Prioritization of projects is based on factors that include improving the operational safety of the corridor and introducing new or enhanced multi-modal facilities for pedestrians, cyclists and transit users.

Program 1004 – Arterial Improvements – 3 Lane

This program has two types of projects. The first type is focused on providing interim operational improvements to provide capacity and safety benefits on existing two lane corridors that are ultimately to be widened to 5 lane widen under Program 1002. This type of 3 Lane project will provide a centre, two-way left turn lane and/or median as well as shoulders/bike lanes.

The other type of 3 Lane project is the completion of an arterial to an identified unique standard. The classification as a unique arterial standard is typically on the basis for access management and is not required to be widened to 5 Lanes. Growth related improvements provide operational capacity and safety benefits and new or enhanced multi-modal facilities for pedestrians, cyclists and transit users.

Program 1006 – Strategic Property Acquisition

This program funds advanced property acquisition for arterial, collector and local road projects prior to a detailed design and/or construction being identified. Properties that are anticipated to be significantly impacted through new arterial roads or from arterial road widening have been identified through concept plans or as part of the City's road classification and allowance maps.

The majority of collector and strategic local road construction projects are completed within existing road allowances but there are a number of instances where they can only be achieved through property acquisition. This program also allocates funds a number of collector and "strategic" local roads that have little or no opportunity for construction by adjacent

development, but are important to realize the planned growth objectives and respond to growth related traffic impacts. These local roads are normally found within the City's NCPs and other development that have a value in supporting the growth objectives of the particular NCP or Town Centre Plan area.

Program 1008 – Development Coordinated Improvements

The Development Coordinated Improvements program includes both development coordinated works (DCW) and Collector upsizing.

DCW accommodates the construction of works that are not identified in the Servicing Plan in conjunction with the development of adjacent properties. The intent is to construct required works that will improve the transportation system and are unlikely to occur through subsequent development or until a future iteration of the Servicing Plan. It is often cost-effective to construct certain works adjacent to development sites that are not expected to be completed through future development projects. This includes road widening/completion, sidewalks, and other works completed through the active development project. As these works are in response to development activity, it is not possible to predict a detailed program of works.

Most collector road widening projects are constructed in conjunction with development with DCC upsizing funds. Developers are responsible for construction of the applicable local road standard (based on zoning) plus curb and gutter, drainage works, sidewalk, street lights and landscaping. The City will complete it to the ultimate standard by funding the additional pavement to the ultimate 14m width plus incremental cost to upgrade to collector standard pavement structure and street lighting

Program 1012 - Arterial Intersection Improvements

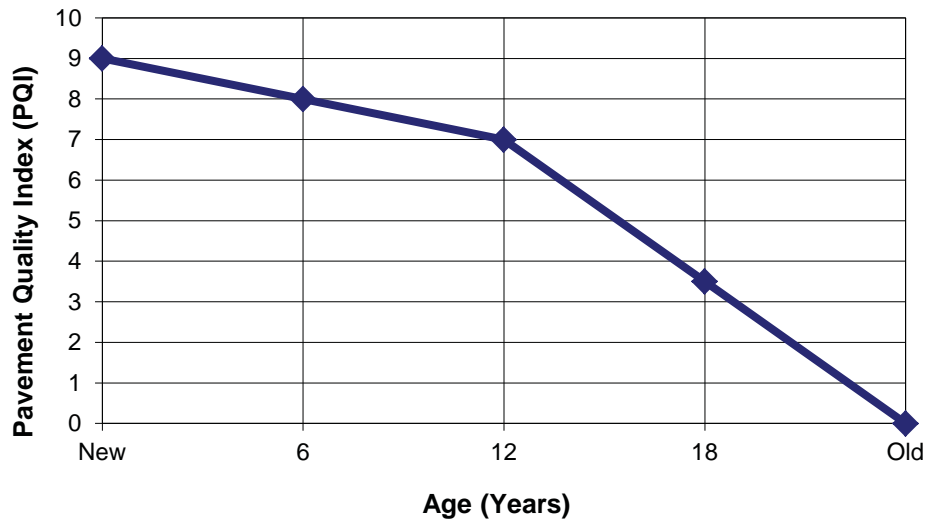
The Arterial Intersection Improvements Program consists of a number of intersections that have been designated for improvement with left turn bays, traffic signals or other works to increase capacity or mitigate the impacts of increased traffic on safety.

Program 1016 - Pavement Resurfacing and Repair

Road pavement studies indicate that resurfacing is most cost-effective when undertaken just before there are visible signs of deterioration; if resurfacing is deferred beyond the time that deterioration first becomes apparent, then rehabilitation costs increase by four to five times the optimum cost. Also, direct vehicle operating costs may double when the vehicle is driven over a very poor, deteriorated road as opposed to a good one.

As the age of pavements increases, the pavement roughness, cracking distress, and structural adequacy (pavement's ability to carry traffic loads) decreases. A PQI rating of 9 represents a smooth pavement in excellent condition, while a PQI rating of 1 represents a very rough pavement in very poor condition. A PQI rating of 7 is approximately at the point of inflection for the pavement deterioration curve, as shown in **Figure 3.2**. This program also covers minor pavement repair works, including crack sealing and patching.

After a pavement falls below a PQI rating of 7, there is a more rapid deterioration with age. Over a 10-year period, a PQI rating of 7 is projected to deteriorate to a condition 1 or 2 if no pavement rehabilitation work is undertaken.

Figure 3.2 – Pavement Deterioration Curve – MRN & Arterial

Arterial pavement resurfacing needs are determined by the Surrey Pavement Management System (PMS). This is a sophisticated database and computerized model of all Surrey roads. It optimizes the scheduling of repaving and repairs to achieve least cost for maintenance and capital repaving over the life cycle of this key infrastructure component.

The Surrey PMS system is divided into two separate analyses: one analysis for the MRN, and another for the remaining City arterial roads.

On the MRN, since maximum benefits coincide with high volume arterial roads, these roads are maintained at a higher condition level than other City roads. Priorities for the MRN paving program are determined through the Surrey PMS, and funding for paving rehabilitation on the MRN is provided by TransLink.

On the remaining City arterial roads, in order to maintain a level approaching the PQI of 7 over the term of the Servicing Plan, we anticipate about \$7 million per year of non-growth funding is required.

Program 1018 – Bridges & Overpasses

This program includes growth related new, widening and improvements to transportation crossings which includes bridges and overpasses. In addition the program identifies major non-growth replacement and rehabilitation of crossings and new crossings. Costs have been assigned between growth and non-growth based on the reasons for replacement.

The City undertakes a bridge condition assessment annually, which has identified bridges for replacement or major deck rehabilitation due to their condition. The crossings selected for replacement or as a new crossing under this program are identified based on bridge condition, the need for widening for increased capacity, or a combination of the two.

Program 1020 – Highways & External Agency

Costs for Highways & External Agency Program projects are typically based on the City's share of works. The projects may be as specific as urban features such as ditch enclosure, sidewalks, curbs and street lights that are more practical and economical when carried out at the same time as Provincial projects. Alternatively the funding allocation may be part of proportional allocation from multiple funding partners such as the Provincial or Federal governments, TransLink or other

Transportation agencies. Typically, the majority of projects are for specific grade separation and interchange ramp cost-sharing and includes safety improvements to existing at-grade rail crossings. Funding from this program is primarily arterial growth related.

Program 1022 - City Centre Upgrading

Based on the density and character planned for the City Centre, road standards in the City Centre are set to a higher beautification level and pedestrian treatment standard than roads in other areas of the City. It is estimated that about \$4 million represents a base within the Servicing Plan to beautify certain Collector and Local roads that will not be upgraded through redevelopment over the next 10 years. One quarter of street beautification costs is attributed to growth and includes wider sidewalks and ornamental street lights.

Program 1026/1076 - City Centre Strategic Property Acquisition

City Centre is planned to have a finer grain road network that supports multi-modal, transit oriented development for the main business, cultural, and activity centre for the City and metropolitan South of Fraser Region. There are a number of key properties where full property acquisition is required to deliver the local roads that would not be typically delivered through a normal rezoning process. This is a specific area charge that equalizes the costs associated with providing the finer grained road network throughout all of City Centre.

Program 1030 – Collector Road Completion

Collector roads serve a wider community need both in terms of vehicular and pedestrian/cycle traffic. Most collector roads are completed as an upsizing project through the Development Coordinated Improvements program 1008. However, many collector roads remain incomplete and are required at locations that are not expected to be achieved through the redevelopment process. Unlike arterial roads, the need for collector widening is not strictly driven by capacity but rather provides improved pedestrian, cyclist and traffic mobility and on street parking as well as a finished streetscape that enhances livability for residents and businesses. This growth program funds all new and widening of collector roads, as well as select local roads as non-growth projects.

Program 1046 – Collector and Local Road Paving

Similar to Program 1016 for arterial roads, pavement studies are used to indicate when resurfacing of collector and local roads is required in order to provide the most cost-effective approach to reduce rehabilitation costs. This program allocates non-growth related funding to collectors and local roads for pavement resurfacing. Additionally, this program allocates funds to finish the final lift (overlay) on roads where this was delayed due to redevelopment and to avoid servicing pavement cuts of new asphalt.

Program 1074 - Local Area Service (LAS) Program

Areas of Surrey that developed before the current servicing standards usually lack roads that are completed to final standard. To complete such roads to the current standards, one or more of the following are required:

- ditch enclosure
- curbs
- pavement widening
- sidewalks
- street lights
- lane development/paving

For local roads, upgrades can be carried out under the Local Area Service (LAS) Program. The LAS process provides a mechanism by which the municipality and the fronting properties share the cost of the upgrading works. LAS road upgrades can achieve the following results:

- Reduced maintenance costs for ditch cleaning, shoulder grading, and pavement.
- Improved appearance and livability for residents.
- Safer street environment with the provision of street lights & sidewalks.

Potential local area service projects arise under the following conditions:

- By petition; or
- As identified to meet community needs or to complete a particular local area.

Currently, there is a LAS revolving fund that is used to up-front all costs and fund the City's component of the works. This fund is anticipated to be adequate to fund local area service needs over this plan period.

Program 1078 – Lane Construction

This non-growth program allocates a modest amount of funding for the construction and completion of lanes as part of arterial road access management needs.

Program 1102 – Traffic Signals and Roundabouts

This program includes all intersection control projects and is focused on growth related installations of traffic signals, pedestrian signals, roundabouts, and activated flashing crosswalks. The installation of intersection control is based on whether the appropriate industry standard warrants are met, with an emphasis on reducing collisions and improving pedestrian crossing opportunities. Non-growth related projects include traffic signal rebuilds, emergency vehicle preemption (Opticom) and Intelligent Transportation System (ITS) improvements.

Program 1104 – Street Light Replacement

This non-growth program is to address the replacement of aging street light poles and fixtures.

Program 1108 - Traffic Calming Measures

The City has an annual program of constructing traffic calming works. These works consist of measures such as speed humps and speed tables, but can also include traffic circles and pavement narrowings. As these measures are primarily needed as a result of increases in traffic flow, three quarters of the cost of works has been assigned to the growth component.

Program 1112 – Pavement Repair

This operational non-growth program addresses the day to day maintenance needs for asphalt pavement, including pothole repair and crack sealing.

Program 1120 - Bicycle Network Improvements

The Bicycle Network Improvement program includes both on and off street projects. On street projects include the funding of pavement markings, signing, and traffic signal modifications on existing arterial and collector roads that do not have bike lanes. On-street bicycle lanes are standard as part of the arterial and collector cross sections and therefore as part of new or widening projects, funding for this is included within the respective road widening programs.

Off-street projects include the funding of property acquisition and pathway construction in cooperation with the Parks, Recreation & Culture Department. The City regularly applies for

annual TransLink funding under the Bicycle Infrastructure Capital Cost Sharing (BICCS) program, as well as Provincial and Federal government funding programs.

The cost of the Bicycle Networks Improvements Program is divided into 33% growth and 67% non-growth. 33% is allocated to growth, as the City intends to improve the modal split for bicycles by providing additional facilities and through education and awareness. This will result in a lower demand for road capacity for vehicles and a reduction in the road widening within the Servicing Plan

Program 1142 – Transit Infrastructure Improvements

The Transit Infrastructure Improvements Program provides funding for infrastructure projects to assist in the transit services provided by TransLink and Coast Mountain Bus Company. Projects include enhanced transit facilities such as new bus stops and making bus stops wheelchair accessible. Additionally, improvements such as transit preemption and “queue jump” lanes are included to enhance the reliability and reduce travel times for transit users. The City regularly applies for annual TransLink funding under the Transit Related Infrastructure Improvements Program (TRIIP).

Program 1154 – Walking Infrastructure

The Walking Infrastructure Program is a consolidation of previous programs that collectively deliver sidewalks, letdowns, walkways and road crossing infrastructure on arterial, collector and local roads. Due to the wide scope of the program, it is a combination of both arterial and non-arterial growth funding that addresses the increased demands on walking infrastructure and vehicle interaction, as well as non-growth funding to respond to existing demands on incomplete infrastructure.

The primary focus for the program is to develop walking infrastructure based on school travel patterns, and the need to complete sidewalk network gaps created through development. The general guidelines for implementation are:

- There should be a safe route to school from all residential subdivisions, and along a route with a sidewalk accessible to school children.
- Sidewalks are needed on both sides of the road along regular transit routes.
- Bus stops should have a sidewalk connection to an adjacent local road.
- Sidewalks are prioritized towards local roads that form a critical element in connecting a route for school purposes.

A component of this program includes improving the frontages of numerous park and school locations that are serviced by roads that no longer meet our current standards, but warrant growth related operational, capacity, and safety improvements.

Program 1500 - Design & Planning

This non-capitalized Design and Planning Program is comprised of three project categories:

- Resources required to manage all aspects of the transportation program including design and construction of the servicing plan, public and agency liaison, review and management of planning studies and internal coordination with other Sections, Divisions and Departments. The staff salaries and wages fall into this program as well.
- Traffic modeling studies to project future traffic volumes and future roadway requirements; modeling to look at specific design or operational issues; and modeling to assess development impacts/needs.

- Transportation studies to plan the City's transportation infrastructure, including NCPs, preliminary and functional designs, and all components of the Transportation Plan.

Program 1515 - Minor Projects

The Minor Projects Program is an operating program that is not allocated to specific projects but is made available in order to respond to smaller improvements. These projects that can include minor road works, street lights, curb returns, sidewalks, and cycling projects on arterials, collectors and local roads. Some funding is allocated to minor repairs and other similar items that are outside the scope of typical operations based funding. As the minor projects are typically an operational improvement related to increase in traffic volume, this program is allocated 67% growth funding and 33% non-growth funding.

Program 1520 - Transportation Management

This operating program covers overall management of the transportation network. This includes management of the signals program as well as street signs and pavement markings. Also included is the administration support and operational studies required to manage and improve the network.

2.4 Transportation Cost Summary

No.	Program	Program Type	Growth Arterial (\$)	Growth Non-Arterial	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1000	New Arterial Improvements	Capital	33,050,000			9,000,000		42,050,000
1002	Arterial Widening - 5 Lane	Capital	141,150,000			3,000,000	24,500,000	168,650,000
1004	Arterial Widening - 3 Lane	Capital	42,310,000		1,650,000	4,800,000		48,760,000
1006	Strategic Property Acquisition	Capital	20,000,000	9,000,000	31,000,000			60,000,000
1008	Development Coordinated Works	Capital	3,500,000	9,500,000				13,000,000
1012	Arterial Intersection Improvements	Capital	21,950,000					21,950,000
1018	Bridges and Overpasses	Capital	9,000,000		12,240,000	22,580,000	8,280,000	52,100,000
1020	Hwy and External Agency Projects	Capital	15,500,000		6,440,000	22,280,000	5,280,000	49,500,000
1026/76	City Centre Strategic Property Acquisition	Capital	54,512,000					54,512,000
1030	Collector Road Improvements	Capital		38,462,500	9,225,000	1,212,500		48,900,000
1102	Traffic Signals and Roundabouts	Capital	22,725,000	3,675,000	12,000,000		9,000,000	47,400,000
1120	Bicycle Infrastructure	Capital	5,541,750	1,637,750	14,061,800	2,922,500	8,327,200	32,491,000
1142	Transit Infrastructure	Capital			6,000,000		4,000,000	10,000,000
1154	Walking Infrastructure	Capital	5,400,000	10,250,000	29,500,000			45,150,000
1016	Arterial Paving	Capital			60,000,000		30,000,000	90,000,000
1022	City Centre Upgrading	Capital		1,000,000	3,000,000			4,000,000
1046	Collector Road Paving	Capital			31,000,000			31,000,000
1070	Local Road Paving	Capital			35,000,000			35,000,000
1074	Local Area Servicing	Capital			9,000,000			9,000,000
1078	Lane Construction	Capital			4,500,000			4,500,000

No.	Program	Program Type	Growth Arterial (\$)	Growth (\$) Non-Arterial	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1104	Streetlight Replacement	Operating			7,500,000			7,500,000
1108	Traffic Calming	Capital		1,000,000	1,000,000			2,000,000
1112	Pavement Repair	Operating			15,000,000			15,000,000
1505	Design and Planning	Non-Capital	5,700,000	3,000,000	14,000,000			22,700,000
1515	Minor Projects	Operating			9,000,000			9,000,000
1520	Transportation Management	Operating			30,000,000			30,000,000
		Total	380,338,750	77,525,250	341,116,800	65,795,000	89,387,200	954,163,000

2.5 Transportation Projects by Program

This section contains tables and figures that identify the projects under the transportation programs.

The tables provide the following information:

- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs – the high level estimates in 2016 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external, and Greater Vancouver Transportation Authority (GVTA) funding components. External funding may include sources such as the Provincial Government, the Federal Government, and Developers' contributions through their projects.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.

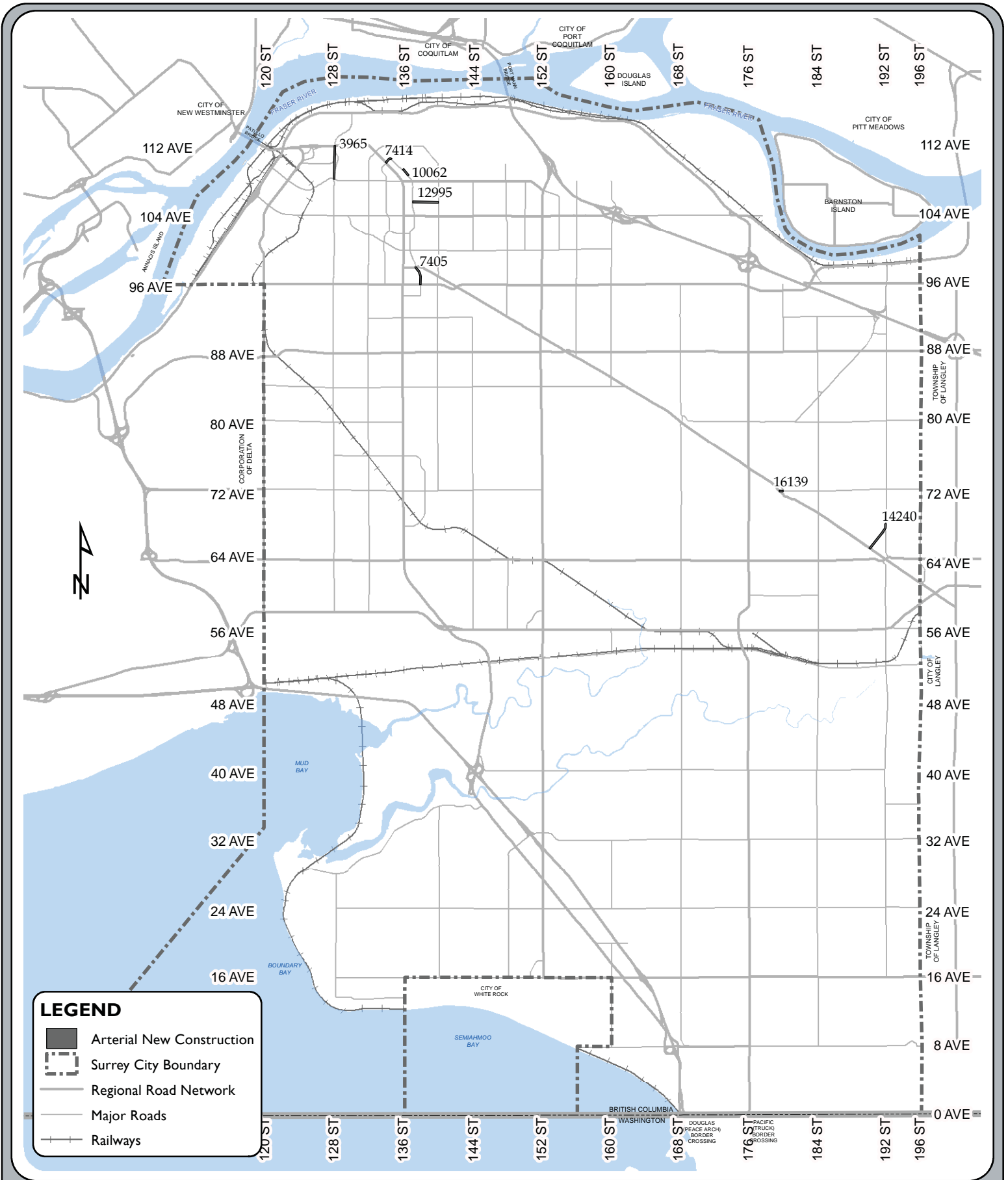
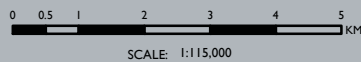
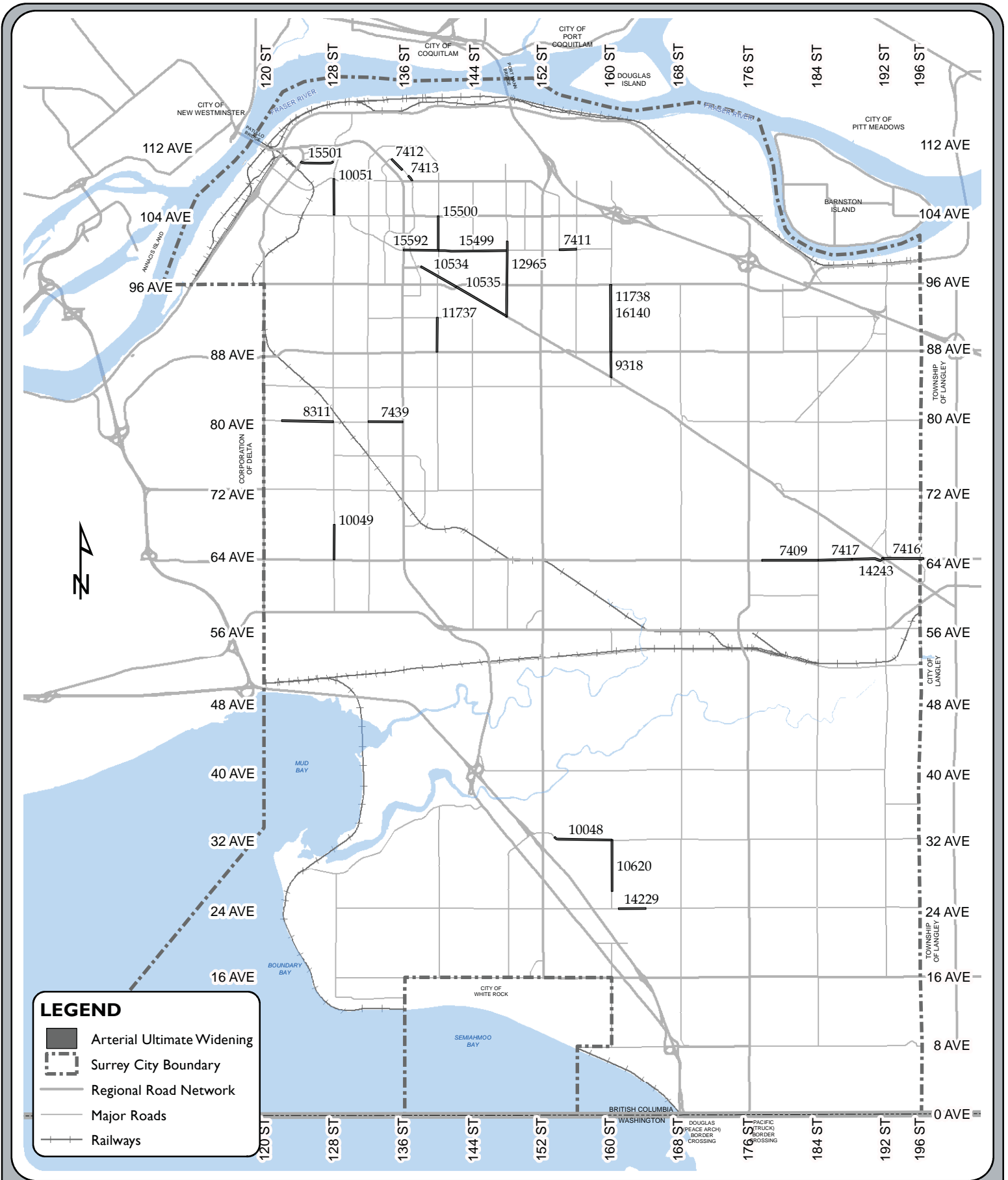
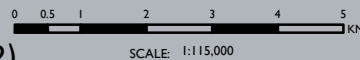


FIGURE 2.2 - Transportation
Arterial New Construction (Program 1000)





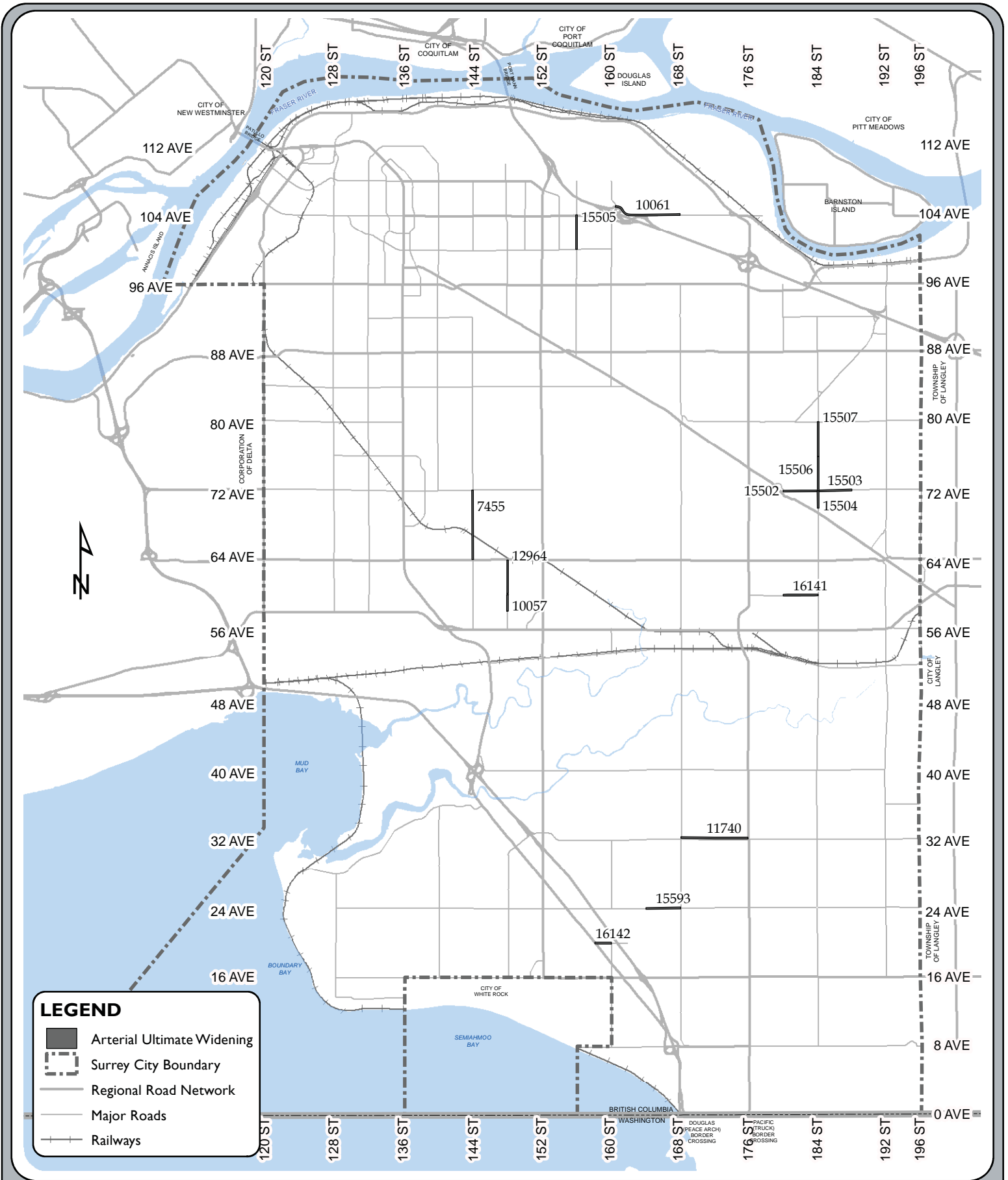
**FIGURE 2.3 - Transportation
Arterial Improvements – 5 Lanes (Program 1002)**



SCALE: 1:115,000



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**FIGURE 2.4 - Transportation
Arterial Improvements – 3 Lanes (Program 1004)**

0 0.5 1 2 3 4 5
KM
SCALE: 1:115,000

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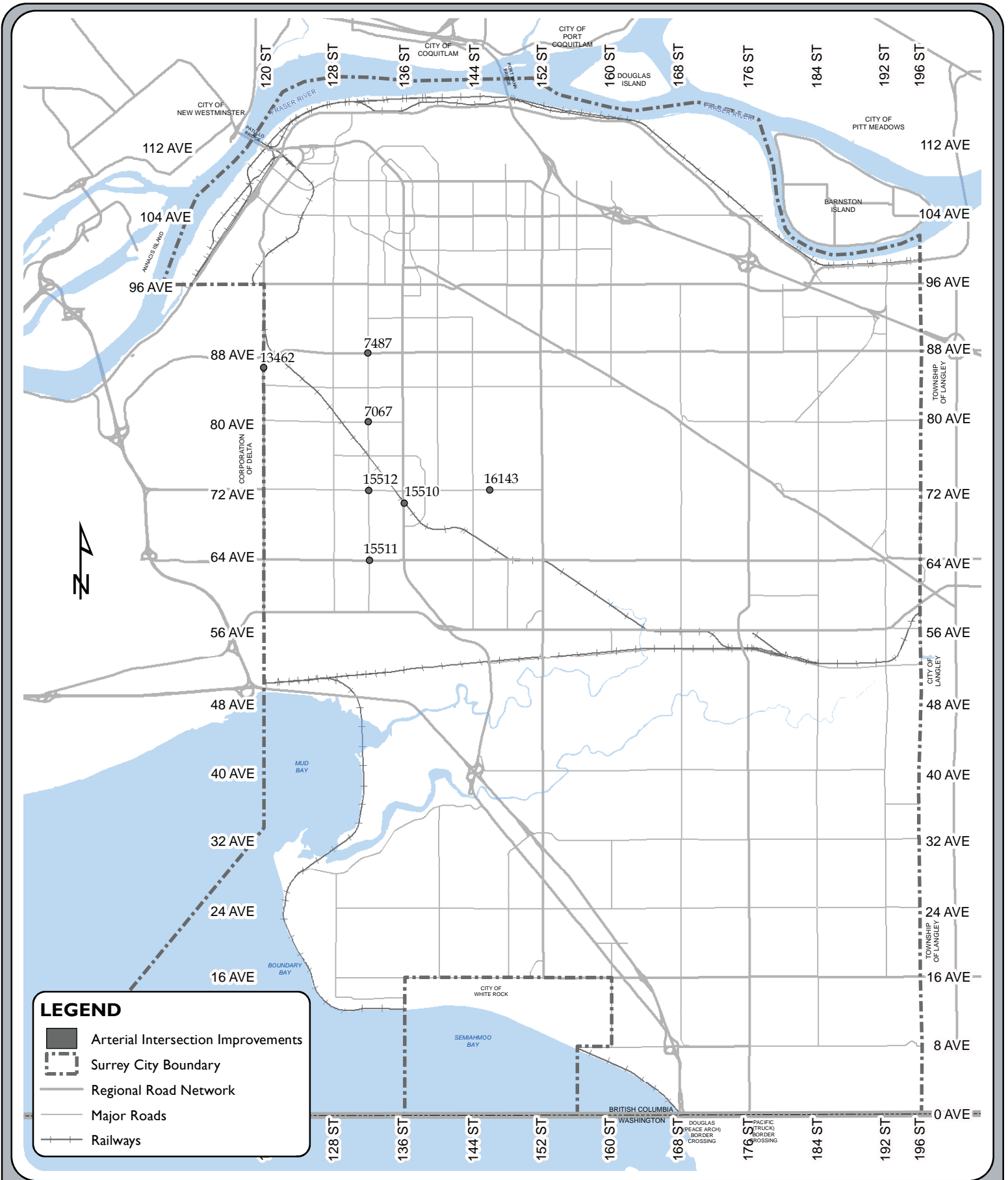
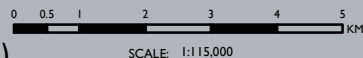


FIGURE 2.5 - Transportation
Arterial Intersection Improvements (Program 1012)



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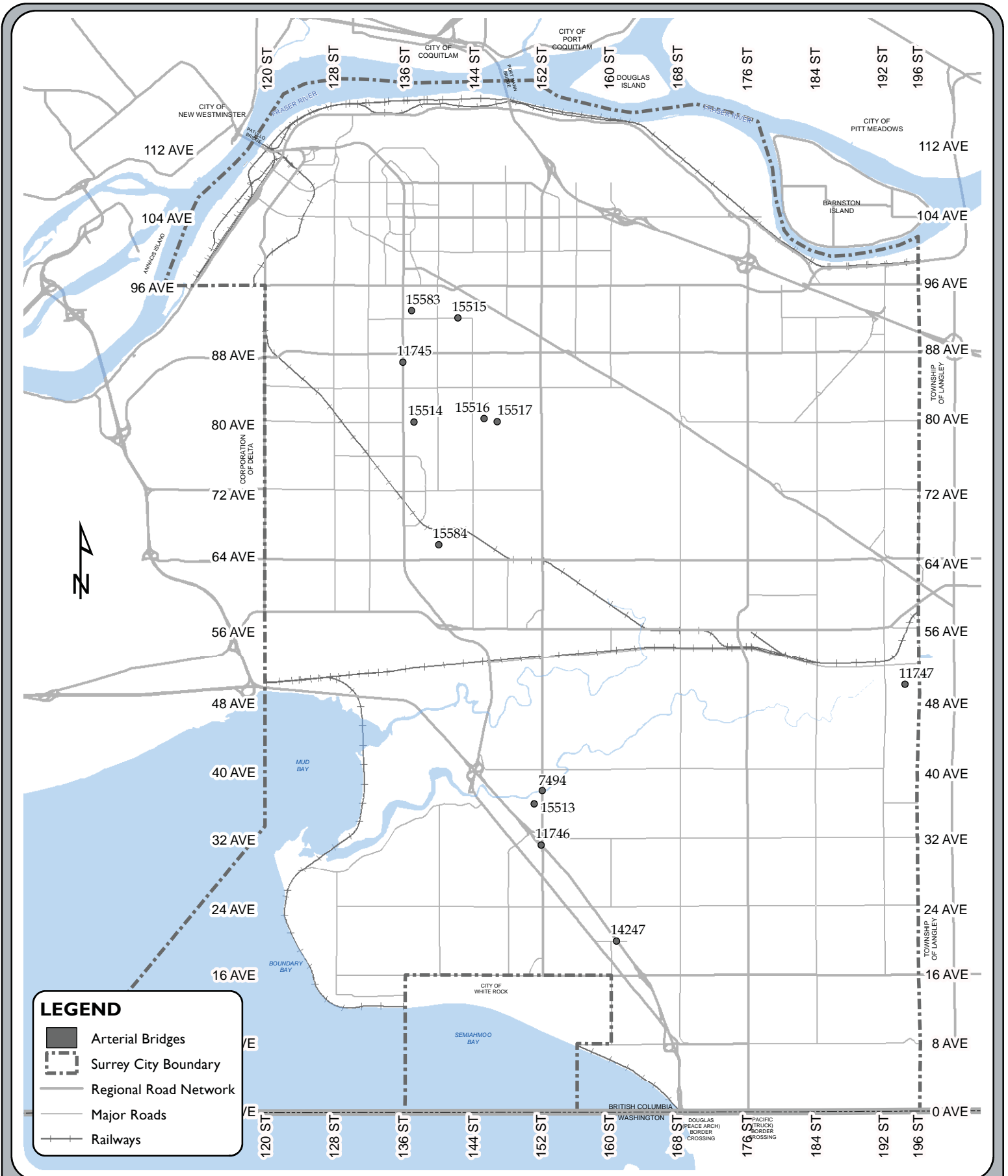
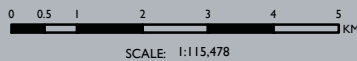


FIGURE 2.6 - Transportation Bridges & Overpasses (Program 1018)



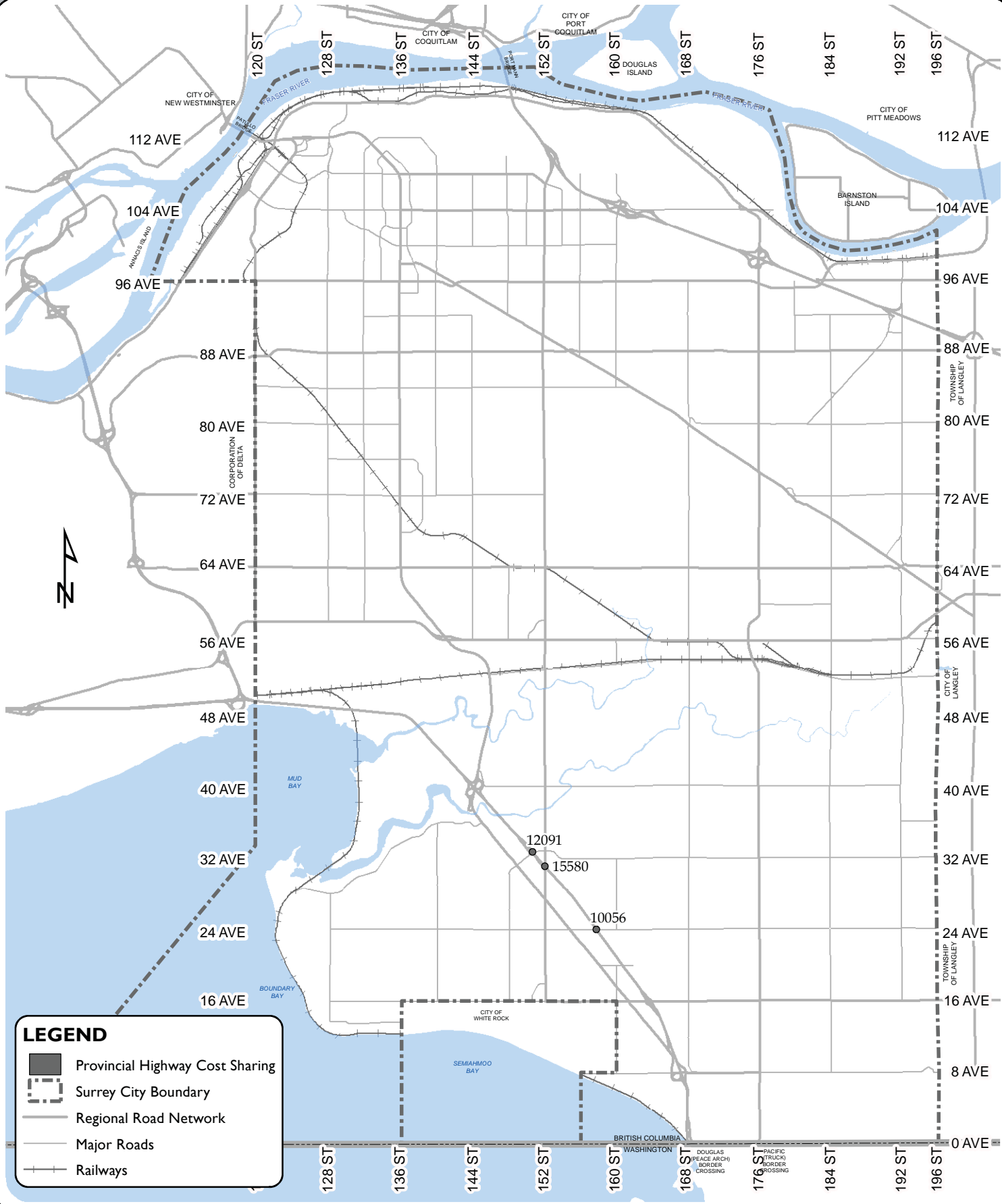
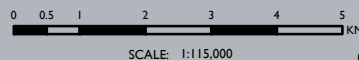


FIGURE 2.7 - Transportation Highways & External Agency (Program 1020)



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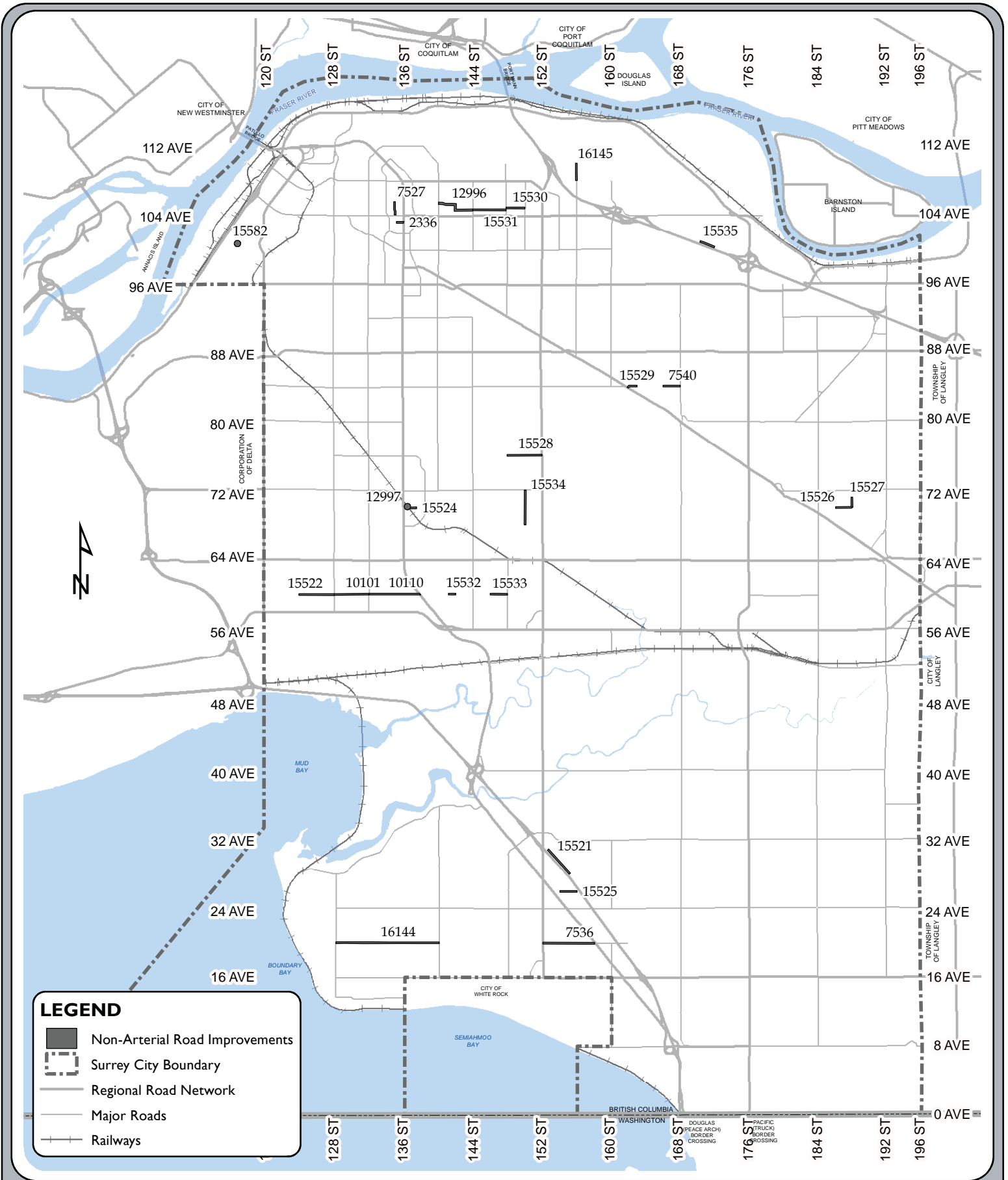


FIGURE 2.8 - Transportation Collector Road Completion (Program 1030)

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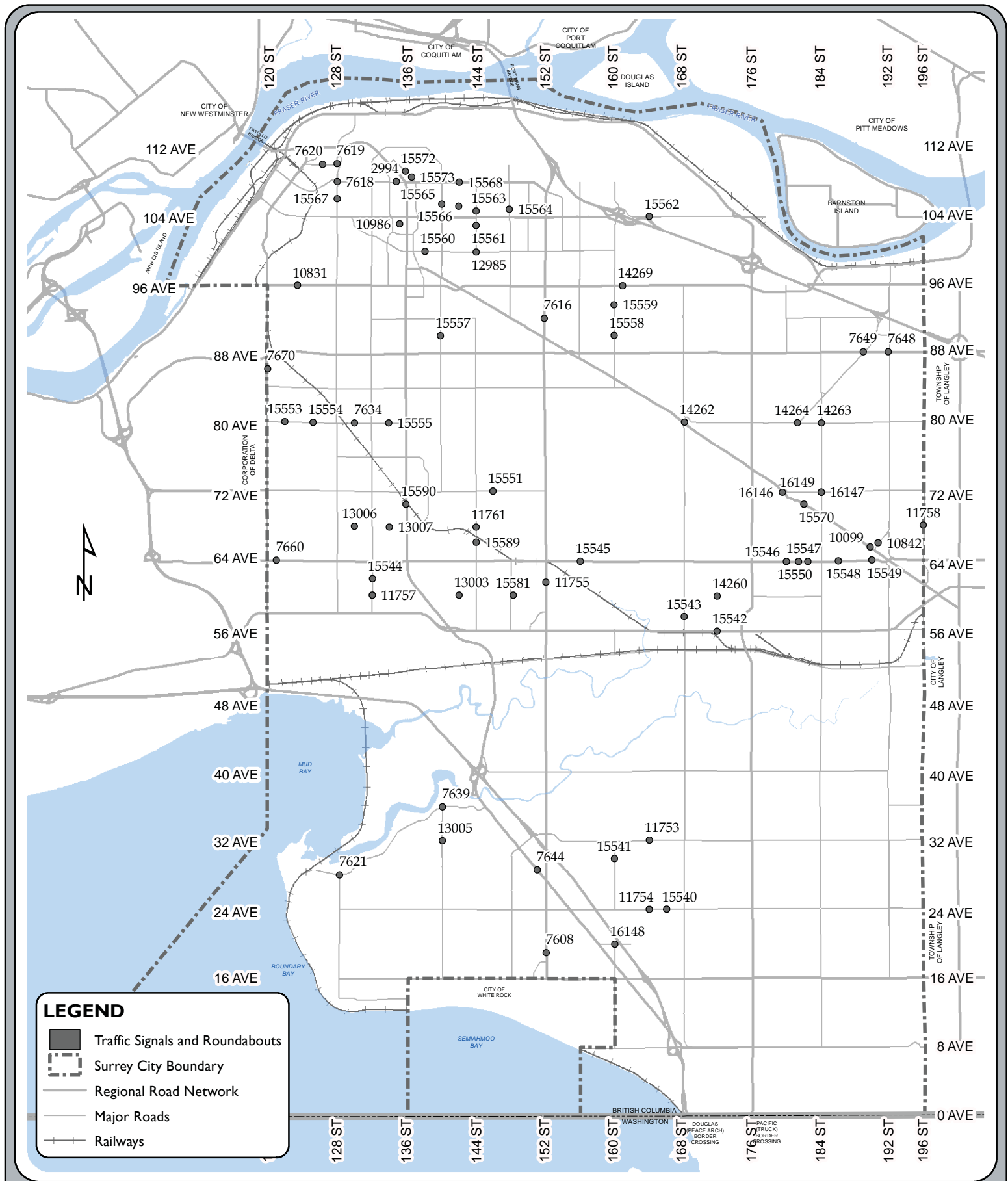
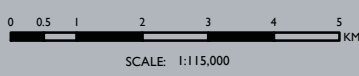


FIGURE 2.9 - Transportation
Traffic Signals & Roundabouts (Program 1102)



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 Date Printed: 06/12/2016 Cartographer: C3W © City of Surrey
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TRANSPORTATION

Program 1000 - Arterial New Construction

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding
3965	Arterial New Construction	128 St: 108 Ave - King George Blvd	Long Term (7 - 10 Yrs)	18,000,000	9,000,000	-	-	9,000,000
7405	Arterial New Construction	Whalley Blvd: 96 Ave - Fraser Hwy	Short Term (1 - 3 Yrs)	3,400,000	3,400,000	-	-	-
7414	Arterial New Construction	Whalley Blvd: King George Blvd. - Hilton Rd	Long Term (7 - 10 Yrs)	1,700,000	1,700,000	-	-	-
10062	Arterial New Construction	Whalley Blvd: Grosvenor Rd - Bentley Rd	Long Term (7 - 10 Yrs)	1,700,000	1,700,000	-	-	-
12995	Arterial New Construction	105A Ave: 137 St (Whalley Blvd) - 140 St	Medium Term (4 - 6 Yrs)	5,100,000	5,100,000	-	-	-
14240	Arterial New Construction	192 St: Fraser Hwy - 68 Ave	Medium Term (4 - 6 Yrs)	3,400,000	3,400,000	-	-	-
16139	Arterial New Construction	72 Ave: Fraser Hwy - 180 St	Long Term (7 - 10 Yrs)	8,750,000	8,750,000	-	-	-
				42,050,000	33,050,000	-	-	9,000,000

TRANSPORTATION
Program 1002 - Arterial Improvements - 5 Lanes

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
7409	Arterial Widening - 5 Lane	064 Ave: 177 St - 184 St	Long Term (7 - 10 Yrs)	10,500,000	5,250,000	-	-	-	5,250,000
7411	Arterial Widening - 5 Lane	100 Ave: 154 St - 156 St	Medium Term (4 - 6 Yrs)	3,000,000	3,000,000	-	-	-	-
7412	Arterial Widening - 4 Lane	Whalley Blvd (Hilton Rd): Bentley to Bolivar	Long Term (7 - 10 Yrs)	2,625,000	2,625,000	-	-	-	-
7413	Arterial Widening - 4 Lane	Whalley Blvd: 108 Ave - Grosvenor	Long Term (7 - 10 Yrs)	1,125,000	1,125,000	-	-	-	-
7416	Arterial Widening - 5 Lane	064 Ave: Fraser Hwy - 196 St	Short Term (1 - 3 Yrs)	4,500,000	2,250,000	-	-	-	2,250,000
7417	Arterial Widening - 5 Lane	064 Ave: 184 St - 188 St	Long Term (7 - 10 Yrs)	6,000,000	3,000,000	-	-	-	3,000,000
7439	Arterial Widening - 5 Lane	080 Ave: 132 St - King George Blvd	Medium Term (4 - 6 Yrs)	6,000,000	6,000,000	-	-	-	-
8311	Arterial Widening - 5 Lane	080 Ave: 122 St - 128 St	Long Term (7 - 10 Yrs)	9,000,000	9,000,000	-	-	-	-
9318	Arterial Widening - 5 Lane	160 St: Fraser Hwy - 088 Ave	Long Term (7 - 10 Yrs)	6,000,000	6,000,000	-	-	-	-
10048	Arterial Widening - 5 Lane	032 Ave: 154 St - 160 St	Medium Term (4 - 6 Yrs)	9,000,000	9,000,000	-	-	-	-
10049	Arterial Widening - 5 Lane	128 St: 64 Ave - 68 Ave	Short Term (1 - 3 Yrs)	6,000,000	6,000,000	-	-	-	-
10051	Arterial Widening - 5 Lane	128 St: 104 Ave - 108 Ave	Long Term (7 - 10 Yrs)	6,000,000	6,000,000	-	-	-	-
10534	Arterial Widening - 5 Lane	Fraser Hwy: 138 St - 096 Ave	Short Term (1 - 3 Yrs)	10,000,000	5,000,000	-	-	-	5,000,000
10535	Arterial Widening - 5 Lane	Fraser Hwy: 96 Ave - 148 St	Medium Term (4 - 6 Yrs)	14,000,000	7,000,000	-	-	-	7,000,000
10620	Arterial Widening - 5 Lane	160 St: 26 Ave - 32 Ave	Short Term (1 - 3 Yrs)	9,000,000	9,000,000	-	-	-	-
11737	Arterial Widening - 5 Lane	140 St: 88 Ave - 92 Ave	Medium Term (4 - 6 Yrs)	6,000,000	6,000,000	-	-	-	-
11738	Arterial Widening - 5 Lane	160 St: 92 Ave - 96 Ave	Long Term (7 - 10 Yrs)	6,000,000	6,000,000	-	-	-	-
12965	Arterial Widening - 5 Lane	148 St: 092 Ave - 101 Ave	Medium Term (4 - 6 Yrs)	10,800,000	10,800,000	-	-	-	-
14229	Arterial Widening - 5 Lane	024 Ave: 161 St - 164 St	Short Term (1 - 3 Yrs)	4,500,000	4,500,000	-	-	-	-
14243	Arterial Widening - 5 Lane	064 Ave: 188 St - Fraser Hwy	Long Term (7 - 10 Yrs)	4,000,000	2,000,000	-	-	-	2,000,000
15499	Arterial Widening - 5 Lane	100 Ave: 140 St - 148 St	Short Term (1 - 3 Yrs)	9,600,000	9,600,000	-	-	-	-
15500	Arterial Widening - 5 Lane	140 St: 100 Ave - 104 Ave	Short Term (1 - 3 Yrs)	6,000,000	6,000,000	-	-	-	-
15501	Arterial Widening - 3 to 5 Lane	110 Ave: Scott Rd - 128 St	Medium Term (4 - 6 Yrs)	4,000,000	4,000,000	-	-	-	-
15592	Arterial Widening - 5 Lane	100 Ave: King George Blvd - 140 St	Short Term (1 - 3 Yrs)	6,000,000	6,000,000	-	-	-	-
16140	Arterial Widening - 5 Lane	160 St: 088 Ave - 092 Ave	Long Term (7 - 10 Yrs)	6,000,000	6,000,000	-	-	-	-
				165,650,000	141,150,000				24,500,000

TRANSPORTATION

Program 1004 - Arterial Improvements - 3 Lanes

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding
7441	Arterial Median Projects	Various Locations	Annual	2,000,000	2,000,000	-	-	-
7455	Arterial Widening - 3 Lane	144 St: 64 Ave - 72 Ave	Short Term (1 - 3 Yrs)	5,600,000	5,600,000	-	-	-
10057	Arterial Widening - 2 Lane + Parking	148 St: 58 Ave - 60 Ave	Medium Term (4 - 6 Yrs)	1,400,000	1,400,000	-	-	-
10061	Arterial Widening - 3 Lane	104 Ave: 160 St - 168 St	Long Term (7 - 10 Yrs)	5,600,000	5,600,000	-	-	-
11740	Arterial Widening - 3 Lane	032 Ave: 168 St - 176 St	Medium Term (4 - 6 Yrs)	5,600,000	5,600,000	-	-	-
12964	Arterial Widening - 2 Lane + Parking	148 St: 60 Ave - 64 Ave	Medium Term (4 - 6 Yrs)	2,800,000	2,800,000	-	-	-
14244	Arterial Minor Projects	Various Locations	Annual	5,000,000	3,350,000	-	1,650,000	-
15502	Arterial Widening - DCW Blvd	072 Ave: 180 St - 184 St	Short Term (1 - 3 Yrs)	1,120,000	1,120,000	-	-	-
15503	Arterial Widening - DCW Blvd	072 Ave: 184 St - 187 St	Medium Term (4 - 6 Yrs)	840,000	840,000	-	-	-
15504	Arterial Widening - DCW Blvd	184 St: 70 Ave - 72 Ave	Short Term (1 - 3 Yrs)	560,000	560,000	-	-	-
15505	Arterial Widening - 3 Lane	156 St: 100 Ave - 104 Ave	Long Term (7 - 10 Yrs)	2,800,000	2,800,000	-	-	-
15506	Arterial Widening - DCW Blvd	184 St: 072 Ave - 076 Ave	Medium Term (4 - 6 Yrs)	1,120,000	1,120,000	-	-	-
15507	Arterial Widening - DCW Blvd	184 St: 076 Ave - 080 Ave	Long Term (7 - 10 Yrs)	1,120,000	1,120,000	-	-	-
15593	Arterial Widening - 3 Lane	024 Ave: 164 St - 168 St	Medium Term (4 - 6 Yrs)	2,800,000	2,800,000	-	-	-
16141	Arterial Widening - 3 Lane	060 Ave: 180 St - 184 St	Long Term (7 - 10 Yrs)	2,800,000	2,800,000	-	-	-
16142	Arterial Widening - 3 Lane	020 Ave: King George Blvd - 160 St	Medium Term (4 - 6 Yrs)	2,800,000	2,800,000	-	-	-
				43,960,000	42,310,000	-	1,650,000	-

TRANSPORTATION

Program 1012 - Arterial Intersection Improvements

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding
7067	Arterial Intersection Improvements	080 Ave / 132 St	Long Term (7 - 10 Yrs)	1,500,000	1,500,000	-	-	-
7487	Arterial Intersection Improvements	088 Ave / 132 St	Long Term (7 - 10 Yrs)	1,500,000	1,500,000	-	-	-
10075	Arterial Intersection Improvements	Various Locations	Short Term (1 - 3 Yrs)	1,500,000	1,500,000	-	-	-
13462	Arterial Intersection Improvements	086 Ave / Scott Rd	Short Term (1 - 3 Yrs)	450,000	450,000	-	-	-
15508	Arterial Intersection Improvements	Various Locations	Medium Term (4 - 6 Yrs)	1,500,000	1,500,000	-	-	-
15509	Arterial Intersection Improvements	Various Locations	Long Term (7 - 10 Yrs)	10,000,000	10,000,000	-	-	-
15510	Arterial Intersection Improvements	070 Ave / King George Blvd	Short Term (1 - 3 Yrs)	1,000,000	1,000,000	-	-	-
15511	Arterial Intersection Improvements	064 Ave / 132 St	Long Term (7 - 10 Yrs)	1,500,000	1,500,000	-	-	-
15512	Arterial Intersection Improvements	072 Ave / 132 St	Long Term (7 - 10 Yrs)	1,500,000	1,500,000	-	-	-
16143	Arterial Intersection Improvements	072 Ave & 146 St	Long Term (7 - 10 Yrs)	1,500,000	1,500,000	-	-	-
				21,950,000	21,950,000	-	-	-

TRANSPORTATION

Program 1018 - Bridges and Overpasses

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
7494	Rehabilitate Crossing	152 St / Nicomekl	Short Term (1 - 3 Yrs)	3,000,000	-	-	1,500,000	-	1,500,000
11745	Replace Crossing	King George Blvd. / Bear Creek	Medium Term (4 - 6 Yrs)	6,000,000	-	-	-	4,500,000	1,500,000
11746	Replace Crossing	152 St / Hwy 99	Long Term (7 - 10 Yrs)	16,000,000	4,000,000	-	1,440,000	5,280,000	5,280,000
11747	Rehabilitate Crossing	Colebrook Rd / Anderson Creek	Long Term (7 - 10 Yrs)	1,000,000	-	-	1,000,000	-	-
14247	New Crossing (50% share w/Hwy 99 ID 14341)	020 Ave / Hwy 99	Long Term (7 - 10 Yrs)	10,000,000	5,000,000	-	-	5,000,000	-
15513	Pedestrian - Cycle Bridge	036 Ave / Barbara Creek (15100 Blk)	Medium Term (4 - 6 Yrs)	3,000,000	-	-	1,500,000	1,500,000	-
15514	Pedestrian - Cycle Bridge	080 Ave / Hunt Brook (13800 Blk)	Medium Term (4 - 6 Yrs)	3,000,000	-	-	1,500,000	1,500,000	-
15515	Pedestrian - Cycle Bridge	092 Ave / King Creek	Medium Term (4 - 6 Yrs)	3,000,000	-	-	1,500,000	1,500,000	-
15516	Pedestrian - Cycle Bridge	Surrey Lake / Enver Creek	Long Term (7 - 10 Yrs)	3,000,000	-	-	1,500,000	1,500,000	-
15517	Pedestrian - Cycle Bridge	Surrey Lake / Bear Creek	Long Term (7 - 10 Yrs)	3,000,000	-	-	1,500,000	1,500,000	-
15583	Pedestrian - Cycle Bridge	Green Timbers / Quibble Creek	Short Term (1 - 3 Yrs)	600,000	-	-	300,000	300,000	-
15584	Rehabilitate Crossing	140 St / Hyland Creek	Short Term (1 - 3 Yrs)	500,000	-	-	500,000	-	-
				52,100,000	9,000,000	-	12,240,000	22,580,000	8,280,000

TRANSPORTATION

Program 1020 - Highways and External Agency Projects

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
10056	Interchange Ramps (50% share w/Hwy 99 ID 14399)	024 Ave / Hwy 99	Medium Term (4 - 6 Yrs)	5,000,000	2,500,000	-	-	2,500,000	-
11751	Coordinated Works	Various Locations	Annual	1,000,000	1,000,000	-	-	-	-
12091	Interchange Ramps	032 Ave / Hwy 99	Short Term (1 - 3 Yrs)	7,500,000	3,000,000	-	-	4,500,000	-
15519	Railway Improvements	Various Locations	Annual	20,000,000	5,000,000	-	5,000,000	10,000,000	-
15580	Interchange Ramps	152 St / Hwy 99	Long Term (7 - 10 Yrs)	16,000,000	4,000,000	-	1,440,000	5,280,000	5,280,000
				49,500,000	15,500,000	-	6,440,000	22,280,000	5,280,000

TRANSPORTATION
Program 1030 - Collector Road Completion

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding
2336	Collector Widening	103 Ave: City Parkway - King George Blvd	Short Term (1 - 3 Yrs)	1,000,000	-	1,000,000	-	-
7527	Collector Widening	City Pkwy: 104 Ave - 105 Ave	Medium Term (4 - 6 Yrs)	1,000,000	-	1,000,000	-	-
7536	Collector Widening	020 Ave: 152 St - King George Blvd	Medium Term (4 - 6 Yrs)	4,200,000	-	4,200,000	-	-
7540	Collector Widening	084 Ave: 166 St - 168 St (S Side)	Medium Term (4 - 6 Yrs)	1,000,000	-	1,000,000	-	-
10101	Collector Widening	060 Ave: 128 St - 132 St (N side)	Medium Term (4 - 6 Yrs)	2,000,000	-	2,000,000	-	-
10110	Collector Widening	060 Ave: 132 St - King George Blvd. (N side)	Long Term (7 - 10 Yrs)	1,800,000	-	1,800,000	-	-
12148	Collector Intersection Improvements	Various Locations	Medium Term (4 - 6 Yrs)	1,200,000	-	1,200,000	-	-
12996	New Collector	105A/104A Ave : 140 St - 144 St	Short Term (1 - 3 Yrs)	4,500,000	-	4,500,000	-	-
12997	New Collector	070 Ave : King George Blvd - 136B St	Short Term (1 - 3 Yrs)	900,000	-	900,000	-	-
15520	Collector Intersection Improvements	Various Locations	Long Term (7 - 10 Yrs)	1,600,000	-	1,600,000	-	-
15521	Collector Widening	Croydon Dr: 28 Ave - 31 Ave	Short Term (1 - 3 Yrs)	750,000	-	750,000	-	-
15522	Collector Widening	060 Ave: 124 St - 128 St	Short Term (1 - 3 Yrs)	2,000,000	-	1,000,000	1,000,000	-
15524	Collector Widening	070 Ave: 136B St - 137B St	Short Term (1 - 3 Yrs)	500,000	-	50,000	450,000	-
15525	Local Widening	026 Ave: 154 St - 156 St	Short Term (1 - 3 Yrs)	1,000,000	-	-	500,000	500,000
15526	New Local	070 Ave: 186 St - 188 St	Long Term (7 - 10 Yrs)	1,000,000	-	-	1,000,000	-
15527	Collector Widening	188 St: 70 Ave - 71 Ave (W Side)	Long Term (7 - 10 Yrs)	1,500,000	-	1,500,000	-	-
15528	Collector Widening	076 Ave: 148 St - 152 St	Long Term (7 - 10 Yrs)	2,800,000	-	2,800,000	-	-
15529	New Collector	084 Ave : Fraser Hwy - 162 St	Long Term (7 - 10 Yrs)	900,000	-	900,000	-	-
15530	New Collector	105 Ave: 148 St - 150 St	Short Term (1 - 3 Yrs)	1,400,000	-	1,400,000	-	-
15531	Collector Widening	104A Ave: 144 St - 148 St	Short Term (1 - 3 Yrs)	2,800,000	-	2,800,000	-	-
15532	Collector Widening	060 Ave: 141 St - 142 St (S Side)	Long Term (7 - 10 Yrs)	700,000	-	700,000	-	-
15533	Collector Widening	060 Ave: 146 St - 148 St (S Side)	Short Term (1 - 3 Yrs)	1,400,000	-	700,000	700,000	-
15534	Local Widening	150 St: 68 Ave - 72 Ave	Long Term (7 - 10 Yrs)	1,200,000	-	-	1,200,000	-
15535	Collector Widening	Barnston Dr: 170A St - 172 St	Short Term (1 - 3 Yrs)	1,050,000	-	262,500	525,000	262,500
15582	Collector Widening	River Rd / Grace Rd Connector	Short Term (1 - 3 Yrs)	2,100,000	-	2,100,000	-	-
16144	Collector Widening	020 Ave: 128 St - 140 St	Short Term (1 - 3 Yrs)	7,200,000	-	3,600,000	3,600,000	-
16145	Collector Widening	156 St: 108 Ave - 110 Ave	Short Term (1 - 3 Yrs)	1,400,000	-	700,000	700,000	-
				48,900,000	-	38,462,500	9,225,000	1,212,500

TRANSPORTATION

Program 1102 - Traffic Signals and Roundabouts

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
2994	Traffic Signals: New	108 Ave / City Pkwy	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
7608	Traffic Signals: Conversion	019 Ave / 152 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
7618	Traffic Signals: New	108 Ave / 128 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7619	Traffic Signals: New	110 Ave / 128 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7620	Traffic Signals: New	110 Ave / 126A St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
7621	Roundabout	Crescent Rd / 128 St	Long Term (7 - 10 Yrs)	750,000	750,000	-	-	-	-
7634	Traffic Signals: New	080 Ave / 130 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
7639	Traffic Signals: New	Crescent Rd / 140 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7648	Traffic Signals: New	088 Ave / 192 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7649	Traffic Signals: New	088 Ave / Harvie Rd	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7660	Traffic Signals: New	064 Ave / 121 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
7670	Traffic Signals: Conversion	086 Ave / 120 St	Short Term (1 - 3 Yrs)	150,000	150,000	-	-	-	-
8035	Opticom Pre-emption	Various Locations	Annual	1,000,000	-	-	1,000,000	-	-
10099	Traffic Signals: New	Fraser Hwy / 192 St Div	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
10831	Traffic Signals: Conversion	096 Ave / 123A St	Short Term (1 - 3 Yrs)	100,000	100,000	-	-	-	-
10842	Traffic Signals: New	065 Ave / 192 St Div	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
10986	Traffic Signals: New	103 Ave / City Parkway	Long Term (7 - 10 Yrs)	200,000	-	200,000	-	-	-
11753	Traffic Signals: New	032 Ave / 164 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
11754	Traffic Signals: New	024 Ave / 164 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
11755	Traffic Signals: New	062 Ave / 152 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
11757	Traffic Signals: New	060 Ave / 132 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
11758	Traffic Signals: New	068 Ave / 196 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
11761	Traffic Signals: New	068 Ave / 144 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
12985	Traffic Signals: New	100 Ave / 144 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
13003	Roundabout	060 Ave / 142 St	Medium Term (4 - 6 Yrs)	500,000	-	500,000	-	-	-
13006	Roundabout	032 Ave / 140 St	Short Term (1 - 3 Yrs)	750,000	375,000	375,000	-	-	-
13007	Traffic Signals: New	068 Ave / 130 St	Long Term (7 - 10 Yrs)	200,000	-	200,000	-	-	-
13052	ITS Improvements	068 Ave / 134 St	Long Term (7 - 10 Yrs)	200,000	-	200,000	-	-	-
13053	Traffic Signals: Rebuild	Various Locations	Annual	3,000,000	-	-	3,000,000	-	-
14255	Traffic Signals: Pedestrian	Various Locations	Annual	12,000,000	-	-	3,000,000	-	9,000,000
14263	Traffic Signals: New	080 Ave / 184 St	Medium Term (4 - 6 Yrs)	200,000	5,000,000	-	-	-	-
14264	Traffic Signals: New	080 Ave / Harvie Rd	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
14269	Traffic Signals: Pedestrian	096 Ave / 161 St	Short Term (1 - 3 Yrs)	150,000	150,000	-	-	-	-
14345	Activated Flashing Crosswalks	Various Locations	Annual	5,000,000	2,000,000	-	3,000,000	-	-
15536	Traffic Signals: New	Various Locations	Medium Term (4 - 6 Yrs)	1,800,000	1,350,000	450,000	-	-	-
15537	Traffic Signals: New	Various Locations	Long Term (7 - 10 Yrs)	2,400,000	1,800,000	600,000	-	-	-
15540	Traffic Signals: New	024 Ave / 166 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15541	Traffic Signals: New	030 Ave / 160 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15542	Traffic Signals: New	056 Ave (Hwy 10) / 172 St	Long Term (7 - 10 Yrs)	200,000	-	200,000	-	-	-
15543	Traffic Signals: New	058 Ave / 168 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15544	Traffic Signals: Ped	062 Ave / 132 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15546	Traffic Signals: Conversion	064 Ave / 180 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15547	Traffic Signals: New	064 Ave / 181A St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15548	Traffic Signals: New	064 Ave / 186 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15549	Traffic Signals: New	064 Ave / 190 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15550	Traffic Signals: New	064 Ave / Clayton Wood	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15551	Traffic Signals: New	072 Ave / 146 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15553	Traffic Signals: New	080 Ave / 122 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15554	Traffic Signals: New	080 Ave / 125 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-

TRANSPORTATION
Program 1102 - Traffic Signals and Roundabouts

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
15555	Traffic Signals: New	080 Ave / 134 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
15557	Traffic Signals: New	090 Ave / 140 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
15558	Traffic Signals: New	090 Ave / 160 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15559	Traffic Signals: New	094 Ave / 160 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15560	Traffic Signals: New	100 Ave / 138 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15561	Traffic Signals: New	103 Ave / 144 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
15562	Traffic Signals: New	104 Ave / 164 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15563	Traffic Signals: New	104A Ave / 144 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15564	Traffic Signals: New	105 Ave / 148 St	Short Term (1 - 3 Yrs)	200,000	100,000	100,000	-	-	-
15565	Traffic Signals: New	105A Ave / 140 St	Short Term (1 - 3 Yrs)	200,000	100,000	100,000	-	-	-
15566	Roundabout	105A Ave / 142 St	Short Term (1 - 3 Yrs)	750,000	-	750,000	-	-	-
15567	Traffic Signals: New	106 Ave / 128 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15568	Traffic Signals: New	108 Ave / 142 St	Short Term (1 - 3 Yrs)	150,000	150,000	-	-	-	-
15570	Traffic Signals: Pedestrian	Fraser Hwy / 182 St	Short Term (1 - 3 Yrs)	150,000	150,000	-	-	-	-
15572	Traffic Signals: New	Whalley Blvd / Bentley	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15573	Traffic Signals: New	Whalley Blvd / Grosvenor	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
15581	Roundabout	060 Ave / 148 St	Medium Term (4 - 6 Yrs)	750,000	750,000	-	-	-	-
15589	Traffic Signals: New	066 Ave (Hyland) / 144 St	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
15590	Traffic Signals: New	070 Ave / King George Blvd	Short Term (1 - 3 Yrs)	200,000	200,000	-	-	-	-
16146	Traffic Signals: New	072 Ave / Fraser Hwy	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
16147	Traffic Signals: New	072 Ave / 184 St	Long Term (7 - 10 Yrs)	200,000	200,000	-	-	-	-
16148	Traffic Signals: New	020 Ave / 160 St	Medium Term (4 - 6 Yrs)	200,000	200,000	-	-	-	-
16149	Rapid Flashing Beacons	Various Locations	Annual	2,000,000	-	-	2,000,000	-	-
				47,400,000	22,725,000	3,675,000	12,000,000	-	9,000,000

TRANSPORTATION
Program 1120 - Bicycle Network

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
12385	Multi-Use Pathway	Fleetwood Greenway: 163 - 168 St	Short Term (1 - 3 Yrs)	716,000	-	-	429,600	-	286,400
14270	Multi-Use Pathway	Various locations	Long Term (7 - 10 Yrs)	2,300,000	-	-	2,300,000	-	-
14271	On-Street Bike Lanes	Various locations	Annual	2,000,000	2,000,000	-	-	-	-
14273	Local Street Bikeway	Various locations	Annual	2,000,000	-	-	2,000,000	-	-
14857	Multi-Use Pathway	Fleetwood Greenway: 160 - 163 St	Medium Term (4 - 6 Yrs)	751,000	-	-	450,600	-	300,400
15242	Cycle Tracks	102 Ave Cycle Tracks: King George Blvd - 140 St	Short Term (1 - 3 Yrs)	2,100,000	1,260,000	-	-	-	840,000
15773	Multi-Use Pathway	Bear Creek Greenway: 088 Ave - 094 Ave	Long Term (7 - 10 Yrs)	500,000	-	-	250,000	250,000	-
16174	Multi-Use Pathway	Fleetwood Greenway: 152 St - 156 St	Medium Term (4 - 6 Yrs)	220,000	-	-	132,000	-	88,000
16175	Multi-Use Pathway	Fleetwood Greenway: 146 St - 152 St	Long Term (7 - 10 Yrs)	548,000	-	-	328,800	-	219,200
16176	Multi-Use Pathway	Surrey Lake Greenway: 144 St - 146 St	Long Term (7 - 10 Yrs)	773,000	-	-	463,800	-	309,200
16177	Multi-Use Pathway	Surrey Lake Greenway: 146 St - 148 St	Long Term (7 - 10 Yrs)	645,000	-	-	387,000	-	258,000
16178	Multi-Use Pathway	Bon Accord Greenway: 144 St - 146 St	Short Term (1 - 3 Yrs)	1,065,000	-	532,500	-	-	532,500
16179	Multi-Use Pathway	Bon Accord Greenway: 100 Ave - 105A Ave	Medium Term (4 - 6 Yrs)	1,515,000	378,750	-	-	-	757,500
16180	Local Street Bikeway	North Surrey Neighbourhood Route: 139A St - 140 St	Short Term (1 - 3 Yrs)	305,000	-	-	305,000	-	-
16182	Multi-Use Pathway	Guildford Greenway: 160 St - 162A St	Long Term (7 - 10 Yrs)	1,320,000	-	-	792,000	-	528,000
16183	Multi-Use Pathway	Guildford Greenway: 161 St - 168 St	Long Term (7 - 10 Yrs)	1,950,000	-	-	1,170,000	-	780,000
16184	Multi-Use Pathway	Guildford Greenway: 100 Ave - 102 Ave	Long Term (7 - 10 Yrs)	555,000	-	-	333,000	-	222,000
16185	Multi-Use Pathway	Bear Creek Greenway: 76 Ave - Bear Creek Dr	Short Term (1 - 3 Yrs)	772,000	-	-	463,200	-	308,800
16186	Multi-Use Pathway	Scottsdale Greenway: 121A St - 132 St	Short Term (1 - 3 Yrs)	748,000	-	374,000	-	-	374,000
16187	Multi-Use Pathway	Sunnyside Greenway: 148 St - 151A St	Long Term (7 - 10 Yrs)	1,125,000	-	281,250	281,250	562,500	-
16188	Local Street Bikeway	Hook Greenway: 168 St - 176 St	Short Term (1 - 3 Yrs)	1,593,000	-	-	955,800	-	637,200
16189	Multi-Use Pathway	Cloverdale Greenway: 65A Ave - 68 Ave	Long Term (7 - 10 Yrs)	1,410,000	-	-	846,000	-	564,000
16190	Multi-Use Pathway	Cloverdale Greenway: 190 St - 192 St	Long Term (7 - 10 Yrs)	1,050,000	-	-	630,000	-	420,000
16191	Multi-Use Pathway	Elgin Greenway: 24 Ave - 28 Ave	Medium Term (4 - 6 Yrs)	1,800,000	-	450,000	450,000	900,000	-
16192	Cycle Tracks	Whalley Blvd: Fraser Hwy - 100 Ave	Medium Term (4 - 6 Yrs)	1,025,000	615,000	-	-	-	410,000
16193	Cycle Tracks	BC Parkway: Old Yale Rd - 102 Ave	Short Term (1 - 3 Yrs)	1,230,000	738,000	-	-	-	492,000
16194	Multi-Use Pathway	Quibble Creek Greenway	Short Term (1 - 3 Yrs)	1,700,000	425,000	-	425,000	850,000	-
16195	Multi-Use Pathway	Green Timbers Greenway: 134 St - KGB	Short Term (1 - 3 Yrs)	275,000	-	-	165,000	110,000	-
16196	Multi-Use Pathway	Green Timbers Greenway: KGB - 138 St	Short Term (1 - 3 Yrs)	500,000	125,000	-	125,000	250,000	-
				32,491,000	5,541,750	1,637,750	14,061,800	2,922,500	8,327,200

3. WATER

The water utility provides sufficient, safe, and clean drinking water to the residents of the City. This is provided through the operation and maintenance of the existing system and planning the design and construction of new facilities to support growth.

3.1 Water Supply

The City receives its water supply from the system of transmission mains and reservoir structures operated by the Greater Vancouver Water District (GVWD). Currently the GVWD system supplies water at the following six major reservoir supply points:

- Whalley
- Clayton
- Kennedy
- Newton
- Sunnyside
- Grandview Heights

In addition, there are a number of on-line feeds on GVWD's feeder-mains. The overall regional system in Surrey is shown in **Figure 3.1**.

3.2 Water Distribution System

The City's water system takes supply from the major reservoir supply points and the on-line supply points, and distributes to approximately 110,000 customers. Under the agreement between the City and the GVWD, the GVWD has no obligation to provide any residual pressure at their supply points. As a result, the City operates a system of pump stations to provide adequate pressure under peak demand conditions and for firefighting purposes. The major pipe network (water mains of 250mm diameter and larger) is currently used to supply and distribute flow through Surrey as illustrated in **Figure 3.1**, and the characteristics of the City's distribution system is summarized in **Table 3.1**.

Table 3.1 – Major Water System Infrastructure Summary

Water mains (acceptable materials)	1,652 km (typically constructed after 1970)
Water mains (obsolete materials)	199 km (typically constructed before 1970)
Pressure reducing station	167
Pump Stations	9

3.3 Region's Current Obligations to Provide Supply

The GVWD is obligated under the GVWD Water Act to provide the needed water flows at the supply points and to upgrade its facilities to meet increased demand due to growth within the City, except where such regional works are to be constructed under existing agreements between the City and the GVWD which specify agreed supply flows, cost-sharing, and timing of works.

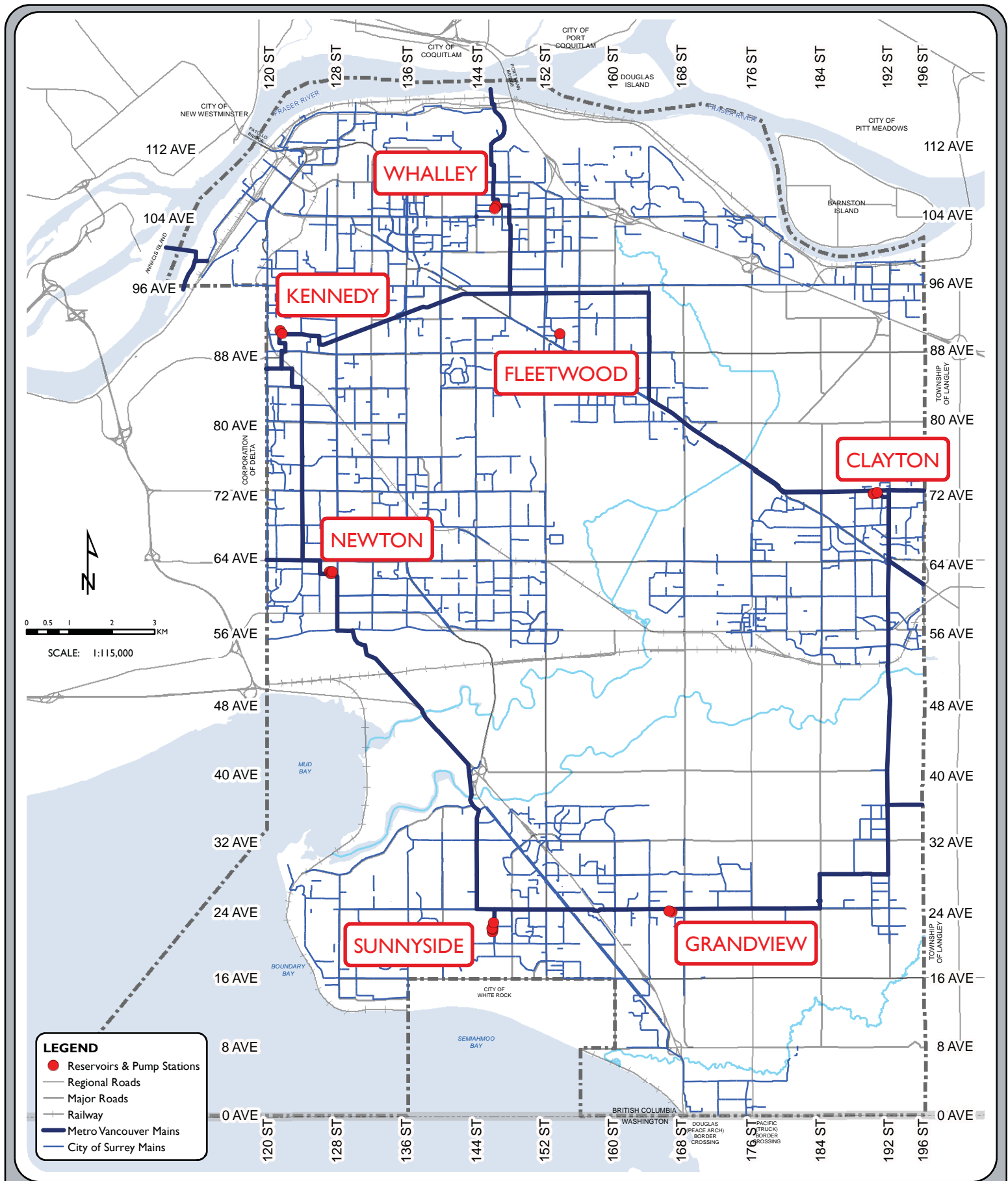


FIGURE 3.1 - MAJOR WATER NETWORK

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

3.4 Surrey's Water System in the Context of Growth

The demands on the water system increase with residential, commercial, and industrial developments. To meet these increased demands, water system improvement studies were completed using the latest calibrated water models. The works identified from these studies and Neighbourhood Concept Plans (NCPs) are included in the Servicing Plan and have been divided into three programs:

1. *Supply Works and Feeder Mains* include essential additional works to store, pump, and transfer water from the supply points to the local distribution;
2. *Distribution Mains* are nominal mains up to and including 300mm diameter on Surrey's grid roads; and
3. *Development Coordinated Works (DCW) Upsizing* includes new and/or the upsizing of replacement distribution mains required for maintaining pressures and meeting demands within local distribution areas.

3.5 Water Main Replacement Strategy

The first water mains in Surrey, constructed in 1940, were made of wood and galvanized iron that had a relatively short service life and have been since replaced.

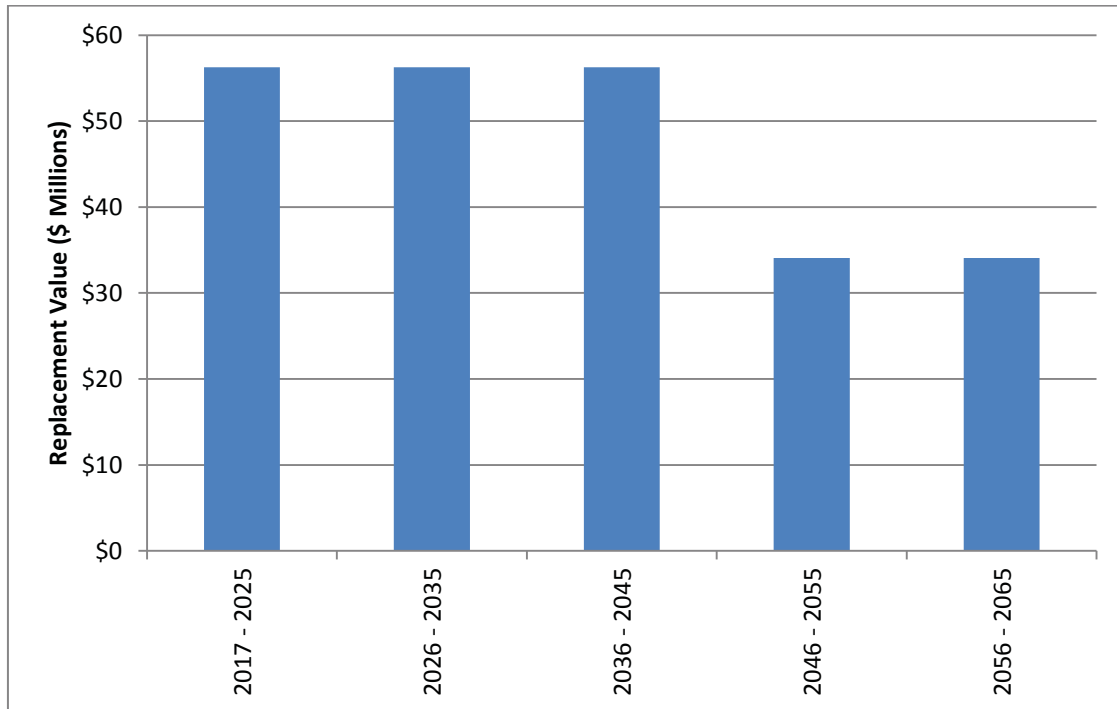
Water mains constructed in the 1950s and 1960s were mainly of cast iron and asbestos cement. These materials are no longer used. The service life of these materials is generally between 50 to 65 years and, as a result, most of these pipes are at the end of their service life and are due for replacement.

The characteristics of the pipes requiring replacement over the next 50 years is summarized in **Table 3.2**.

Table 3.2 Water System Replacement Requirements in the Next 50 Years

Material	Total Main Length	Replacement Demand up to 2066 (50 years)	Replacement Cost
Misc: Cast Iron, Asbestos Cement (AC), Concrete, Copper, Galvanized Iron, Galvanized Steel, and Steel	199 km (11% of entire pipe system by length)	199 km	\$169 million
Plastic: Poly Vinyl Chloride (PVC) and Poly Ethylene (PE)	640 km (35% of entire pipe system by length)	11.5 km	\$9.8 million
Ductile Iron	1,012 km (54% of entire pipe system by length)	62 km	\$62 million

The estimated cost to replace aging water mains in the next 10 years is \$70 million, and \$240 million in the next 50 years. The annual replacement cost in the next 50 years is illustrated in **Figure 3.2**.

Figure 3.2 – Water Main Replacement Costs Over the Next 50 Years

The service life of water mains, constructed of currently approved materials and installed after the 1970's, is estimated to be 80 to 100-years. Assuming an average 80-year life for these materials, replacement of the majority of the City's water mains does not need to start until after 2065.

It is too early to establish a strategy for the replacement of pipes beyond 50 years as changing technologies, developments in asset management, and demand management practices may influence the replacement strategy in that period.

3.6 Water Servicing Program

Program 1600 - General

This program covers the overhead costs associated with the general operating of the water section. Included are the costs of staff time, hardware and software equipment, and internal support services.

Program 1602 - Distribution Mains (<= 300mm)

This program comprises three project categories:

- *The replacement of existing water distribution mains that are deficient, in terms of providing sufficient fire flow and adequate pressure at peak demand.* Replacement and upsizing of existing system to meet existing demand is a non-growth cost component. There are also sections that require upsizing in order to meet the increasing demand from future OCP designated land use. The cost of upsizing is a growth cost component.
- *The replacement of water mains in conjunction with the City's Water Main Replacement Strategy.* Replacement of these water mains is prioritized based on their age, condition of the pipe, replacement costs versus maintenance cost, risk/frequency of breakage, hydraulic capacity, fire flow availability, criticality, and impact to environment and property. The

replacement of these mains is a non-growth cost component, unless upsizing is required which is a growth cost component.

- *Within each supply zone a grid network, approximately on a half-mile grid. This grid comprises 250 mm diameter and greater water mains that help to provide adequate pressure and flow throughout each distribution zone. Based on both peak hour flows and maximum day demand plus fire flow demands, new locations for grid mains have been identified. New grid mains can have a non-growth cost component, a growth cost component, or a combination of the two.*

Efforts will be made to always complete pipe replacement works in conjunction with road reconstruction or widening works in an effort to minimize the cutting and patching of roads. This will reduce breakage of aging water mains at newly completed roads, and avoid construction in the same area within a short period of time.

Program 1604 - Cross Connection Control

The Cross Connection Control program seeks to preserve public health by maintaining the high quality of water supplied by the City, and protect against contamination caused by backflow from end user equipment and systems, and unapproved water sources. In 2015, the City started the cross connection control survey program focusing on existing industrial properties. Over the next 10 years, the utility will continue the survey program for existing industrial, commercial and institutional properties.

Program 1606 - Minor Projects

The Minor Projects program includes the projects for the following initiatives:

- Water main abandonment;
- Water quality improvement; and
- Corrosion protection.

The water main abandonment initiative is to abandon approximately 50 km of cast iron and asbestos cement pipes by transferring existing service connections to an existing parallel main of currently approved pipe material.

The water quality improvement initiative is to eliminate stagnant water in dead-end mains and on either side of pressure zone boundaries.

The initiative for corrosion protection is to provide protection for existing metallic pipes located in corrosive soils. Under this initiative, soil testing and condition assessment techniques will be used to evaluate pipe conditions and the effects of corrosive soils. Based on the evaluations, a corrosion protection program or replacement program will be initiated.

In addition to projects under the initiatives, the Minor Projects program funds other minor works as required. The implementation schedule for the minor projects is typically coordinated with development coordinated works and the City's water main replacement strategy.

Program 1608 - Planning

This program covers the overhead costs associated with and program management of the utility related to supporting growth. Included are the costs of staff time, internal support services, and external services, such as planning studies, preliminary engineering studies, and feasibility studies for capital works.

Program 1609 - Demand Management

The City has a Voluntary Water Metering program for existing properties. The utility funds the metering of existing single-family homes and cost shares the metering of multi-family homes. In addition, the City is exploring the merits of installing water meters on part of the remaining 23,000 unmetered properties. The estimated cost for these works is \$24 million.

The City has a mandatory metering program for all new construction. The utility funds the installation of meters for new single family homes and recovers the cost from developers. The estimated cost of these works is \$3 million.

The City tests and maintains customer meters to enhance their reliability. The frequency of meter testing has yet to be confirmed by field results, but an estimated cost of \$6 million is allowed in the next 10 years for this program.

Meters that were installed before 2002 will be approaching the end of their service life within the next 10 years. A replacement program has been established to replace the aging meters and defective meters. \$6 million is provided for the replacement of meters. Other demand management initiatives comprise of the remainder of the program.

Program 1610 - Supply Works and Feeder Mains

This program includes water facilities such as pump stations and pressure reducing valves as well as large-diameter feeder mains. These facilities serve overall City-wide supply needs and are generally beyond the servicing requirements of individual developers.

Supply works and feeder main projects are assigned growth related cost, non-growth related cost, or a combination of the two, depending on whether growth or an existing system deficiency is driving the need for the works.

Program 1612 - Planning

This program includes studies in water loss reduction, condition assessment, post-disaster water supply, water quality, and other planning works that are required for the operation of the utility.

The City has an active water loss reduction program with the objective of reducing non-revenue water and reducing water main break incidents. Studies and works are carried out, such as water audits, leak detection surveys, and zone meter installations.

The City is also exploring different condition assessment strategies and technologies to help plan and prioritize future capital rehabilitation and replacement programs.

Program 1620 - DCW Upsizing

NCPs have identified the need for grid and distribution mains where there are currently no water mains, or the existing main does not have adequate capacity to service the new development. In these cases, the minimum (or base) water main size necessary for the fronting properties is funded by the fronting or benefiting properties, and the cost to upsize the water main from the base size to the ultimate size is funded by the overall DCC program.

An allowance is included in this program to upsize water mains not currently identified in the Plan. The upsizing provision will allow for a cost-effective sizing of the distribution system, as development opportunities arise.

3.7 Water Cost Summary

No.	Program	Program Type	Growth (\$)	Non-Growth (\$)	Total (\$)
1600	General	Operating		7,000,000	7,000,000
1602	Distribution Mains	Capital	12,326,000	50,980,600	63,306,600
1606	Minor Projects	Capital		10,000,000	10,000,000
1608	Planning	Non-Capital	2,500,000	2,000,000	4,500,000
1609	Demand Management	Operating		31,000,000	31,000,000
1610	Supply Works and Feeder Mains	Capital	40,535,251	25,044,580	65,629,831
1612	Planning	Operating		4,000,000	4,000,000
1620	DCW Upsizing	Capital	15,768,200		15,768,200
		Total	71,129,451	130,025,180	201,204,631

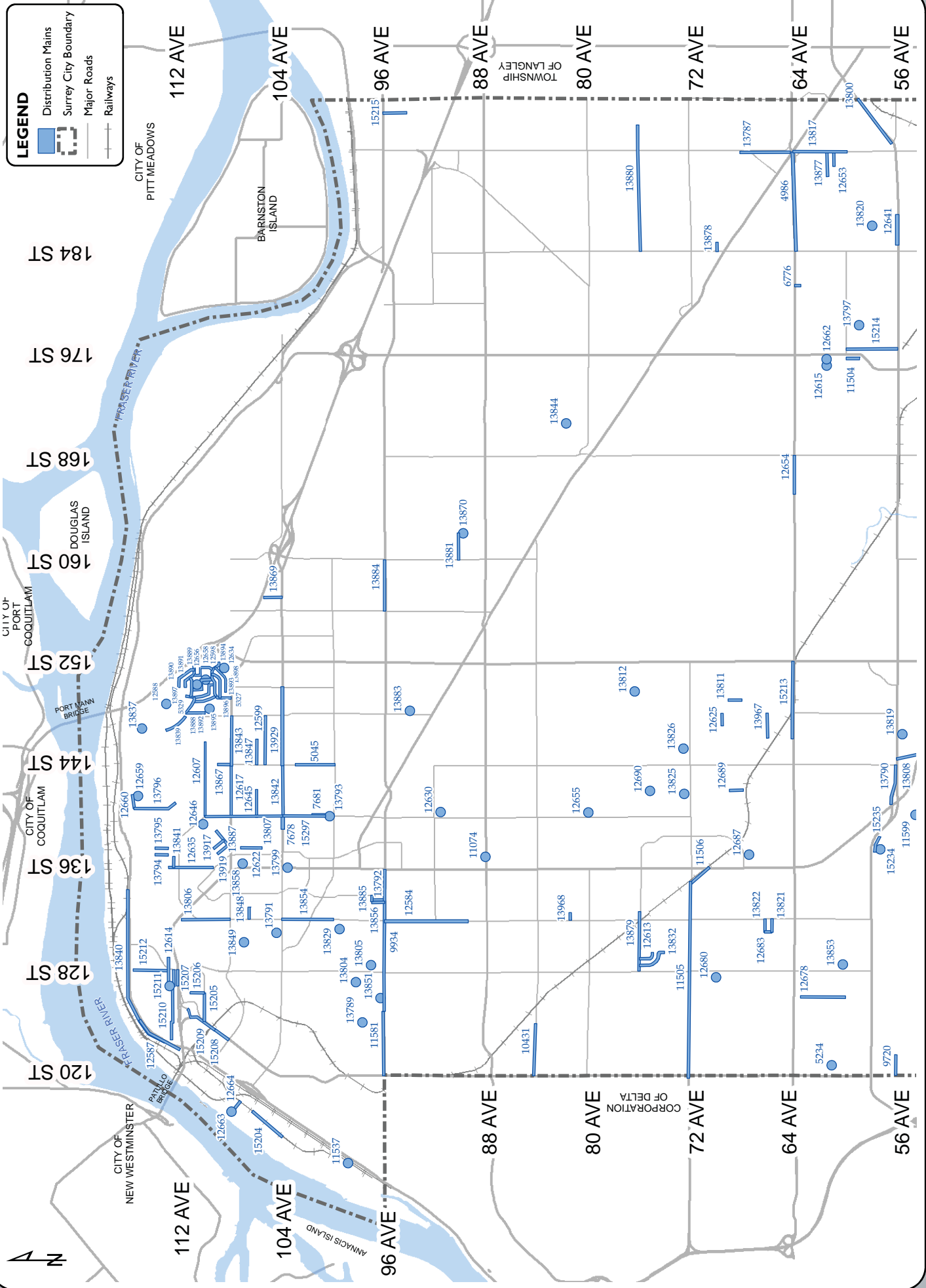
3.8 Water Projects by Program

This section contains tables and figures that identify the projects under the water programs.

The tables provide the following information:

- f) Project ID - the unique identifier of the project;
- g) Project name - the specific name or generic name that depicts the type of work;
- h) Project location - the geographic extent of the works;
- i) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- j) Costs - the high level estimates in 2016 dollars (subject to change at the actual time of construction). The costs are comprised of growth and non-growth components.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.



LEGEND

- Distribution Mains
- Surrey City Boundary
- Major Roads
- Railways

FIGURE 3.2 - Water Distribution Mains <=300mm (Program 1602)

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

Date Printed: 07/12/2016 Cartographer: GSW © City of Surrey
 Source: G:\MAPPING\GIS\Maps\Recurring\101\ServicingPlan2017\26\Figure3.2-WaterNorth.mxd

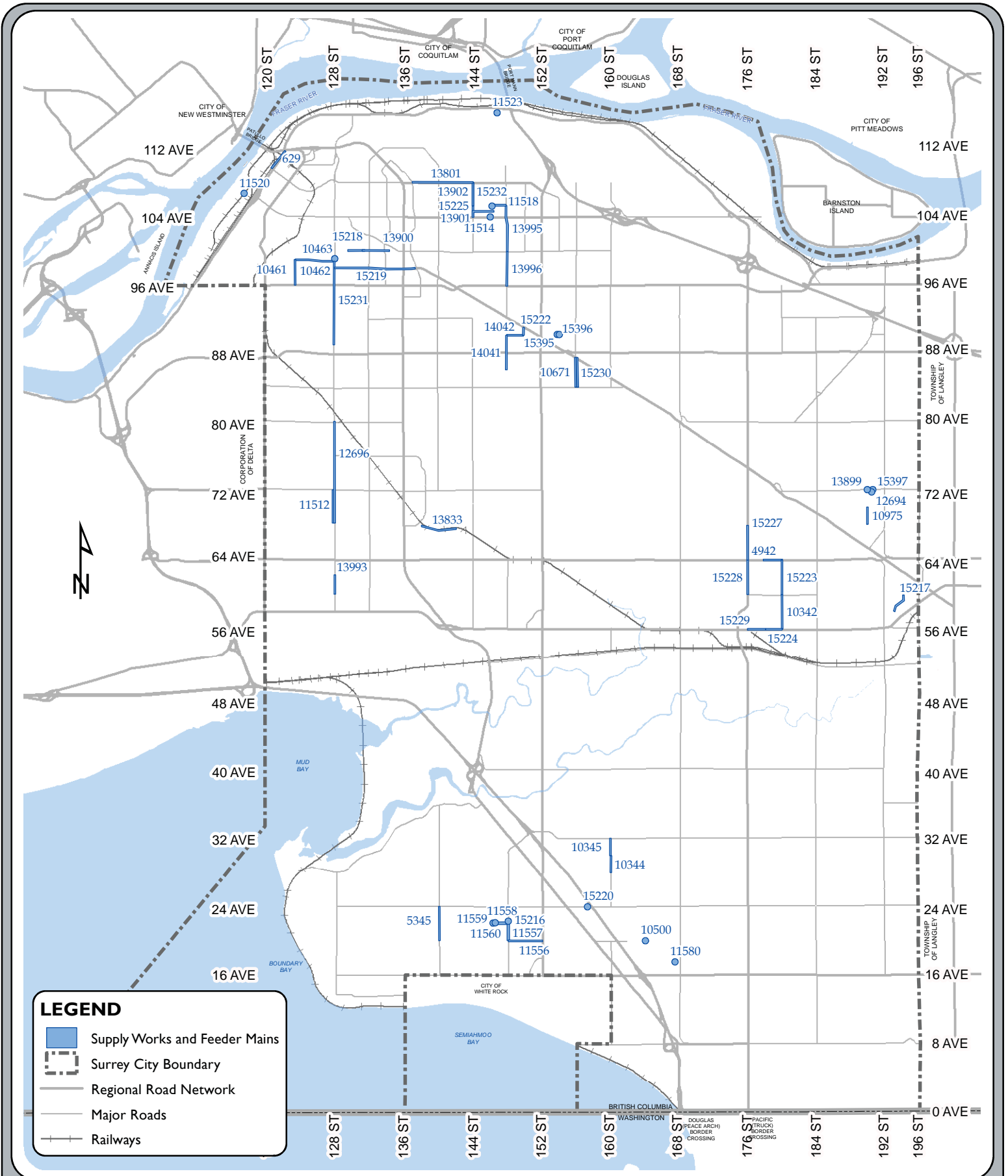
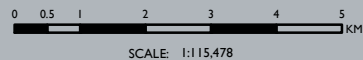


FIGURE 3.3 - Water Supply Works & Feeder Mains (Program 1610)



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WATER

Program 1602 - Distribution Mains (<=300mm)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
4986	310m of 200mm diameter	064 Ave: 184 St - 192 St	Long Term (7 - 10 Yrs)	20,000	-	20,000	-
5045	480m of 300mm diameter	144 St: 100 - 103 Ave, 100 Ave: 143 - 144 St	Medium Term (4 - 6 Yrs)	504,000	277,000	227,000	-
5234	105m of 200mm diameter	061 Ave: 120A - 121 St	Long Term (7 - 10 Yrs)	156,000	-	156,000	-
5327	240m of 200mm diameter	Oriole Dr: 108 Ave - Canary Dr	Medium Term (4 - 6 Yrs)	187,000	-	187,000	-
5329	310m of 200mm diameter	Blackbird Cres: 148A St - Partridge Cres	Medium Term (4 - 6 Yrs)	242,000	-	242,000	-
6776	75m of 200mm diameter	181A St: 063A Ave - 064 Ave	Long Term (7 - 10 Yrs)	59,000	-	59,000	-
7678	210m of 300mm diameter	104 Ave: 139 - 140 St	Medium Term (4 - 6 Yrs)	1,260,000	693,000	567,000	-
7681	380m of 300mm diameter	140 St: 100 - 102 Ave*	Long Term (7 - 10 Yrs)	281,200	-	281,200	-
7908	W/Ms Replacements w/o Upsizing	Various Locations	Short Term (1 - 3 Yrs)	1,000,000	-	1,000,000	-
9720	300m of 200mm diameter	56 Ave: 120 St - 121A St	Long Term (7 - 10 Yrs)	234,000	-	234,000	-
9917	200m of 300mm diameter	137 St: 026 Ave - 027 Ave	Long Term (7 - 10 Yrs)	211,000	116,000	95,000	-
9919	200m of 300mm diameter	027 Ave: 136 - 137 St	Long Term (7 - 10 Yrs)	211,000	116,000	95,000	-
9920	200m of 100mm diameter	129 St: 020 - 021 Ave	Long Term (7 - 10 Yrs)	107,200	-	107,200	-
9934	1,000m of 300mm diameter	096 Ave: 131 - 136 St*	Medium Term (4 - 6 Yrs)	1,051,000	578,000	473,000	-
9952	230m of 300mm diameter	018 Ave: 152 - 153 St	Long Term (7 - 10 Yrs)	242,000	-	242,000	-
9973	40m of 100mm diameter	127A St: 017A Ave - 018 Ave	Short Term (1 - 3 Yrs)	31,000	-	31,000	-
10431	800m of 300mm diameter	084 Ave: 120 - 124 St	Long Term (7 - 10 Yrs)	840,000	462,000	378,000	-
11074	100m of 300mm diameter	088 Ave: 136 - 137 St*	Short Term (1 - 3 Yrs)	105,000	58,000	47,000	-
11504	200m of 300mm diameter	175B St: 059 - 060 Ave	Long Term (7 - 10 Yrs)	211,000	116,000	95,000	-
11505	220m of 300mm diameter	072 Ave: 120 St - Hall Rd	Medium Term (4 - 6 Yrs)	246,000	-	246,000	-
11506	320m of 300mm diameter	Hall Rd: 72 Ave - King George Blvd	Short Term (1 - 3 Yrs)	336,000	185,000	151,000	-
11537	150m of 300mm diameter	Plywood Rd: Robson Road and River Road	Medium Term (4 - 6 Yrs)	158,000	87,000	71,000	-
11581	1,000m of 300mm diameter	096 Ave: 120 - 125 St*	Medium Term (4 - 6 Yrs)	1,051,000	578,000	473,000	-
11584	850m of 200mm diameter	Woodcrest Dr: Vine Maple Dr - 136 St	Medium Term (4 - 6 Yrs)	663,000	-	663,000	-
11599	50m of 200mm diameter	Trites Rd: Lot 13995 - lot 14023	Short Term (1 - 3 Yrs)	10,000	-	10,000	-
11623	200m of 200mm diameter	017 Ave: 144 - 145 St	Short Term (1 - 3 Yrs)	156,000	-	156,000	-
12584	1300m of 300mm diameter	132 St: 89A - 96 Ave	Short Term (1 - 3 Yrs)	300,000	-	300,000	-
12587	650m of 300mm diameter	Industrial Rd: 111A Ave - 124 St	Long Term (7 - 10 Yrs)	840,000	-	840,000	-
12588	220m of 200mm diameter	Loughren Dr: Perth - Glen Avon Dr	Medium Term (4 - 6 Yrs)	172,000	-	172,000	-
12596	670m of 300mm diameter	24 Ave: 127B - 124 St	Medium Term (4 - 6 Yrs)	704,000	387,000	317,000	-
12598	550m of 200mm diameter	Raven Pl: Bluebird Cres - Canary Dr	Medium Term (4 - 6 Yrs)	429,000	-	429,000	-
12599	400m of 300mm diameter	104 Ave: 150 - 144 St	Long Term (7 - 10 Yrs)	862,000	474,000	388,000	-
12607	1160m of 200mm diameter	110 Ave: 140 - 146 St	Medium Term (4 - 6 Yrs)	905,000	-	905,000	-
12613	480m of 200mm diameter	Sinclair Cr: 129A St - 76 Ave	Short Term (1 - 3 Yrs)	374,000	-	374,000	-
12614	270m of 300mm diameter	112B Ave: 129 - 126A St	Long Term (7 - 10 Yrs)	284,000	-	284,000	-
12615	60m of 200mm diameter	175A St: 61B - 61A Ave	Short Term (1 - 3 Yrs)	47,000	-	47,000	-
12617	980m of 300mm diameter	108 Ave: 138 - 142 St	Medium Term (4 - 6 Yrs)	1,029,000	566,000	463,000	-
12622	1240m of 300mm diameter	140 St: 110 - 104 Ave	Medium Term (4 - 6 Yrs)	1,302,000	716,000	586,000	-
12625	180m of 200mm diameter	69A Ave: 148 - 147 St	Short Term (1 - 3 Yrs)	140,000	-	140,000	-
12630	30m of 200mm diameter	91A Ave: Lot 14040 - lot 14050	Short Term (1 - 3 Yrs)	24,000	-	24,000	-
12634	250m of 200mm diameter	Dove Pl: Canary Dr - Raven Pl	Medium Term (4 - 6 Yrs)	195,000	-	195,000	-
12635	170m of 100mm diameter	112A Ave: 137 - 136 St	Medium Term (4 - 6 Yrs)	114,000	-	114,000	-
12641	460m of 100mm diameter	56 Ave: 187 - 184A St	Short Term (1 - 3 Yrs)	308,000	-	308,000	-
12645	420m of 200mm diameter	106 Ave: 142 - 140 St	Medium Term (4 - 6 Yrs)	328,000	-	328,000	-
12646	90m of 100mm diameter	120 St: Antrim Rd - 110 Ave	Short Term (1 - 3 Yrs)	60,000	-	60,000	-

WATER

Program 1602 - Distribution Mains (<=300mm)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
12651	1620m of 300mm diameter	28 Ave: 140 - 132 St	Medium Term (4 - 6 Yrs)	1,702,000	936,000	766,000	-
12653	230m of 200mm diameter	60B Ave: 192 - 190B St	Medium Term (4 - 6 Yrs)	180,000	-	180,000	-
12654	600m of 300mm diameter	64 Ave: 168 - 165 St	Long Term (7 - 10 Yrs)	630,000	-	630,000	-
12655	150m of 200mm diameter	80 Ave: 140A - 140 St	Short Term (1 - 3 Yrs)	117,000	-	117,000	-
12656	120m of 100mm diameter	Eagle Pl: Lot 15111 - Jay Cr	Medium Term (4 - 6 Yrs)	80,000	-	80,000	-
12658	440m of 200mm diameter	Swan Cr: Canary - Pheasant Dr	Medium Term (4 - 6 Yrs)	343,000	-	343,000	-
12659	20m of 200mm diameter	115 Ave/141A St	Long Term (7 - 10 Yrs)	16,000	-	16,000	-
12660	240m of 200mm diameter	115A Ave: 141A - 140A St	Long Term (7 - 10 Yrs)	187,000	-	187,000	-
12662	90m of 100mm diameter	175B St: 61B - 61A Ave	Short Term (1 - 3 Yrs)	60,000	-	60,000	-
12663	160m of 300mm diameter	Dyke Rd: Tannery Rd - lot 10839	Long Term (7 - 10 Yrs)	168,000	-	168,000	-
12664	210m of 300mm diameter	Tannery Rd: Timberland - Dyke Rd	Long Term (7 - 10 Yrs)	220,000	-	220,000	-
12678	560m of 300mm diameter	126 St: 60 - 62B Ave	Medium Term (4 - 6 Yrs)	588,000	-	588,000	-
12680	170m of 100mm diameter	127A St: 71A - 70 Ave	Short Term (1 - 3 Yrs)	114,000	-	114,000	-
12683	100m of 200mm diameter	131 St: 66A - 65B Ave	Short Term (1 - 3 Yrs)	78,000	-	78,000	-
12687	190m of 200mm diameter	137 St: 67A - 67 Ave	Short Term (1 - 3 Yrs)	148,000	-	148,000	-
12689	220m of 300mm diameter	142 St: 69 - 68 Ave	Short Term (1 - 3 Yrs)	231,000	127,000	104,000	-
12690	90m of 200mm diameter	142 St: 75A - 75 Ave	Short Term (1 - 3 Yrs)	70,000	-	70,000	-
13785	460m of 200mm diameter	024 Ave: 152 - 154 St	Medium Term (4 - 6 Yrs)	359,000	-	359,000	-
13786	400m of 300mm diameter	018 Ave: 152 - 153 St	Long Term (7 - 10 Yrs)	420,000	-	420,000	-
13787	800m of 200mm diameter	192 St: 64 - 68 Ave	Short Term (1 - 3 Yrs)	624,000	-	624,000	-
13789	110m of 100mm diameter	124 St: 97A - 98 Ave	Medium Term (4 - 6 Yrs)	74,000	-	74,000	-
13790	660m of 200mm diameter	056 Ave: KG Blvd - 144 St	Long Term (7 - 10 Yrs)	50,000	-	50,000	-
13791	30m of 200mm diameter	131 St: 104 - 104A St	Medium Term (4 - 6 Yrs)	24,000	-	24,000	-
13792	200m of 200mm diameter	133A St: 96 - 97 Ave	Medium Term (4 - 6 Yrs)	156,000	-	156,000	-
13793	70m of 250mm diameter	140 St: 100 - 100A Ave	Medium Term (4 - 6 Yrs)	70,000	25,000	45,000	-
13794	230m of 200mm diameter	137 St: 113 - 114 Ave	Long Term (7 - 10 Yrs)	180,000	-	180,000	-
13795	220m of 200mm diameter	137A St: 113 - 114 Ave	Long Term (7 - 10 Yrs)	172,000	-	172,000	-
13796	630m of 200mm diameter	140A St: Grosvenor Rd - 115A Ave	Long Term (7 - 10 Yrs)	491,000	-	491,000	-
13797	70m of 100mm diameter	059 Ave: 178A - 178B St	Short Term (1 - 3 Yrs)	47,000	-	47,000	-
13798	650m of 250mm diameter	Beecher St: McBride Ave - Bayview St	Long Term (7 - 10 Yrs)	650,000	234,000	416,000	-
13799	80m of 300mm diameter	KG Blvd: 103 - 104 Ave	Short Term (1 - 3 Yrs)	84,000	46,000	38,000	-
13800	690m of 300mm diameter	Hwy 10: 193 - 196 St	Long Term (7 - 10 Yrs)	726,000	400,000	326,000	-
13804	80m of 100mm diameter	127A St: 98 - 98A Ave	Long Term (7 - 10 Yrs)	54,000	-	54,000	-
13805	130m of 200mm diameter	128A St: 96B - 97 Ave	Medium Term (4 - 6 Yrs)	102,000	-	102,000	-
13806	880m of 200mm diameter	132 St: 108 - 112 Ave	Medium Term (4 - 6 Yrs)	686,000	-	686,000	-
13807	330m of 250mm diameter	137A St: 105A - 107A Ave	Medium Term (4 - 6 Yrs)	330,000	119,000	211,000	-
13808	490m of 200mm diameter	144A St - Lombard Pl - 56 Ave	Medium Term (4 - 6 Yrs)	382,000	-	382,000	-
13811	190m of 200mm diameter	149 St: 68 69 Ave	Short Term (1 - 3 Yrs)	148,000	-	148,000	-
13812	90m of 200mm diameter	149B St: 76 - 76A Ave	Short Term (1 - 3 Yrs)	70,000	-	70,000	-
13816	220m of 200mm diameter	017 Ave: 155 - 156 St	Medium Term (4 - 6 Yrs)	172,000	-	172,000	-
13817	760m of 200mm diameter	192 St: 60 - 64 Ave	Short Term (1 - 3 Yrs)	593,000	-	593,000	-
13819	430m of 200mm diameter	055A Ave: Southview Dr - 147A St	Long Term (7 - 10 Yrs)	336,000	-	336,000	-
13820	100m of 200mm diameter	058 Ave: 185A - 186A St	Short Term (1 - 3 Yrs)	78,000	-	78,000	-
13821	210m of 200mm diameter	065B Ave: 131 - 132 St	Short Term (1 - 3 Yrs)	164,000	-	164,000	-
13822	190m of 200mm diameter	066A Ave: 131 - 132 St	Short Term (1 - 3 Yrs)	148,000	-	148,000	-

WATER

Program 1602 - Distribution Mains (<=300mm)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13825	40m of 200mm diameter	072A Ave: 141A - 141B St	Short Term (1 - 3 Yrs)	32,000	-	32,000	-
13826	90m of 200mm diameter	072A Ave: 145 - 145A St	Short Term (1 - 3 Yrs)	70,000	-	70,000	-
13829	150m of 100mm diameter	099A Ave: Semiahmoo Rd - 131B St	Long Term (7 - 10 Yrs)	100,000	-	100,000	-
13832	510m of 200mm diameter	Hurdle Cr: 74 - 76 Ave	Short Term (1 - 3 Yrs)	398,000	-	398,000	-
13837	60m of 200mm diameter	St Andrews Dr: 147 St - Surrey Rd	Medium Term (4 - 6 Yrs)	47,000	-	47,000	-
13839	360m of 300mm diameter	Wallace Dr: Surrey Rd - 111A Ave	Medium Term (4 - 6 Yrs)	378,000	208,000	170,000	-
13840	2140m of 300mm diameter	116 Ave: 122 - 134 St	Long Term (7 - 10 Yrs)	2,247,000	-	2,247,000	-
13841	740m of 300mm diameter	136 St: Hilton Rd - 113 Ave	Long Term (7 - 10 Yrs)	777,000	427,000	350,000	-
13842	960m of 300mm diameter	104 Ave: 140 - 144 St	Medium Term (4 - 6 Yrs)	1,008,000	554,000	454,000	-
13843	820m of 300mm diameter	108 Ave: 144 - 148 St	Long Term (7 - 10 Yrs)	862,000	474,000	388,000	-
13844	110m of 200mm diameter	170A St: 81A - 82 Ave	Medium Term (4 - 6 Yrs)	86,000	-	86,000	-
13845	320m of 300mm diameter	KG Blvd W: 12A - 14 Ave	Medium Term (4 - 6 Yrs)	336,000	185,000	151,000	-
13847	350m of 200mm diameter	106 Ave: 144 - 146 St	Medium Term (4 - 6 Yrs)	273,000	-	273,000	-
13848	310m of 200mm diameter	106A Ave: 132 - 133 St	Medium Term (4 - 6 Yrs)	242,000	-	242,000	-
13849	100m of 200mm diameter	107 Ave: 130 - 130A St	Medium Term (4 - 6 Yrs)	78,000	-	78,000	-
13851	160m of 200mm diameter	126 St: 96 - 96A Ave	Medium Term (4 - 6 Yrs)	125,000	-	125,000	-
13852	110m of 200mm diameter	127 St: 26 - 26A Ave	Medium Term (4 - 6 Yrs)	86,000	-	86,000	-
13853	100m of 100mm diameter	128A St: 60 - 60A Ave	Short Term (1 - 3 Yrs)	67,000	-	67,000	-
13854	970m of 300mm diameter	132 St: 100 - 104 Ave	Long Term (7 - 10 Yrs)	1,019,000	-	1,019,000	-
13855	450m of 200mm diameter	132 St: 28 Ave - Crescent Rd	Medium Term (4 - 6 Yrs)	351,000	-	351,000	-
13856	230m of 200mm diameter	133A St: 96 - 97 Ave	Medium Term (4 - 6 Yrs)	180,000	-	180,000	-
13857	380m of 200mm diameter	134 St: 26 - 28 Ave	Medium Term (4 - 6 Yrs)	296,000	-	296,000	-
13858	150m of 100mm diameter	135B St: 107 - 107A Ave	Medium Term (4 - 6 Yrs)	100,000	-	100,000	-
13859	820m of 300mm diameter	136 St: 16 - 20 Ave	Long Term (7 - 10 Yrs)	861,000	-	861,000	-
13861	380m of 200mm diameter	140 St: 24 - 26 Ave	Medium Term (4 - 6 Yrs)	296,000	-	296,000	-
13867	270m of 200mm diameter	144 St: 108 - 109 Ave	Medium Term (4 - 6 Yrs)	211,000	-	211,000	-
13868	70m of 300mm diameter	146 St @ Sunnyside PS	Long Term (7 - 10 Yrs)	74,000	-	74,000	-
13869	450m of 300mm diameter	157 St: 104 Ave - 105A Ave /157 St	Medium Term (4 - 6 Yrs)	473,000	260,000	213,000	-
13870	100m of 200mm diameter	162 St: 89A - 90 Ave	Medium Term (4 - 6 Yrs)	78,000	-	78,000	-
13871	600m of 300mm diameter	164 St: 10 Ave - KG Blvd	Medium Term (4 - 6 Yrs)	631,000	347,000	284,000	-
13872	400m of 300mm diameter	164 St: 8 - 10 Ave	Medium Term (4 - 6 Yrs)	420,000	231,000	189,000	-
13873	2010m of 300mm diameter	020 Ave: 146 - 156 St	Long Term (7 - 10 Yrs)	2,111,000	-	2,111,000	-
13874	810m of 300mm diameter	020 Ave: 164 - 168 St	Medium Term (4 - 6 Yrs)	632,000	-	632,000	-
13876	290m of 200mm diameter	027A Ave: 27 Ave - 127 St	Medium Term (4 - 6 Yrs)	226,000	-	226,000	-
13877	330m of 200mm diameter	061A Ave: 190 - 192 St	Short Term (1 - 3 Yrs)	258,000	-	258,000	-
13878	200m of 300mm diameter	070 Ave: 184 - 185 St	Short Term (1 - 3 Yrs)	50,000	50,000	-	-
13879	940m of 300mm diameter	076 Ave: 128 - 132A St	Long Term (7 - 10 Yrs)	987,000	-	987,000	-
13880	2010m of 300mm diameter	076 Ave: 184 - 194 St	Long Term (7 - 10 Yrs)	2,111,000	1,161,000	950,000	-
13881	430m of 200mm diameter	090 Ave: 160 - 162 St	Medium Term (4 - 6 Yrs)	335,000	-	335,000	-
13883	110m of 200mm diameter	094 Ave: 148 - 148A St	Short Term (1 - 3 Yrs)	86,000	-	86,000	-
13884	830m of 300mm diameter	096 Ave: 156 - 160 St	Medium Term (4 - 6 Yrs)	872,000	-	872,000	-
13885	100m of 200mm diameter	097 Ave: 133A - 134 St	Medium Term (4 - 6 Yrs)	78,000	-	78,000	-
13887	280m of 200mm diameter	Cowan Rd: Larner Rd - 109 Ave	Short Term (1 - 3 Yrs)	218,000	-	218,000	-
13888	160m of 200mm diameter	Peacock Pt: Jay Cr - 151 St	Medium Term (4 - 6 Yrs)	125,000	-	125,000	-
13889	460m of 300mm diameter	Pheasant Dr: 150 - 152 St	Medium Term (4 - 6 Yrs)	483,000	266,000	217,000	-

WATER

Program 1602 - Distribution Mains (<=300mm)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13890	420m of 200mm diameter	Robin Cr: 150 St - Pheasant Dr	Medium Term (4 - 6 Yrs)	328,000	-	328,000	-
13891	330m of 200mm diameter	Swallow Dr: Patridge Cr - Pheasant Dr	Medium Term (4 - 6 Yrs)	258,000	-	258,000	-
13892	380m of 200mm diameter	148A St: 110 Ave - Blackbird Cr	Medium Term (4 - 6 Yrs)	296,000	-	296,000	-
13893	460m of 200mm diameter	Bluebird Cr: Oriole Dr - Canary Dr	Medium Term (4 - 6 Yrs)	360,000	-	360,000	-
13894	600m of 200mm diameter	Canary Dr: Oriole Dr - 152 St	Medium Term (4 - 6 Yrs)	468,000	-	468,000	-
13895	70m of 100mm diameter	Lark Pl: Wren Cr - 148 St	Medium Term (4 - 6 Yrs)	47,000	-	47,000	-
13896	370m of 200mm diameter	Oriole Dr: Canary Dr - Blackbird Cr	Medium Term (4 - 6 Yrs)	290,000	-	290,000	-
13897	600m of 200mm diameter	Partridge Cr: Canary Dr - 111A Ave	Medium Term (4 - 6 Yrs)	268,000	-	268,000	-
13898	480m of 200mm diameter	Jay Cr: Canary Dr - Swallow Dr	Medium Term (4 - 6 Yrs)	374,000	-	374,000	-
13916	250m of 300mm diameter	Cranley Dr: 157A - lot 2303	Medium Term (4 - 6 Yrs)	100,000	-	100,000	-
13917	220m of 200mm diameter	Franklin Rd: Grosvenor - Cowan Rd	Medium Term (4 - 6 Yrs)	171,600	-	171,600	-
13919	200m of 200mm diameter	Larner Rd: Grosvenor - Cowan Rd	Medium Term (4 - 6 Yrs)	156,000	-	156,000	-
13920	290m of 200mm diameter	Seacrest Dr: 123 - 124 St	Medium Term (4 - 6 Yrs)	226,200	-	226,200	-
13929	820m of 300mm diameter	105A Ave: 144 - 148 St	Medium Term (4 - 6 Yrs)	640,000	352,000	288,000	-
13967	500m of 300mm diameter	66 Ave: 146 - 148 St	Long Term (7 - 10 Yrs)	390,000	215,000	175,000	-
13968	50m of 100mm diameter	81A Ave: 132A - 132A st	Medium Term (4 - 6 Yrs)	33,500	-	33,500	-
15202	Leak Detection	Various Locations	Short Term (1 - 3 Yrs)	1,000,000	-	1,000,000	-
15203	Condition Assessment - Distribution Mains	Various Locations	Short Term (1 - 3 Yrs)	500,000	-	500,000	-
15204	Seismic Upgrades - 710m of 350mm diameter	Timberland Rd: lot 10550 - lot 10622	Long Term (7 - 10 Yrs)	468,600	-	468,600	-
15205	Seismic Upgrades - 500m of 300mm diameter	110 Ave: 124 - 126A St	Long Term (7 - 10 Yrs)	315,000	-	315,000	-
15206	Seismic Upgrades - 360m of 300mm diameter	126A St: 110 - 112 Ave	Long Term (7 - 10 Yrs)	226,800	-	226,800	-
15207	Seismic Upgrades - 360m of 300mm diameter	112 Ave: 126A - 128 St	Long Term (7 - 10 Yrs)	226,800	-	226,800	-
15208	Seismic Upgrades - 320m of 300mm diameter	Scott Rd: Old Yale - Larson Rd	Long Term (7 - 10 Yrs)	201,600	-	201,600	-
15209	Seismic Upgrades - 500m of 300mm diameter	Scott Rd: Larson Rd - 111A Ave	Long Term (7 - 10 Yrs)	315,000	-	315,000	-
15210	Seismic Upgrades - 1260m of 300mm diameter	112A Ave: Hwy 17 - 128 St	Long Term (7 - 10 Yrs)	1,323,000	-	1,323,000	-
15211	Seismic Upgrades - 70m of 300mm diameter	126A St: 112A - 112B Ave	Long Term (7 - 10 Yrs)	73,500	-	73,500	-
15212	Seismic Upgrades - 560m of 300mm diameter	128 St: 112B - 115B Ave	Long Term (7 - 10 Yrs)	352,800	-	352,800	-
15213	Seismic Upgrades - 1200m of 300mm diameter	064 Ave: 146 - 152 St	Long Term (7 - 10 Yrs)	756,000	-	756,000	-
15214	Seismic Upgrades - 820m of 300mm diameter	176A St: 56 - 60 Ave	Long Term (7 - 10 Yrs)	516,600	-	516,600	-
15215	Seismic Upgrades - 420m of 300mm diameter	195 St: 94 - 96 Ave	Short Term (1 - 3 Yrs)	264,600	-	264,600	-
15234	80m of 100mm diameter	57A Ave: 137A - 138 St	Short Term (1 - 3 Yrs)	53,600	-	53,600	-
15235	50m of 200mm diameter	57B Ave: 137 - 137A St	Medium Term (4 - 6 Yrs)	39,000	-	39,000	-
15236	150m of 300mm diameter	160 St: 20A - 21A Ave	Long Term (7 - 10 Yrs)	300,000	300,000	-	-
15297	840m of 300mm diameter	140 St: 100A - 104 Ave	Long Term (7 - 10 Yrs)	882,000	-	882,000	-
				63,306,600	12,326,000	50,980,600	-

WATER

Program 1610 - Supply Works and Feeder Mains

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
629	500m of 400mm diameter	SFPR/Bridge Road: Old Yale Rd - 112 Ave	Short Term (1 - 3 Yrs)	600,000	600,000	-	-
4942	360m of 350mm diameter	064 Ave: 178 - 180 St*	Medium Term (4 - 6 Yrs)	396,000	266,000	130,000	-
5345	800m of 400mm diameter	140 St: 20 - 24 Ave	Short Term (1 - 3 Yrs)	960,000	720,000	240,000	-
10342	835m of 450mm diameter	180 St: 056 - 060 Ave	Short Term (1 - 3 Yrs)	1,127,000	1,127,000	-	-
10344	600m of 400mm diameter	160 St: 028 - 030 Ave	Short Term (1 - 3 Yrs)	720,000	720,000	-	-
10345	200m of 400mm diameter	160 St: 030 - 032 Ave	Short Term (1 - 3 Yrs)	240,000	240,000	-	-
10461	600m of 600mm diameter	123A St: 096 Ave - 099 Ave	Short Term (1 - 3 Yrs)	870,000	870,000	-	-
10462	900m of 600mm diameter	099 Ave: 123A St - 128 Ave	Short Term (1 - 3 Yrs)	1,305,000	1,305,000	-	-
10463	600m of 600mm diameter	099 St / 128 St to 100 Ave / 129A St	Short Term (1 - 3 Yrs)	870,000	870,000	-	-
10500	Pressure Reducing Valve	164 St / 20 Ave	Long Term (7 - 10 Yrs)	150,000	150,000	-	-
10671	750m of 450mm diameter	156 St: 84 Ave - Fraser Hwy	Long Term (7 - 10 Yrs)	1,020,000	1,020,000	-	-
10975	420m of 600mm diameter	190 St: 68 - 70 Ave	Short Term (1 - 3 Yrs)	609,000	609,000	-	-
11512	800m of 750mm diameter	128 St: 068 - 072 Ave	Long Term (7 - 10 Yrs)	1,680,000	605,000	1,075,000	-
11514	Whalley P.S. 6th Pump	104A Ave / 146 St	Long Term (7 - 10 Yrs)	750,000	750,000	-	-
11518	450m of 1200mm diameter	105A Ave: 146 - 148 St	Long Term (7 - 10 Yrs)	1,260,000	945,000	315,000	-
11520	130m of 350mm diameter	Timberland Rd: Tannery Rd - 10671	Long Term (7 - 10 Yrs)	143,000	-	143,000	-
11535	Rehab Existing PRVs	Various Locations	Short Term (1 - 3 Yrs)	1,000,000	-	1,000,000	-
11556	800m of 450mm diameter	020 Ave: 148 - 152 St	Long Term (7 - 10 Yrs)	1,080,000	1,080,000	-	-
11557	410m of 600mm diameter	148 St: 020 - 022 Ave	Long Term (7 - 10 Yrs)	595,000	595,000	-	-
11558	410m of 600mm diameter	022 Ave: 148 - 146 St	Long Term (7 - 10 Yrs)	595,000	595,000	-	-
11559	220m of 900mm diameter	146 St / 022 Ave	Long Term (7 - 10 Yrs)	616,000	462,000	154,000	-
11560	Sunnyside P.S. Upgrade	146 St / 022 Ave	Short Term (1 - 3 Yrs)	750,000	750,000	-	-
11580	PRV Station	017A Ave / 167A St	Long Term (7 - 10 Yrs)	150,000	150,000	-	-
12694	Clayton P.S. 5th pump	072 Ave / 190 St	Medium Term (4 - 6 Yrs)	750,000	750,000	-	-
12696	1600m of 600mm diameter	128 St: 72 - 80 Ave	Medium Term (4 - 6 Yrs)	2,321,000	1,021,000	1,300,000	-
13801	1460m of 600mm diameter	108 Ave: Whalley Blvd - 144 St	Medium Term (4 - 6 Yrs)	2,118,000	932,000	1,186,000	-
13833	480m of 400mm diameter	Hyland Rd: 138 - 142 St	Short Term (1 - 3 Yrs)	576,000	432,000	144,000	-
13899	Clayton P.S. 6th pump	072 Ave / 190 St	Medium Term (4 - 6 Yrs)	750,000	750,000	-	-
13900	740m of 600mm diameter	100 Ave: 131A St - 134A St / Old Yale Rd	Long Term (7 - 10 Yrs)	1,073,000	-	1,073,000	-
13901	540m of 750mm diameter	144 St: 104 St - 104A Ave / 146 St	Long Term (7 - 10 Yrs)	432,000	-	432,000	-
13902	540m of 750mm diameter	144 St: Whalley PS - 108 Ave	Medium Term (4 - 6 Yrs)	1,134,000	408,000	726,000	-
13993	510m of 600mm diameter	128 St: 60 - 62A Ave	Long Term (7 - 10 Yrs)	816,000	-	816,000	-
13995	1500m of 900mm diameter	148 St: 100 - 105A Ave	Long Term (7 - 10 Yrs)	4,200,000	2,330,000	1,870,000	-
13996	800m of 600mm diameter	148 St: 96 - 100 Ave	Long Term (7 - 10 Yrs)	1,280,000	560,000	720,000	-
14041	750m of 450mm diameter	148 St: 86 - 90 Ave	Medium Term (4 - 6 Yrs)	1,012,500	1,012,500	-	-
14042	400m of 450mm diameter	090 Ave: 148 - 150 St	Medium Term (4 - 6 Yrs)	540,000	540,000	-	-
15216	Sunnyside P.S. Electrical & Mechanical Upgrades	148 St: lot 2200	Short Term (1 - 3 Yrs)	3,000,000	-	3,000,000	-
15217	500m of 400mm diameter	Enterprise Way: 193 - 194A St	Short Term (1 - 3 Yrs)	600,000	450,000	150,000	-
15218	450m of 750mm diameter	100 Ave: 129A - 131A St	Medium Term (4 - 6 Yrs)	720,000	259,200	460,800	-
15219	2000m of 750mm diameter	098 Ave: 128 - 137A St	Medium Term (4 - 6 Yrs)	3,200,000	2,048,000	1,152,000	-
15220	50m of 450mm diameter	024 Ave: 157 - 157A St	Short Term (1 - 3 Yrs)	100,000	100,000	-	-
15221	Condition Assessment - Supply and Feeder Mains	Various Locations	Short Term (1 - 3 Yrs)	500,000	-	500,000	-
15222	200m of 450mm diameter	150 St: 90 Ave - Fraser Hwy	Medium Term (4 - 6 Yrs)	270,000	270,000	-	-
15223	765m of 450mm diameter	180 St: 60 - 64 Ave	Short Term (1 - 3 Yrs)	1,033,000	1,033,000	-	-
15224	400m of 450mm diameter	056 Ave: 178 - 180 St	Short Term (1 - 3 Yrs)	540,000	540,000	-	-

WATER

Program 1610 - Supply Works and Feeder Mains

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
15225	Whalley P.S. Electrical & Mechanical Upgrades	105A Ave: lot 14620	Medium Term (4 - 6 Yrs)	2,000,000	-	2,000,000	-
15226	Catholic Protection - Supply and Feeder Mains	Various Locations	Short Term (1 - 3 Yrs)	500,000	-	500,000	-
15227	Seismic Upgrades - 830m of 500mm diameter	176 St: 64 - 68 Ave	Long Term (7 - 10 Yrs)	722,100	-	722,100	-
15228	Seismic Upgrades - 830m of 400mm diameter	176 St: 60 - 64 Ave	Long Term (7 - 10 Yrs)	597,600	-	597,600	-
15229	Seismic Upgrades - 500m of 450mm diameter	056 Ave: 176 - 178 St	Long Term (7 - 10 Yrs)	405,000	-	405,000	-
15230	700m of 450mm diameter	156 St: 84 Ave - Fraser Hwy	Long Term (7 - 10 Yrs)	945,000	945,000	-	-
15231	1980m of 750mm diameter	128 St: 8900 block - 99 Ave	Long Term (7 - 10 Yrs)	3,168,000	2,027,520	1,140,480	-
15232	850m of 750mm diameter	144 St: 104 - 108 Ave	Long Term (7 - 10 Yrs)	1,785,000	1,142,400	642,600	-
15233	PRV Abandonments	Various Locations	Short Term (1 - 3 Yrs)	1,000,000	-	1,000,000	-
15395	Fleetwood Reservoir Statutory Right-of-Way	090 Ave: lot 15385 (Fleetwood Reservoir)	Short Term (1 - 3 Yrs)	3,000,000	1,500,000	1,500,000	-
16136	Jericho Reservoir - City of Surrey Contribution	Township of Langley (20400 - 73A Avenue)	Short Term (1 - 3 Yrs)	7,055,631	7,055,631	-	-
				65,629,831	40,535,251	25,094,580	-

4. SANITARY SEWER

The City strives to build and maintain a robust sanitary sewer system that is cost-effective, scalable, lasting and environmentally responsible. To have a robust sanitary sewer system, the City shall:

- replace systems that have a high operation and maintenance cost;
- build a scalable system that accommodates future growth and additional sewer catchments, by upsizing sewers whenever opportunities arise; and
- build an environmentally responsible system to minimize or eliminate sanitary sewer overflows.

4.1 Sanitary Sewer Inventory

Surrey has an inventory of sanitary sewers of approximately 1,574 km. The majority of this system is relatively young and in good condition. However, there are older sections of the system, constructed of asbestos cement, vitrified clay and other materials that are showing signs of deterioration due to wears and tears, cracks and joint dislocations and are subject to excessive infiltration.

Table 4.1 – Major Sewer System Infrastructure Summary

Sanitary Sewer	1,537 km
Vacuum Sanitary System	37 km
Sanitary Pump Stations	44

The major collection network to service the City is illustrated in **Figure 4.1**

4.2 Sanitary Sewer Replacement Strategy

Under the Integrated Liquid Waste and Resource Management Plan (ILWRMP) as part of commitment Strategy 3.18 – *Manage Assets and Optimize Existing Sanitary Sewerage Operations*, the City is developing an asset management plan targeting a 100-year replacement or rehabilitation cycle for the sanitary system.

It is too early to predict a strategy for the replacement of pipes beyond 50 years as changing technologies, development in asset management, and demand management practices may influence the replacement strategy in that period.

The rehabilitation work through City's Inflow and Infiltration (I&I) reduction program will assist in dealing with part of this replacement demand as materials such as vitrified clay pipe (VCP) are used for longer periods than expected, provided they are rehabilitated.

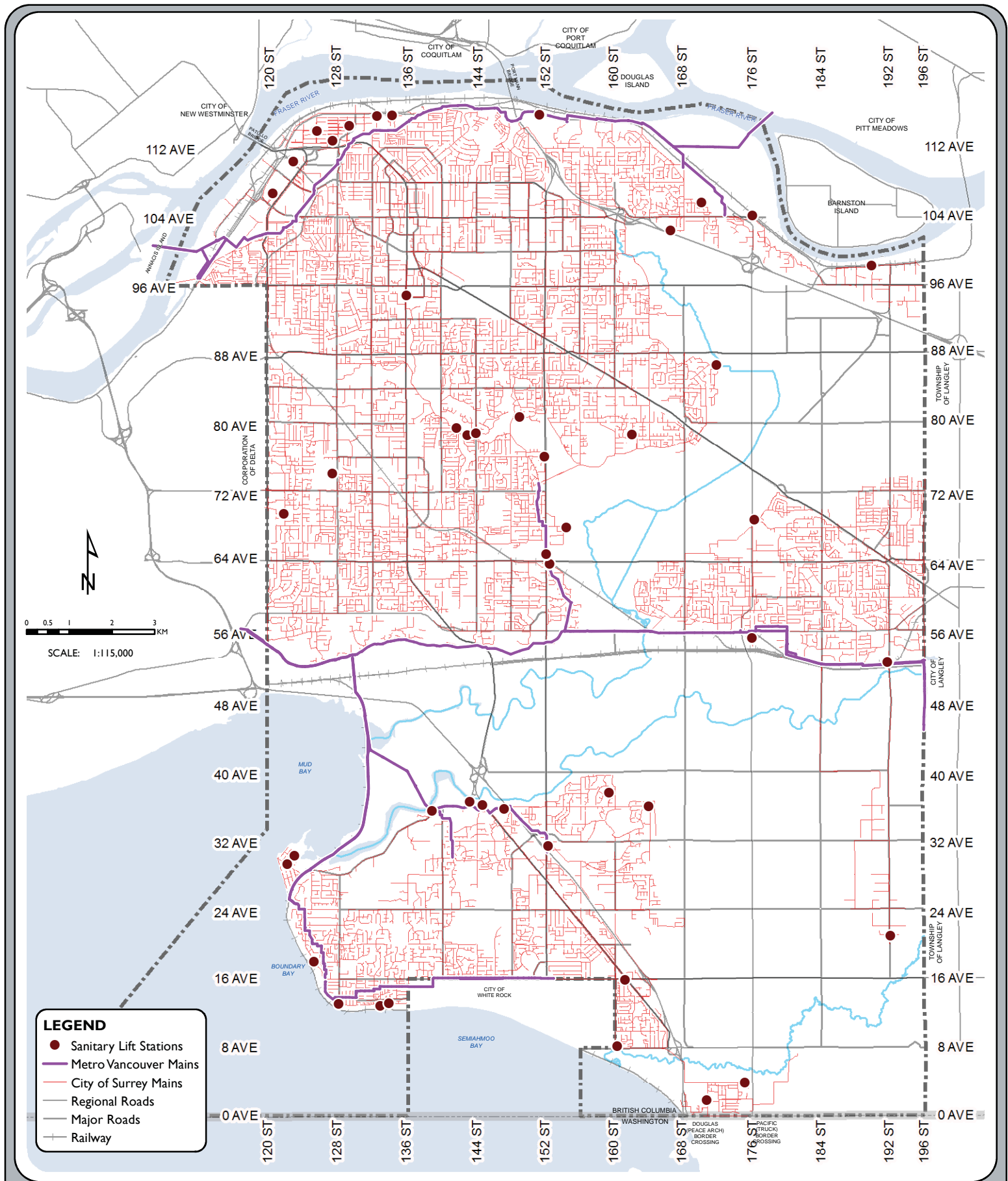


FIGURE 4.1 - SEWER SEWER SYSTEM

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

In the next 50 years, about 63 percent of all sewer mains may have to be replaced at a cost of \$952 million. The remaining will reach their end of service lives in the subsequent 50 years. Such a large resource requirement necessitates careful planning and development of strategies to deal with the replacement demand, which the City is now seeking to prepare.

The pipe materials requiring replacement in the next 50 years and the estimated cost of replacement is summarized in **Table 4.2**.

Table 4.2 – Sanitary Sewer Mains and Replacement Costs

Material	Total Main Length	Replacement demand up to 2066 (50 years)	Cost of Replacement (\$)
Asbestos Cement, Vitrified Clay Pipe, and Cast Iron	323 km (20.5% of entire pipe length)	323 km	\$399 Million
Concrete Pipe, Poly Ethylene, Poly vinyl Chloride, Steel, and Ductile Iron	1,253 km (79.5% of entire pipe length)	856 km	\$1,179 Million

The estimated cost to replace aging sanitary sewer mains in the next 50 years is illustrated in **Figure 4.2**.

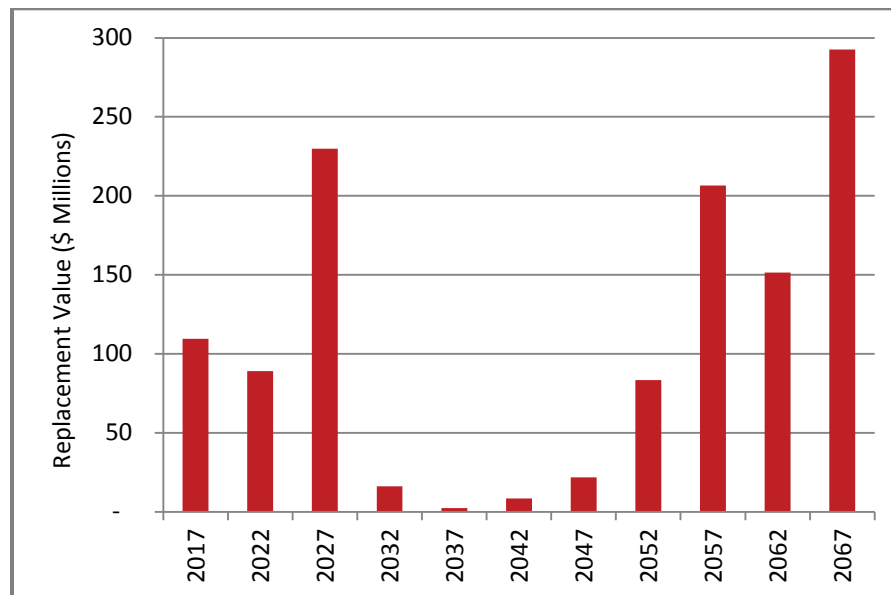


Figure 4.2 – Sanitary Sewer Main Replacement Needs in the Next 50 Years

Under this Plan, an initial \$8 million is set aside for the replacement of sanitary sewer mains. The rehabilitation or replacement works of the gravity sewer system are included as projects within Program 1632 – Minor Mains (<450mm diameter) or Program 1644 – Major Facilities.

Through an established maintenance management program the gravity sewer system is systematically video inspected to determine its condition. The rehabilitation needs for structural deficiencies are confirmed based on this inspection data. Based on the current projections and levels of expenditures, the estimated rehabilitation need over the next 10 years is in the range of \$15 million. The rehabilitation and continued serviceability of the sanitary sewer system, including the control of infiltration, is a municipal commitment under the Metro Vancouver ILWRMP.

4.3 Replacement of the Vacuum Sewer System

A vacuum sewer system services the Bridgeview and South Westminster areas of Surrey as they are low-lying, flat, and subject to a considerable amount of settlement. The City's vacuum sewer system is more expensive to operate than a conventional gravity system.

The replacement strategy for the Bridgeview Vacuum Sewer System comprises:

- a) a steep grade system for the residential area, and
- b) a low-pressure system for the industrial/commercial areas in general.

The Phase 1 of the replacement program in West Bridgeview, through a local area service initiative combined with a senior government grant, was completed in 2011. The Phase 2 of the replacement program in the Industrial Road and 116 Avenue from 112 Avenue to 132 Street and the 112A Avenue and King George Boulevard in Bridgeview has also been completed in 2014. At this stage, more than half of the vacuum sewer in Bridgeview has been replaced. For the remaining phase 3 and 4, the replacements will be completed by fall of 2017. Until these systems are replaced no new service connections are generally permitted to the existing vacuum sewer systems.

A similar approach has been planned for the South Westminster NCP area. The servicing strategy for this area, as outlined in the South Westminster NCP, is to replace the vacuum sewer system in all new developments and redevelopments with low-pressure systems, because:

- a) the operation and maintenance costs are high; and
- b) the existing system does not have sufficient capacity to accommodate development and redevelopment, including new major industries.

The replacement program is to be funded by each development in accordance with their needs. Eventually, all sections of the vacuum sewers in South Westminster will be replaced as development reaches build-out.

However, there is a pocket area at Old Yale Road between Scott Road and 125A Street where the vacuum sewer system has repeatedly failed during storm events. As a result, the City will be replacing the vacuum sewer system with the low-pressure system in advance of development. The costs will be recovered when the properties develop in the future.

The replacement of sections of the vacuum sewer system is included as projects within Program 1644 – Major Facilities.

4.4 Sewer Servicing Programs

Program 1630 - General

This program covers the overhead costs associated with the general operating of the sewer section. Included are the costs of staff time, hardware and software equipment, and internal support services.

Program 1632 - Minor Mains (< 450mm diameter)

There are a number of sections of the existing sewer system that will not have sufficient capacity over the next 10 years to meet one or more of the following:

- current flows that may have increased due to inflow and infiltration; or
- servicing demand from future OCP designated land uses.

Replacement of the existing system that is needed to provide capacity to meet current demand, or to meet the reduction in capacity due to structural failure of the existing sewer, are considered to be non-growth costs. Upsizing these replacements, to allow for new growth to OCP designations, is considered to be a growth cost. Where a relief sewer is necessary for new growth, costs have been primarily assigned to growth, with a small contribution from the utility representing the depreciated value of the replaced asset.

The Robson Creek Trunk Upgrade Phase 1 along the east slope of Robson Creek in the northwest corner of the City is scheduled was completed in 2014. This eliminated the only known source of sanitary sewer overflow from City infrastructure. Phase 2 Robson Creek truck upgrade is completed in 2016, and Phase 3 is scheduled for completion in 2017.

Program 1634 - Inflow & Infiltration (Operation)

Under the ILWRMP, as part of the municipal actions, the City has developed an Inflow and Infiltration Management Plan (IIMP). In general, the plan establishes a long term, systematic, quantifiable, and cost-effective approach to managing Inflow and Infiltration (I&I). Generally higher I&I rates are found in the older systems in the northern and southern parts of the City. This is expected, as research has demonstrated that I&I rates increase as sewer pipes age and deteriorate, as illustrated in **Figure 6.3**.

Eventually the sewer pipes will be replaced when they reached the end of their service life. The range of I&I rates in Surrey are similar to those in other Metro Vancouver municipalities.

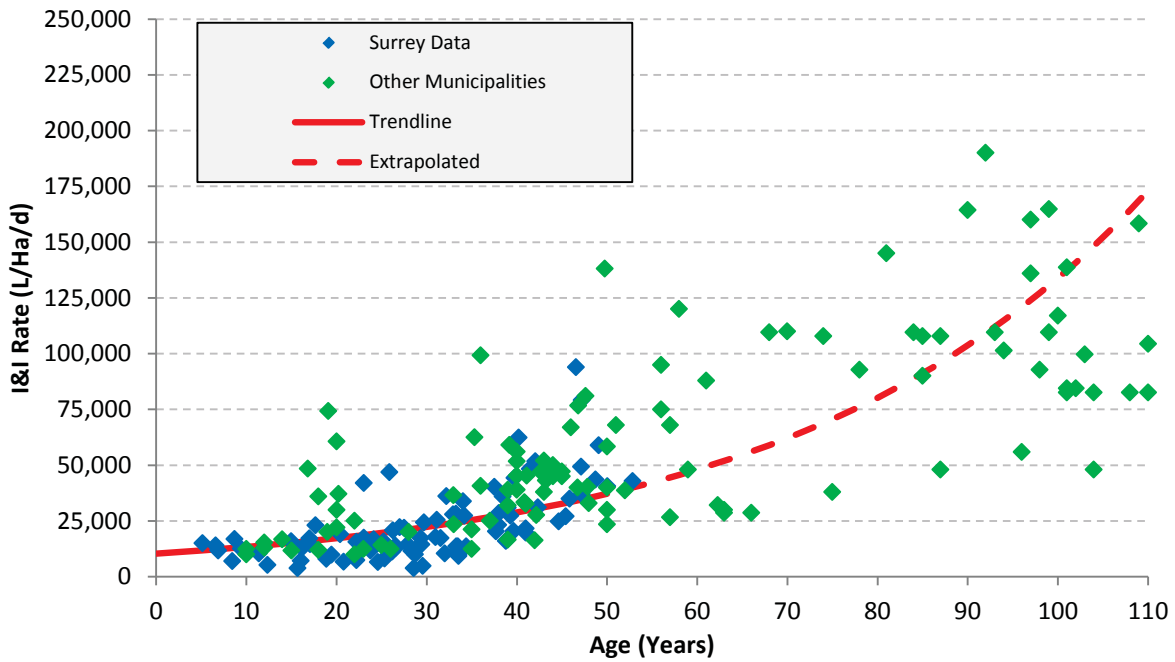


Figure 6.4 – I&I Rates vs. Pipe Age

To ensure that the City’s investments in I&I mitigation are effective, a cost analysis was undertaken. The result of this analysis is illustrated in **Figure 6.5**. Although the cost benefit ratio is never greater than 1, the optimal ratio is achieved at Tier 1 and this value diminishes as one approaches Tier 2 and 3 and I&I reduction costs increase significantly. If additional social and environmental risk mitigation measures are taken into consideration, the benefit cost ratio may shift closer to Tier 2, which includes only completing sewer rehabilitation for mainline and laterals within public rights-of-way.

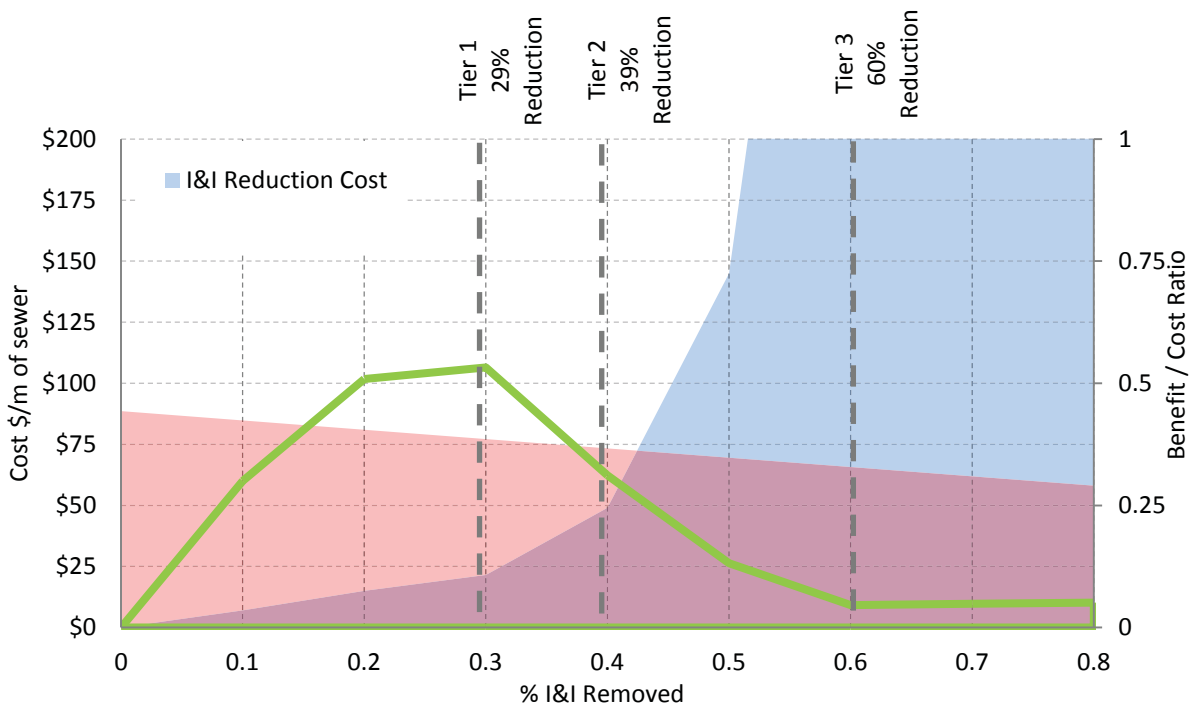


Figure 6.4 – I&I Cost Benefit Analysis

Under the IIMP, the City will undertake the following activities:

- Continue the flow monitor program;
- Systematic QA/QC for temporary and permanent flow monitoring sites and lift station data;
- Use the calibrated hydraulic model and EPA's Sanitary Sewer Overflow Analysis and Planning (SSOAP) to determine the rain dependent inflow and infiltration factor;
- Continue with close circuit video inspection (CCTV) and manhole inspection during wet weather and smoke testing during dry weather programs to identify rehabilitation works;
- Use the threshold limit table developed by the consultant in IIMP for evaluation of study areas;
- Focus on old areas within the sewer system with predominantly asbestos cement and vitrified clay pipe;
- Plan works in conjunction with overall asset planning works where CCTV show rehabilitation is warranted; and
- Continue to develop and implement community outreach programs.

To satisfy these commitments, the City has established an ongoing evaluation and rehabilitation program with an annual budget of \$1.5 million.

An example of rehabilitation works is the City's plan use conduct a pilot study using trenchless technology to reline all sanitary sewers in the Robson Creek catchment that are 150mm diameter and have a structural rating of 4 or greater.

Program 1638 - Planning

As urban, commercial, and industrial development takes place, additional sewage flows are generated causing some sections or components of the sewer system to reach capacity and, consequently, increase the need for relief works. These relief works range from sewer twinning or replacing with a larger sewer, to upgrading pump stations to provide more capacity.

The impact of growth on the sewer system is tracked using computer models. These models are used to predict sections of the sewer system that need additional capacity a) within the next 10 years and b) for ultimate development. The works necessary to provide additional capacity are included in the following programs:

- Program 1644 - Major Facilities
- Program 1632 - Minor Mains (< 450mm diameter)
- Program 1650 - DCW Upsizing

These programs do not include relief works associated to the Greater Vancouver Sewerage and Drainage District (GVS&DD) system, which are the responsibility of the GVS&DD and are funded on a regional basis.

In addition to flow monitoring and computer modeling, planning studies are required to develop master sewer plans, servicing plans, and specific project details. The costs of these engineering services are included in this program; furthermore, this program covers a portion of staff wages and salaries.

The provision of infrastructure for new growth is handled in two ways:

- i) Where infrastructure services a large area and is of high cost which makes it unreasonable to expect one fronting or benefiting property to finance the works, the works are included in the Major Facilities program; or
- ii) Where servicing can be reasonably provided through upsizing or extending the services necessary for a fronting or benefiting property, then the works are included in the DCW Program.

Program 1644 - Major Facilities

Major facilities include sewage lift stations, pressure sewers, replacement of vacuum sewer system, and large-diameter trunk mains ($\geq 450\text{mm}$ diameter). In some cases, major facilities do benefit existing customers and therefore a portion of the projects costs is attributed as non-growth. These costs are attributed to:

- replacement and/or upgrade of electrical components;
- on-going replacement of the Bridgeview vacuum system;
- seismic retrofitting of existing pump stations;
- addition of emergency storage and surge tanks at existing pump stations;
- addition of odour control facilities;
- addition of new pump stations; and
- addition of new interceptors.

Typically, the City will initiate construction of major facilities, due to the size and scope of major facility projects, located in existing serviced areas or where the facilities service both new and existing areas.

Program 1650 - DCW Upsizing

Trunk mains to service new areas can be provided by City funding the upsizing of base size services is necessary for the fronting or benefiting properties. For these trunks, only the upsizing cost (the cost from the base size required for a fronting property to the size required for the overall catchment) is included. As the timing of these works is strictly dependent on the fronting property owners or development, no estimate of timing is provided.

In addition to the upsizing of identified trunks, an allowance for upsizing the yet-to-be-identified works is included in the overall provision for upsizing.

Program 1658 - Land Acquisition

Land acquisition and requirements, such as rights-of-way and working easements, are required in capital projects. The program deals with various such requirements for the projects listed under various Programs.

4.5 Sanitary Sewer Cost Summary

No.	Program	Program Type	Growth (\$)	Non-Growth (\$)	Total (\$)
1630	General	Operating		4,200,000	4,200,000
1632	Minor Mains	Capital	17,453,210	14,472,080	31,925,290
1634	Inflow and Infiltration	Operating		15,000,000	15,000,000
1636	Minor Projects	Capital		165,000	165,000
1638	Planning	Non-Capital	5,600,000	1,800,000	7,400,000
1644	Major Facilities	Capital	57,691,096	30,032,231	87,723,327
1650	DCW Upsizing	Capital	6,339,501		6,339,501
1658	Land Acquisition	Capital	500,000	1,000,000	1,500,000
Total			87,583,807	66,669,311	154,253,118

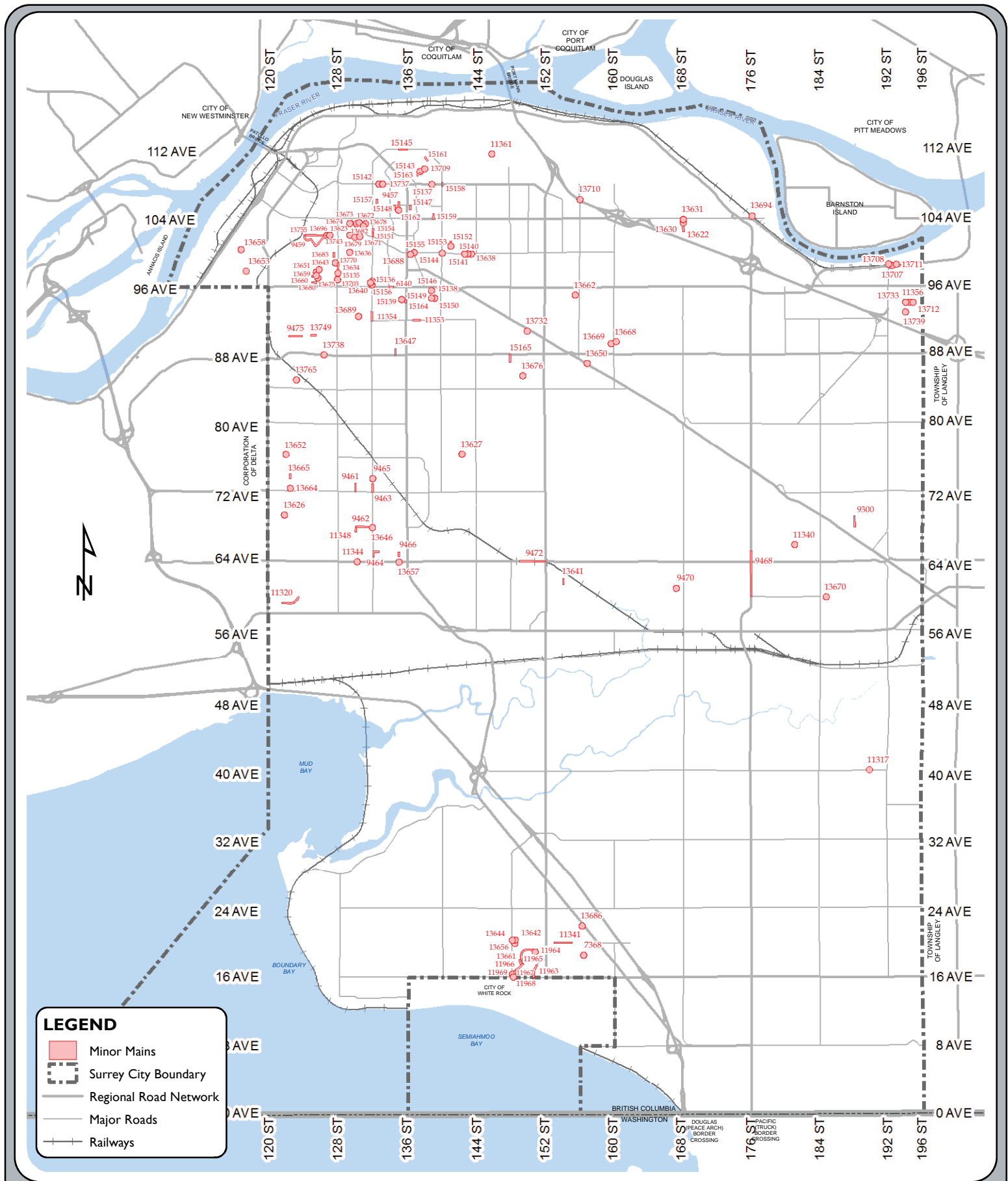
4.6 Sanitary Sewer Projects by Program

This section contains tables and figures that identify the projects under the sanitary sewer programs.

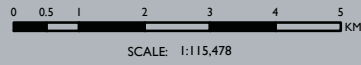
The tables provide the following information:

- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs – the high level estimates in 2016 dollars (subject to change at the actual time of construction). The costs are comprised of growth and non-growth components.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.



**FIGURE 4.2 - Sewer
Minor Mains < 450mm (Program 1632)**



The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.
This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.
Date Printed: 12/01/2017 Cartographer: C9W © City of Surrey
Source: G:\MAPPING\GIS\Maps\Recurring\10yrServicingPlan2017-26\Figure4-2-Sewer.mxd

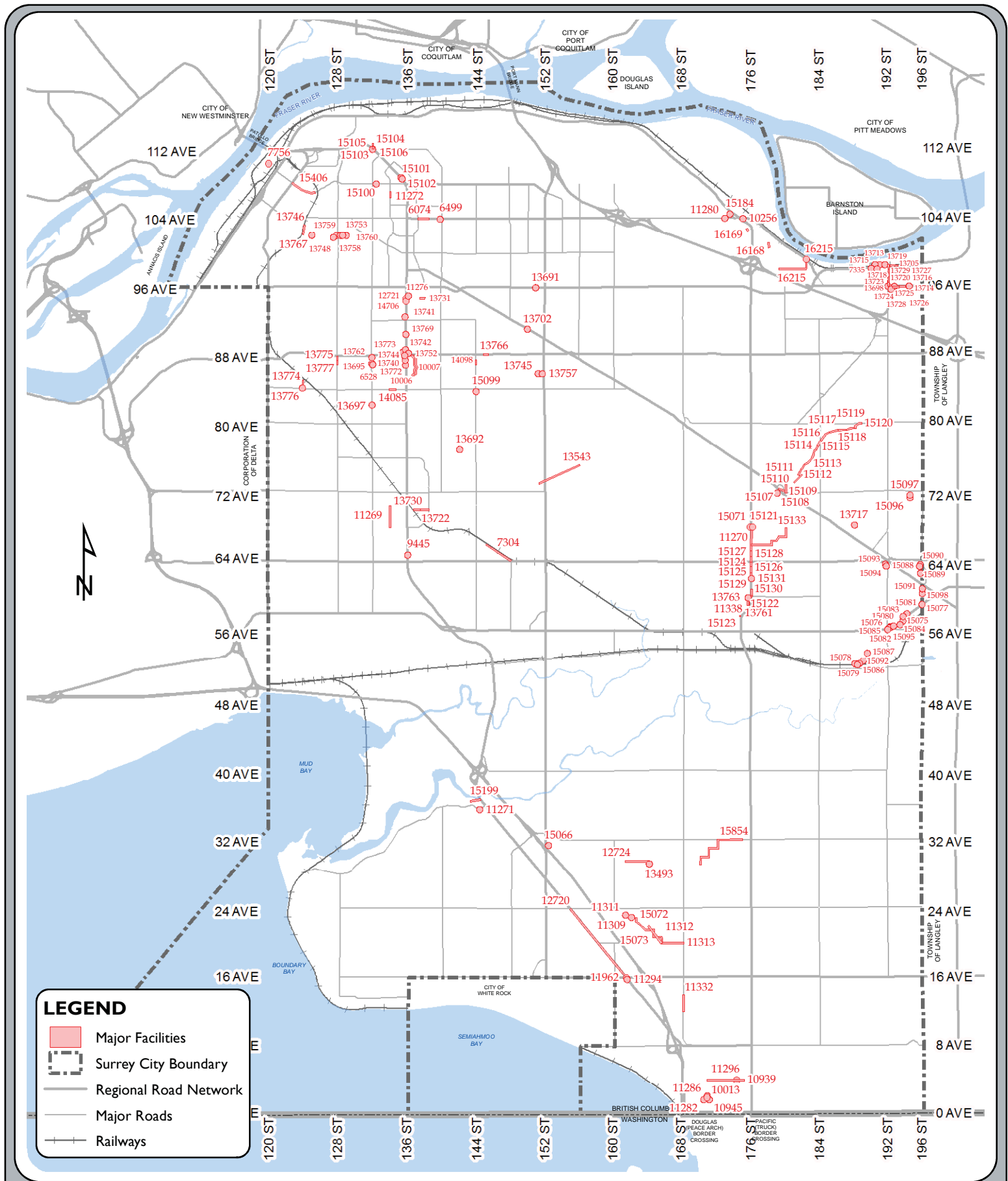


FIGURE 4.3 - Sewer Major Facilities (Program 1644)

0 0.5 1 2 3 4 5
KM
SCALE: 1:115,478

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.
This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.
Date Printed: 12/01/2017 Cartographer: C9W © City of Surrey
Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2017-26\Figure4-3-Sewer.mxd

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Program 1632 - Minor Mains <450mm

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6140	100m of 375mm diameter	096 Ave: 134-134A St	Short Term (1 - 3 Yrs)	143,000	100,100	42,900	-
7368	340m of 300mm diameter	156 St: 17A Ave - 18 Ave; 18 Ave: 156 St - Flower Rd	Long Term (7 - 10 Yrs)	490,000	343,000	147,000	-
9457	90m of 250mm diameter	City Parkway: 105 -106 Ave	Medium Term (4 - 6 Yrs)	113,740	68,244	45,496	-
9461	245m of 250mm diameter	130A St: 72 Ave to 73 Ave	Short Term (1 - 3 Yrs)	276,000	165,600	110,400	-
9463	200m of 250mm diameter	132 St: 072 - 073 Ave	Short Term (1 - 3 Yrs)	268,000	160,800	107,200	-
9464	235m of 250mm diameter	132 St and 64A Ave to 133 St and 65A Ave	Short Term (1 - 3 Yrs)	284,000	227,200	56,800	-
9465	45m of 250mm diameter	132 St: 073A Ave to 7360	Short Term (1 - 3 Yrs)	76,000	60,800	15,200	-
9466	55m of 250mm diameter	135 St: 64A Ave to 65A Ave	Medium Term (4 - 6 Yrs)	58,000	46,400	11,600	-
9468	1,080m of 375mm diameter	176 St: 065A - 060 Ave	Long Term (7 - 10 Yrs)	1,963,000	1,570,400	392,600	-
9470	130m of 375mm diameter	061 Ave: East of 167A St	Short Term (1 - 3 Yrs)	185,000	129,500	55,500	-
9472	660m of 375mm diameter	064: 149 St to 152 St	Long Term (7 - 10 Yrs)	1,304,000	912,800	391,200	-
9475	260m of 250mm diameter	090 Ave: 12267 - 124 St	Short Term (1 - 3 Yrs)	293,000	175,800	117,200	-
11269	500m of 375mm diameter	134 St:70B to 68 Ave	Long Term (7 - 10 Yrs)	745,000	745,000	-	-
11320	415m of 375mm diameter	Boundary Dr: Soth: Boundary Cres - 12181 (N)	Short Term (1 - 3 Yrs)	591,000	591,000	-	-
11340	95m of 375mm diameter	Claytonhill Dr/Claytonwood Cr to 067A Utility ROW	Short Term (1 - 3 Yrs)	100,000	100,000	-	-
11341	525m of 250mm diameter	020 Ave: 153 -155 St & 15272 - 20 Ave	Long Term (7 - 10 Yrs)	704,000	492,800	211,200	-
11344	90m of 300mm diameter	064 Ave: 130 St - 13031	Long Term (7 - 10 Yrs)	162,000	81,000	81,000	-
11348	120m of 375mm diameter	130 St: 067A Ave - 068 Ave	Medium Term (4 - 6 Yrs)	175,000	175,000	-	-
11353	130m of 200mm diameter	092 Ave: 137A St to lot 13684 (flow diversion)	Short Term (1 - 3 Yrs)	187,000	149,600	37,400	-
11354	200m of 300mm diameter	132 St: 092 Ave to #9307	Short Term (1 - 3 Yrs)	360,000	216,000	144,000	-
11356	200m of 375mm diameter	094 Ave: 194-195 St	Short Term (1 - 3 Yrs)	316,000	316,000	-	-
11361	20m of 200mm diameter	111A Ave / 146 St (flow diversion)	Short Term (1 - 3 Yrs)	25,000	25,000	-	-
11963	282m of 300mm diameter (N)	Martin Dr -1750 driveway entrance on Martin Dr to 16 Ave	Long Term (7 - 10 Yrs)	508,000	508,000	-	-
11964	80m of 300mm diameter	Southmere Cr E - 1881 Southmere Cr E	Short Term (1 - 3 Yrs)	116,000	116,000	-	-
11965	420m of 250mm diameter	Southmere Cres: 1881 - 1766	Medium Term (4 - 6 Yrs)	619,300	619,300	-	-
11966	267m of 250mm diameter	South of 17A Ave: 1799 Sothmere Cr - 14812 17A Ave	Long Term (7 - 10 Yrs)	233,000	233,000	-	-
11967	170m of 250mm diameter	Southwest corner of 14812 17A Ave and South to 16 Ave	Long Term (7 - 10 Yrs)	148,000	148,000	-	-
11968	28m of 250mm diameter	016 Ave: 148 - 148A St	Long Term (7 - 10 Yrs)	47,000	47,000	-	-
11969	93m of 375mm diameter	148 St: 1645 - 016 Ave	Short Term (1 - 3 Yrs)	184,000	184,000	-	-
13013	Rehab & Replacement of Minor Mains	Various Locations	Short Term (1 - 3 Yrs)	4,700,000	-	4,700,000	-
13622	140m of 300mm diameter	168 St: 102 Ave - 103 Ave	Short Term (1 - 3 Yrs)	189,000	189,000	-	-
13626	21m of 300mm diameter	122 St: lot 6935 (south, in park)	Short Term (1 - 3 Yrs)	20,000	16,000	4,000	-
13630	126m of 250mm diameter	168 St: 103 Ave - lot 10362	Short Term (1 - 3 Yrs)	164,000	131,200	32,800	-
13631	60m of 250mm diameter	168 St: 104 Ave - lot 10362	Short Term (1 - 3 Yrs)	87,000	69,600	17,400	-
13634	81m of 300mm diameter	128 St: 99 Ave - lot 9847	Short Term (1 - 3 Yrs)	120,320	96,256	24,064	-
13636	103m of 250mm diameter	100 Ave: 129A - 129 St	Medium Term (4 - 6 Yrs)	139,000	111,200	27,800	-
13638	26m of 300mm diameter	100 Ave: lot 14345 - 143A St	Short Term (1 - 3 Yrs)	41,000	32,800	8,200	-
13640	104m of 300mm diameter	128 St: 97 Ave (north lane) - lot 9769	Short Term (1 - 3 Yrs)	154,160	123,328	30,832	-
13642	27m of 300mm diameter	148 St: lot 2036 - 20 Ave (walkway)	Short Term (1 - 3 Yrs)	28,000	22,400	5,600	-
13643	84m of 300mm diameter	Pinewood Cr: 125A - 126 St	Short Term (1 - 3 Yrs)	90,240	72,192	18,048	-

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Program 1632 - Minor Mains <450mm

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13644	11m of 300mm diameter	148 St: lot 2036 (lane)	Short Term (1 - 3 Yrs)	13,000	10,400	2,600	-
13650	79m of 300mm diameter	157 St: lot 8740 - Fraser Hwy	Medium Term (4 - 6 Yrs)	75,000	60,000	15,000	-
13651	51m of 300mm diameter	125A St: Pinewood Cr - lot 12559	Medium Term (4 - 6 Yrs)	58,000	46,400	11,600	-
13652	98m of 300mm diameter	122 St: 76 - 76A Ave	Medium Term (4 - 6 Yrs)	109,000	87,200	21,800	-
13653	19m of 250mm diameter	098Ave: lot 11730 (easement southeast of lot)	Medium Term (4 - 6 Yrs)	17,000	17,000	-	-
13656	66m of 300mm diameter	020 Ave: 148 St - Lot 14845	Medium Term (4 - 6 Yrs)	41,700	41,700	-	-
13657	16m of 300mm diameter	064 Ave: lot 13498 - lot 13514	Medium Term (4 - 6 Yrs)	26,000	26,000	-	-
13658	45m of 250mm diameter	River Rd: lot 10035 - lot 10019	Medium Term (4 - 6 Yrs)	49,000	49,000	-	-
13659	54m of 300mm diameter	125A St: 97A Ave - lot 12559	Medium Term (4 - 6 Yrs)	58,280	58,280	-	-
13660	105m of 300mm diameter	097 Ave: 125 - 125A St	Medium Term (4 - 6 Yrs)	124,080	124,080	-	-
13661	106m of 250mm diameter	Southmere Cres: 017 Ave to #1811	Medium Term (4 - 6 Yrs)	140,800	140,800	-	-
13662	46m of 300mm diameter	095Ave: lot 15547 (along east property line)	Medium Term (4 - 6 Yrs)	44,000	44,000	-	-
13664	45m of 300mm diameter	122A St: 72 Ave - lot 7235	Medium Term (4 - 6 Yrs)	53,000	53,000	-	-
13665	112m of 300mm diameter	122A St: lot 7355 - 74 Ave	Medium Term (4 - 6 Yrs)	137,000	137,000	-	-
13668	38m of 300mm diameter	089A Ave: 160 St - lot 16016	Medium Term (4 - 6 Yrs)	62,000	62,000	-	-
13669	44m of 300mm diameter	160 St: lot 8909 - lot 8925	Medium Term (4 - 6 Yrs)	70,000	70,000	-	-
13671	55m of 250mm diameter	101B Ave: Semiahmoo Rd - lot 13047	Medium Term (4 - 6 Yrs)	62,000	62,000	-	-
13672	97m of 250mm diameter	103A Ave: lot 13022 - 13062 (lane behind lots)	Medium Term (4 - 6 Yrs)	117,000	117,000	-	-
13673	49m of 250mm diameter	103A Ave: lot 13022 (west of property)	Medium Term (4 - 6 Yrs)	52,000	52,000	-	-
13674	66m of 300mm diameter	129 St: lot 10352 (south)	Medium Term (4 - 6 Yrs)	65,000	65,000	-	-
13675	53m of 300mm diameter	125A St: 97A - 97 Ave	Medium Term (4 - 6 Yrs)	57,340	57,340	-	-
13676	13m of 300mm diameter	085A Ave / 149A St (intersection)	Medium Term (4 - 6 Yrs)	15,000	15,000	-	-
13678	94m of 250mm diameter	103A Ave: lot 13071 - lot 13101 (lane behind lots)	Medium Term (4 - 6 Yrs)	106,000	106,000	-	-
13679	45m of 250mm diameter	Semiahmoo Rd: 101B - 102 Ave	Medium Term (4 - 6 Yrs)	47,000	47,000	-	-
13680	108m of 300mm diameter	096A Ave: 125 St - lot 12555	Medium Term (4 - 6 Yrs)	119,380	119,380	-	-
13682	46m of 250mm diameter	109 Ave: lot 13113 (easement west of lot)	Medium Term (4 - 6 Yrs)	41,000	41,000	-	-
13683	138m of 300mm diameter	127B St: lot 9946 - 100 Ave	Medium Term (4 - 6 Yrs)	157,000	157,000	-	-
13686	60m of 300mm diameter	022 Ave: 156 St - King George Blvd	Long Term (7 - 10 Yrs)	69,000	69,000	-	-
13688	96m of 300mm diameter	100 Ave: lot 13618	Long Term (7 - 10 Yrs)	152,000	152,000	-	-
13689	99m of 300mm diameter	Prince Charles Blvd: 092A Ave - Applehill Cr	Long Term (7 - 10 Yrs)	129,000	129,000	-	-
13694	19m of 375mm diameter	104 Ave / 176 St (pump station)	Long Term (7 - 10 Yrs)	34,000	34,000	-	-
13696	9m of 375mm diameter	127 St / 102 Ave (intersection)	Short Term (1 - 3 Yrs)	12,000	2,400	9,600	-
13703	97m of 375mm diameter	128 St: 96B Ave - lot 9713	Short Term (1 - 3 Yrs)	159,800	31,960	127,840	-
13707	86m of 375mm diameter	098A Ave: lot 19250 (along railway)	Medium Term (4 - 6 Yrs)	151,000	120,800	30,200	-
13708	24m of 375mm diameter	192 St / 98A Ave (intersection)	Medium Term (4 - 6 Yrs)	42,000	33,600	8,400	-
13709	102m of 375mm diameter	Grosvenor Rd: Berg Rd - Selkirk Dr	Medium Term (4 - 6 Yrs)	157,000	125,600	31,400	-
13710	37m of 375mm diameter	Highway 1: lot 15627	Medium Term (4 - 6 Yrs)	39,000	31,200	7,800	-
13711	135m of 375mm diameter	098A Ave: lot 19250 (along railway)	Medium Term (4 - 6 Yrs)	237,000	189,600	47,400	-
13712	97m of 375mm diameter	094 Ave: 195 St - lot 19434	Medium Term (4 - 6 Yrs)	131,000	104,800	26,200	-
13732	83m of 375mm diameter	150 St: Fraser Hwy - 90A Ave	Medium Term (4 - 6 Yrs)	112,000	89,600	22,400	-
13733	102m of 375mm diameter	094 Ave: 194 St - lot 19434	Medium Term (4 - 6 Yrs)	137,000	109,600	27,400	-
13738	26m of 375mm diameter	088 Ave: lot 12645	Medium Term (4 - 6 Yrs)	46,000	36,800	9,200	-
13739	27m of 375mm diameter	194 St: lot 9275	Medium Term (4 - 6 Yrs)	37,000	29,600	7,400	-
13743	35m of 375mm diameter	127 St / 102 Ave (east of intersection)	Medium Term (4 - 6 Yrs)	45,000	36,000	9,000	-
13749	107m of 375mm diameter	090 Ave: lot 12521 (lane)	Medium Term (4 - 6 Yrs)	153,000	122,400	30,600	-

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Program 1632 - Minor Mains <450mm

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13755	402m of 375mm diameter	102 Ave: 124 - 127 St	Medium Term (4 - 6 Yrs)	540,000	432,000	108,000	-
13765	57m of 375mm diameter	123 St: lot 8482 (east)	Medium Term (4 - 6 Yrs)	60,000	48,000	12,000	-
13770	66m of 375mm diameter	099 Ave: 128 St - lot 12769	Medium Term (4 - 6 Yrs)	123,000	98,400	24,600	-
14102	Rehab & Replacement of Minor Mains	Various Locations	Medium Term (4 - 6 Yrs)	3,000,000	-	3,000,000	-
14103	Rehab & Replacement of Minor Mains	Various Locations	Long Term (7 - 10 Yrs)	4,000,000	-	4,000,000	-
15135	City Centre NCP: 108m of 300mm diameter	132 St / 96 Ave (north)	Short Term (1 - 3 Yrs)	195,000	195,000	-	-
15136	City Centre NCP: 123m of 300mm diameter	132 St / 96 Ave (north)	Short Term (1 - 3 Yrs)	222,000	222,000	-	-
15137	City Centre NCP: 130m of 375mm diameter	139 St / 108 Ave	Short Term (1 - 3 Yrs)	250,000	250,000	-	-
15138	City Centre NCP: 101m of 375mm diameter	139 St / 96 Ave (south)	Short Term (1 - 3 Yrs)	144,000	144,000	-	-
15139	City Centre NCP: 115m of 250mm diameter	King George Blvd: lot 9457 (Queen Elizabeth SS)	Short Term (1 - 3 Yrs)	101,000	101,000	-	-
15140	City Centre NCP: 95m of 300mm diameter	100 Ave / 143 St	Short Term (1 - 3 Yrs)	155,000	155,000	-	-
15141	City Centre NCP: 116m of 300mm diameter	100 Ave / 143 St	Short Term (1 - 3 Yrs)	183,000	183,000	-	-
15142	City Centre NCP: 9m of 375mm diameter	108 Ave / 132A St	Short Term (1 - 3 Yrs)	16,000	16,000	-	-
15143	City Centre NCP: 89m of 375mm diameter	Grosvenor Rd / Franklin Rd	Short Term (1 - 3 Yrs)	141,000	141,000	-	-
15144	City Centre NCP: 51m of 300mm diameter	100 Ave / 140 St	Short Term (1 - 3 Yrs)	87,000	87,000	-	-
15145	City Centre NCP: 109m of 300mm diameter	112 Ave / 135 St	Medium Term (4 - 6 Yrs)	193,200	193,200	-	-
15146	City Centre NCP: 85m of 300mm diameter	139 St south of 096 Ave	Medium Term (4 - 6 Yrs)	112,350	112,350	-	-
15147	City Centre NCP: 103m of 375mm diameter	Lane east of KGB, south of 105A Ave	Medium Term (4 - 6 Yrs)	145,950	145,950	-	-
15148	City Centre NCP: 97m of 250mm diameter	134A St / 105A Ave	Medium Term (4 - 6 Yrs)	118,650	118,650	-	-
15149	City Centre NCP: 61m of 300mm diameter	094A Ave / 139 St	Medium Term (4 - 6 Yrs)	75,000	75,000	-	-
15150	City Centre NCP: 12m of 375mm diameter	094A Ave / 139 St	Medium Term (4 - 6 Yrs)	17,000	17,000	-	-
15151	City Centre NCP: 114m of 300mm diameter	132 St / Old Yale Rd	Medium Term (4 - 6 Yrs)	193,000	193,000	-	-
15152	City Centre NCP: 86m of 300mm diameter	141 St / 101 Ave	Medium Term (4 - 6 Yrs)	105,000	105,000	-	-
15153	City Centre NCP: 69m of 300mm diameter	141 St / 101 Ave	Medium Term (4 - 6 Yrs)	84,000	84,000	-	-
15154	City Centre NCP: 125m of 300mm diameter	132 St / Old Yale Rd	Short Term (1 - 3 Yrs)	211,000	211,000	-	-
15155	City Centre NCP: 6m of 300mm diameter	100 Ave / Whalley Blvd	Long Term (7 - 10 Yrs)	10,000	10,000	-	-
15156	City Centre NCP: 14m of 250mm diameter	132 St / 96 Ave (north)	Long Term (7 - 10 Yrs)	21,000	21,000	-	-
15157	City Centre NCP: 134m of 300mm diameter	132A st/105A Ave	Long Term (7 - 10 Yrs)	174,000	174,000	-	-
15158	City Centre NCP: 15m of 250mm diameter	140 St / 108 Ave	Long Term (7 - 10 Yrs)	22,000	22,000	-	-
15159	City Centre NCP: 128m of 375mm diameter	139 St / 104 Ave	Short Term (1 - 3 Yrs)	224,000	224,000	-	-
15160	City Centre NCP: 123m of 375mm diameter	139 St north of 104 Ave	Long Term (7 - 10 Yrs)	170,000	170,000	-	-
15161	City Centre NCP: 102m of 375mm diameter	Brentwood Cres / Bentley Rd	Long Term (7 - 10 Yrs)	146,000	146,000	-	-
15162	City Centre NCP: 87m of 300mm diameter	City Parkway / 105 Ave (north)	Long Term (7 - 10 Yrs)	126,000	126,000	-	-
15163	City Centre NCP: 111m of 375mm diameter	Grosvenor Rd / Franklin Rd	Long Term (7 - 10 Yrs)	176,000	176,000	-	-
15164	City Centre NCP: 73m of 250mm diameter	Queen Elizabeth SS	Long Term (7 - 10 Yrs)	64,000	64,000	-	-
15165	165m of 250mm diameter	148 St: 88 Ave - lot 8721	Medium Term (4 - 6 Yrs)	154,000	107,800	46,200	-
				31,925,290	17,453,210	14,472,080	

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Program 1644 - Major Facilities

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6074	250m of 525mm diameter	104 Ave: Whalley Blvd - 138A St	Short Term (1 - 3 Yrs)	425,000	297,500	127,500	-
6499	123m of 525 diameter	104 Ave: 139A - 140 St	Short Term (1 - 3 Yrs)	276,000	276,000	-	-
6528	49m of 600mm diameter	08700 Blk: 132 St - 13223 Shakespeare Dr	Short Term (1 - 3 Yrs)	71,000	35,500	35,500	-
7304	700m of 750mm diameter	Hyland Rd: 66 - 64 Ave	Medium Term (4 - 6 Yrs)	1,890,000	1,890,000	-	-
7335	Port Kells Lift Station - Upsize Pumps	190 St / 98 Ave	Short Term (1 - 3 Yrs)	2,103,570	2,103,570	-	-
7756	Steep Grade Lift Stations	South Westminster	Short Term (1 - 3 Yrs)	2,523,151	2,144,695	378,456	-
9445	162m of 450mm diameter	King George Blvd: 64 Ave - lot 6475	Long Term (7 - 10 Yrs)	331,000	331,000	-	-
10006	Tynehead Interceptor: Bear Creek Trunk to 88 Ave	Tynehead Interceptor Manholes Tie Down	Medium Term (4 - 6 Yrs)	800,000	-	800,000	-
10007	Bear Creek Trunk Manhole Tie Downs	Tynehead Interceptor: Bear Creek Trunk - 88 Ave	Long Term (7 - 10 Yrs)	700,000	-	700,000	-
10013	DCC F/End - Emergency Storage for Douglas P.S.	171 St / 2 Ave	Short Term (1 - 3 Yrs)	300,000	300,000	-	-
11270	North Cloverdale PS Upgrade	176 St/68 Ave (N)	Short Term (1 - 3 Yrs)	2,300,000	2,300,000	-	-
11271	Pinch Valve Replacement at Crescent Road	144 St / Crescent Rd (N)	Short Term (1 - 3 Yrs)	169,176	169,176	-	-
11272	Whalley Trunk Twinning at WWRR: 153m of 1050mm	University Dr: 10665 - 107 Ave	Long Term (7 - 10 Yrs)	484,000	484,000	-	-
11280	Odour Control Facility	173 St / 104 Ave	Short Term (1 - 3 Yrs)	1,051,800	1,051,800	-	-
11281	Odour Control Facility	Various Locations	Medium Term (4 - 6 Yrs)	4,000,000	1,000,000	3,000,000	-
11282	Douglas Pump Station West Surge Tank	171 St / 2 Ave	Medium Term (4 - 6 Yrs)	368,403	368,403	-	-
11285	Surcharge/Manhole Lockdown	Various Locations	Long Term (7 - 10 Yrs)	556,500	333,900	222,600	-
11286	Douglas Pump Station Relocation	171 St / 2 Ave (N)	Medium Term (4 - 6 Yrs)	1,262,142	1,262,142	-	-
11287	Pump Stations Upgrade	Various Locations	Short Term (1 - 3 Yrs)	2,000,000	-	2,000,000	-
11290	Sewer Sag Repairs	Various Locations	Long Term (7 - 10 Yrs)	1,669,500	-	1,669,500	-
11294	North Bluff Pump Station Surge Tank	King George Blvd / 16 Ave	Long Term (7 - 10 Yrs)	526,449	526,449	-	-
11296	Douglas Pump Station East Upgrade - 3rd pump	004 Ave / 175 St	Long Term (7 - 10 Yrs)	289,905	289,905	-	-
11309	Grandview South P.S. Odour Control at outlet	023 Ave / 162 St	Long Term (7 - 10 Yrs)	736,785	736,785	-	-
11311	80m of 525 diameter	022A Ave: 163 - 163A St, 163 St, 22A - 22 Ave (N)	Short Term (1 - 3 Yrs)	151,000	151,000	-	-
11312	350m of 450 diameter	022 Ave/164 St - 21 Ave/165A St (N)	Long Term (7 - 10 Yrs)	542,000	542,000	-	-
11313	485m of 450 diameter	020 Ave: 165A - 168 St (N)	Long Term (7 - 10 Yrs)	835,000	835,000	-	-
11332	100m of 525mm diameter	168 St: 12 Ave - P.S. (N)	Short Term (1 - 3 Yrs)	188,000	188,000	-	-
11339	390m of 1200mm diameter	175 St: Cloverdale By-pass - Hwy 10	Long Term (7 - 10 Yrs)	1,497,000	1,497,000	-	-
11962	North Bluff Pump Station Upgrades (Pump, Controls, HVAC)	King George Blvd / 16 Ave	Long Term (7 - 10 Yrs)	1,337,720	1,337,720	-	-
12720	Twin 500mm FM from North Bluff to 24 Avenue	KGB: 016 - 024 Avenue	Medium Term (4 - 6 Yrs)	4,463,130	4,463,130	-	-
12722	Odour Control for Grandview Heights	160 St / 28 Ave	Medium Term (4 - 6 Yrs)	1,113,000	1,113,000	-	-
13493	Odour Mitigation Facility for GHI at MHS14	164 St: lot 2902 - lot 2950 (E of April Creek)	Short Term (1 - 3 Yrs)	700,000	700,000	-	-
13543	Lower Tynehead Siphon	075 Ave / 156 St	Medium Term (4 - 6 Yrs)	2,777,800	2,777,800	-	-
13691	13m of 525mm diameter	096 Ave / 151 St (intersection)	Short Term (1 - 3 Yrs)	28,000	5,600	22,400	-
13697	29m of 525mm diameter	132 St: 82A Ave - lot 8217	Short Term (1 - 3 Yrs)	62,000	12,400	49,600	-
13698	21m of 525mm diameter	096 Ave / 192 St (intersection)	Short Term (1 - 3 Yrs)	45,000	9,000	36,000	-
13702	10m of 450mm diameter	150 St / Fraser Hwy	Short Term (1 - 3 Yrs)	20,000	4,000	16,000	-
13705	92m of 450mm diameter	098A Ave: lot 19250 (along railway)	Short Term (1 - 3 Yrs)	178,000	35,600	142,400	-
13713	99m of 600mm diameter	190 St: lot 9830 (along railway)	Short Term (1 - 3 Yrs)	137,000	27,400	109,600	-
13714	124m of 450mm diameter	096Ave: lot 19272 (N side of lot)	Short Term (1 - 3 Yrs)	239,000	47,800	191,200	-
13715	97m of 600mm diameter	190 St: lot 9830 (railway, NW corner of 192 St)	Short Term (1 - 3 Yrs)	134,000	26,800	107,200	-
13716	106m of 525mm diameter	192 St: lot 9715 - lot 9761	Short Term (1 - 3 Yrs)	238,000	47,600	190,400	-
13718	105m of 525mm diameter	192 St: lot 9761 - lot 9785	Short Term (1 - 3 Yrs)	247,000	197,600	49,400	-

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Program 1644 - Major Facilities

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13719	103m of 600mm diameter	190 St: lot 9830 (along railway)	Short Term (1 - 3 Yrs)	143,000	114,400	28,600	-
13720	56m of 525mm diameter	192 St: lot 9785 - Golden Ears Way	Short Term (1 - 3 Yrs)	119,000	95,200	23,800	-
13723	100m of 600mm diameter	190 St: lot 9830 (along railway)	Medium Term (4 - 6 Yrs)	138,000	110,400	27,600	-
13724	63m of 450mm diameter	096 Ave: lot 19272 - lot 19238	Medium Term (4 - 6 Yrs)	122,000	97,600	24,400	-
13725	120m of 450mm diameter	096 Ave: lot 19358	Medium Term (4 - 6 Yrs)	231,000	184,800	46,200	-
13726	45m of 450mm diameter	194A St / 96 Ave (east of lot 19438)	Medium Term (4 - 6 Yrs)	90,000	72,000	18,000	-
13727	96m of 525mm diameter	192 St: 96 Ave - lot 9659	Medium Term (4 - 6 Yrs)	215,000	172,000	43,000	-
13728	42m of 450mm diameter	096 Ave: lot 19218 (north frontage)	Medium Term (4 - 6 Yrs)	81,000	64,800	16,200	-
13729	107m of 525mm diameter	192 St: lot 9659 - lot 9699	Medium Term (4 - 6 Yrs)	228,000	182,400	45,600	-
13731	106m of 525mm diameter	094A Ave: 138 St - lot 13764	Medium Term (4 - 6 Yrs)	156,980	125,584	31,396	-
13740	25m of 900mm diameter	King George Blvd: lot 8739	Medium Term (4 - 6 Yrs)	77,000	77,000	-	-
13741	49m of 750mm diameter	092A Ave: lot 13499 (east on King George Blvd)	Medium Term (4 - 6 Yrs)	133,000	133,000	-	-
13742	31m of 675mm diameter	King George Blvd: lot 8835	Medium Term (4 - 6 Yrs)	79,000	79,000	-	-
13744	91m of 675mm diameter	King George Blvd: 88 Ave -lot 13588 (east)	Long Term (7 - 10 Yrs)	230,000	230,000	-	-
13745	87m of 450mm diameter	151A St: lot 8585 - 86 Ave (lane behind)	Long Term (7 - 10 Yrs)	135,000	135,000	-	-
13746	151m of 525mm diameter	124 St: lot 10257 (along railway)	Long Term (7 - 10 Yrs)	203,000	203,000	-	-
13752	76m of 675mm diameter	King George Blvd / 88 Ave (N of intersection)	Long Term (7 - 10 Yrs)	192,000	192,000	-	-
13754	32m of 450mm diameter	100 Ave: lot 12499 (Park, E of Robson Creek)	Long Term (7 - 10 Yrs)	37,000	37,000	-	-
13757	45m of 450mm diameter	151A St: lot 8578 (easement S of lot)	Long Term (7 - 10 Yrs)	56,000	56,000	-	-
13758	63m of 450mm diameter	102 St / 128A St (W of intersection)	Long Term (7 - 10 Yrs)	88,000	88,000	-	-
13759	53m of 450mm diameter	128 St / 102 Ave (E of intersection)	Long Term (7 - 10 Yrs)	103,000	103,000	-	-
13760	96m of 450mm diameter	102 Ave: 128A - 129 St	Long Term (7 - 10 Yrs)	145,000	145,000	-	-
13761	110m of 1050mm diameter	059 Ave: lot 17561 (E of lot)	Long Term (7 - 10 Yrs)	227,000	227,000	-	-
13762	113m of 600mm diameter	132 St: 88 Ave - lot 8766	Long Term (7 - 10 Yrs)	260,000	260,000	-	-
13766	82m of 525mm diameter	088 Ave: lot 14493 - lot 14542	Long Term (7 - 10 Yrs)	193,000	193,000	-	-
13767	98m of 525mm diameter	102 Ave: 124A - 125 St	Long Term (7 - 10 Yrs)	158,000	158,000	-	-
13769	50m of 600mm diameter	King George Blvd: lot 9045 - lot 9023	Long Term (7 - 10 Yrs)	121,000	121,000	-	-
13772	9m of 600mm diameter	087A Ave: lot 13570 (behind lot, on King George Blvd)	Long Term (7 - 10 Yrs)	21,000	21,000	-	-
13773	29m of 450mm diameter sewer upgrade	King George Blvd: lot 8835	Long Term (7 - 10 Yrs)	56,000	56,000	-	-
13774	119m of 450mm diameter	124 St: lot 8480 - lot 8400	Long Term (7 - 10 Yrs)	184,000	184,000	-	-
13775	111m of 600mm diameter	128 St: 88 Ave - lot 8740	Long Term (7 - 10 Yrs)	262,000	262,000	-	-
13776	53m of 450mm diameter	124 St: lot 8400 (SW corner of lot)	Long Term (7 - 10 Yrs)	74,000	74,000	-	-
13777	89m of 600mm diameter	128 St: 87 Ave - lot 8740	Long Term (7 - 10 Yrs)	215,000	215,000	-	-
13779	425m of 450mm diameter	100 Ave: 127B - 125 St	Short Term (1 - 3 Yrs)	693,000	693,000	-	-
14085	151m of 525mm diameter	084 Ave: 134 - 134B St	Long Term (7 - 10 Yrs)	355,000	355,000	-	-
14098	122m of 525mm diameter sewer upgrade	144 St: 8684 - 8734	Long Term (7 - 10 Yrs)	259,000	259,000	-	-
14132	Pump Station Upgrades	Various Locations	Medium Term (4 - 6 Yrs)	2,500,000	-	2,500,000	-
14134	Pump Station Upgrades	Various Locations	Long Term (7 - 10 Yrs)	1,500,000	-	1,500,000	-
14706	Quibble Creek Pump Station Upgrade	King George Blvd / 94A Ave	Long Term (7 - 10 Yrs)	450,000	450,000	-	-
15071	North Cloverdale PS Overflow Storage Tank Phase 1	176 St/68 Ave (N)	Long Term (7 - 10 Yrs)	1,430,000	1,430,000	-	-
15072	Sunnyside Hts Trunk Sewer (incl. ROW acquisition)	021 Ave /164 St - 16300 blk / 22 Ave	Short Term (1 - 3 Yrs)	468,033	468,033	-	-
14328	DCC F/End - Langley Bypass: 40m of 675mm dia	Hwy 10: lot 19372	Short Term (1 - 3 Yrs)	74,620	74,620	-	-
14330	DCC F/End - Langley Bypass: 29m of 675mm dia	Hwy 10: lot 19225	Short Term (1 - 3 Yrs)	110,670	110,670	-	-
14237	DCC F/End - Langley Bypass: 32m of 525mm dia	Hwy 10 / 196 St	Short Term (1 - 3 Yrs)	69,800	69,800	-	-

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Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
14336	DCC F/End - Langley Bypass: 10m of 750mm dia	052 Ave / 188 St	Short Term (1 - 3 Yrs)	30,880	30,880	-	-
14335	DCC F/End - Langley Bypass: 50m of 675mm dia	052 Ave: lot 18833 (south)	Short Term (1 - 3 Yrs)	278,660	278,660	-	-
14329	DCC F/End - Langley Bypass: 83m of 675mm dia	Hwy 10: lot 19265	Short Term (1 - 3 Yrs)	202,820	202,820	-	-
14327	DCC F/End - Langley Bypass: 150m of 675mm dia	Hwy 10: lot 19425	Short Term (1 - 3 Yrs)	237,750	237,750	-	-
14331	DCC F/End - Langley Bypass: 20m of 675mm dia	Hwy 10 / 192 St	Short Term (1 - 3 Yrs)	209,240	209,240	-	-
14433	DCC F/End - Langley Bypass: 110m of 675mm dia	Hwy 10: lot 19415 - lot 19395	Short Term (1 - 3 Yrs)	204,560	204,560	-	-
14434	DCC F/End - Langley Bypass: 151m of 675mm dia	Hwy 10: lot 19360 - lot 19330 - lot 19300	Short Term (1 - 3 Yrs)	279,360	279,360	-	-
14435	DCC F/End - Langley Bypass: 48m of 675mm dia	Hwy 10: lot 19219	Short Term (1 - 3 Yrs)	106,950	106,950	-	-
14334	DCC F/End - Langley Bypass: 113m of 675mm dia	052 Ave: lot 18833 (south)	Short Term (1 - 3 Yrs)	77,530	77,530	-	-
14333	DCC F/End - Langley Bypass: 84m of 525mm dia	189 St: lot 5358 (ROW E of lot)	Short Term (1 - 3 Yrs)	150,810	150,810	-	-
14360	DCC F/End - Langley Bypass: 56m of 375mm dia	195B St: lot 6331	Medium Term (4 - 6 Yrs)	171,600	171,600	-	-
14437	DCC F/End - Langley Bypass: 17m of 375mm dia	062A Ave / 195B St	Medium Term (4 - 6 Yrs)	68,400	68,400	-	-
14438	DCC F/End - Langley Bypass: 17m of 375mm dia	063A Ave / 195B St	Medium Term (4 - 6 Yrs)	49,200	49,200	-	-
14359	DCC F/End - Langley Bypass: 139m of 375mm dia	196 St / Fraser Hwy (south)	Medium Term (4 - 6 Yrs)	169,400	169,400	-	-
14424	DCC F/End - Langley Bypass: 93m of 675mm dia	052 Ave: lot 18872 (ROW through lot)	Medium Term (4 - 6 Yrs)	126,000	126,000	-	-
14332	DCC F/End - Langley Bypass: 79m of 250mm dia	064 Ave: lot 19146 - 192 St: lot 6363	Long Term (7 - 10 Yrs)	101,810	101,810	-	-
14436	DCC F/End - Langley Bypass: 30m of 250mm dia	192 St: lot 6355	Medium Term (4 - 6 Yrs)	16,400	16,400	-	-
14507	DCC F/End - Langley Bypass: 25m of 675mm dia	Hwy 10: lot 19225	Medium Term (4 - 6 Yrs)	57,000	57,000	-	-
14679	DCC F/End - Langley Bypass: 143m of 300mm dia	194A St: lot 7115	Long Term (7 - 10 Yrs)	146,000	146,000	-	-
14678	DCC F/End - Langley Bypass: 126m of 300mm dia	194A St: lot 7145	Long Term (7 - 10 Yrs)	129,000	129,000	-	-
14680	DCC F/End - Langley Bypass: 150m of 375mm dia	196 St: lot 6036	Long Term (7 - 10 Yrs)	218,000	218,000	-	-
15099	97m of 525mm diameter	144 St: 84 Ave - lot 8359	Medium Term (4 - 6 Yrs)	178,000	142,400	35,600	-
15100	City Centre NCP: 16m of 450mm diameter	108 Ave / 132A St	Short Term (1 - 3 Yrs)	31,000	31,000	-	-
15101	City Centre NCP: 153m of 450mm diameter	Bentley Rd / King George Blvd	Short Term (1 - 3 Yrs)	312,000	312,000	-	-
15102	City Centre NCP: 43m of 525mm diameter	Bentley Rd / King George Blvd	Medium Term (4 - 6 Yrs)	94,000	94,000	-	-
15103	City Centre NCP: 114m of 450mm diameter	112 Ave / 132 St Diversion	Medium Term (4 - 6 Yrs)	220,000	220,000	-	-
15104	City Centre NCP: 92m of 675mm diameter	132 St north of KGB	Long Term (7 - 10 Yrs)	249,900	249,900	-	-
15105	City Centre NCP: 62m of 675mm diameter	132 St north of KGB	Long Term (7 - 10 Yrs)	164,850	164,850	-	-
15106	City Centre NCP: 16m of 600mm diameter	132 St north of KGB	Long Term (7 - 10 Yrs)	38,850	38,850	-	-
15107	N Cloverdale Trunk: Sec 1 - 83m of 1050mm dia	177A Ave: lot 7196 (S of Fraser Hwy, tie-in N of lot)	NCP Driven	155,200	155,200	-	-
15109	N Cloverdale Trunk: Sec 3 - 243m of 1050mm dia	180 St: 7200 Blk - 073 Ave/181 St	NCP Driven	382,000	382,000	-	-
15110	N Cloverdale Trunk: Sec 4 - 201m of 1050mm dia	073 Ave/181 St - 74 Ave: lot 18175	NCP Driven	368,000	368,000	-	-
15111	N Cloverdale Trunk: Sec 5 - 144m of 1050mm dia	074 Ave: lot 18175 (through ROW)	NCP Driven	293,103	293,103	-	-
15112	N Cloverdale Trunk: Sec 6 - 145m of 1050mm dia	074 Ave: lot 18175 (through ROW)	NCP Driven	291,156	291,156	-	-
15113	N Cloverdale Trunk: Sec 7 - 475m of 1050mm dia	184 St: lot 7481 - N property line of lot 7679 (through R/NCP Driven	NCP Driven	333,900	333,900	-	-
15114	N Cloverdale Trunk: Sec 8 - 86m of 1050mm dia	184 St: lot 7747 (through ROW)	NCP Driven	186,900	186,900	-	-
15115	N Cloverdale Trunk: Sec 9 - 154m of 1050mm dia	184 St: lot 7747 (through ROW)	NCP Driven	333,900	333,900	-	-
15116	N Cloverdale Trunk: Sec 10 - 297m of 1050mm dia	184 St: lot 7828 / 080 Ave: lot 18478 (through ROW)	NCP Driven	643,650	643,650	-	-
15117	N Cloverdale Trunk: Sec 11 - 203m of 1050mm dia	080 Ave: lot 18504/18566 (through ROW)	NCP Driven	439,950	439,950	-	-
15118	N Cloverdale Trunk: Sec 12 - 198m of 1050mm dia	080 Ave: lot 18644/18680 (through ROW)	NCP Driven	429,450	429,450	-	-
15119	N Cloverdale Trunk: Sec 13 - 216m of 1050mm dia	080 Ave: lot 18714; 188 St: lot 7921 (through ROW)	NCP Driven	468,300	468,300	-	-
15120	N Cloverdale Trunk: Sec 14 - 225m of 1050mm dia	080 Ave: lot 7970 (through ROW to 080 Ave)	NCP Driven	488,250	488,250	-	-
15121	N Cloverdale Forcemain Upgrade	West Clayton NCP	NCP Driven	1,555,529	1,555,529	-	-
15122	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 1	060 Ave: lot 17570 (north of address)	NCP Driven	45,150	45,150	-	-
15123	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 5	058 Ave: lot 17486 (south of address)	NCP Driven	75,600	75,600	-	-

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Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
15124	Cloverdale Trunk Sewer (56 to 68 Ave); Sec6	Hwy 15: N of 62A Ave	NCP Driven	408,450	408,450	-	-
15125	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 7	Hwy 15: S of 64 Ave	NCP Driven	344,400	344,400	-	-
15126	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 8	Hwy 15: 62 Ave - 62A Ave	NCP Driven	286,650	286,650	-	-
15127	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 9	Hwy 15: N of 64 Ave	NCP Driven	428,400	428,400	-	-
15128	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 10	Hwy 15: S of 65A Ave	NCP Driven	437,850	437,850	-	-
15129	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 13	Hwy 15: S of 61A Ave	NCP Driven	467,250	467,250	-	-
15130	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 14	Hwy 15: N of 60 Ave	NCP Driven	132,300	132,300	-	-
15131	Cloverdale Trunk Sewer (56 to 68 Ave); Sec 15	Hwy 15 / 62 Ave (south)	NCP Driven	438,000	438,000	-	-
15133	Diversion Sewer (w/ ROW acquisition and restoration)	180 St: 68 - 67 St; 67 St: 180 St - 67 Ave; lot 17926, ...	NCP Driven	543,500	543,500	-	-
15184	Big Bend PS Relocation	104A Ave: lot 17337	Long Term (7 - 10 Yrs)	5,172,105	1,348,026	3,824,079	-
15188	Rehab & Replacement of Major Mains	Various Locations	Short Term (1 - 3 Yrs)	2,500,000	-	2,500,000	-
15189	Rehab & Replacement of Major Mains	Various Locations	Medium Term (4 - 6 Yrs)	2,500,000	-	2,500,000	-
15190	Rehab & Replacement of Major Mains	Various Locations	Long Term (7 - 10 Yrs)	3,000,000	-	3,000,000	-
15199	450mm diameter Flow Diversion	King George Blvd - Elgin Rd: lot 3653 (South Port P.S.)	Short Term (1 - 3 Yrs)	550,000	330,000	220,000	-
15854	Grandview Hts East Pump station & 550 mm diameter Forcemain (Outside Redwood Heights NCP)	17500 blk / 32 Ave; 32 Ave: 175 blk - 172 St; 172 St: 32 / Medium Term (4 - 6 Yrs)	Medium Term (4 - 6 Yrs)	890,000	890,000	-	-
16168	101m of 900mm diameter sewer	17800 blk of 100A Ave	NCP Driven	255,580	255,580	-	-
16215	182A St Pump Station and Forcemain	182A St and Hwy 17; 182A St: Hwy 17 to 98 Ave; 98 Ave	NCP Driven	1,594,000	1,594,000	-	-
16169	71m of 900mm diameter sewer	10267 176 St	NCP Driven	134,750	134,750	-	-
12721	Quibble Creek 4th Pump	094A Avenue and KGB	Long Term (7 - 10 Yrs)	445,200	445,200	-	-
15406	South Westminster "j" line Vacuum Sewer Replacement	old Yale Rd: Scott Rd - 125A St	Short Term (1 - 3 Yrs)	3,800,000	-	3,800,000	-
16169	71m of 900mm diameter sewer	10267 176 St	NCP Driven	134,750	134,750	-	-
				87,723,327	57,691,096	30,032,231	-

5. STORMWATER

The City's drainage basins comprise of upland and lowland areas. Generally, the upland areas are being urbanized while the lowlands are within the designated Agricultural Land Reserve (ALR), with the exception of the Fraser River and Crescent Beach floodplain areas. The City drains to four rivers - the Serpentine, Nicomekl, Campbell and Fraser rivers - through a network of watercourses (rivers, creeks and ditches) and storm sewers.

These watercourses are habitat areas supporting aquatic life, including various species of Pacific salmon. In general, the upland drainage system operates as a free flowing gravity system through open watercourses and storm sewers. The lowland drainage system's operation is impacted by the diurnal tides and the extended wet weather of Pacific Northwest winters and relies on a system of dyking, floodplain storage, and pump stations.

The diverse meteorological, hydrological, topographical, and eco-system characteristics of the City's watersheds and watercourses have created a complex drainage environment with distinct rainfall-runoff impact-control needs. This poses many challenges in developing and managing a viable servicing scheme for the City, as mandated by the Local Government Act, that addresses our current and long term needs based on our current characteristics and those that may be impacted through climate change, including sea level rise.

The Servicing Plan aims at ensuring the City's drainage utility provides a high level of service within the natural constraints highlighted above. This includes operation and maintenance of the existing system, planning, design and construction of new infrastructure to support growth and development, and monitoring system performance. Also, investigation on climate adaptation to determine vulnerable areas and projected servicing requirements is a part of this plan.

5.1 Drainage Inventory

The drainage system in the City comprises a combination of man-made storm sewer systems in the urban areas, constructed drainage ditches and canals in the more rural and older urban areas, and natural watercourses, streams and rivers. The current estimated inventory is shown in **Table 5.1**.

Table 5.1 – Major Drainage System Infrastructure Summary

Storm Sewers	1,758 km
Ditches	1168 km
Upland Water Courses >5m	296 km
Lowland Watercourses <5m	58 km
Serpentine River	31 km
Nicomekl River	20 km
Campbell River	15 km
TOTAL	3,346 km

5.2 Drainage Program Needs

The capital needs for Drainage comprise various programs-of-work to meet the needs of the existing residents, new growth, and a combination of both.

Programs dealing with servicing existing residents are focused on infrastructure to address the following:

- public safety;
- preserving aquatic habitat;
- avoiding property damage from flooding and land erosion;
- reducing inconvenience to the public from problems like localized ponding; and
- climate change adaptation.

The growth related programs of works identified are intended to:

- meet the drainage servicing needs for new growth; and
- manage any downstream impacts associated with growth.

Figure 5.1 provides an overview of the City's drainage system.

The works included in the Servicing Plan reflect the current design criteria requirements, policies to promote orderly development, and protection of natural watercourses including the more holistic approaches proposed in Master Drainage Plans (MDPs), Functional Plans, NCPs, and Integrated Stormwater Management Plans (ISMPs) that are either complete or substantially complete.

ISMPs are a municipal action item included in Metro Vancouver's Integrated Liquid Waste and Resource Management Plan (ILWRMP). These plans are aimed at bridging the gap between traditional drainage planning through MDPs and land use planning, while protecting the recreational, environmental, and physical functionalities of the City's natural drainage system. According to the ILWRMP, an ISMP must be completed for every urban (or potentially urban) watershed within the Region.

There are drainage related impacts due to urbanization that are not fully addressed in the programs mentioned above. These include impacts to water quality, base flows, and groundwater. In these situations, the City relies on the development community to address these issues through the provisions of Best Management Practices (BMPs) and source controls. A framework for implementation of these BMPs is provided through ISMPs, MDPs, and NCPs.

The Servicing Plan only identifies the offsite drainage work necessary to manage the impacts of development. Onsite works, as identified by ISMPs and NCPs, may be required in certain areas of the City. Onsite works are the responsibility of the developer, and they are not a DCC eligible item.

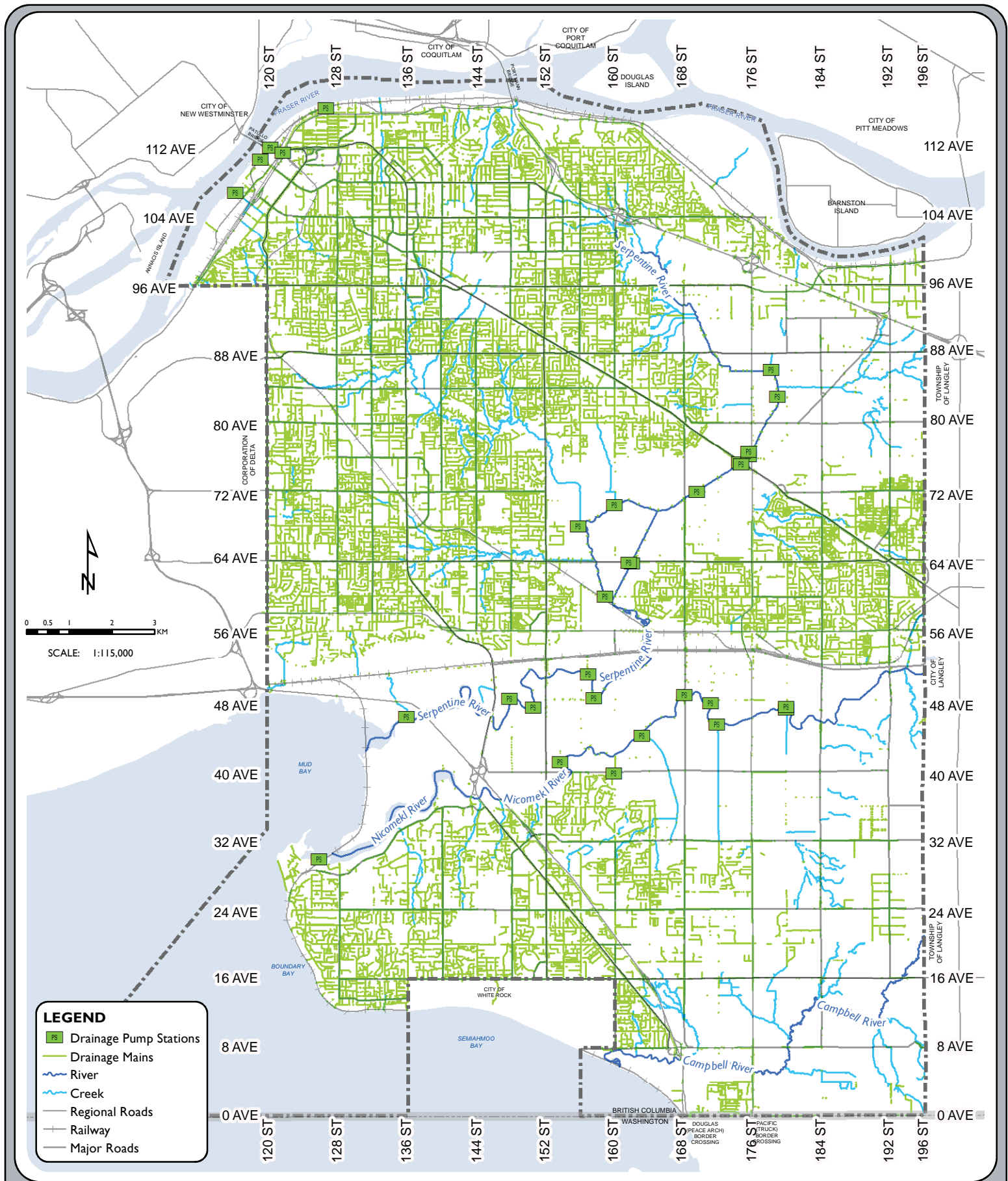


FIGURE 5.1 - DRAINAGE SYSTEM

5.3 Drainage Main Replacement Strategy

Replacement of the drainage infrastructure at the end of their service lives will be of concern when competing servicing demands, such as growth needs and new standards or practices in drainage servicing, necessitates prioritization of replacement works.

The characteristics of the pipes requiring replacement in the next 50 years is summarized in **Table 5.2**.

Table 5.2 Drainage System Replacement Requirements in the Next 50 Years

Material	Total Main Length	Replacement Demand up to 2061 (50 years)	Replacement Cost
Miscellaneous: Asbestos Cement, Clay Tile, Corrugated Metal Pipe, Cast Iron, Ductile Iron, Steel Pipe, and Wood	31 km (2% of entire pipe length)	28 km	\$40 million
Concrete: Concrete Pipe	1080 km (61% of entire pipe length)	586 km	\$673 million
Plastic: Poly Ethylene, Poly Vinyl Chloride	647 km (37% of entire pipe length)	162 km	\$152 million

The estimated cost to replace aging sewer mains over the next 10 years is \$10 million and \$700 million over the next 50 years. The annual replacement cost over the next 50 years is illustrated in **Figure 5.2**.

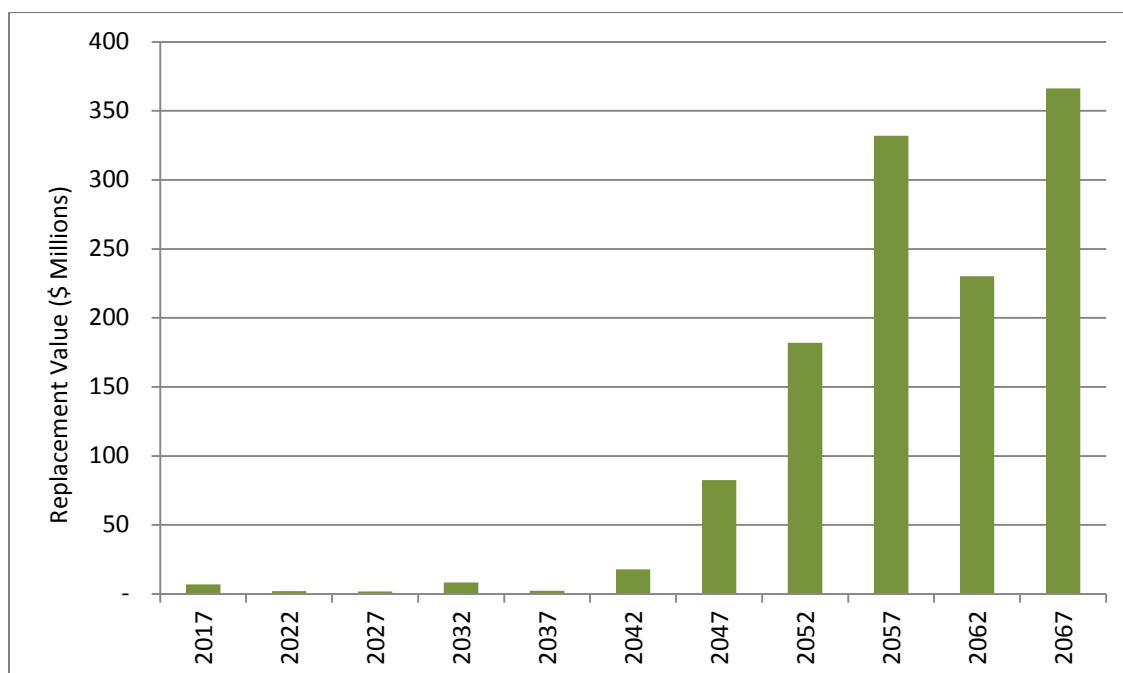


Figure 5.2 - Drainage Main Replacement Costs over the Next 50 Years

The service life of drainage mains, constructed of currently approved materials and installed after the 1970's, is estimated to be 75-years. Assuming there is an average 75-year lifespan for these materials, only a small amount of drainage mains may have to be replaced in the next 50 years.

It is too early to establish a strategy for the replacement of pipes beyond 50 years, as changing technologies and developments in asset management may influence the replacement strategy in that period.

5.4 Drainage Servicing Strategy

Program 1660 - General Items

This program comprises three project categories:

- The first project category is to fund the resources required to manage all aspects of the drainage program including design and construction of the Servicing Plan, staffing, public liaison, the review and project management of ISMPs and NCPs, as well as internal coordination with other divisions in Engineering and other departments.
- In some cases, system improvements and maintenance works can be constructed in conjunction with development, although these improvements may not be required for the developments in question. This project category provides funds to complete these works in conjunction with ongoing development as opportunities arise.
- The third project category comprises initiatives that seek to reduce the impacts of small storms and provide overall reductions in runoff volume. These measures utilize both on-lot and on-road measures to increase infiltration and enhance the ability of the topsoil to store and retain rainfall. This project category assists in the implementation of more sustainable standards, such as the funding of safety factors or infrastructure redundancy to allow for possible changes in performance and cost assistance to pilot projects using more sustainable standards. A Surrey-wide flow-monitoring program will be employed to provide more accurate predictions of rain flow.

Programs 1662 & 1663 - Existing System Upgrades

Drainage improvements within these programs seek to resolve documented or potential flooding and environmental concerns. Improving the drainage systems in older neighbourhoods has been an ongoing issue and will likely continue beyond the current extent of the Servicing Plan.

Included within these programs are existing system upgrades along the Fraser River and in Crescent Beach (Projects ID 11674 through 11678). The projects within these areas are very expensive, and as a result, the City is dependent on external funding from senior levels of government to help finance these projects. The cost estimates included in this plan for projects in these areas represent a City contribution of 1/3 of the total project costs. It is assumed that both the Provincial and Federal Governments will provide the remaining funding.

Program 1664, 1665, and 1666 - Lowlands Flood Control

The Strategic Plan for Lowlands Flood Control program involves extending and raising dykes along the Serpentine and Nicomekl Rivers, as well as constructing pump stations and conveyance improvements throughout the lowland area in an effort to meet the Agri-Food Regional Development Subsidiary Agreement (ARDSA) drainage service criteria.

The continued focus of this program in the short term is to complete the dykes along the Serpentine and Nicomekl Rivers. With dyke construction works nearing completion, the focus of this program is shifting from dyking to conveyance.

Program 1668 – Planning

New growth requires the development of strategies and servicing plans in advance of the functional and detailed design of drainage works. Areas of existing urban development also need updating of drainage plans to meet new objectives such as infrastructure management, floodplain studies, and asset replacement strategies. In the past, this program included MDPs necessary to scope projects for watershed management.

ISMPs now form the basis of planning for the capital program. The existing plans are being integrated with land use, transportation, and parks planning initiatives as part of the City's commitment under the ILWRMP to update all watersheds on a 12-year cycle. Ongoing monitoring and update of ISMPs is needed to keep plans current. This program also includes the Adaptive Management Framework, which monitors stormwater and assesses and reports the implementation and effectiveness of ISMPs.

Program 1670 - Relief and Trunk System

Relief and trunk storm systems consist of storm sewers, overland flow paths, ditches, and other conveyance systems that have a catchment area greater than 20 hectares and serve areas of urban development. These systems are sometimes applied as diversion systems to reduce flows to the natural creeks, and as alternatives to storm detention ponds. In this case, the storm diversion provides a similar function as a detention pond to reduce peak storm discharges to streams.

Program 1672 - Community Detention

This program includes provisions for land acquisition and construction of stormwater detention ponds. These ponds are planned and designed to reduce peak flows to natural streams, and in many cases, to improve water quality. They are also planned to serve a sub watershed area, which may include more than one development site. This sub watershed approach better serves the overall goal of stormwater management in a community. The detention facilities listed have been recommended through existing ISMPs, MDPs, and NCPs. Also included are detention/infiltration corridors proposed through recently completed NCPs. In some cases, these distributed systems provide better protection for our natural watercourses.

Program 1673 - Habitat Compensation

This program includes provisions for the replanting of vegetation associated with various fisheries compensation requirements for Surrey capital construction sites. Any construction impacting fisheries watercourses and riparian areas often require the installation of vegetation as compensation. These compensation sites are monitored and reported to the fisheries organizations. As part of the agreements, plants need to be established at the end of the monitoring period. If they are not, the City is required to replant. Since this is beyond the normal capital construction window and is not considered an asset, the City needs to fund the program separately for the replanting that may be required.

Program 1678 & 1679 - Erosion and Ravine Stabilization

Creeks form an integral part of the City's drainage system. Although the City practices stormwater management to reduce impacts of peak flows on natural creeks, some allowance for erosion control is necessary due to local conditions. Detailed assessments of problem areas are ongoing and the projects identified within this program are to address medium to high-risk areas.

Program 1680 - DCW Upsizing

The design of community infrastructure (e.g., trunks and ponds) in developing areas has been optimized to provide the best possible long-term system for the City. In some cases, this leads to increased local drainage servicing requirements beyond the minimum fronting servicing needs for properties/developments. These local systems do not fall within the strict definition of community trunks, and are therefore not eligible for growth funding under the trunk program.

Since these larger local systems are integral to proper functioning of the community system, allocation has been made under this specific upsizing program through funding for growth. An allowance has been made based on a detailed review of the City's current drainage system make-up and anticipated future drainage system construction in developing neighbourhoods. The anticipated costs for upsizing are entirely linked to growth.

Program 1682 - Environment

This program includes provisions for water quality and riparian health assessments required as a component of the ISMP process. Also, this program is to address compliance for the City's Stormwater and Erosion & Sediment Control By-laws.

The program comprises:

- overall programs for long term monitoring of various riparian areas to meet Fisheries & Oceans' requirements;
- benthic collection and assessments for ISMP stream health;
- Boundary Bay water quality sampling for non-point source pollution tracing; and
- general environmental services to address spill events and other pollution events when they occur in the City's waterways.

Since open channels are a significant component of the City's drainage system, maintaining environmental health in these systems is an item that the City needs to address on a consistent basis.

Program 1683 – Climate Change Adaptation

New information and design considerations have come from the Province regarding potential impacts from climate change, in particular sea level rise. Rising seas and potential increases in precipitation will impact existing drainage systems. The projects in this program are meant to identify potential impacts, timing of potential vulnerabilities, work towards new strategies to address climate change in the drainage program, and times of asset renewal. In this plan, all the projects are study based and are in support of the City's Climate Adaptation Strategy.

Program 1690 - Operations & Maintenance

This program includes provisions for video inspection of older systems with conveyance issues, payments of water licenses, and obtaining approvals for conducting drainage maintenance and emergency works on open channels throughout the City.

5.5 Stormwater Cost Summary

No.	Program	Program Type	Growth (\$)	Non-Growth (\$)	Total (\$)
1660	General Items	Operating		12,750,000	12,750,000
1662	Existing System Upgrades	Capital	4,675,800	36,433,056	41,108,856
1664	Lowlands Flood Control	Capital	5,065,142	30,215,5691	35,280,711
1665	Lowlands Flood Control	Non-Capital	610,000	2,940,000	3,550,000
1666	Lowlands Flood Control	Operating		500,000	500,000
1668	Planning	Non-Capital	7,650,000	4,050,000	11,700,000
1670	Relief and Truck Systems	Capital	18,406,470	18,948,500	37,354,970
1671	Planning	Operating		20,000	20,000
1672	Community Detention	Capital	42,811,500	2,386,500	45,198,000
1673	Habitat Compensation	Non-Capital		1,800,000	1,800,000
1678	Erosion and Ravine Stabilization	Operating		1,971,000	1,971,000
1679	Erosion and Ravine Stabilization	Capital	3,165,000	13,158,000	16,323,000
1680	DCW Upsizing	Capital	9,250,000		9,250,000
1681	Minor Projects	Capital		5,500,000	5,500,000
1682	Environment	Operating		10,065,000	10,065,000
1683	Climate Change Adaptation	Non-Capital	850,000	4,150,000	5,000,000
1690	Operations and Maintenance	Operating		1,370,000	1,370,000
Total			92,483,912	148,197,747	238,741,537

5.6 Stormwater Projects by Program

This section contains tables and figures that identify the projects under the stormwater programs.

The tables provide the following information:

- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs – the high level estimates in 2016 dollars (subject to change at the actual time of construction). The costs are comprised of growth and non-growth components.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.

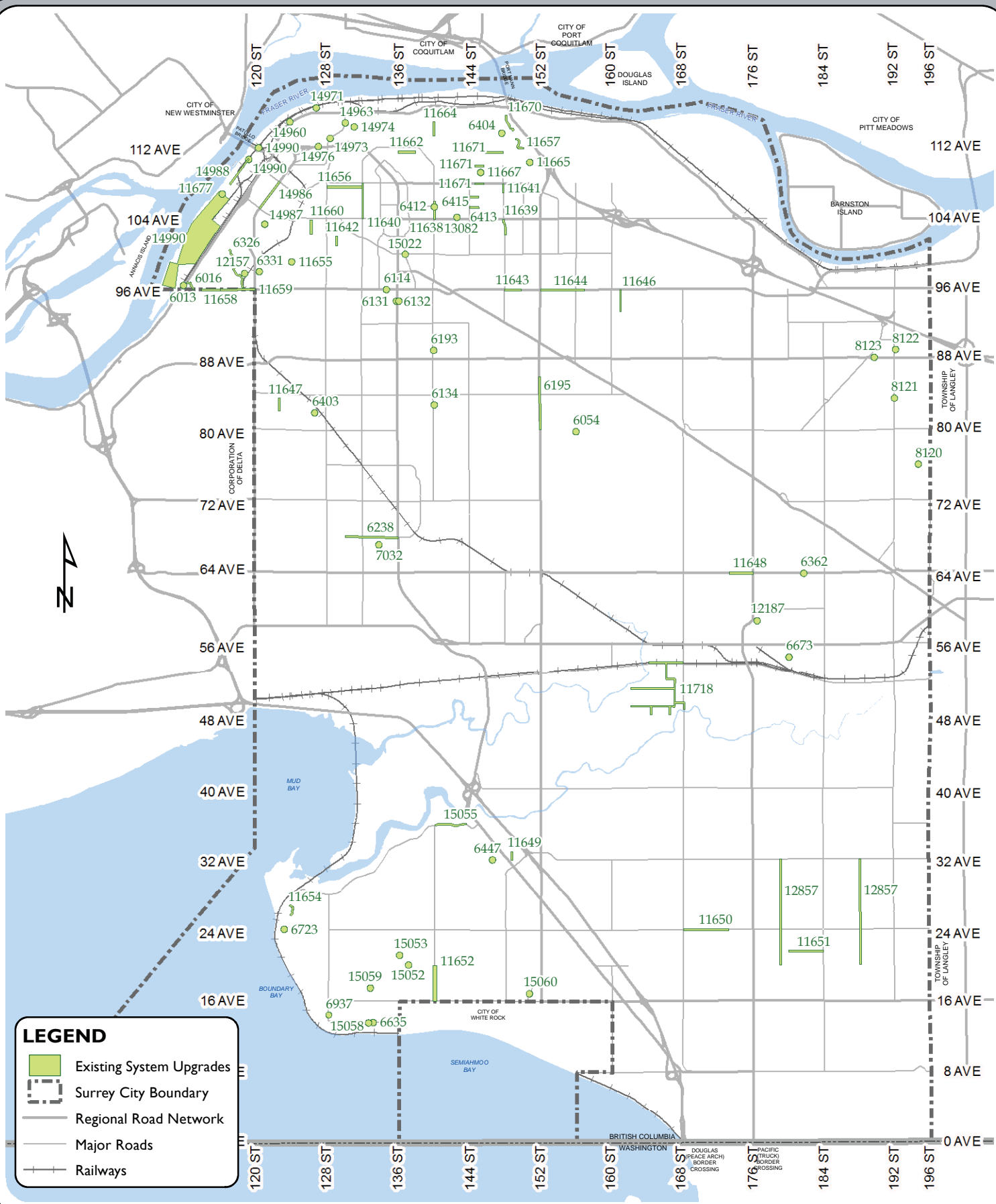


FIGURE 5.2 - Drainage Existing System Upgrades (Program 1662)

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.
This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.
Date Printed: 12/01/2017 Cartographer: C3W © City of Surrey
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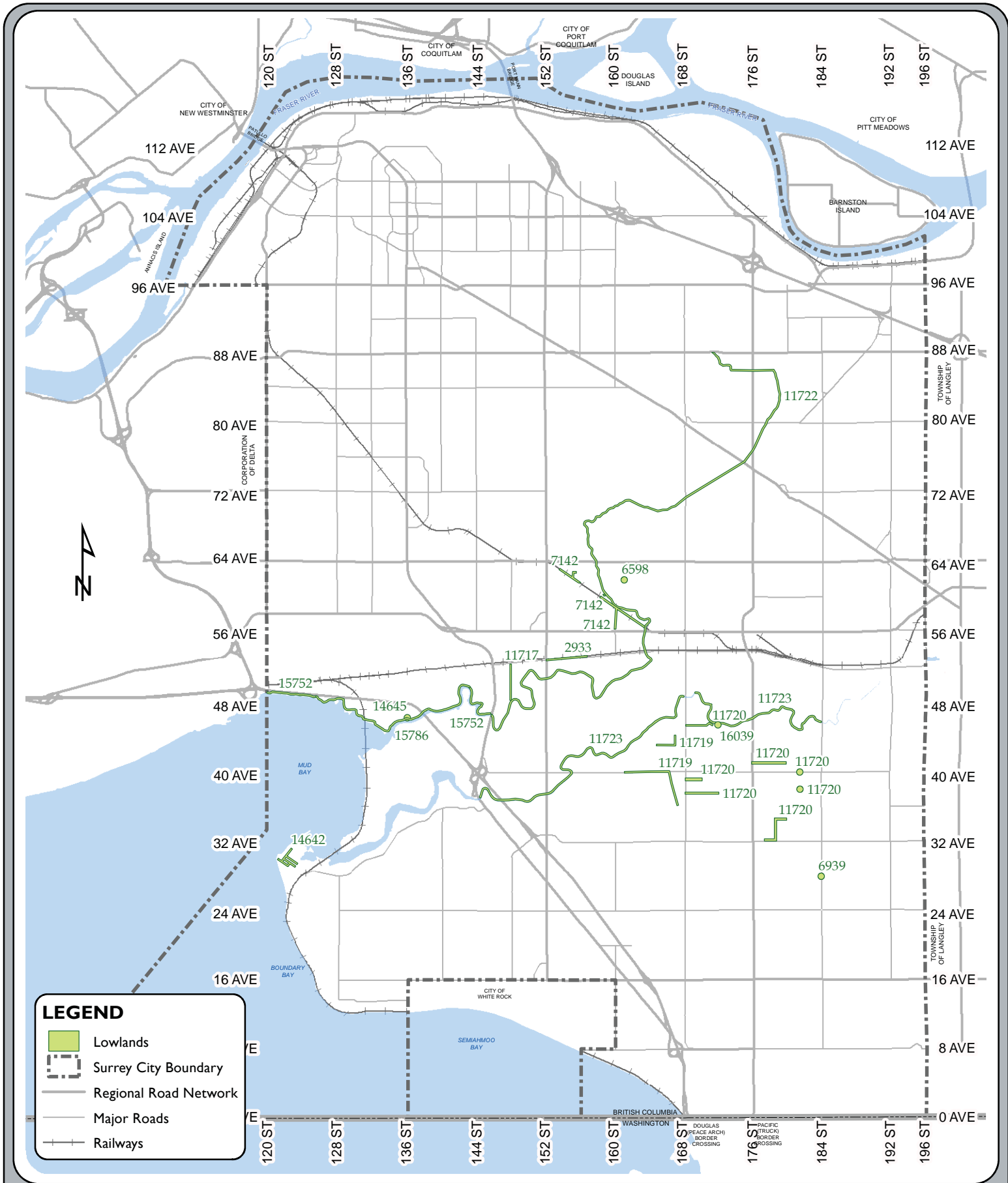


FIGURE 5.3 - Drainage Lowlands Flood Control (Program 1664)

The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

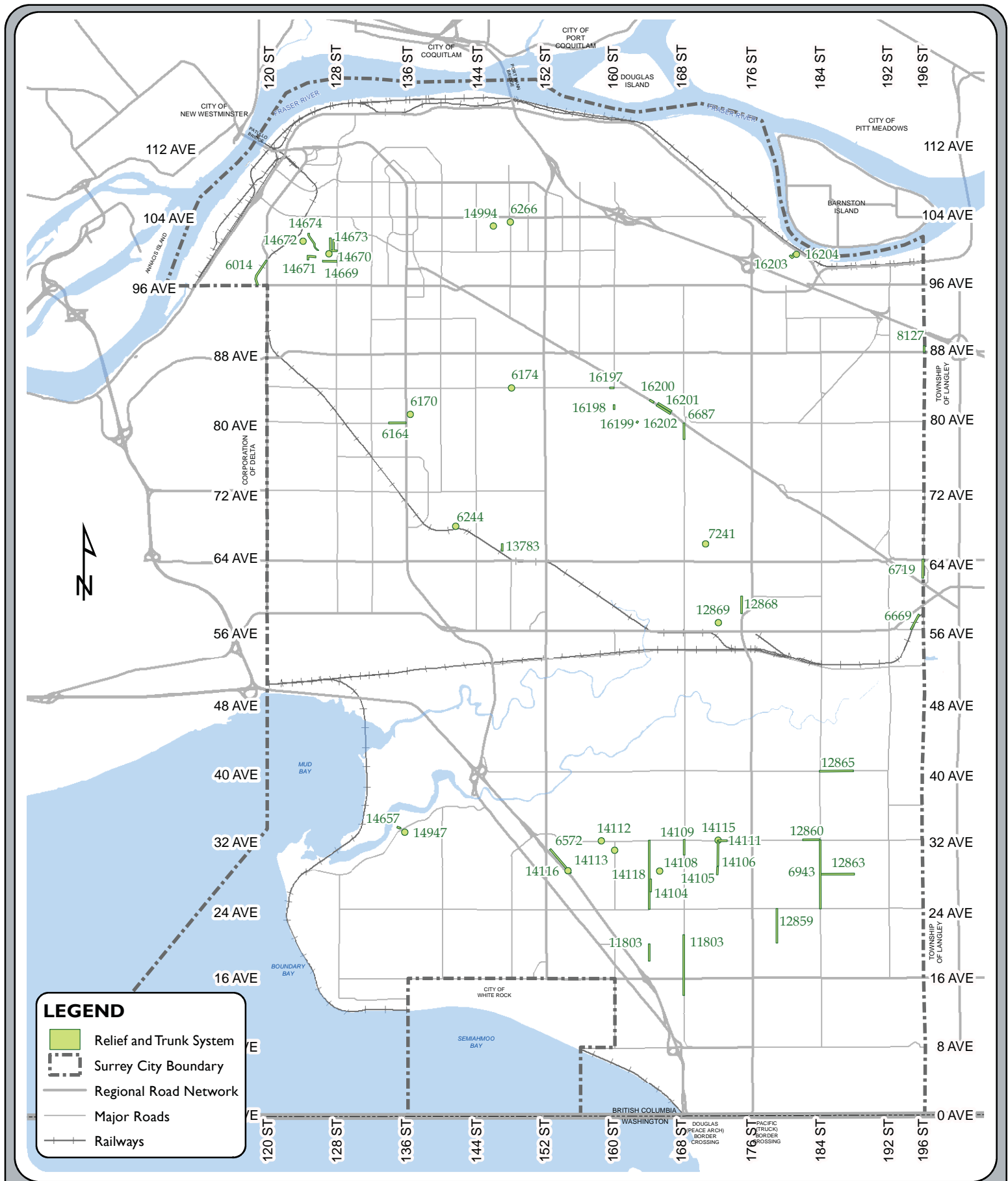
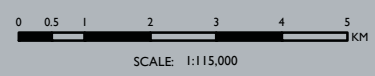


FIGURE 5.4 - Drainage Relief & Trunk System (Program 1670)



The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

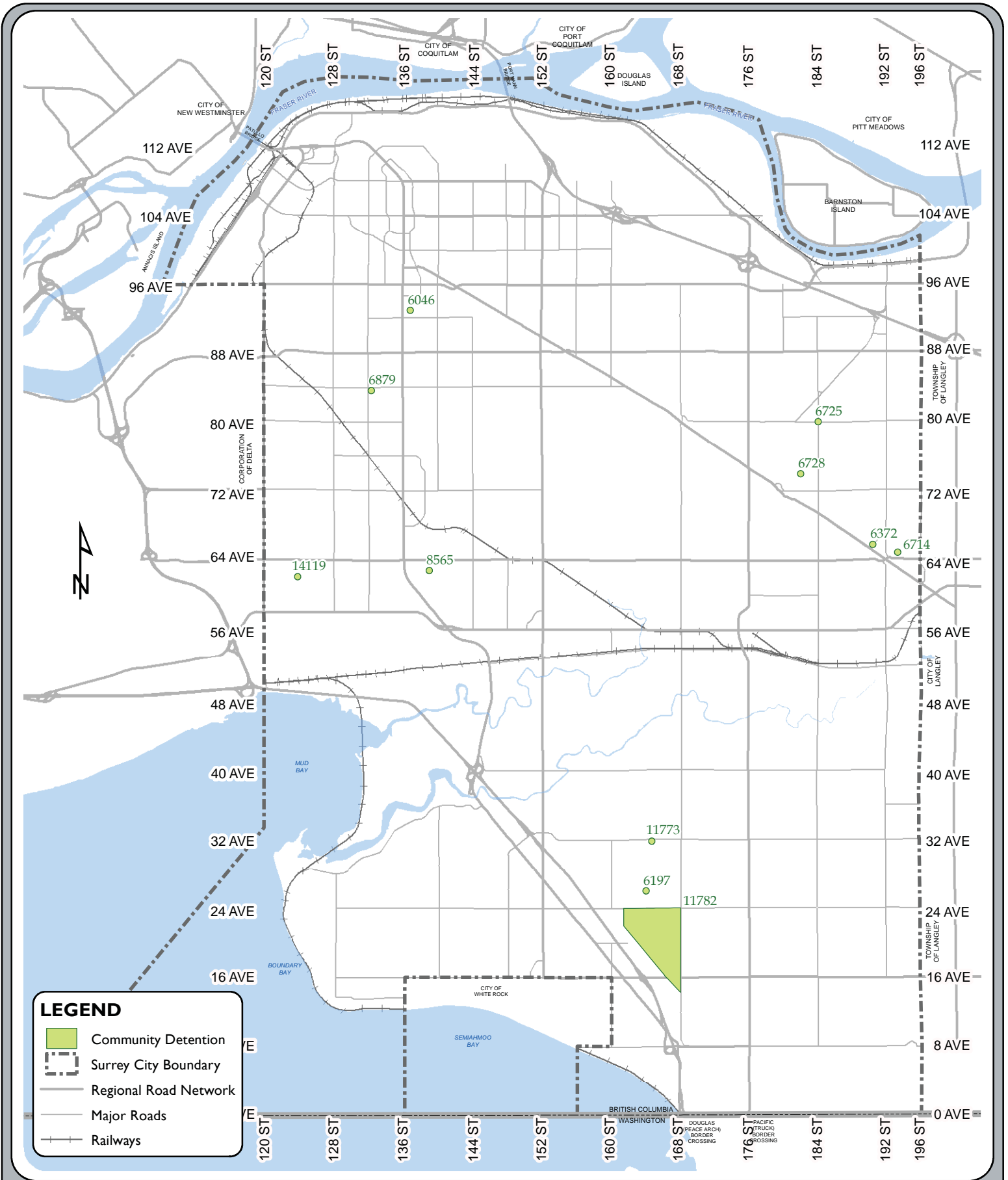


FIGURE 5.5 - Drainage Community Detention (Program 1672)

The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

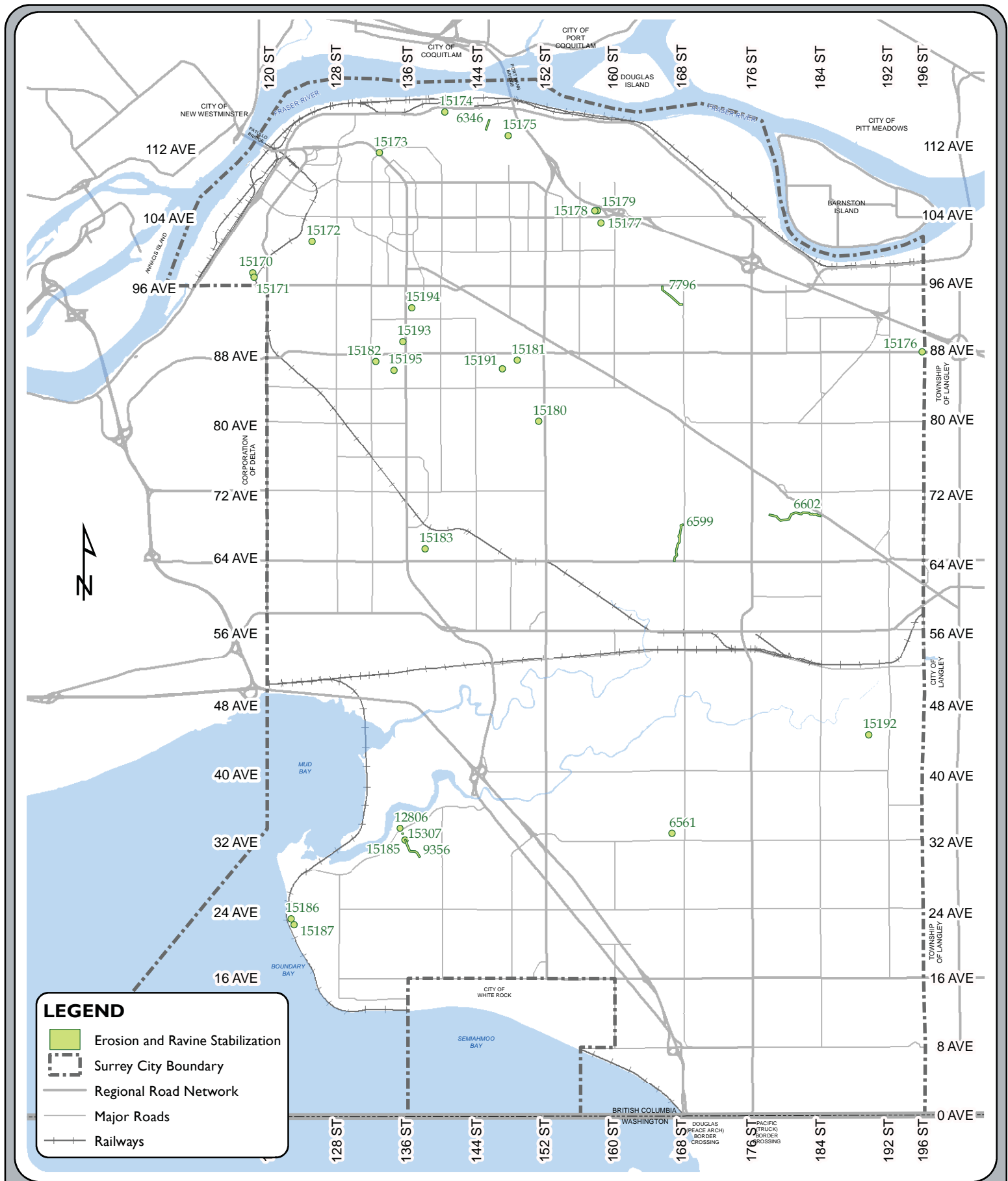
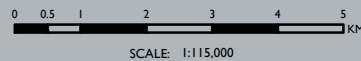


FIGURE 5.6 - Drainage Erosion & Ravine Stabilization (Program 1679)



The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

DRAINAGE

Program 1662 - Existing System Upgrades (Capital)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6013	Lowland Culvert Upgrades	Armstrong Creek	Medium Term (4 - 6 Yrs)	338,000	-	338,000	-
6016	Shadow Brook and Armstrong Creek Improvements	Shadow Brook: River Rd / 96 Ave	Medium Term (4 - 6 Yrs)	388,000	-	388,000	-
6054	30m of 1200mm diameter	156 St / 80 Ave (south)	Long Term (7 - 10 Yrs)	40,000	-	40,000	-
6114	Culvert Upgrade: 2550mm	135 St / 96 Ave	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
6131	Culvert Upgrade: 3000mm diameter	094A Ave / King George Hwy (west)	Long Term (7 - 10 Yrs)	250,000	-	250,000	-
6132	Culvert Upgrade: 3000mm diameter	094A Ave / King George Blvd	Long Term (7 - 10 Yrs)	500,000	-	500,000	-
6134	Culvert Upgrade: 1800mm diameter	83 Ave / 140 St (142 St Tributary)	Long Term (7 - 10 Yrs)	100,000	-	100,000	-
6193	Creek Headwall Repairs for Flooding	140 St: lot 8881 - King Cr: 88 - 90 Ave	Short Term (1 - 3 Yrs)	50,000	-	50,000	-
6195	1081m of 675-1050mm diameter	152 St: 86 - 80 Ave	Short Term (1 - 3 Yrs)	1,030,000	-	1,030,000	-
6238	1200m Pipe Upgrade	068 Ave: 130 St - King George Blvd	Medium Term (4 - 6 Yrs)	244,000	24,000	220,000	-
6326	Delta Creek Ravine Protection	118 St: 96 Ave - River Rd (100 Ave)	Medium Term (4 - 6 Yrs)	791,000	160,000	631,000	-
6331	Culvert Upgrade	120A St - 98 Ave	Medium Term (4 - 6 Yrs)	133,000	27,000	106,000	-
6362	Culvert Upgrade for 100 Year Flow	064 Ave / 181B St	Long Term (7 - 10 Yrs)	50,000	-	50,000	-
6403	Trunk Upgrade to 1200mm diameter	082 Ave: 126 - 127 St	Long Term (7 - 10 Yrs)	205,000	5,000	200,000	-
6404	Creek Outlet Improvements	Wellington Dr / Wallace Cr	Medium Term (4 - 6 Yrs)	160,000	-	160,000	-
6412	172m of 450-600mm diameter upgrade	140 St: 105 - 105A Ave	Long Term (7 - 10 Yrs)	119,200	11,920	107,280	-
6413	428m of 600mm diameter upgrades	105A Ave: 144 - 145 St	Medium Term (4 - 6 Yrs)	302,700	30,200	272,500	-
6415	129m of 600mm diameter storm sewer	106A Ave: 145 - 144 St	Long Term (7 - 10 Yrs)	102,000	10,200	91,800	-
6447	100m of 600mm diameter storm sewer	032 Ave: 146 - 145A St	Long Term (7 - 10 Yrs)	53,000	-	53,000	-
6635	675mm upgrade	Marine Dr: 132B St - Knudson Creek	Medium Term (4 - 6 Yrs)	77,400	4,000	73,400	-
6673	220m of 1350mm diameter trunk drain	180 St: 54 - 55 Ave	Medium Term (4 - 6 Yrs)	320,000	-	320,000	-
6723	1350mm diameter upgrade	024 Ave / Harboureene Dr	Long Term (7 - 10 Yrs)	212,000	11,000	201,000	-
6937	115m of 600mm diameter storm sewer	128 St: 14A - 14 Ave	Long Term (7 - 10 Yrs)	70,000	-	70,000	-
7032	195m of pipe upgrades	067A Ave: 133 - 134 St	Long Term (7 - 10 Yrs)	39,000	2,000	37,000	-
8120	Upgrade Existing Culvert (650mm to 1000mm)	Latimer Creek Trib: 76 Ave / 194 St	Long Term (7 - 10 Yrs)	55,000	50,000	5,000	-
8121	Upgrade Existing Culvert (850mm to 1200mm)	Latimer Creek Trib: 192 St / 84 Ave	Long Term (7 - 10 Yrs)	110,000	100,000	10,000	-
8122	Upgrade Existing Culvert (600mm to 1000mm)	129 St / 89 Ave (Bartlesko Brook)	Long Term (7 - 10 Yrs)	110,000	100,000	10,000	-
8123	Upgrade Existing Culvert (700mm to 1500mm)	088 Ave / 190 St (Old Sawmill Creek)	Long Term (7 - 10 Yrs)	110,000	100,000	10,000	-
11638	Storm Sewer Upgrade	140 St: 104 - 106 Ave	Long Term (7 - 10 Yrs)	250,000	-	250,000	-
11639	Storm Sewer Upgrade	148 St: Halsted Pl - 104 Ave	Long Term (7 - 10 Yrs)	840,422	-	840,422	-
11640	Storm Sewer Upgrade	132 St: 104 - 108 Ave	Long Term (7 - 10 Yrs)	592,843	-	592,843	-
11641	Storm Sewer Upgrade	148 St - 150 St: 107 - 108 Ave - Raven PI	Long Term (7 - 10 Yrs)	518,788	-	518,788	-
11642	Storm Sewer Upgrade	129 St - 129A St: 102 - 103A Ave	Long Term (7 - 10 Yrs)	334,765	-	334,765	-
11643	Storm Sewer Upgrade	096 Ave: 148 St - lot 14979	Long Term (7 - 10 Yrs)	208,219	-	208,219	-
11644	Storm Sewer Upgrade	096 Ave: 152 - 157 St	Long Term (7 - 10 Yrs)	998,455	-	998,455	-
11646	Storm Sewer Upgrade	160 St - 162 St: 93A - 96 Ave	Long Term (7 - 10 Yrs)	418,347	-	418,347	-
11647	Storm Sewer Upgrade	122A - 125 St: 82 - 83A Ave	Long Term (7 - 10 Yrs)	228,971	-	228,971	-
11648	Storm Sewer Upgrade	63A - 64 Ave: 173A - 176 St	Long Term (7 - 10 Yrs)	433,888	-	433,888	-
11649	Storm Sewer Upgrade	148A St: 33 - 32Ave	Long Term (7 - 10 Yrs)	173,719	-	173,719	-
11650	Storm Sewer Upgrade	024 Ave: 168 St - lot 17331	Long Term (7 - 10 Yrs)	493,741	-	493,741	-
11651	Storm Sewer Upgrade	021A Ave: 180 - 184 St	Long Term (7 - 10 Yrs)	278,829	-	278,829	-
11652	Storm Sewer Upgrade	139 St - 140 St: 16 - 20 Ave	Long Term (7 - 10 Yrs)	548,176	-	548,176	-
11654	Storm Sewer Upgrade	Dogwood Dr: Crescent - Cedar Dr	Long Term (7 - 10 Yrs)	276,759	-	276,759	-
11655	Storm Sewer Upgrade	124 - 127 St: 97B - 100 Ave	Medium Term (4 - 6 Yrs)	709,468	-	709,468	-
11656	Storm Sewer Upgrade	106A - 107 Ave: Old Yale Rd - 132 St	Long Term (7 - 10 Yrs)	709,306	-	709,306	-

DRAINAGE
Program 1662 - Existing System Upgrades (Capital)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
11657	Storm Sewer Upgrade	Kew Dr - Glen Avon Dr: 150 St - Loughren Dr	Long Term (7 - 10 Yrs)	586,328	-	586,328	-
11658	Storm Sewer Upgrade	96A - 97A Ave: 116 St - Townline Div	Long Term (7 - 10 Yrs)	422,625	-	422,625	-
11659	Storm Sewer Upgrade	96A - 99A Ave: 116 - 120 St	Long Term (7 - 10 Yrs)	841,766	-	841,766	-
11660	Storm Sewer Upgrade	124 - 127A St: 100 - 104 Ave	Medium Term (4 - 6 Yrs)	1,458,804	-	1,458,804	-
11662	Storm Sewer Upgrade	Grosvenor Rd - 111A Ave: 136 St - Brentwood Cr	Long Term (7 - 10 Yrs)	355,753	-	355,753	-
11664	Storm Sewer Upgrade	139 - 140 St: 113A - 115 Ave	Long Term (7 - 10 Yrs)	299,956	-	299,956	-
11665	East Bon Accord - South Birdland Phases 2 & 4	107A Ave - Pheasant Dr: 148A St - Canary Dr	Long Term (7 - 10 Yrs)	4,340,000	-	4,340,000	-
11667	Storm Sewer Upgrade	108 - 110 Ave: 145 - 146 St	Long Term (7 - 10 Yrs)	1,000,000	-	1,000,000	-
11670	East Bon Accord Peak Flow Diversion (North Birdland)	Glen Avon Dr - 150 St (North Birdland)	Short Term (1 - 3 Yrs)	2,250,000	-	2,250,000	-
11671	East Bon Accord - Wallace Creek Phase 3 works	108 - 110 Ave: 144A - 145A St, 111A Ave: 146 - 148 St	Long Term (7 - 10 Yrs)	2,000,000	-	2,000,000	-
11677	Fraser River Dyke Improvement	Vancouver Fraser Port Authority land	Long Term (7 - 10 Yrs)	1,200,000	-	1,200,000	-
12157	Storm Sewer Extension	118B St: 98 - 97A Ave	Medium Term (4 - 6 Yrs)	70,000	-	70,000	-
12187	Drainage Improvement	176A St: lot 5871 (ROW)	Medium Term (4 - 6 Yrs)	50,000	-	50,000	-
12857	Existing infrastructure and Culvert Upgrades	179 - 188 St / 20 - 32 Ave	NCP Driven	1,335,714	1,335,714	-	-
13082	East Bon Accord Creek Drainage Improvements	104 Ave: 14400 blk (north)	Medium Term (4 - 6 Yrs)	4,200,000	500,000	3,700,000	-
14642	Crescent Beach Phase 2	Crescent Beach	Medium Term (4 - 6 Yrs)	2,000,000	-	2,000,000	-
14960	43m of 1350mm diameter pipe upgrades	124 St / Industrial Rd	Medium Term (4 - 6 Yrs)	101,773	50,887	50,886	-
14963	81m of 1200mm diameter pipe upgrades	Bridgeview Dr / 115 Ave	Short Term (1 - 3 Yrs)	171,125	85,562	85,563	-
14971	16m of 2400mm diameter culvert	126A St / Royal City PS	Short Term (1 - 3 Yrs)	79,911	15,982	63,929	-
14973	65m of 675 mm diameter upgrade	Bridgeview Dr / 112B Ave	Short Term (1 - 3 Yrs)	85,314	68,251	17,063	-
14974	87m of 675mm diameter upgrade	131 St / 115 Ave (south)	Long Term (7 - 10 Yrs)	114,132	91,306	22,826	-
14976	77m of 675mm diameter upgrade	King George Blvd / 126A St (east)	Medium Term (4 - 6 Yrs)	101,485	50,743	50,742	-
14986	Drainage Conveyance & Storage Improvements	Scott Rd: Tannery - Old Yale Rd	Medium Term (4 - 6 Yrs)	50,000	10,000	40,000	-
14987	Hydraulic Efficiency Culverts & Inlets	121 St / 103A Ave	Medium Term (4 - 6 Yrs)	60,000	12,000	48,000	-
14988	Feasibility of Connecting Manson PS & Old Yald PS	Dyke Rd: Tannery - Old Yale Rd	Medium Term (4 - 6 Yrs)	40,000	8,000	32,000	-
14990	Future Design Criteria (S Westminister Pump Stations)	Manson, Old Yale and Pattullo Pump Stations	Medium Term (4 - 6 Yrs)	30,000	6,000	24,000	-
15022	191m of 900mm diameter upgrades	Whalley Blvd / 100 Ave	Medium Term (4 - 6 Yrs)	130,174	26,035	104,139	-
15052	Upper Chantrell Creek Green Corridor	020 Ave: lot 13741	Medium Term (4 - 6 Yrs)	300,000	150,000	150,000	-
15053	Sediment & Water Quality Device (Upper Chantrell)	136 St: lot 2101	Medium Term (4 - 6 Yrs)	50,000	-	50,000	-
15055	1,380m Dyke Upgrades	Crescent Rd: 140 St - Elgin Rd	Medium Term (4 - 6 Yrs)	2,500,000	1,250,000	1,250,000	-
15058	80m of 450mm diameter upgrade	Marine Dr: lot 13245	Medium Term (4 - 6 Yrs)	120,000	60,000	60,000	-
15059	230m of 450mm diameter upgrade	Amble Green Blvd: lot 1755	Medium Term (4 - 6 Yrs)	350,000	175,000	175,000	-
15060	125m of 450mm diameter upgrade	Martin Dr / Southmere Cr	Medium Term (4 - 6 Yrs)	190,000	95,000	95,000	-
				41,108,856	4,675,800	36,433,056	-

DRAINAGE

Program 1664 - Lowlands Flood Control (Capital)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
2933	Ditch Widening	Colebrook Rd: 152 - 157 St (north side)	Medium Term (4 - 6 Yrs)	5,000	-	5,000	-
6598	North Cloverdale Pump Station (Area F)	Serpentine Canal / 62 Ave	Long Term (7 - 10 Yrs)	2,359,000	471,800	1,887,200	-
6939	39m of 1200mm diameter	027A Ave: 184 St (East Kensington Elementary)	Long Term (7 - 10 Yrs)	50,000	-	50,000	-
14645	Colebrook Pump Station	Colebrook at Serpentine River	Short Term (1 - 3 Yrs)	800,000	800,000	4,200,000	-
11717	Gray Creek Conveyance Works	Various Locations (Gray Creek)	Short Term (1 - 3 Yrs)	1,000,000	200,000	800,000	-
11718	Inter River Conveyance Works	Inter River	Long Term (7 - 10 Yrs)	1,250,000	250,000	1,000,000	-
11719	Old Logging Ditch Conveyance Works	Old Logging Ditch	Short Term (1 - 3 Yrs)	2,200,000	440,000	1,760,000	-
11720	Erickson / Burrow Conveyance Works	Erickson / Burrow	Medium Term (4 - 6 Yrs)	1,250,000	250,000	1,000,000	-
11721	Southwest Cloverdale Conveyance Works	Southwest Cloverdale	Medium Term (4 - 6 Yrs)	2,500,000	500,000	2,000,000	-
11722	Serpentine River Dyking	Serpentine River: Sea Dam - 88 Avenue	Medium Term (4 - 6 Yrs)	3,466,711	693,342	2,773,369	-
11723	Nicomelk River Dyking	Nicomelk River: Sea Dam - 184 St	Medium Term (4 - 6 Yrs)	1,100,000	220,000	880,000	-
12566	Mud Bay Conveyance Works	Mud Bay	Long Term (7 - 10 Yrs)	1,000,000	200,000	800,000	-
12567	Panorama Conveyance Works	Panorama	Medium Term (4 - 6 Yrs)	1,700,000	340,000	1,360,000	-
12570	Dyking District Erosion Protection	Surrey Lowlands	Annual	2,500,000	500,000	2,000,000	-
13457	Emergency Dyke Repairs	Surrey Lowlands	Annual	1,000,000	200,000	800,000	-
14944	Floodbox Replacement Program	Various Locations	Annual	3,000,000	-	3,000,000	-
15752	Colebrook Dyke Upgrades - City Portion	Boundary Bay Delta - King George Blvd	Medium Term (4 - 6 Yrs)	4,500,000	-	4,500,000	-
15786	Colebrook Dyking Upgrades - Provincial Portion	Boundary Bay Delta - King George Blvd	Medium Term (4 - 6 Yrs)	10,400,000	-	-	10,400,000
16039	Burrows Pump Station	Nicomelk River: 4444 168 St	Medium Term (4 - 6 Yrs)	1,400,000	-	1,400,000	-
				40,680,711	5,065,142	30,215,569	10,400,000

DRAINAGE
Program 1670 - Relief and Trunk System

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6014	Delta Creek Trunk Diversion	096 Ave: 11800 blk - 99 Ave: Scott Rd	Short Term (1 - 3 Yrs)	3,500,000	500,000	3,000,000	-
6164	807m of 750-900mm diameter	080 Ave: 134 St - King George Hwy	Long Term (7 - 10 Yrs)	1,332,000	1,332,000	-	-
6170	115m of 1050mm diameter	081A Ave / 136 St	Medium Term (4 - 6 Yrs)	540,000	450,000	90,000	-
6174	213m of 750-900mm diameter	84 Ave: E of 148 St	Long Term (7 - 10 Yrs)	175,000	175,000	-	-
6244	900mm Upgrade Existing Storm	068 Ave: 141 - 142 St	Medium Term (4 - 6 Yrs)	450,000	450,000	-	-
6266	120m of 600mm diameter storm sewer	148 St: North of 103 Ave	Medium Term (4 - 6 Yrs)	70,000	70,000	-	-
6572	630m of 1,200mm diameter trunk sewer	Croydon Dr: 29 - 31 Ave (Rosemary Hts Business Park)	NCP Driven	1,089,000	1,089,000	-	-
6669	406m of Erosion Protection	195 St: 56 - 58 Ave	Long Term (7 - 10 Yrs)	200,000	200,000	-	-
6687	300m of 750mm diameter trunk sewer	168 St: Fraser Hwy - 78 Ave	Medium Term (4 - 6 Yrs)	370,000	370,000	-	-
6719	Trunk Storm Sewer Diversion	196 St: 64 Ave - outfall	Medium Term (4 - 6 Yrs)	1,895,000	1,895,000	-	-
6943	1,617m of 600mm diameter storm sewer	184 St: 24 - 32 Ave	NCP Driven	970,000	970,000	-	-
7241	Culvert Drainage	066 Ave / 171 St	Short Term (1 - 3 Yrs)	72,000	36,000	36,000	-
8127	New Storm Trunk Sewer (150m)	088 Ave: 196 St - Latimer Creek Trib	Long Term (7 - 10 Yrs)	125,000	112,500	12,500	-
11803	Trunk Storm Sewers (DWA portion)	Sunnyside Heights NCP	NCP Driven	1,418,400	1,418,400	-	-
11804	Ditch/Channel Erosion Protection	Sunnyside Heights NCP	NCP Driven	25,560	25,560	-	-
12859	Drainage Channel DC1	179 St: 20 - 24 Ave (Erickson Watershed)	NCP Driven	217,000	217,000	-	-
12860	Drainage Channel DC2	032 Ave: 182 - 184 St (Erickson Watershed)	NCP Driven	139,000	139,000	-	-
12863	Drainage Channel DC4	028 Ave: 188 - 184 St (Erickson Watershed)	NCP Driven	155,000	155,000	-	-
12865	Drainage Channel DC5	040 Ave: 188 - 184 St (Erickson Watershed)	NCP Driven	155,000	155,000	-	-
12868	Storm Sewer Upgrade	175 St: 58 - 60 Ave	Medium Term (4 - 6 Yrs)	700,000	-	700,000	-
12869	Storm Sewer	057 Ave: 177 - 172 St	Short Term (1 - 3 Yrs)	300,000	-	300,000	-
13783	Ditch Improvements	147 St: 66 Ave - Hyland Creek	Short Term (1 - 3 Yrs)	500,000	500,000	-	-
14104	Orchard Grove - Trunk Sewer Upgrade	164 St: 26 Ave - 2700 block	NCP Driven	395,000	395,000	-	-
14105	Trunk Sewer Upgrade to 600mm diameter	172 St: lot 2815 - 2875 Country Woods Dr	NCP Driven	227,000	227,000	-	-
14106	Trunk Sewer Upgrade to 1200mm diameter	172 St: 32 Ave - lot 2875 Country Woods Dr	NCP Driven	1,459,000	1,459,000	-	-
14108	April Creek Headwaters Trunk Sewer	165 St / 28 Ave - April Creek (Old Logging ISMP)	Long Term (7 - 10 Yrs)	220,000	-	220,000	-
14109	Trunk Sewer Upgrade	32 Ave: 172 St - 17300 blk (Old Logging/Burrow's)	Long Term (7 - 10 Yrs)	866,000	-	866,000	-
14111	Trunk Sewer Upgrade to 1050mm diameter	032 Ave: 172 St - 17300 blk (Old Logging/Burrow's)	Long Term (7 - 10 Yrs)	851,000	-	851,000	-
14112	Culvert Upgrade	032 Ave: 15850 - Titman Crk (Old Logging/Burrow's)	Long Term (7 - 10 Yrs)	115,000	115,000	-	-
14113	Culvert Upgrade	160 St: 3087 - Wills Brook Trib (Old Logging/Burrow's)	NCP Driven	45,000	45,000	-	-
14115	Culvert Upgrade	032 Ave / 172 St (Old Logging/Burrow's ISMP)	Long Term (7 - 10 Yrs)	100,000	-	100,000	-
14116	Culvert Upgrade	Hwy 99 / 28 Ave: Upper Titman Creek (Old Logging ISMP)	Medium Term (4 - 6 Yrs)	100,000	-	100,000	-
14118	Trunk Sewer Upgrade	164 St: 24 - 32 Ave	Long Term (7 - 10 Yrs)	553,000	-	553,000	-
14657	Lower Chantrell Realignment	Crescent Rd: lot 13601	Medium Term (4 - 6 Yrs)	3,000,000	-	3,000,000	-
14669	Trunk Project #1 (Robson)	099 Ave: Grove Cr - 127B St	Short Term (1 - 3 Yrs)	380,000	70,000	310,000	-
14670	Trunk Project #2 (Robson)	100 Ave: 127A St - Robson Creek outfall	Short Term (1 - 3 Yrs)	1,000,000	200,000	800,000	-
14671	Trunk Project #3 (Robson)	124A St: 99 - 99A Ave, 99A Ave - 124A St	Medium Term (4 - 6 Yrs)	610,000	100,000	510,000	-
14672	Trunk Project #4 (Robson)	100 Ave: 125 St - Robson Ravine Outfall (W of 124 St)	Short Term (1 - 3 Yrs)	3,200,000	-	3,200,000	-
14673	Trunk Project #5 (Robson)	100 Ave: 128 - 127A St, 127A St, 127B St: 100 A	Medium Term (4 - 6 Yrs)	1,600,000	300,000	1,300,000	-
14674	Trunk Project #6 (Robson)	Beaver Dr / Park Dr: 102 - 100 Ave	Medium Term (4 - 6 Yrs)	1,900,000	400,000	1,500,000	-
14947	Chantrell Realignment via Davidson Pond Site	Crescent Rd: lot 13568	Short Term (1 - 3 Yrs)	2,000,000	500,000	1,500,000	-
14994	1775m of 1050mm diameter	103 Ave / 146 St - 105A Ave / 152 St	Medium Term (4 - 6 Yrs)	4,336,010	4,336,010	-	-
				37,354,970	18,406,470	18,948,500	

DRAINAGE
Program 1672 - Community Detention

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6046	Community Detention/Sediment Pond	093Ave: 136A St - Hydro ROW	Medium Term (4 - 6 Yrs)	55,000	5,000	50,000	-
6197	DCC F/End - Orchard Grove NCP Detention Pond	164 St / 26 Ave	NCP Driven	2,690,000	2,690,000	-	-
6372	East Clayton NCP Pond - D	Fraser Hwy / 190 St	NCP Driven	2,890,000	2,890,000	-	-
6714	Detention Pond - B P4	194 St / 64 Ave	NCP Driven	2,300,000	2,300,000	-	-
6725	West Clayton Pond #2 and Trunk Sewers	184 /80 Ave	NCP Driven	4,988,000	4,988,000	-	-
6728	West Clayton Pond #1 and Trunk Sewers	182 St / 74 Ave	NCP Driven	8,030,000	8,030,000	-	-
6879	Mahood Cruickshank Pond 3	084 Ave / 132 St (Mahood Creek)	Medium Term (4 - 6 Yrs)	6,775,000	5,025,600	1,749,400	-
8565	Archibald Detention Pond P1B	138 St / 62 Ave	NCP Driven	2,471,000	2,223,900	247,100	-
11773	DCC F/End - North Grandview Heights NCP Pond F	032 Ave / 166 St (April Creek)	NCP Driven	616,000	616,000	-	-
11782	Stormwater Corridors	Sunnyside Heights NCP	NCP Driven	14,043,000	14,043,000	-	-
14119	Rain garden in Boundary Park	Boundary Drive East / 62 Ave	Long Term (7 - 10 Yrs)	340,000	-	340,000	-
				45,198,000	42,811,500	2,386,500	-

DRAINAGE

Program 1679 - Erosion and Ravine Stabilization (Capital)

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
6346	Remove Log Weir - Bon Accord Creek	146 St: 114 - 115A Avenue	Short Term (1 - 3 Yrs)	2,400,000	400,000	2,000,000	-
6561	Erosion Protection - North Grandview Heights NCP	167 St / 033 Ave	NCP Driven	60,000	60,000	-	-
6599	Creek Protection- W Cloverdale N NCP	East Creek: 64 Ave - 168 St	NCP Driven	320,000	320,000	-	-
6602	900m of Creek Improvements - N Cloverdale W NCP	070 Ave / 184 - 178 St (North Creek)	NCP Driven	350,000	350,000	-	-
7796	Upper Serpentine Erosion Prevention	096 Ave: lot 16542 - lot 9712 168 St (Serpentine River)	Medium Term (4 - 6 Yrs)	2,000,000	1,000,000	1,000,000	-
9356	Ravine Stability Works	032 Ave / 136 St (Chantrell Creek)	Medium Term (4 - 6 Yrs)	283,000	25,000	258,000	-
12806	Chantrell Creek Realignment	136 St / Crescent (North)	Short Term (1 - 3 Yrs)	4,000,000	-	4,000,000	-
15170	Erosion site (high risk) Delta Creek #1	097A Ave: lot 18822, 1188 St / 91A Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15171	Erosion site (high risk) - Delta Creek #2	097A Ave: lot 18822, 1188 St / 96A Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15172	Erosion site (high risk): Robson Creek	Park Dr: lot 10121, Park Dr / Centre Dr	Long Term (7 - 10 Yrs)	125,000	25,000	100,000	-
15173	Erosion site (high risk) : Bolivar Creek	King George Blvd: lot 13285 / 132 St	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
15174	Erosion site (high risk): Wingwall Creek	116 Ave: lot 14037, 140A St / 116 Ave	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
15175	Erosion site (high risk): East Bon Accord Creek	Roxburgh Rd: lot 11348, Wellington/Surrey Rd	Medium Term (4 - 6 Yrs)	600,000	100,000	500,000	-
15176	Erosion site (high risk): Latimer Creek	088 Ave: lot 19588, 192 St / 88 Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15177	Erosion site (high risk): Serpentine River Tributary	158A St: lot 10336, 158A St/102B Ave	Medium Term (4 - 6 Yrs)	125,000	25,000	100,000	-
15178	Erosion site (high risk): Guildford Brook Creek#1	158 St: lot 10461, 158 St / 104 Ave	Medium Term (4 - 6 Yrs)	125,000	25,000	100,000	-
15179	Erosion site (high risk): Guildford Brook Creek #2	158 St: lot 10461, 158 St / 104 Ave	Medium Term (4 - 6 Yrs)	125,000	25,000	100,000	-
15180	Erosion site (high risk): 152 St Creek	080 Ave: lot 15135, 152 St / 80 Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15181	Erosion site (high risk): Cub Creek	149 St: lot 8719, 149 St / 87 Ave	Short Term (1 - 3 Yrs)	250,000	50,000	200,000	-
15182	Erosion site (high risk): Grenville Creek	Tulsky Pl: lot 13256, 132 St / Shakespear Pl	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
15183	Erosion site (high risk): Hyland Tributaries	138 St: lot 6542, 138 St / 65 Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15185	Erosion site (high risk): Chantrell Creek	032 Ave: lot 13552, 136A St / 136 St	Short Term (1 - 3 Yrs)	360,000	60,000	300,000	-
15186	Erosion site (high risk): Crescent Beach Creek #1	Christopherson Rd: lot 2267 / 228 Ave	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
15187	Erosion site (high risk): Crescent Beach Creek #2	123 St: lot 2233, 123 St / 22 Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15191	Erosion site (high risk): Price Creek	147A St: lot 8615, 146A St / 86A Ave	Medium Term (4 - 6 Yrs)	125,000	25,000	100,000	-
15192	Erosion site (high risk): Armstrong Creek	190 St: lot 4427, 192 St / 42A Ave	Medium Term (4 - 6 Yrs)	125,000	25,000	100,000	-
15193	Erosion site (high risk) Quibble Creek #1	089 Ave: lot 13598, 135A St / 89 Ave	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15194	Erosion site (high risk): Quibble Creek #2	093A Ave: lot 13710, 138 St / 93A	Medium Term (4 - 6 Yrs)	250,000	50,000	200,000	-
15195	Erosion site (high risk) Bear Creek	Tulsky Cr E: lot 8626, Tulsky Cr / Tulsky Cr E	Long Term (7 - 10 Yrs)	250,000	50,000	200,000	-
15307	Chantrell Creek Reinstatement	Crescent Rd: lot 13568	Medium Term (4 - 6 Yrs)	1,700,000	-	1,700,000	-
				16,323,000	3,165,000	13,158,000	-

6. CAMPBELL HEIGHTS

The Campbell Heights area encompasses approximately 800 hectares in southeast Surrey. The area generally lies between 18 and 44 Avenue to the south and north, and 186 and 196 Street to the west and east. The western boundary follows the top of a ridge that descends to the Nicomekl River lowland floodplain.

The City of Surrey Official Community Plan (OCP) designates all of Campbell Heights as an industrial area.

A specific area servicing plan was developed for this area to address local site constraints and issues related to servicing an entire industrial development. Major servicing requirements include:

- Local feeder mains to provide water distribution and fire protection;
- New collector and arterial routes, and the widening of arterials to 4-5 lanes throughout the area;
- Pump station upgrades, siphons to the Metro Vancouver Cloverdale trunk, and local gravity trunk sewers to provide sanitary sewer service; and
- Exfiltration systems, open channel wetlands, and detention ponds for drainage, also including environmental measures like habitat restoration.

Table 6.1 – Campbell Heights Cost Summary

No.	Program	Growth (\$)	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1017	Transportation	97,287,500		35,937,500	16,875,000	150,100,000
1617	Water	13,442,252				13,442,252
1637	Sewer	13,015,600				13,015,600
1667	Drainage	9,531,200				9,531,200
	Total	133,276,552	0	35,937,500	16,875,000	186,089,052

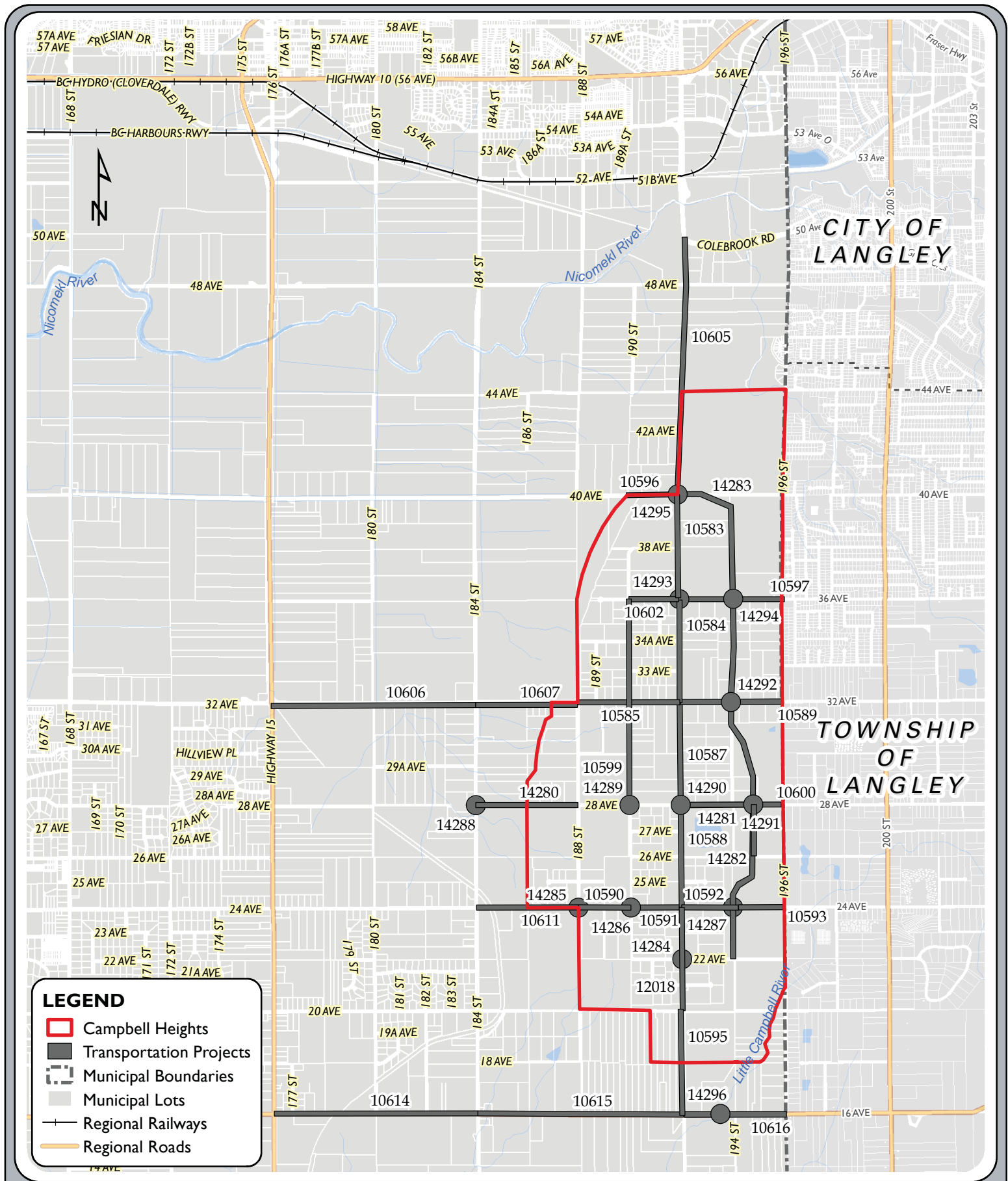
6.1 Campbell Heights Projects by Program

The following tables and figures identify the projects under the Campbell Heights programs for transportation, sanitary sewer, water, and stormwater. The tables provide the following information:

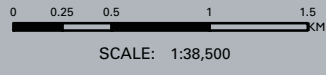
- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs - the high level estimates in 2016 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external, and Greater Vancouver Transportation Authority (GVTA) funding components. External funding may include sources such as the Provincial Government, the Federal Government, and Developers' contributions through their projects.

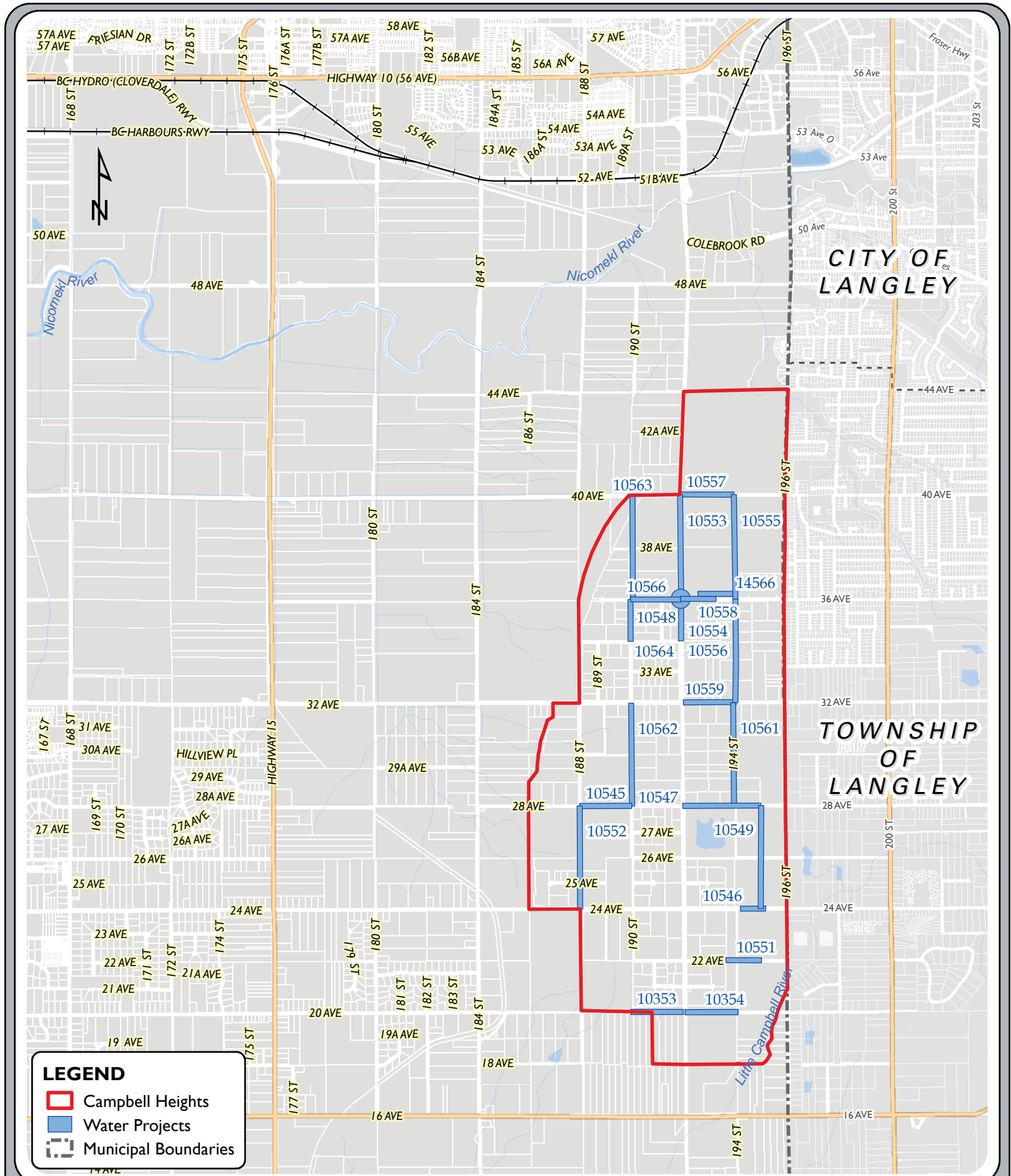
Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.



**FIGURE 6.1 - Transportation
Campbell Heights (Program 1017)**



The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.



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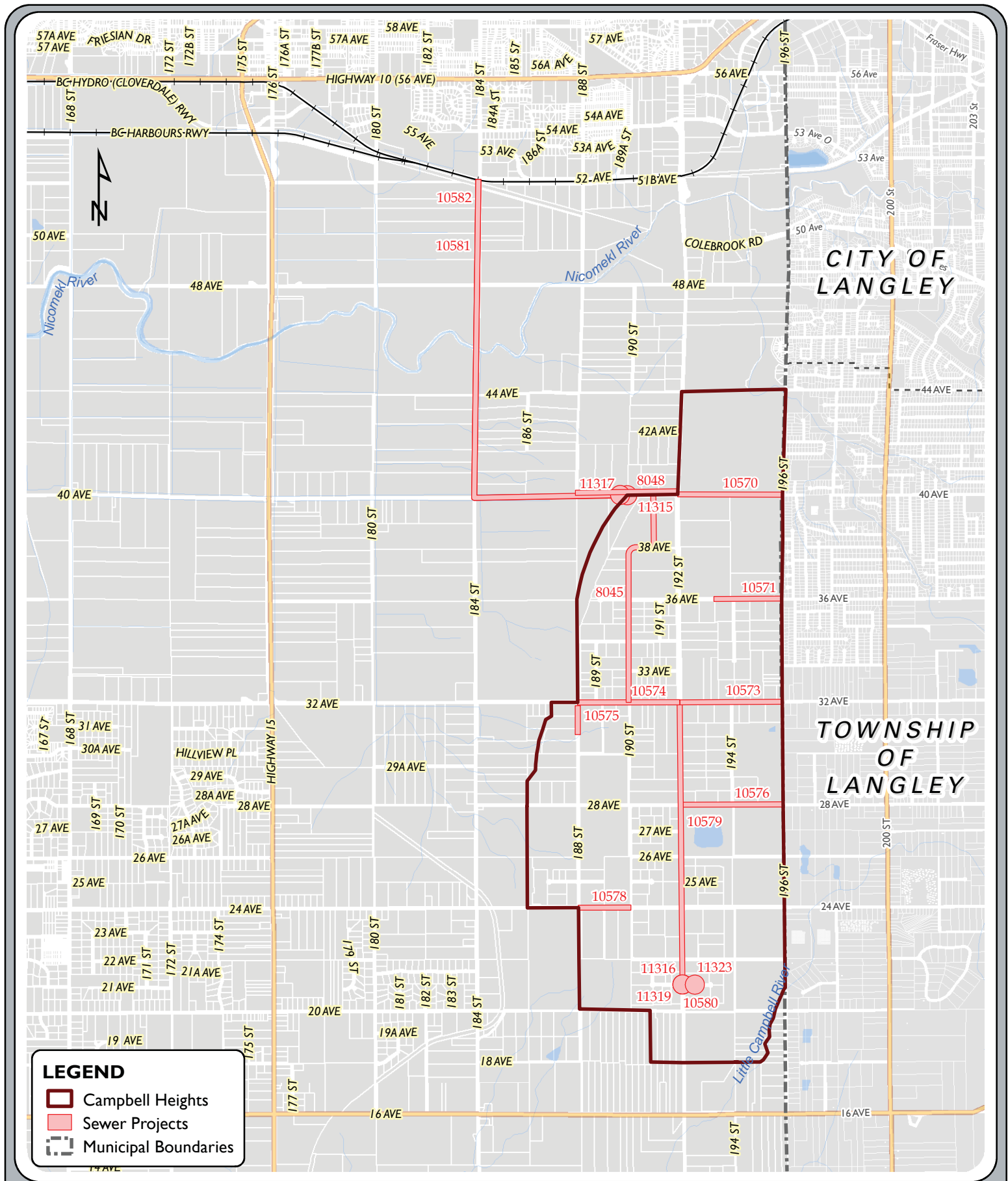
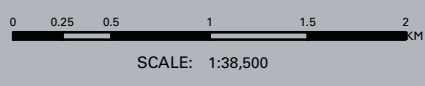
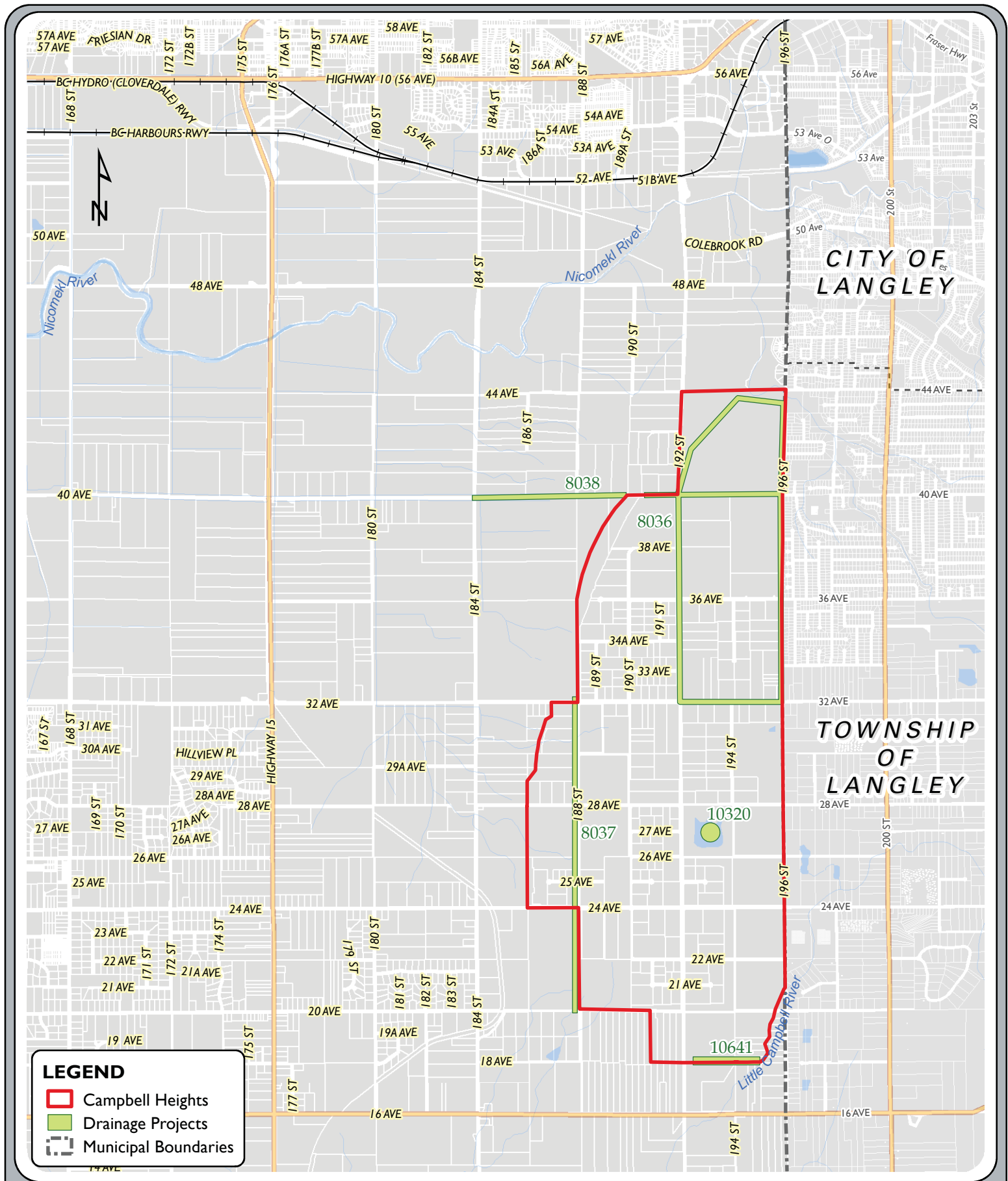


FIGURE 6.3 - Sewer Campbell Heights (Program 1637)



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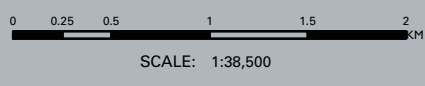
Date Printed: 12/12/2016 Cartographer: C9W © City of Surrey
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LEGEND

- Campbell Heights
- Drainage Projects
- Municipal Boundaries

**FIGURE 6.4 - Drainage
Campbell Heights (Program 1667)**



GIS SECTION
ENGINEERING

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office. Date Printed: 07/12/2016 Cartographer: C9W © City of Surrey Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2017-26\Figure6-4_CampbellHeights-D.mxd

TRANSPORTATION

Program 1017 - Campbell Heights

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	Citywide Contribution	GVTA
10583	Arterial Widening - 5 Lane	192 St: 36 Ave - 40 Ave	NCP Driven	6,000,000	6,000,000	-	-	-	-
10584	Arterial Widening - 5 Lane	192 St: 32 Ave - 36 Ave	NCP Driven	6,000,000	6,000,000	-	-	-	-
10585	Arterial Widening (South Side)	032 Ave: 188 St - 192 St	NCP Driven	1,500,000	1,500,000	-	-	-	-
10587	Arterial Widening - 5 Lane	192 St: 28 Ave - 32 Ave	NCP Driven	6,000,000	6,000,000	-	-	-	-
10588	Arterial Widening - 3 to 5 Lane (East Side)	192 St: 24 Ave - 28 Ave	NCP Driven	2,800,000	2,800,000	-	-	-	-
10589	Arterial Widening - 5 Lane	032 Ave: 192 St - 196 St	NCP Driven	6,000,000	6,000,000	-	-	-	-
10590	Arterial Widening - 5 Lane	024 Ave: 188 St - 190 St	NCP Driven	3,000,000	3,000,000	-	-	-	-
10591	Arterial Widening - 3 to 5 Lane (South Side)	024 Ave: 190 St - 192 St	NCP Driven	1,400,000	1,400,000	-	-	-	-
10592	Arterial Widening - 3 to 5 Lane (South Side)	024 Ave: 192 St - 194 St	NCP Driven	1,400,000	1,400,000	-	-	-	-
10593	New Arterial Construction	024 Ave: 194 St - 196 St	NCP Driven	3,400,000	3,400,000	-	-	-	-
10595	Arterial Widening - 5 Lane	192 St: 16 Ave - 20 Ave	NCP Driven	6,000,000	3,000,000	-	-	3,000,000	-
10596	Arterial Widening - 5 Lane	040 Ave: 190 blk - 192 St	NCP Driven	3,000,000	1,500,000	-	-	1,500,000	-
10597	Arterial Widening - 5 Lane	036 Ave: 192 St - 196 St	NCP Driven	6,000,000	6,000,000	-	-	-	-
10599	Collector Upsizing	190 St: 28 Ave - 36 Ave	NCP Driven	1,200,000	-	1,200,000	-	-	-
10600	Collector Upsizing	028 Ave: 192 St - 196 St	NCP Driven	600,000	-	600,000	-	-	-
10602	Collector Upsizing	036 Ave: 190 St - 192 St	NCP Driven	300,000	-	300,000	-	-	-
10605	Arterial Widening - 3 Lane	192 St: 40 Ave - 5000 blk	NCP Driven	10,000,000	10,000,000	-	-	-	-
10606	Arterial Widening - 3 Lane	032 Ave: 176 St - 184 St	NCP Driven	6,400,000	6,400,000	-	-	-	-
10607	Arterial Widening - 3 Lane	032 Ave: 184 St - 188 St	NCP Driven	3,200,000	3,200,000	-	-	-	-
10611	Arterial Widening - 5 Lane	024 Ave: 184 St - 188 St	NCP Driven	8,000,000	4,000,000	-	-	4,000,000	-
10614	Arterial Widening - 5 Lane	016 Ave: 176 St - 184 St	NCP Driven	12,000,000	3,000,000	-	-	3,000,000	6,000,000
10615	Arterial Widening - 5 Lane	016 Ave: 184 St - 192 St	NCP Driven	12,000,000	3,000,000	-	-	3,000,000	6,000,000
10616	Arterial Widening - 5 Lane	016 Ave: 192 St - 196 St	NCP Driven	6,000,000	1,500,000	-	-	1,500,000	3,000,000
12018	Arterial Widening - 3 to 5 Lane (East Side)	192 St: 20 Ave - 24 Ave	NCP Driven	3,600,000	3,600,000	-	-	-	-
14280	Collector Widening	028 Ave: 184 St - 188 St	NCP Driven	3,600,000	-	3,600,000	-	-	-
14281	Collector Widening	028 Ave: 192 St - 194A St	NCP Driven	1,000,000	-	1,000,000	-	-	-
14282	Collector Widening	194A St: 26 Ave - 28 Ave	NCP Driven	1,000,000	-	1,000,000	-	-	-
14283	Collector Upsizing	194/194A St: 22 Ave - 40 Ave	NCP Driven	4,200,000	-	4,200,000	-	-	-
14284	Traffic Signal	022 Ave / 192 St	NCP Driven	200,000	200,000	-	-	-	-
14285	Traffic Signal	024 Ave / 188 St	NCP Driven	200,000	200,000	-	-	-	-
14286	Traffic Signal	024 Ave / 190 St	NCP Driven	200,000	200,000	-	-	-	-
14287	Traffic Signal	024 Ave / 194A St	NCP Driven	200,000	200,000	-	-	-	-
14288	Traffic Signal	028 Ave / 184 St	NCP Driven	200,000	200,000	-	-	-	-
14289	Traffic Signal	028 Ave / 190 St	NCP Driven	200,000	200,000	-	-	-	-
14290	Traffic Signal	028 Ave / 192 St	NCP Driven	200,000	-	200,000	-	-	-
14291	Traffic Signal	028 Ave / 194A St	NCP Driven	200,000	200,000	-	-	-	-
14292	Traffic Signal	032 Ave / 194A St	NCP Driven	200,000	-	200,000	-	-	-
14293	Traffic Signal	036 Ave / 192 St	NCP Driven	200,000	200,000	-	-	-	-
14294	Traffic Signal	036 Ave / 194A St	NCP Driven	200,000	200,000	-	-	-	-
14295	Traffic Signal	040 Ave / 192 St	NCP Driven	150,000	150,000	-	-	-	-
14296	Replace Crossing	016 Ave / Campbell River	NCP Driven	3,750,000	937,500	-	-	937,500	1,875,000
				131,700,000	85,587,500	12,900,000	-	16,937,500	16,875,000

WATER

Program 1617 - Campbell Heights

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
10353	400m of 300mm diameter	020 Ave: 190 - 192 St	NCP Driven	330,000	330,000	-	-
10354	400m of 300mm diameter	020 Ave: 192 - 194 St	NCP Driven	330,000	330,000	-	-
10545	400m of 300mm diameter	028 Ave: 190 - 188 St	NCP Driven	330,000	330,000	-	-
10546	400m of 300mm diameter	024 Ave: 194 - 195 St	NCP Driven	330,000	330,000	-	-
10547	600m of 350mm diameter	028 Ave: 195 - 192 St	NCP Driven	520,000	520,000	-	-
10548	GVWD Connection	192 St / 36 Ave	NCP Driven	225,000	225,000	-	-
10549	800m of 350mm diameter	195 St: 28 - 24 Ave	NCP Driven	690,000	690,000	-	-
10551	200m of 300mm diameter	022 Ave: 194 - 195 St	NCP Driven	165,000	165,000	-	-
10552	800m of 350mm diameter	188 St: 28 - 24 Ave	NCP Driven	690,000	690,000	-	-
10553	800m of 350mm diameter	192 St: 40 - 36 Ave	NCP Driven	690,000	690,000	-	-
10554	350m of 400mm diameter	192 St: 34A - 36 Ave	NCP Driven	725,000	725,000	-	-
10555	800m of 350mm diameter	194 St: 40 - 36 Ave	NCP Driven	690,000	690,000	-	-
10556	800m of 350mm diameter	194 St: 36 - 32 Ave	NCP Driven	690,000	690,000	-	-
10557	400m of 350mm diameter	040 Ave: 194 - 192 St	NCP Driven	345,000	345,000	-	-
10558	285m of 350mm diameter	036 Ave: 192 - lot 19310	NCP Driven	345,000	345,000	-	-
10559	400m of 300/350mm diameter	032 Ave: 194 - 192 St	NCP Driven	345,000	345,000	-	-
10561	800m of 350mm diameter	194 St: 32 - 28 Ave	NCP Driven	690,000	690,000	-	-
10562	800m of 300mm diameter	190 St: 32 - 28 Ave	NCP Driven	660,000	660,000	-	-
10563	800m of 300mm diameter	190 St: 40 - 36 Ave	NCP Driven	660,000	660,000	-	-
10564	800m of 300mm diameter	190 St: 34 - 36 Ave	NCP Driven	660,000	660,000	-	-
10566	400m of 350mm diameter	036 Ave: 192 - 190 St	NCP Driven	345,000	345,000	-	-
14566	150m of 350mm diameter	36 Ave: lot 19310 - 194 St	NCP Driven	165,000	165,000	-	-
16137	Jericho Reservoir - City of Surrey Contribution	Township of Langley (20400 - 73A Avenue)	NCP Driven	2,822,252	2,822,252	-	-
				13,442,252	13,442,252		

SEWER

Program 1637 - Campbell Heights

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
8045	DCC F/End - 809m of 675/750mm diameter trunk	191St: 38-40Ave, 38Ave: 190-191St, 190St: 36-38Ave	NCP Driven	1,697,000	1,697,000	-	-
10570	800m of 375mm diameter upsizing	040 Ave: 192 - 196 St	NCP Driven	237,000	237,000	-	-
10571	525m of 375mm diameter upsizing	036 Ave: lot 19370 - 196 St	NCP Driven	130,000	130,000	-	-
10573	800m of 375mm diameter upsizing	032 Ave: 192 - 196 St	NCP Driven	237,000	237,000	-	-
10574	DCC F/End - 820m of 675mm diameter	032 Ave: 188- 192 St	NCP Driven	771,000	771,000	-	-
10575	400m of 375mm diameter upsizing	188 Street: 31 - 32 Avenue	NCP Driven	76,000	76,000	-	-
10576	800m of 300mm diameter upsizing	028 Avenue: 192 - 196 Street	NCP Driven	138,000	138,000	-	-
10578	400m of 300mm diameter	024 Ave: 188 - 190 St	NCP Driven	378,000	378,000	-	-
10580	DCC F/End - Campbell Heights PS Interim Upgrade	021 Ave / 192 St	NCP Driven	830,000	830,000	-	-
10581	DCC F/End - 450mm siphon (Campbell Hts to GVRD)	040 Ave: 184 St - 19000 blk, 184 St: 40 - 52 Ave	NCP Driven	2,700,000	2,700,000	-	-
10582	DCC F/End - 550mm siphon (Campbell Hts to GVRD)	040 Ave: 184 St - 19000 blk, 184St: 40 - 52 Ave	NCP Driven	3,070,000	3,070,000	-	-
11315	Odour Control Facilities at Ultimate Siphon Inlet	040 Ave / 19000 blk	NCP Driven	731,600	731,600	-	-
11316	Odour Control Facilities at Pump Station	021 Ave / 192 St	NCP Driven	80,000	80,000	-	-
11317	Grit Chamber	040 Ave / 19000 blk	NCP Driven	500,000	500,000	-	-
11318	Campbell Hts Sewer Upsizing	Various Locations	NCP Driven	179,000	179,000	-	-
11319	Campbell Hts Overflow Storage Tank at P.S. (N)	021 Ave / 192 St	NCP Driven	900,000	900,000	-	-
11323	Campbell Hts. PS - 2nd Upgrade to 2.10 L/s	021 Ave / 192 St	NCP Driven	361,000	361,000	-	-
				13,015,600	13,015,600		

DRAINAGE

Program 1667 - Campbell Heights

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
8036	Exfiltration Storm	192 St: 41A - 32 Ave	NCP Driven	2,920,300	2,920,300	-	-
8037	Storm Exfiltration System	188 St: 20 - 28 Ave	NCP Driven	2,871,000	2,871,000	-	-
8038	Road Drainage Works	040 Ave: 190- 184 St	NCP Driven	487,200	487,200	-	-
10319	Local Industrial Area Servicing	Various Locations	NCP Driven	2,377,500	2,377,500	-	-
10320	Latimer Pond (Campbell Heights)	192 St / 28 Ave	NCP Driven	440,200	440,200	-	-
10641	Exfiltration Drainage System	018 Ave: 192 - 195 St	NCP Driven	435,000	435,000	-	-
				9,531,200	9,531,200	-	-

7. HIGHWAY 99 CORRIDOR

The Highway 99 Corridor area encompasses approximately 195 hectares and generally lies along Highway 99 from 8th Avenue to 32nd Avenue.

The City's OCP designates the Highway 99 Corridor for commercial and industrial development.

A specific area-servicing plan was developed for this area to address issues related to servicing a mixed-use commercial/industrial development. Major servicing requirements include:

- Feeder mains, pressure reducing valves, and local feeder mains to provide water distribution and fire protection;
- Intersection improvements, and the widening of collectors and arterials throughout the area;
- A new pump station and forcemain, and local gravity trunk sewers to provide sanitary sewer service; and
- Community detention facilities, and culvert and watercourse upgrades.

Table 7.1 – Highway 99 Corridor Cost Summary

No.	Program	Growth (\$)	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1019	Transportation	34,475,000		14,250,000	3,250,000	51,975,000
1619	Water	4,322,117				4,322,117
1639	Sanitary Sewer	6,559,000				6,559,000
1669	Drainage	600,000				600,000
	Total	45,956,117	0	14,250,000	3,250,000	63,456,117

7.1 Highway 99 Corridor Projects by Program

The following tables and figures identify the projects under the Highway 99 Corridor programs for transportation, sanitary sewer, water, and stormwater. The tables provide the following information:

- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs - the high level estimates in 2016 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external, and Greater Vancouver Transportation Authority (GVTA) funding components. External funding may include sources such as the Provincial Government, the Federal Government, and Developers' contributions through their projects.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.

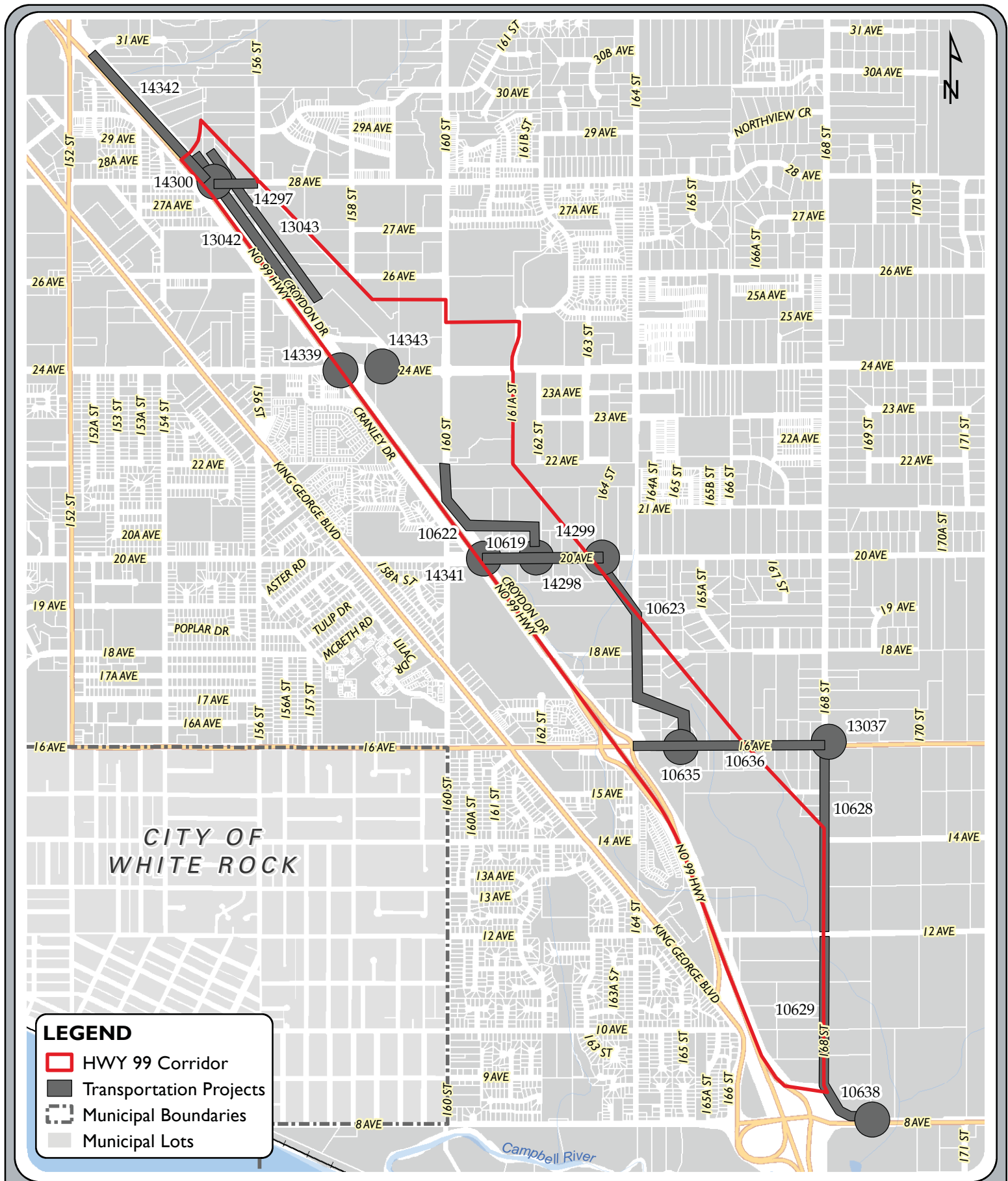


FIGURE 7.1 - Transportation Highway 99 Corridor (Program 1019)

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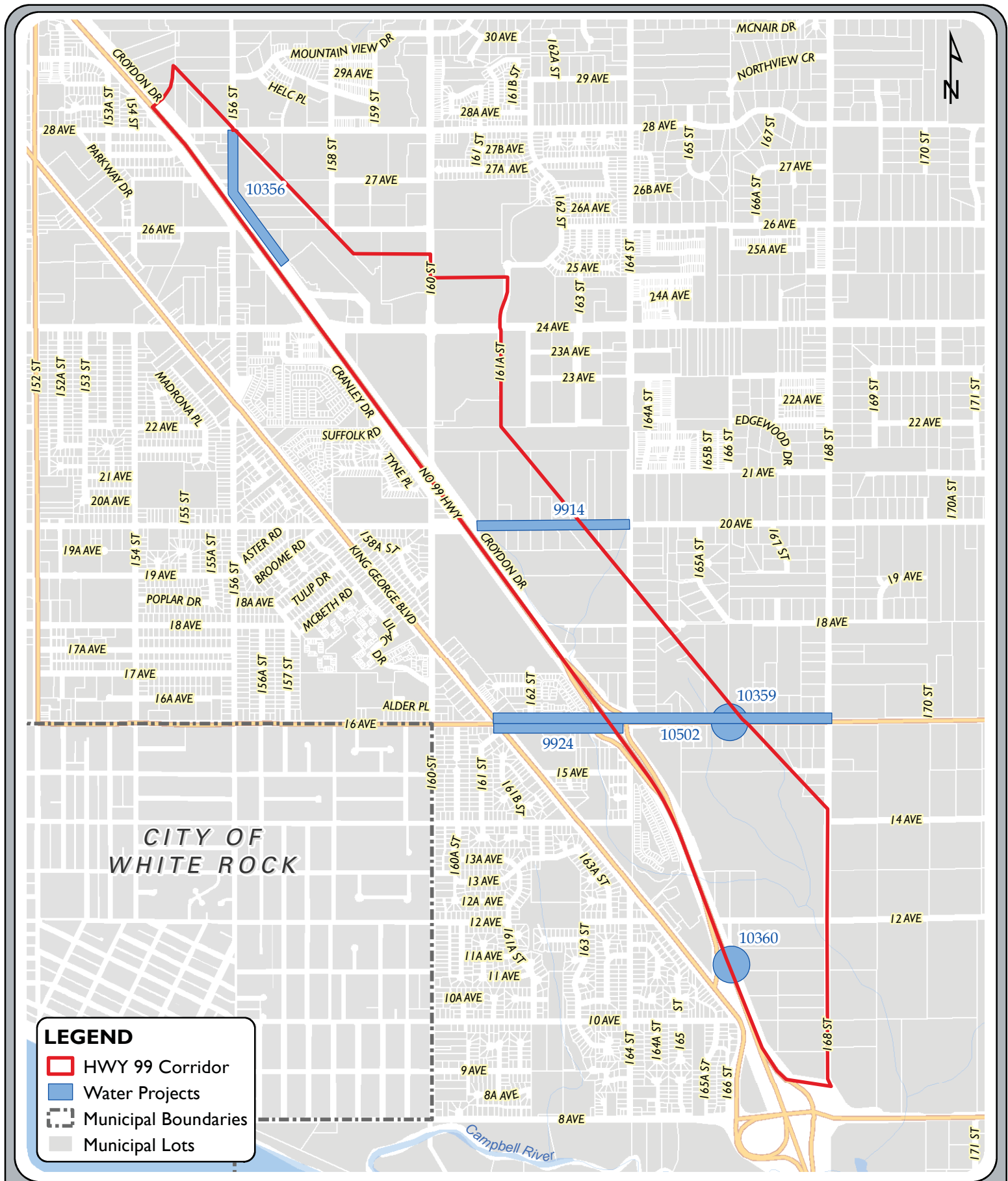


FIGURE 7.2 - Water Highway 99 Corridor (Program 1619)

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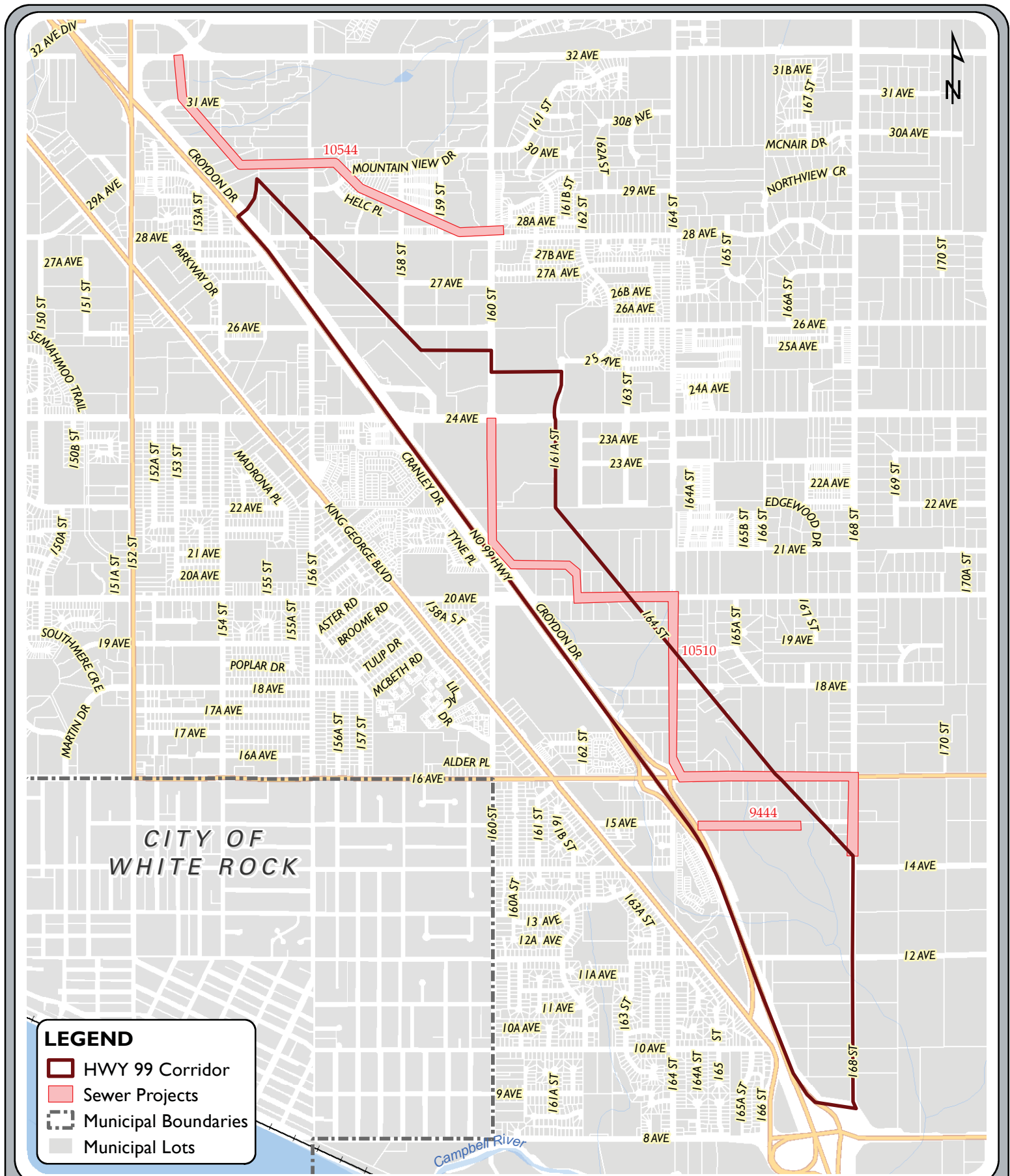


FIGURE 7.3 - Sewer Highway 99 Corridor (Program 1639)

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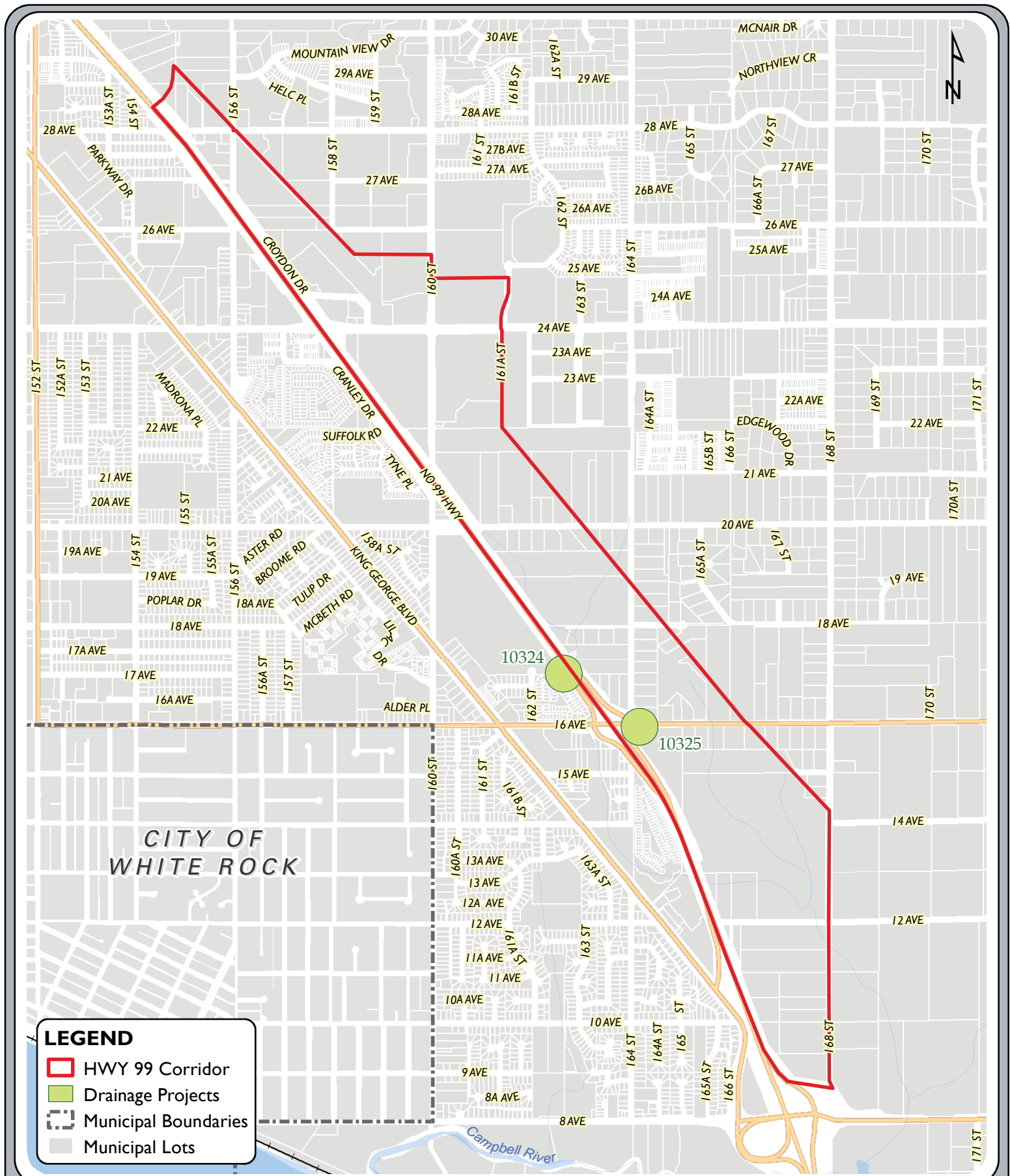
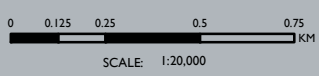


FIGURE 7.4 - Drainage Highway 99 Corridor (Program 1669)



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Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2017-26\Figure7-4_Hwy99Corridor-D.mxd

TRANSPORTATION

Program 1019 - Highway 99 Corridor

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	Developer Contribution	Citywide Contribution	GVTA
10619	Arterial Widening - 5 Lane	020 Ave: 161 St - 164 St	NCP Driven	4,500,000	4,500,000	-	-	-	-	-
10622	Collector Ultimate Widening	Croydon Dr: 20 Ave - 2200 blk	NCP Driven	3,500,000	-	1,750,000	-	1,750,000	-	-
10623	Collector Ultimate Widening	164 St Realignment: 16 Ave - 20 Ave	NCP Driven	7,000,000	-	3,500,000	-	3,500,000	-	-
10628	Arterial Widening - 5 Lane	168 St: 12 Ave - 16 Ave	NCP Driven	3,200,000	3,200,000	-	-	-	-	-
10629	Arterial Widening - 5 Lane	168 St: 8 Ave - 12 Ave	NCP Driven	3,200,000	3,200,000	-	-	-	-	-
10635	Arterial Intersection Improvements	016 Ave / 164A St	NCP Driven	500,000	500,000	-	-	-	-	-
10636	Arterial Widening - 5 Lane (50% share w/ Citywide ID 10627)	016 Ave: Hwy 99 - 168 St (2 to 5 Lanes)	NCP Driven	6,000,000	1,500,000	-	-	-	1,500,000	3,000,000
10638	Arterial Intersection Improvements	008 Ave / 168 St	NCP Driven	1,000,000	1,000,000	-	-	-	-	-
13037	Arterial Intersection Improvements	016 Ave / 168 St	NCP Driven	500,000	250,000	-	-	-	-	250,000
13042	Collector Widening	Croydon Dr: 2500 blk - 28 Ave (West Side)	NCP Driven	1,250,000	-	1,250,000	-	-	-	-
13043	Collector Upsizing	Croydon Dr: 2500 blk - 28 Ave (East Side)	NCP Driven	375,000	-	375,000	-	-	-	-
14297	Collector Upsizing	028 Ave: Croydon Dr - 156 St (South Side)	NCP Driven	300,000	-	300,000	-	-	-	-
14298	Roundabout	020 Ave / Croydon Dr	NCP Driven	750,000	750,000	-	-	-	-	-
14299	Roundabout	020 Ave / 164 St Diversion	NCP Driven	750,000	750,000	-	-	-	-	-
14300	Traffic Signal	028 Ave / Croydon Dr	NCP Driven	200,000	-	200,000	-	-	-	-
14339	Interchange Ramps (50% share w/Citywide ID 10056)	024 Ave / Hwy 99	NCP Driven	5,000,000	2,500,000	-	-	-	2,500,000	-
14341	New Crossing (50% share w/Citywide ID 14247)	020 Ave / Hwy 99	NCP Driven	10,000,000	5,000,000	-	-	-	5,000,000	-
14342	Collector Widening	Croydon Dr: 28 Ave - 31 Ave (West Side)	NCP Driven	2,450,000	-	2,450,000	-	-	-	-
14343	Arterial Intersection Improvements	024 Ave / Croydon Dr	NCP Driven	1,500,000	-	1,500,000	-	-	-	-
				51,975,000	23,150,000	11,325,000	-	5,250,000	9,000,000	3,250,000

WATER

Program 1619 - Highway 99 Corridor

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
9914	1,000m of 400mm diameter	020 Ave: Croydon Dr - 164 St	NCP Driven	1,400,000	1,400,000	-	-
10356	400m of 350mm diameter	Croydon Dr: 26 - 28 Ave	NCP Driven	500,000	500,000	-	-
10359	Pressure Reducing Valve	016 Ave / 16600 blk	NCP Driven	180,000	180,000	-	-
10360	Hwy 99 Watermain Crossing	011 Ave / Hwy 99	NCP Driven	120,000	120,000	-	-
10502	1,300m of 300mm diameter	016 Ave: King George Blvd - 168 St	NCP Driven	1,600,000	1,600,000	-	-
16138	Jericho Reservoir - City of Surrey Contribution	Township of Langley (20400 - 73A Avenue)	NCP Driven	522,117	522,117	-	-
				4,322,117	4,322,117	-	-

SEWER

Program 1639 - Highway 99 Corridor

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
9444	1300m of 375mm diameter gravity sewer	15 Ave/Hwy 99 - 168 St/1200 blk (Grandview South PS)	NCP Driven	1,379,000	1,379,000	-	-
10510	DCC F/End - Hwy 99 Pump Station and Forcemain (parti: 164 St/1200 blk		NCP Driven	4,580,000	4,580,000	-	-
10544	DCC F/End - North Grandview Interceptor Phase 1	152 St / 32 Ave - 156 St/2900 blk - 160 St/2800 blk	NCP Driven	600,000	600,000	-	-
				6,559,000	6,559,000	-	-

DRAINAGE

Program 1669 - Highway 99 Corridor

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
10324	Flow Splitter and Ditch along Hwy 99	017 Ave / 162 St	NCP Driven	400,000	400,000	-	-
10325	Diversion Channel to Fergus	016 Ave / 164 St	NCP Driven	200,000	200,000	-	-
				600,000	600,000	-	-

8. ANNIEDALE-TYNEHEAD

The Anniedale-Tynehead Neighbourhood Concept Plan (NCP) area encompasses approximately 415 hectares and generally lies south of Highway 1 and north of the Agricultural Land Reserve located from 168 Street to Harvie Road.

The NCP designates the area for a variety of land uses including commercial, light industrial, business park, institutional, and a range of multi-family and single family housing densities (2 to 45 units per acre).

An area specific development cost charge was developed for this area to provide an equitable way to distribute the high costs of providing sanitary sewer, water, drainage, and transportation servicing infrastructure required to support build out of the NCP area. Major servicing requirements include:

- Four (4) new sanitary sewer pump stations, three low pressure systems, and a network of gravity trunk sewers and forcemains;
- Two (2) new water supply sources, and a network of distribution and feeder mains;
- Eight (8) community detention and water quality ponds, and construction of a major drainage system; and
- Highway overpasses, intersection roundabouts, traffic signals, road widening, and upgrades throughout the area.

Table 8.1 – Anniedale-Tynehead Cost Summary

No.	Program	Growth (\$)	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1021	Transportation	124,000,000	-	116,275,000	25,560,000	265,835,000
1621	Water	20,500,000	-	-	-	20,500,000
1641	Sewer	29,293,000	-	-	-	29,293,000
1676	Drainage	26,637,000	-	-	-	26,637,000
	Total	200,430,000	-	116,275,000	25,560,000	342,265,000

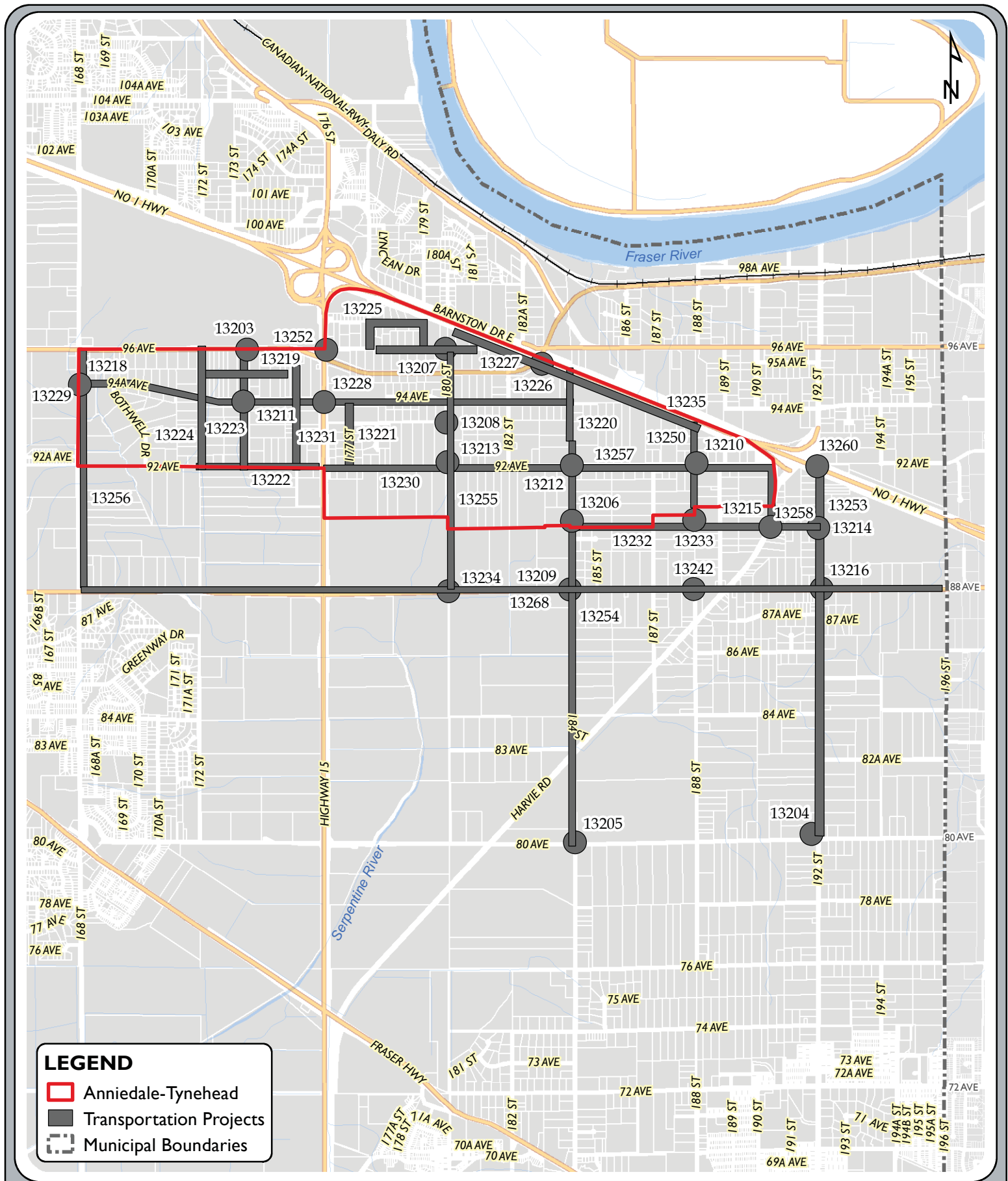
8.1 Anniedale-Tynehead Projects by Program

The following tables and figures identify the projects under the Anniedale-Tynehead programs for transportation, sanitary sewer, water, and stormwater. The tables provide the following information:

- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs - the high level estimates in 2016 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external, and Greater Vancouver Transportation Authority (GVTA) funding components. External funding may include sources such as the Provincial Government, the Federal Government, and Developers' contributions through their projects.

Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.

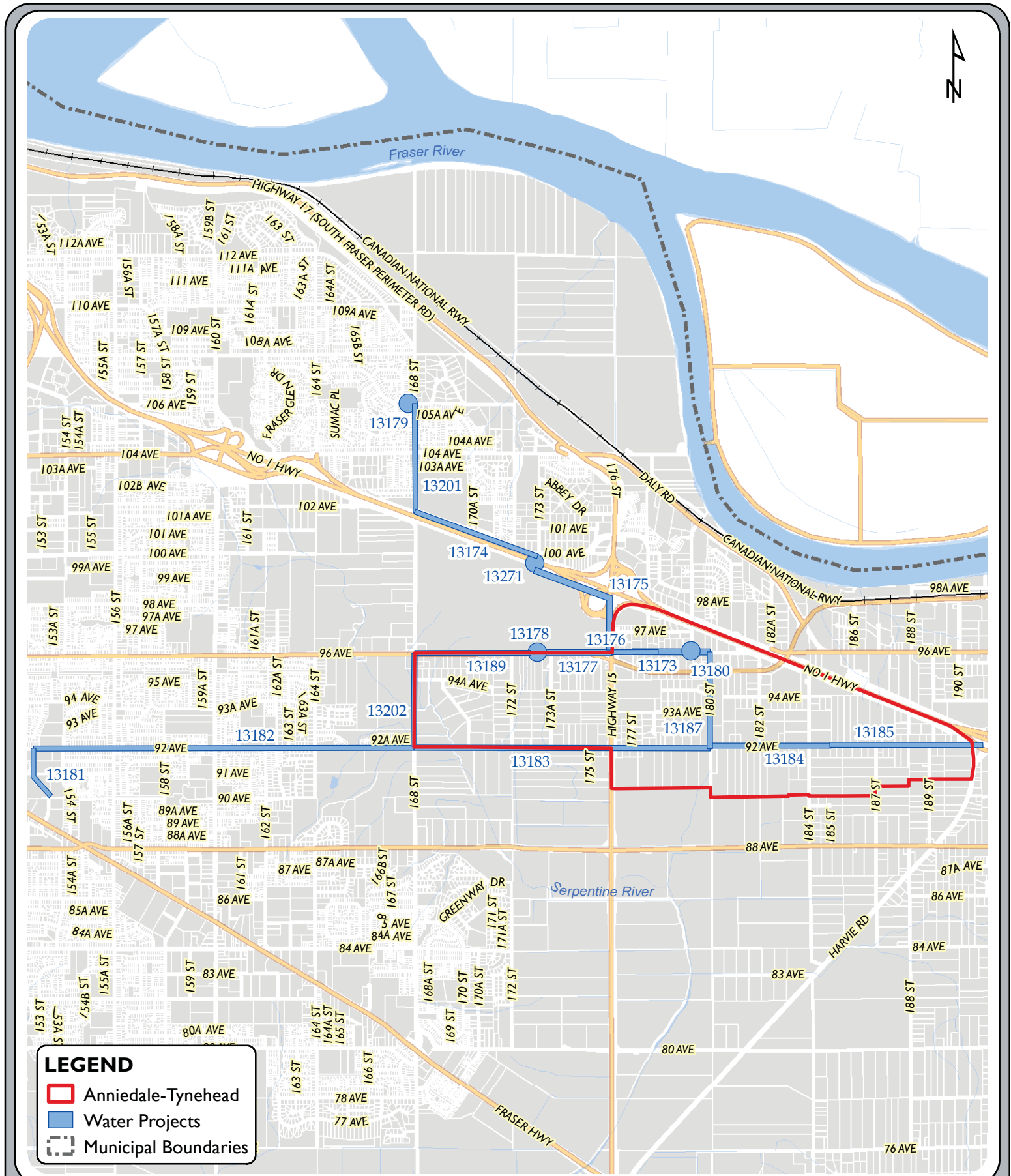


**FIGURE 8.1 - Transportation
Anniedale-Tynehead (Program 1021)**

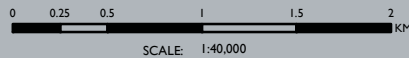
0 0.125 0.25 0.5 0.75 1 KM
SCALE: 1:32,000



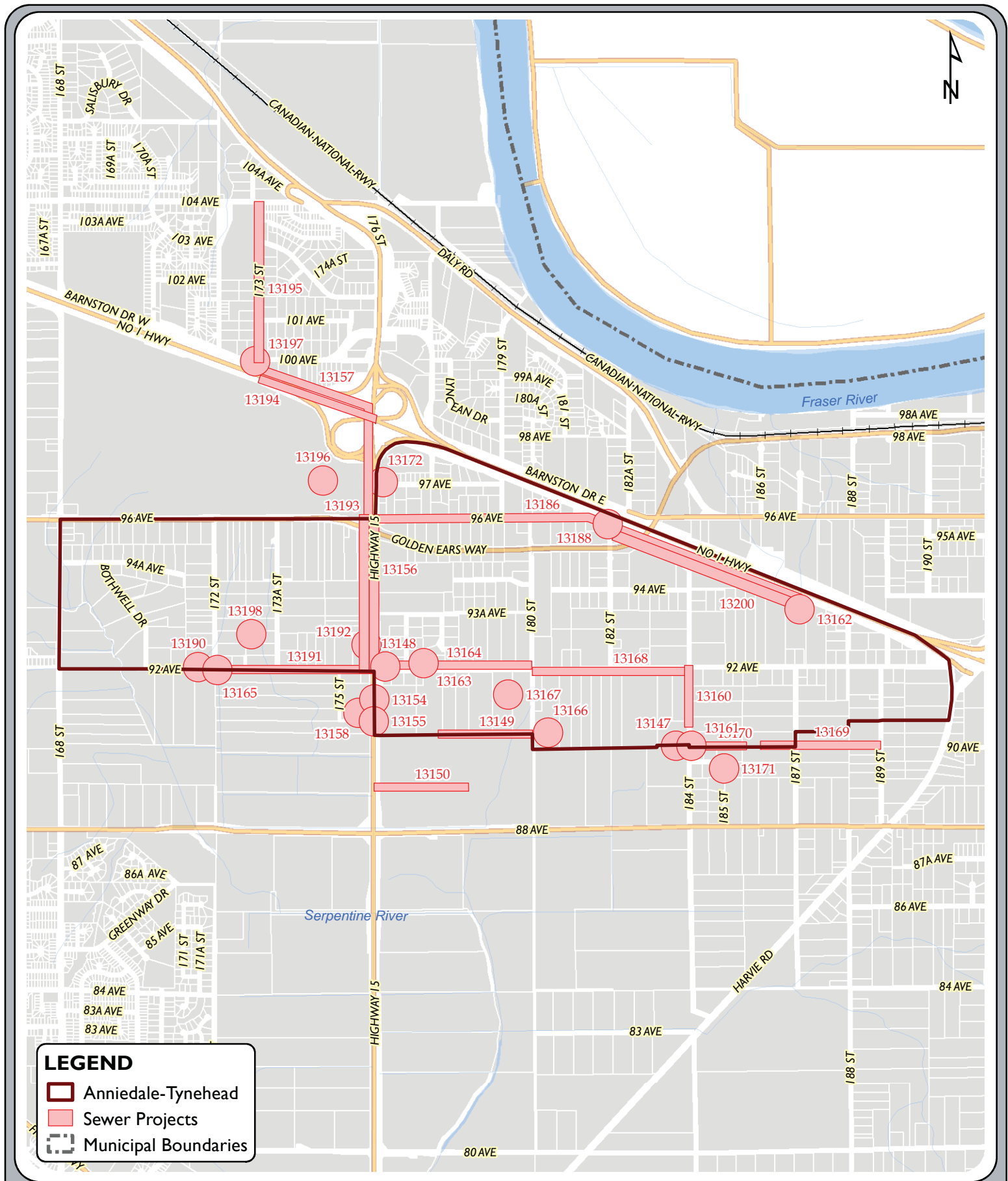
The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.



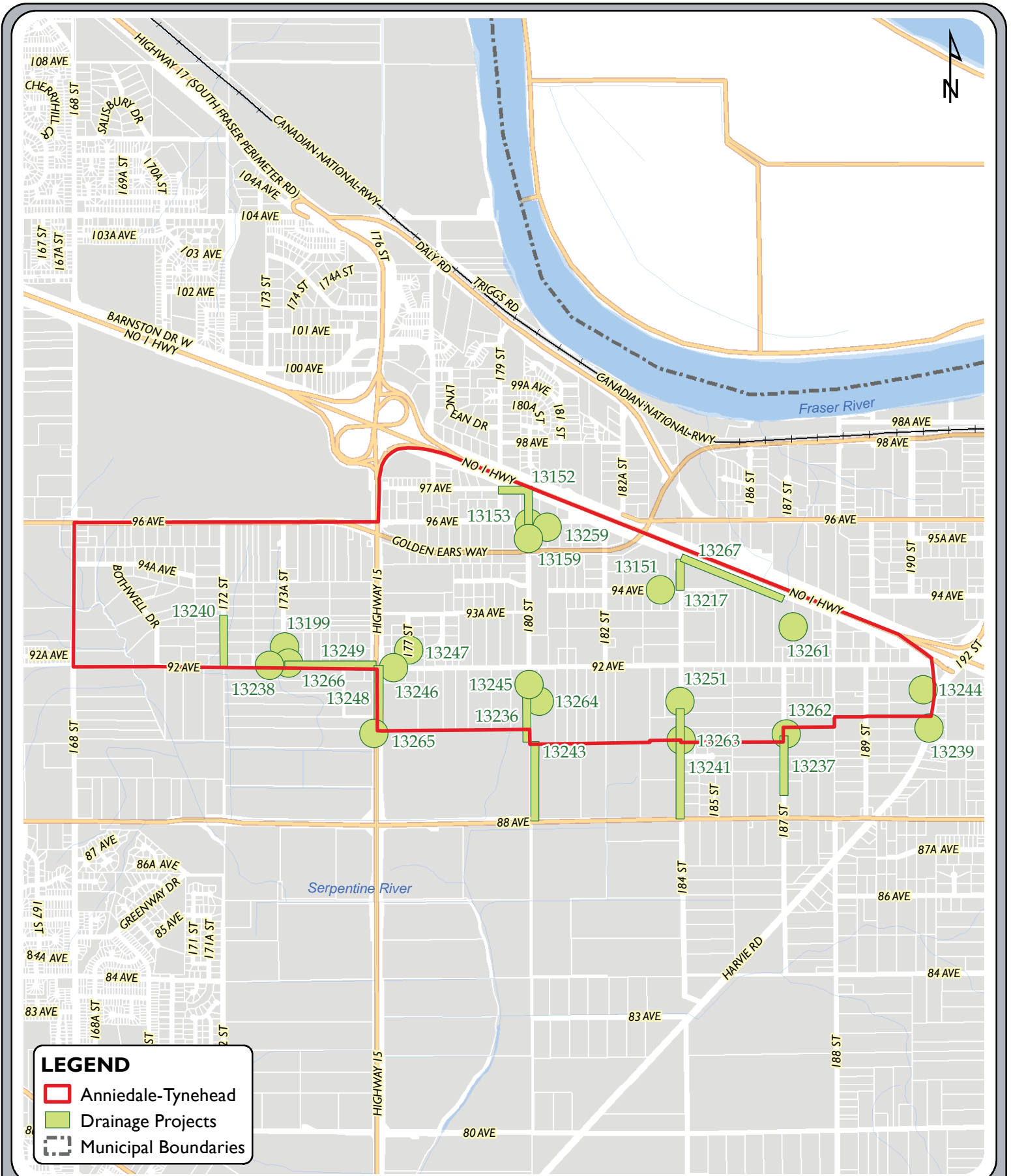
**FIGURE 8.2 - Water
Anniedale-Tynehead (Program 1621)**



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TRANSPORTATION
Program 1021 - Anniedale-Tynehead

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Arterial	Growth Non-Arterial	Non-Growth	External Funding	GVTA
13203	Traffic Signal	096 Ave / 173A St	NCP Driven	180,000	180,000	-	-	-	-
13204	Traffic Signal	192 St / 80 Ave	NCP Driven	180,000	90,000	-	-	90,000	-
13205	Traffic Signal	184 St / 80 Ave	NCP Driven	180,000	90,000	-	-	90,000	-
13206	Traffic Signal	184 St / 90 Ave	NCP Driven	180,000	90,000	-	-	90,000	-
13207	Traffic Signal	180 St / 96 Ave	NCP Driven	180,000	180,000	-	-	-	-
13208	Traffic Signal	180 St / 93A Ave	NCP Driven	180,000	180,000	-	-	-	-
13209	Traffic Signal	088 Ave / 184 St	NCP Driven	180,000	72,000	-	-	18,000	90,000
13210	Traffic Signal	092 Ave / 188 St	NCP Driven	180,000	180,000	-	-	-	-
13211	Roundabout/Intersection Improvements	094A Ave / 173A St	NCP Driven	750,000	750,000	-	-	-	-
13212	Traffic Signal	092 Ave / 184 St	NCP Driven	180,000	180,000	-	-	-	-
13213	Traffic Signal	092 Ave / 180 St	NCP Driven	180,000	180,000	-	-	-	-
13214	Traffic Signal	090 Ave / 192 St	NCP Driven	180,000	126,000	-	-	54,000	-
13215	Traffic Signal	090 Ave / Harvie Rd	NCP Driven	180,000	126,000	-	-	54,000	-
13216	Traffic Signal	088 Ave / 192 St	NCP Driven	180,000	72,000	-	-	18,000	90,000
13218	Traffic Signal	168 St / 94A Ave	NCP Driven	180,000	90,000	-	-	90,000	-
13219	Upsizing (Special Section DD)	095 Ave: 172 - 175 St	NCP Driven	1,120,000	168,000	-	-	952,000	-
13220	Upsizing	184 St: 92A Ave - Hwy 1	NCP Driven	1,475,000	310,000	-	-	1,165,000	-
13221	Upsizing	177 St: 92 - 94A Ave	NCP Driven	1,005,000	211,000	-	-	794,000	-
13222	Upsizing (Special Section EE)	175 St: 92 - 95 Ave	NCP Driven	1,545,000	351,000	-	-	1,194,000	-
13223	Upsizing	173A St: 92 - 96 Ave	NCP Driven	2,870,000	603,000	-	-	2,267,000	-
13224	Upsizing	172 St: 92 - 96 Ave	NCP Driven	2,870,000	603,000	-	-	2,267,000	-
13225	Anniedale Triangle Upsizing	097 Ave: 177A - 179 St, 177A St: 96 - 97 Ave, 179 St:	NCP Driven	3,000,000	675,000	-	-	2,325,000	-
13226	Frontage Road Overpass Structure	Hwy 1 / Golden Ears Way	NCP Driven	5,500,000	5,500,000	-	-	-	-
13227	Upsizing	096 Ave: 177A - 181A St	NCP Driven	2,515,000	527,000	-	-	1,988,000	-
13228	Overpass Structure	094 Ave / Hwy 15	NCP Driven	6,500,000	6,500,000	-	-	-	-
13229	Upsizing & South Side of 94A Ave (Special Section AA)	094A Ave: 168 - 176 St, 93A Ave: 176 - 184 St	NCP Driven	13,200,000	2,973,000	-	-	10,227,000	-
13230	Upsizing	092 Ave: 176 - 180 St	NCP Driven	3,112,000	654,000	-	-	2,458,000	-
13231	Upsizing & South Side (Special Section CC)	092 Ave: 172 - 176 St	NCP Driven	2,230,000	670,000	-	-	1,560,000	-
13232	Upsizing (Special Section KK)	090 Ave: 184 St - Harvie Rd	NCP Driven	1,810,000	325,000	-	-	1,485,000	-
13233	Roundabout/Intersection Improvements	090 Ave / 188 St	NCP Driven	750,000	750,000	-	-	-	-
13234	Traffic Signal	088 Ave / 180 St	NCP Driven	180,000	72,000	-	-	18,000	90,000
13235	Upsizing of Frontage Rd (Special Section GG)	Hwy 1 (S of): 181 - 188 St	NCP Driven	6,370,000	3,188,000	-	-	3,182,000	-
13242	Traffic Signal	088 Ave / 188 St	NCP Driven	180,000	72,000	-	-	18,000	90,000
13250	Upsizing	188 St: 90A Ave - Hwy 1	NCP Driven	3,533,000	742,000	-	-	2,791,000	-
13252	Interchange	Hwy 15 / GEW / 96 Ave	NCP Driven	47,500,000	11,870,000	-	-	35,630,000	-
13253	Arterial Ultimate Widening	192 St: 80 - 88 Ave	NCP Driven	19,200,000	9,600,000	-	-	9,600,000	-
13254	Arterial Ultimate Widening & New Arterial	184 St: 80 - 93 Ave	NCP Driven	21,600,000	10,800,000	-	-	10,800,000	-
13255	Arterial Ultimate Widening (Special Section HH)	180 St: 88 - 96 Ave	NCP Driven	12,800,000	12,800,000	-	-	-	-
13256	Arterial Ultimate Widening	168 St: 88 - 96 Ave	NCP Driven	14,400,000	7,200,000	-	-	7,200,000	-
13257	Arterial Interim Upsizing (Special Section II)	092 Ave: 180 St - Harvie Rd, Harvie Rd: 92 - 90 Ave	NCP Driven	18,200,000	18,200,000	-	-	-	-
13258	Arterial Ultimate Widening	090 Ave: Harvie Rd - 192 St	NCP Driven	2,700,000	1,890,000	-	-	810,000	-
13260	Interchange	Hwy 1 / 192 St	NCP Driven	16,000,000	4,000,000	-	-	12,000,000	-
13268	Arterial Ultimate Widening	088 Ave: 168 - 192 St	NCP Driven	50,400,000	20,160,000	-	-	5,040,000	25,200,000
				265,835,000	124,000,000			116,275,000	25,560,000

WATER

Program 1621 - Anniedale-Tynehead

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13138	Upsizing 9,345m of 300mm diameter	Various Locations	NCP Driven	1,870,000	1,870,000	-	-
13145	Upsizing 1,595m of 300mm diameter	Various Locations	NCP Driven	160,000	160,000	-	-
13173	440m of 300mm diameter	096 Ave: 177 - 180 St	NCP Driven	325,600	325,600	-	-
13174	1,060 of 450mm diameter	Hwy 1: 168 - 173 St	NCP Driven	901,000	901,000	-	-
13175	1,060 of 450mm diameter	Hwy 1 (S of): 173 -176 St, 176 St, 176 St, Hwy 1 (S of) - 96 Ave	NCP Driven	901,000	901,000	-	-
13176	350m of 450mm diameter	096 Ave: Hwy 15 - 178 St	NCP Driven	297,500	297,500	-	-
13177	505m of 300mm diameter	096 Ave: Hwy 15 - 173A St	NCP Driven	373,700	373,700	-	-
13178	PRV Station	096 Ave / 173A St	NCP Driven	115,000	115,000	-	-
13179	80m of 450mm diameter (tie-in to existing network)	Cherry Hill Cr / 168 St	NCP Driven	102,500	102,500	-	-
13180	PRV Station	096 Ave / 179 St	NCP Driven	115,000	115,000	-	-
13181	550m of 750mm diameter	153 St: 90 - 92 Ave	NCP Driven	935,000	935,000	-	-
13182	3,000m of 750mm diameter	092 Ave: 153 - 168 St	NCP Driven	5,100,000	5,100,000	-	-
13183	2,405 of 750mm diameter	092 Ave: 168 - 180 St	NCP Driven	4,087,000	4,087,000	-	-
13184	955m of 600mm diameter	092 Ave: 180 - 185 St	NCP Driven	1,260,600	1,260,600	-	-
13185	780m of 450mm diameter	092 Ave: 185 - 191 St	NCP Driven	663,000	663,000	-	-
13187	770m of 350mm diameter	180 St: 96 - 92 Ave	NCP Driven	592,900	592,900	-	-
13189	1,095m of 300mm diameter	096 Ave: 173A - 168 St	NCP Driven	814,000	814,000	-	-
13201	1,060m of 450mm diameter	168 St: 106 Ave - Hwy 1	NCP Driven	901,000	901,000	-	-
13202	760m of 350mm diameter	168 St: 96 - 92 Ave	NCP Driven	585,200	585,200	-	-
13271	Hwy 1 Crossing	Hwy 1 / 173 St	NCP Driven	400,000	400,000	-	-
				20,500,000	20,500,000	-	-

SEWER

Program 1641 - Anniedale-Tynehead

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13139	435m of 375mm diameter	Tynehead 375mm diameter upsizing	NCP Driven	104,500	104,500	-	-
13140	160m of 300mm diameter	Tynehead 300mm diameter upsizing	NCP Driven	22,000	22,000	-	-
13141	270m of 250mm diameter	Tynehead 250mm diameter upsizing	NCP Driven	17,500	17,500	-	-
13142	1,135m of 250mm diameter	Anniedale A1/B1/B4 250mm diameter upsizing	NCP Driven	72,500	72,500	-	-
13143	350m of 300mm diameter	Anniedale A1/B1/B4 300mm diameter upsizing	NCP Driven	47,500	47,500	-	-
13144	75m of 375mm diameter	Anniedale A1/B1/B4 375mm diameter upsizing	NCP Driven	18,000	18,000	-	-
13146	100m of 300mm diameter	Anniedale B3 300mm diameter upsizing	NCP Driven	13,500	13,500	-	-
13147	Anniedale B2 pump station	184 St / 89 Ave	NCP Driven	4,400,000	4,400,000	-	-
13148	390m of 375mm diameter	092 Ave: 177 - 176 St	NCP Driven	93,500	93,500	-	-
13149	690m of 300mm diameter	091 Ave: 180 - 178 St	NCP Driven	94,000	94,000	-	-
13150	135m of 375mm diameter	090A Ave: 178 - 176 St	NCP Driven	32,500	32,500	-	-
13154	200m of 400mm diameter	Hwy 15: 91 - 92 Ave	NCP Driven	194,000	194,000	-	-
13155	Anniedale B4 odour control	Hwy 15 / 91 Ave	NCP Driven	60,000	60,000	-	-
13156	980m of 500mm diameter	Hwy 15: 92 - 96 Ave	NCP Driven	1,065,500	1,065,500	-	-
13157	1150m of 650mm diameter	Hwy 15: 96 Ave - Hwy 1, Hwy 1: Hwy 15 - 173 St	NCP Driven	1,396,000	1,396,000	-	-
13158	Anniedale B4 Pump Station	176 St / 091 Ave	NCP Driven	3,500,000	3,500,000	-	-
13160	400m of 250mm diameter	184 St: 90 - 92 Ave	NCP Driven	304,000	304,000	-	-
13161	Anniedale B2 odour control	090 Ave / 184 St	NCP Driven	60,000	60,000	-	-
13162	Anniedale Pump Station	Hwy 1 (S of) / 187 St	NCP Driven	3,600,000	3,600,000	-	-
13163	265m of 375mm diameter	092 Ave: 178 - 177 St	NCP Driven	63,500	63,500	-	-
13164	850m of 250mm diameter	092 Ave: 180 - 176 St	NCP Driven	646,000	646,000	-	-
13165	Tynehead Pump Station	092 Ave / 172 St	NCP Driven	3,300,000	3,300,000	-	-
13166	220m of 300mm diameter	091 Ave: 180 - 181 St	NCP Driven	30,000	30,000	-	-
13167	Anniedale B3 Trunk ROW	091 Ave / 179 St	NCP Driven	225,000	225,000	-	-
13168	920m of 250mm diameter	092 Ave: 184 - 180 St	NCP Driven	699,000	699,000	-	-
13169	890m of 525mm diameter	090A Ave: 189 - 186 St	NCP Driven	822,000	822,000	-	-
13170	190m of 600 diameter	090 Ave: 186 - 184 St	NCP Driven	191,000	191,000	-	-
13171	Anniedale B2 Trunk ROW	089 Ave / 185 St, 90A Ave / 188 St, 91 Ave / 188A St	NCP Driven	235,000	235,000	-	-
13172	Hwy 15 crossing	Hwy 15 / 97 Ave	NCP Driven	200,000	200,000	-	-
13186	2140m of 400mm diameter	Hwy 1 (S of): 182 - 187 St, 96 Ave: 182 St - Hwy 15	NCP Driven	2,078,000	2,078,000	-	-
13188	Anniedale A odour control	096 Ave / 182 St	NCP Driven	60,000	60,000	-	-
13190	355m of 375mm diameter	092 Ave: 171 - 172 St	NCP Driven	85,500	85,500	-	-
13191	835m of 400mm diameter	092 Ave: 176 - 172 St	NCP Driven	811,000	811,000	-	-
13192	Tynehead forcemain odour control	Hwy 15 / 92A Ave	NCP Driven	60,000	60,000	-	-
13193	980m of 400mm diameter	Hwy 15: 96 - 92 Ave	NCP Driven	952,000	952,000	-	-
13194	1150m of 400mm diameter	Hwy 1 (S of): 176 - 173 St, Hwy 15: 96 Ave - Hwy 1 (S of)	NCP Driven	1,117,000	1,117,000	-	-
13195	800m of 600mm diameter	173 St: Hwy 1 - 104 Ave	NCP Driven	1,133,000	1,133,000	-	-
13196	Tynehead Trunk ROW	097 Ave / 175A St	NCP Driven	90,000	90,000	-	-
13197	Hwy 1 crossing	Hwy 1 / 173 St	NCP Driven	500,000	500,000	-	-
13198	South Port kells odour control	173 St / 092A Ave	NCP Driven	660,000	660,000	-	-
13200	1000m of 375mm diameter upsizing	Hwy 1 (S of): 182 - 187 St	NCP Driven	240,000	240,000	-	-
				29,293,000	29,293,000		

DRAINAGE

Program 1676 - Anniedale-Tynehead

Project ID	Project Name	Project Location	Priority	Total Cost	Growth Component	Non-Growth Component	External Funding
13151	200m of 1050mm diameter	094 Ave: 183 - 184 St	NCP Driven	371,000	371,000	-	-
13152	250m of 900mm diameter	097 Ave: 179 - 180 St, 180 St: 97 - 96 Ave	NCP Driven	347,000	347,000	-	-
13153	65m of 1050mm diameter	096 Ave / 180 St	NCP Driven	108,000	108,000	-	-
13159	160m of 1050mm diameter	180 St: 96 Ave - Golden Ears Way	NCP Driven	297,000	297,000	-	-
13199	150m of 900mm diameter	173A St: 92 - 93 Ave	NCP Driven	249,000	249,000	-	-
13217	150m of 1050mm diameter	184 St: 94 - 95 Ave	NCP Driven	279,000	279,000	-	-
13236	270m of 525mm diameter	180 St: 91 - 90 Ave	NCP Driven	266,000	266,000	-	-
13237	250m of ditch improvement	187 St: 89 - 90 Ave	NCP Driven	34,000	34,000	-	-
13238	200m of ditch improvement	092 Ave: 173 - 173A St	NCP Driven	27,000	27,000	-	-
13239	100m of ditch improvement	Harvie Rd: 91 - 90 Ave	NCP Driven	14,000	14,000	-	-
13240	150m of 750mm diameter	172 St: 93 - 92 Ave	NCP Driven	220,000	220,000	-	-
13241	400m of ditch improvement	184 St: 90 - 88 Ave	NCP Driven	54,000	54,000	-	-
13243	400m of ditch improvement & ROW	180 St: 90 - 88 Ave	NCP Driven	509,000	509,000	-	-
13244	Anniedale 6 detention pond	191 St / 91 Ave	NCP Driven	3,279,000	3,279,000	-	-
13245	150m of 450mm diameter	180 St: 91 - 92 Ave	NCP Driven	134,000	134,000	-	-
13246	170m of 600mm diameter	092 Ave: 176 - 177 St	NCP Driven	220,000	220,000	-	-
13247	350m of 900mm diameter	177 St: 93 - 92 Ave	NCP Driven	217,000	217,000	-	-
13248	350m of ditch improvement	176 St: 90A - 92 Ave	NCP Driven	809,000	809,000	-	-
13249	290m of 900mm diameter	092 Ave: 173A - 176 St	NCP Driven	47,000	47,000	-	-
13251	Anniedale 7 detention pond	184 St: 91A - 90 Ave	NCP Driven	482,000	482,000	-	-
13259	Anniedale 8 water quality pond	096 Ave / 180 St	NCP Driven	4,888,000	4,888,000	-	-
13261	Anniedale 5 water quality pond	187 St / 93 Ave	NCP Driven	2,217,000	2,217,000	-	-
13262	Anniedale 4 water quality pond	090 Ave / 187 St	NCP Driven	1,439,000	1,439,000	-	-
13263	Anniedale 3 water quality pond	184 St / 90 Ave	NCP Driven	1,679,000	1,679,000	-	-
13264	Anniedale 2 water quality pond	180 St / 91 Ave	NCP Driven	1,738,000	1,738,000	-	-
13265	Tynehead 1 water quality pond	90A Ave / Hwy 15	NCP Driven	2,967,000	2,967,000	-	-
13266	1050m of 1050mm diameter	173A St / 92 Ave	NCP Driven	2,122,000	2,122,000	-	-
13267		Hwy 1 (S of): 184 - 187 St	NCP Driven	1,624,000	1,624,000	-	-
				26,637,000	26,637,000		



City of Surrey, Engineering Department
13450 104 Avenue
Surrey, BC V3T 1V

For further details, visit the Ten Year Plan website:
www.surrey.ca/city-services/3135.aspx
All photos provided by Staff, Engineering Department, 2016

CITY OF SURREY

BYLAW NO. 19107

A Bylaw of the City to impose development cost charges.

.....

WHEREAS:

- A. Pursuant to Part 14, Division 19 of the *Local Government Act* and the regulations passed pursuant thereto, the Council of the City of Surrey may, by bylaw, impose development cost charges; and
- B. The development cost charges may be imposed for the purpose of providing funds to assist the City of Surrey in paying the capital cost of providing, constructing, altering, or expanding sewage, water, drainage and highway facilities, other than off-street parking facilities, and providing and improving park land or any of them, in order to service, directly or indirectly, the development for which the charge is being imposed.

NOW THEREFORE, the Council of the City of Surrey, ENACTS AS FOLLOWS:

TITLE

- 1. This Bylaw may be cited for all purposes as "Surrey Development Cost Charge Bylaw, 2017, No. 19107".

DEFINITIONS AND INTERPRETATION

- 2. For the purposes of this Bylaw, unless the context otherwise requires:

Anniedale-Tynehead means the area of the City of Surrey shown as Area XXVII in Schedule "F" of the Surrey Zoning Bylaw.

Assisted Living Residence means a multiple-unit residential building containing 45 dwelling units per acre or greater which is subject to a housing agreement pursuant to Section 483 of the *Local Government Act* between the City of Surrey and the owner of the building, but does not include not-for-profit rental housing. The housing agreement will specify that the multiple unit residential building will:

- (a) be occupied only by persons who are "Qualified Occupants";
- (b) be registered as an "Assisted Living Residence" under the *Community Care and Assisted Living Act*, S.B.C. 2002, c. 75, as amended from time to time; and
- (c) not be strata-titled or further subdivided.

BA or Building Area means building area as defined by the total sum of all floor areas enclosed or partially enclosed by the exterior perimeter of a building or structure including without limitation stairways, elevator shafts, storage rooms, mechanical rooms and basements, and excluding areas for parking that are provided as an accessory use to the building or structure.

Campbell Heights means the area of the City of Surrey shown as Area XVII in Schedule "F" of the Surrey Zoning Bylaw.

City Centre means the area of the City of Surrey shown in Schedule "D.1" of the Surrey Zoning Bylaw.

Community Charter means the *Community Charter*, S.B.C. 2003, c.26, as amended from time to time.

Completed means, in the case of a subdivision, an application for which the servicing agreement is completed and signed, appropriate zoning is in place, all applicable fees and levies are paid, all conditions of approval are fulfilled and the final plans of subdivision are ready for approval by the approving officer.

DA or Developed Area means that area of a lot containing any improvements for the accommodation of a building, accessory building, structure, storage or parking or circulation area, landscaping or anything or device to facilitate the permitted use.

DU or Dwelling Unit means dwelling unit as defined in the Surrey Zoning Bylaw.

Effective Date means the date on which this bylaw comes into force, which is established as May 16, 2017.

Federal and Provincial Buildings means buildings or land owned by the Provincial or Federal government for use by the Provincial or Federal Government or Crown corporations, excluding hospitals operating under Federal or Provincial legislation, located in any zone.

Highway 99 Corridor means the area of the City of Surrey shown as Area XX in Schedule "F" of the Surrey Zoning Bylaw.

Hospitals means hospitals as defined under the *Hospital Act*, R.S.B.C. 1996, c. 200, as amended from time to time, the *Hospital Insurance Act*, R.S.B.C. 1996, c. 204, as amended from time to time, private hospitals as defined under the *Hospital Act* and private mental hospitals as defined under the *Mental Health Act*, R.S.B.C. 1996, c. 288, as amended from time to time.

In-stream means, in reference to an application, not determined, rejected or withdrawn and:

- (a) in the case of an application for subdivision, one for which the application form has been completed, the application fee has been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application;
- (b) in the case of an application for building permit, one for which the application form has been completed, the application fee has been paid, and all required supporting documentation including all applicable architectural, structural, plumbing, electrical, mechanical and site drainage drawings necessary to make the application complete has been submitted and accepted by the City as a legitimate application;
- (c) in the case of a rezoning application, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application; and

- (d) in the case of an application for development permit, one for which the application form has been completed, the application fees have been paid and all required supporting documentation necessary to make the application complete has been submitted and accepted by the City as a legitimate application.

Issuable means, in the case of a building permit, an application which meets the requirements of an in-stream application and for which:

- (a) Council has approved any applicable rezoning and/or development permit and/or development variance permit;
- (b) all required off-site legal encumbrances relating to engineering services have been registered at the Land Title Office on title to the subject property;
- (c) any plan, including a plan of subdivision, consolidation, or road dedication, that would affect the legal description of the subject property has been registered at the Land Title Office on title to the subject property;
- (d) all review comments arising from the building permit application review process have been addressed to the satisfaction of the City; and
- (e) all applicable fees and levies have been paid.

Local Government Act means *Local Government Act*, R.S.B.C. 2015, c. 1, as amended from time to time.

LA or Lot area means the total area of a lot.

Minor Change means a change to the scope of work authorized by a building permit which results in an increase of five percent (5%) or less in the cumulative total square footage of the dwelling unit of all dwelling units, the building area, the number of dwelling units within a building or on a lot, or the developed area of a lot.

Not-for-profit rental housing means a not-for-profit housing development project subject to either the Memorandum of Understanding on Responding to Homelessness between the BC Housing Management Commission and the City of Surrey dated for reference March 31, 2008 or the Memorandum of Understanding Regarding the Development of Housing for the Homeless between the BC Housing Management Commission and the City of Surrey dated for reference September 2015.

Person with Disability means a person who, in the written opinion of a medical doctor or registered psychologist, has a significant permanent disability that cannot be significantly permanently improved by medical treatment, and that produces a loss or impairment of physical or mental ability.

Precursor application means, in relation to a building permit, that there is an:

- (a) in-stream development permit application and that the development authorized by the building permit is entirely within the area of land that is subject to the development permit application; or
- (b) in-stream rezoning application and that the development authorized by the building permit is entirely within the area of land that is subject to the rezoning application.

Qualified Occupant means:

- (a) a person who is 70 years of age or older;
- (b) a person with disability;
- (c) a person who is employed to manage the assisted living residence, provided only one dwelling unit within the assisted living residence is designated for this type of occupant; and
- (d) a person who is a companion or spouse of a person in (a), (b) or (c) herein, and resides in the same dwelling unit.

Revision Permit means a revised building permit issued by the City where the City has accepted a proposed change to the scope of work originally authorized by a building permit.

Seniors Apartments means a multiple unit residential building with a minimum density of 45 dwelling units per acre and where there exists a housing agreement pursuant to Section 483 of the *Local Government Act* between the City of Surrey and the owner specifying that the multiple unit residential building will be restricted to seniors, but does not include not-for-profit rental housing.

Square footage of the DU or sq. ft. of DU means the cumulative floor area measured from the outside edge of the exterior walls or sheathing of the dwelling unit and, where applicable, the centre line of the common walls dividing the dwelling units and shall include all the internal walls within each dwelling unit excluding parking areas (to a maximum of 250 square feet per parking space), crawl spaces less than or equal to 1.5 metres [5 ft.] clear height, balconies, canopies, terraces and sun decks.

Substantial change means a change to the scope of work authorized by a building permit which results in either:

- (a) an increase by more than five percent (5%) in the cumulative total square footage of the dwelling units, the building area, the number of dwelling units within a building or on a lot, or the developed area of a lot; or
- (b) a change to the zone or land use on which the development cost charges was based, as determined by the City.

Surrey Zoning Bylaw means "Surrey Zoning By-law, 1993, No. 12000", as amended from time to time.

West Clayton means the area of the City of Surrey shown as Area XXIX in Schedule "F" of the Surrey Zoning Bylaw.

- 3. Words not specifically defined in this Bylaw shall have the same meaning as defined in Surrey Zoning Bylaw.
- 4. If any section, clause or phrase of this Bylaw is held to be invalid by a court of competent jurisdiction, the invalid portion shall be severed and the remainder of the Bylaw shall be deemed to have been enacted without the invalid portion.

DEVELOPMENT COST CHARGES

- 5. Every person who obtains:
 - (a) approval of a subdivision; or
 - (b) a building permit authorizing the construction, alteration or extension of a building or structure including a building permit that authorizes the construction, alteration or extension of a building or part of a building that

will, after the construction, alteration or extension, contain one or more self-contained dwelling units,

shall pay to the City of Surrey the development cost charge in the amounts set out in Schedule "B" of this Bylaw except for those within:

- West Clayton, which shall pay the amounts set out in Schedule "B" plus Schedule "C" of this Bylaw;
- City Centre, which shall pay the amounts set out in Schedule "B" plus Schedule "D" of this Bylaw; and
- Anniedale-Tynehead, which shall pay the amounts set out in Schedule "E" of this Bylaw.

The list of zones set out in Schedule "A" of this Bylaw include zones in both Surrey Zoning Bylaw and "Surrey Zoning By-law, 1979, No. 5942", as amended ("Bylaw 5942"). The development cost charges payable for any zones where Bylaw 5942 is applicable are determined by referring to its equivalent zone in the "Bylaw 12000" column in Schedule "A".

6. Development cost charges shall be payable at the time specified below:
 - (a) after application for a subdivision has been made, but before the final approval of the subdivision has been given, for agricultural, single family and single family with a secondary suite land use, or all zones and land uses within Campbell Heights;
 - (b) for all zones and land uses within Campbell Heights whose development cost charges were not collected upon approval of the subdivision as described in clause 6(a), after application for a building permit has been made, but before the building permit has been issued; and
 - (c) for all cases other than those described in clause 6(a) and clause 6(b), after application for a building permit has been made, but before the building permit has been issued.

EXEMPTIONS

7. A development cost charge is not payable if any of the following applies in relation to a development authorized by a building permit:
 - (a) the permit authorizes the construction, alteration or extension of a building or part of a building that is, or will be, after the construction, alteration or extension, exempt from taxation under Section 220(1)(h) or 224(2)(f) of the *Community Charter*;
 - (b) in the case of residential zones and land uses, the value of the work authorized by the permit does not exceed \$100,000;
 - (c) for all cases other than those described in clause 7(b), the value of the work authorized by the permit does not exceed \$50,000;
 - (d) the size of the dwelling unit is no greater than 312.2 ft² [29 m²];
 - (e) the permit authorizes the construction, alteration or extension of a building or part of a building that is, or will be, after the construction, alteration or extension, used for not-for-profit rental housing.

MIXED USE AND COMPREHENSIVE DEVELOPMENTS

8. For mixed use developments, the development cost charge payable shall be calculated separately for each portion of the development contained in the building permit or subdivision application in accordance with the zones and land uses identified in the applicable Schedule(s). The total payable will be the sum of the development cost charges for each portion of the development.
9. Development cost charges payable for comprehensive development zones shall be calculated as specified in the applicable comprehensive development zone amendment to Surrey Zoning Bylaw.

CHANGES TO WORK AUTHORIZED BY A BUILDING PERMIT

10. If a minor change to a building permit is proposed, the development cost charges will be recalculated based on the increase in building area, developed area, or dwelling units (as applicable) using the rates in the Surrey Development Cost Charge Bylaw in effect at the time of issuance of the revision permit. The difference between the original development cost charge amount and the recalculated development cost charge amount shall be paid to the City prior to the issuance of the revision permit.
11. If a substantial change to a building permit is proposed, the development cost charges will be recalculated on the entire project at the rates in the Surrey Development Cost Charge Bylaw in effect at the time of issuance of the revision permit. The difference between the original development cost charge amount and the recalculated development cost charge amount shall be paid to the City prior to the issuance of the revision permit.

EFFECTIVE DATE AND TRANSITIONAL PROVISIONS

12. This Bylaw will come into force on the Effective Date.
13. *Surrey Development Cost Charge Bylaw, 2016, No.18664*, and all amendments thereto, is hereby repealed except in the case of:
 - (a) applications for subdivision of land that are in-stream on the Effective Date and which are completed within one year of the Effective Date;
 - (b) building permits that are in-stream on the Effective Date and which are issuable within one year of the Effective Date; and
 - (c) building permits on lands with a precursor application in-stream on the Effective Date and where the related building permit is issuable within one year of the Effective Date,in which case *Surrey Development Cost Charge Bylaw, 2016, No. 18664*, and all amendments thereto, shall apply. *Surrey Development Cost Charge Bylaw, 2016, No. 18664*, and all amendments thereto, shall be wholly repealed one year from the Effective Date.

PASSED FIRST READING on the ____ day of _____, 2017.

PASSED SECOND READING on the ____ day of _____, 2017.

PASSED THIRD READING on the ____ day of _____, 2017.

APPROVED BY THE DEPUTY INSPECTOR OF MUNICIPALITIES on the ____ day of _____, 2017.

RECONSIDERED AND FINALLY ADOPTED, signed by the Mayor and Clerk, and sealed with the Corporate Seal on the ____ day of _____, 2017.

_____MAYOR

_____CLERK

SCHEDULE "A"

LIST OF ZONES

SURREY ZONING BYLAWS 12000 AND 5942

	Name of Zone	Bylaw 12000 Zone	Bylaw 5942 Zone
Residential Zones	General Agriculture	A-1	A-1, A-3
	Intensive Agriculture	A-2	A-2
	One-Acre Residential	RA	RS
	Acreage Residential Gross Density	RA-G	R-A(G)
	Half-Acre Residential	RH	R-1
	Half-Acre Residential Gross Density	RH-G	R-H(G)
	Single Family Residential	RF	R-F, R-F(R), R-F(F)
	Single Family Residential Secondary Suite	RF-SS	RF-SS, RFR-SS
	Single Family Residential Gross Density	RF-G	R-F(C)
	Duplex Residential	RM-D	R-F(D)
	Manufactured Home Residential	RM-M	R-F(M), CT(2)
	Multiple Residential 15	RM-15	RT-1
	Multiple Residential 30	RM-30	RM-1
	Multiple Residential 45	RM-45	RM-2
	Multiple Residential 70	RM-70	RM-3
	Multiple Residential Commercial 150	RMC-150	RM-4
	Special Care Housing 1	RMS-1	P-P, P-P(2)
Special Care Housing 2	RMS-2	P-P, P-P(2)	
Institutional Zones	Cemetery	PC	P-C
	Assembly Hall 1	PA-1	P-A
	Assembly Hall 2	PA-2	P-A

SCHEDULE "A"

LIST OF ZONES continued

SURREY ZONING BYLAWS 12000 AND 5942

	Name of Zone	Bylaw 12000 Zone	Bylaw 5942 Zone
Commercial Zones	Local Commercial	C-4	C-L
	Community Commercial	C-8	C-S
	Town Centre Commercial	C-15	CR-1, CR-2, CR-3, CR-4
	Downtown Commercial	C-35	C-C
	Highway Commercial Industrial	CHI	C-H, I-S
	Self-Service Gasoline Station	CG-1	C-G(1)
	Combined Service Gasoline Station	CG-2	C-G(2), CG
	Tourist Accommodation	CTA	C-T(1), C-T(2)
	Child Care	CCR	P-P(1)
	Commercial Recreation	CPR	P-R, P-D
	Golf Course	CPG	P-R
	Marina	CPM	P-R
Industrial Zones	Business Park	IB, IB-3	I-1, I-P(2), I-G, I-4
	Light Impact Industrial	IL	I-G, I-S, I-T, I-W
	High Impact Industrial	IH	I-H, I-W
	Salvage Industrial	IL	I-L(S)
	Agro-Industrial	IA	I-A
Comprehensive Development Zone	Comprehensive Development	CD	C-D

Schedule "B"
City Wide

Surrey Development Cost Charge Bylaw No. 19107, 2017

No	Zones and Land Uses	DCC Components						Total	Units for Each Column
		Water	Sewer	Arterial Roads	Collector Roads	Drainage	Parkland Acquisition		
Agricultural (except for lines 33, 34 & 35)									
1	A-1, A-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	/lot
Single Family Residential (except for lines 33, 34 & 35)									
2	RA, RA-G, RH, RH-G, RC (Types I and II), RF-O	\$2,402	\$2,668	\$14,803	\$3,534	\$7,024	\$4,440	\$34,871	/lot
3	RF, RF-G, RF-SS, RF-12, RF-12C, RF-13	\$2,402	\$2,668	\$14,803	\$3,534	\$4,014	\$8,880	\$36,301	/lot
4	RF-10, RF-10S, RF-9, RF-9C, RF-9S, RF-SD, RM-23	\$2,160	\$2,400	\$13,480	\$3,218	\$2,368	\$8,086	\$31,712	/lot
5	RM-D	\$4,321	\$4,799	\$26,959	\$6,436	\$4,014	\$16,173	\$62,702	/lot (a)
Multi Family Residential (except for lines 33, 34 & 35)									
6	RM-M	\$1,379	\$1,531	\$6,755	\$1,612	\$883	\$8,086	\$20,246	/pad or /DU
7	RM-10, RM-15, RM-30, RC (Type III) (except line 8)	\$1.23	\$1.37	\$5.57	\$1.33	\$1.50	\$8.14	\$19.14	/sq.ft. of DU (b)
8	RM-30 (in City Centre)	\$1.23	\$1.37	\$5.57	\$1.33	\$1.50	\$8.14	\$19.14	/sq.ft. of DU (b)
9	RM-45, RM-70 (except lines 10,11,12, & 13)	\$1.45	\$1.61	\$7.24	\$1.73	\$1.06	\$8.29	\$21.38	/sq.ft. of DU (c)
10	RM-45, RM-70 (for Seniors Apartments not in City Centre)	\$1.62	\$1.80	\$4.71	\$1.12	\$1.18	\$9.27	\$19.70	/sq.ft. of DU (c)
11	RM-45, RM-70 (for Assisted Living Residences)	\$1.62	\$1.80	\$4.71	\$1.12	\$1.18	\$3.09	\$13.52	/sq.ft. of DU (c)
12	RM-45, RM-70 (in City Centre, except for lines 11 & 13)	\$1.62	\$1.80	\$5.15	\$1.23	\$1.18	\$4.94	\$15.92	/sq.ft. of DU (d)
13	RM-45, RM-70 (for Seniors Apartments in City Centre)	\$1.62	\$1.80	\$4.71	\$1.12	\$1.18	\$4.94	\$15.37	/sq.ft. of DU (d)
14	RM-135, RMC-135, RMC-150 (except lines 15, 16, & 17)	\$1.62	\$1.80	\$6.43	\$1.54	\$0.46	\$9.11	\$20.96	/sq.ft. of DU (e)
15	RM-135, RMC-135, RMC-150 (for Seniors Apartments not in City Centre)	\$1.62	\$1.80	\$4.82	\$1.15	\$0.46	\$9.11	\$18.96	/sq.ft. of DU (e)
16	RM-135, RMC-135, RMC-150 (Assisted Living Residences)	\$1.62	\$1.80	\$4.82	\$1.15	\$0.46	\$3.04	\$12.89	/sq.ft. of DU (e)
17	RM-135, RMC-135, RMC-150 (in City Centre) (except for line 16)	\$1.62	\$1.80	\$4.11	\$0.98	\$0.46	\$4.82	\$13.79	/sq.ft. of DU (f)
18	RMS-1, RMS-2, RMS-1A	\$0.71	\$0.79	\$1.13	\$0.27	\$1.00	\$0.00	\$3.90	/sq.ft. of BA
Commercial Zones excluding CTA, CPG, CPM, CPR, and CCR (except for lines 33, 34 & 35)									
19	Commercial - Ground floor	\$0.71	\$0.79	\$5.50	\$1.31	\$2.61	\$0.00	\$10.92	/sq.ft. of BA (g)
20	Commercial - All other floors	\$0.71	\$0.79	\$3.47	\$0.83	\$0.52	\$0.00	\$6.32	/sq.ft. of BA (g)
CTA, CPG, CPM, CPR, and CCR (except for lines 33, 34 & 35)									
21	CTA	\$1,070	\$1,180	\$3,380	\$810	\$880	\$0	\$7,320	/pad (h)
22	CPG, CPM, CPR, CCR	\$0.78	\$0.79	\$4.38	\$1.05	\$1.57	\$0	\$8.57	/sq.ft. of BA
Dwelling Units in Non Residential									
23	DU in Non Residential Zones (excluding line 24)	\$1.45	\$1.61	\$7.24	\$1.73	\$1.06	\$8.29	\$21.38	/sq.ft. of DU (c)
24	DU in Non Residential Zones (in City Centre)	\$1.62	\$1.80	\$5.15	\$1.23	\$1.18	\$4.94	\$15.92	/sq.ft. of DU (d)
Industrial (except for lines 33,34 & 35)									
25	All Industrial Zones & Land Uses - Developed Area	\$7,107	\$7,894	\$29,645	\$7,077	\$34,118	\$0	\$85,841	/acre (g)
26	All Industrial Zones & Land Uses - All other floors	\$0.16	\$0.18	\$0.43	\$0.10	\$0.16	\$0	\$1.03	/sq.ft. of BA (g) (i)
Institutional (except for lines 33, 34 & 35)									
27	PA-1, PA-2, PC	\$0.78	\$0.79	\$0.00	\$0.00	\$1.57	\$0.00	\$3.14	/sq.ft. of BA (g)
28	Public & Private Schools (to grade 12)	\$0.78	\$0.79	\$0.00	\$0.00	\$1.57	\$0.00	\$3.14	/sq.ft. of BA (g)
29	Public & Private Schools (Post Secondary)	\$0.78	\$0.79	\$3.50	\$0.84	\$1.57	\$0.00	\$7.48	/sq.ft. of BA (g)
30	Hospitals	\$0.78	\$0.79	\$1.75	\$0.42	\$1.57	\$0.00	\$5.31	/sq.ft. of BA (g)
31	Federal and Provincial Buildings	\$0.78	\$0.79	\$3.44	\$0.82	\$0.52	\$0.00	\$6.35	/sq.ft. of BA (g)
32	Municipal Buildings	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	/sq.ft. of BA
Highway 99 Corridor									
33	All Commercial Zones & Land Uses	\$18,295	\$25,441	\$110,315	\$60,515	\$248	\$11,332	\$226,146	/acre (g)
34	All Industrial Zones & Land Uses	\$18,295	\$25,441	\$32,446	\$17,799	\$248	\$11,332	\$105,561	/acre (g)
Campbell Heights									
35	All Zones & Land Uses	\$14,777	\$12,593	\$91,423	\$15,113	\$9,875	\$0	\$143,781	/acre (g)

Notes:

West Clayton rates equal to the sum of the rates provided Schedule "B" and Schedule "C"
City Centre rates equal the sum of the rates provided in Schedule "B" and Schedule "D"
Annisdale-Tynehead rates are the rates provided in Schedule "E"

- (a) Based on an ultimate of 2 DU per lot.
- (b) Rate to be charged based on the total sq. ft. of DU to a maximum of \$33,495/DU.
- (c) Rate to be charged based on the total sq. ft. of DU to a maximum of \$28,863/DU.
- (d) Rate to be charged based on the total sq. ft. of DU to a maximum of \$21,492/DU.
- (e) Rate to be charged based on the total sq. ft. of DU to a maximum of \$26,200/DU.
- (f) Rate to be charged based on the total sq. ft. of DU to a maximum of \$17,238/DU.
- (g) Dwelling Units within Non Residential Zones and Land Uses shall be charged the applicable rate in line 23 or line 24.
- (h) Rate to be charged per trailer pad or camping site in addition to rate of lines 19 and 20 for BA of any other building.
- (i) Rate to be charged for all other floors in addition to rate of line 25.

Schedule "C"
West Clayton - Additional Rates

Surrey Development Cost Charge Bylaw No. 19107, 2017

No	Zones and Land Uses	DCC Components		Total	Units for Each Column
		Sewer	Drainage		
Single Family Residential					
1	RA, RA-G, RH, RH-G, RC (Types I and II)	\$2,038	\$2,957	\$4,995	/lot
2	RF, RF-G, RF-12, RF-12C, RF-13	\$2,038	\$1,690	\$3,728	/lot
3	RF-10, RF-10S, RF-SD, RM-23	\$1,812	\$997	\$2,809	/lot
4	RM-D	\$3,623	\$1,690	\$5,313	/lot (a)
Multi Family Residential					
5	RM-10, RM-15, RM-30, RC (Type III)	\$1.02	\$0.63	\$1.65	/sq.ft. of DU (b)
6	RM-45, RM-70 (except lines 8 & 9)	\$0.92	\$0.44	\$1.36	/sq.ft. of DU (c)
7	RM-45, RM-70 (for Seniors Apartments)	\$1.03	\$0.50	\$1.53	/sq.ft. of DU (c)
8	RM-45, RM-70 (for Assisted Living Residences)	\$1.03	\$0.50	\$1.53	/sq.ft. of DU (c)
9	RMS-1, RMS-2, RMS-1A	\$0.45	\$0.42	\$0.87	/sq.ft. of BA
Commercial Zones					
10	Commercial - Ground floor	\$0.45	\$1.10	\$1.55	/sq.ft. of BA (d)
11	Commercial - All other floors	\$0.45	\$0.22	\$0.67	/sq.ft. of BA (d)
13	CPG, CPM, CPR, CCR	\$0.45	\$0.66	\$1.11	/sq.ft. of BA
Dwelling Units in Non Residential					
14	DU in Non Residential Zones	\$0.92	\$0.44	\$1.36	/sq.ft. of DU (c)
Institutional					
15	PA-1, PA-2, PC	\$0.45	\$0.66	\$1.11	/sq.ft. of BA (d)
16	Public & Private Schools (to grade 12)	\$0.45	\$0.66	\$1.11	/sq.ft. of BA (d)
17	Public & Private Schools (Post Secondary)	\$0.45	\$0.66	\$1.11	/sq.ft. of BA (d)
18	Hospitals	\$0.45	\$0.66	\$1.11	/sq.ft. of BA (d)
19	Federal and Provincial Buildings	\$0.45	\$0.22	\$0.67	/sq.ft. of BA (d)
20	Municipal Buildings	\$0.00	\$0.00	\$0.00	/sq.ft. of BA

Notes:

West Clayton rates equal to the sum of the rates provided Schedule "B" and Schedule "C"

City Centre rates equal the sum of the rates provided in Schedule "B" and Schedule "D"

Annedale-Tynehead rates are the rates provided in Schedule "E"

(a) Based on an ultimate of 2 DU per lot.

(b) Rate to be charged based on the total sq. ft. of DU to a maximum of \$2,888/DU.

(c) Rate to be charged based on the total sq. ft. of DU to a maximum of \$1,836/DU.

(d) Dwelling Units within Non Residential Zones and Land Uses shall be charged the applicable rate in line 14.

Schedule "D"
City Centre - Additional Rates

Surrey Development Cost Charge Bylaw No. 19107, 2017

No	Zones and Land Uses	DCC Component	Total	Units for Each Column
		Local Road		
Multi Family Residential				
1	RM-10, RM-15, RM-30, RC (Type II)	\$2.83	\$2.83	/sq.ft. of DU (a)
2	RM-45, RM-70	\$2.62	\$2.62	/sq.ft. of DU (b)
3	RM-135, RMC-135, RMC-150	\$2.09	\$2.09	/sq.ft. of DU (c)
Commercial Zones				
4	Commercial - Ground floor	\$2.79	\$2.79	/sq.ft. of BA (d)
5	Commercial - All other floors	\$1.76	\$1.76	/sq.ft. of BA (d)
Dwelling Units in Non Residential				
6	DU in Non Residential Zones	\$2.62	\$2.62	/sq.ft. of DU (b)
Institutional				
7	Public & Private Schools (Post Secondary)	\$1.78	\$1.78	/sq.ft. of BA (d)
8	Hospitals	\$0.89	\$0.89	/sq.ft. of BA (d)
9	Federal and Provincial Buildings	\$1.75	\$1.75	/sq.ft. of BA (d)
10	Municipal Buildings	\$0.00	\$0.00	/sq.ft. of BA

Notes:

West Clayton rates equal to the sum of the rates provided Schedule "B" and Schedule "C"

City Centre rates equal the sum of the rates provided in Schedule "B" and Schedule "D"

Anniedale-Tynehead rates are the rates provided in Schedule "E"

(a) Rate to be charged based on the total sq. ft. of DU to a maximum of \$4,953/DU.

(b) Rate to be charged based on the total sq. ft. of DU to a maximum of \$3,537/DU.

(c) Rate to be charged based on the total sq. ft. of DU to a maximum of \$2,613/DU.

(d) Dwelling Units within Non Residential Zones and Land Uses shall be charged the applicable rate in line 6.

Schedule "E"
Anniedale-Tynehead
Surrey Development Cost Charge Bylaw No. 19107, 2017

No	Zones and Land Uses	DCC Components						Total	Units for Each Column
		Water	Sewer	Arterial Roads	Collector Roads	Drainage	Parkland Acquisition		
Agricultural									
1	A-1, A-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	/lot
Single Family Residential									
2	RA, RA-G, RH, RH-G, RC (Types I and II), RF-O	\$3,136	\$4,485	\$18,747	\$4,853	\$8,336	\$3,083	\$42,640	/lot
3	RF, RF-G, RF-SS, RF-12, RF-12C, RF-13	\$3,136	\$4,485	\$18,747	\$4,853	\$4,763	\$6,167	\$42,151	/lot
4	RF-10, RF-10S, RF-9, RF-9C, RF-9S, RF-SD, RM-23	\$2,826	\$4,042	\$17,060	\$4,417	\$2,810	\$5,612	\$36,767	/lot
5	RM-D	\$5,652	\$8,085	\$34,120	\$8,833	\$4,763	\$11,224	\$72,677	/lot (a)
Multi Family Residential									
6	RM-M	\$2,003	\$2,866	\$10,123	\$2,621	\$1,048	\$5,612	\$24,273	/pad or /DU
7	RM-10, RM-15, RM-30, RC (Type III)	\$1.76	\$2.52	\$8.00	\$2.07	\$1.84	\$6.41	\$22.60	/sq.ft. of DU (b)
8	RM-45, RM-70 (except lines 9 & 10)	\$2.00	\$2.87	\$10.31	\$2.67	\$1.19	\$6.48	\$25.52	/sq.ft. of DU (c)
9	RM-45, RM-70 (for Seniors Apartments)	\$2.00	\$2.87	\$6.00	\$1.55	\$1.19	\$6.48	\$20.09	/sq.ft. of DU (c)
10	RM-45, RM-70 (for Assisted Living Residences)	\$2.00	\$2.87	\$6.00	\$1.55	\$1.19	\$2.16	\$15.77	/sq.ft. of DU (c)
11	RM-135, RMC-135, RMC-150 (except lines 12 & 13)	\$1.93	\$2.76	\$7.76	\$2.01	\$0.44	\$5.24	\$20.14	/sq.ft. of DU (e)
12	RM-135, RMC-135, RMC-150 (for Seniors Apartments)	\$1.93	\$2.76	\$5.82	\$1.51	\$0.44	\$5.24	\$17.70	/sq.ft. of DU (e)
13	RM-135, RMC-135, RMC-150 (Assisted Living Residences)	\$1.93	\$2.76	\$5.82	\$1.51	\$0.44	\$1.75	\$14.21	/sq.ft. of DU (e)
11	RMS-1, RMS-2, RMS-1A	\$0.97	\$1.38	\$1.69	\$0.44	\$1.19	\$0.00	\$5.67	/sq.ft. of BA
Commercial Zones excluding CTA, CPG, CPM, CPR, and CCR									
12	Commercial - Ground floor	\$0.97	\$1.38	\$8.25	\$2.14	\$3.10	\$0.00	\$15.84	/sq.ft. of BA (d)
13	Commercial - All other floors	\$0.97	\$1.38	\$5.20	\$1.35	\$0.62	\$0.00	\$9.52	/sq.ft. of BA (d)
CTA, CPG, CPM, CPR, and CCR									
14	CTA	\$1,450	\$2,080	\$5,060	\$1,310	\$1,050	\$0	\$10,950	/pad (e)
15	CPG, CPM, CPR, CCR	\$1.06	\$1.38	\$6.56	\$1.70	\$1.86	\$0.00	\$12.56	/sq.ft. of BA
Dwelling Units in Non Residential									
16	DU in Non Residential Zones	\$2.00	\$2.87	\$10.31	\$2.67	\$1.19	\$6.48	\$25.52	/sq.ft. of DU (c)
Industrial									
17	All Industrial Zones & Land Uses - Developed Area	\$9,679	\$13,844	\$60,928	\$15,773	\$40,489	\$0	\$140,713	/acre (d)
18	All Industrial Zones & Land Uses - All other floors	\$0.22	\$0.32	\$0.64	\$0.17	\$0.19	\$0.00	\$1.54	/sq.ft. of BA (d) (f)
Institutional									
19	PA-1, PA-2, PC	\$1.06	\$1.38	\$0.00	\$0.00	\$1.86	\$0.00	\$4.30	/sq.ft. of BA (d)
20	Public & Private Schools (to grade 12)	\$1.06	\$1.38	\$0.00	\$0.00	\$1.86	\$0.00	\$4.30	/sq.ft. of BA (d)
21	Public & Private Schools (Post Secondary)	\$1.06	\$1.38	\$5.25	\$1.36	\$1.86	\$0.00	\$10.91	/sq.ft. of BA (d)
22	Hospitals	\$1.06	\$1.38	\$2.62	\$0.68	\$1.86	\$0.00	\$7.60	/sq.ft. of BA (d)
23	Federal and Provincial Buildings	\$1.06	\$1.38	\$5.16	\$1.33	\$0.62	\$0.00	\$9.55	/sq.ft. of BA (d)
24	Municipal Buildings	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	/sq.ft. of BA

Notes:

West Clayton rates equal to the sum of the rates provided Schedule "B" and Schedule "C"

City Centre rates equal the sum of the rates provided in Schedule "B" and Schedule "D"

Anniedale-Tynehead rates are the rates provided in Schedule "E"

(a) Based on an ultimate of 2 DU per lot.

(b) Rate to be charged based on the total sq. ft. of DU to a maximum of \$39,550/DU.

(c) Rate to be charged based on the total sq. ft. of DU to a maximum of \$34,452/DU.

(d) Rate to be charged based on the total sq. ft. of DU to a maximum of \$14,999/DU.

(e) Rate to be charged based on the total sq. ft. of DU to a maximum of \$17,000/DU.

(d) Rate to be charged based on the total sq. ft. of DU to a maximum of \$11,375/DU.

(d) Dwelling Units within Non Residential Zones and Land Uses shall be charged the applicable rate in line 16.

(e) Rate to be charged per trailer pad or camping site in addition to rate of lines 12 and 13 for BA of any other building.

(f) Rate to be charged for all other floors in addition to rate of line 17.

Proposed Amendments to Surrey Official Community Plan

The following amendments proposed for *Surrey Official Community Plan Bylaw, 2013, No. 18020* are presented and highlighted in the order the sections appear in the document and include:

Tables and Figures:

1. Page 6, after the words “Figure 26: Sanitary Sewer Infrastructure” adding a new row that reads:

“Figure 26a: District Energy Systems”

Policies:

2. Page 112, Theme C: Infrastructure and Facilities, C1. Adaptable, Greener Infrastructure, by deleting “Figure 24: Water Distribution Infrastructure” and replacing it with a new “Figure 24: Water Distribution Infrastructure”, shown as Attachment “A”.
3. Page 113, Theme C: Infrastructure and Facilities, C1. Adaptable, Greener Infrastructure, by deleting “Figure 25: Stormwater Infrastructure” and replacing it with a new “Figure 25: Stormwater Infrastructure”, shown as Attachment “B”.
4. Page 115, Theme C: Infrastructure and Facilities, C1. Adaptable, Greener Infrastructure, by deleting “Figure 26: Sanitary Sewer Infrastructure” and replacing it with a new “Figure 26: Sanitary Sewer Infrastructure”, shown as Attachment “C”.
5. Page 116, Theme C: Infrastructure and Facilities, C1. Adaptable, Greener Infrastructure, Energy, Policy C1.29, after the words “Advance the implementation of District Energy Systems” add the words “(see Figure 26a)”.
6. Page 116, Theme C: Infrastructure and Facilities, C1. Adaptable, Greener Infrastructure, by adding a new “Figure 26a: District Energy Systems” map, shown as Attachment “D”.

Figure 24: Water Distribution Infrastructure

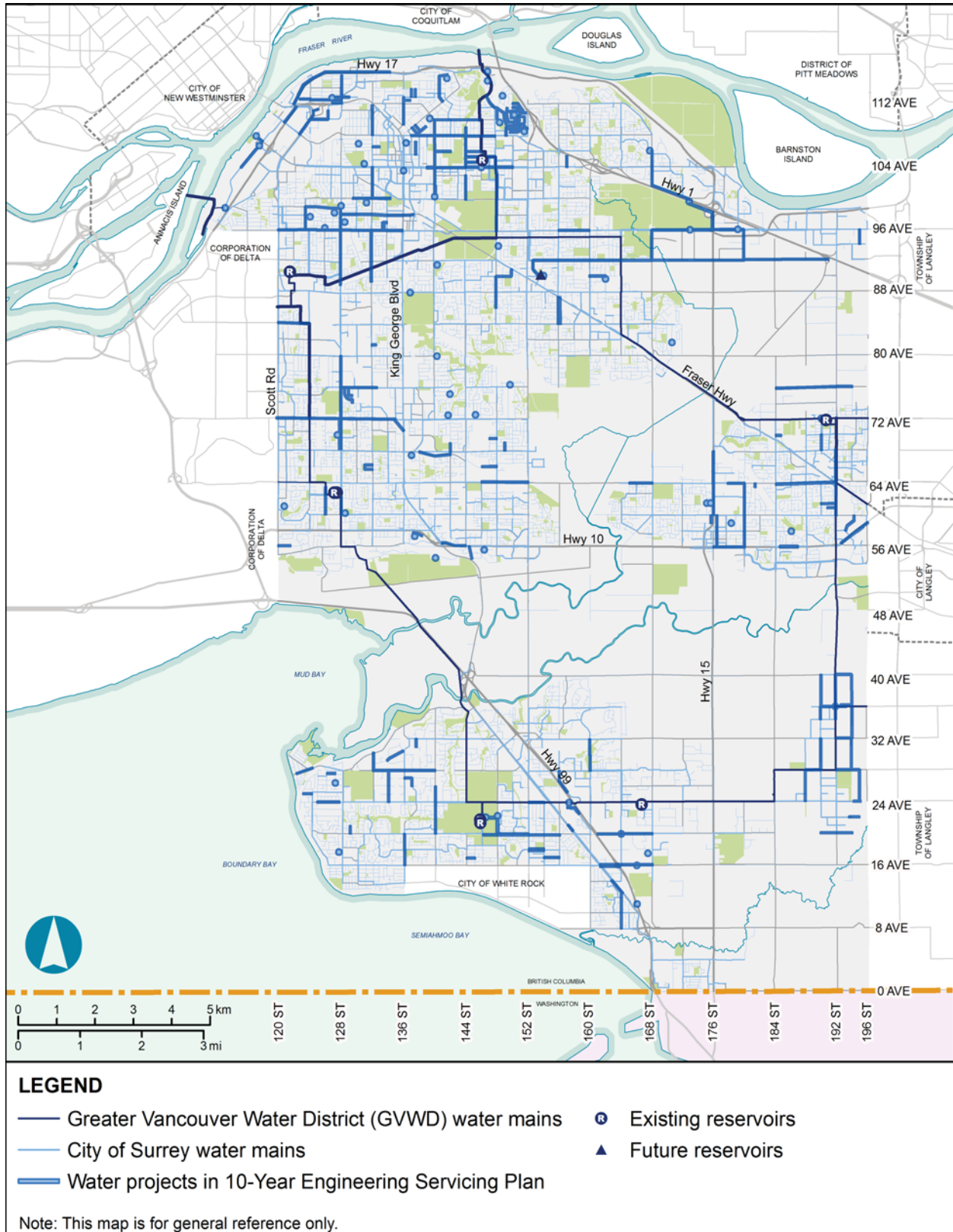


Figure 25: Stormwater Infrastructure

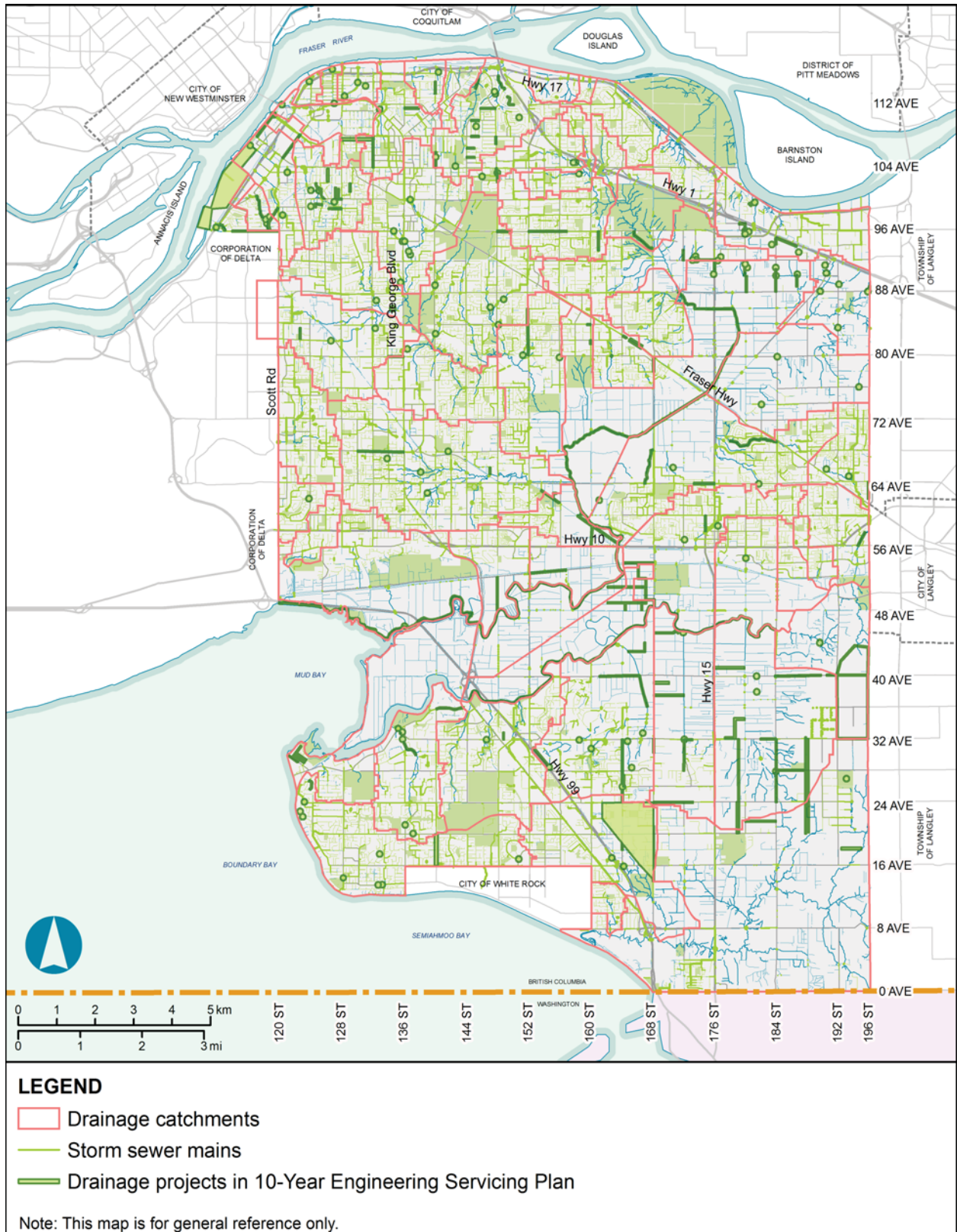


Figure 26: Sanitary Sewer Infrastructure

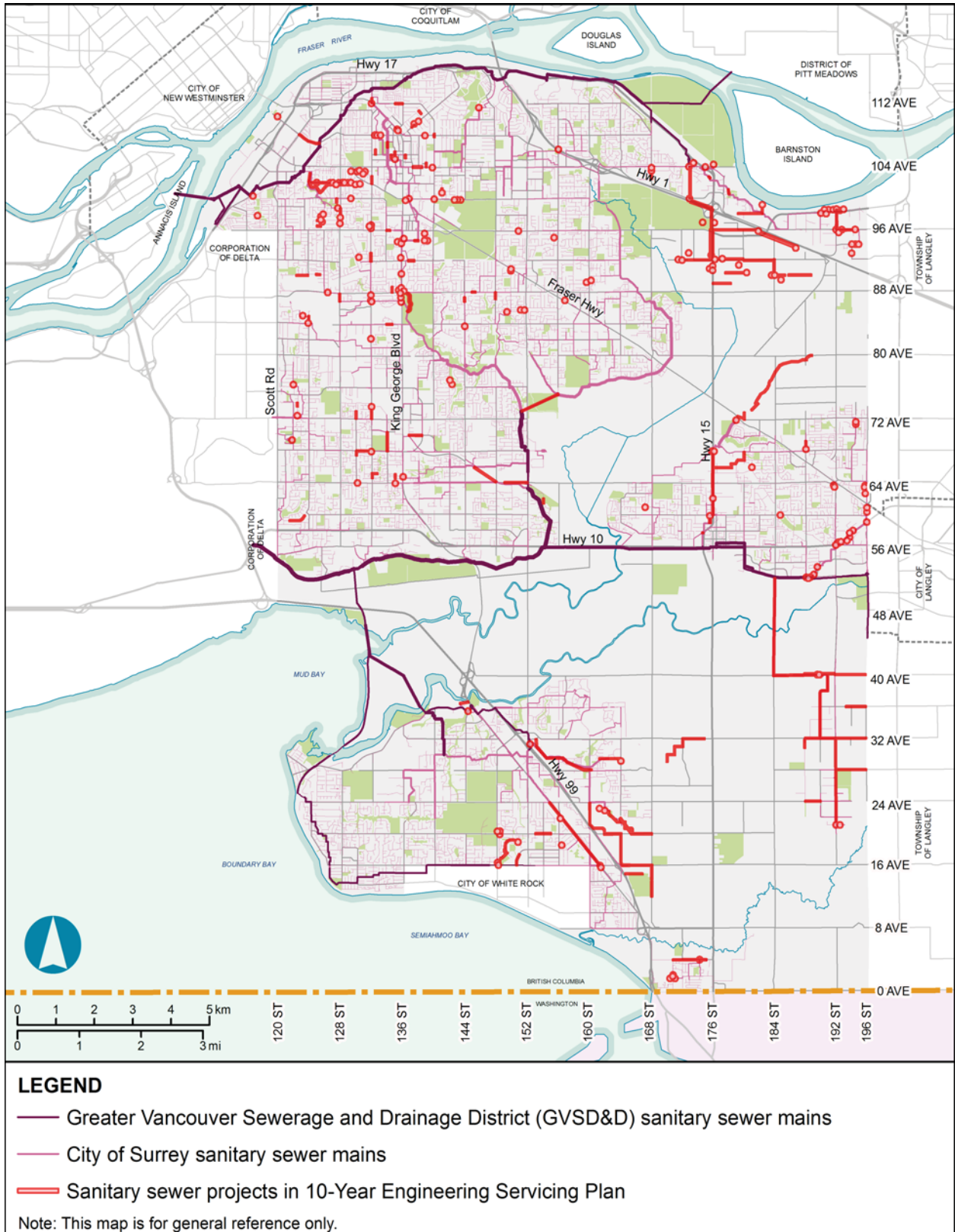


Figure 26a: District Energy Systems

