

NO: R020

COUNCIL DATE: February 5, 2018

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## REGULAR COUNCIL

**TO: Mayor & Council** **DATE: January 30, 2018**

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

**SUBJECT: 10-Year (2018-2027) Servicing Plan and 2018 Development Cost Charge Bylaw**

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## RECOMMENDATION

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

1. Approve the proposed 10-Year (2018-2027) 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 Development Cost Charge (“DCC”) rate adjustments to fund the 10-Year Servicing Plan and the Parkland Acquisition Program; and
3. Subject to the Bylaw being given the required readings, authorize staff to forward the Bylaw to the Provincial Ministry of Municipal Affairs and Housing for approval prior to its final adoption by Council.

## 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 Municipal Affairs and Housing 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 DCC rates.

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 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 2018-2027 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.

In 2017, Council adopted the current 10-Year (2017-2026) Servicing Plan and related DCC rates.

**DISCUSSION**

Since the 10-Year Servicing Plan update last year, in addition to the works planned for inclusion in 2018, a number of planning and engineering studies have been completed that identify additional infrastructure needs in the City. These include:

- LRT Route Alignment planning;
- 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 anticipated 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 construct all of the identified projects, but rather identifies projects that will be constructed on a year-to-year basis as funding becomes available either through DCCs that are collected on new development (growth funding for projects that support growth), City annual budgets and from utilities and/or from other agencies (non-growth, external and GVTA funding for projects that support the City’s existing residents).

**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:

<b>Program</b>	<b>Growth Component (DCC Eligible)</b>	<b>Non-Growth Component</b>	<b>External and GVTA Funding</b>	<b>Total</b>
Arterial Roads	\$410,728,250	\$354,067,500	\$194,786,000	\$1,041,267,000
Non-Arterial Roads	\$81,685,250			
Drainage	\$70,529,000	\$134,974,000	-	\$205,503,000
Sewer	\$101,945,589	\$75,484,674	-	\$177,430,263
Water	\$92,188,520	\$149,642,625	-	\$241,831,145
<b>TOTAL</b>	<b>\$757,076,609</b>	<b>\$714,168,799</b>	<b>\$194,786,000</b>	<b>\$1,666,031,408</b>

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 3%. 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 3% to 1% to reduce the demands on the Parks, Recreation & Culture Department’s financial resources.

**2018 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		
	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%	3%	1%

The proposed DCC rates are summarized below:

**City-Wide DCCs**

Zone	Existing DCC Rate	Proposed DCC Rate	Rate Change \$	Rate Change %
SF (RF, RF-12, RFC) (per lot)	\$36,301	\$41,220	\$4,919	13.6%
SF Small Lot (RF-9, RF-SD) (per lot)	\$31,712	\$36,193	\$4,481	14.1%
RM-10, RM-15 and RM-30 (per sq. ft.)	\$19.14	\$21.28\$	\$2.14	11.2%
RM-45 and RM-70 (per sq. ft.)	\$21.38	\$24.18	\$2.80	13.1%
RM-45 and RM-70 in City Centre (per sq. ft.)	\$18.54 *	\$20.59 *	\$2.05	11.11%
RM-135 and RMC-150 (per sq. ft.)	\$20.96	\$23.62	\$2.66	12.7%
RM-135 and RMC-150 in City Centre (per sq. ft.)	\$15.88 *	\$17.58 *	\$1.70	10.7%
Commercial (ground floor) (per sq. ft.)	\$10.92	\$11.98	\$1.06	9.7%
Industrial (per acre)	\$85,841	\$91,807	\$5,966	7.0%

Note: \* 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 \$	Rate Change %
All Zones (per acre)	\$143,781	\$147,837	\$4,056	2.8%

### Highway 99 Corridor DCCs

Zone	Existing DCC Rate	Proposed DCC Rate	Rate Change \$	Rate Change %
All Commercial Zones (per acre)	\$226,146	\$230,442	\$4,296	1.9%
All Industrial Zones (per acre)	\$105,561	\$111,991	\$6,430	6.1%

With this latest phase of DCC rate increases, the proposed DCC rates are approximately 2% higher than originally projected in 2015 prior to the implementation of the first phase of DCC rate increases. Several projects to support growth, including infrastructure upsizing along the SNG LRT route, have been since added to the proposed 10-Year Servicing Plan account for this minor DCC differentiation.

#### *Anniedale-Tynehead NCP Area Specific DCC Rate*

No increases to the DCC rates for developments in the Anniedale-Tynehead Neighbourhood Concept Plan (“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 continuing to review both the sewer and water servicing strategies in the NCP area to seek 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 Local Area Plan (“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.

#### **Public Consultation**

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](http://www.surrey.ca/DCCs). Staff also hosted a Public Open House on January 23, 2018 that was advertised in the local newspapers and through an Urban Development Institute member newsletter. The Public Open House was attended by 2 individuals. There was support for the proposed Servicing Plan and DCC rate increases by those in attendance as they believe that the development community needs to pay its equitable share of the cost to support growth; however, there was concern that increases to DCC rates are one of many factors that are challenging housing affordability in the region.

The Urban Development Institute, the Commercial Real Estate Development Association (NAIOP Vancouver) and the City’s Development Advisory Committee (“DAC”) were also directly 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. Staff are of the opinion that regularly consulting with the development community on the proposed DCC rate increases for 2018

beginning in the fall of 2015 has provided the development community significant advance notice of these increases.

During the meeting with the DAC, a question was raised about what portion of the three years of rate increases can be attributed to an increase in program value and what portion of the rate increases can be attributed to a change in assumptions (population projections, dwelling unit projections and dwelling unit area projections). The table below illustrates the City's 2014 DCC rates that were in effect until May 16, 2016, the proposed 2018 DCC rates and the portion of the increase that is attributed to a change in the program value and the portion that is attributed to a change in these assumptions.

Land Use	2014 DCC Rate (effective until May 16, 2016)	Proposed 2018 DCC Rate (Year 3 of 3)	Increase (\$)	Increase (%)	Value of the Increase attributed to a change in Program Value	Value of the Increase attributed to a change in Assumptions
RF (Per lot)	\$28,691	\$41,220	\$12,529	43.7%	\$4,761 (38.0%)	\$7,768 (62.0%)
RM10/30 (Per sq. ft. of DU)	\$16.42	\$21.28	\$4.86	29.6%	\$3.94 (81.1%)	\$0.92 (18.9%)
RM45/70 (Per sq. ft. of DU)	\$18.06	\$24.18	\$6.12	33.9%	\$4.21 (68.8%)	\$1.91 (31.2%)
RM135/150 in City Centre (Per sq. ft. of DU)	\$10.04	\$15.49	\$5.45	54.3%	\$2.33 (42.8%)	\$3.12 (57.2%)
Commercial (All other floors) (Per sq. ft. of BA)	\$10.11	\$11.98	\$1.87	18.5%	\$0.65 (34.8%)	\$1.22 (65.2%)
Industrial (Per Acre of DA)	\$77,507	\$91,807	\$14,300	18.4%	\$3,052 (21.3%)	\$11,248 (78.7%)

Note: Excludes the area specific DCC rate component for Strategic Property Acquisition in the City Centre.  
DU = dwelling unit. BA = building area. DA = developed area.

As demonstrated, the value of the proposed DCC rate increase and the justification for it varies by land use.

- For the RM10/30 townhouse land use, staff found that current rate setting assumptions matched well with those used in 2014, and therefore a large portion of the rate increase for this use is related to change in the infrastructure program;
- For the RM135/150 apartment land use, staff found that the current rate setting assumptions changed slightly with those in 2014 and therefore an equal portion of the rate increase for this land use can be attributed to the change in infrastructure program value, and the change in assumptions; and
- For the RF single family home land use, staff found that current rate setting assumptions changed significantly from those in 2014, and therefore a large portion of the rate increase for this land use can be attributed to the change in assumptions.

## Implementation

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

- February 2018: Corporate Report to Council for approval of the 10-Year (2018-2027) Servicing Plan and initial readings of the related 2018 DCC Bylaw
- March-April 2018: Ministry of Municipal Affairs and Housing approval of the 2018 DCC Bylaw
- May 7, 2018: Final Adoption of 2018 DCC Bylaw
- May 16, 2018: 2018 DCC Rates Take Effect for all applications not in-stream
- May 16, 2018: 2018 DCC Rates Take Effect for all in-stream applications that have yet to be completed

## Impact on the Five Year (2018-2022) Financial Plan

The 2018 Five Year (2018-2022) Financial Plan – Utilities and Other Self-Funded Programs, which was approved by the Finance Committee on November 27, 2017, reflects the proposed 10-Year Servicing Plan as documented in this report.

The 2018 The Five Year (2018-2022) Capital Plan, which was approved by the Finance Committee on November 27, 2017, reflects the proposed 10-Year Servicing Plan as documented in this report.

The 2018 The Five Year (2018-2022) General Operating Financial Plans, which was approved by the Finance Committee on November 27, 2017, reflects the proposed 10-Year Servicing Plan as documented in this report.

## Metro Vancouver and TransLink DCC Rate Discussion

In addition to the City's proposed DCC rate increase, Metro Vancouver (Greater Vancouver Regional Sewerage & Drainage District) is introducing a rate increase and TransLink is proposing to establish a new DCC.

Metro Vancouver introduced a DCC for liquid waste in 1997 and has brought forward their first DCC rate increase. This increase is scheduled to take effect on May 1, 2018.

Land Use	Existing DCC Rate	Proposed DCC Rate	Rate Change \$	Rate Change %
Single Family Residential Unit	\$1,711	\$5,428	\$3,717	217%
Townhouse Unit	\$1,515	\$4,695	\$3,180	210%
Apartment Unit	\$1,082	\$3,531	\$2,449	226%
Non-Residential (sq. ft. of BA)	\$0.82	\$2.67	\$1.85	226%

In December 2017, TransLink's Mayors' Council approved a framework to establish a new DCC to assist in funding the 10-Year Vision for Metro Vancouver Transportation Plan (2017-2026). TransLink is currently consulting with all stakeholders and the Province at this time. TransLink does not have the legislative authority to introduce a DCC. TransLink is working to introduce the proposed DCC by 2020.

<b>Land Use</b>	<b>Proposed DCC Rate</b>
Single Family Residential Unit	\$2,100
Townhouse Unit	\$1,900
Apartment Unit	\$1,200
Commercial – Retail (sq. ft. of BA)	\$1.00
Commercial – Non-Retail (sq. ft. of BA)	\$0.50
Industrial - (sq. ft. of BA)	\$0.50

### **Legal Services and Finance Review**

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

### **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 and Strategic Directions:

- 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; and
- Green Infrastructure DO12: Include natural capital and ecosystem services in all City projects at the planning phase, as well as in the City's infrastructure services program and climate adaptation planning.

## CONCLUSION

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

1. Approve the proposed 10-Year (2018-2027) 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 Development Cost Charge (“DCC”) rate adjustments to fund the 10-Year Servicing Plan and the Parkland Acquisition Program; and
3. Subject to the Bylaw being given the required readings, authorize staff to forward the Bylaw to the Provincial Ministry of Municipal Affairs and Housing for approval prior to its final adoption by Council.

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JA/ggg

Appendix “I” - 10-Year (2018-2027) Servicing Plan

Appendix “II” - Proposed Surrey Development Cost Charge Bylaw, 2018, No. 19478



2018–2027

# TEN YEAR SERVICING PLAN

Engineering Department



**City of Surrey  
Engineering Department**

**10-YEAR SERVICING PLAN (2018-2027)**

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**TABLE OF CONTENTS**

<b>1.</b>	<b>OVERVIEW OF THE PLAN .....</b>	<b>1</b>
<b>2.</b>	<b>TRANSPORTATION .....</b>	<b>6</b>
<b>3.</b>	<b>WATER.....</b>	<b>20</b>
<b>4.</b>	<b>SANITARY SEWER.....</b>	<b>28</b>
<b>5.</b>	<b>STORMWATER.....</b>	<b>38</b>
<b>6.</b>	<b>CAMPBELL HEIGHTS.....</b>	<b>47</b>
<b>7.</b>	<b>HIGHWAY 99 CORRIDOR .....</b>	<b>49</b>
<b>8.</b>	<b>ANNIEDALE-TYNEHEAD .....</b>	<b>51</b>

## **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 (2018-2027).

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 (2017-2026);
- Biodiversity Conservation Strategy;
- Transportation Strategic Plan;
- Walking and Cycling Plans;
- Integrated Stormwater Management Plans;
- Serpentine/Nicomekl 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 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.

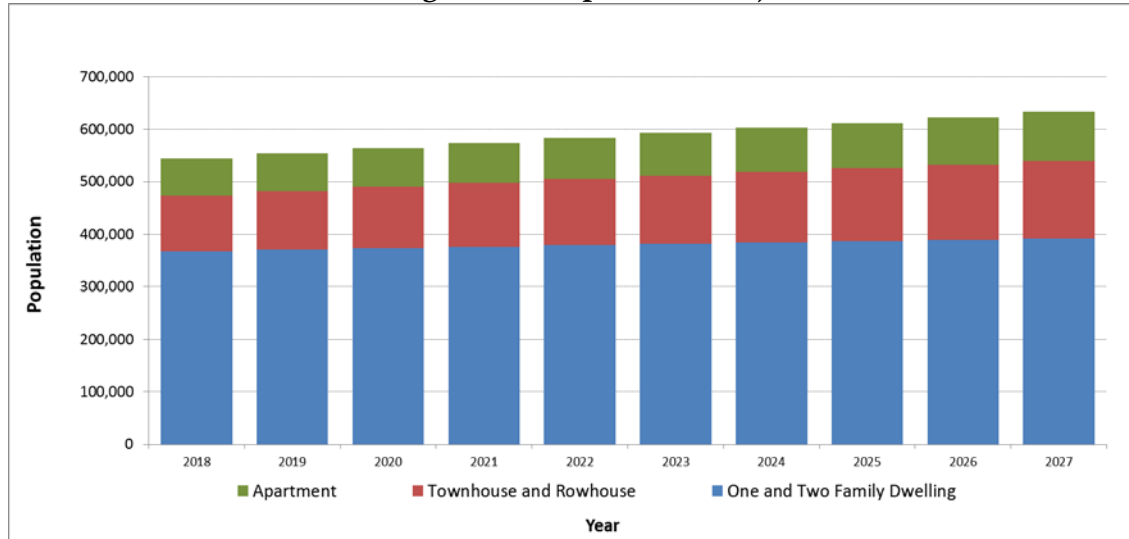
### **1.1 Servicing Plan Programs**

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 & 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 2018 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 (2017-2026) 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:

<b>A</b>	-	Annual	Every year
<b>S</b>	-	Short Term	1 - 3 years
<b>M</b>	-	Medium Term	4 - 6 years
<b>L</b>	-	Long Term	7 - 10 years
<b>N</b>	-	NCP dependent	Timing depends on development within NCP area
<b>U</b>	-	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 - 2018-2027 10-Year Servicing Plan Cost Summary**

<b>Program</b>	<b>Growth (\$)</b>	<b>Non-Growth (\$)</b>	<b>External (\$)</b>	<b>GVTA (\$)</b>	<b>Total (\$)</b>
Transportation Arterial	410,728,250	354,067,500	61,560,000	133,226,000	1,041,267,000
Transportation Non-Arterial	81,685,250				
Water	70,529,000	134,974,000	0	0	205,503,000
Sewer	101,945,589	75,484,674	0	0	177,430,263
Drainage	92,188,520	149,642,625	0	0	241,831,145
Campbell Heights	137,399,400	0	16,937,500	16,875,000	171,211,900
Highway 99 Corridor	44,307,350	0	14,250,000	3,250,000	61,807,350
Anniedale-Tynehead	207,404,200	0	116,275,000	25,560,000	349,239,200
<b>Total</b>	<b>1,146,187,559</b>	<b>714,168,799</b>	<b>209,022,500</b>	<b>178,911,000</b>	<b>2,248,289,858</b>

## **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; and
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 is 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 and 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 Bylaw.

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.

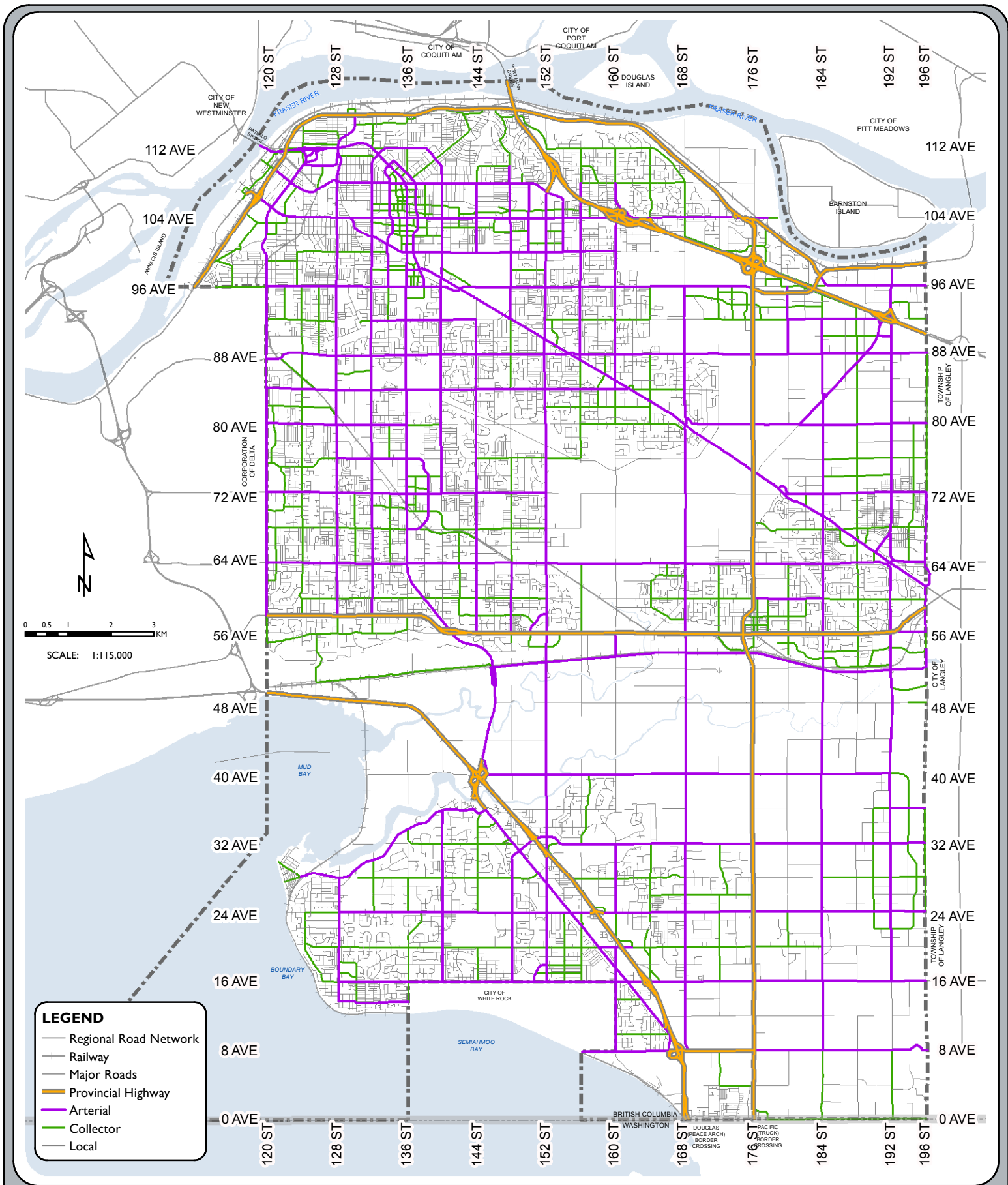


In conjunction with the highway downloading, several City arterial roads were “uploaded” to become part of the new MRN. The City assumes maintenance and capital construction responsibilities for these devolved roads, while TransLink provides the maintenance funding. For the purposes of this Plan, funding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

Provincial Highways as well as 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**

<b>Roads - Centreline Length</b>	
Arterial Roads (including MRN roads)	407 km
Collector Roads	273 km
Local Roads	1,409 km
<u>Lanes</u>	<u>211 km</u>
Total Surrey Roads	2,300 km
Provincial Highways	99 km
Total Surrey & Provincial Roads	2,399 km
<b>Lane Kilometre Length</b>	
Major Road Network	487 l km
City Arterials	568 l km
Collectors	544 l km
<b>Supporting Infrastructure</b>	
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.

Date Printed: 20-Nov-2017 Cartographer: C9W © City of Surrey  
Source: G:\MAPPING\GIS\Maps\Recurring\10yrServicingPlan2018-27\Figure2\_1\_RoadNetwork.mxd

## **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 to 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 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 2 lane corridors that are ultimately to be widened to 5 lanes 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, 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 to 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**

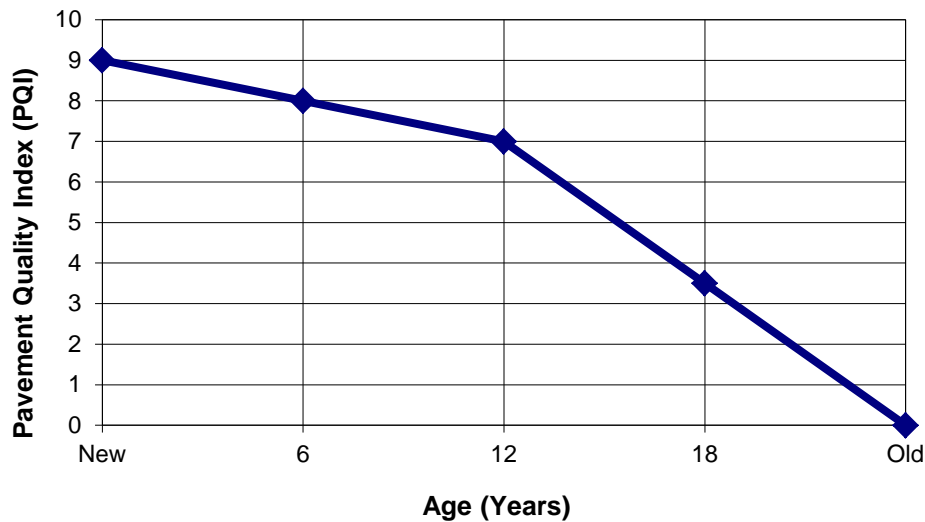
The Arterial Intersection Improvements program consists of a number of intersections that have been designated for improvement with left-turn bays, traffic signals or other works to increase capacity or mitigate the impacts of increased traffic on safety.

### **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 include 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 and 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 collector 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**

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; and/or
- 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; and
- Safer street environment with the provision of street lights and sidewalks.

Potential LAS 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 an 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 LAS 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 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 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.

**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; and
- 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 & 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 arterial, collector 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	38,150,000	0	0	9,000,000	0	47,150,000
1002	Arterial Widening - 5 Lane	Capital	146,600,000	0	0	0	45,550,000	192,150,000
1004	Arterial Widening - 3 Lane	Capital	42,310,000	0	1,650,000	0	0	43,960,000
1006	Strategic Property Acquisition	Capital	20,000,000	9,000,000	31,000,000	0	0	60,000,000
1008	Development Coordinated Works	Capital	3,500,000	9,500,000	0	0	0	13,000,000
1012	Arterial Intersection Improvements	Capital	33,950,000	0	0	0	0	33,950,000
1018	Bridges and Overpasses	Capital	17,000,000	0	10,190,000	26,780,000	23,280,000	77,250,000
1020	Hwy and External Agency Projects	Capital	15,500,000	0	6,440,000	22,280,000	5,280,000	49,500,000
1026/76	City Centre Strategic Property Acquisition	Capital	54,512,000	0	0	0	0	54,512,000
1030	Collector Road Improvements	Capital	0	41,712,500	9,225,000	1,637,500	0	52,575,000
1102	Traffic Signals and Roundabouts	Capital	24,475,000	3,325,000	19,000,000	150,000	10,250,000	57,200,000
1120	Bicycle Infrastructure	Capital	3,631,250	2,897,750	16,062,500	1,712,500	14,866,000	39,170,000
1142	Transit Infrastructure	Capital	0	0	6,000,000	0	4,000,000	10,000,000
1154	Walking Infrastructure	Capital	5,400,000	10,250,000	32,000,000	0	0	47,650,000
1016	Arterial Paving	Capital	0	0	60,000,000	0	30,000,000	90,000,000
1022	City Centre Upgrading	Capital	0	1,000,000	3,000,000	0	0	4,000,000
1046	Collector Road Paving	Capital	0	0	31,000,000	0	0	31,000,000
1070	Local Road Paving	Capital	0	0	35,000,000	0	0	35,000,000
1074	Local Area Servicing	Capital	0	0	9,000,000	0	0	9,000,000
1078	Lane Construction	Capital	0	0	4,500,000	0	0	4,500,000
1104	Streetlight Replacement	Operating	0	0	7,500,000	0	0	7,500,000
1108	Traffic Calming	Capital	0	1,000,000	1,000,000	0	0	2,000,000
1112	Pavement Repair	Operating	0	0	15,000,000	0	0	15,000,000

No.	Program	Program Type	Growth Arterial (\$)	Growth (\$ Non-Arterial)	Non-Growth (\$)	External (\$)	GVTA (\$)	Total (\$)
1505	Design and Planning	Non-Capital	5,700,000	3,000,000	15,500,000	0	0	24,200,000
1515	Minor Projects	Operating	0	0	9,000,000	0	0	9,000,000
1520	Transportation Management	Operating	0	0	32,000,000	0	0	32,000,000
<b>Total</b>			<b>410,728,250</b>	<b>81,685,250</b>	<b>354,067,500</b>	<b>61,560,000</b>	<b>133,226,000</b>	<b>1,041,267,000</b>

## 2.5 Transportation Projects by Program

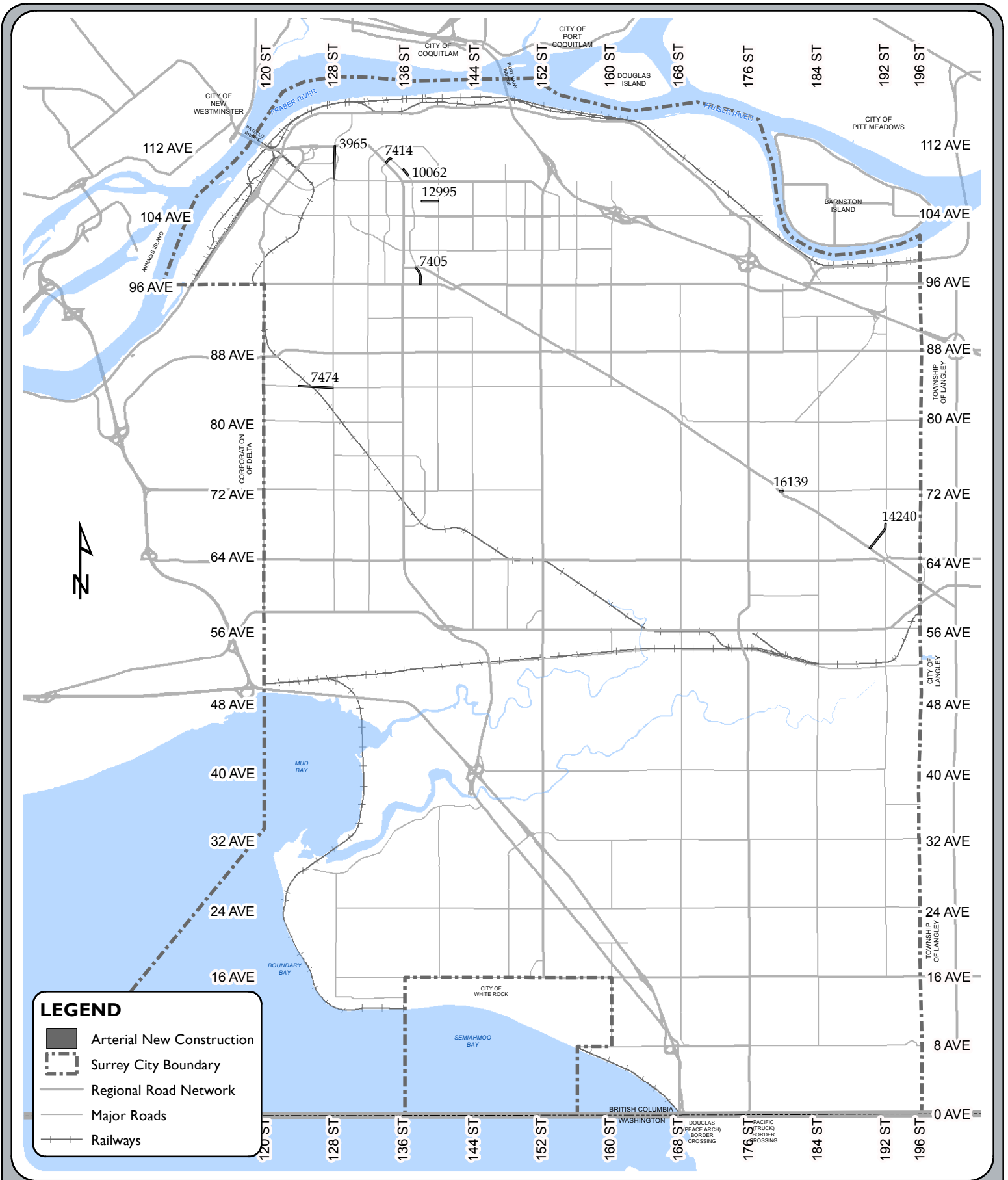
This section contains tables and figures that identify the projects under the transportation programs.

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)
- e) Costs - the high level estimates in 2018 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.



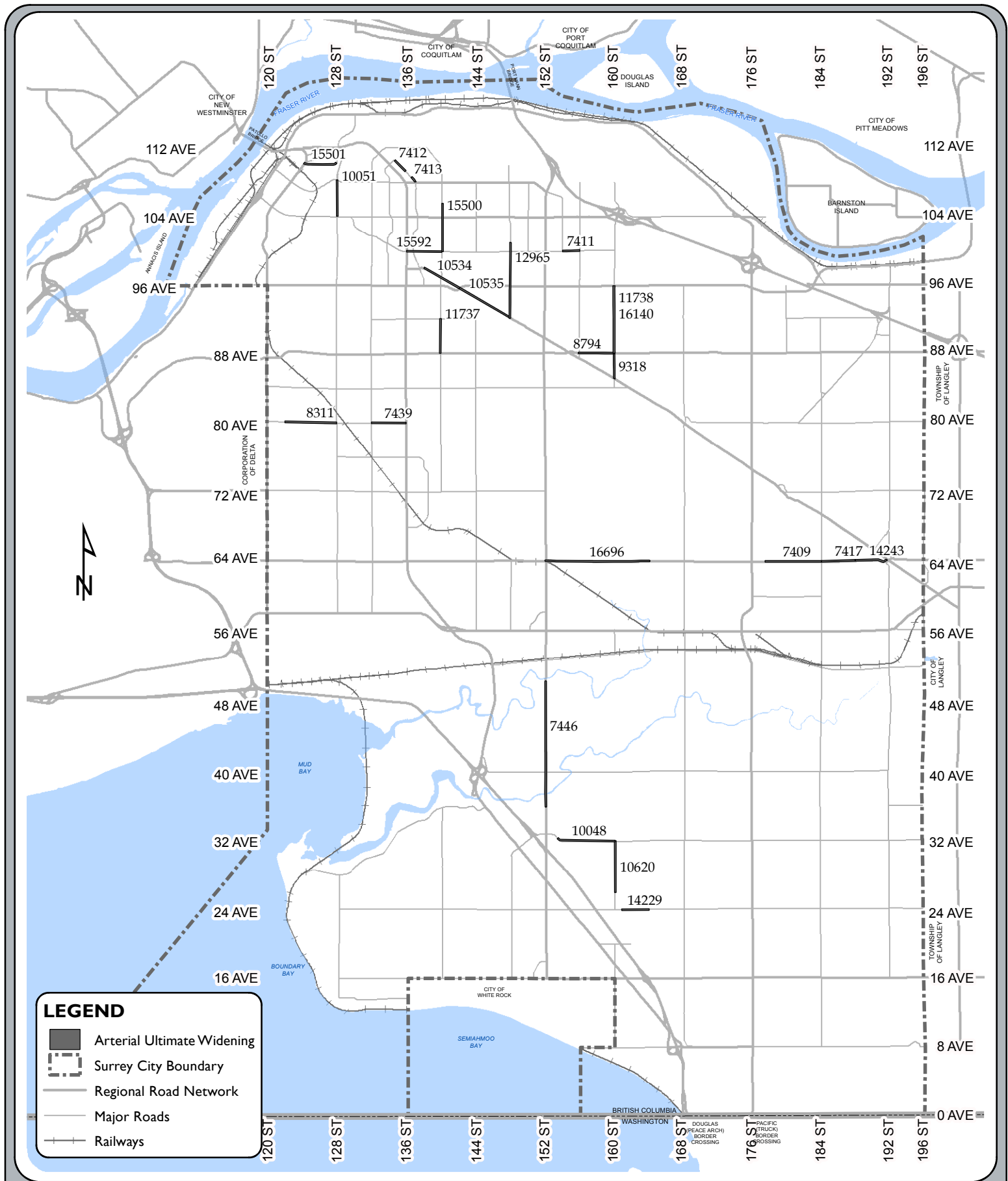
**FIGURE 2.2 - Transportation  
Arterial New Construction (Program 1000)**

The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey.  
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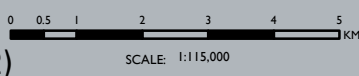
## Transportation

### Program 1000 - Arterial New Construction

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
3965	Arterial New Construction	128 St: 108 Ave - King George Blvd.	Medium Term (4 - 6 Yrs)	\$18,000,000	\$9,000,000	\$0	\$9,000,000	\$0
7405	Arterial New Construction	Whalley Blvd: 96 Ave - Fraser Hwy	Short Term (1 - 3 Yrs)	\$3,400,000	\$3,400,000	\$0	\$0	\$0
7414	Arterial New Construction	Whalley Blvd: King George Blvd. - Hilton Rd	Long Term (7 - 10 Yrs)	\$1,700,000	\$1,700,000	\$0	\$0	\$0
7474	New Arterial Construction	084 Ave: 124 St - 128 St	Long Term (7 - 10 Yrs)	\$5,100,000	\$5,100,000	\$0	\$0	\$0
10062	Arterial New Construction	Whalley Blvd: Grosvenor Rd - Bentley Rd	Long Term (7 - 10 Yrs)	\$1,700,000	\$1,700,000	\$0	\$0	\$0
12995	Arterial New Construction	105A Ave: 137 St (Whalley Blvd) - 144 St	Short Term (1 - 3 Yrs)	\$5,100,000	\$5,100,000	\$0	\$0	\$0
14240	Arterial New Construction	192 St: Fraser Hwy - 68 Ave	Medium Term (4 - 6 Yrs)	\$3,400,000	\$3,400,000	\$0	\$0	\$0
16139	Arterial New Constrction	072 Ave: Fraser Hwy - 180 St	Long Term (7 - 10 Yrs)	\$8,750,000	\$8,750,000	\$0	\$0	\$0



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



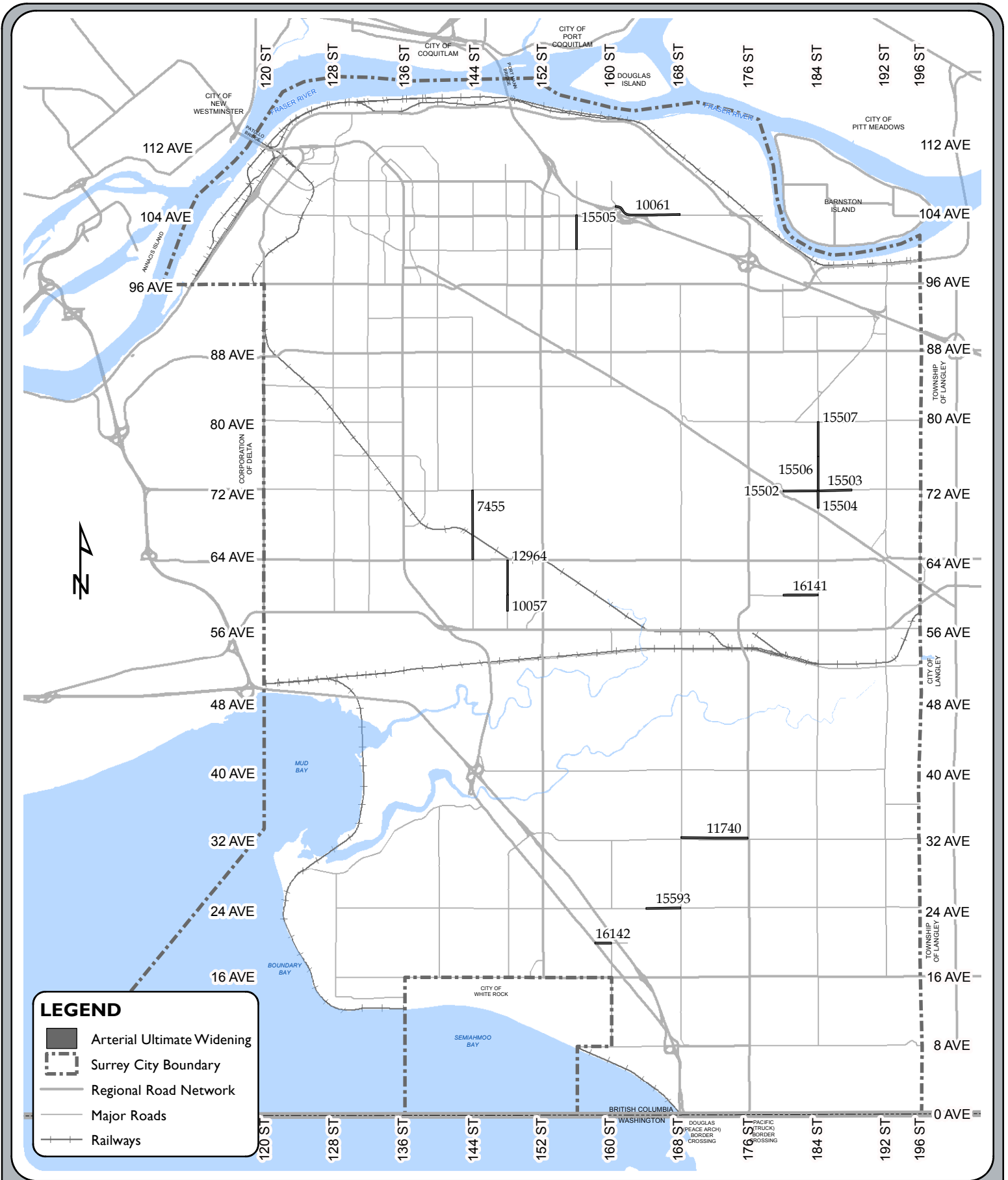
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Date Printed: 21/11/2017 Cartographer: C9W © City of Surrey  
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## Transportation

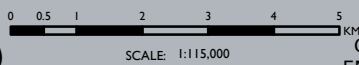
### Program 1002 - Arterial Ultimate Widening

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7409	Arterial Widening - 5 Lane	064 Ave: 177 St - 184 St	Medium Term (4 - 6 Yrs)	\$10,500,000	\$5,250,000	\$0	\$0	\$5,250,000
7411	Arterial Widening - 5 Lane	100 Ave: 154 St - 156 St	Short Term (1 - 3 Yrs)	\$3,000,000	\$3,000,000	\$0	\$0	\$0
7412	Arterial Widening - 4 Lane	Whalley Blvd (Hilton Rd): Bentley to Bolivar	Long Term (7 - 10 Yrs)	\$2,625,000	\$2,625,000	\$0	\$0	\$0
7413	Arterial Widening - 4 Lane	Whalley Blvd: 108 Ave - Grosvenor	Long Term (7 - 10 Yrs)	\$1,125,000	\$1,125,000	\$0	\$0	\$0
7417	Arterial Widening - 5 Lane	064 Ave: 184 St - 188 St	Short Term (1 - 3 Yrs)	\$6,000,000	\$3,000,000	\$0	\$0	\$3,000,000
7439	Arterial Widening - 5 Lane	080 Ave: 132 St - King George Blvd.	Short Term (1 - 3 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
7446	Ultimate Arterial Widening - 5 Lane	152 St: 036 Ave - 5000 Blk	Long Term (7 - 10 Yrs)	\$19,000,000	\$9,500,000	\$0	\$0	\$9,500,000
8311	Arterial Widening - 5 Lane	080 Ave: 122 St - 128 St	Medium Term (4 - 6 Yrs)	\$9,000,000	\$9,000,000	\$0	\$0	\$0
8794	Ultimate Arterial Widening	088 Ave: 156 St - 160 St	Long Term (7 - 10 Yrs)	\$6,000,000	\$3,000,000	\$0	\$0	\$3,000,000
9318	Ultimate Arterial Widening	160 St: Fraser Hwy - 88 Ave	Long Term (7 - 10 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10048	Arterial Widening - 5 Lane	032 Ave: 154 St - 160 St	Medium Term (4 - 6 Yrs)	\$9,000,000	\$9,000,000	\$0	\$0	\$0
10051	Arterial Widening - 5 Lane	128 St: 104 Ave - 108 Ave	Medium Term (4 - 6 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10534	Arterial Widening - 5 Lane	Fraser Hwy: 138 St - 096 Ave	Short Term (1 - 3 Yrs)	\$6,000,000	\$3,000,000	\$0	\$0	\$3,000,000
10535	Arterial Widening - 5 Lane	Fraser Hwy: 140 St - 148 St	Medium Term (4 - 6 Yrs)	\$18,000,000	\$9,000,000	\$0	\$0	\$9,000,000
10620	Arterial Widening - 5 Lane	160 St: 026 Ave - 032 Ave	Short Term (1 - 3 Yrs)	\$9,000,000	\$9,000,000	\$0	\$0	\$0
11737	Arterial Widening - 5 Lane	140 St: 088 Ave - 092 Ave	Medium Term (4 - 6 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
11738	Arterial Widening - 5 Lane	160 St: 092 Ave - 096 Ave	Long Term (7 - 10 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
12965	Arterial Untilmate Widening	148 St: Fraser Hwy - 100 Ave	Medium Term (4 - 6 Yrs)	\$10,800,000	\$10,800,000	\$0	\$0	\$0
14229	Arterial Widening - 5 Lane	024 Ave: 161 St - 164 St	Short Term (1 - 3 Yrs)	\$4,500,000	\$4,500,000	\$0	\$0	\$0
14243	Arterial Widening - 5 Lane	064 Ave: 188 St - Fraser Hwy	Short Term (1 - 3 Yrs)	\$4,000,000	\$2,000,000	\$0	\$0	\$2,000,000
15500	Arterial Widening - 5 Lane	140 St: 100 Ave - 105A Ave	Short Term (1 - 3 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
15501	Arterial Widening - 3 to 5 Lane	110 Ave: Scott Rd - 128 St	Long Term (7 - 10 Yrs)	\$4,000,000	\$4,000,000	\$0	\$0	\$0
15592	Arterial Widening - 5 Lane	100 Ave: King George Blvd - 140 St	Short Term (1 - 3 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
16140	Arterial Widening - 5 Lane	160 St: 88 Ave - 92 Ave	Long Term (7 - 10 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
16696	Arterial Widening - 5 Lane	064 Ave: 152 St - 164 St	Long Term (7 - 10 Yrs)	\$21,600,000	\$10,800,000	\$0	\$0	\$10,800,000





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

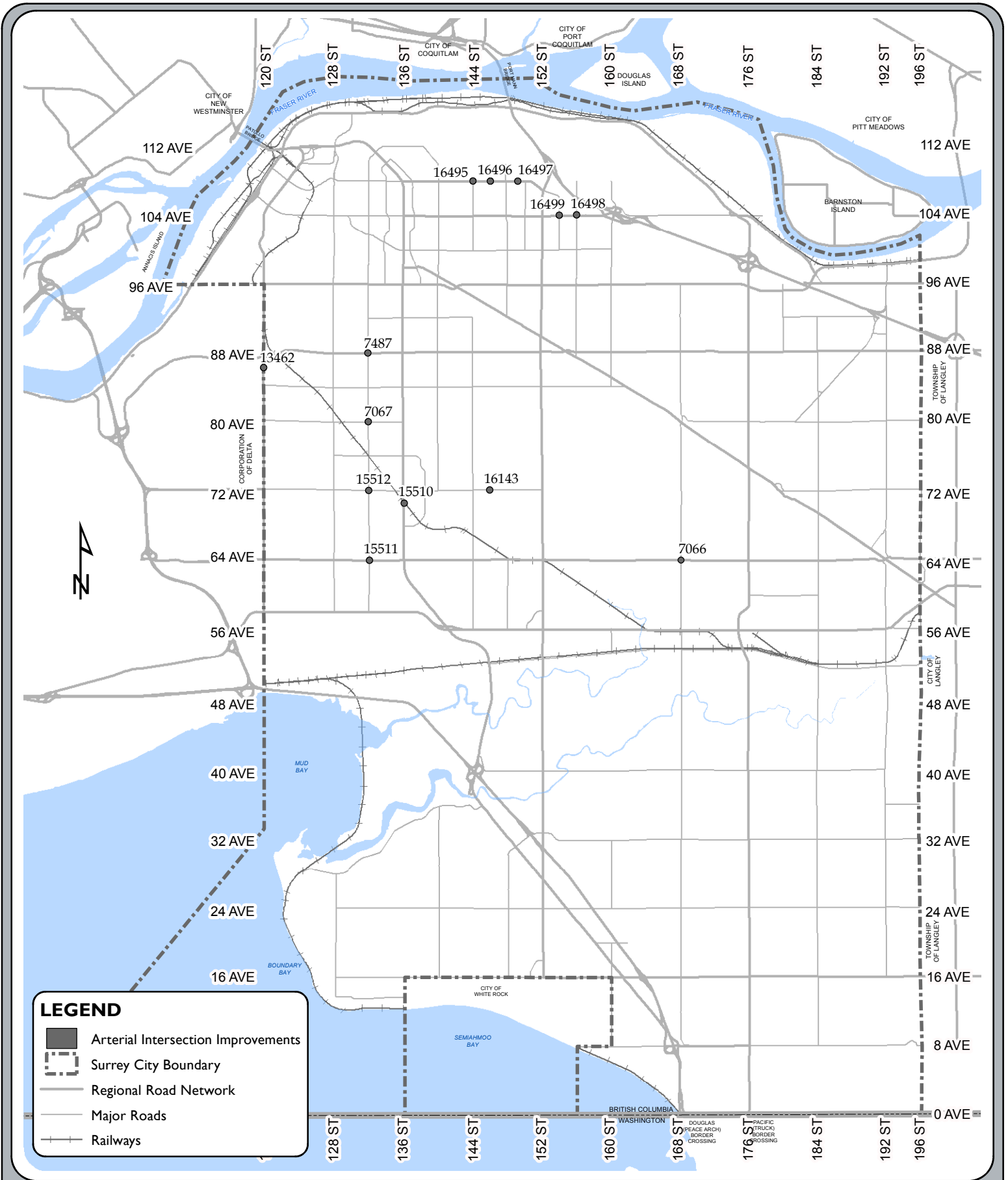


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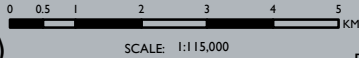
## Transportation

### Program 1004 - Arterial Interim Widening

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7441	Arterial Median Projects	Various locations	Annual	\$2,000,000	\$2,000,000	\$0	\$0	\$0
7455	Arterial Widening	144 St: 064 Ave - 072 Ave	Short Term (1 - 3 Yrs)	\$5,600,000	\$5,600,000	\$0	\$0	\$0
10057	Arterial Widening - 2 Lane + Parking	148 St: 058 Ave - 060 Ave	Medium Term (4 - 6 Yrs)	\$1,400,000	\$1,400,000	\$0	\$0	\$0
10061	Arterial Widening - 3 Lane	104 Ave: 160 St - 168 St	Long Term (7 - 10 Yrs)	\$5,600,000	\$5,600,000	\$0	\$0	\$0
11740	Arterial Widening - 3 Lane	032 Ave: 168 St - 176 St	Medium Term (4 - 6 Yrs)	\$5,600,000	\$5,600,000	\$0	\$0	\$0
12964	Arterial Widening - 2 Lane + Parking	148 St: 060 Ave - 064 Ave	Medium Term (4 - 6 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
14244	Arterial Minor Projects	Various locations	Annual	\$5,000,000	\$3,350,000	\$1,650,000	\$0	\$0
15502	Arterial Widening - DCW Blvd	072 Ave: 180 St - 184 St	Short Term (1 - 3 Yrs)	\$1,120,000	\$1,120,000	\$0	\$0	\$0
15503	Arterial Widening - DCW Blvd	072 Ave: 184 St - 187 St	Medium Term (4 - 6 Yrs)	\$840,000	\$840,000	\$0	\$0	\$0
15504	Arterial Widening - DCW Blvd	184 St: 070 Ave - 072 Ave	Short Term (1 - 3 Yrs)	\$560,000	\$560,000	\$0	\$0	\$0
15505	Arterial Widening - 3 Lane	156 St: 100 Ave - 104 Ave	Long Term (7 - 10 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
15506	Arterial Widening - DCW Blvd	184 St: 072 Ave - 076 Ave	Medium Term (4 - 6 Yrs)	\$1,120,000	\$1,120,000	\$0	\$0	\$0
15507	Arterial Widening - DCW Blvd	184 St: 076 Ave - 080 Ave	Long Term (7 - 10 Yrs)	\$1,120,000	\$1,120,000	\$0	\$0	\$0
15593	Arterial Widening - 3 Lane	024 Ave: 164 St - 168 St	Medium Term (4 - 6 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
16141	Arterial Widening - 3 Lane	060 Ave: 180 St - 184 St	Long Term (7 - 10 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
16142	Arterial Widening - 3 Lane	020 Ave: King George Blvd - 160 St	Medium Term (4 - 6 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0



**FIGURE 2.5 - Transportation**  
**Arterial Intersection Improvements (Program 1012)**

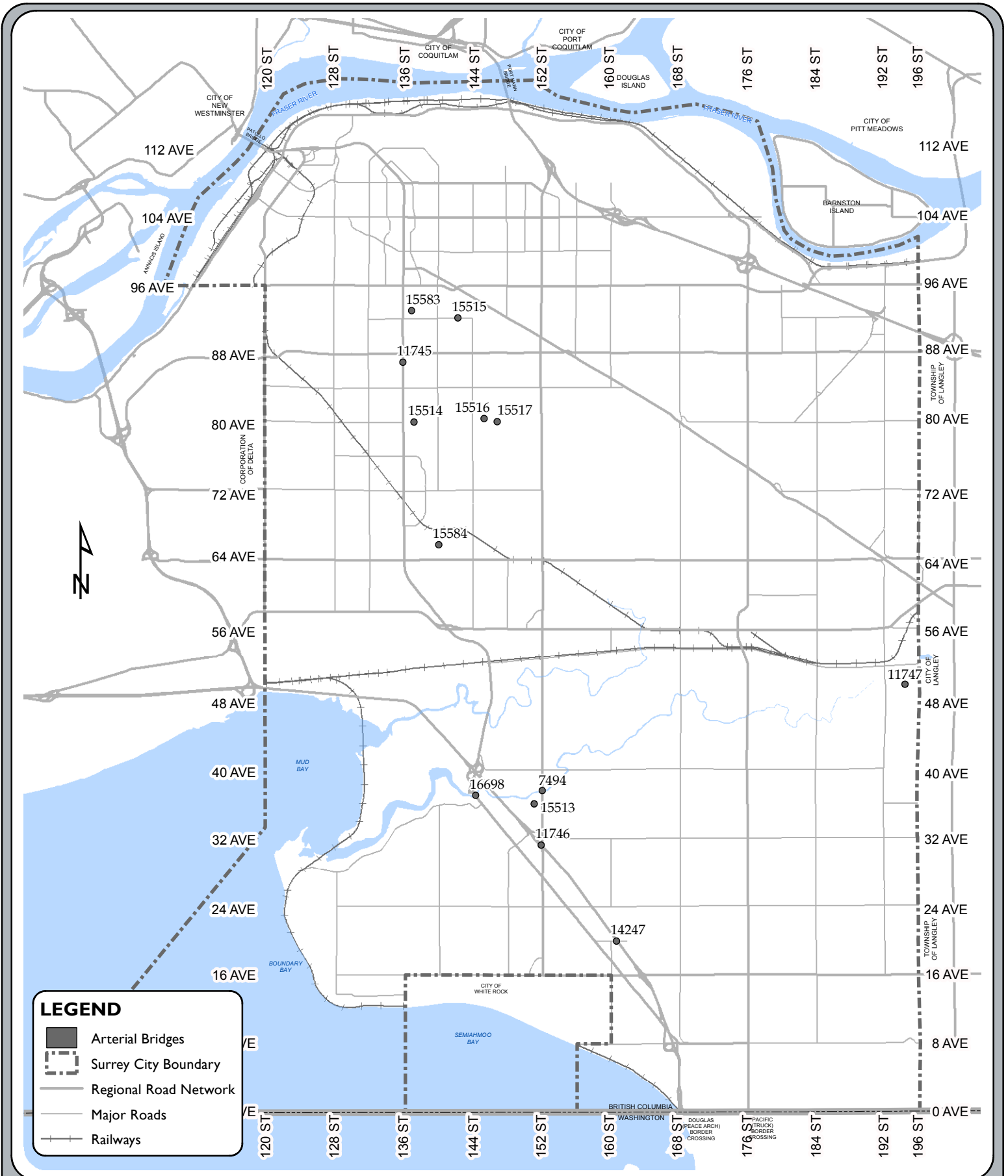


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## Transportation

### Program 1012 - Arterial Intersection Improvements

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7067	Arterial Intersection Improvements	080 Ave & 132 St	Short Term (1 - 3 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
7487	Arterial Intersection Improvements	088 Ave & 132 St	Short Term (1 - 3 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
13462	Arterial Intersection Improvements	086 Ave / Scott Rd	Short Term (1 - 3 Yrs)	\$450,000	\$450,000	\$0	\$0	\$0
15508	Arterial Intersection Improvements	Various locations	Medium Term (4 - 6 Yrs)	\$6,000,000	\$6,000,000	\$0	\$0	\$0
15509	Arterial Intersection Improvements	Various locations	Long Term (7 - 10 Yrs)	\$9,000,000	\$9,000,000	\$0	\$0	\$0
15510	Arterial Intersection Improvements	070 Ave / King George Blvd.	Short Term (1 - 3 Yrs)	\$1,000,000	\$1,000,000	\$0	\$0	\$0
15511	Arterial Intersection Improvements	064 Ave & 132 St	Long Term (7 - 10 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
15512	Arterial Intersection Improvements	072 Ave & 132 St	Long Term (7 - 10 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
16143	Arterial Intersection Improvements	072 Ave & 146 St	Long Term (7 - 10 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
16495	Arterial Intersection Improvements	108 Ave & 144 Street	Short Term (1 - 3 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
16496	Arterial Intersection Improvements	108 Ave & 146 St	Short Term (1 - 3 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
16497	Arterial Intersection Improvements	108 Ave & Oriole Dr	Short Term (1 - 3 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
16498	Arterial Intersection Improvements	104 Ave & 156 St	Short Term (1 - 3 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
16499	Arterial Intersection Improvements	104 Ave & 154 St	Short Term (1 - 3 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0



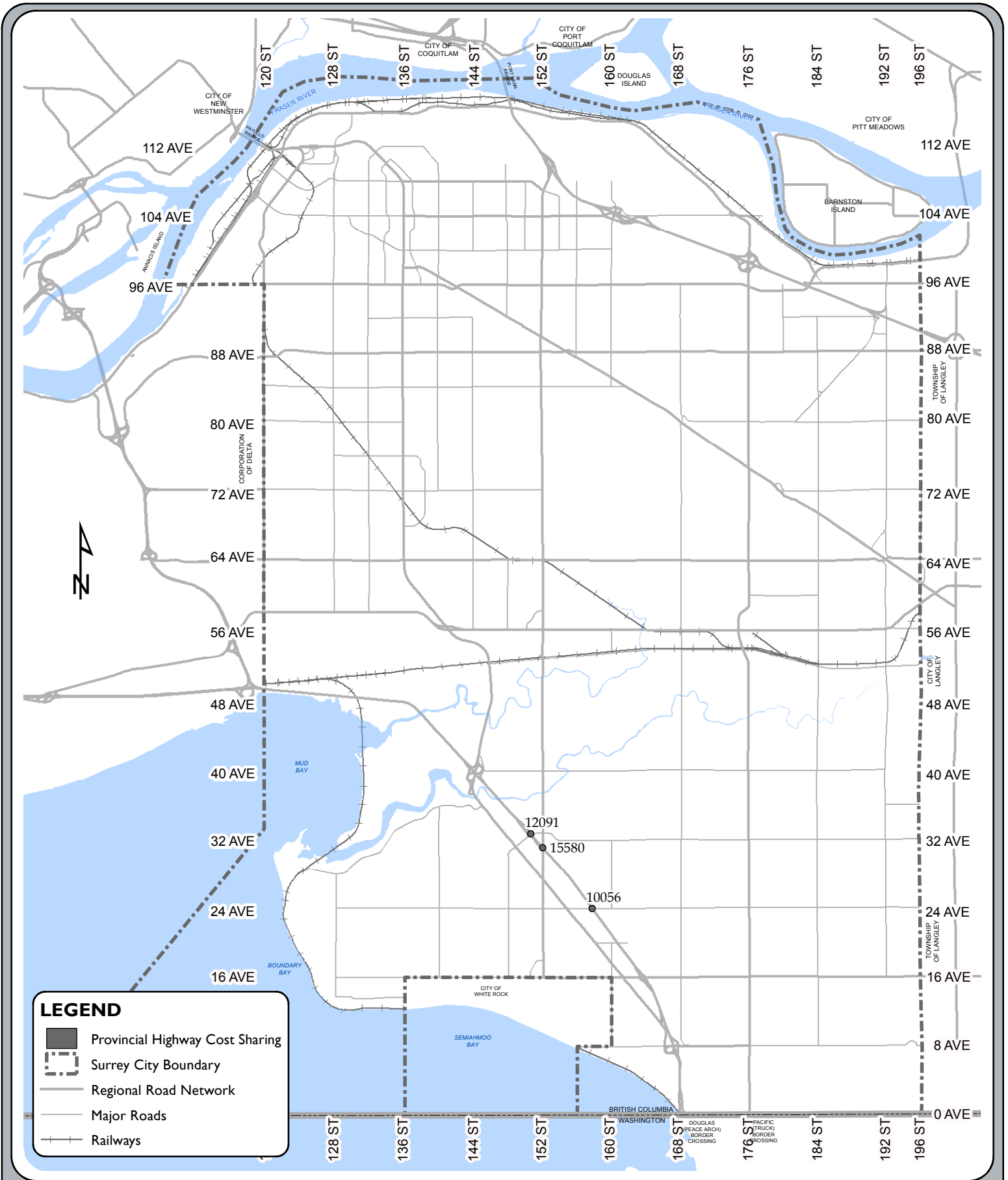
**FIGURE 2.6 - Transportation Bridges & Overpasses (Program 1018)**

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## Transportation

### Program 1018 - Arterial Bridges

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7494	New Crossing	152 St / Nicomekl	Long Term (7 - 10 Yrs)	\$10,000,000	\$5,000,000	\$0	\$0	\$5,000,000
11745	Replace Crossing	King George Blvd. / Bear Creek	Short Term (1 - 3 Yrs)	\$10,000,000	\$0	\$0	\$0	\$10,000,000
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	Replace Crossing	Colebrook Rd / Anderson Creek	Long Term (7 - 10 Yrs)	\$750,000	\$0	\$750,000	\$0	\$0
14247	New Crossing (50% share w/Hwy 99 ID 14341)	020 Ave Overpass of Hwy 99	Medium Term (4 - 6 Yrs)	\$10,000,000	\$5,000,000	\$0	\$5,000,000	\$0
15513	Pedestrian - Cycle Bridge	036 Ave / Barbara Creek (15100 Blk)	Medium Term (4 - 6 Yrs)	\$3,000,000	\$0	\$1,500,000	\$1,500,000	\$0
15514	Pedestrian - Cycle Bridge	080 Ave / Hunt Brook (13800 Blk)	Medium Term (4 - 6 Yrs)	\$3,000,000	\$0	\$1,500,000	\$1,500,000	\$0
15515	Pedestrian - Cycle Bridge	092 Ave / Bear Creek (14200 Blk)	Medium Term (4 - 6 Yrs)	\$3,000,000	\$0	\$1,500,000	\$1,500,000	\$0
15516	Pedestrian - Cycle Bridge	Surrey Lake / Enver Creek	Long Term (7 - 10 Yrs)	\$3,000,000	\$0	\$1,500,000	\$1,500,000	\$0
15517	Pedestrian - Cycle Bridge	Surrey Lake / Bear Creek	Long Term (7 - 10 Yrs)	\$3,000,000	\$0	\$1,500,000	\$1,500,000	\$0
15583	Pedestrian - Cycle Bridge	Green Timbers / Quibble Creek		\$0	\$0	\$0	\$0	\$0
15584	Rehabilitation Crossing	140 St / Hyland Creek	Short Term (1 - 3 Yrs)	\$500,000	\$0	\$500,000	\$0	\$0
16698	Replace Crossing	King George Boulevard @ Nicomekl River	Short Term (1 - 3 Yrs)	\$15,000,000	\$3,000,000	\$0	\$9,000,000	\$3,000,000



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

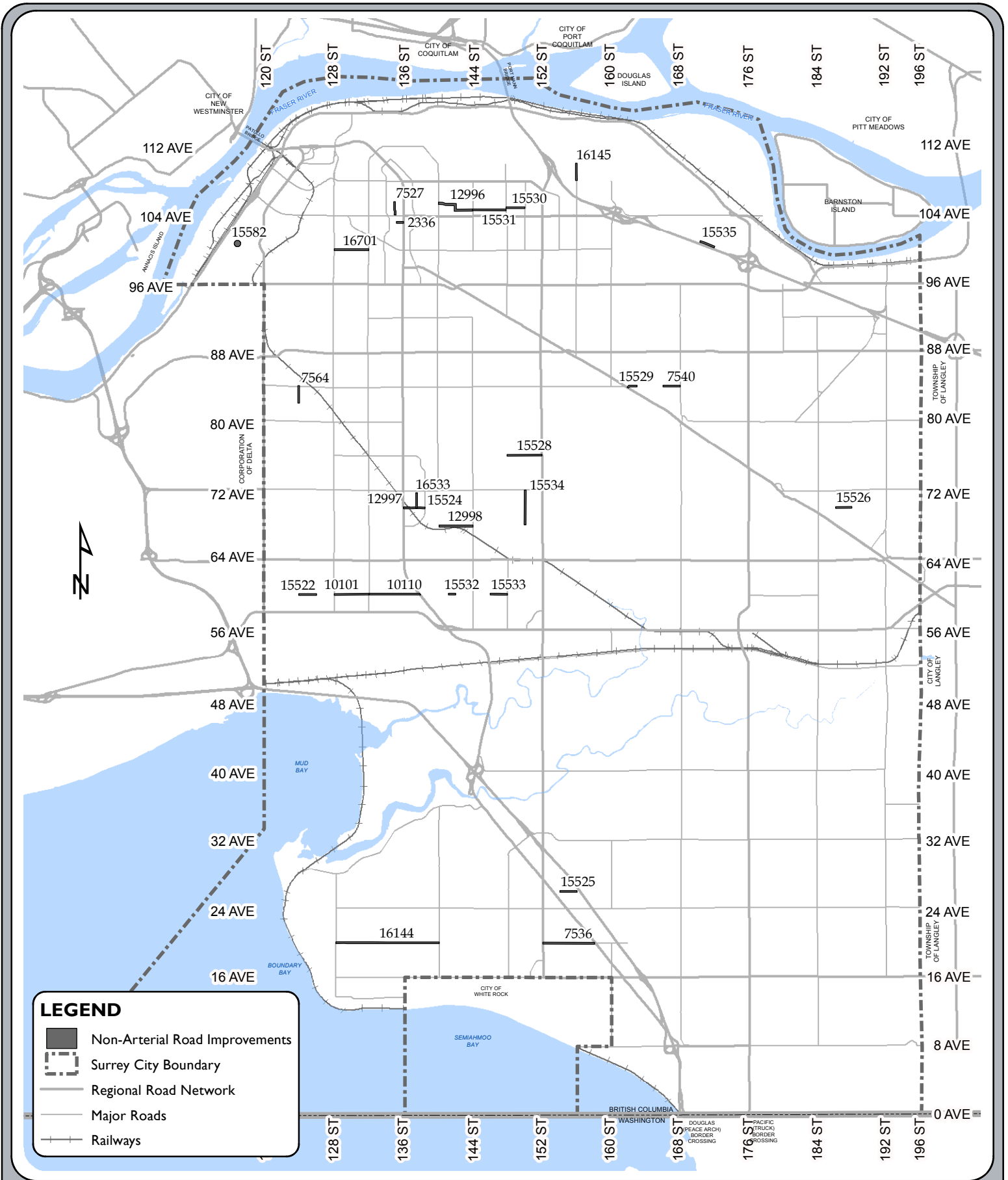
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## Transportation

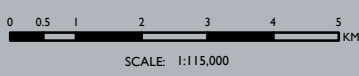
### Program 1020 - Provincial Hwy Cost Sharing

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
15580	Interchange Ramp	152 St / Hwy 99	Long Term (7 - 10 Yrs)	\$16,000,000	\$4,000,000	\$1,440,000	\$5,280,000	\$5,280,000
15519	Railway Improvements	Various locations	Annual	\$20,000,000	\$5,000,000	\$5,000,000	\$10,000,000	\$0
12091	Interchange Ramps	032 Ave / Hwy 99	Short Term (1 - 3 Yrs)	\$7,500,000	\$3,000,000	\$0	\$4,500,000	\$0
11751	Coordinated Works	Various locations	Annual	\$1,000,000	\$1,000,000	\$0	\$0	\$0
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	\$0	\$2,500,000	\$0





**FIGURE 2.8 - Transportation Collector Road Completion (Program 1030)**

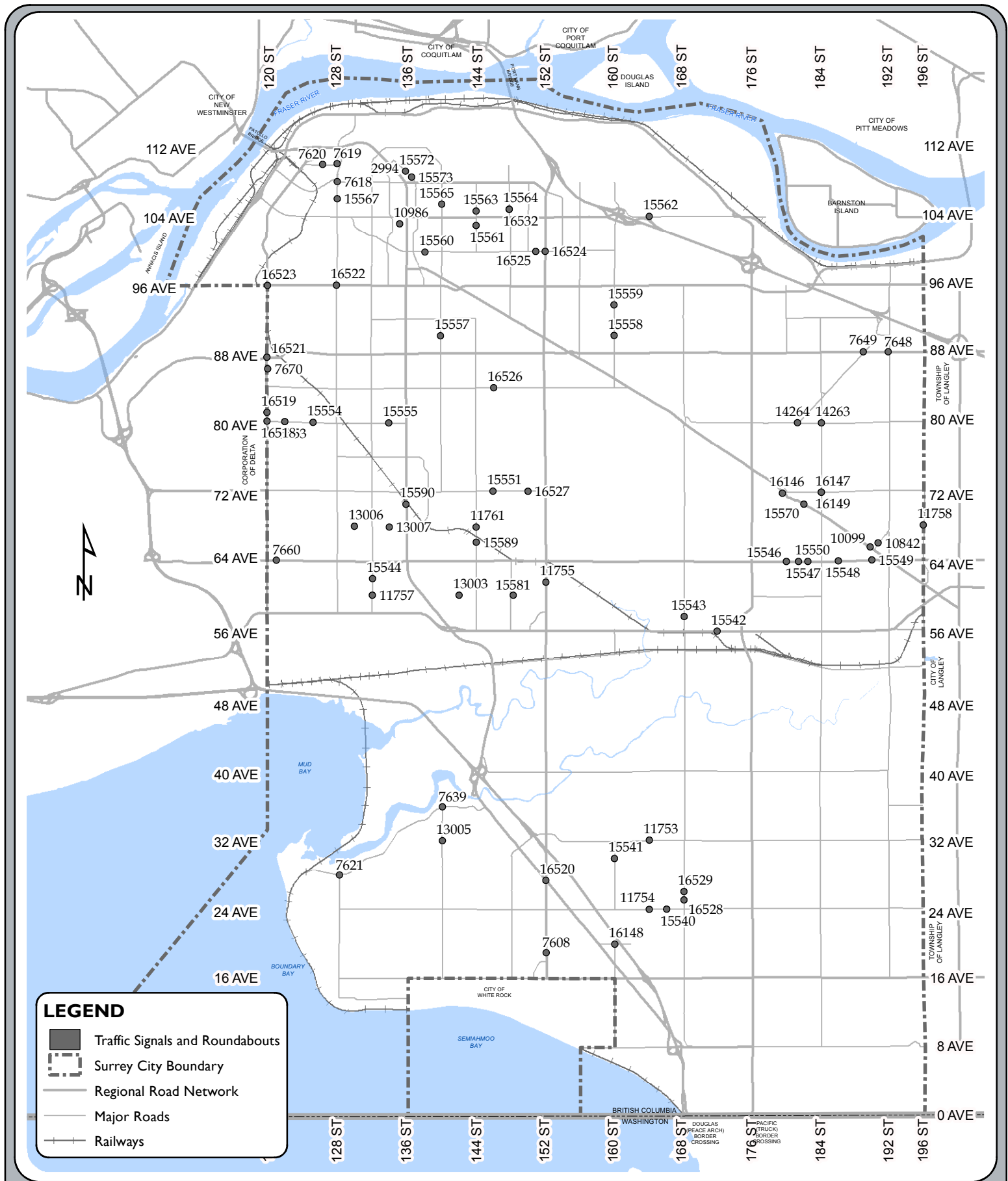


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Source: G:\MAPPING\GIS\Maps\Recurring\10yrServicingPlan2018-27\Figure2-8-Transportation.mxd

## Transportation

### Program 1030 - Non-Arterial Road Improvements

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
2336	Collector Widening	103 Ave: City Parkway - King George Blvd.	Short Term (1 - 3 Yrs)	\$1,000,000	\$1,000,000	\$0	\$0	\$0
7527	Collector Widening	City Pkwy: 104 Ave - 105 Ave	Medium Term (4 - 6 Yrs)	\$1,000,000	\$1,000,000	\$0	\$0	\$0
7536	Collector Widening	020 Ave: 152 St - King George Blvd.	Medium Term (4 - 6 Yrs)	\$4,200,000	\$4,200,000	\$0	\$0	\$0
7540	Collector Widening	084 Ave: 166 St - 168 St (S Side)	Long Term (7 - 10 Yrs)	\$1,000,000	\$1,000,000	\$0	\$0	\$0
10101	Collector Widening	060 Ave: 128 St - 132 St (N side)	Medium Term (4 - 6 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
10110	Collector Widening	060 Ave: 136 St - KG Blvd	Long Term (7 - 10 Yrs)	\$1,800,000	\$1,800,000	\$0	\$0	\$0
12148	Collector Intersection Improvements	Various locations	Medium Term (4 - 6 Yrs)	\$1,200,000	\$1,200,000	\$0	\$0	\$0
12996	New Collector	105A/104A Ave : 140 St - 144 St	Short Term (1 - 3 Yrs)	\$4,500,000	\$4,500,000	\$0	\$0	\$0
12997	New Collector Road	070 Ave: King George Blvd - 137A St	Short Term (1 - 3 Yrs)	\$900,000	\$900,000	\$0	\$0	\$0
12998	Collector Widening	68 Ave: 140 St - 144 St	Medium Term (4 - 6 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0
15302	Local Road Widening	137A St: 70 Ave - 71 Ave		\$0	\$0	\$0	\$0	\$0
15520	Collector Intersection Improvements	Various locations	Long Term (7 - 10 Yrs)	\$1,600,000	\$1,600,000	\$0	\$0	\$0
15522	Collector Widening	060 Ave: 124 St - 126 St	Short Term (1 - 3 Yrs)	\$2,000,000	\$1,000,000	\$1,000,000	\$0	\$0
15524	Collector Widening	070 Ave: 136B St - 137B St	Short Term (1 - 3 Yrs)	\$500,000	\$50,000	\$0	\$450,000	\$0
15525	Local Widening	026 Ave: 154 St - 156 St	Short Term (1 - 3 Yrs)	\$1,000,000	\$0	\$500,000	\$500,000	\$0
15526	New Local	070 Ave: 186 St - 188 St	Long Term (7 - 10 Yrs)	\$1,000,000	\$0	\$1,000,000	\$0	\$0
15527	Collector Widening	188 St: 070 Ave - 071 Ave (W.Side)	Long Term (7 - 10 Yrs)	\$1,500,000	\$1,500,000	\$0	\$0	\$0
15528	Collector Widening	076 Ave: 148 St - 152 St	Long Term (7 - 10 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
15529	New Collector	084 Ave : Fraser Hwy - 162 St	Long Term (7 - 10 Yrs)	\$900,000	\$900,000	\$0	\$0	\$0
15530	New Collector	105 Ave: 148 St - 150 St	Short Term (1 - 3 Yrs)	\$1,400,000	\$1,400,000	\$0	\$0	\$0
15531	Collector Widening	104A Ave: 144 St - 148 St	Short Term (1 - 3 Yrs)	\$2,800,000	\$2,800,000	\$0	\$0	\$0
15532	Collector Widening	060 Ave: 141 St - 142 St (S Side)	Medium Term (4 - 6 Yrs)	\$700,000	\$700,000	\$0	\$0	\$0
15533	Collector Widening	060 Ave: 146 St - 148 St (S Side)	Short Term (1 - 3 Yrs)	\$1,400,000	\$700,000	\$700,000	\$0	\$0
15534	Local Widening	150 St: 068 Ave - 072 Ave	Long Term (7 - 10 Yrs)	\$1,200,000	\$0	\$1,200,000	\$0	\$0
15535	Collector Widening	Barnston Dr: 170A St - 172 St	Short Term (1 - 3 Yrs)	\$1,050,000	\$262,500	\$525,000	\$262,500	\$0
15582	Collector Widening	River Rd / Grace Rd Connector	Short Term (1 - 3 Yrs)	\$2,100,000	\$2,100,000	\$0	\$0	\$0
16144	Collector Widening	020 Ave: 128 St - 140 St	Short Term (1 - 3 Yrs)	\$7,200,000	\$3,600,000	\$3,600,000	\$0	\$0
16145	Collector Widening	156 St: 108 Ave - 110 Ave	Short Term (1 - 3 Yrs)	\$1,400,000	\$700,000	\$700,000	\$0	\$0
16533	137A Street Local Road Improvement	137A St: 70 Ave to 71 Ave	Short Term (1 - 3 Yrs)	\$425,000	\$0	\$0	\$425,000	\$0
16701	Collector Widening	100 Ave: 128 St - 132 St	Medium Term (4 - 6 Yrs)	\$2,000,000	\$2,000,000	\$0	\$0	\$0



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

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 Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2018-27\Figure2-9-Transportation.mxd

## Transportation

### Program 1102 - Traffic Signals and Roundabouts

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7608	Traffic Signals: Conversion	019 Ave / 152 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7618	Traffic Signals: New	108 Ave / 128 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7619	Traffic Signals: New	110 Ave / 128 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7620	Traffic Signals: New	110 Ave / 126A St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7621	Traffic Signals: New	Crescent Rd / 128 St	Long Term (7 - 10 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
7639	Traffic Signals: New	Crescent Rd / 140 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7648	Traffic Signals: New	088 Ave / 192 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7649	Traffic Signals: New	088 Ave / Harvie Rd	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7660	Traffic Signals: New	064 Ave / 121 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
7670	Traffic Signal	086 Ave / Scott Rd	Short Term (1 - 3 Yrs)	\$150,000	\$150,000	\$0	\$0	\$0
8035	Opticom Pre-emption	Various locations	Annual	\$1,000,000	\$0	\$1,000,000	\$0	\$0
10099	Traffic Signals: New	Fraser Hwy / 192 St Div.	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
10842	Traffic Signals: New	065 Ave / 192 St Div	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
10986	Traffic Signals: New	103 Ave / City Parkway	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11753	Traffic Signals: New	032 Ave / 164 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11754	Traffic Signals: New	024 Ave / 164 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11755	Traffic Signals: New	062 Ave / 152 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11757	Traffic Signals: New	060 Ave / 132 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11758	Traffic Signals: New	068 Ave / 196 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
11761	Traffic Signals: New	068 Ave / 144 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
13003	Roundabout	060 Ave / 142 St	Medium Term (4 - 6 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
13005	Roundabout	032 Ave / 140 St Round-about	Short Term (1 - 3 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
13006	Traffic Signals: New	068 Ave / 130 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
13007	Traffic Signals: New	068 Ave / 134 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
13052	ITS Improvements	Various locations	Annual	\$3,000,000	\$0	\$3,000,000	\$0	\$0
13053	Traffic Signals: Rebuild	Various locations	Annual	\$19,000,000	\$0	\$10,000,000	\$0	\$9,000,000
14255	Traffic Signals: Pedestrian	Various locations	Annual	\$5,000,000	\$5,000,000	\$0	\$0	\$0
14263	Traffic Signals: New	080 Ave / 184 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
14264	Traffic Signals: New	080 Ave / Harvie Rd	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
14345	Activated Flashing Crosswalks	Various	Annual	\$5,000,000	\$2,000,000	\$3,000,000	\$0	\$0
15536	Traffic Signals: New	Various locations	Medium Term (4 - 6 Yrs)	\$1,800,000	\$1,800,000	\$0	\$0	\$0
15537	Traffic Signals: New	Various locations	Long Term (7 - 10 Yrs)	\$2,400,000	\$2,400,000	\$0	\$0	\$0
15540	Traffic Signals: New	024 Ave / 166 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15541	Traffic Signals: New	030 Ave / 160 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15542	Traffic Signals: New	056 Ave (Hwy 10) / 172 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15543	Traffic Signals: New	058 Ave / 168 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15544	Traffic Signals: Ped	062 Ave / 132 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15546	Traffic Signals: Conversion	064 Ave / 180 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15547	Traffic Signals: New	064 Ave / 181A St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15548	Traffic Signals: New	064 Ave / 186 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15549	Traffic Signals: New	064 Ave / 190 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15550	Traffic Signals: New	064 Ave / Clayton Wood	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15551	Traffic Signals: New	072 Ave / 146 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15553	Traffic Signals: New	080 Ave / 122 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15554	Traffic Signals: New	080 Ave / 125 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15555	Traffic Signals: New	080 Ave / 134 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15557	Traffic Signals: New	090 Ave / 140 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15558	Traffic Signals: New	090 Ave / 160 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15559	Traffic Signals: New	094 Ave / 160 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15560	Traffic Signals: New	100 Ave / 138 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0

15561	Traffic Signals: New	103 Ave / 144 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15562	Traffic Signals: New	104 Ave / 164 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15563	New Roundabout	104A Ave / 144 St	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
15564	New Roundabout	105 Ave / 148 St	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
15565	Traffic Signal: New	105A Ave / 140 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15567	Traffic Signals: New	106 Ave / 128 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15570	Traffic Signals: Pedestrian	Fraser Hwy / 182 St	Short Term (1 - 3 Yrs)	\$150,000	\$150,000	\$0	\$0	\$0
15572	Traffic Signals: New	Whalley Blvd / Bentley	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15573	Traffic Signals: New	Whalley Blvd / Grosvenor	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15581	Roundabout	060 Ave / 148 St	Medium Term (4 - 6 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
15589	Traffic Signals: New	066 Ave (Hyland) / 144 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
15590	Traffic Signals: New	070 Ave / King George Blvd.	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16146	Traffic Signal: New	072 Ave / Fraser Hwy	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16147	Traffic Signal: New	072 Ave / 184 St	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16148	Traffic Signal: New	020 Ave / 160 St	Medium Term (4 - 6 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16149	Rapid Flashing Beacons	Various Locations	Annual	\$2,000,000	\$0	\$2,000,000	\$0	\$0
16518	Traffic Signal Rebuild (MRN)	80 Ave & 120 St	Short Term (1 - 3 Yrs)	\$250,000	\$0	\$0	\$0	\$250,000
16519	Traffic Signal: Pedestrian	8100 Block & 120 Street	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
16520	Traffic Signal Rebuild (MRN)	152 St & King George Blvd	Short Term (1 - 3 Yrs)	\$200,000	\$0	\$0	\$0	\$200,000
16521	Traffic Signal Rebuild (MRN)	Nordel Way & 120 St	Short Term (1 - 3 Yrs)	\$200,000	\$0	\$0	\$0	\$200,000
16522	Traffic Signal Rebuild (MRN)	96 Ave & 128 St	Short Term (1 - 3 Yrs)	\$200,000	\$0	\$0	\$0	\$200,000
16523	Traffic Signal Rebuild (MRN)	96 Ave and 120 St	Short Term (1 - 3 Yrs)	\$200,000	\$0	\$0	\$0	\$200,000
16524	Traffic Signal Rebuild (MRN)	100 Ave & 152 St	Short Term (1 - 3 Yrs)	\$200,000	\$0	\$0	\$0	\$200,000
16525	Traffic Signal Conversion	100 Ave & 151 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16526	Traffic Signal Conversion	84 Ave & 146 St	Short Term (1 - 3 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
16527	New Traffic Signal	72 Ave & 150 St	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
16528	New Traffic Signal	25 Ave & 168 St	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
16529	New Traffic Signal	26 Ave & 168 St	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
16532	Traffic Signal: Pedestrian	16 Ave / 153 St	Short Term (1 - 3 Yrs)	\$300,000	\$150,000	\$0	\$150,000	\$0

### 3. WATER

The water utility provides sufficient, safe and clean drinking water to the residents of the City. This is provided through the operation, maintenance and replacement 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

The GVWD is upgrading Clayton reservoir and installing a new reservoir in the Fleetwood neighbourhood. Once commissioned, the new Clayton and Fleetwood reservoirs will enhance water distribution resiliency in the City.

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

#### 3.2 Water Distribution System

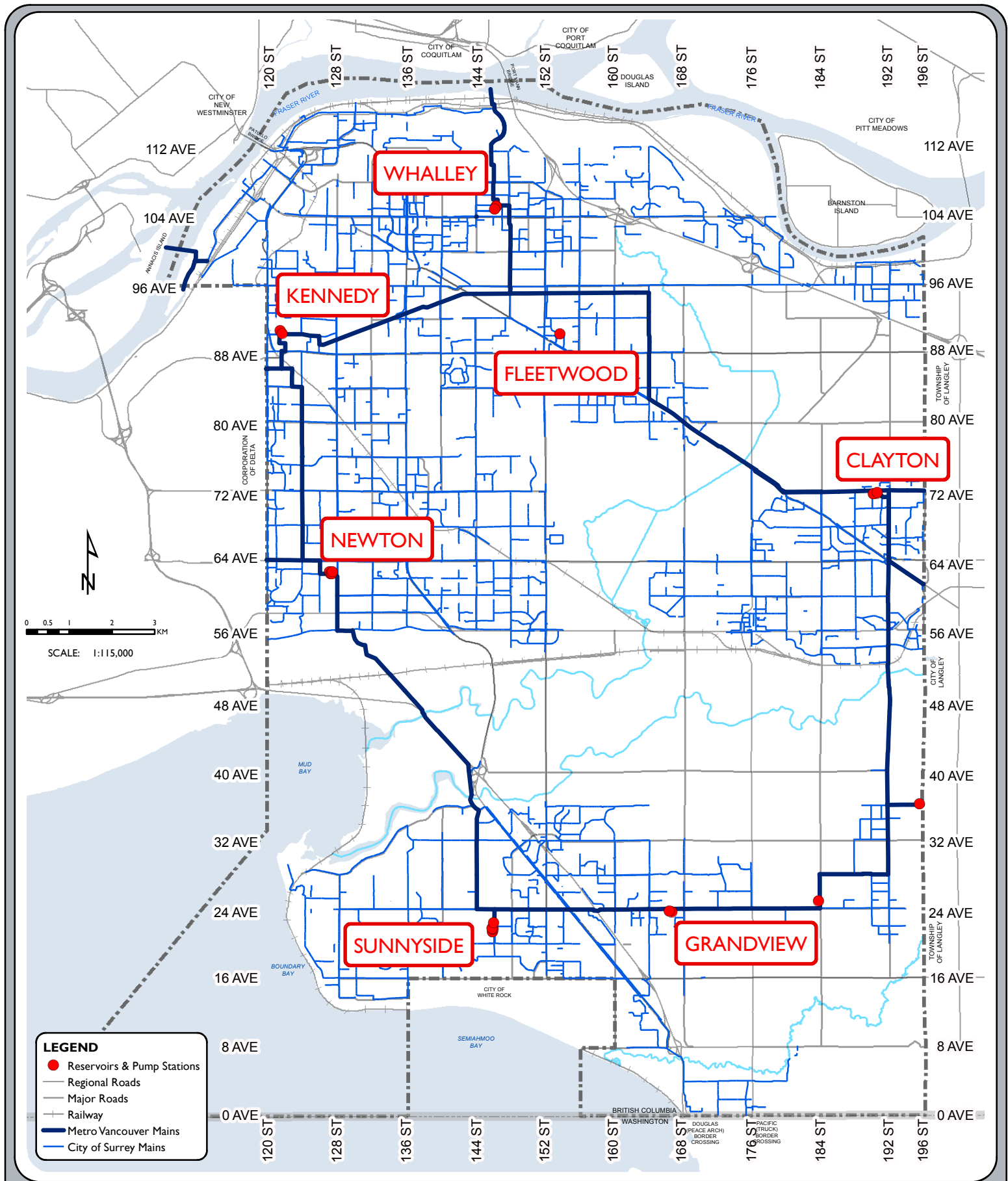
The City’s water system takes supply from the major reservoir supply points and the on-line supply points, and distributes to approximately 110,000 customers. Under the agreement between the City and the GVWD, the GVWD has no obligation to provide any residual pressure at their supply points. As a result, 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 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 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.

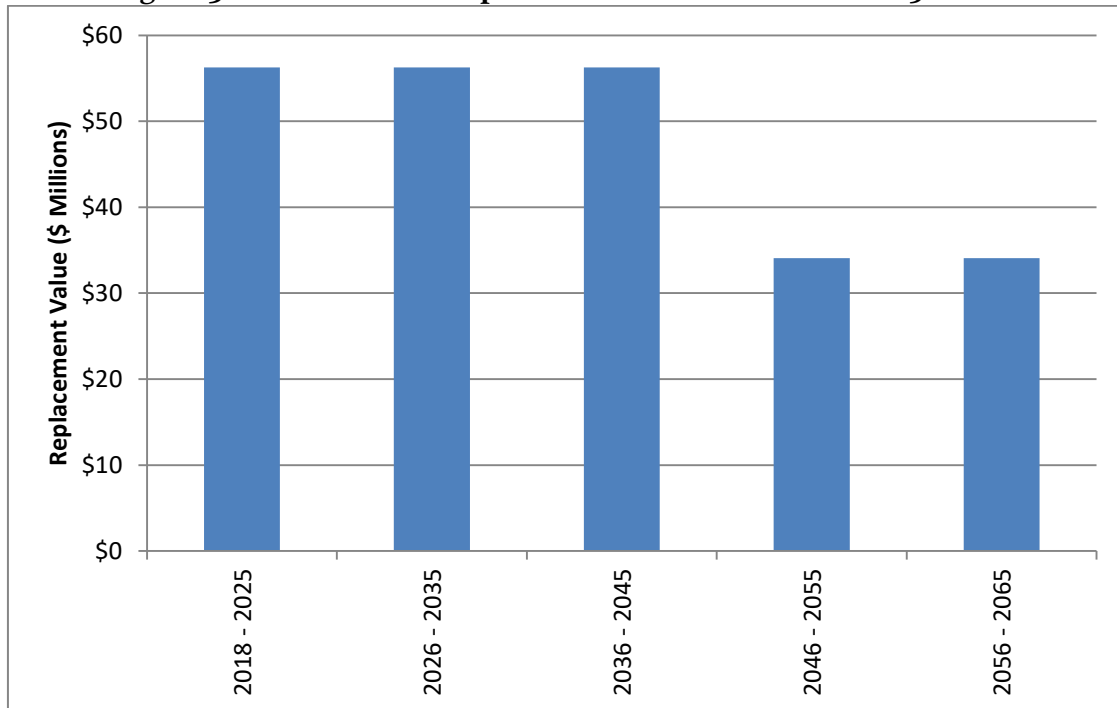
The characteristics of the pipes requiring replacement over the next 50 years is summarized in **Table 3.2**.

**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
<b>Misc.:</b> Cast Iron, Asbestos Cement, Concrete, Copper, Galvanized Iron, Galvanized Steel, and Steel	199 km (11% of entire pipe system by length)	199 km	\$169 million
<b>Plastic:</b> Poly Vinyl Chloride and Poly Ethylene	640 km (35% of entire pipe system by length)	11.5 km	\$9.8 million
<b>Ductile Iron</b>	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 \$60 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 1970s 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 the 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 DCW 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	0	7,000,000	7,000,000
1602	Distribution Mains	Capital	11,468,000	46,021,000	57,489,000
1606	Minor Projects	Capital	0	15,305,000	15,305,000
1608	Planning	Non-Capital	2,500,000	2,000,000	4,500,000
1609	Demand Management	Operating	0	31,000,000	31,000,000
1610	Supply Works and Feeder Mains	Capital	40,561,000	29,648,000	70,209,000
1612	Planning	Operating	0	4,000,000	4,000,000
1620	DCW Upsizing	Capital	16,000,000	0	16,000,000
<b>Total</b>			<b>70,529,000</b>	<b>134,974,000</b>	<b>205,503,000</b>

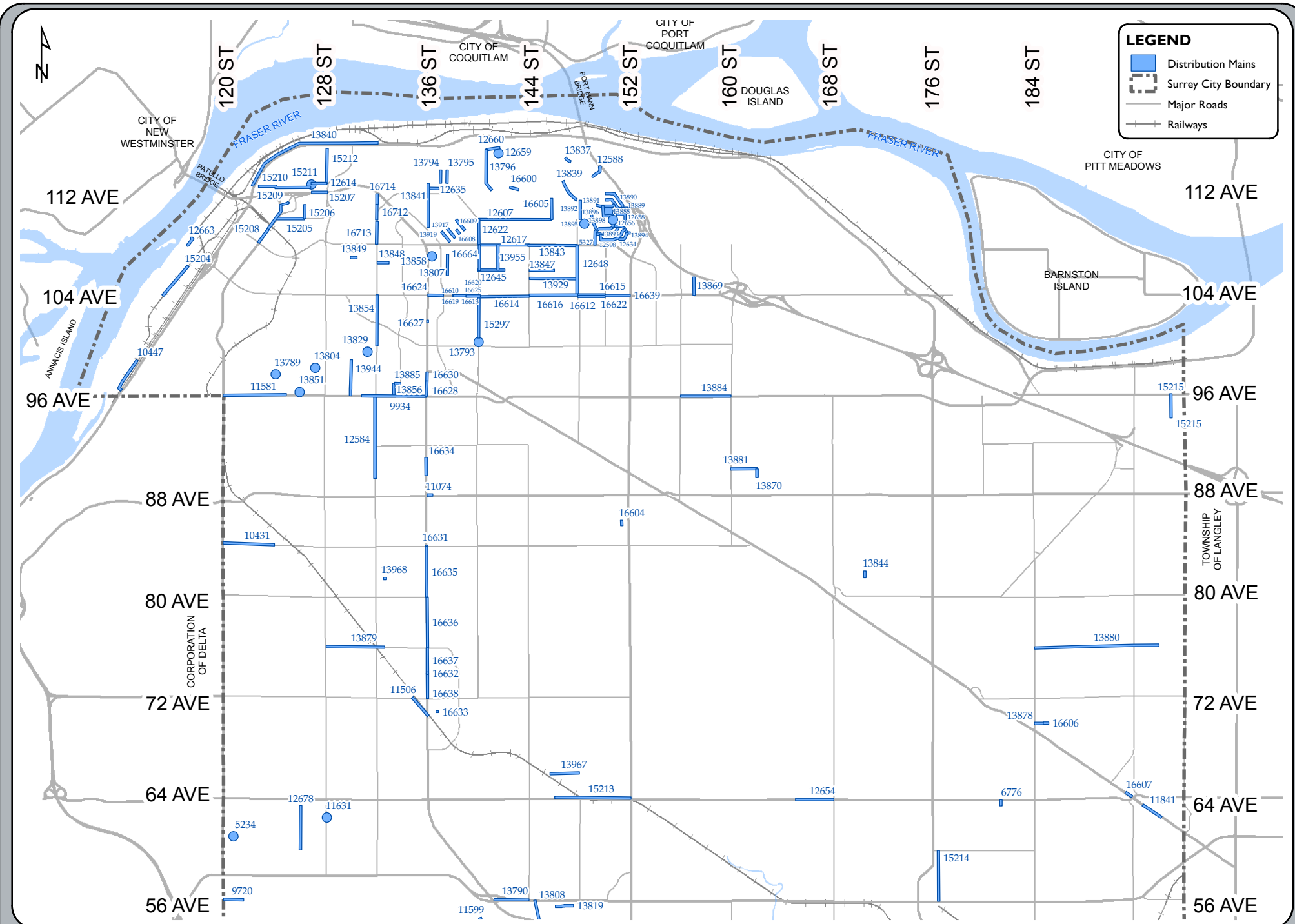
### 3.8 Water Projects by Program

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

The tables provide the following information:

- 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)
- e) Costs – the high level estimates in 2018 dollars (subject to change at the actual time of construction). The costs are comprised of growth and non-growth components.

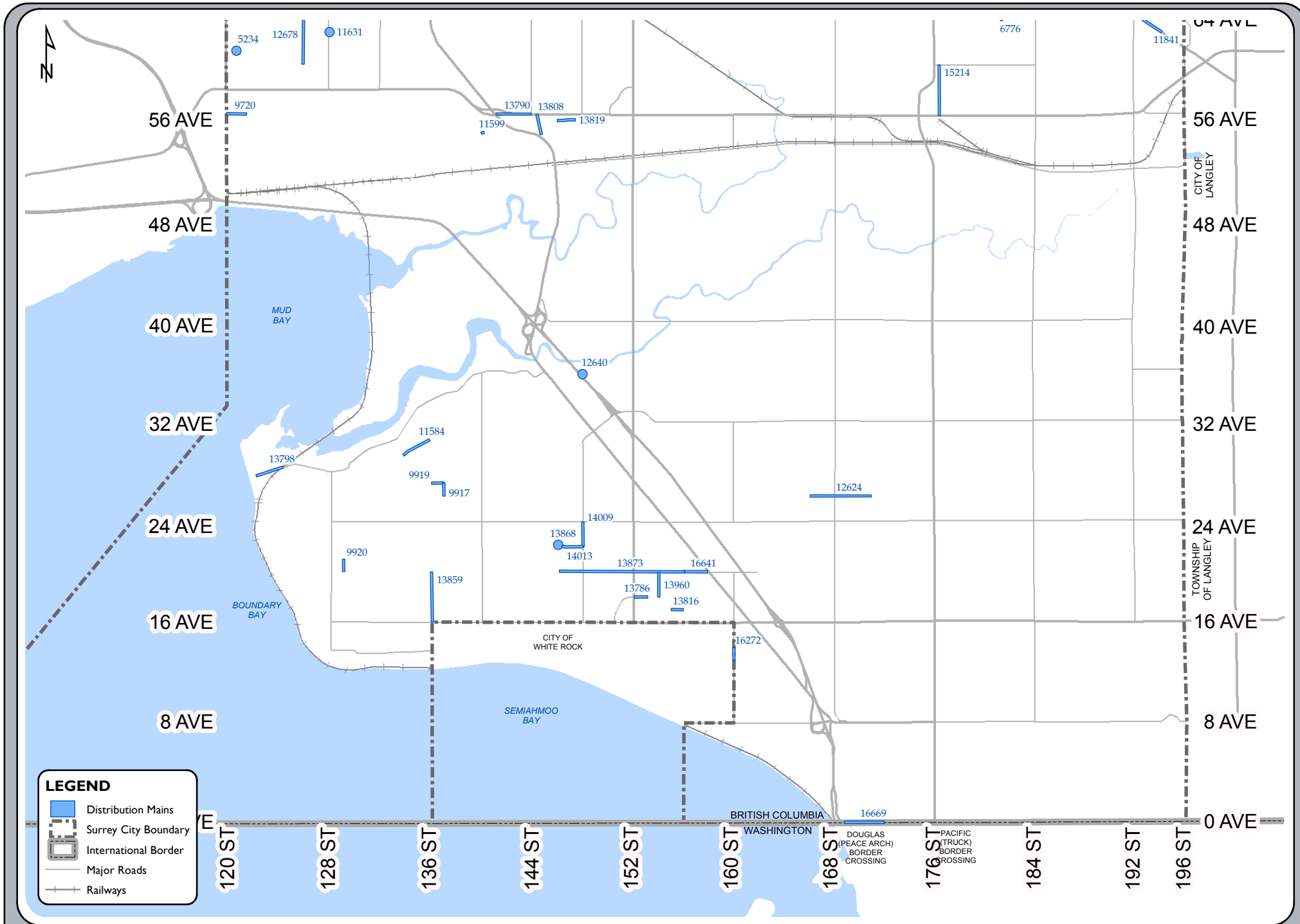
Each program table is accompanied by a figure (map) that shows the location and extent of the projects. Projects that are general in nature or in various locations throughout Surrey may not be shown on the maps.



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

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**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.

## Water

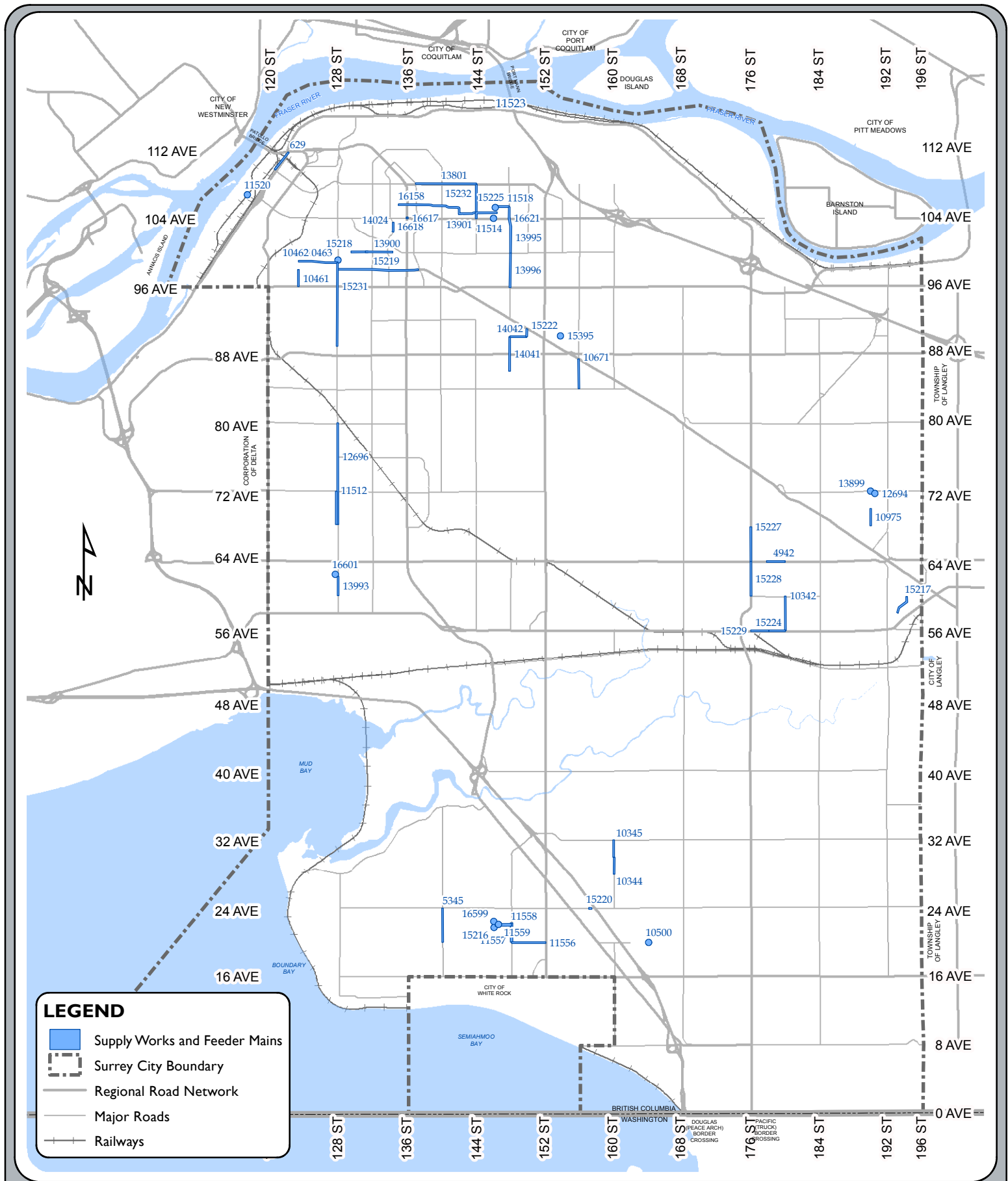
### Program 1602 - Distribution Mains (<= 300mm diameter)

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
5234	105m of 200mm diameter	061 Ave: 120A - 121 St	Long Term (7 - 10 Yrs)	\$90,000	\$0	\$90,000	\$0	\$0
5327	240m of 200mm diameter	Oriole Dr: 108 Ave - Canary Dr	Medium Term (4 - 6 Yrs)	\$187,000	\$0	\$187,000	\$0	\$0
6776	75m of 200mm diameter	181A St: 63A Ave - 64 Ave	Short Term (1 - 3 Yrs)	\$59,000	\$0	\$59,000	\$0	\$0
7908	W/Ms Replacements w/o Upsizing	Various Locations	Long Term (7 - 10 Yrs)	\$1,000,000	\$150,000	\$850,000	\$0	\$0
9720	300m of 200mm diameter	056 Ave: 120 St - 121A St	Short Term (1 - 3 Yrs)	\$234,000	\$0	\$234,000	\$0	\$0
9917	220m of 300mm diameter	137 ST: 26 Ave - 27 Ave	Short Term (1 - 3 Yrs)	\$211,000	\$116,000	\$95,000	\$0	\$0
9919	200m of 300mm diameter	027 Ave: 136 - 137 St	Short Term (1 - 3 Yrs)	\$211,000	\$116,000	\$95,000	\$0	\$0
9920	200m of 100mm diameter	129 St: 20 - 21 Ave	Long Term (7 - 10 Yrs)	\$132,000	\$0	\$132,000	\$0	\$0
9934	1000m of 300mm diameter	096 Ave: 131 - 136 St®	Short Term (1 - 3 Yrs)	\$1,051,000	\$0	\$1,051,000	\$0	\$0
10431	800m of 300mm diameter	084 Ave: 120 - 124 St	Short Term (1 - 3 Yrs)	\$840,000	\$252,000	\$588,000	\$0	\$0
10447	450m of 300m diameter	Robson Rd: Plywood - River Rd	Medium Term (4 - 6 Yrs)	\$350,000	\$193,000	\$157,000	\$0	\$0
11074	100m of 300mm diameter	088 Ave: 136 - 137 St®	Short Term (1 - 3 Yrs)	\$100,000	\$55,000	\$45,000	\$0	\$0
11506	320m of 300mm diameter	Hall Rd: 72 Ave - King George Blvd	Short Term (1 - 3 Yrs)	\$336,000	\$185,000	\$151,000	\$0	\$0
11581	1000m of 300mm diameter	096 Ave: 120 - 125 St®	Short Term (1 - 3 Yrs)	\$1,051,000	\$0	\$1,051,000	\$0	\$0
11584	1220m of 200mm diameter	Woodcrest Dr: 132 - 136 St	Short Term (1 - 3 Yrs)	\$750,000	\$0	\$750,000	\$0	\$0
11599	50m of 50mm diameter	Trites Rd: Lot 13995 - lot 14023	Short Term (1 - 3 Yrs)	\$10,000	\$0	\$10,000	\$0	\$0
11631	48m of 200mm diameter	062A Ave / 128 St	Short Term (1 - 3 Yrs)	\$29,000	\$0	\$29,000	\$0	\$0
11841	360m of 300 mm diameter	Fraser Hwy: Lot 19268 - 196 St	Long Term (7 - 10 Yrs)	\$600,000	\$330,000	\$270,000	\$0	\$0
12584	420m of 300mm diameter	132 St: 96 - 98 Ave	Medium Term (4 - 6 Yrs)	\$430,000	\$0	\$430,000	\$0	\$0
12588	220m of 200mm diameter	Loughren Dr: Perth - Hwy 1	Short Term (1 - 3 Yrs)	\$169,000	\$0	\$169,000	\$0	\$0
12598	550m of 200mm diameter	Raven Pl: Bluebird Cres - Canary Dr	Short Term (1 - 3 Yrs)	\$429,000	\$0	\$429,000	\$0	\$0
12607	1160m of 200mm diameter	110 Ave: 140 - 146 St	Short Term (1 - 3 Yrs)	\$905,000	\$0	\$905,000	\$0	\$0
12614	270m of 300mm diameter	112B Ave: 126A - 128 St	Short Term (1 - 3 Yrs)	\$284,000	\$0	\$284,000	\$0	\$0
12617	980m of 300mm diameter	108 Ave: 138 - 142 St	Medium Term (4 - 6 Yrs)	\$1,029,000	\$574,000	\$455,000	\$0	\$0
12622	1240m of 300mm diameter	140 St: 108 - 110 Ave	Medium Term (4 - 6 Yrs)	\$659,000	\$362,000	\$297,000	\$0	\$0
12624	1000m of 250mm diameter	026 Ave: 166 - 171 St	Short Term (1 - 3 Yrs)	\$900,000	\$324,000	\$576,000	\$0	\$0
12634	250m of 200mm diameter	Dove Pl: Canary Dr - Raven Pl	Short Term (1 - 3 Yrs)	\$94,000	\$0	\$94,000	\$0	\$0
12635	170m of 100mm diameter	112A Ave: 137 - 136 St	Medium Term (4 - 6 Yrs)	\$114,000	\$0	\$114,000	\$0	\$0
12640	60m of 100mm diameter	148 St: 36A - 36 Ave	Short Term (1 - 3 Yrs)	\$48,000	\$0	\$48,000	\$0	\$0
12645	420m of 200mm diameter	106 Ave: 142 - 140 St	Short Term (1 - 3 Yrs)	\$328,000	\$0	\$328,000	\$0	\$0
12648	750m of 300mm diameter	148 St: 108 - 104 Ave	Short Term (1 - 3 Yrs)	\$840,000	\$462,000	\$378,000	\$0	\$0
12654	600m of 300mm diameter	64 Ave: 168 - 165 St	Short Term (1 - 3 Yrs)	\$630,000	\$0	\$630,000	\$0	\$0
12656	120m of 100mm diameter	Eagle Pl: Lot 15111 - Jay Cr	Short Term (1 - 3 Yrs)	\$80,000	\$0	\$80,000	\$0	\$0
12658	440m of 200mm diameter	Swan Cr: Canary - Pheasant Dr	Short Term (1 - 3 Yrs)	\$343,000	\$0	\$343,000	\$0	\$0
12659	20m of 200mm diameter	115 Ave/141A St	Short Term (1 - 3 Yrs)	\$16,000	\$0	\$16,000	\$0	\$0
12660	240m of 200mm diameter	115A Ave: 141A - 140A St	Short Term (1 - 3 Yrs)	\$187,000	\$0	\$187,000	\$0	\$0
12663	160m of 300mm diameter	Dyke Rd: Tannery Rd - lot 10839	Medium Term (4 - 6 Yrs)	\$160,000	\$0	\$160,000	\$0	\$0
12678	560m of 300mm diameter	126 St: 60 - 62B Ave	Medium Term (4 - 6 Yrs)	\$700,000	\$0	\$700,000	\$0	\$0
13786	250m of 300mm diameter	018 Ave: 152 - 153 St	Short Term (1 - 3 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
13789	110m of 100mm diameter	124 St: 97A - 98 Ave	Short Term (1 - 3 Yrs)	\$74,000	\$0	\$74,000	\$0	\$0
13790	660m of 200mm diameter	056 Ave: King George Blvd - 144 St	Short Term (1 - 3 Yrs)	\$570,000	\$0	\$570,000	\$0	\$0
13793	70m of 250mm diameter	140 St: 100 - 100A Ave	Short Term (1 - 3 Yrs)	\$70,000	\$0	\$70,000	\$0	\$0
13794	230m of 200mm diameter	137 St: 113 - 114 Ave	Short Term (1 - 3 Yrs)	\$180,000	\$0	\$180,000	\$0	\$0
13795	220m of 200mm diameter	137A St: 113 - 114 Ave	Short Term (1 - 3 Yrs)	\$172,000	\$0	\$172,000	\$0	\$0
13796	630m of 200mm diameter	140A St: Grosvenor Rd - 115A Ave	Medium Term (4 - 6 Yrs)	\$491,000	\$0	\$491,000	\$0	\$0
13798	650m of 250mm diameter	Beecher St: McBride Ave - Bayview St	Medium Term (4 - 6 Yrs)	\$650,000	\$236,000	\$414,000	\$0	\$0
13804	80m of 100mm diameter	127A St: 98 - 98A Ave	Short Term (1 - 3 Yrs)	\$54,000	\$0	\$54,000	\$0	\$0
13806	880m of 200mm diameter	132 St: 108 - 112 Ave	Medium Term (4 - 6 Yrs)	\$686,000	\$0	\$686,000	\$0	\$0
13807	330m of 250mm diameter	137A St: 105A - 107A Ave	Short Term (1 - 3 Yrs)	\$330,000	\$119,000	\$211,000	\$0	\$0

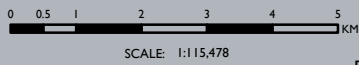
13808	490m of 200mm diameter	144A St - Lombard Pl - 56 Ave	Short Term (1 - 3 Yrs)	\$420,000	\$0	\$420,000	\$0	\$0
13816	220m of 200mm diameter	017 Ave: 155 - 156 St	Short Term (1 - 3 Yrs)	\$172,000	\$0	\$172,000	\$0	\$0
13819	430m of 200mm diameter	055A Ave: Southview Dr - 147A St	Short Term (1 - 3 Yrs)	\$493,000	\$0	\$493,000	\$0	\$0
13829	150m of 100mm diameter	099A Ave: Semiahmoo Rd - 131B St	Medium Term (4 - 6 Yrs)	\$100,000	\$0	\$100,000	\$0	\$0
13837	60m of 200mm diameter	St Andrews Dr: 147 St - Surrey Rd	Short Term (1 - 3 Yrs)	\$47,000	\$0	\$47,000	\$0	\$0
13839	360m of 300mm diameter	Wallace Dr: Surrey Rd - 111A Ave	Short Term (1 - 3 Yrs)	\$397,000	\$218,000	\$179,000	\$0	\$0
13840	2140m of 300mm diameter	116 Ave: 122 - 134 St	Short Term (1 - 3 Yrs)	\$2,247,000	\$0	\$2,247,000	\$0	\$0
13841	740m of 300mm diameter	136 St: Hilton Rd - 113 Ave	Medium Term (4 - 6 Yrs)	\$777,000	\$427,000	\$350,000	\$0	\$0
13843	820m of 300mm diameter	108 Ave: 144 - 148 St	Medium Term (4 - 6 Yrs)	\$820,000	\$0	\$820,000	\$0	\$0
13844	110m of 200mm diameter	170A St: 81A - 82 Ave	Short Term (1 - 3 Yrs)	\$86,000	\$0	\$86,000	\$0	\$0
13847	350m of 200mm diameter	106 Ave: 144 - 146 St	Medium Term (4 - 6 Yrs)	\$273,000	\$0	\$273,000	\$0	\$0
13848	310m of 200mm diameter	106A Ave: 132 - 133 St	Short Term (1 - 3 Yrs)	\$242,000	\$0	\$242,000	\$0	\$0
13849	100m of 200mm diameter	107 Ave: 130 - 130A St	Short Term (1 - 3 Yrs)	\$78,000	\$0	\$78,000	\$0	\$0
13851	160m of 200mm diameter	126 St: 96 - 96A Ave	Short Term (1 - 3 Yrs)	\$125,000	\$0	\$125,000	\$0	\$0
13854	970m of 300mm diameter	132 St: 100 - 104 Ave	Medium Term (4 - 6 Yrs)	\$810,000	\$0	\$810,000	\$0	\$0
13856	230m of 200mm diameter	133A St: 96 - 97 Ave	Short Term (1 - 3 Yrs)	\$179,000	\$0	\$179,000	\$0	\$0
13858	150m of 100mm diameter	135B St: 107 - 107A Ave	Medium Term (4 - 6 Yrs)	\$120,000	\$0	\$120,000	\$0	\$0
13859	820m of 300mm diameter	136 St: 16 - 20 Ave	Short Term (1 - 3 Yrs)	\$820,000	\$0	\$820,000	\$0	\$0
13868	70m of 300mm diameter	146 St @ Sunnyside PS	Long Term (7 - 10 Yrs)	\$70,000	\$0	\$70,000	\$0	\$0
13869	450m of 300mm diameter	157 St: 104 Ave - 105A Ave /157 St	Short Term (1 - 3 Yrs)	\$389,000	\$214,000	\$175,000	\$0	\$0
13870	100m of 200mm diameter	162 St: 89A - 90 Ave	Short Term (1 - 3 Yrs)	\$156,000	\$0	\$156,000	\$0	\$0
13873	2010m of 300mm diameter	020 Ave: 146 - 156 St	Medium Term (4 - 6 Yrs)	\$1,600,000	\$0	\$1,600,000	\$0	\$0
13878	200m of 300mm diameter	070 Ave: 184 - 185 St	Short Term (1 - 3 Yrs)	\$210,000	\$210,000	\$0	\$0	\$0
13879	940m of 300mm diameter	076 Ave: 128 - 132A St	Medium Term (4 - 6 Yrs)	\$800,000	\$0	\$800,000	\$0	\$0
13880	2010m of 300mm diameter	076 Ave: 184 - 194 St	Medium Term (4 - 6 Yrs)	\$2,010,000	\$1,105,000	\$905,000	\$0	\$0
13881	430m of 200mm diameter	090 Ave: 160 - 162 St	Short Term (1 - 3 Yrs)	\$335,000	\$0	\$335,000	\$0	\$0
13884	830m of 300mm diameter	096 Ave: 156 - 160 St	Short Term (1 - 3 Yrs)	\$870,000	\$0	\$870,000	\$0	\$0
13885	100m of 200mm diameter	097 Ave: 133A - 134 St	Short Term (1 - 3 Yrs)	\$85,000	\$0	\$85,000	\$0	\$0
13888	160m of 200mm diameter	Peacock Pl: Jay Cr - 151 St	Short Term (1 - 3 Yrs)	\$125,000	\$0	\$125,000	\$0	\$0
13889	460m of 300mm diameter	Pheasant Dr: 150 - 152 St	Short Term (1 - 3 Yrs)	\$483,000	\$266,000	\$217,000	\$0	\$0
13890	420m of 200mm diameter	Robin Cr: 150 St - Pheasant Dr	Short Term (1 - 3 Yrs)	\$328,000	\$0	\$328,000	\$0	\$0
13891	330m of 200mm diameter	Swallow Dr: Patridge Cr - Pheasant Dr	Short Term (1 - 3 Yrs)	\$258,000	\$0	\$258,000	\$0	\$0
13892	380m of 200mm diameter	148A St: 110 Ave - Blackbird Cr	Short Term (1 - 3 Yrs)	\$311,000	\$0	\$311,000	\$0	\$0
13893	460m of 200mm diameter	Bluebird Cr: Oriole Dr - Canary Dr	Medium Term (4 - 6 Yrs)	\$360,000	\$0	\$360,000	\$0	\$0
13894	600m of 200mm diameter	Canary Dr: Oriole Dr - 152 St	Medium Term (4 - 6 Yrs)	\$468,000	\$0	\$468,000	\$0	\$0
13895	70m of 100mm diameter	Lark Pl: Wren Cr - 148 St	Short Term (1 - 3 Yrs)	\$47,000	\$0	\$47,000	\$0	\$0
13896	370m of 200mm diameter	Oriole Dr: Canary Dr - Blackbird Cr	Short Term (1 - 3 Yrs)	\$290,000	\$0	\$290,000	\$0	\$0
13898	480m of 200mm diameter	Jay Cr: Canary Dr - Swallow Dr	Short Term (1 - 3 Yrs)	\$374,000	\$0	\$374,000	\$0	\$0
13917	220m of 200mm diameter	Franklin Rd: Grosvenor - Cowan Rd	Short Term (1 - 3 Yrs)	\$172,000	\$0	\$172,000	\$0	\$0
13919	200m of 200mm diameter	Larner Rd: Grosvenor - Cowan Rd	Short Term (1 - 3 Yrs)	\$156,000	\$0	\$156,000	\$0	\$0
13929	820m of 300mm diameter	105A Ave: 144 - 148 St	Medium Term (4 - 6 Yrs)	\$861,000	\$474,000	\$387,000	\$0	\$0
13944	750m of 300mm diameter	130 St: 96 - 98B Ave	Medium Term (4 - 6 Yrs)	\$550,000	\$0	\$550,000	\$0	\$0
13955	400m of 200mm diameter	141A St: 106 - 108 Ave	Short Term (1 - 3 Yrs)	\$300,000	\$0	\$300,000	\$0	\$0
13960	410m of 300mm diameter	154 St: 18 - 20 Ave	Medium Term (4 - 6 Yrs)	\$410,000	\$226,000	\$184,000	\$0	\$0
13967	500m of 300mm diameter	66 Ave: 146 - 148 St	Medium Term (4 - 6 Yrs)	\$500,000	\$275,000	\$225,000	\$0	\$0
13968	50m of 100mm diameter	081A Ave: 132A - 132A st	Short Term (1 - 3 Yrs)	\$40,000	\$0	\$40,000	\$0	\$0
14009	410m of 300mm diameter	148 St: 22 - 24 Ave	Medium Term (4 - 6 Yrs)	\$410,000	\$123,000	\$287,000	\$0	\$0
14013	410m of 300mm diameter	22 Ave: 146 - 148 St	Medium Term (4 - 6 Yrs)	\$410,000	\$123,000	\$287,000	\$0	\$0
15203	Condition Assessment - Distribution Mains	Various Locations	Long Term (7 - 10 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
15204	Seismic Upgrades - 710m of 350mm diameter	Timberland Rd: lot 10550 - lot 10622	Medium Term (4 - 6 Yrs)	\$750,000	\$0	\$750,000	\$0	\$0
15205	Seismic Upgrades - 500m of 300mm diameter	110 Ave: 124 - 126A St	Medium Term (4 - 6 Yrs)	\$525,000	\$0	\$525,000	\$0	\$0
15206	Seismic Upgrades - 360m of 300mm diameter	126A St: 110 - 112 Ave	Medium Term (4 - 6 Yrs)	\$378,000	\$0	\$378,000	\$0	\$0
15207	Seismic Upgrades - 360m of 300mm diameter	112 Ave: 126A - 128 St	Medium Term (4 - 6 Yrs)	\$378,000	\$0	\$378,000	\$0	\$0



15208	Seismic Upgrades - 320m of 300mm diameter	Scott Rd: Old Yale - Larson Rd	Medium Term (4 - 6 Yrs)	\$336,000	\$0	\$336,000	\$0	\$0
15209	Seismic Upgrades - 500m of 300mm diameter	Scott Rd: Larson Rd - 111A Ave	Medium Term (4 - 6 Yrs)	\$525,000	\$0	\$525,000	\$0	\$0
15210	1000m of 300mm diameter	112A Ave: Hwy 17 - 126A St	Short Term (1 - 3 Yrs)	\$1,200,000	\$0	\$1,200,000	\$0	\$0
15211	Seismic Upgrades - 70m of 300mm diameter	126A St: 112A - 112B Ave	Medium Term (4 - 6 Yrs)	\$74,000	\$0	\$74,000	\$0	\$0
15212	Seismic Upgrades - 560m of 300mm diameter	128 St: 112B - 115B Ave	Medium Term (4 - 6 Yrs)	\$588,000	\$0	\$588,000	\$0	\$0
15213	Seismic Upgrades - 1200m of 300mm diameter	064 Ave: 146 - 152 St	Medium Term (4 - 6 Yrs)	\$1,260,000	\$0	\$1,260,000	\$0	\$0
15214	Seismic Upgrades - 820m of 300mm diameter	176A St: 56 - 60 Ave	Medium Term (4 - 6 Yrs)	\$861,000	\$0	\$861,000	\$0	\$0
15215	Seismic Upgrades - 420m of 300mm diameter	195 St: 94 - 96 Ave	Medium Term (4 - 6 Yrs)	\$441,000	\$0	\$441,000	\$0	\$0
15297	840m of 300mm diameter	140 St: 100A - 104 Ave	Short Term (1 - 3 Yrs)	\$740,000	\$0	\$740,000	\$0	\$0
16272	200m of 200mm diameter	160 St: 13 - 14 Ave	Medium Term (4 - 6 Yrs)	\$168,000	\$0	\$168,000	\$0	\$0
16600	150m of 200mm diameter	Gladstone Dr: 143A St - Lot 14261	Short Term (1 - 3 Yrs)	\$120,000	\$0	\$120,000	\$0	\$0
16604	90m of 200mm diameter	151A St: 85A - 86 Ave	Short Term (1 - 3 Yrs)	\$72,000	\$0	\$72,000	\$0	\$0
16605	340m of 200mm diameter	146 St: 110 - 111A Ave	Medium Term (4 - 6 Yrs)	\$281,000	\$0	\$281,000	\$0	\$0
16606	90m of 200mm diameter	070 Ave: 185 St - Lot 18513	Medium Term (4 - 6 Yrs)	\$74,000	\$0	\$74,000	\$0	\$0
16607	130m of 200mm diameter	Fraser Hwy: 191A - 192 St	Medium Term (4 - 6 Yrs)	\$111,000	\$0	\$111,000	\$0	\$0
16608	90m of 200mm diameter	Berg Rd: Cowan Rd - Lot 13823	Short Term (1 - 3 Yrs)	\$70,000	\$0	\$70,000	\$0	\$0
16609	220m of 200mm diameter	Selkirk Dr: Cowan Rd - Grosvenor Rd	Short Term (1 - 3 Yrs)	\$187,000	\$0	\$187,000	\$0	\$0
16610	200m of 300mm diameter (LRT)	104 Ave: 138 - 139 St (South)	Short Term (1 - 3 Yrs)	\$345,000	\$190,000	\$155,000	\$0	\$0
16612	440m of 300mm diameter (LRT)	104 Ave: 148 - 150 St (South)	Short Term (1 - 3 Yrs)	\$506,000	\$278,000	\$228,000	\$0	\$0
16613	230m of 300mm diameter (LRT)	104 Ave: 139 - 140 St (South)	Short Term (1 - 3 Yrs)	\$265,000	\$146,000	\$119,000	\$0	\$0
16614	810m of 300mm diameter (LRT)	104 Ave: 140 - 144 St (South)	Short Term (1 - 3 Yrs)	\$932,000	\$513,000	\$419,000	\$0	\$0
16615	440m of 300mm diameter (LRT)	104 Ave: 148 - 150 St (North)	Short Term (1 - 3 Yrs)	\$506,000	\$0	\$506,000	\$0	\$0
16616	Upsizing 790m of 300mm diameter (LRT)	104 Ave: 144 - 148 St (North)	Short Term (1 - 3 Yrs)	\$182,000	\$182,000	\$0	\$0	\$0
16619	Upsizing 30m of 300mm diameter (LRT)	104 Ave / 138 St (Crossing N-S)	Short Term (1 - 3 Yrs)	\$34,000	\$34,000	\$0	\$0	\$0
16620	Upsizing 30m of 300mm diameter (LRT)	104 Ave / 139 St (Crossing N-S)	Short Term (1 - 3 Yrs)	\$34,000	\$34,000	\$0	\$0	\$0
16622	Upsizing 30m of 300mm diameter (LRT)	104 Ave / 150 St (Crossing N-S)	Short Term (1 - 3 Yrs)	\$25,000	\$25,000	\$0	\$0	\$0
16624	250m of 300mm diameter (LRT)	104 Ave: King George - Whalley Blvd (South)	Short Term (1 - 3 Yrs)	\$230,000	\$230,000	\$0	\$0	\$0
16625	230m of 300mm diameter (LRT)	104 Ave: 139 - 140 St (North)	Short Term (1 - 3 Yrs)	\$230,000	\$230,000	\$0	\$0	\$0
16627	30m of 300mm diameter (LRT)	King George Blvd / 102 Ave (Crossing E-W)	Short Term (1 - 3 Yrs)	\$166,000	\$166,000	\$0	\$0	\$0
16628	250m of 300mm diameter (LRT)	King George Blvd: 96 - 97A Ave (East)	Short Term (1 - 3 Yrs)	\$288,000	\$158,000	\$130,000	\$0	\$0
16630	Upsizing 220m of 300mm diameter (LRT)	King George Blvd: Fraser Hwy - 97A Ave (East)	Short Term (1 - 3 Yrs)	\$38,000	\$38,000	\$0	\$0	\$0
16631	Upsizing 35m of 300mm diameter (LRT)	King George Blvd / 84 Ave (Crossing E-W)	Short Term (1 - 3 Yrs)	\$29,000	\$29,000	\$0	\$0	\$0
16632	Upsizing 30m of 300mm diameter (LRT)	King George Blvd / 74 Ave (Crossing E-W)	Short Term (1 - 3 Yrs)	\$25,000	\$25,000	\$0	\$0	\$0
16633	Upsizing 30m of 300mm diameter (LRT)	071 Ave / 136B St (Crossing N-S)	Short Term (1 - 3 Yrs)	\$34,000	\$34,000	\$0	\$0	\$0
16634	290m of 300mm diameter (LRT)	King George Blvd: Lot 8992 - 91 Ave (East)	Short Term (1 - 3 Yrs)	\$379,000	\$379,000	\$0	\$0	\$0
16635	770m of 300mm diameter (LRT)	King George Blvd: 80 - 84 Ave (West)	Short Term (1 - 3 Yrs)	\$414,000	\$414,000	\$0	\$0	\$0
16636	820m of 300mm diameter (LRT)	King George Blvd: 76 - 80 Ave (East)	Short Term (1 - 3 Yrs)	\$345,000	\$345,000	\$0	\$0	\$0
16637	400m of 300mm diameter (LRT)	King George Blvd: 74 - 76 Ave (East)	Short Term (1 - 3 Yrs)	\$190,000	\$190,000	\$0	\$0	\$0
16638	410m of 300mm diameter (LRT)	King George Blvd: 72 - 74 Ave (East)	Short Term (1 - 3 Yrs)	\$115,000	\$115,000	\$0	\$0	\$0
16639	430m of 300mm diameter (LRT)	104 Ave: 150 - 152 St (North)	Short Term (1 - 3 Yrs)	\$495,000	\$0	\$495,000	\$0	\$0
16641	400m of 300m diameter	020 Ave: 156 St - King George Blvd	Medium Term (4 - 6 Yrs)	\$400,000	\$224,000	\$176,000	\$0	\$0
16664	405m of 300mm diameter	140 St: 106 - 108 Ave	Short Term (1 - 3 Yrs)	\$643,000	\$354,000	\$289,000	\$0	\$0
16669	650m of 300mm diameter	000 Ave: Peace Park Dr - 172 St	Short Term (1 - 3 Yrs)	\$553,000	\$0	\$553,000	\$0	\$0



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



# Water

## Program 1610 - Supply Works and Feeder Main

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
629	500m of 400mm diameter	SFPR/Bridge Road: Old Yale Rd - 112 Ave	Short Term (1 - 3 Yrs)	\$600,000	\$600,000	\$0	\$0	\$0
4942	360m of 350mm diameter	064 Ave: 178 - 180 St®	Medium Term (4 - 6 Yrs)	\$396,000	\$267,000	\$129,000	\$0	\$0
5345	800m of 400mm diameter	140 St: 20 - 24 Ave	Short Term (1 - 3 Yrs)	\$960,000	\$720,000	\$240,000	\$0	\$0
10342	835m of 450mm diameter	180 St: 56 - 60 Ave	Long Term (7 - 10 Yrs)	\$1,127,000	\$1,127,000	\$0	\$0	\$0
10344	600m of 400mm diameter	160 St: 28 - 30 Ave	Medium Term (4 - 6 Yrs)	\$720,000	\$720,000	\$0	\$0	\$0
10345	200m of 400mm diameter	160 St: 30 - 32 Ave	Medium Term (4 - 6 Yrs)	\$240,000	\$240,000	\$0	\$0	\$0
10461	600m of 600mm diameter	123A St: 96 Ave - 98 Ave	Long Term (7 - 10 Yrs)	\$990,000	\$990,000	\$0	\$0	\$0
10462	900m of 600mm diameter	099 Ave: 123A St - 128 Ave	Long Term (7 - 10 Yrs)	\$1,485,000	\$1,485,000	\$0	\$0	\$0
10463	600m of 600mm diameter	099 St / 128 St to 100 Ave / 129A St	Long Term (7 - 10 Yrs)	\$990,000	\$990,000	\$0	\$0	\$0
10500	Pressure Reducing Valve	164 St / 20 Ave	Long Term (7 - 10 Yrs)	\$200,000	\$0	\$200,000	\$0	\$0
10671	750m of 450mm diameter	156 St: 84 Ave - Fraser Hwy	Long Term (7 - 10 Yrs)	\$1,020,000	\$1,020,000	\$0	\$0	\$0
10975	420m of 600mm diameter	190 St: 68 - 70 Ave	Long Term (7 - 10 Yrs)	\$693,000	\$693,000	\$0	\$0	\$0
11512	800m of 750mm diameter	128 St: 68 - 72 Ave	Long Term (7 - 10 Yrs)	\$1,680,000	\$605,000	\$1,075,000	\$0	\$0
11514	Whalley P.S. 6th Pump	104A Ave / 146 St	Long Term (7 - 10 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
11518	450m of 1200mm diameter	105A Ave: 146 - 148 St	Long Term (7 - 10 Yrs)	\$1,050,000	\$788,000	\$262,000	\$0	\$0
11520	150m of 350mm diameter	Timberland Rd: Tannery Rd - Pine Rd	Short Term (1 - 3 Yrs)	\$143,000	\$0	\$143,000	\$0	\$0
11535	Rehab Existing PRVs	Various Locations	Medium Term (4 - 6 Yrs)	\$4,500,000	\$1,500,000	\$3,000,000	\$0	\$0
11556	800m of 450mm diameter	020 Ave: 148 - 152 St	Long Term (7 - 10 Yrs)	\$1,040,000	\$1,040,000	\$0	\$0	\$0
11557	410m of 600mm diameter	148 St: 20 - 22 Ave	Long Term (7 - 10 Yrs)	\$677,000	\$677,000	\$0	\$0	\$0
11558	410m of 600mm diameter	022 Ave: 148 - 146 St	Long Term (7 - 10 Yrs)	\$677,000	\$677,000	\$0	\$0	\$0
11559	220m of 900mm diameter	146 St / 22 Ave	Long Term (7 - 10 Yrs)	\$616,000	\$616,000	\$0	\$0	\$0
12694	Clayton P.S. 5th pump	72 Ave / 190 St	Long Term (7 - 10 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
12696	1600m of 600mm diameter	128 St: 72 - 80 Ave	Long Term (7 - 10 Yrs)	\$2,640,000	\$1,162,000	\$1,478,000	\$0	\$0
13801	1460m of 600mm diameter	108 Ave: Whalley Blvd - 144 St	Long Term (7 - 10 Yrs)	\$2,409,000	\$1,060,000	\$1,349,000	\$0	\$0
13899	Clayton P.S. 6th pump	72 Ave / 190 St	Long Term (7 - 10 Yrs)	\$750,000	\$750,000	\$0	\$0	\$0
13900	740m of 600mm diameter	100 Ave: 131A St - 134A St / Old Yale Rd	Long Term (7 - 10 Yrs)	\$1,221,000	\$0	\$1,221,000	\$0	\$0
13901	540m of 750mm diameter	144 St: 104 - 104A Ave /146 St	Long Term (7 - 10 Yrs)	\$1,134,000	\$0	\$1,134,000	\$0	\$0
13993	510m of 600mm diameter	128 St: 60 - 62A Ave	Long Term (7 - 10 Yrs)	\$759,000	\$0	\$759,000	\$0	\$0
13995	1500m of 900mm diameter	148 St: 100 - 105A Ave	Long Term (7 - 10 Yrs)	\$3,080,000	\$1,694,000	\$1,386,000	\$0	\$0
13996	800m of 600mm diameter	148 St: 96 - 100 Ave	Long Term (7 - 10 Yrs)	\$1,320,000	\$581,000	\$739,000	\$0	\$0
14024	180m of 600mm diameter	University Dr: 102A - 103A Ave	Long Term (7 - 10 Yrs)	\$297,000	\$0	\$297,000	\$0	\$0
14041	750m of 450mm diameter	148 St: 86 - 90 Ave	Long Term (7 - 10 Yrs)	\$975,000	\$975,000	\$0	\$0	\$0
14042	400m of 450mm diameter	090 Ave: 148 - 150 St	Long Term (7 - 10 Yrs)	\$520,000	\$520,000	\$0	\$0	\$0
15216	Sunnyside Pump Station 1 Electrical & Mechanical Upgrades	148 St: lot 2200	Short Term (1 - 3 Yrs)	\$1,500,000	\$0	\$1,500,000	\$0	\$0
15217	500m of 400mm diameter	Enterprise Way: 193 - 194A St	Short Term (1 - 3 Yrs)	\$600,000	\$450,000	\$150,000	\$0	\$0
15218	450m of 750mm diameter	100 Ave: 129A - 131A St	Long Term (7 - 10 Yrs)	\$630,000	\$403,000	\$227,000	\$0	\$0
15219	2000m of 750mm diameter	098 Ave: 128 - 137A St	Long Term (7 - 10 Yrs)	\$4,200,000	\$2,688,000	\$1,512,000	\$0	\$0
15220	50m of 450mm diameter	024 Ave: 157 - 157A St	Short Term (1 - 3 Yrs)	\$100,000	\$100,000	\$0	\$0	\$0
15221	Condition Assessment - Supply and Feeder Mains	Various Locations	Long Term (7 - 10 Yrs)	\$500,000	\$0	\$500,000	\$0	\$0
15222	200m of 450mm diameter	150 St: 90 Ave - Fraser Hwy	Long Term (7 - 10 Yrs)	\$260,000	\$260,000	\$0	\$0	\$0
15224	400m of 450mm diameter	056 Ave: 178 - 180 St	Long Term (7 - 10 Yrs)	\$540,000	\$540,000	\$0	\$0	\$0
15225	Whalley Pump Station Electrical & Mechanical Upgrades	105A Ave: lot 14620	Short Term (1 - 3 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
15226	Cathodic Protection - Supply and Feeder Mains	Various Locations	Long Term (7 - 10 Yrs)	\$500,000	\$0	\$500,000	\$0	\$0
15227	Seismic Upgrades - 830m of 500mm diameter	176 St: 64 - 68 Ave	Medium Term (4 - 6 Yrs)	\$872,000	\$0	\$872,000	\$0	\$0
15228	Seismic Upgrades - 830m of 400mm diameter	176 St: 60 - 64 Ave	Medium Term (4 - 6 Yrs)	\$872,000	\$0	\$872,000	\$0	\$0
15229	Seismic Upgrades - 500m of 450mm diameter	056 Ave: 176 - 178 St	Medium Term (4 - 6 Yrs)	\$525,000	\$0	\$525,000	\$0	\$0
15231	1980m of 750mm diameter	128 St: 8900 block - 99 Ave	Long Term (7 - 10 Yrs)	\$3,990,000	\$2,554,000	\$1,436,000	\$0	\$0
15232	850m of 750mm diameter	144 St: 104 - 108 Ave	Long Term (7 - 10 Yrs)	\$1,785,000	\$643,000	\$1,142,000	\$0	\$0
15395	Fleetwood Reservoir Statutory Right-of-Way	090 Ave: lot 15385	Long Term (7 - 10 Yrs)	\$3,000,000	\$1,500,000	\$1,500,000	\$0	\$0

16136	Jericho Reservoir - City of Surrey Contribution	Township of Langley (20400 - 73A Avenue)	Short Term (1 - 3 Yrs)	\$7,000,000	\$7,000,000	\$0	\$0	\$0
16158	2700m of 750mm/900mm diameter	105A Ave: City Parkway - 14400 Block	Short Term (1 - 3 Yrs)	\$1,329,000	\$1,329,000	\$0	\$0	\$0
16599	Sunnyside Pump Station 2 Electrical & Mechanical Upgrades	148 St: Lot 2200	Short Term (1 - 3 Yrs)	\$1,500,000	\$0	\$1,500,000	\$0	\$0
16601	Newton Pump Station Electrical & Mechanical Upgrades	128 St: Lot 6275	Short Term (1 - 3 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
16617	Upsizing 50m of 350mm diameter (LRT)	104 Ave / King George Blvd (Crossing E-W-S)	Short Term (1 - 3 Yrs)	\$9,000	\$9,000	\$0	\$0	\$0
16618	Upsizing 35m of 375mm diameter (LRT)	104 Ave / King George Blvd (Crossing N-S)	Short Term (1 - 3 Yrs)	\$29,000	\$29,000	\$0	\$0	\$0
16621	Upsizing 30m of 400mm diameter (LRT)	104 Ave / 148 St (Crossing N-S)	Short Term (1 - 3 Yrs)	\$59,000	\$59,000	\$0	\$0	\$0

## 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 and the flooding of private property.

### 4.1 Sanitary Sewer Inventory

Surrey has an inventory of sanitary sewers of approximately 1,657 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	1,657 km
Vacuum Sanitary System	23 km
Sanitary Pump Stations	45

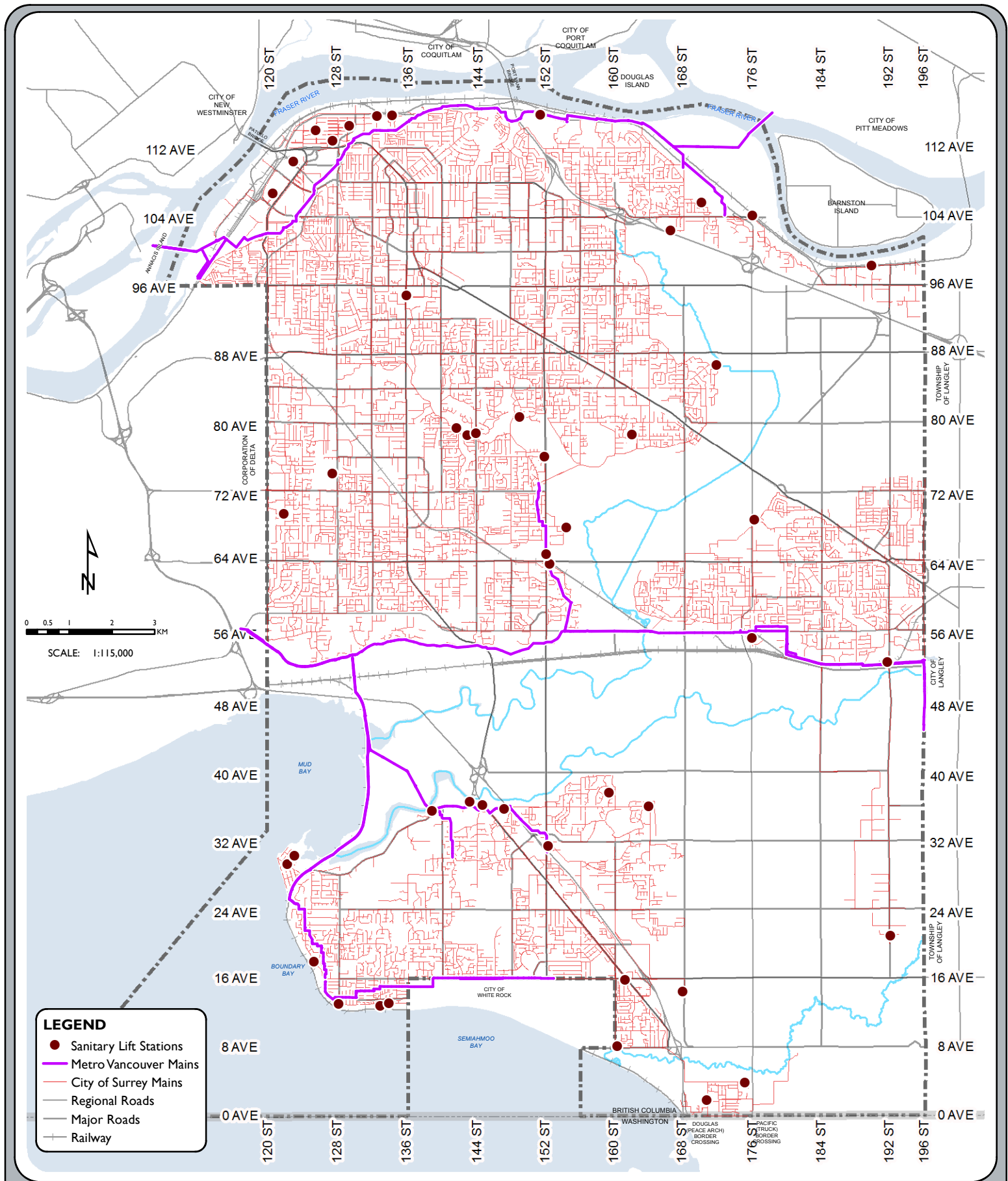
The major collection network to service the City is illustrated in **Figure 4.1**.

### 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 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.

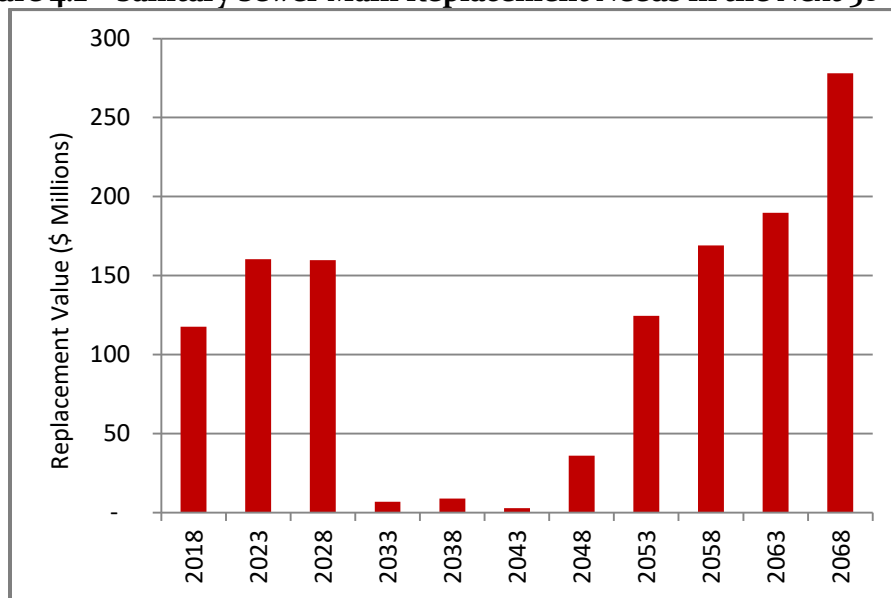
The pipe materials requiring replacement in the next 50 years and the estimated cost of replacement is summarized in **Table 4.2**.

**Table 4.2 – Sanitary Sewer Mains and Replacement Costs**

Material	Total Main Length	Replacement demand up to 2068 (50 years)	Cost of Replacement (\$)
Asbestos Cement, Vitrified Clay Pipe, and Cast Iron	378 km (23% of entire pipe length)	378 km	\$419 Million
Concrete Pipe, Poly Ethylene, Poly Vinyl Chloride, Steel, and Ductile Iron	1,279 km (77% of entire pipe length)	648 km	\$900 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 South Westminster areas and used to in Bridgeview areas of Surrey as they are low-lying, flat and subject to considerable settlement. The City's vacuum sewer system is more expensive to operate than a conventional gravity system.

The servicing strategy for this area, as outlined in the South Westminster NCP, is to replace the vacuum sewer in all new developments and redevelopments with low-pressure systems as the operation and maintenance costs are high and 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 been repeatedly down during storm events. Half of this area comprises small lots that are original residential lots. Because of this small lot size, development is unlikely to happen in the foreseeable future. Under these circumstances, City will be considering replacing the vacuum sewer system with a low pressure sewer system, and recovering the cost when the properties develop.

A similar approach has been planned for the Bridgeview area. The replacement strategy for the Bridgeview vacuum sewer system comprises:

- A steep grade system for the residential area; and
- A low-pressure system for the industrial/commercial areas in general.

The Phase 1 of the replacement program in West Bridgeview, through a LAS initiative combined with a senior government grant, was completed in 2011. The Phase 2 of the replacement program on Industrial Road and 116 Avenue from 112 Avenue to 132 Street and on 112A Avenue and King George Boulevard in Bridgeview has also been completed in 2014. For the remaining phases, Phase 3 and 4, the City is in the midst of replacing the vacuum sewer. At this stage, all of the vacuum sewer in Bridgeview will be replaced when Phase 3 and 4 is complete and all vacuum sewer service connections have been switched over to the replacement system.

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.

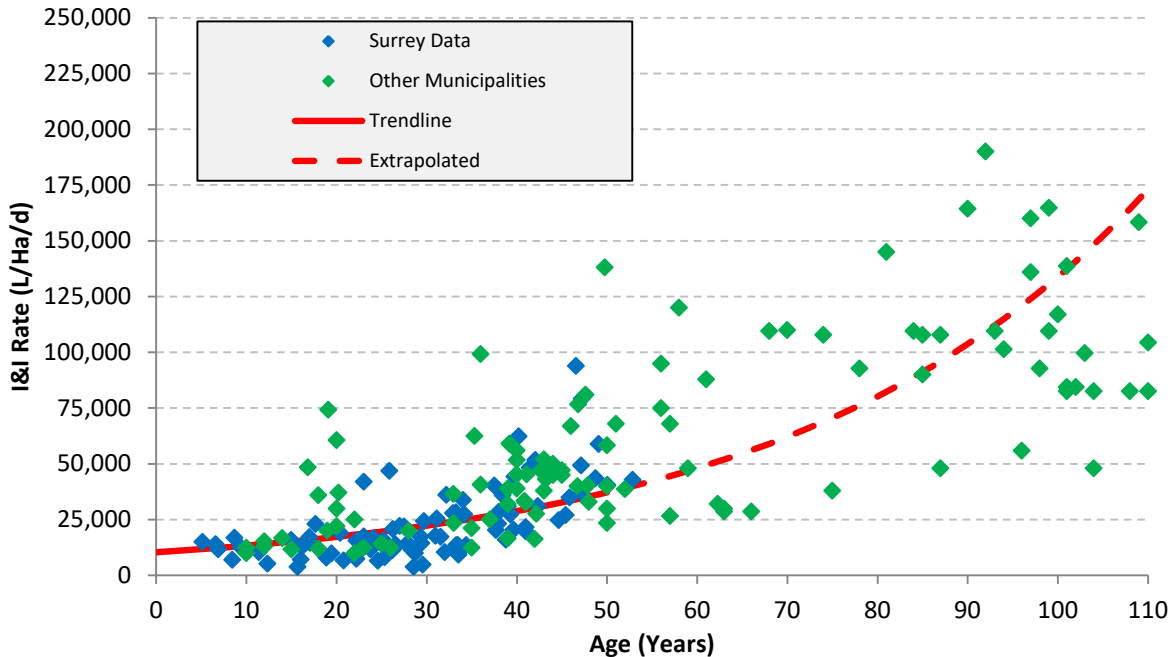
The Robson Creek Trunk Upgrade Phase 1 along the east slope of Robson Creek in the northwest corner of the City is scheduled was completed in 2014. This eliminated the only known source of sanitary sewer overflow from City infrastructure. Phase 2 Robson Creek truck upgrade is completed in 2016, and Phase 3 is scheduled for completion in 2018.

### 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 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 4.3**.

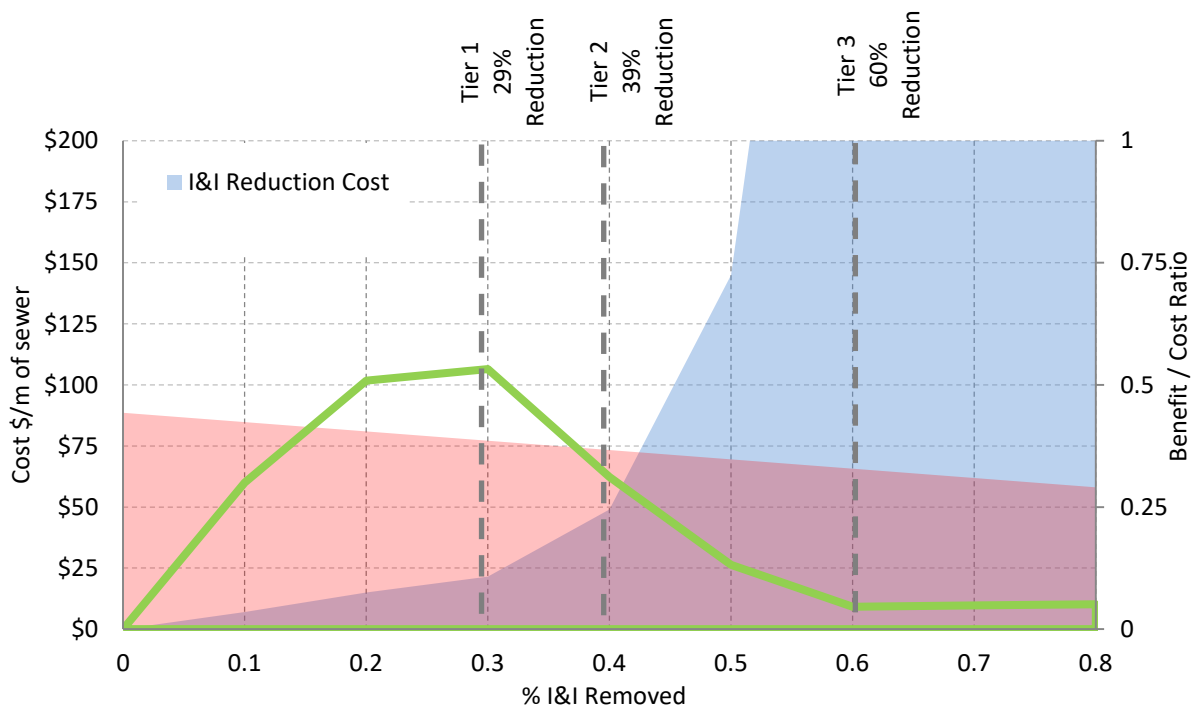
Eventually, the sewer pipes will be replaced when they reached the end of their service life. The range of I&I rates in Surrey are similar to those in other Metro Vancouver municipalities.

**Figure 4.3 – 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 4.4**. 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 4.4 – 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 to determine the rain dependent I&I 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:

1. 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
2. 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	0	3,500,000	3,500,000
1632	Minor Mains	Capital	18,024,283	18,017,115	36,041,398
1634	Inflow and Infiltration	Operating	0	15,000,000	15,000,000
1636	Minor Projects	Capital	0	1,600,000	1,600,000
1638	Planning	Non-Capital	5,000,000	3,000,000	8,000,000
1644	Major Facilities	Capital	68,584,306	33,367,559	101,951,865
1650	DCW Upsizing	Capital	9,837,000	0	9,837,000
1658	Land Acquisition	Capital	500,000	1,000,000	1,500,000
<b>Total</b>			<b>101,945,589</b>	<b>75,484,674</b>	<b>177,430,263</b>

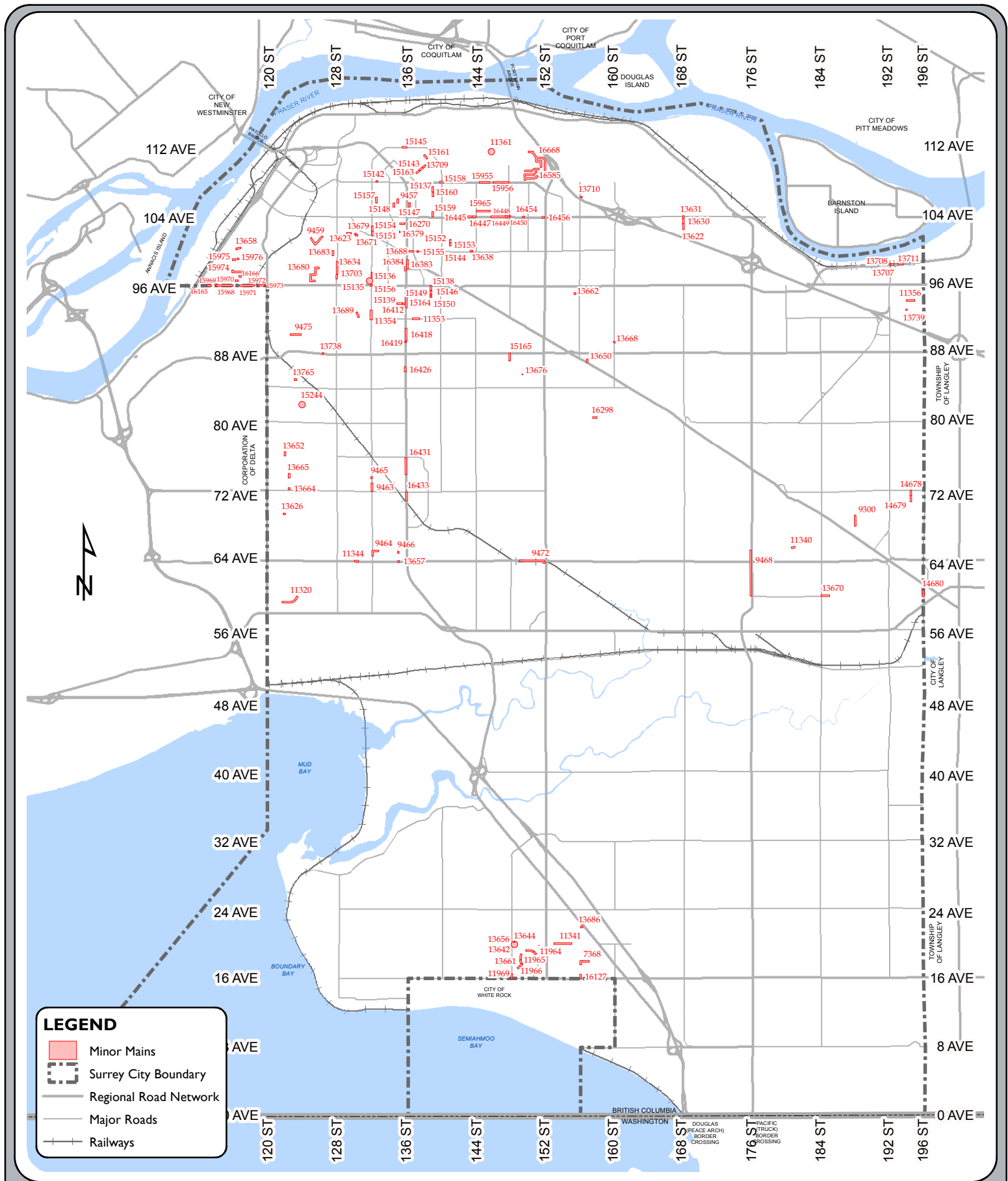
#### 4.6 Sanitary Sewer Projects by Program

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

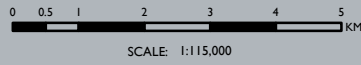
The tables provide the following information:

- 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)
- e) Costs – the high level estimates in 2018 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)**



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Date Printed: 22/11/2017 Cartographer: C9W © City of Surrey  
Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2018-27\Figure4-2-Sewer.mxd

## Sewer

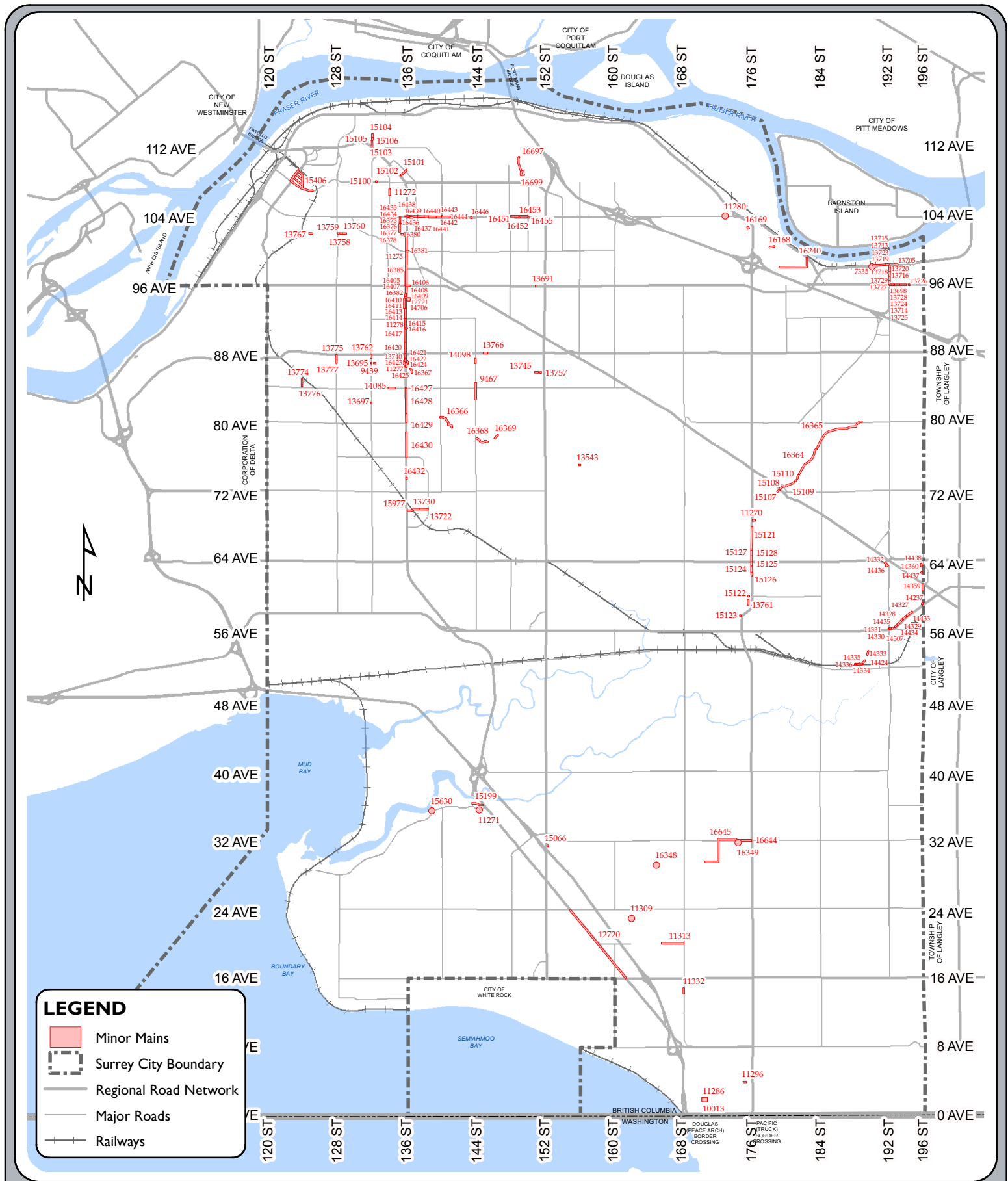
### Program 1632 - Minor Mains (<450mm diameter)

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7368	311m of 300mm diameter	156 St:17A Ave to 18 Ave and 18 Ave:156 St to Flower Rd;	Long Term (7 - 10 Yrs)	\$532,600	\$378,200	\$154,400	\$0	\$0
9300	265m of 525mm diameter	188 St: 068 - 069 Ave	Short Term (1 - 3 Yrs)	\$162,000	\$162,000	\$0	\$0	\$0
9457	87m of 250mm diameter	City Parkway: 105A -106 Ave	Short Term (1 - 3 Yrs)	\$130,500	\$80,100	\$50,400	\$0	\$0
9459	450m of 250mm diameter	10148 Park Dr to 12619 Centre Drive	Short Term (1 - 3 Yrs)	\$652,050	\$130,410	\$521,640	\$0	\$0
9463	200m of 250mm diameter	132 St: 072 - 073 Ave	Long Term (7 - 10 Yrs)	\$289,600	\$177,200	\$112,400	\$0	\$0
9464	LRT related - 235m of 250mm diameter	132 St and 064A Ave to 133 St and 065A Ave	Short Term (1 - 3 Yrs)	\$310,400	\$250,500	\$59,900	\$0	\$0
9465	45m of 250mm diameter	132 St: 073A Ave to 7360	Long Term (7 - 10 Yrs)	\$82,800	\$67,000	\$15,800	\$0	\$0
9466	55m of 250mm diameter	135 St: 064A Ave to 065A Ave	Medium Term (4 - 6 Yrs)	\$63,700	\$51,100	\$12,600	\$0	\$0
9468	1,080m of 375mm diameter	176 St: 065A - 060 Ave	Medium Term (4 - 6 Yrs)	\$2,142,900	\$1,731,300	\$411,600	\$0	\$0
9472	660m of 375mm diameter	064 Ave: 149 St to 152 St	Long Term (7 - 10 Yrs)	\$1,415,800	\$1,006,300	\$409,500	\$0	\$0
9475	260m of 250mm diameter	090 Ave: 12267 - 124 St	Short Term (1 - 3 Yrs)	\$316,700	\$316,700	\$0	\$0	\$0
11320	415m of 375 diameter	Boundary Dr. South: Boundary Cres - 12181 (N)	Medium Term (4 - 6 Yrs)	\$651,600	\$651,600	\$0	\$0	\$0
11340	95m of 375mm diameter	67A Utility ROW: 18118 Claytonwood Cr to mh in 67A ROW	Long Term (7 - 10 Yrs)	\$110,300	\$110,300	\$0	\$0	\$0
11341	525m of 250mm diameter	020 Ave: 153 -155 St & 15272 - 020 Ave	Medium Term (4 - 6 Yrs)	\$764,900	\$543,300	\$221,600	\$0	\$0
11344	90m of 300mm diameter	064 Ave: 130 St - 13031 64 Ave	Long Term (7 - 10 Yrs)	\$178,800	\$89,400	\$89,400	\$0	\$0
11353	130m of 200mm diameter	092 Ave: 137A St to lot 13684 (flow diversion)	Medium Term (4 - 6 Yrs)	\$203,900	\$165,000	\$38,900	\$0	\$0
11354	200m of 300mm diameter	132 St: 092 Ave to #9307	Long Term (7 - 10 Yrs)	\$389,300	\$238,100	\$151,200	\$0	\$0
11356	200m of 375mm diameter	094 Ave: 194-195 St	Short Term (1 - 3 Yrs)	\$348,400	\$348,400	\$0	\$0	\$0
11361	20m of 200mm diameter	111A Ave / 146 St (flow diversion)	Medium Term (4 - 6 Yrs)	\$27,600	\$27,600	\$0	\$0	\$0
11964	80m of 300mm diameter	Southmere Cr E: 19 Ave to 1910 Southmere Cr E	Long Term (7 - 10 Yrs)	\$127,900	\$127,900	\$0	\$0	\$0
11965	424m of 250mm diameter	Southmere Cres: 17 Ave to East of 1901	Long Term (7 - 10 Yrs)	\$682,800	\$682,800	\$0	\$0	\$0
11966	140m of 250mm diameter	17 Ave: 148A St to Southmere Cr	Long Term (7 - 10 Yrs)	\$225,000	\$225,000	\$0	\$0	\$0
11969	93m of 375mm diameter	148 St: 1645 148 St to 016 Ave	Medium Term (4 - 6 Yrs)	\$212,800	\$212,800	\$0	\$0	\$0
13013	Rehab & Replacement of Minor Mains	Various Locations	Short Term (1 - 3 Yrs)	\$2,500,000	\$0	\$2,500,000	\$0	\$0
13622	DCCFEA: 140m of 300mm diameter	168 St: 102 Ave - 103 Ave	Short Term (1 - 3 Yrs)	\$198,500	\$198,500	\$0	\$0	\$0
13623	106m of 300mm diameter	102 Ave: 129 St - 129A St	Medium Term (4 - 6 Yrs)	\$134,000	\$26,800	\$107,200	\$0	\$0
13626	21m of 300mm diameter	122 St: lot 6935 (south, in park)	Long Term (7 - 10 Yrs)	\$21,800	\$17,600	\$4,200	\$0	\$0
13630	DCCFEA: 126m of 250mm diameter	168 St: 103 Ave to 10362 168 St	Short Term (1 - 3 Yrs)	\$172,200	\$137,800	\$34,400	\$0	\$0
13631	DCCFEA: 60m of 250mm diameter	168 St: 104 Ave to 10362 168 St	Short Term (1 - 3 Yrs)	\$91,400	\$73,100	\$18,300	\$0	\$0
13634	LRT related - 318m of 300mm diameter	128 St: 9720 to 99 Ave	Short Term (1 - 3 Yrs)	\$200,600	\$160,480	\$40,120	\$0	\$0
13638	26m of 300mm diameter	100 Ave: lot 14331 - 143A St	Long Term (7 - 10 Yrs)	\$44,500	\$36,100	\$8,400	\$0	\$0
13642	27m of 300mm diameter	148 St: lot 2036 - 20 Ave (walkway)	Long Term (7 - 10 Yrs)	\$31,900	\$25,600	\$6,300	\$0	\$0
13644	11m of 300mm diameter	148 St: lot 2036 (lane)	Long Term (7 - 10 Yrs)	\$14,600	\$11,400	\$3,200	\$0	\$0
13650	79m of 300mm diameter	157 St: lot 8740 - Fraser Hwy	Long Term (7 - 10 Yrs)	\$82,000	\$66,200	\$15,800	\$0	\$0
13652	98m of 300mm diameter	122 St: 76 - 76A Ave	Medium Term (4 - 6 Yrs)	\$114,500	\$91,600	\$22,900	\$0	\$0
13656	66m of 300mm diameter	020 Ave: 148 St - Lot 14845	Long Term (7 - 10 Yrs)	\$46,000	\$46,000	\$0	\$0	\$0
13657	16m of 300mm diameter	064 Ave: lot 13498 - lot 13514	Long Term (7 - 10 Yrs)	\$28,700	\$28,700	\$0	\$0	\$0
13658	85m of 300mm diameter	River Rd: lot 10035 - lot 10019	Short Term (1 - 3 Yrs)	\$130,000	\$91,000	\$39,000	\$0	\$0
13661	106m of 250mm diameter	Southmere Cres: 017 Ave to #1811	Long Term (7 - 10 Yrs)	\$155,200	\$155,200	\$0	\$0	\$0
13662	46m of 300mm diameter	155A st: 15547 95 Ave to 34A utility ROW (ROW1982-0021)	Short Term (1 - 3 Yrs)	\$50,700	\$50,700	\$0	\$0	\$0
13664	45m of 300mm diameter	122A St: 72 Ave - lot 7235	Short Term (1 - 3 Yrs)	\$58,500	\$58,500	\$0	\$0	\$0
13665	112m of 300mm diameter	122A St: lot 7355 - 74 Ave	Short Term (1 - 3 Yrs)	\$151,100	\$151,100	\$0	\$0	\$0
13668	38m of 300mm diameter	089A Ave: 160 St - lot 16016	Medium Term (4 - 6 Yrs)	\$68,400	\$68,400	\$0	\$0	\$0
13670	181m of 300mm diameter	060 Ave:18486 60 Ave to184 St	Short Term (1 - 3 Yrs)	\$250,000	\$250,000	\$0	\$0	\$0
13671	55m of 250mm diameter	101B Ave: Semiahmoo Rd - lot 13047	Short Term (1 - 3 Yrs)	\$71,700	\$7,170	\$64,530	\$0	\$0
13676	13m of 300mm diameter	085A Ave / 149A St (intersection)	Medium Term (4 - 6 Yrs)	\$16,600	\$16,600	\$0	\$0	\$0
13679	45m of 250mm diameter	Semiahmoo Rd: 101B - 102 Ave	Short Term (1 - 3 Yrs)	\$54,000	\$5,400	\$48,600	\$0	\$0
13680	601m of 300mm diameter	lot 12555 96A Ave to 12588 Pinewood Cr	Short Term (1 - 3 Yrs)	\$400,000	\$400,000	\$0	\$0	\$0
13683	138m of 300mm diameter	127B St: lot 9946 - 100 Ave	Medium Term (4 - 6 Yrs)	\$173,100	\$173,100	\$0	\$0	\$0

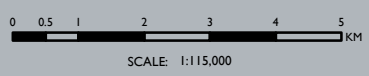
13686	60m of 300mm diameter	022 Ave: 156 St - King George Blvd (ROW W1974-0509)	Long Term (7 - 10 Yrs)	\$76,100	\$76,100	\$0	\$0	\$0
13688	96m of 300mm diameter	100 Ave: 13618 100 Ave to Whalley Blvd	Long Term (7 - 10 Yrs)	\$167,600	\$167,600	\$0	\$0	\$0
13689	99m of 300mm diameter	Prince Charles Blvd: 092A Ave - Applehill Cr	Long Term (7 - 10 Yrs)	\$142,300	\$142,300	\$0	\$0	\$0
13694	19m of 375mm diameter	104 Ave / 176 St (pump station)	Long Term (7 - 10 Yrs)	\$37,500	\$37,500	\$0	\$0	\$0
13703	LRT related - 97m of 375mm diameter	128 St: 96B Ave - 9720	Short Term (1 - 3 Yrs)	\$63,000	\$13,000	\$50,000	\$0	\$0
13707	86m of 375mm diameter	098A Ave: 192 St to 19287 98A Ave	Short Term (1 - 3 Yrs)	\$170,000	\$138,500	\$31,500	\$0	\$0
13708	24m of 375mm diameter	192 St / 98A Ave (intersection)	Short Term (1 - 3 Yrs)	\$42,800	\$34,400	\$8,400	\$0	\$0
13709	102m of 375mm diameter	Grosvenor Rd: Berg Rd - Selkirk Dr	Medium Term (4 - 6 Yrs)	\$168,100	\$135,500	\$32,600	\$0	\$0
13710	37m of 375mm diameter	Highway 1: 156 St to ROW E1987-0184	Medium Term (4 - 6 Yrs)	\$42,800	\$34,400	\$8,400	\$0	\$0
13711	135m of 375mm diameter	098A Ave:19287 98A Ave to 19339 98A Ave	Short Term (1 - 3 Yrs)	\$258,500	\$209,100	\$49,400	\$0	\$0
13738	26m of 375mm diameter	088 Ave: lot 12645	Short Term (1 - 3 Yrs)	\$50,000	\$40,500	\$9,500	\$0	\$0
13739	27m of 375mm diameter	194 St: lot 9275	Short Term (1 - 3 Yrs)	\$40,100	\$32,700	\$7,400	\$0	\$0
13765	57m of 375mm diameter sewer upgrade	123 St: lot 8482 ROW E1975-0018 )	Medium Term (4 - 6 Yrs)	\$65,500	\$52,900	\$12,600	\$0	\$0
14102	Rehab & Replacement of Minor Mains	Various Locations	Medium Term (4 - 6 Yrs)	\$3,000,000	\$0	\$3,000,000	\$0	\$0
14103	Rehab & Replacement of Minor Mains	Various Locations	Long Term (7 - 10 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
14678	Langley Bypass: 126m of 300mm diameter twinning	194A St: 72 Ave - 7145	Long Term (7 - 10 Yrs)	\$81,800	\$81,800	\$0	\$0	\$0
14679	Langley Bypass: 220m of 300mm diameter twinning	194A St: SouthPL of 7185 to 71 Ave	Long Term (7 - 10 Yrs)	\$103,700	\$103,700	\$0	\$0	\$0
14680	Langley Bypass: 150m of 375mm diameter twinning	196 St: 6039 - 60 Ave	Long Term (7 - 10 Yrs)	\$177,300	\$177,300	\$0	\$0	\$0
15135	City Centre NCP: 108m of 300mm diameter	132 St / 96 Ave (north)	NCP Driven	\$215,000	\$215,000	\$0	\$0	\$0
15136	City Centre NCP: 123m of 300mm diameter	132 St: 9681 132 st to 9747 132 St	NCP Driven	\$244,800	\$244,800	\$0	\$0	\$0
15137	City Centre NCP: 130m of 375mm diameter	139 St: 10743 139 St to 10707 139 St	NCP Driven	\$275,600	\$275,600	\$0	\$0	\$0
15138	City Centre NCP: 101m of 375mm diameter	139 St: 96 Ave to tallon PI	NCP Driven	\$158,800	\$158,800	\$0	\$0	\$0
15139	City Centre NCP: 115m of 250mm diameter	King George Blvd: lot 9457 (Queen Elizabeth SS)	NCP Driven	\$111,400	\$111,400	\$0	\$0	\$0
15142	City Centre NCP: 9m of 375mm diameter	108 Ave / 132A St	NCP Driven	\$17,600	\$17,600	\$0	\$0	\$0
15143	City Centre NCP: 89m of 375mm diameter	Grosvenor Rd: Franklin Rd to Berg Rd	NCP Driven	\$155,500	\$155,500	\$0	\$0	\$0
15144	City Centre NCP: 51m of 300mm diameter	100 Ave: 140St to 13969 100 Ave	NCP Driven	\$96,000	\$96,000	\$0	\$0	\$0
15145	City Centre NCP: 109m of 300mm diameter	112Ave: 135A St to 136 St	NCP Driven	\$213,000	\$213,000	\$0	\$0	\$0
15146	City Centre NCP: 85m of 300mm diameter	139 St south of 096 Ave	NCP Driven	\$123,900	\$123,900	\$0	\$0	\$0
15147	City Centre NCP: 103m of 375mm diameter	Lane east of KGB, south of 105A Ave	NCP Driven	\$160,900	\$160,900	\$0	\$0	\$0
15148	City Centre NCP: 97m of 250mm diameter	134A St: 10511 134A St to 105A Ave	NCP Driven	\$124,600	\$124,600	\$0	\$0	\$0
15149	City Centre NCP: 61m of 300mm diameter	139St: 94A Ave to 9506 139 St	NCP Driven	\$82,700	\$82,700	\$0	\$0	\$0
15150	City Centre NCP: 12m of 375mm diameter	094A Ave / 139 St	NCP Driven	\$18,800	\$18,800	\$0	\$0	\$0
15151	City Centre NCP: 114m of 300mm diameter	132 St: Old yale Rd to 10218 132 St	NCP Driven	\$212,800	\$212,800	\$0	\$0	\$0
15152	City Centre NCP: 86m of 300mm diameter	141 St: 10137 141 St to 101 Ave	NCP Driven	\$115,800	\$115,800	\$0	\$0	\$0
15153	City Centre NCP: 69m of 300mm diameter	141 St: 100A Ave to 101 Ave	NCP Driven	\$92,600	\$92,600	\$0	\$0	\$0
15154	City Centre NCP: 125m of 300mm diameter	132 St: 10282 to 10218 132 St	NCP Driven	\$221,600	\$221,600	\$0	\$0	\$0
15155	City Centre NCP: 6m of 300mm diameter	100 Ave and 137A St	NCP Driven	\$11,000	\$11,000	\$0	\$0	\$0
15156	City Centre NCP: 14m of 250mm diameter	132 St north of 096 Ave	NCP Driven	\$23,200	\$23,200	\$0	\$0	\$0
15157	City Centre NCP: 134m of 300mm diameter	132A St: 105A Ave to 10627 132A St	NCP Driven	\$191,800	\$191,800	\$0	\$0	\$0
15158	City Centre NCP: 15m of 250mm diameter	Intersection of 140 St and 108 Ave	NCP Driven	\$24,300	\$24,300	\$0	\$0	\$0
15159	City Centre NCP: 128m of 375mm diameter	139 St: 104 Ave to 10469 139 St	NCP Driven	\$235,200	\$235,200	\$0	\$0	\$0
15160	City Centre NCP: 123m of 375mm diameter	139 St: 10631 to 10665	NCP Driven	\$178,500	\$178,500	\$0	\$0	\$0
15161	City Centre NCP: 102m of 375mm diameter	Brentwood Cres: Bentley Rd to 13835 Brentwood Cres	NCP Driven	\$153,300	\$153,300	\$0	\$0	\$0
15163	City Centre NCP: 111m of 375mm diameter	Grosvenor Rd: Franklin Rd to Lamer Rd	NCP Driven	\$184,800	\$184,800	\$0	\$0	\$0
15164	City Centre NCP: 73m of 250mm diameter	Queen Elizabeth SS	NCP Driven	\$70,600	\$70,600	\$0	\$0	\$0
15165	165m of 250mm diameter	148 St: 088 Ave - Lot 8721	Medium Term (4 - 6 Yrs)	\$169,800	\$118,900	\$50,900	\$0	\$0
15244	Sanitary Sewer Flow Diversion	124 St / 82 Ave	Short Term (1 - 3 Yrs)	\$162,100	\$162,100	\$0	\$0	\$0
15955	LRT related - 254 m of 250 mm diameter (FRRS)	108 Ave:14560 to 14440	Medium Term (4 - 6 Yrs)	\$367,000	\$0	\$367,000	\$0	\$0
15956	LRT related - 353 m of 250 mm diameter (FRRS)	108 Ave: 146 St to 148 St	Medium Term (4 - 6 Yrs)	\$396,000	\$0	\$396,000	\$0	\$0
15965	LRT related - 308 m of 250 mm diameter (FRRS)	104A Ave: 14424 to 14558	Short Term (1 - 3 Yrs)	\$335,000	\$0	\$335,000	\$0	\$0
15968	367 m of 200 mm diameter (FRRS)	96 Ave: Townline Div to 116 St	Short Term (1 - 3 Yrs)	\$504,000	\$0	\$504,000	\$0	\$0
15969	18 m of 200 mm diameter (FRRS)	Townline Div:9612 to 96 ave	Short Term (1 - 3 Yrs)	\$27,300	\$0	\$27,300	\$0	\$0
15970	63 m of 200 mm diameter (FRRS)	96A Ave: 11662 to 11630	Short Term (1 - 3 Yrs)	\$80,850	\$0	\$80,850	\$0	\$0



15971	331 m of 200 mm diameter (FRRS)	96 Ave: 11861 to 11679	Short Term (1 - 3 Yrs)	\$456,750	\$0	\$456,750	\$0	\$0
15972	61 m of 200 mm diameter (FRRS)	117B St: Flankage of 11779 96 Ave	Short Term (1 - 3 Yrs)	\$68,250	\$0	\$68,250	\$0	\$0
15973	205 m of 200 mm diameter (FRRS)	96 Ave: 118B St to 11963	Short Term (1 - 3 Yrs)	\$275,100	\$0	\$275,100	\$0	\$0
15974	322m of 200mm diameter (FRRS)	97A Ave: 11732 to 9772 116 St	Short Term (1 - 3 Yrs)	\$157,500	\$0	\$157,500	\$0	\$0
15975	90m of 200 mm diameter (FRRS)	99 Ave: 11646 to 9896 116 St	Short Term (1 - 3 Yrs)	\$143,850	\$0	\$143,850	\$0	\$0
15976	60 m of 200 mm diameter (FRRS)	99 Ave: 11666 to 9916 116A St	Short Term (1 - 3 Yrs)	\$84,000	\$0	\$84,000	\$0	\$0
16127	84 m of 200mm diameter	156 St: 16 Ave to 16A Ave	Short Term (1 - 3 Yrs)	\$67,000	\$0	\$67,000	\$0	\$0
16165	105m of 200mm diameter (FRRS)	96 Ave: Queens PI to 11349 96 Ave	Short Term (1 - 3 Yrs)	\$116,000	\$0	\$116,000	\$0	\$0
16166	61 m of 200mm diameter (FRRS)	97 Ave: 11704 to 11670	Short Term (1 - 3 Yrs)	\$76,000	\$0	\$76,000	\$0	\$0
16270	LRT related - 75m of 300mm diameter upgrade	103 Ave: King George Blvd to City Park Way	Short Term (1 - 3 Yrs)	\$1,100,000	\$1,100,000	\$0	\$0	\$0
16298	100m of 200mm diameter Sag repair	80A Ave: 157A St to 158 St	Short Term (1 - 3 Yrs)	\$91,000	\$0	\$91,000	\$0	\$0
16379	13m of 250mm diameter sanitary main - Upsizing(LRT-KGB)	13511 102 Ave crossing	Short Term (1 - 3 Yrs)	\$1,998	\$0	\$1,998	\$0	\$0
16383	224m of 300mm diameter sanitary main - Upsizing (LRT-KGB)	King George Blvd: 98 Ave to 98A Ave (east side of road)	Short Term (1 - 3 Yrs)	\$58,826	\$29,413	\$29,413	\$0	\$0
16384	156m of 375mm diameter Sanitary mian (LRT-KGB)	King George Blvd: 98 Ave to 98A Ave	Short Term (1 - 3 Yrs)	\$317,676	\$158,823	\$158,853	\$0	\$0
16412	260m of 375mm diameter sanitary mian (LRT - KGB)	King George Blvd: 9457 to 94A Ave	Short Term (1 - 3 Yrs)	\$528,936	\$264,468	\$264,468	\$0	\$0
16418	275m of 375mm diameter sanitary main (LRT - KGB)	King George Blvd: 8992 to 9066	Short Term (1 - 3 Yrs)	\$560,312	\$280,156	\$280,156	\$0	\$0
16419	26m of 375mm diameter sanitary main (LRT - KGB)	8992 King George Blvd	Short Term (1 - 3 Yrs)	\$54,106	\$25,978	\$28,128	\$0	\$0
16426	112m of 375mm diameter sanitary main (LRT - KGB)	8655 King George Blvd (westside)	Short Term (1 - 3 Yrs)	\$228,200	\$114,100	\$114,100	\$0	\$0
16431	388m of 375mm diameter sanitary main (LRT - KGB)	King George Blvd: 76 Ave to 74 Ave	Short Term (1 - 3 Yrs)	\$789,735	\$0	\$789,735	\$0	\$0
16433	198m of 375mm diameter sanitary main (LRT - KGB)	King George Blvd: Hall Rd to 72 Ave	Short Term (1 - 3 Yrs)	\$402,610	\$0	\$402,610	\$0	\$0
16445	91m of 375mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave: 143 St to 143A St	Short Term (1 - 3 Yrs)	\$39,812	\$19,906	\$19,906	\$0	\$0
16447	47m of 250mm diameter sanitary main (LRT - 104)	104 Ave: 143A St to 144 St	Short Term (1 - 3 Yrs)	\$14,813	\$0	\$14,813	\$0	\$0
16448	405m of 375mm diameter sanitary main (LRT -104)	104 Ave: 146 St to 148 St	Short Term (1 - 3 Yrs)	\$824,780	\$412,390	\$412,390	\$0	\$0
16449	22m of 300mm diameter sanitary main - Upsizing (LRT - 104)	10395 148 St	Short Term (1 - 3 Yrs)	\$6,922	\$0	\$6,922	\$0	\$0
16450	32m of 375mm diameter sanitary main (LRT - 104)	104 Ave and 148 St	Short Term (1 - 3 Yrs)	\$65,200	\$21,733	\$43,467	\$0	\$0
16454	22m of 375mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave and 149A St	Short Term (1 - 3 Yrs)	\$10,769	\$4,856	\$5,913	\$0	\$0
16456	49m of 250mm diameter sanitary main (LRT - 104)	104 ave and 152 St	Short Term (1 - 3 Yrs)	\$100,653	\$0	\$100,653	\$0	\$0
16668	1233m of 300mm diam (Birdland Replacement)	Pheasant Drive and Swan Cres	Short Term (1 - 3 Yrs)	\$1,675,000	\$0	\$1,675,000	\$0	\$0



**FIGURE 4.3 - Sewer Major Facilities (Program 1644)**



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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 Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2018-27\Figure4-3-Sewer.mxd

**Sewer**  
**Program 1644 - Major Facilities**

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
7304	700m of 750mm diameter	Hyland Rd: 066 - 064 Ave	Medium Term (4 - 6 Yrs)	\$1,979,600	\$1,979,600	\$0	\$0	\$0
7335	Port Kells Lift Station - upsize pumps	190 St / 098 Ave	Medium Term (4 - 6 Yrs)	\$2,203,200	\$2,203,200	\$0	\$0	\$0
7756	Steep Grade Lift Stations	11977-Old Yale Road - immediate opposite 11048 Oslen Rd	Long Term (7 - 10 Yrs)	\$2,642,700	\$2,246,300	\$396,400	\$0	\$0
9439	50m of 525mm diameter relief trunk	132 St, North of Shakespeare Place	Medium Term (4 - 6 Yrs)	\$97,000	\$97,000	\$0	\$0	\$0
9445	162m of 450mm diameter	King George Blvd: 64 Ave - lot 6475	Medium Term (4 - 6 Yrs)	\$346,700	\$346,700	\$0	\$0	\$0
9467	400m of 525mm diameter relief sewer	144 St: 082A Ave - 8469	Long Term (7 - 10 Yrs)	\$365,400	\$221,100	\$144,300	\$0	\$0
10006	Tynehead Interceptor Manhole Tie Downs	Tynehead Interceptor various locations	Medium Term (4 - 6 Yrs)	\$400,000	\$0	\$400,000	\$0	\$0
10007	Bear Creek Trunk Manhole Tie Downs	Bear Creek Trunk - 88 Ave	Medium Term (4 - 6 Yrs)	\$600,000	\$0	\$600,000	\$0	\$0
10013	DCCFEA: Emergency Storage for Douglas Pump Stn (West)	171 St / 002 Ave	Short Term (1 - 3 Yrs)	\$270,000	\$270,000	\$0	\$0	\$0
11270	North Cloverdale PS Upgrade	176 St / 68 Ave	Long Term (7 - 10 Yrs)	\$2,409,000	\$2,409,000	\$0	\$0	\$0
11271	Pinch Valve Replacement at Crescent Road	144 St / Crescent Rd (N)	Medium Term (4 - 6 Yrs)	\$171,100	\$171,100	\$0	\$0	\$0
11272	153m of 1050mm diameter twinning	University Dr: 10665 - 107 Ave	Medium Term (4 - 6 Yrs)	\$506,900	\$506,900	\$0	\$0	\$0
11275	City Centre South PS west side forcemain	King George Hwy: 94A - 102 Ave	Long Term (7 - 10 Yrs)	\$3,415,000	\$3,415,000	\$0	\$0	\$0
11277	Bear Creek Pump Station Relief System	King George Hwy/87 Ave (N)	Long Term (7 - 10 Yrs)	\$4,830,000	\$4,830,000	\$0	\$0	\$0
11278	1700m of 500 diameter forcemain	King George Hwy: 87 - 94A Ave (N)	Long Term (7 - 10 Yrs)	\$2,970,000	\$2,970,000	\$0	\$0	\$0
11280	Odour Control Facility	173 St / 104 Ave	Medium Term (4 - 6 Yrs)	\$1,101,700	\$1,101,700	\$0	\$0	\$0
11281	Odour Control Facility	Various Locations	Medium Term (4 - 6 Yrs)	\$2,887,500	\$712,500	\$2,175,000	\$0	\$0
11282	Douglas Pump Station West Surge Tank	171 St / 002 Ave	Short Term (1 - 3 Yrs)	\$385,900	\$385,900	\$0	\$0	\$0
11286	Douglas Pump Station Relocation	171 St / 002 Ave (N)	Medium Term (4 - 6 Yrs)	\$1,258,900	\$1,258,900	\$0	\$0	\$0
11287	Pump Stations Upgrades - Short Term	Various Locations	Short Term (1 - 3 Yrs)	\$1,425,000	\$0	\$1,425,000	\$0	\$0
11290	Sewer Sag Repairs	Various Locations	Long Term (7 - 10 Yrs)	\$1,753,000	\$0	\$1,753,000	\$0	\$0
11296	Douglas Pump Station East Upgrade - 3rd pump	004 Ave / 175 St	Long Term (7 - 10 Yrs)	\$303,700	\$303,700	\$0	\$0	\$0
11309	Grandview South P.S. Odour Control at outlet	023 Ave / 162 St	Long Term (7 - 10 Yrs)	\$773,600	\$773,600	\$0	\$0	\$0
11313	485m of 450 diameter	020 Ave: 165A - 168 St (N)	Long Term (7 - 10 Yrs)	\$874,700	\$874,700	\$0	\$0	\$0
11332	100m of 525mm diameter	168 St: 012 Ave to PS [N]	Medium Term (4 - 6 Yrs)	\$196,900	\$196,900	\$0	\$0	\$0
11339	364m of 1350mm diameter	175 St: Cloverdale By-pass - Hwy 10	Short Term (1 - 3 Yrs)	\$1,568,000	\$1,568,000	\$0	\$0	\$0
12720	Twin 500mm FM from North Buff to 24 Avenue	KGB: 016 - 024 Avenue	Medium Term (4 - 6 Yrs)	\$4,674,600	\$4,674,600	\$0	\$0	\$0
12721	Quibble Creek 4th pump	094A Avenue and KGB	Medium Term (4 - 6 Yrs)	\$467,500	\$467,500	\$0	\$0	\$0
13543	Lower Tynehead Siphon	075 Ave / 156 St	Medium Term (4 - 6 Yrs)	\$3,100,000	\$3,100,000	\$0	\$0	\$0
13691	13m of 525mm diameter	096 Ave:151 St to 9644 96 Ave	Medium Term (4 - 6 Yrs)	\$29,300	\$5,900	\$23,400	\$0	\$0
13695	LRT related - 13m of 675mm diameter	132 St: lot 8696 (street crossing)	Medium Term (4 - 6 Yrs)	\$34,650	\$6,930	\$27,720	\$0	\$0
13697	29m of 525mm diameter	132 St: 82A Ave - lot 8217	Medium Term (4 - 6 Yrs)	\$65,100	\$13,000	\$52,100	\$0	\$0
13698	21m of 525mm diameter	096 Ave / 192 St (intersection)	Long Term (7 - 10 Yrs)	\$47,200	\$9,500	\$37,700	\$0	\$0
13705	92m of 450mm diameter	098A Ave:19219 98A Ave to 19287 98A Ave	Short Term (1 - 3 Yrs)	\$186,200	\$37,100	\$149,100	\$0	\$0
13713	99m of 600mm diameter	98A Ave: 19031 to 9875 (along Railway)	Long Term (7 - 10 Yrs)	\$143,600	\$28,800	\$114,800	\$0	\$0
13714	124m of 450mm diameter	096Ave: 19239 to 19315	Long Term (7 - 10 Yrs)	\$250,400	\$50,100	\$200,300	\$0	\$0
13715	97m of 600mm diameter	98A Ave: 192 St to 9875 (ROW E1976-0309)	Long Term (7 - 10 Yrs)	\$140,400	\$28,000	\$112,400	\$0	\$0
13716	106m of 525mm diameter	192 St: lot 9715 - lot 9761	Long Term (7 - 10 Yrs)	\$249,300	\$49,900	\$199,400	\$0	\$0
13718	105m of 525mm diameter	192 St: lot 9761 - lot 9785	Long Term (7 - 10 Yrs)	\$258,800	\$207,000	\$51,800	\$0	\$0
13719	103m of 600mm diameter	98A Ave: 190 St to 19031 (Along Railway)	Long Term (7 - 10 Yrs)	\$149,700	\$119,800	\$29,900	\$0	\$0
13720	56m of 525mm diameter	192 St: lot 9785 - Golden Ears Way	Long Term (7 - 10 Yrs)	\$124,800	\$99,800	\$25,000	\$0	\$0
13722	LRT related - 191m of 450mm diameter	070 Ave: 137A - 138 St	Short Term (1 - 3 Yrs)	\$295,000	\$236,000	\$59,000	\$0	\$0
13723	100m of 600mm diameter	89A Ave: 19031 to 9875 (along railway ROW E1976-0309)	Long Term (7 - 10 Yrs)	\$144,600	\$115,600	\$29,000	\$0	\$0
13724	63m of 450mm diameter	096 Ave: lot 19272 - lot 19238	Long Term (7 - 10 Yrs)	\$127,800	\$102,300	\$25,500	\$0	\$0
13725	120m of 450mm diameter	096 Ave: lot 19358	Long Term (7 - 10 Yrs)	\$241,900	\$193,500	\$48,400	\$0	\$0
13726	45m of 450mm diameter	96 Ave: 194A St to 19470	Long Term (7 - 10 Yrs)	\$94,300	\$75,400	\$18,900	\$0	\$0
13727	96m of 525mm diameter	192 St: 96 Ave - lot 9659	Long Term (7 - 10 Yrs)	\$225,200	\$180,200	\$45,000	\$0	\$0
13728	42m of 450mm diameter	096 Ave: 192 St to 19238	Long Term (7 - 10 Yrs)	\$84,800	\$67,800	\$17,000	\$0	\$0
13729	107m of 525mm diameter	192 St: lot 9659 - lot 9699	Long Term (7 - 10 Yrs)	\$238,800	\$191,000	\$47,800	\$0	\$0

13730	LRT related - 157m of 450mm diameter	070 Ave / 136B St (east to 137A St)	Short Term (1 - 3 Yrs)	\$256,000	\$204,800	\$51,200	\$0	\$0
13731	106m of 525mm diameter	094A Ave: 138 St - lot 13764	Short Term (1 - 3 Yrs)	\$175,000	\$140,000	\$35,000	\$0	\$0
13740	LRT related - 25m of 900mm diameter	King George Blvd: 8739 to 13598	Short Term (1 - 3 Yrs)	\$77,000	\$77,000	\$0	\$0	\$0
13745	87m of 450mm diameter	151A St: lot 8585 to 15096 - 86 Ave (lane behind)	Long Term (7 - 10 Yrs)	\$141,400	\$141,400	\$0	\$0	\$0
13757	45m of 450mm diameter	151A St: lot 8578 (ROW E1972-0129)	Long Term (7 - 10 Yrs)	\$58,700	\$58,700	\$0	\$0	\$0
13758	63m of 450mm diameter	102 Ave: 128A St to laneway west of 128A St	Long Term (7 - 10 Yrs)	\$92,100	\$92,100	\$0	\$0	\$0
13759	53m of 450mm diameter	102 Ave: 128 St to laneway east of 128 St	Long Term (7 - 10 Yrs)	\$107,900	\$107,900	\$0	\$0	\$0
13760	96m of 450mm diameter	102 Ave: 128A - 129 St	Long Term (7 - 10 Yrs)	\$151,900	\$151,900	\$0	\$0	\$0
13761	110m of 1050mm diameter	059 Ave: lot 17561 (E of lot)	Long Term (7 - 10 Yrs)	\$237,400	\$237,400	\$0	\$0	\$0
13762	LRT related - 113m of 600mm diameter	132 St: 88 Ave - lot 8766	Short Term (1 - 3 Yrs)	\$272,400	\$272,400	\$0	\$0	\$0
13766	82m of 525mm diameter	088 Ave: lot 14493 - lot 14542	Long Term (7 - 10 Yrs)	\$202,200	\$202,200	\$0	\$0	\$0
13767	98m of 525mm diameter	102 Ave: 124A - 125 St	Long Term (7 - 10 Yrs)	\$165,500	\$165,500	\$0	\$0	\$0
13774	119m of 450mm diameter	124 St: lot 8480 - lot 8400	Short Term (1 - 3 Yrs)	\$192,700	\$192,700	\$0	\$0	\$0
13775	111m of 600mm diameter	128 St: 88 Ave - lot 8740	Long Term (7 - 10 Yrs)	\$274,400	\$274,400	\$0	\$0	\$0
13776	53m of 450mm diameter	124 St: 84 ave to lot 8400 (SW corner of lot)	Short Term (1 - 3 Yrs)	\$77,500	\$77,500	\$0	\$0	\$0
13777	89m of 600mm diameter	128 St: 87 Ave - lot 8740	Long Term (7 - 10 Yrs)	\$225,200	\$225,200	\$0	\$0	\$0
14085	151m of 525mm diameter	084 Ave: 134 - 134B St	Short Term (1 - 3 Yrs)	\$371,900	\$371,900	\$0	\$0	\$0
14098	122m of 525mm diameter sewer upgrade	144 St: 8684 - 8734	Long Term (7 - 10 Yrs)	\$271,300	\$271,300	\$0	\$0	\$0
14132	Pump Station Upgrades - Medium Range	Various Locations	Medium Term (4 - 6 Yrs)	\$1,500,000	\$0	\$1,500,000	\$0	\$0
14134	Pump Station Upgrades - Long Range	Various Locations	Long Term (7 - 10 Yrs)	\$1,500,000	\$0	\$1,500,000	\$0	\$0
14237	Langley Bypass: 32m of 525mm diameter (DCCFE)	Hwy 10/196 St	Short Term (1 - 3 Yrs)	\$69,800	\$69,800	\$0	\$0	\$0
14327	Langley Bypass: 150m of 600mm diameter twinning (DCCFE)	19425 Hwy 10	Short Term (1 - 3 Yrs)	\$289,120	\$289,120	\$0	\$0	\$0
14328	Langley Bypass: 40m of 900mm diameter twinning (DCCFE)	19372 Hwy 10	Short Term (1 - 3 Yrs)	\$74,620	\$74,620	\$0	\$0	\$0
14329	Langley Bypass: 83m of 675mm diameter twinning (DCCFE)	19289 - 19262 Hwy 10	Short Term (1 - 3 Yrs)	\$202,820	\$202,820	\$0	\$0	\$0
14330	Langley Bypass: 29m of 750mm diameter twinning (DCCFE)	19225 Hwy 10	Short Term (1 - 3 Yrs)	\$110,670	\$110,670	\$0	\$0	\$0
14331	Langley Bypass: 20m of 600mm diameter twinning (DCCFE)	Hwy 10/192 St	Short Term (1 - 3 Yrs)	\$100,760	\$100,760	\$0	\$0	\$0
14332	Langley Bypass: 79m of 250mm diameter twinning (DCCFE)	19146 64 Ave - 6363 192 St	Long Term (7 - 10 Yrs)	\$101,810	\$101,810	\$0	\$0	\$0
14333	Langley Bypass: 84m of 450mm diameter twinning (DCCFE)	5358 - 189 St East side ROW	Short Term (1 - 3 Yrs)	\$150,810	\$150,810	\$0	\$0	\$0
14334	Langley Bypass: 113m of 525mm diameter twinning (DCCFE)	052 Ave: south of 18833	Short Term (1 - 3 Yrs)	\$77,900	\$77,900	\$0	\$0	\$0
14335	Langley Bypass: 50m of 675mm diameter twinning (DCCFE)	052 Ave: South of 18833	Short Term (1 - 3 Yrs)	\$278,660	\$278,660	\$0	\$0	\$0
14336	Langley Bypass: 10m of 1200mm diameter twinning (DCCFE)	052 Ave/188 St	Short Term (1 - 3 Yrs)	\$30,880	\$30,880	\$0	\$0	\$0
14359	Langley Bypass: 139m of 525mm diameter twinning (DCCFE)	196 St: south of Fraser Hwy	Medium Term (4 - 6 Yrs)	\$169,400	\$169,400	\$0	\$0	\$0
14360	Langley Bypass: 56m of 525mm diameter twinning	195B St: 6332 - 6324	Medium Term (4 - 6 Yrs)	\$129,400	\$129,400	\$0	\$0	\$0
14424	Langley Bypass: 93m of 675mm diameter twinning (DCCFE)	18872 - 52 Ave	Medium Term (4 - 6 Yrs)	\$108,480	\$108,480	\$0	\$0	\$0
14433	Langley Bypass: 110m of 600mm diameter twinning (DCCFE)	19415 - 19395 Hwy 10	Short Term (1 - 3 Yrs)	\$204,560	\$204,560	\$0	\$0	\$0
14434	Langley Bypass: 151m of 600mm diameter twinning (DCCFE)	19360 - 19300 Hwy 10	Short Term (1 - 3 Yrs)	\$279,360	\$279,360	\$0	\$0	\$0
14435	Langley Bypass: 18m of 600mm diameter twinning (DCCFE)	19219 Hwy 10	Short Term (1 - 3 Yrs)	\$106,950	\$106,950	\$0	\$0	\$0
14436	Langley Bypass: 30m of 250mm diameter twinning (DCCFE)	6355 192 St: ROW 1991-0400	Medium Term (4 - 6 Yrs)	\$16,400	\$16,400	\$0	\$0	\$0
14437	Langley Bypass: 17m of 525mm diameter twinning	062A Ave/195B St	Medium Term (4 - 6 Yrs)	\$23,000	\$23,000	\$0	\$0	\$0
14438	Langley Bypass: 17m of 525mm diameter twinning	063A Ave/195B St	Medium Term (4 - 6 Yrs)	\$49,200	\$49,200	\$0	\$0	\$0
14507	Langley Bypass: 25m of 675mm diameter twinning	19225 Hwy 10	Medium Term (4 - 6 Yrs)	\$57,000	\$57,000	\$0	\$0	\$0
14706	Quibble Creek Pump Station Upgrade	King George Blvd / 94A Ave	Long Term (7 - 10 Yrs)	\$1,800,000	\$1,800,000	\$0	\$0	\$0
15066	Odour Pre-treatment Facility for Rosemary Heights Bio-bed	Croydon Dr: Lot 3144 (Rosemary Heights Bio-bed)	Short Term (1 - 3 Yrs)	\$700,000	\$0	\$700,000	\$0	\$0
15100	City Centre NCP: 16m of 450mm diameter	108 Ave / 132A St (intersection)	NCP Driven	\$32,600	\$32,600	\$0	\$0	\$0
15101	City Centre NCP: 153m of 450mm diameter	Bentley Rd/King George Blvd:	NCP Driven	\$326,800	\$326,800	\$0	\$0	\$0
15102	City Centre NCP: 43m of 525mm diameter	Bentley Rd: King George Blvd to 13546 Bentley Rd	NCP Driven	\$98,500	\$98,500	\$0	\$0	\$0
15103	City Centre NCP: 122m of 750mm diameter	132 St: King George Blvd to 11279 132 St	NCP Driven	\$230,500	\$230,500	\$0	\$0	\$0
15104	City Centre NCP: 92m of 675mm diameter	132 St: 11299 to 11374 132 St	NCP Driven	\$261,800	\$261,800	\$0	\$0	\$0
15105	City Centre NCP: 62m of 675mm diameter	132 St: 112B Ave to 11299 132 St	NCP Driven	\$172,600	\$172,600	\$0	\$0	\$0
15106	City Centre NCP: 16m of 600mm diameter	132 St and 112 B Ave (south of intersection)	NCP Driven	\$40,700	\$40,700	\$0	\$0	\$0
15107	North Cloverdale Trunk: Section 1 - 83m of 1050mm diameter	177A Ave: lot 7196 (S of Fraser Hwy, tie-in N of address)	NCP Driven	\$153,500	\$153,500	\$0	\$0	\$0
15108	North Cloverdale Trunk: Section 2- 220m of 1050mm diameter	Fraser Hwy: lot 17916 - 180 St: 7200 Blk	NCP Driven	\$425,000	\$425,000	\$0	\$0	\$0
15109	North Cloverdale Trunk: Section 3 - 243m of 1050mm diameter	180 St: 7200 Blk - 073 Ave/181 St	NCP Driven	\$149,100	\$149,100	\$0	\$0	\$0

15110	North Cloverdale Trunk: Section 4 - 201m of 1050mm diameter	073 Ave/181 St - 74 Ave: lot 18175	NCP Driven	\$385,500	\$385,500	\$0	\$0	\$0
15121	North Cloverdale Forcemain Upgrade	176 St: 68 Ave - 65A ave (East side)	NCP Driven	\$1,629,200	\$1,629,200	\$0	\$0	\$0
15122	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 14m of 1200mm dia	060 Ave: lot 17570 (north of address)	NCP Driven	\$47,300	\$47,300	\$0	\$0	\$0
15123	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 31m of 1200mm dia	175 St and Cloverdale Bypass	NCP Driven	\$79,300	\$79,300	\$0	\$0	\$0
15124	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 127m of 900mm dia	Hwy 15: N of 062A Ave	NCP Driven	\$427,900	\$427,900	\$0	\$0	\$0
15125	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 107m of 900mm dia	Hwy 15: S of 064 Ave	NCP Driven	\$406,600	\$406,600	\$0	\$0	\$0
15126	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 89m of 900mm dia	Hwy 15: 062 Ave - 062A Ave	NCP Driven	\$386,300	\$386,300	\$0	\$0	\$0
15127	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 133m of 900mm dia	Hwy 15: N of 064 Ave	NCP Driven	\$448,800	\$448,800	\$0	\$0	\$0
15128	Cloverdale Trunk Sewer (56 Ave - 68 Ave): 136m of 900mm dia	Hwy 15: S of 065A Ave	NCP Driven	\$458,600	\$458,600	\$0	\$0	\$0
15129	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 145m of 900mm dia	Hwy 15: S of 061A Ave	NCP Driven	\$515,100	\$515,100	\$0	\$0	\$0
15130	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 41m of 900mm dia	Hwy 15: N of 060 Ave	NCP Driven	\$138,600	\$138,600	\$0	\$0	\$0
15131	Cloverdale Trunk Sewer (56 Ave to 68 Ave): 143m of 900mm dia	Hwy 15 / 62 Ave (south)	NCP Driven	\$458,700	\$458,700	\$0	\$0	\$0
15188	Unallocated Allowance for Rehab & Replacement of Major Main	Various Locations	Short Term (1 - 3 Yrs)	\$2,500,000	\$0	\$2,500,000	\$0	\$0
15189	Unallocated Allowance for Rehab & Replacement of Major Main	Various Locations	Medium Term (4 - 6 Yrs)	\$2,500,000	\$0	\$2,500,000	\$0	\$0
15190	Unallocated Allowance for Rehab & Replacement of Major Main	Various Location	Long Term (7 - 10 Yrs)	\$2,500,000	\$0	\$2,500,000	\$0	\$0
15199	450mm diameter Flow Diversion	King George Blvd - Elgin Rd: lot 3653 (South Port P.S.)	Short Term (1 - 3 Yrs)	\$900,000	\$680,000	\$220,000	\$0	\$0
15406	South Westminster "J" Line Vacuum Sewer Replacement	Old Yale Rd: Scott Rd - 125A St	Short Term (1 - 3 Yrs)	\$5,489,800	\$0	\$5,489,800	\$0	\$0
15630	Stewart Farm PS Flood-Proofing	Crescent Rd / 35A Ave	Short Term (1 - 3 Yrs)	\$350,000	\$0	\$350,000	\$0	\$0
15977	LRT related - 150m of 450 mm diameter	King George Blvd: 7010 to 13720 70 Ave	Short Term (1 - 3 Yrs)	\$267,000	\$213,600	\$53,400	\$0	\$0
16168	101m of 900mm diameter Sewer	17800blk of 100A Ave	NCP Driven	\$267,800	\$267,800	\$0	\$0	\$0
16169	71m of 900mm diameter sewer	10267 176 St	NCP Driven	\$141,500	\$141,500	\$0	\$0	\$0
16240	182A St Sanitary Pump Station and Forcemain	182A St and Hwy 17; 182A St: Hwy 17 to 98 Ave;	NCP Driven	\$1,511,000	\$1,511,000	\$0	\$0	\$0
16348	Odour Facility for GH East PS Redwood H (outside NCP control)	16484 29A Ave	NCP Driven	\$276,200	\$276,200	\$0	\$0	\$0
16349	Grandview Heights East PS - Redwood Height (outside NCP control)	17436 32 Ave	NCP Driven	\$1,933,200	\$1,933,200	\$0	\$0	\$0
16364	North Cloverdale Trunk: Section 5 - 764m of 900mm dia trunk	74 ave: lot 18175 (through ROW) to 7747 184 St	NCP Driven	\$964,100	\$964,100	\$0	\$0	\$0
16365	North Cloverdale Trunk: Section 6 - 1379m of 750mm dia trunk	184 st: lot 7747 to 188 St lot 7970 (through ROW)	NCP Driven	\$252,000	\$252,000	\$0	\$0	\$0
16366	Bear Creek Trunk: 49m of 1200mm diameter	141A St: Laneway to 79A Ave	Long Term (7 - 10 Yrs)	\$168,100	\$168,100	\$0	\$0	\$0
16367	Bear Creek trunk: 146m of 900mm diameter sewer main	Bear Creek park ROW	Long Term (7 - 10 Yrs)	\$353,300	\$353,300	\$0	\$0	\$0
16368	Bear Creek Trunk: 294m of 1500mm diameter sanitary main	78 Ave: 144 St to 145A St	Long Term (7 - 10 Yrs)	\$1,178,900	\$1,178,900	\$0	\$0	\$0
16369	Bear Creek trunk: 142m of 1500mm diameter sanitary main	79 Ave: 146 St to 14636 79 Ave	Long Term (7 - 10 Yrs)	\$569,400	\$569,400	\$0	\$0	\$0
16375	145m of 525mm diameter sanitary main - Upsizing (LRT-KGB)	City parkway: 103 ave to 104 Ave	Short Term (1 - 3 Yrs)	\$65,070	\$0	\$65,070	\$0	\$0
16376	13m of 525mm diameter sanitary - Upsizing (LRT - KGB)	City parkway: 103 Ave to 104 Ave	Short Term (1 - 3 Yrs)	\$3,968	\$0	\$3,968	\$0	\$0
16377	7m of 525mm diameter sanitary main - upsizing (LRT-KGB)	City Parkway and 103 Ave	Short Term (1 - 3 Yrs)	\$2,751	\$0	\$2,751	\$0	\$0
16378	201m of 525mm diameter sanitary main - Upsizing - (LRT-KGB)	City Parkway: 102 Ave to 103 Ave	Short Term (1 - 3 Yrs)	\$62,310	\$0	\$62,310	\$0	\$0
16380	28m of 700mm diameter casing - upsizing (LRT - KGB)	City Parkway and 102 Ave	Short Term (1 - 3 Yrs)	\$177	\$0	\$177	\$0	\$0
16381	82m of 450mm diameter sanitary main - Upsizing - (LRT-KGB)	Old Yale Rd/100 Ave Crossing	Short Term (1 - 3 Yrs)	\$51,376	\$25,688	\$25,688	\$0	\$0
16382	28m of 900mm diameter sanitary casing (LRT-KGB)	94AAve and King George Blvd	Short Term (1 - 3 Yrs)	\$4,173	\$4,173	\$0	\$0	\$0
16385	332m of 600mm diameter sanitary sewer- upsizing (LRT - KGB)	King George Blvd: 13586 98 Ave to 96 Ave	Short Term (1 - 3 Yrs)	\$191,016	\$95,508	\$95,508	\$0	\$0
16405	9m of 600mm diameter sanitary main (LRT - KGB)	King George Blvd and 96 Ave	Short Term (1 - 3 Yrs)	\$23,252	\$11,626	\$11,626	\$0	\$0
16406	107m of 525mm diameter sanitary main (LRT - KGB)	96 ave east of King George Blvd	Short Term (1 - 3 Yrs)	\$259,960	\$129,980	\$129,980	\$0	\$0
16407	24m of 600mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd and 96 ave	Short Term (1 - 3 Yrs)	\$9,106	\$4,553	\$4,553	\$0	\$0
16408	267m of 900mm diameter sanitary main (LRT - KGB)	King George Blvd: 94A Ave to 96 Ave (east side)	Short Term (1 - 3 Yrs)	\$906,780	\$453,390	\$453,390	\$0	\$0
16409	74m of 450mm diameter sanitary main (LRT - KGB)	King George Blvd: North of 94A Ave	Short Term (1 - 3 Yrs)	\$163,538	\$81,769	\$81,769	\$0	\$0
16410	32m of 525mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd and 94A Ave	Short Term (1 - 3 Yrs)	\$13,126	\$4,172	\$8,954	\$0	\$0
16411	276m of 600mm diameter sanitary main (LRT - KGB)	9457 King George Blvd (westside)	Short Term (1 - 3 Yrs)	\$722,096	\$361,048	\$361,048	\$0	\$0
16413	26m of 450mm diameter sanitary main - Upsizing (LRT - KGB)	9310 King George Blvd	Short Term (1 - 3 Yrs)	\$9,951	\$4,975	\$4,976	\$0	\$0
16414	243m of 675mm diameter sanitary main (LRT - KGB)	King George Blvd: 9457 to 92 Ave	Short Term (1 - 3 Yrs)	\$690,648	\$345,324	\$345,324	\$0	\$0
16415	217m of 675mm diameter sanitary main (LRT - KGB)	King George Blvd: 91 Ave to 92 Ave	Short Term (1 - 3 Yrs)	\$615,556	\$307,869	\$307,687	\$0	\$0
16416	52m of 450mm diameter sanitary main - upsizing (LRT - KGB)	9093 King George Blvd	Short Term (1 - 3 Yrs)	\$19,338	\$9,461	\$9,877	\$0	\$0
16417	337m of 675mm diameter sanitary main (LRT - KGB)	King George Blvd: 91 Ave to 89 Ave	Short Term (1 - 3 Yrs)	\$957,088	\$478,544	\$478,544	\$0	\$0
16420	248m of 750mm diameter sanitary main (LRT - KGB)	King George Blvd: 88 Ave to 89 Ave	Short Term (1 - 3 Yrs)	\$750,806	\$375,403	\$375,403	\$0	\$0
16421	116m of 750mm diameter sanitary (LRT - KGB)	King George Blvd: 13588 to 13598 88 Ave	Short Term (1 - 3 Yrs)	\$349,992	\$174,996	\$174,996	\$0	\$0
16422	100m of 750mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd:13588 88 Ave to 13570 87A Ave	Short Term (1 - 3 Yrs)	\$80,240	\$40,120	\$40,120	\$0	\$0

16423	33m of 750mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd and 13570 87A Ave	Short Term (1 - 3 Yrs)	\$28,013	\$13,240	\$14,773	\$0	\$0
16424	101m of 450mm diameter sanitary main (LRT - KGB)	8655 King George Blvd	Short Term (1 - 3 Yrs)	\$224,948	\$112,474	\$112,474	\$0	\$0
16425	24m of 450mm diameter sanitary main - Upsizing (LRT - KGB)	8655 King George Blvd	Short Term (1 - 3 Yrs)	\$13,157	\$6,050	\$7,107	\$0	\$0
16427	30m of 750mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd and 84 Ave	Short Term (1 - 3 Yrs)	\$25,533	\$12,000	\$13,533	\$0	\$0
16428	594m of 750mm diameter sanitary main (LRT - KGB)	King George Blvd: 81 Ave to 84 Ave	Short Term (1 - 3 Yrs)	\$1,885,942	\$897,971	\$987,971	\$0	\$0
16429	241m of 450mm diameter sanitary main (LRT - KGB)	King George Blvd: 81 Ave to 80 Ave	Short Term (1 - 3 Yrs)	\$475,706	\$237,853	\$237,853	\$0	\$0
16430	602m of 450mm diameter sanitary main (LRT - KGB)	King George Blvd: 76 Ave to 79 Ave	Short Term (1 - 3 Yrs)	\$1,339,228	\$669,614	\$669,614	\$0	\$0
16432	51m of 525mm diameter sanitary main - Upsizing (LRT - KGB)	King George Blvd and 73A Ave	Short Term (1 - 3 Yrs)	\$20,295	\$0	\$20,295	\$0	\$0
16434	44m of 750mm diameter sanitary main - Upsizing (LRT - 104)	10435 King George Blvd	Short Term (1 - 3 Yrs)	\$26,100	\$8,700	\$17,400	\$0	\$0
16435	37m of 750mm diameter sanitary main - Upsizing (LRT - 104)	King George Blvd and 104 Ave	Short Term (1 - 3 Yrs)	\$15,180	\$0	\$15,180	\$0	\$0
16436	17m of 525 mm diameter sanitary main - Upsizing (LRT - 104)	13635 104 Ave	Short Term (1 - 3 Yrs)	\$7,352	\$0	\$7,352	\$0	\$0
16437	87m of 525mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave: King George Blvd to 136A St	Short Term (1 - 3 Yrs)	\$33,713	\$11,238	\$22,475	\$0	\$0
16438	230m of 600mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave: King George Blvd to Whalley Blvd	Short Term (1 - 3 Yrs)	\$132,423	\$44,141	\$88,282	\$0	\$0
16439	168m of 600mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave: King George Blvd to Whalley Blvd	Short Term (1 - 3 Yrs)	\$126,076	\$63,038	\$63,038	\$0	\$0
16440	89m of 525mm diameter sanitary main - Upsizing	104 Ave: 138 St to 138A St	Short Term (1 - 3 Yrs)	\$50,027	\$16,689	\$33,338	\$0	\$0
16441	187m of 525mm diameter sanitary main- Upsizing (LRT - 104)	104 Ave: 138A St to 13939 104 Ave	Short Term (1 - 3 Yrs)	\$105,300	\$35,100	\$70,200	\$0	\$0
16442	121m of 525mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave: 13939 104 Ave to 140 St	Short Term (1 - 3 Yrs)	\$47,043	\$0	\$47,043	\$0	\$0
16443	22m of 375mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave and 140 St	Short Term (1 - 3 Yrs)	\$7,838	\$0	\$7,838	\$0	\$0
16444	179m of 375mm diameter sanitary main (LRT - 104)	104 Ave: 104 St to 141 St	Short Term (1 - 3 Yrs)	\$364,508	\$182,254	\$182,254	\$0	\$0
16446	19m of 525mm diameter sanitary mains - Upsizing (LRT - 104)	14344 104 Ave	Short Term (1 - 3 Yrs)	\$218	\$109	\$109	\$0	\$0
16451	214m of 525mm diameter sanitary main (LRT - 104)	104 Ave: 148 St to 149 St	Short Term (1 - 3 Yrs)	\$519,435	\$173,145	\$346,290	\$0	\$0
16452	22m of 675mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave and 149 St	Short Term (1 - 3 Yrs)	\$5,655	\$2,498	\$3,157	\$0	\$0
16453	195m of 675mm diameter sanitary main (LRT - 104)	104 Ave: 149 St to 150 St	Short Term (1 - 3 Yrs)	\$553,029	\$0	\$553,029	\$0	\$0
16455	22m of 900mm diameter sanitary main - Upsizing (LRT - 104)	104 Ave and 150 St	Short Term (1 - 3 Yrs)	\$10,078	\$4,163	\$5,915	\$0	\$0
16644	307m of 600mm diam trunk Redwood Heights (outside NCP co	32 Ave: Highway 15 to 17436	NCP Driven	\$63,400	\$63,400	\$0	\$0	\$0
16645	1306m of 500mm diam Forcemain Redwood Heights (outside N	Redwood Heights	NCP Driven	\$742,500	\$742,500	\$0	\$0	\$0
16697	Birdland Trunk Sewer Relocation Ph1a	Oriole Dr: 10920 to Blackbird Cr	Short Term (1 - 3 Yrs)	\$740,000	\$0	\$740,000	\$0	\$0
16699	Birdland Trunk Sewer Relocation Ph1b	14945 Bluebird Cr to 14944 Canary Dr	Medium Term (4 - 6 Yrs)	\$450,000	\$0	\$450,000	\$0	\$0

## 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, 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
<b>TOTAL</b>	<b>3,346 km</b>

## 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.

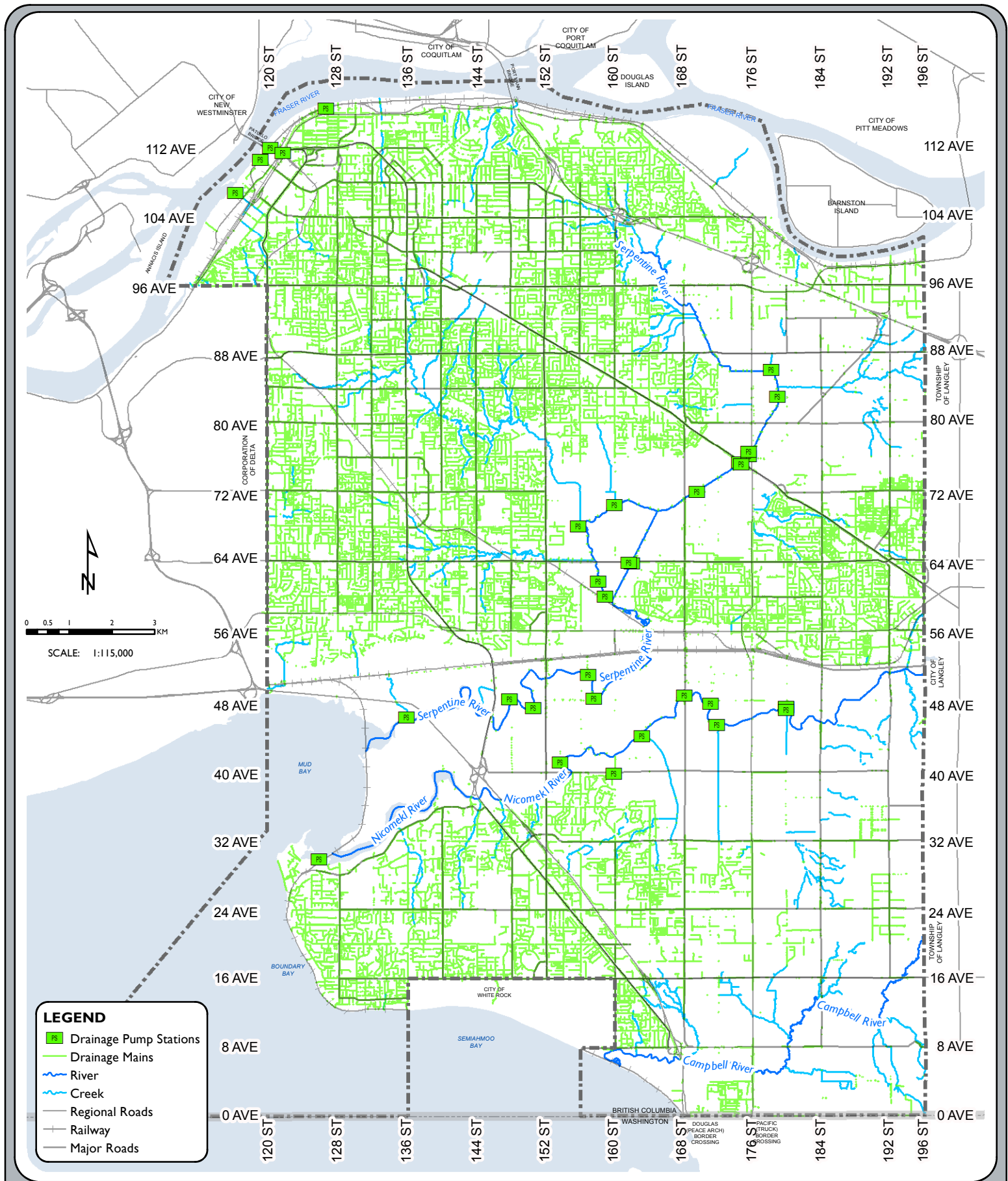
The works included in the Servicing Plan reflect the current design criteria requirements, policies to promote orderly development, and protection of natural watercourses including the more holistic approaches proposed in Master Drainage Plans ("MDPs"), Functional Plans, NCPs, and Integrated Stormwater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

ISMPs are a municipal action item included in Metro Vancouver's 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.

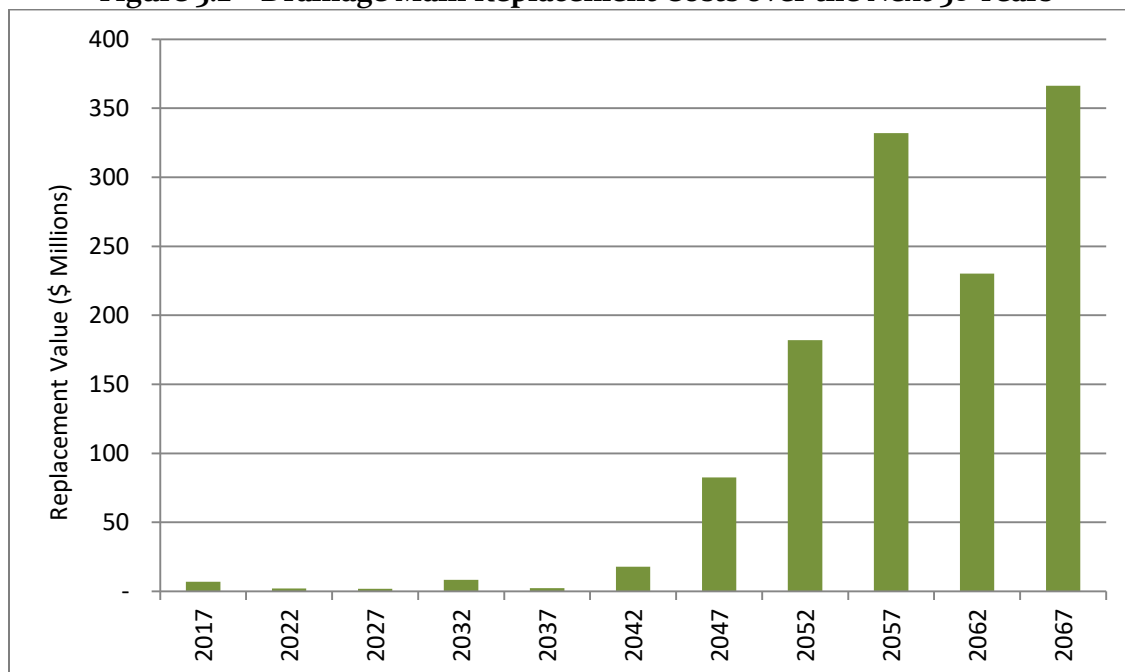
The characteristics of the pipes requiring replacement in the next 50 years is summarized in **Table 5.2**.

**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
<b>Miscellaneous:</b> 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
<b>Concrete:</b> Concrete Pipe	1,080 km (61% of entire pipe length)	586 km	\$673 million
<b>Plastic:</b> 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 and 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 the 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 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 and 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 Bylaws.

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	0	12,750,000	12,750,000
1662	Existing System Upgrades	Capital	4,052,300	40,818,056	44,870,356
1664	Lowlands Flood Control	Capital	5,065,142	30,215,569	35,280,711
1665	Lowlands Flood Control	Non-Capital	610,000	2,940,000	3,550,000
1666	Lowlands Flood Control	Operating	0	500,000	500,000
1668	Planning	Non-Capital	7,650,000	4,050,000	11,700,000
1670	Relief and Truck Systems	Capital	18,706,470	17,948,500	36,654,970
1671	Planning	Operating	0	20,000	20,000
1672	Community Detention	Capital	42,811,500	2,386,500	45,198,000
1673	Habitat Compensation	Non-Capital	0	1,800,000	1,800,000
1678	Erosion and Ravine Stabilization	Operating	0	1,971,000	1,971,000
1679	Erosion and Ravine Stabilization	Capital	3,193,108	13,158,000	16,351,108
1680	DCW Upsizing	Capital	9,250,000	0	9,250,000
1681	Minor Projects	Capital	0	5,500,000	5,500,000
1682	Environment	Operating	0	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	0	1,370,000	1,370,000
<b>Total</b>			<b>92,188,520</b>	<b>149,642,625</b>	<b>241,831,145</b>

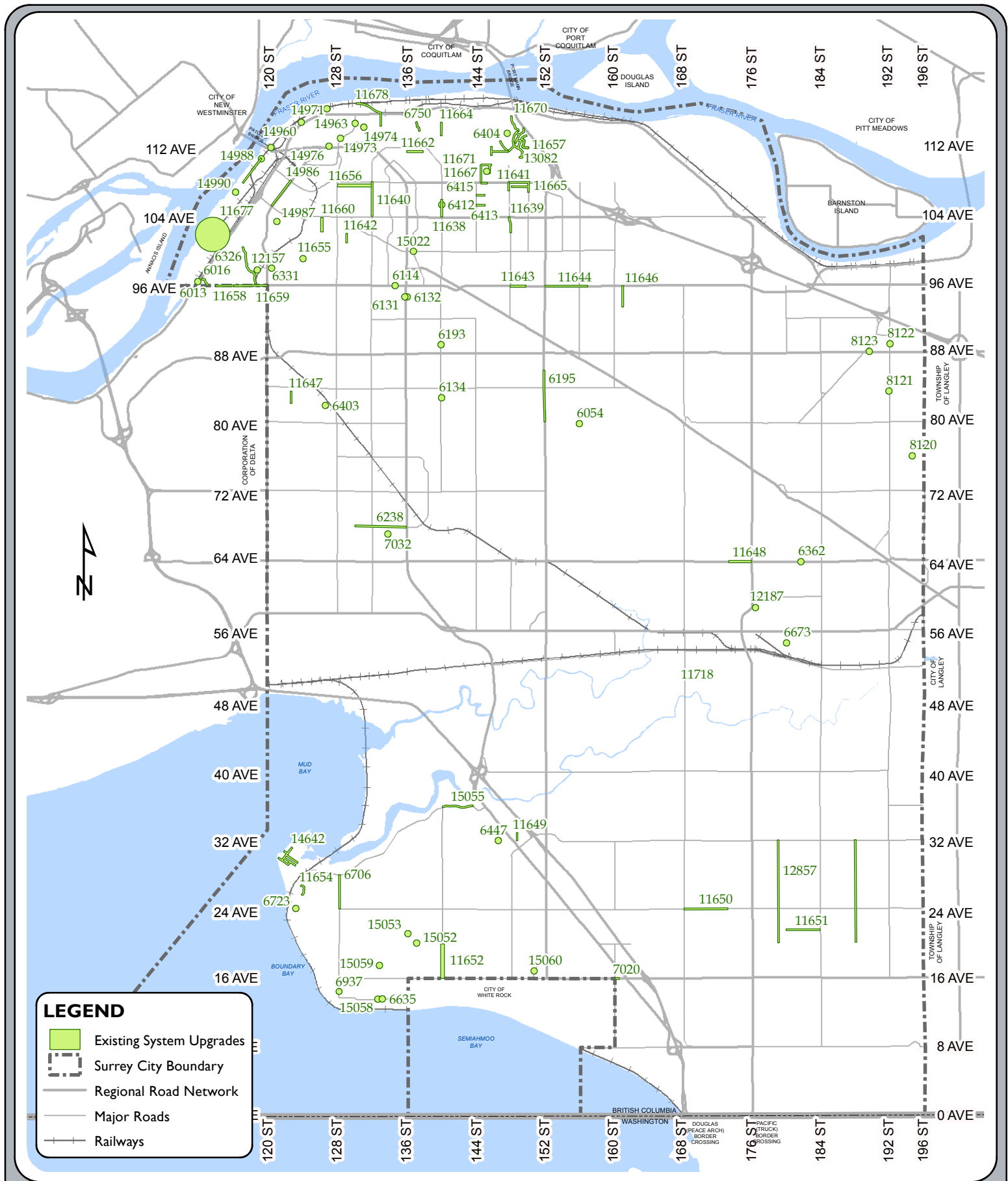
## 5.6 Stormwater Projects by Program

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 2018 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.

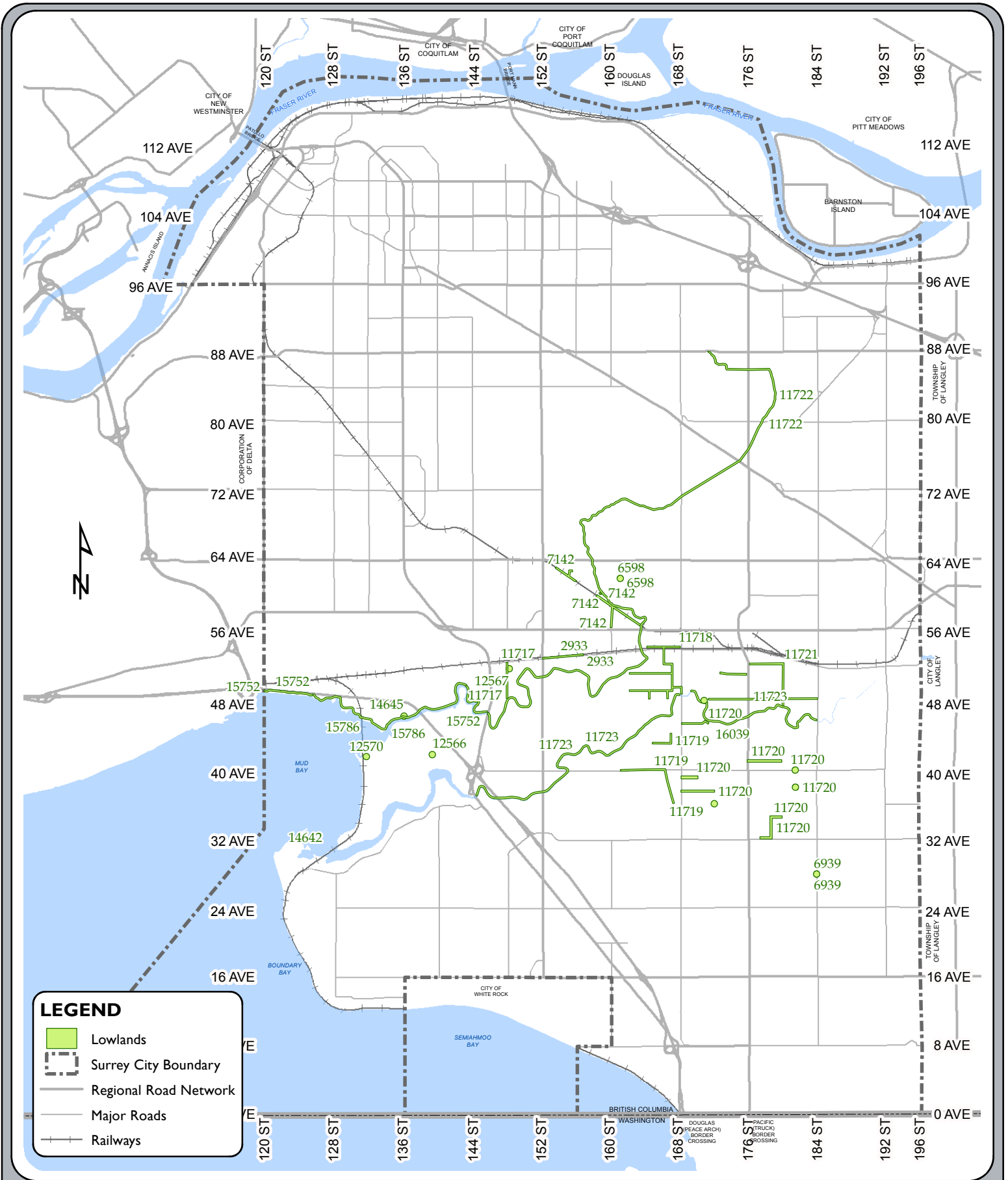
# Drainage

## Program 1662 - Existing System Upgrades

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
6013	Armstrong Crk Lowland Culv. Upgrades	Armstrong Creek	Medium Term (4 - 6 Yrs)	\$338,000	\$0	\$338,000	\$0	\$0
6016	Shadow Brook and Armstrong Creek Drainage Improvement	Shadow Brook: River Rd / 096 Ave	Medium Term (4 - 6 Yrs)	\$388,000	\$0	\$388,000	\$0	\$0
6054	30m - 1200mm at 156 St: S of 80 Ave	156 St: S of 80 Ave	Long Term (7 - 10 Yrs)	\$40,000	\$0	\$40,000	\$0	\$0
6114	Culvert Upgrade: 1-2550mm diameter	135St - 96 Ave	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
6131	Culvert Upgrade: 1-3000mm diameter	094A Ave / W of King George Hwy	Long Term (7 - 10 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
6132	Culvert Upgrade: 1-3000mm diameter	094A Ave at KG Hwy	Long Term (7 - 10 Yrs)	\$500,000	\$0	\$500,000	\$0	\$0
6134	Culvert Upgrade: 1-1800mm diameter	83 Ave / 140 St at 142 St Tributary	Long Term (7 - 10 Yrs)	\$100,000	\$0	\$100,000	\$0	\$0
6193	Creek Works: Headwall repairs and flooding issues	8881 140 St - King Cr: 88 ave and 90 ave	Short Term (1 - 3 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
6195	Trunk: 1081m - 675 to 1050mm	152 St: 86 - 80 Ave	Short Term (1 - 3 Yrs)	\$1,030,000	\$0	\$1,030,000	\$0	\$0
6238	1200m pipe ugrade	068 Ave: 130 St - KG Hwy	Medium Term (4 - 6 Yrs)	\$244,000	\$24,000	\$220,000	\$0	\$0
6326	Delta Creek Ravine protection	118 St 96 - River Rd (100 Ave)	Medium Term (4 - 6 Yrs)	\$791,000	\$160,000	\$631,000	\$0	\$0
6331	120A St/98Ave Culvert Upgrade	120A St - 98 Ave	Medium Term (4 - 6 Yrs)	\$133,000	\$27,000	\$106,000	\$0	\$0
6362	Culvert Upgrade to 100 Yr Flow	064 Ave / 181B St	Long Term (7 - 10 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
6403	Trunk Upgrade to 1200mm diameter	082 Ave: 126 - 127 St	Long Term (7 - 10 Yrs)	\$205,000	\$5,000	\$200,000	\$0	\$0
6404	Wallace Cr. Outlet Improvements	Wellington Dr. / Wallace Cr.	Medium Term (4 - 6 Yrs)	\$160,000	\$0	\$160,000	\$0	\$0
6412	672m - 450 & 600 mm Sewer Upgrade	140 St 105 - 105A Ave; 140 St: 104 - 106 Ave	Long Term (7 - 10 Yrs)	\$119,200	\$11,920	\$107,280	\$0	\$0
6413	428m of 600mm diameter. Pipe Upgrades	105A Ave: 144 - 145 St	Medium Term (4 - 6 Yrs)	\$302,700	\$30,200	\$272,500	\$0	\$0
6415	129m of 600mm diameter storm sewer	106A Ave: 145 - 144 St	Long Term (7 - 10 Yrs)	\$102,000	\$10,200	\$91,800	\$0	\$0
6447	100m of 600mm diameter storm sewer	032 Ave: 146 -145A St	Long Term (7 - 10 Yrs)	\$53,000	\$0	\$53,000	\$0	\$0
6635	675mm Upgrade Storm	Marine Dr: 132B St - Knudson Creek	Medium Term (4 - 6 Yrs)	\$77,400	\$4,000	\$73,400	\$0	\$0
6673	220m of 1350mm diameter. Trunk drain	180 St: 054 - 055 Ave	Medium Term (4 - 6 Yrs)	\$320,000	\$0	\$320,000	\$0	\$0
6706	1050 m of 525mm diameter Upgrade Existing Storm	128 St: 024 Ave - Beckett Rd	Medium Term (4 - 6 Yrs)	\$634,500	\$63,500	\$571,000	\$0	\$0
6723	Pipe Upgrade: 1350mm diameter storm sewer	024 Ave / Harbourgreene Dr	Long Term (7 - 10 Yrs)	\$212,000	\$11,000	\$201,000	\$0	\$0
6750	Southward Creek Diversion 759 m -	138 St 114 Ave to 137 and 115 Ave	Medium Term (4 - 6 Yrs)	\$627,000	\$63,000	\$564,000	\$0	\$0
6937	115m - 600m New Sewer at 128 St	128 St: 014A - 014 Ave	Long Term (7 - 10 Yrs)	\$70,000	\$0	\$70,000	\$0	\$0
7032	195m pipe upgrade	067A Ave: 133 - 134 St	Long Term (7 - 10 Yrs)	\$39,000	\$2,000	\$37,000	\$0	\$0
8120	Upgrade Existing Culvert (650mm to 1000mm)	Latimer Creek Trib: 076 Ave / 194 St	Long Term (7 - 10 Yrs)	\$55,000	\$50,000	\$5,000	\$0	\$0
8121	Upgrade Existing Culvert (850mm to 1200mm)	Latimer Creek Trib: 192 St / 084 Ave	Long Term (7 - 10 Yrs)	\$110,000	\$100,000	\$10,000	\$0	\$0
8122	Upgrade Existing Culvert (600mm to 1000mm)	Bartesko Brook (129 St and 89 Ave)	Long Term (7 - 10 Yrs)	\$110,000	\$100,000	\$10,000	\$0	\$0
8123	Upgrade Existing Culvert (700mm to 1500mm)	Old Sawmill Creek: 088 Ave / 190 St	Long Term (7 - 10 Yrs)	\$110,000	\$100,000	\$10,000	\$0	\$0
11638	Storm Sewer Upgrade	140 St: 104 - 106 Ave	Long Term (7 - 10 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
11639	Storm Sewer Upgrade	148 St: Halsted PI - 104Ave	Long Term (7 - 10 Yrs)	\$840,422	\$0	\$840,422	\$0	\$0
11640	Storm Sewer Upgrade	132 St: 104 - 108Ave	Long Term (7 - 10 Yrs)	\$592,843	\$0	\$592,843	\$0	\$0
11641	Storm Sewer Upgrade	148 St to 150 St: 107 - 108 Ave and Raven PI	Long Term (7 - 10 Yrs)	\$518,788	\$0	\$518,788	\$0	\$0
11642	Storm Sewer Upgrade	129 St to 129A St; from 102 Ave to 103A Ave	Long Term (7 - 10 Yrs)	\$334,765	\$0	\$334,765	\$0	\$0
11643	Storm Sewer Upgrade	096 Ave: 148 St - 14979	Long Term (7 - 10 Yrs)	\$208,219	\$0	\$208,219	\$0	\$0
11644	Storm Sewer Upgrade	096Ave: 152 - 157St	Long Term (7 - 10 Yrs)	\$998,455	\$0	\$998,455	\$0	\$0
11646	Storm Sewer Upgrade	160 St to 162 St: 93A Ave to 96 Ave	Long Term (7 - 10 Yrs)	\$418,347	\$0	\$418,347	\$0	\$0
11647	Storm Sewer Upgrade	122A St to 125 St: 82 Ave to 83A Ave	Long Term (7 - 10 Yrs)	\$228,971	\$0	\$228,971	\$0	\$0
11648	Storm Sewer Upgrade	63A Ave to 64 Ave: 173A - 176St	Long Term (7 - 10 Yrs)	\$433,888	\$0	\$433,888	\$0	\$0
11649	Storm Sewer Upgrade	148A St: 033 - 032Ave	Long Term (7 - 10 Yrs)	\$173,719	\$0	\$173,719	\$0	\$0
11650	Storm Sewer Upgrade	024 Ave: 168 St to 17331-24 Ave	Long Term (7 - 10 Yrs)	\$493,741	\$0	\$493,741	\$0	\$0
11651	Storm Sewer Upgrade	21A Ave: 180 - 184St	Long Term (7 - 10 Yrs)	\$278,829	\$0	\$278,829	\$0	\$0
11652	Storm Sewer Upgrade	139 St to 140 St: 16 to 20 Ave	Long Term (7 - 10 Yrs)	\$548,176	\$0	\$548,176	\$0	\$0
11654	Storm Sewer Upgrade	Dogwood Dr: From Crescent - Cedar Dr	Long Term (7 - 10 Yrs)	\$276,759	\$0	\$276,759	\$0	\$0
11655	Storm Sewer Upgrade	124 St to 127 St: 97B Ave to 100 Ave	Medium Term (4 - 6 Yrs)	\$709,468	\$0	\$709,468	\$0	\$0
11656	Storm Sewer Upgrade	106A Ave to 107 Ave: Old Yale Rd - 132 St	Long Term (7 - 10 Yrs)	\$709,306	\$0	\$709,306	\$0	\$0
11657	Storm Sewer Upgrade	Kew Dr to Glen Avon Dr: 150 St - Loughren Dr	Long Term (7 - 10 Yrs)	\$586,328	\$0	\$586,328	\$0	\$0
11658	Storm Sewer Upgrade	96A Ave to 97A Ave: 116 St - Townline Div	Long Term (7 - 10 Yrs)	\$422,625	\$0	\$422,625	\$0	\$0
11659	Storm Sewer Upgrade	96A Ave to 99A Ave: 116 St - 120 St	Long Term (7 - 10 Yrs)	\$841,766	\$0	\$841,766	\$0	\$0



11660	Storm Sewer Upgrade	124 St to 127A St: 100 Ave to 104 Ave	Medium Term (4 - 6 Yrs)	\$1,458,804	\$0	\$1,458,804	\$0	\$0
11662	Storm Sewer Upgrade	Grosvenor Rd to 111A Ave: 136 St - Brentwood Cr	Long Term (7 - 10 Yrs)	\$355,753	\$0	\$355,753	\$0	\$0
11664	Storm Sewer Upgrade	139 St to 140 St: 113A Ave to 115 Ave	Long Term (7 - 10 Yrs)	\$299,956	\$0	\$299,956	\$0	\$0
11665	East Bon Accord -South Birdland Phases 2 & 4	107A Ave to Pheasant Dr from 148A St to Canary Dr	Long Term (7 - 10 Yrs)	\$4,340,000	\$0	\$4,340,000	\$0	\$0
11667	Storm Sewer Upgrade	108 Ave to 110 Ave : 145 St to 146 St	Long Term (7 - 10 Yrs)	\$1,000,000	\$0	\$1,000,000	\$0	\$0
11670	East Bon Accord Peak Flow Diversion (North Birdland)	Glen Avon Dr - 150 St (North Birdland)	Short Term (1 - 3 Yrs)	\$2,250,000	\$0	\$2,250,000	\$0	\$0
11671	East Bon Accord - Wallace Creek Phase 3 works	108-110 Ave frm 144A - 145A St & 111A Ave frm 146 to 148 St	Long Term (7 - 10 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
11677	Fraser River Dyke Improvement -VFPA LAND	Vancouver Fraser Port Authority (VFPA) Land	Long Term (7 - 10 Yrs)	\$1,200,000	\$0	\$1,200,000	\$0	\$0
11678	Fraser River Dyke Improvement Phase 4	Fraser River from 130 St - 140 St	Short Term (1 - 3 Yrs)	\$2,500,000	\$0	\$2,500,000	\$0	\$0
12157	Storm Sewer Extension	118B Street: 98Ave to 97A Ave	Medium Term (4 - 6 Yrs)	\$70,000	\$0	\$70,000	\$0	\$0
12187	5871-176A St ROW Drainage Improvement	5871-176A St	Medium Term (4 - 6 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
12857	South Surrey - Existing infrastructure and Culvert Upgrades	179 St and 188 and 20 to 32 Ave	NCP Driven	\$1,335,714	\$1,335,714	\$0	\$0	\$0
13082	North Surrey - East Bon Accord Creek Drainage Improvements	Glen Avon Drive	Medium Term (4 - 6 Yrs)	\$4,200,000	\$500,000	\$3,700,000	\$0	\$0
14642	Crescent Beach Drainage Improvements-Phase 2	Gardiner St, Agar St, & McBride Ave: Sullivan and Target St	Medium Term (4 - 6 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
14960	43 m pipe upgrade to 1350mm	124 St at Industrial Rd	Medium Term (4 - 6 Yrs)	\$101,773	\$50,887	\$50,886	\$0	\$0
14963	81m pipe upgrade to 1200mm	Bridgeview Dr at 115 Ave	Short Term (1 - 3 Yrs)	\$171,125	\$85,562	\$85,563	\$0	\$0
14971	16m culvert upgrade to 2400mm	culvert under 126A St at Royal City PS	Short Term (1 - 3 Yrs)	\$79,911	\$15,982	\$63,929	\$0	\$0
14973	65m pipe upgrade to 675 mm	Bridgeview Dr at 112B Ave	Short Term (1 - 3 Yrs)	\$85,314	\$68,251	\$17,063	\$0	\$0
14974	87m pipe upgrade to 675mm	131 St south of 115 Ave	Long Term (7 - 10 Yrs)	\$114,132	\$91,306	\$22,826	\$0	\$0
14976	77m pipe upgrade to 675mm	King George Blvd east of 126A St, north side	Medium Term (4 - 6 Yrs)	\$101,485	\$50,743	\$50,742	\$0	\$0
14986	Improve drainage conveyance and storage	Scott Rd from Tannery Rd to Old Yale Rd	Medium Term (4 - 6 Yrs)	\$50,000	\$10,000	\$40,000	\$0	\$0
14987	Improve hydraulic efficiency of culverts and inlets	121 St at 103A Ave	Medium Term (4 - 6 Yrs)	\$60,000	\$12,000	\$48,000	\$0	\$0
14988	Feasibility of connecting Manson & Old Yale Pump Stations	Dyke Rd from Tannery Rd to Old Yale Rd	Medium Term (4 - 6 Yrs)	\$40,000	\$8,000	\$32,000	\$0	\$0
14990	Future design criteria for the South Westminster PS	Manson, Old Yale, & Pattullo Pump Stations	Medium Term (4 - 6 Yrs)	\$30,000	\$6,000	\$24,000	\$0	\$0
15022	191m pipe upgrade to 900mm	Whalley Blvd at 100 Ave	Medium Term (4 - 6 Yrs)	\$130,174	\$26,035	\$104,139	\$0	\$0
15052	Upper Chantrell Creek Green Corridor	13741 - 20 Ave	Medium Term (4 - 6 Yrs)	\$300,000	\$150,000	\$150,000	\$0	\$0
15053	Sediment and water quality device Upper Chantrell	2101 - 136 St	Medium Term (4 - 6 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
15055	1,380m Crescent Road Dyke Upgrades	Crescent Road from 140 St to Elgin Rd	Medium Term (4 - 6 Yrs)	\$2,500,000	\$500,000	\$2,000,000	\$0	\$0
15058	80m pipe upgrade to 450mm	13245 - Marine Dr	Medium Term (4 - 6 Yrs)	\$120,000	\$60,000	\$60,000	\$0	\$0
15059	230m pipe upgrade to 450mm	1755 - Amble Green Blvd	Medium Term (4 - 6 Yrs)	\$350,000	\$175,000	\$175,000	\$0	\$0
15060	125m pipe upgrade to 450mm	Martin Drive and Southmere Crescent,	Medium Term (4 - 6 Yrs)	\$190,000	\$95,000	\$95,000	\$0	\$0



**FIGURE 5.3 - Drainage Lowlands Flood Control (Program 1664)**

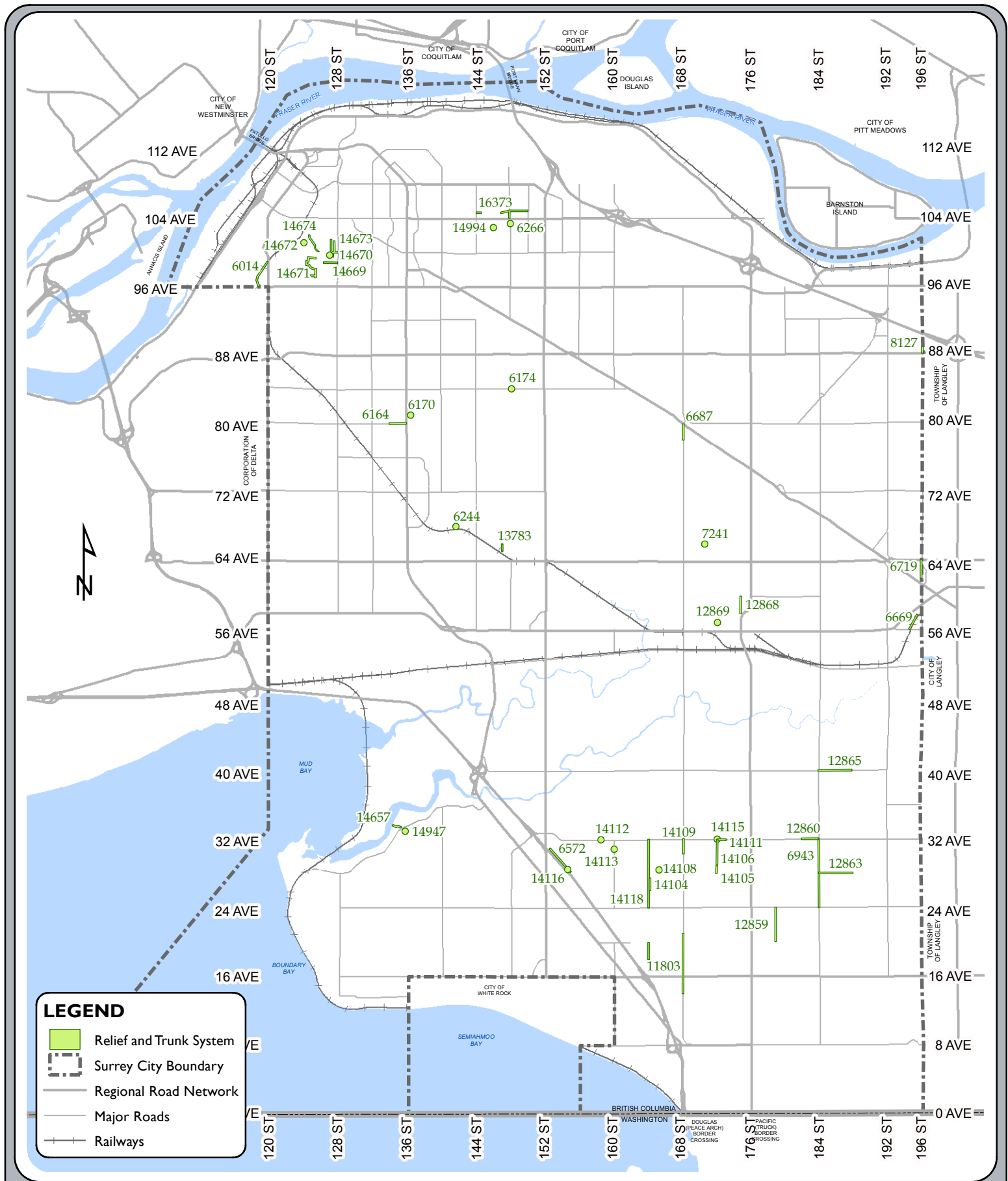
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**GIS SECTION**  
**ENGINEERING**  
**CITY OF SURREY**  
 the future lives here.

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.  
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 Date Printed: 21/11/2017 Cartographer: C9W © City of Surrey  
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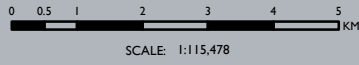
## Drainage

### Program 1664 - Lowlands (Capital)

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
2933	Ditch Widening N side of Colebrook Rd	Colebrook Rd - 152 - 157 St	Medium Term (4 - 6 Yrs)	\$5,000	\$0	\$5,000	\$0	\$0
6598	North Cloverdale Pump Station (Area F)	Serpentine Canal / 062 Ave	Long Term (7 - 10 Yrs)	\$2,359,000	\$471,800	\$1,887,200	\$0	\$0
6939	39m - 1200mm E. Kensington Elementary	027A Ave: 184 St	Long Term (7 - 10 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
7142	Hook Brook Drainage Improvements	Various Locations	Short Term (1 - 3 Yrs)	\$0	\$0	\$0	\$0	\$0
11717	Gray Creek Conveyance Works	Various Locations (Gray Creek)	Short Term (1 - 3 Yrs)	\$1,000,000	\$200,000	\$800,000	\$0	\$0
11718	Inter River Conveyance Works	Inter River	Long Term (7 - 10 Yrs)	\$1,250,000	\$250,000	\$1,000,000	\$0	\$0
11719	Old Logging Ditch Conveyance Works	Old Logging Ditch	Short Term (1 - 3 Yrs)	\$2,200,000	\$440,000	\$1,760,000	\$0	\$0
11720	Erickson/Burrow Conveyance Works	Erickson/ Burrow	Medium Term (4 - 6 Yrs)	\$1,250,000	\$250,000	\$1,000,000	\$0	\$0
11721	Southwest Cloverdale Conveyance Works	Southwest Cloverdale	Medium Term (4 - 6 Yrs)	\$2,500,000	\$500,000	\$2,000,000	\$0	\$0
11722	Serpentine River Dyking	Serpentine River: Sea Dam to 088 Avenue	Medium Term (4 - 6 Yrs)	\$3,466,711	\$693,342	\$2,773,369	\$0	\$0
11723	Nicomekl River Dyking	Nicomekl River: Sea Dam to 184 Street	Medium Term (4 - 6 Yrs)	\$1,100,000	\$220,000	\$880,000	\$0	\$0
12566	South Surrey - Mud Bay Conveyance Works	Mud Bay	Long Term (7 - 10 Yrs)	\$1,000,000	\$200,000	\$800,000	\$0	\$0
12567	Central Surrey - Panorama Conveyance Works	Panorama	Medium Term (4 - 6 Yrs)	\$1,700,000	\$340,000	\$1,360,000	\$0	\$0
12570	Surrey - Dyking District Erosion Protection	Surrey Lowlands	Annual	\$2,500,000	\$500,000	\$2,000,000	\$0	\$0
13457	Surrey Lowlands - Emergency Dyke Repairs	Surrey Lowland Area	Annual	\$1,000,000	\$200,000	\$800,000	\$0	\$0
14645	Colebrook Pump Station Upgrades	Colebrook at Serpentine River	Medium Term (4 - 6 Yrs)	\$5,000,000	\$800,000	\$4,200,000	\$0	\$0
14944	Floodbox replacement program	various	Annual	\$3,000,000	\$0	\$3,000,000	\$0	\$0
15752	Colebrook Dyke Upgrades - City lands	Colebrook dykes - sea dam to Delta	Medium Term (4 - 6 Yrs)	\$4,500,000	\$0	\$4,500,000	\$0	\$0
15786	Colebrook Dyke Upgrades - Provincial Portion	Colebrook dyke - delta to Serpentine sea dam	Medium Term (4 - 6 Yrs)	\$10,400,000	\$0	\$0	\$10,400,000	\$0
16039	Burrows Pump Station upgrades	Nicomekl River: 4444 168 St	Medium Term (4 - 6 Yrs)	\$1,400,000	\$0	\$1,400,000	\$0	\$0



**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.

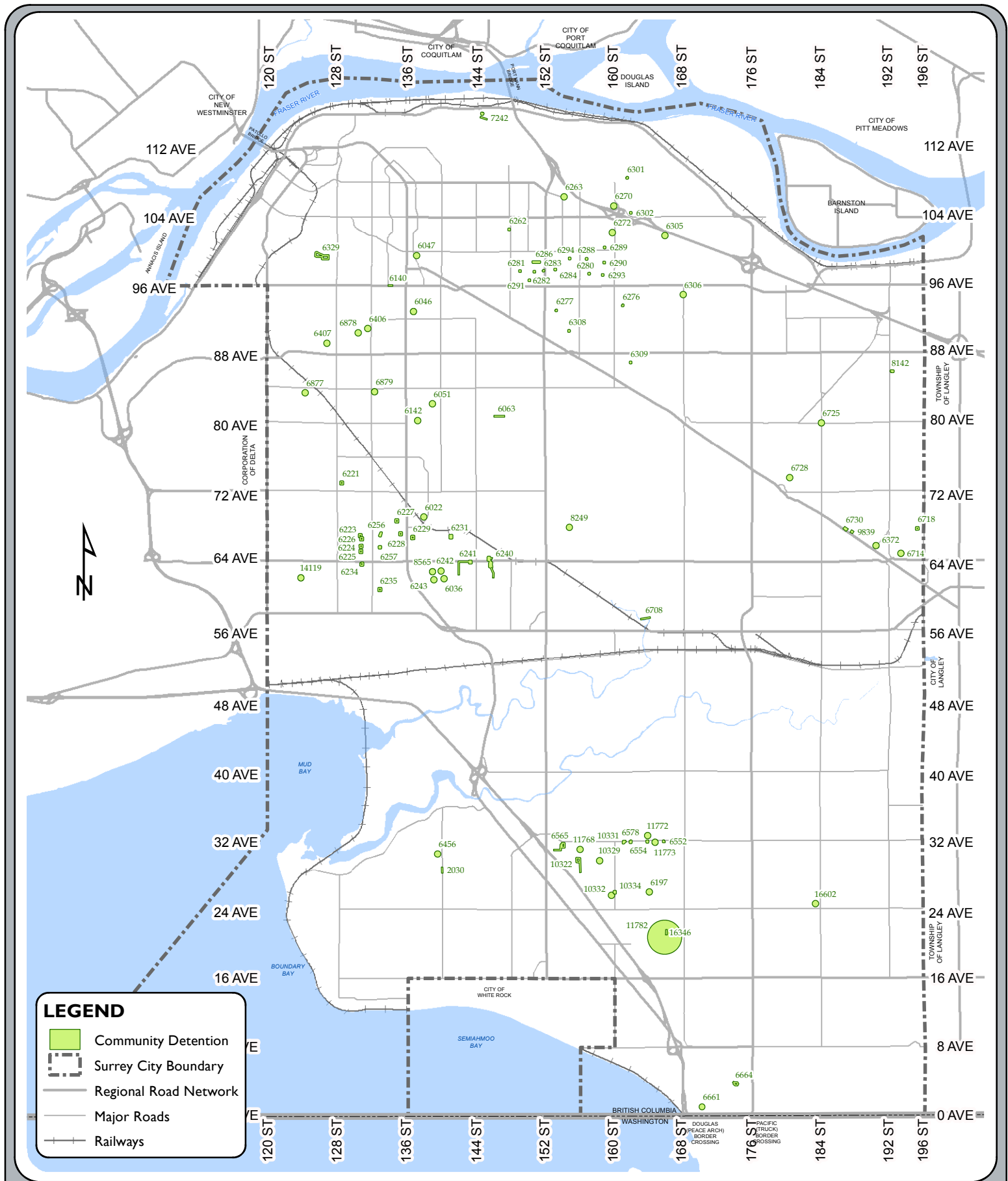
## Drainage

### Program 1670 - Relief & Trunk System

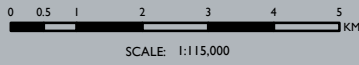
PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
6014	Delta Creek Trunk Diversion	096 Ave: 11800 blk - 99 Ave: Scott Rd	Short Term (1 - 3 Yrs)	\$3,500,000	\$500,000	\$3,000,000	\$0	\$0
6046	Community detention/sediment Pond	093Ave: 136A St - Hydro ROW	Medium Term (4 - 6 Yrs)	\$55,000	\$5,000	\$50,000	\$0	\$0
6164	807m of 750 to 900mm diameter	080 Ave: 134 St - King George Hwy	Long Term (7 - 10 Yrs)	\$1,332,000	\$1,332,000	\$0	\$0	\$0
6170	115m of 1050mm diameter	081A Ave / 136 St	Medium Term (4 - 6 Yrs)	\$540,000	\$450,000	\$90,000	\$0	\$0
6174	Trunk: 213m - 750 -900mm	84 Ave: E of 148 St	Long Term (7 - 10 Yrs)	\$175,000	\$175,000	\$0	\$0	\$0
6197	DCC F/End - Orchard Grove NCP Detention Pond	164 St / 026 Ave	NCP Driven	\$2,690,000	\$2,690,000	\$0	\$0	\$0
6244	900mm Upgrade Existing Storm	068 Ave: 141 - 142 St	Medium Term (4 - 6 Yrs)	\$450,000	\$450,000	\$0	\$0	\$0
6266	120m of 600mm diameter storm sewer	148 St: North of 103 Ave	Medium Term (4 - 6 Yrs)	\$70,000	\$70,000	\$0	\$0	\$0
6346	Bon Accord Creek removal of log weir	146 St: 114 Ave - 115A Ave	Short Term (1 - 3 Yrs)	\$2,400,000	\$400,000	\$2,000,000	\$0	\$0
6372	East Clayton NCP Pond - D	Fraser Hwy / 190 St	NCP Driven	\$2,890,000	\$2,890,000	\$0	\$0	\$0
6418	Aquire Creek banks and provide Erosion Protection	Bon Accord Crk Park to Melrose	Long Term (7 - 10 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
6420	Remove Flume and rehab creek	147A St/ 116 Ave	Medium Term (4 - 6 Yrs)	\$250,000	\$0	\$250,000	\$0	\$0
6561	Erosion protection - North Grandview Heights NCP	167 St / 033 Ave	NCP Driven	\$60,000	\$60,000	\$0	\$0	\$0
6572	630m of 1,200mm trunk sewer	Croydon Dr: 029 - 031 Ave (Rosemary Hts Bus Prk NCP)	NCP Driven	\$1,089,000	\$1,089,000	\$0	\$0	\$0
6599	Creek Protection- W Cloverdale North NCP	East Creek: 064 Ave - 168 St	NCP Driven	\$320,000	\$320,000	\$0	\$0	\$0
6602	900m of creek improvement - North Cloverdale West NCP	North Creek: 70 Ave /184 - 178 St	NCP Driven	\$350,000	\$350,000	\$0	\$0	\$0
6669	406m - Erosion protection.	195 St: 56 - 58 Ave	Long Term (7 - 10 Yrs)	\$200,000	\$200,000	\$0	\$0	\$0
6687	300m of 750mm diameter. Trunk	168 St: Fraser Hwy - 078 Ave	Medium Term (4 - 6 Yrs)	\$370,000	\$370,000	\$0	\$0	\$0
6714	Detention Pond - B P4	194 St / 064 Ave	NCP Driven	\$2,300,000	\$2,300,000	\$0	\$0	\$0
6719	Trunk storm sewer diversion	196 St: 064 Ave - outfall	Medium Term (4 - 6 Yrs)	\$1,895,000	\$1,895,000	\$0	\$0	\$0
6725	West Clayton Pond #2 & trunk sewers	184 /80 Ave	NCP Driven	\$4,988,000	\$4,988,000	\$0	\$0	\$0
6728	West Clayton Pond 1 & trunk sewers	182 St / 74 Ave	NCP Driven	\$8,030,000	\$8,030,000	\$0	\$0	\$0
6879	Mahood Cruickshank Pond 3	Mahood Creek: 084 Ave / 132 St	Medium Term (4 - 6 Yrs)	\$6,775,000	\$5,025,600	\$1,749,400	\$0	\$0
6943	1,617m of 600mm diameter storm sewer	184 St: 024 Ave - 032 Ave	NCP Driven	\$970,000	\$970,000	\$0	\$0	\$0
7241	Culvert Drainage	066 Ave / 171 St	Short Term (1 - 3 Yrs)	\$72,000	\$36,000	\$36,000	\$0	\$0
7796	Upper Serpentine Erosion Prevention	Serpentine River: 16542 096 Ave to 9212 168 St	Medium Term (4 - 6 Yrs)	\$2,000,000	\$1,000,000	\$1,000,000	\$0	\$0
8127	New Storm Trunk Sewer (150m)	88 Ave - 196 St to Latimer Creek Trib	Long Term (7 - 10 Yrs)	\$125,000	\$112,500	\$12,500	\$0	\$0
8565	Archibald Detention Pond P1B	138 St / 62 Ave	NCP Driven	\$2,471,000	\$2,223,900	\$247,100	\$0	\$0
9321	Ravine Erosion Works	near 10687 Salisbury Dr on 108 Ave Creek	Medium Term (4 - 6 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
9333	Ravine Stabilitiy Works	Fergus Creek: 012 Ave / 168 St	Short Term (1 - 3 Yrs)	\$71,000	\$0	\$71,000	\$0	\$0
9356	Ravine Stability Works	Chantrell Creek: 032 Ave / 136 St	Medium Term (4 - 6 Yrs)	\$283,000	\$25,000	\$258,000	\$0	\$0
11773	DCC F/End - North Grandview Heights NCP Pond F: 1800 cu.n	032 Ave / 166 St (April Crk)	NCP Driven	\$616,000	\$616,000	\$0	\$0	\$0
11782	Stormwater Corridors for Sunnyside Heights NCP	Grandview Heights #2 (Sunnyside Heights) NCP	NCP Driven	\$14,043,000	\$14,043,000	\$0	\$0	\$0
11803	Trunk Storm Sewers (DWA portion)	Sunnyside Heights NCP	NCP Driven	\$1,418,400	\$1,418,400	\$0	\$0	\$0
11804	Ditch/Channel Erosion Protection	Sunnyside Heights NCP	NCP Driven	\$25,560	\$25,560	\$0	\$0	\$0
12806	South Surrey - Chantrell Creek Realignment	136 St and Crescent (North)	Short Term (1 - 3 Yrs)	\$4,000,000	\$0	\$4,000,000	\$0	\$0
12829	Ravine Erosion Works	2237-123 St	Short Term (1 - 3 Yrs)	\$150,000	\$0	\$150,000	\$0	\$0
12830	Ravine Erosion Works	2363-Christopherson Rd (at 24 Ave)	Short Term (1 - 3 Yrs)	\$150,000	\$0	\$150,000	\$0	\$0
12841	Ravine Erosion Works	14517-76 Ave	Short Term (1 - 3 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
12859	South Surrey - Drainage Channel DC1	179 St 20 to 24 ave Erickson Watershed	NCP Driven	\$217,000	\$217,000	\$0	\$0	\$0
12860	South Surrey - Drainage Channel DC2	32 Ave 182 to 184 St Erickson Watershed	NCP Driven	\$139,000	\$139,000	\$0	\$0	\$0
12863	South Surrey - Drainage Channel DC4	28 Ave 188 to 184 St Erickson Watershed	NCP Driven	\$155,000	\$155,000	\$0	\$0	\$0
12865	South Surrey - Drainage Channel DC5	40 ave 188 to 184 St. Erickson watershed	NCP Driven	\$155,000	\$155,000	\$0	\$0	\$0
12868	Central Surrey - 175th St. Storm sewer Upgrade	175th st 60 58 Ave	Medium Term (4 - 6 Yrs)	\$700,000	\$0	\$700,000	\$0	\$0
12869	Central Surrey - 57th Ave storm sewer	57th ave 177 to 172 St.	Short Term (1 - 3 Yrs)	\$300,000	\$0	\$300,000	\$0	\$0
13151	200m of 1050mm diameter	094 Ave: 183 - 184 St Anniedale NCP	NCP Driven	\$371,000	\$371,000	\$0	\$0	\$0
13152	250m of 900mm diameter	097 Ave: 179 - 180 St; 180 St: 97 - 96 Ave Anniedale NCP	NCP Driven	\$347,000	\$347,000	\$0	\$0	\$0
13153	65m of 1050mm diameter	096 Ave / 180 St Anniedale NCP	NCP Driven	\$108,000	\$108,000	\$0	\$0	\$0
13159	160m of 1050mm diameter	180 St: 96 Ave - Golden Ears Way. Anniedale NCP	NCP Driven	\$297,000	\$297,000	\$0	\$0	\$0
13199	150m of 900mm diameter	173A St: 92 - 93 Ave Anniedale NCP	NCP Driven	\$249,000	\$249,000	\$0	\$0	\$0

13217	150m of 1050mm diameter	184 St: 94 - 95 Ave Anniedale NCP	NCP Driven	\$279,000	\$279,000	\$0	\$0	\$0
13236	270m of 525mm diameter	180 St: 91 - 90 Ave Anniedale NCP	NCP Driven	\$266,000	\$266,000	\$0	\$0	\$0
13237	250m of ditch improvement	187 St: 89 - 90 Ave. Anniedale NCP	NCP Driven	\$34,000	\$34,000	\$0	\$0	\$0
13238	200m of ditch improvement	092 Ave: 173 - 173A St Anniedale NCP	NCP Driven	\$27,000	\$27,000	\$0	\$0	\$0
13239	100m of ditch improvement	Harvie Rd: 91 -90 Ave Anniedale NCP	NCP Driven	\$14,000	\$14,000	\$0	\$0	\$0
13240	150m of 750mm diameter	172 St: 93 - 92 Ave Anniedale NCP	NCP Driven	\$220,000	\$220,000	\$0	\$0	\$0
13241	400m of ditch improvement	184 St: 90 - 88 Ave Anniedale NCP	NCP Driven	\$54,000	\$54,000	\$0	\$0	\$0
13243	400m of ditch improvement & ROW	180 St: 90 - 88 Ave Anniedale NCP	NCP Driven	\$509,000	\$509,000	\$0	\$0	\$0
13244	Anniedale 6 detention pond	191 St / 91 Ave	NCP Driven	\$3,279,000	\$3,279,000	\$0	\$0	\$0
13245	150m of 450mm diameter	180 St: 91 - 92 Ave Anniedale NCP	NCP Driven	\$134,000	\$134,000	\$0	\$0	\$0
13246	150m of 750mm diameter	092 Ave: 176 - 177 St Anniedale NCP	NCP Driven	\$220,000	\$220,000	\$0	\$0	\$0
13247	170m of 600mm diameter	177 St: 93 - 92 Ave Anniedale NCP	NCP Driven	\$217,000	\$217,000	\$0	\$0	\$0
13248	350m of 900mm diameter	176 St: 90A - 92 Ave Anniedale NCP	NCP Driven	\$809,000	\$809,000	\$0	\$0	\$0
13249	350m of ditch improvement	092 Ave: 173A - 176 St Anniedale NCP	NCP Driven	\$47,000	\$47,000	\$0	\$0	\$0
13251	290m of 900mm diameter	184 St: 91A - 90 Ave Anniedale NCP	NCP Driven	\$482,000	\$482,000	\$0	\$0	\$0
13259	Anniedale 7 detention pond	096 Ave / 180 St Anniedale NCP	NCP Driven	\$4,888,000	\$4,888,000	\$0	\$0	\$0
13261	Anniedale 8 water quality pond	187 St / 93 Ave	NCP Driven	\$2,217,000	\$2,217,000	\$0	\$0	\$0
13262	Anniedale 5 water quality pond	090 Ave / 187 St	NCP Driven	\$1,439,000	\$1,439,000	\$0	\$0	\$0
13263	Anniedale 4 water quality pond	184 St / 90 Ave	NCP Driven	\$1,679,000	\$1,679,000	\$0	\$0	\$0
13264	Anniedale 3 water quality pond	180 St / 91 Ave	NCP Driven	\$1,738,000	\$1,738,000	\$0	\$0	\$0
13265	Anniedale 2 water quality pond	90A Ave / Hwy 15	NCP Driven	\$2,967,000	\$2,967,000	\$0	\$0	\$0
13266	Tynehead 1 water quality pond	173A St / 92 Ave Anniedale NCP	NCP Driven	\$2,122,000	\$2,122,000	\$0	\$0	\$0
13267	1050m of 1050mm diameter	South of Hwy 1: 184 - 187 St Anniedale NCP	NCP Driven	\$1,624,000	\$1,624,000	\$0	\$0	\$0
13527	South Surrey - Groundwater and Surface Water Monitoring Pro	19280 and 19427-24 Ave	Complete	\$0	\$0	\$0	\$0	\$0
13783	Ditch Improvements	147 St: 66 Ave - Hyland Creek	Short Term (1 - 3 Yrs)	\$500,000	\$500,000	\$0	\$0	\$0
14054	Sea Level Rise - Flood Plain Studies	various coastal & River sites	Annual	\$3,000,000	\$500,000	\$2,500,000	\$0	\$0
14055	Floodplain Mapping	Serpentine & Nicomekl River	Short Term (1 - 3 Yrs)	\$600,000	\$100,000	\$500,000	\$0	\$0
14056	Trending studies - flow, rainfall and subsidence	applies to whole City	Annual	\$300,000	\$150,000	\$150,000	\$0	\$0
14057	Seismic Investigations/models	Throughout Surrey	Medium Term (4 - 6 Yrs)	\$200,000	\$0	\$200,000	\$0	\$0
14058	Development of Sea Level Rise Strategy	Throughout Surrey	Short Term (1 - 3 Yrs)	\$400,000	\$100,000	\$300,000	\$0	\$0
14059	Regional Partnership on various Drainage projects	Throughout Surrey	Annual	\$500,000	\$0	\$500,000	\$0	\$0
14104	South Surrey - Orchard Grove NCP trunk sewer upgrade	164 St: 26 Ave to 2700 block	NCP Driven	\$395,000	\$395,000	\$0	\$0	\$0
14105	South Surrey - 172 St trunk sewer upgrade to 600 mm diam	172 St alignment behind 2815 to 2875 Country Woods Dr	NCP Driven	\$227,000	\$227,000	\$0	\$0	\$0
14106	South Surrey - 172 St trunk sewer upgrade to 1200 mm diam	172 St from 32 ave to back of 2875 Country Woods Dr	NCP Driven	\$1,459,000	\$1,459,000	\$0	\$0	\$0
14108	South Surrey - April Creek headwaters trunk sewer	165 St at 28 Ave north to April Creek (Old Logging ISMP)	Long Term (7 - 10 Yrs)	\$220,000	\$0	\$220,000	\$0	\$0
14109	South Surrey - 168 St trunk sewer upgrade	168 St from 30A Ave to 32 Ave (Old Logging/Burrow's ISMP)	Long Term (7 - 10 Yrs)	\$866,000	\$0	\$866,000	\$0	\$0
14111	South Surrey - 32 Avenue trunk sewer to 1050mm diam	32 Ave from 172 St to 17300 blk (Old Logging/Burrow's ISMP)	Long Term (7 - 10 Yrs)	\$851,000	\$0	\$851,000	\$0	\$0
14112	South Surrey - Morgan Creek at 32 Avenue culvert upgrade	15850 - 32 Ave: Titman Creek (Old Logging/Burrow's ISMP)	Long Term (7 - 10 Yrs)	\$115,000	\$115,000	\$0	\$0	\$0
14113	South Surrey - Wills Brook trib at 160 St culvert upgrade	3087 - 160 St: Wills Brook trib (Old Logging/Burrow's ISMP)	NCP Driven	\$45,000	\$45,000	\$0	\$0	\$0
14115	South Surrey - Burrow's Ditch at 32 Avenue culvert upgrade	32 Ave at 172 St (Old Logging/Burrow's ISMP)	Long Term (7 - 10 Yrs)	\$100,000	\$0	\$100,000	\$0	\$0
14116	South Surrey - Hwy 99 Culvert at Morgan Creek	Hwy 99 at 28 Ave: Upper Titman Creek (Old Logging ISMP)	Medium Term (4 - 6 Yrs)	\$100,000	\$0	\$100,000	\$0	\$0
14118	South Surrey - 164 St trunk sewer - Old Logging/Burrows ISMP	164 St from 24 Ave to 32 Ave	Long Term (7 - 10 Yrs)	\$553,000	\$0	\$553,000	\$0	\$0
14119	Central Surrey - Rain garden in Boundary Park	Boundary Drive East at 62 Ave; Boundary Park & Pond	Long Term (7 - 10 Yrs)	\$340,000	\$0	\$340,000	\$0	\$0
14657	Lower Chantrell Creek Realignment Project	Chantrell Creek north of Crescent Road	Medium Term (4 - 6 Yrs)	\$2,000,000	\$0	\$2,000,000	\$0	\$0
14669	Robson 99 Ave trunk Project #1 McElhanney & USL reports	99 Ave from Grove Cr. To 127B St	Short Term (1 - 3 Yrs)	\$380,000	\$70,000	\$310,000	\$0	\$0
14670	Robson 100 Ave trunk replacement Project #2 McElhanney	100 Ave from 127A St to Robson Creek outfall	Short Term (1 - 3 Yrs)	\$1,000,000	\$200,000	\$800,000	\$0	\$0
14671	Robson 124A st Trunk Project #3 McElhanney and Urban Syste	124A St between 99 Ave and 99A Ave, and 99A Ave from 124A	Medium Term (4 - 6 Yrs)	\$610,000	\$100,000	\$510,000	\$0	\$0
14672	Robson 102 Ave Trunk Sewer	102 Ave: 125 St - Robson Ravine	Short Term (1 - 3 Yrs)	\$3,200,000	\$0	\$3,200,000	\$0	\$0
14673	Robson 100 Ave Trunk project #5 McElhanney	100 Ave from 128 St to 127A St, 127A St & 127B St from 100 A	Medium Term (4 - 6 Yrs)	\$1,600,000	\$300,000	\$1,300,000	\$0	\$0
14674	Beaver/Park Drive Trunk Project #6 McElhanney	Beaver Dr / Park Dr from 102 Ave to 100 Ave	Medium Term (4 - 6 Yrs)	\$1,900,000	\$400,000	\$1,500,000	\$0	\$0
14914	2015/2016 Ravine Stability Assessments	Various Creeks	Annual	\$1,000,000	\$0	\$1,000,000	\$0	\$0
14915	Land Development Coordinated works	various	Annual	\$3,250,000	\$3,250,000	\$0	\$0	\$0
14916	storm sewer upsizing	various	Annual	\$6,000,000	\$6,000,000	\$0	\$0	\$0

14917	water licenses and rentals	various	Annual	\$200,000	\$0	\$200,000	\$0	\$0
14918	storm sewer video inspection	various	Annual	\$1,000,000	\$0	\$1,000,000	\$0	\$0
14922	Minor Projects Upland	various	Annual	\$4,000,000	\$0	\$4,000,000	\$0	\$0
14923	Minor Projects - Lowlands	various	Annual	\$1,500,000	\$0	\$1,500,000	\$0	\$0
14927	Surrey Drainage Parcel Tax for drainage infrastructures	various	Annual	\$20,000	\$0	\$20,000	\$0	\$0
14928	Long term monitoring	various	Annual	\$800,000	\$0	\$800,000	\$0	\$0
14929	LTM watering, replanting and maintenance	various	Annual	\$1,000,000	\$0	\$1,000,000	\$0	\$0
14930	Salmon Habitat restoration program	various	Annual	\$1,500,000	\$0	\$1,500,000	\$0	\$0
14931	BBAMP / Fraser River water quality monitoring	various	Annual	\$550,000	\$0	\$550,000	\$0	\$0
14932	general environmental services	various	Annual	\$500,000	\$0	\$500,000	\$0	\$0
14934	Benthic invertebrate monitoring	various	Annual	\$700,000	\$0	\$700,000	\$0	\$0
14935	Giant Hogweed management on City roads and property	various	Annual	\$200,000	\$0	\$200,000	\$0	\$0
14936	Eagle Nest mapping	various	Annual	\$150,000	\$0	\$150,000	\$0	\$0
14937	Environmental events	various	Annual	\$200,000	\$0	\$200,000	\$0	\$0
14939	Upper Serpentine Debris Basin Cleaning	Serpentine River at 88 Ave	Long Term (7 - 10 Yrs)	\$90,000	\$0	\$90,000	\$0	\$0
14940	Gravel deficient creek augmentation	various	Annual	\$150,000	\$0	\$150,000	\$0	\$0
14942	Surrey Lake Cleaning	Surrey Lake	Long Term (7 - 10 Yrs)	\$80,000	\$0	\$80,000	\$0	\$0
14945	SHIM mapping	various	Annual	\$800,000	\$0	\$800,000	\$0	\$0
14946	ESC projects	various	Annual	\$200,000	\$0	\$200,000	\$0	\$0
14947	Chantrell realignment through Davidson Pond site	13568 Crescent Road	Short Term (1 - 3 Yrs)	\$2,000,000	\$500,000	\$1,500,000	\$0	\$0
14994	1775 m pipe upsize to 1050mm	103 Ave & 146 St to 105A Ave & 152 St	Medium Term (4 - 6 Yrs)	\$4,336,010	\$4,336,010	\$0	\$0	\$0
15170	Erosion site (high risk) Delta Creek #1	Delta Creek: 11822 97A Ave (118B St / 91A Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15171	Erosion site (high risk) - Delta Creek #2	Delta Creek: 11822 97 Ave (118B St / 96A Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15172	Erosion site (high risk): Robson Creek	Robson Creek: 10121 Park Dr (Park Dr / Centre Dr)	Long Term (7 - 10 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15173	Erosion site (high risk) : Bolivar Creek	Bolivar Creek: 13285 King George Blvd (132 St Div / KGB)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15174	Erosion site (high risk): Dingwall Creek	Dingwall Creek: 14037 116 Ave (140A St / 116 Ave)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15175	Erosion site (high risk): East Bon Accord Creek	E Bon Accord Creek: 11348 Roxburgh Rd (Wellington/Surrey R	Medium Term (4 - 6 Yrs)	\$600,000	\$100,000	\$500,000	\$0	\$0
15176	Erosion site (high risk): Latimer Creek	Latimer Creek: 19588 88 Ave (192 St / 88 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15177	Erosion site (high risk): Serpentine River Tributary	Serpentine River Trib:10336 158A St (158A St/102B Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15178	Erosion site (high risk): Guildford Brook Creek#1	Guildford Brook Creek: 10461 158 St (158 St / 104 Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15179	Erosion site (high risk): Guildford Brook Creek #2	Guildford Brook Creek: 10461 158 St (158 St / 104 Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15180	Erosion site (high risk): 152 St	152 St Creek: 15135 80 Ave (152 St / 80 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15181	Erosion site (high risk): Cub Creek	Cub Creek:8719 149 St (149 St / 87 Ave)	Short Term (1 - 3 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15182	Erosion site (high risk): Grenville Creek	Grenville Creek: 13256 Tulsy Pl (132 St / Shakespeare Pl)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15183	Erosion site (high risk): Hyland Trib	Hyland Tributaries: 6542 138 St (138 St / 65 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15185	Erosion site (high risk): Chantrell Creek	Chantrell Creek: 13552 32 Ave (136A St / 136 St)	Short Term (1 - 3 Yrs)	\$360,000	\$60,000	\$300,000	\$0	\$0
15186	Erosion site (high risk): Crescent Beach Creek #1	Crescent Beach Creeks: 2267 Christopherson Rd (at 22B Ave)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15187	Erosion site (high risk): Crescent Beach Creek #2	Crescent Beach Creeks: 2233 123 St (123 St / 22 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15191	Erosion site (high risk): Price Creek	Price Creek: 8615 147A St (146A St / 86A Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15192	Erosion site (high risk): Armstrong Creek	Armstrong Creek: 4427 190 St (192 St / 42A Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15193	Erosion site (high risk):Quibble Creek #1	Quibble Creek: 13598 89 Ave (135A St / 89 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15194	Erosion site (high risk): Quibble Creek #2	Quibble Creek: 13710 93A Ave (138 St / 93A)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15195	Erosion site (high risk): Bear Creek	Bear Creek: 8626 Tulsy Cr E (Tulsy Cr / Tulsy Cr E)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15237	168 St Creek: Enviro Enhancements	168 St: 108 Ave to 109 ave	Long Term (7 - 10 Yrs)	\$50,000	\$0	\$50,000	\$0	\$0
15238	Lyncean Crk West: Enviro Enhancements	Lyncean Drive to Daly Rd	Long Term (7 - 10 Yrs)	\$35,000	\$0	\$35,000	\$0	\$0
15240	184 st Creek: Enviro Enhancements	18407 - 96 Ave	Medium Term (4 - 6 Yrs)	\$25,000	\$0	\$25,000	\$0	\$0
15241	196 St Creek: Golden Ears Way to Fraser River	196 st at Golden Ears Way	Medium Term (4 - 6 Yrs)	\$5,000	\$0	\$5,000	\$0	\$0
15243	Drainage Maintenance - Environmental approvals	various	Annual	\$2,000,000	\$0	\$2,000,000	\$0	\$0
15307	Chantrell Creek Reinstatement at 13568 Crescent Road	13568 Crescent Road	Medium Term (4 - 6 Yrs)	\$1,728,108	\$28,108	\$1,700,000	\$0	\$0
15314	Environment Program Management	surrey	Annual	\$3,000,000	\$0	\$3,000,000	\$0	\$0
16373	104 Ave trunk relocation	104 Ave to 105 Ave along 148 St. 105 Ave from 148 to 150 St	Short Term (1 - 3 Yrs)	\$3,209,288	\$300,000	\$0	\$2,909,288	\$0



**FIGURE 5.5 - Drainage  
Community Detention (Program 1672)**



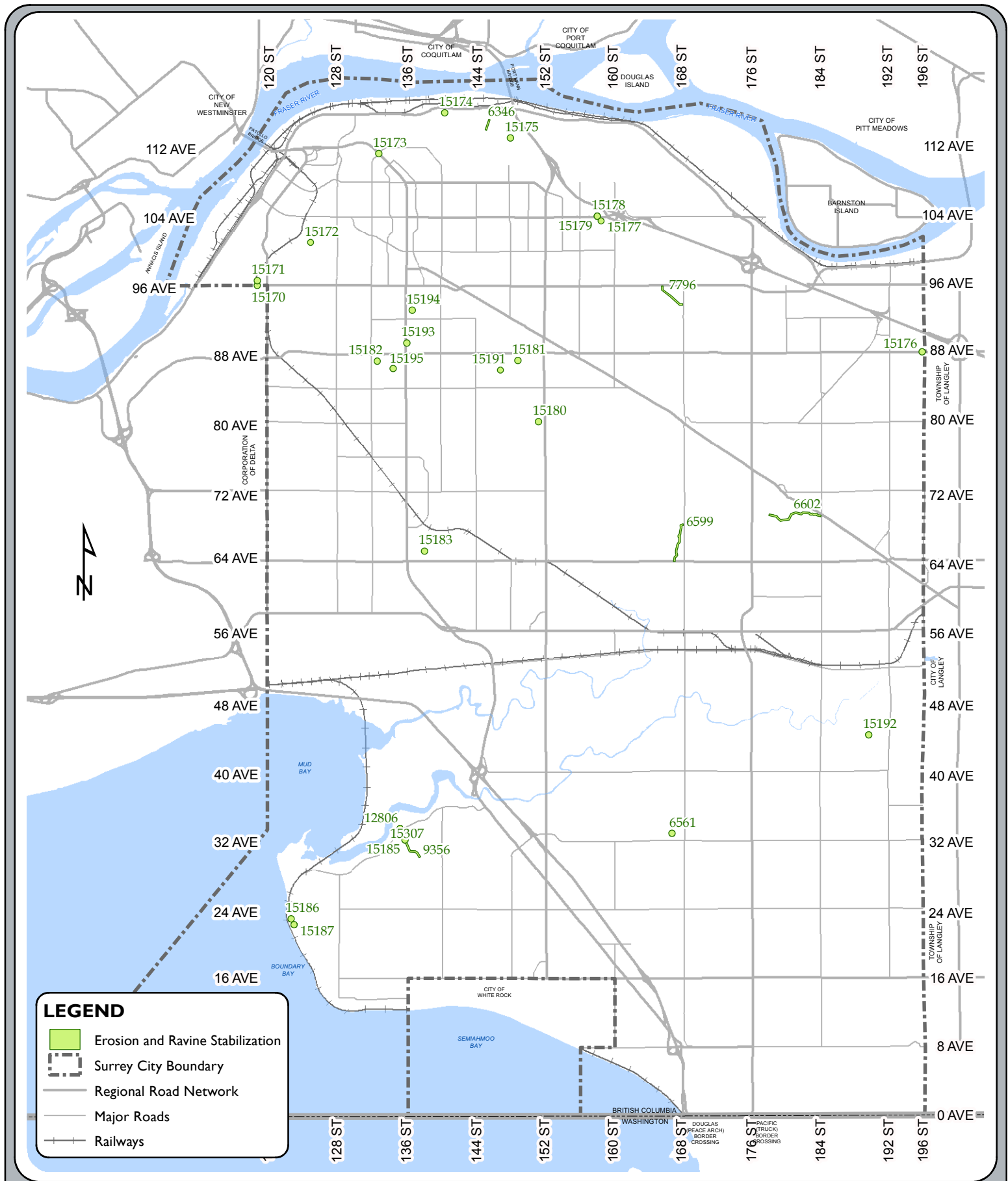
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## Drainage

### Program 1672 - Community Detention

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
6046	Community detention/sediment Pond	093Ave: 136A St - Hydro ROW	Medium Term (4 - 6 Yrs)	\$55,000	\$5,000	\$50,000	\$0	\$0
6197	DCC F/End - Orchard Grove NCP Detention Pond	164 St / 026 Ave	NCP Driven	\$2,690,000	\$2,690,000	\$0	\$0	\$0
6372	East Clayton NCP Pond - D	Fraser Hwy / 190 St	NCP Driven	\$2,890,000	\$2,890,000	\$0	\$0	\$0
6714	Detention Pond - B P4	194 St / 064 Ave	NCP Driven	\$2,300,000	\$2,300,000	\$0	\$0	\$0
6725	West Clayton Pond #2 & trunk sewers	184 /80 Ave	NCP Driven	\$4,988,000	\$4,988,000	\$0	\$0	\$0
6728	West Clayton Pond 1 & trunk sewers	182 St / 74 Ave	NCP Driven	\$8,030,000	\$8,030,000	\$0	\$0	\$0
6879	Mahood Cruickshank Pond 3	Mahood Creek: 084 Ave / 132 St	Medium Term (4 - 6 Yrs)	\$6,775,000	\$5,025,600	\$1,749,400	\$0	\$0
8565	Archibald Detention Pond P1B	138 St / 62 Ave	NCP Driven	\$2,471,000	\$2,223,900	\$247,100	\$0	\$0
11773	DCC F/End - North Grandview Heights NCP Pond F: 1800 cu.n	032 Ave / 166 St (April Crk)	NCP Driven	\$616,000	\$616,000	\$0	\$0	\$0
11782	Stormwater Corridors for Sunnyside Heights NCP	Grandview Heights #2 (Sunnyside Heights) NCP	NCP Driven	\$14,043,000	\$14,043,000	\$0	\$0	\$0
14119	Central Surrey - Rain garden in Boundary Park	Boundary Drive East at 62 Ave; Boundary Park & Pond	Long Term (7 - 10 Yrs)	\$340,000	\$0	\$340,000	\$0	\$0



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

0 0.5 1 2 3 4 5 KM  
 SCALE: 1:115,000  
 GIS SECTION ENGINEERING  
 CITY OF SURREY  
 the future lives here.

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## Drainage

### Program 1679 - Erosion & Ravine Stabilization

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
6346	Bon Accord Creek removal of log weir	146 St: 114 Ave - 115A Ave	Short Term (1 - 3 Yrs)	\$2,400,000	\$400,000	\$2,000,000	\$0	\$0
6561	Erosion protection - North Grandview Heights NCP	167 St / 033 Ave	NCP Driven	\$60,000	\$60,000	\$0	\$0	\$0
6599	Creek Protection- W Cloverdale North NCP	East Creek: 064 Ave - 168 St	NCP Driven	\$320,000	\$320,000	\$0	\$0	\$0
6602	900m of creek improvement - North Cloverdale West NCP	North Creek: 70 Ave /184 - 178 St	NCP Driven	\$350,000	\$350,000	\$0	\$0	\$0
7796	Upper Serpentine Erosion Prevention	Serpentine River: 16542 096 Ave to 9212 168 St	Medium Term (4 - 6 Yrs)	\$2,000,000	\$1,000,000	\$1,000,000	\$0	\$0
9356	Ravine Stability Works	Chantrell Creek: 032 Ave / 136 St	Medium Term (4 - 6 Yrs)	\$283,000	\$25,000	\$258,000	\$0	\$0
12806	South Surrey - Chantrell Creek Realignment	136 St and Crescent (North)	Short Term (1 - 3 Yrs)	\$4,000,000	\$0	\$4,000,000	\$0	\$0
15170	Erosion site (high risk) Delta Creek #1	Delta Creek: 11822 97A Ave (118B St / 91A Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15171	Erosion site (high risk) - Delta Creek #2	Delta Creek: 11822 97 Ave (118B St / 96A Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15172	Erosion site (high risk): Robson Creek	Robson Creek: 10121 Park Dr (Park Dr / Centre Dr)	Long Term (7 - 10 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15173	Erosion site (high risk) : Bolivar Creek	Bolivar Creek: 13285 King George Blvd (132 St Div / KGB)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15174	Erosion site (high risk): Dingwall Creek	Dingwall Creek: 14037 116 Ave (140A St / 116 Ave)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15175	Erosion site (high risk): East Bon Accord Creek	E Bon Accord Creek: 11348 Roxburgh Rd (Wellington/Surrey R	Medium Term (4 - 6 Yrs)	\$600,000	\$100,000	\$500,000	\$0	\$0
15176	Erosion site (high risk): Latimer Creek	Latimer Creek: 19588 88 Ave (192 St / 88 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15177	Erosion site (high risk): Serpentine River Tributary	Serpentine River Trib:10336 158A St (158A St/102B Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15178	Erosion site (high risk): Guildford Brook Creek#1	Guildford Brook Creek: 10461 158 St (158 St / 104 Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15179	Erosion site (high risk): Guildford Brook Creek #2	Guildford Brook Creek: 10461 158 St (158 St / 104 Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15180	Erosion site (high risk): 152 St	152 St Creek: 15135 80 Ave (152 St / 80 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15181	Erosion site (high risk): Cub Creek	Cub Creek:8719 149 St (149 St / 87 Ave)	Short Term (1 - 3 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15182	Erosion site (high risk): Grenville Creek	Grenville Creek: 13256 Tulsy Pl (132 St / Shakespeare Pl)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15183	Erosion site (high risk): Hyland Trib	Hyland Tributaries: 6542 138 St (138 St / 65 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15185	Erosion site (high risk): Chantrell Creek	Chantrell Creek: 13552 32 Ave (136A St / 136 St)	Short Term (1 - 3 Yrs)	\$360,000	\$60,000	\$300,000	\$0	\$0
15186	Erosion site (high risk): Crescent Beach Creek #1	Crescent Beach Creeks: 2267 Christopherson Rd (at 22B Ave)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15187	Erosion site (high risk): Crescent Beach Creek #2	Crescent Beach Creeks: 2233 123 St (123 St / 22 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15191	Erosion site (high risk): Price Creek	Price Creek: 8615 147A St (146A St / 86A Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15192	Erosion site (high risk): Armstrong Creek	Armstrong Creek: 4427 190 St (192 St / 42A Ave)	Medium Term (4 - 6 Yrs)	\$125,000	\$25,000	\$100,000	\$0	\$0
15193	Erosion site (high risk):Quibble Creek #1	Quibble Creek: 13598 89 Ave (135A St / 89 Ave)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15194	Erosion site (high risk): Quibble Creek #2	Quibble Creek: 13710 93A Ave (138 St / 93A)	Medium Term (4 - 6 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15195	Erosion site (high risk): Bear Creek	Bear Creek: 8626 Tulsy Cr E (Tulsy Cr / Tulsy Cr E)	Long Term (7 - 10 Yrs)	\$250,000	\$50,000	\$200,000	\$0	\$0
15307	Chantrell Creek Reinstatement at 13568 Crescent Road	13568 Crescent Road	Medium Term (4 - 6 Yrs)	\$1,728,108	\$28,108	\$1,700,000	\$0	\$0

## 6. CAMPBELL HEIGHTS

The Campbell Heights area encompasses approximately 800 hectares in southeast Surrey. The area generally lies between 18 Avenue and 44 Avenue to the south and north, and 186 Street 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 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	97,887,500	0	16,937,500	16,875,000	131,700,000
1617	Water	13,374,000	0	0	0	13,374,000
1637	Sewer	16,606,700	0	0	0	16,606,700
1667	Drainage	9,531,200	0	0	0	9,531,200
	<b>Total</b>	<b>137,399,400</b>	<b>0</b>	<b>16,937,500</b>	<b>16,875,000</b>	<b>171,211,900</b>

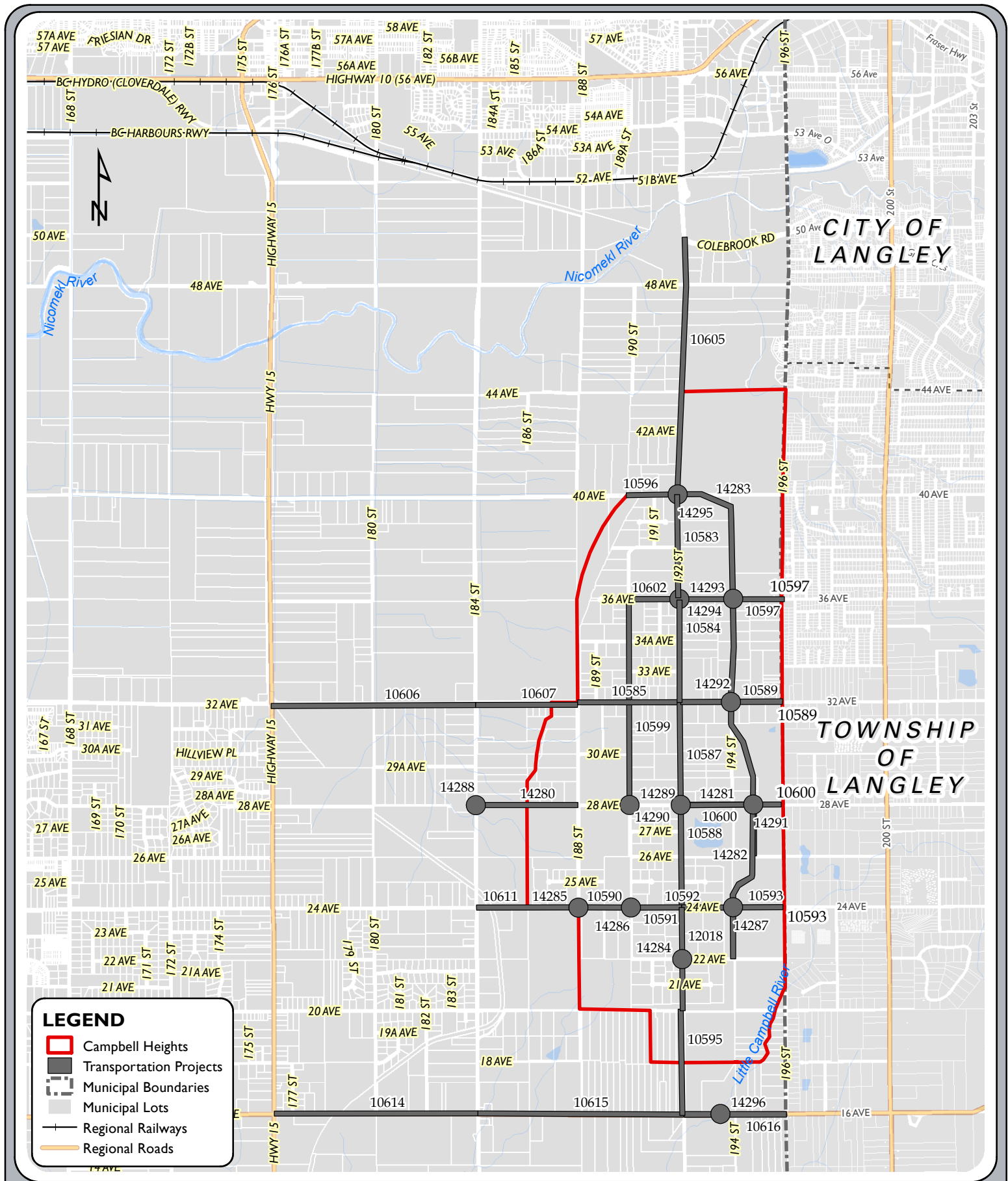
### 6.1 Campbell Heights Projects by Program

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:

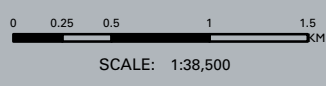
- a) Project ID - the unique identifier of the project;
- b) Project name - the specific name or generic name that depicts the type of work;
- c) Project location - the geographic extent of the works;
- d) Priority - the intended time frame for when the project is planned to proceed (subject to change); and
- e) Costs – the high level estimates in 2018 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external and 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.



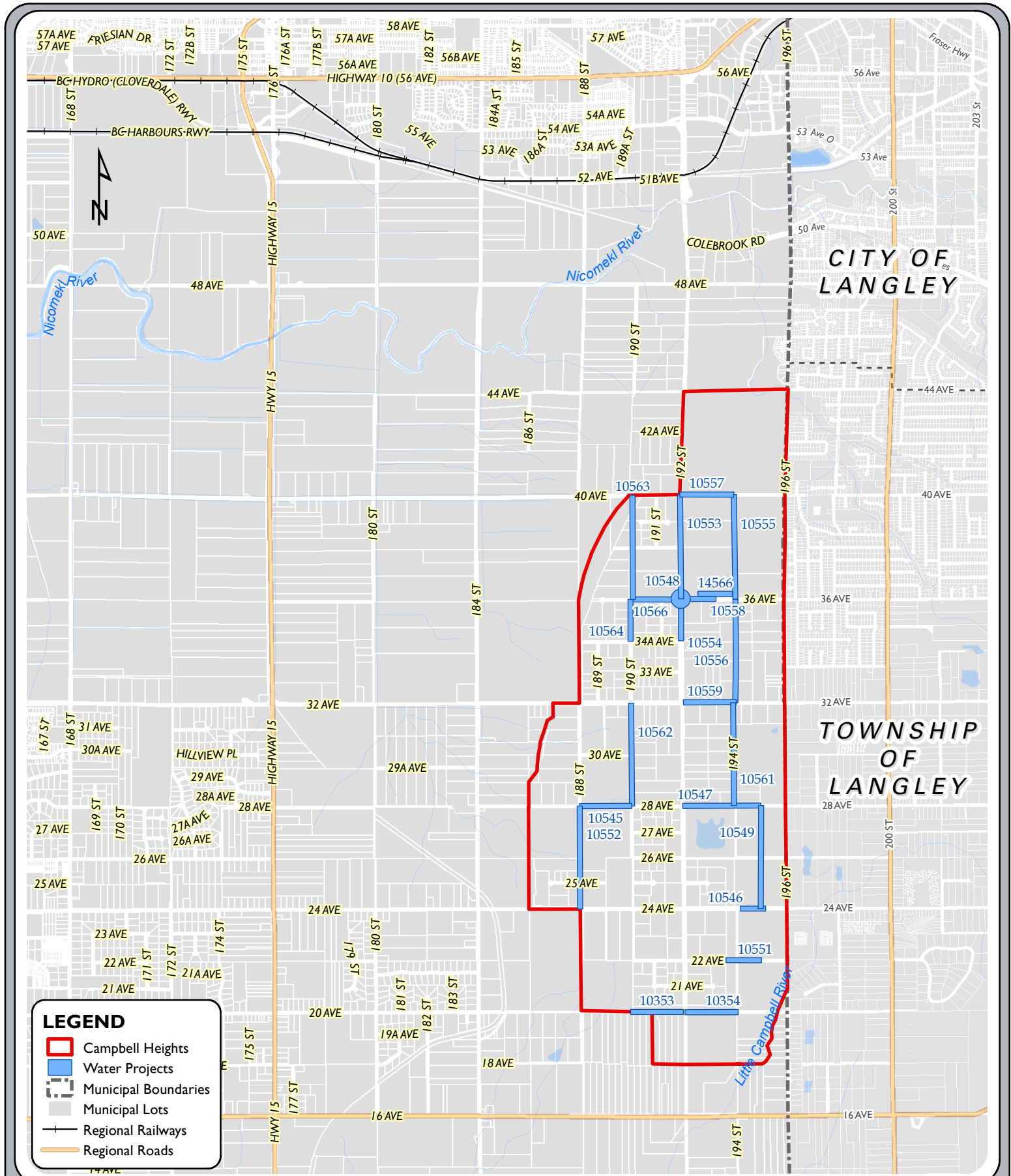
**FIGURE 6.1 - Transportation Campbell Heights (Program 1017)**



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**Transportation**  
**Program 1017 - Campbell Heights**

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
10583	Arterial Widening - 5 Lane	192 St: 036 Ave - 040 Ave	NCP Driven	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10584	Arterial Widening - 5 Lane	192 St: 032 Ave - 036 Ave	NCP Driven	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10585	Arterial Widening (South Side)	032 Ave: 188 St - 192 St	NCP Driven	\$1,500,000	\$1,500,000	\$0	\$0	\$0
10587	Arterial Widening - 5 Lane	192 St: 028 Ave - 032 Ave	NCP Driven	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10588	Arterial Widening - 3 to 5 Lane (East Side)	192 St: 024 Ave - 028 Ave	NCP Driven	\$2,800,000	\$2,800,000	\$0	\$0	\$0
10589	Arterial Widening - 5 Lane	032 Ave: 192 St - 196 St	NCP Driven	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10590	Arterial Widening - 5 Lane	024 Ave: 188 St - 190 St	NCP Driven	\$3,000,000	\$3,000,000	\$0	\$0	\$0
10591	Arterial Widening - 3 to 5 Lane (South Side)	024 Ave: 190 St - 192 St	NCP Driven	\$1,400,000	\$1,400,000	\$0	\$0	\$0
10592	Arterial Widening - 3 to 5 Lane (South Side)	024 Ave: 192 St - 194 St	NCP Driven	\$1,400,000	\$1,400,000	\$0	\$0	\$0
10593	New Arterial Construction	024 Ave: 194 St - 196 St	NCP Driven	\$3,400,000	\$3,400,000	\$0	\$0	\$0
10595	Arterial Widening - 5 Lane	192 St: 016 Ave - 020 Ave	NCP Driven	\$6,000,000	\$3,000,000	\$0	\$3,000,000	\$0
10596	Arterial Widening - 5 Lane	040 Ave: 190 Blk - 192 St	NCP Driven	\$3,000,000	\$1,500,000	\$0	\$1,500,000	\$0
10597	Arterial Widening - 5 Lane	036 Ave: 192 St - 196 St	NCP Driven	\$6,000,000	\$6,000,000	\$0	\$0	\$0
10599	Collector Upsizing	190 St: 028 Ave - 036 Ave	NCP Driven	\$1,200,000	\$1,200,000	\$0	\$0	\$0
10600	Collector Upsizing	028 Ave: 192 St - 196 St	NCP Driven	\$600,000	\$600,000	\$0	\$0	\$0
10602	Collector Upsizing	036 Ave: 190 St - 192 St	NCP Driven	\$300,000	\$300,000	\$0	\$0	\$0
10605	Arterial Widening - 3 Lane	192 St: 040 Ave - 5000 Blk	NCP Driven	\$10,000,000	\$10,000,000	\$0	\$0	\$0
10606	Arterial Widening - 3 Lane	032 Ave: 176 St - 184 St	NCP Driven	\$6,400,000	\$6,400,000	\$0	\$0	\$0
10607	Arterial Widening - 3 Lane	032 Ave: 184 St - 188 St	NCP Driven	\$3,200,000	\$3,200,000	\$0	\$0	\$0
10611	Arterial Widening - 5 Lane	024 Ave: 184 St - 188 St	NCP Driven	\$8,000,000	\$4,000,000	\$0	\$4,000,000	\$0
10614	Arterial Widening - 5 Lane	016 Ave: 176 St - 184 St	NCP Driven	\$12,000,000	\$3,000,000	\$0	\$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	\$0	\$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	\$0	\$1,500,000	\$3,000,000
12018	Arterial Widening - 3 to 5 Lane (East Side)	192 St: 020 Ave - 024 Ave	NCP Driven	\$3,600,000	\$3,600,000	\$0	\$0	\$0
14280	Collector Widening	028 Ave: 184 St - 188 St	NCP Driven	\$3,600,000	\$3,600,000	\$0	\$0	\$0
14281	Collector Widening	028 Ave: 192 St - 194A St	NCP Driven	\$1,000,000	\$1,000,000	\$0	\$0	\$0
14282	Collector Widening	194A St: 026 Ave - 028 Ave	NCP Driven	\$1,000,000	\$1,000,000	\$0	\$0	\$0
14283	Collector Upsizing	194/194A St: 022 Ave - 040 Ave	NCP Driven	\$4,200,000	\$4,200,000	\$0	\$0	\$0
14284	Traffic Signal	022 Ave / 192 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14285	Traffic Signal	024 Ave / 188 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14286	Traffic Signal	024 Ave / 190 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14287	Traffic Signal	024 Ave / 194A St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14288	Traffic Signal	028 Ave / 184 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14289	Traffic Signal	028 Ave / 190 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14290	Traffic Signal	028 Ave / 192 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14291	Traffic Signal	028 Ave / 194A St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14292	Traffic Signal	032 Ave / 194A St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14293	Traffic Signal	036 Ave / 192 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14294	Traffic Signal	036 Ave / 194A St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14295	Traffic Signal	040 Ave / 192 St	NCP Driven	\$150,000	\$150,000	\$0	\$0	\$0
14296	Replace Crossing	016 Ave / Campbell River	NCP Driven	\$3,750,000	\$937,500	\$0	\$937,500	\$1,875,000



**FIGURE 6.2 - Water  
Campbell Heights (Program 1617)**

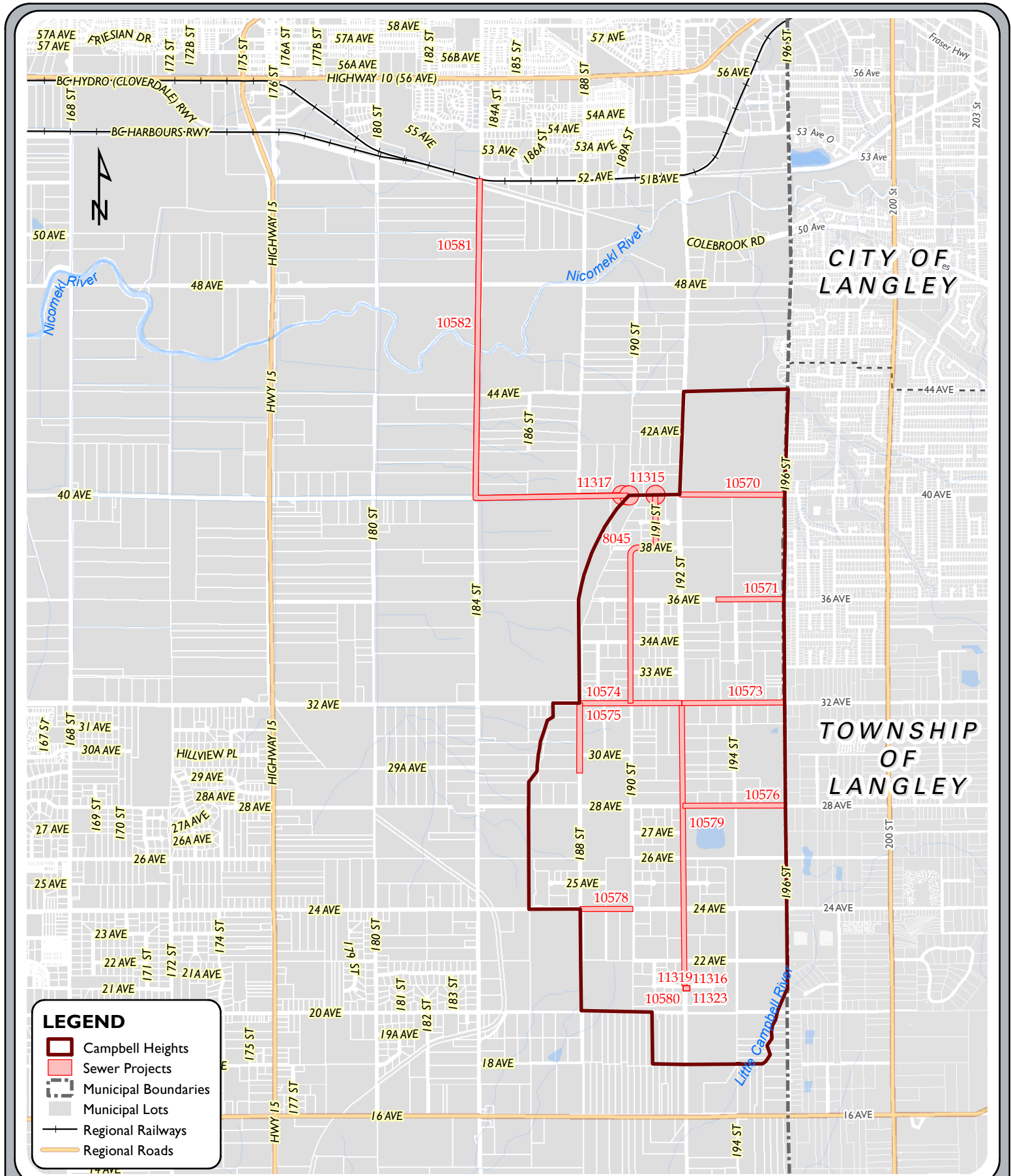
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## Water

### Program 1617 - Campbell Heights

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
10353	400m of 300mm diameter	020 Ave: 190 - 192 St	NCP Driven	\$330,000	\$330,000	\$0	\$0	\$0
10354	400m of 300mm diameter	020 Ave: 192 - 194 St	NCP Driven	\$330,000	\$330,000	\$0	\$0	\$0
10545	400m of 300mm diameter	028 Ave: 190 - 188 St	NCP Driven	\$330,000	\$330,000	\$0	\$0	\$0
10546	400m of 300mm diameter	024 Ave: 194 - 195 St	NCP Driven	\$330,000	\$330,000	\$0	\$0	\$0
10547	600m of 350mm diameter	028 Ave: 195 - 192 St	NCP Driven	\$520,000	\$520,000	\$0	\$0	\$0
10548	GVWD Connection	192 St / 036 Ave	NCP Driven	\$225,000	\$225,000	\$0	\$0	\$0
10549	800m of 350mm diameter	195 St: 028 - 024 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10551	200m of 300mm diameter	022 Ave: 194 - 195 St	NCP Driven	\$165,000	\$165,000	\$0	\$0	\$0
10552	800m of 350mm diameter	188 St: 028 - 024 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10553	800m of 350mm diameter	192 St: 040 - 036 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10554	350m of 400mm diameter	192 St: 34A - 36 Ave	NCP Driven	\$725,000	\$725,000	\$0	\$0	\$0
10555	800m of 350mm diameter	194 St: 040 - 036 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10556	800m of 350mm diameter	194 St: 036 - 032 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10557	400m of 350mm diameter	040 Ave: 194 - 192 St	NCP Driven	\$345,000	\$345,000	\$0	\$0	\$0
10558	285m of 350mm diameter	036 Ave: 192 - 19310	NCP Driven	\$345,000	\$345,000	\$0	\$0	\$0
10559	400m of 300/350mm diameter	032 Ave: 194 - 192 St	NCP Driven	\$345,000	\$345,000	\$0	\$0	\$0
10561	800m of 350mm diameter	194 St: 032 - 028 Ave	NCP Driven	\$690,000	\$690,000	\$0	\$0	\$0
10562	800m of 300mm diameter	190 St: 032 - 028 Ave	NCP Driven	\$660,000	\$660,000	\$0	\$0	\$0
10563	800m of 300mm diameter	190 St: 040 - 036 Ave	NCP Driven	\$660,000	\$660,000	\$0	\$0	\$0
10564	800m of 300mm diameter	190 St: 34 - 36 Ave	NCP Driven	\$660,000	\$660,000	\$0	\$0	\$0
10566	400m of 350mm diameter	036 Ave: 192 - 190 St	NCP Driven	\$345,000	\$345,000	\$0	\$0	\$0
14566	150m of 350mm diameter	36 Ave: 19310 - 194 St	NCP Driven	\$165,000	\$165,000	\$0	\$0	\$0
16137	Jericho Reservoir - City of Surrey Contribution (Campbell He	Township of Langley (20400 - 73A Avenue)	NCP Driven	\$2,754,000	\$2,754,000	\$0	\$0	\$0



**FIGURE 6.3 - Sewer Campbell Heights (Program 1637)**

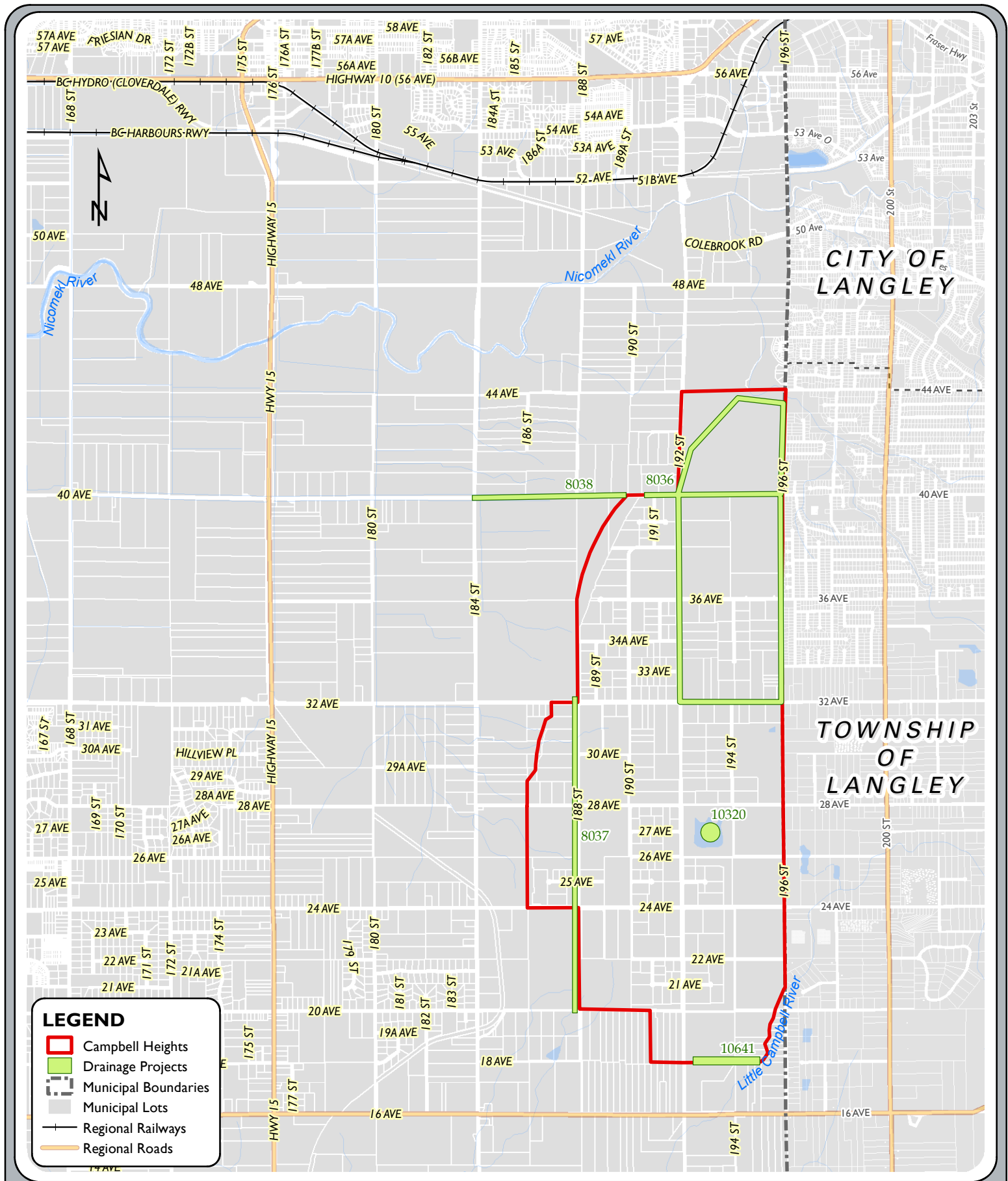
The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.  
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Date Printed: 21/11/2017 Cartographer: C9W © City of Surrey  
Source: G:\MAPPING\GIS\Maps\Recurring\10yr\ServicingPlan2018-27\Figure6-3\_CampbellHeights-S.mxd

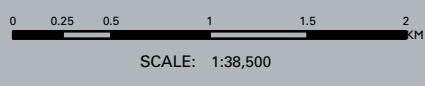
## Sewer

### Program 1637 - Campbell Heights

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
8045	809m of 675/750mm diameter Sanitary Trunk	191St: 038-040 Ave; 038 Ave: 190-191St; 190 St: 036-038 Ave	NCP Driven	\$1,781,900	\$1,781,900	\$0	\$0	\$0
10570	800m of 375mm diameter upsizing	040 Ave: 192 - 196 St	NCP Driven	\$248,900	\$248,900	\$0	\$0	\$0
10571	525m of 375mm diameter upsizing	036 Ave: 19370 - 196 St	NCP Driven	\$136,500	\$136,500	\$0	\$0	\$0
10573	800m of 375mm diameter upsizing	032 Ave: 192 - 196 St	NCP Driven	\$248,900	\$248,900	\$0	\$0	\$0
10574	820m of 675mm diameter	032 Ave: 188- 192 St	NCP Driven	\$809,600	\$809,600	\$0	\$0	\$0
10575	400m of 375mm diameter upsizing	188 Street: 031 - 032 Avenue	NCP Driven	\$79,800	\$79,800	\$0	\$0	\$0
10576	800m of 300mm diameter upsizing	028 Avenue: 192 - 196 Street	NCP Driven	\$144,900	\$144,900	\$0	\$0	\$0
10578	400m of 300mm diameter	24 Ave: 188 - 190 St	NCP Driven	\$396,900	\$396,900	\$0	\$0	\$0
10579	2,200m of 450mm diameter forcemain	192 St: 021 - 032 Ave	NCP Driven	\$2,940,000	\$2,940,000	\$0	\$0	\$0
10580	Campbell Heights PS interim upgrade to 120 L/s	021 Ave / 192 St	NCP Driven	\$871,500	\$871,500	\$0	\$0	\$0
10581	450mm dia siphon from Campbel Heights to GVRD Cloverdale	040 Ave: 184 St - 19000 Bl & 184St: 040 - 052 Avenue	NCP Driven	\$2,835,000	\$2,835,000	\$0	\$0	\$0
10582	550mm dia siphon from Campbell Heights to GVRD Cloverdale	040 Ave: 184 St - 19000 Bl & 184St: 040 - 052 Ave	NCP Driven	\$3,223,500	\$3,223,500	\$0	\$0	\$0
11315	Odour Control Facilities	040 Ave / 19000 blk	NCP Driven	\$768,200	\$768,200	\$0	\$0	\$0
11316	Odour Control Facilities at Pump station	021 Ave / 192 St	NCP Driven	\$84,000	\$84,000	\$0	\$0	\$0
11317	Campbell Hts Grid Chamber	040 Ave / 19000 blk (N)	NCP Driven	\$525,000	\$525,000	\$0	\$0	\$0
11318	Campbell Hts Sewer Upsizing	Various Locations	NCP Driven	\$188,000	\$188,000	\$0	\$0	\$0
11319	Campbell Hts. Overflow Storage Tank at P.S.	021 Ave / 192 St	NCP Driven	\$945,000	\$945,000	\$0	\$0	\$0
11323	Campbell Hts. Pump Station - 2nd Upgrade to 210 L/s	021 Ave / 192 St	NCP Driven	\$379,100	\$379,100	\$0	\$0	\$0



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



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**Drainage**

**Program 1667 - Campbell Heights**

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
8036	Exfiltration Storm	192 St: 041A - 032 Ave	NCP Driven	\$2,920,300	\$2,920,300	\$0	\$0	\$0
8037	Storm Exfiltration System	188 St: 020 - 028 Ave	NCP Driven	\$2,871,000	\$2,871,000	\$0	\$0	\$0
8038	Road Drainage works	040 Ave: 190- 184 St	NCP Driven	\$487,200	\$487,200	\$0	\$0	\$0
10319	Local Industrial area servicing	Various Locations	NCP Driven	\$2,377,500	\$2,377,500	\$0	\$0	\$0
10320	Latimer Pond (Campbell Heights)	192 St / 028 Ave	NCP Driven	\$440,200	\$440,200	\$0	\$0	\$0
10641	Exfiltration Drainage System	018 Ave: 192 - 195 St	NCP Driven	\$435,000	\$435,000	\$0	\$0	\$0

## 7. HIGHWAY 99 CORRIDOR

The Highway 99 Corridor area encompasses approximately 195 hectares and generally lies along Highway 99 from 8 Avenue to 32 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	32,270,000	0	14,250,000	3,250,000	49,770,000
1619	Water	4,310,000	0	0	0	4,310,000
1639	Sanitary Sewer	7,127,350	0	0	0	7,127,350
1669	Drainage	600,000	0	0	0	600,000
	<b>Total</b>	<b>44,307,350</b>	<b>0</b>	<b>14,250,000</b>	<b>3,250,000</b>	<b>61,807,350</b>

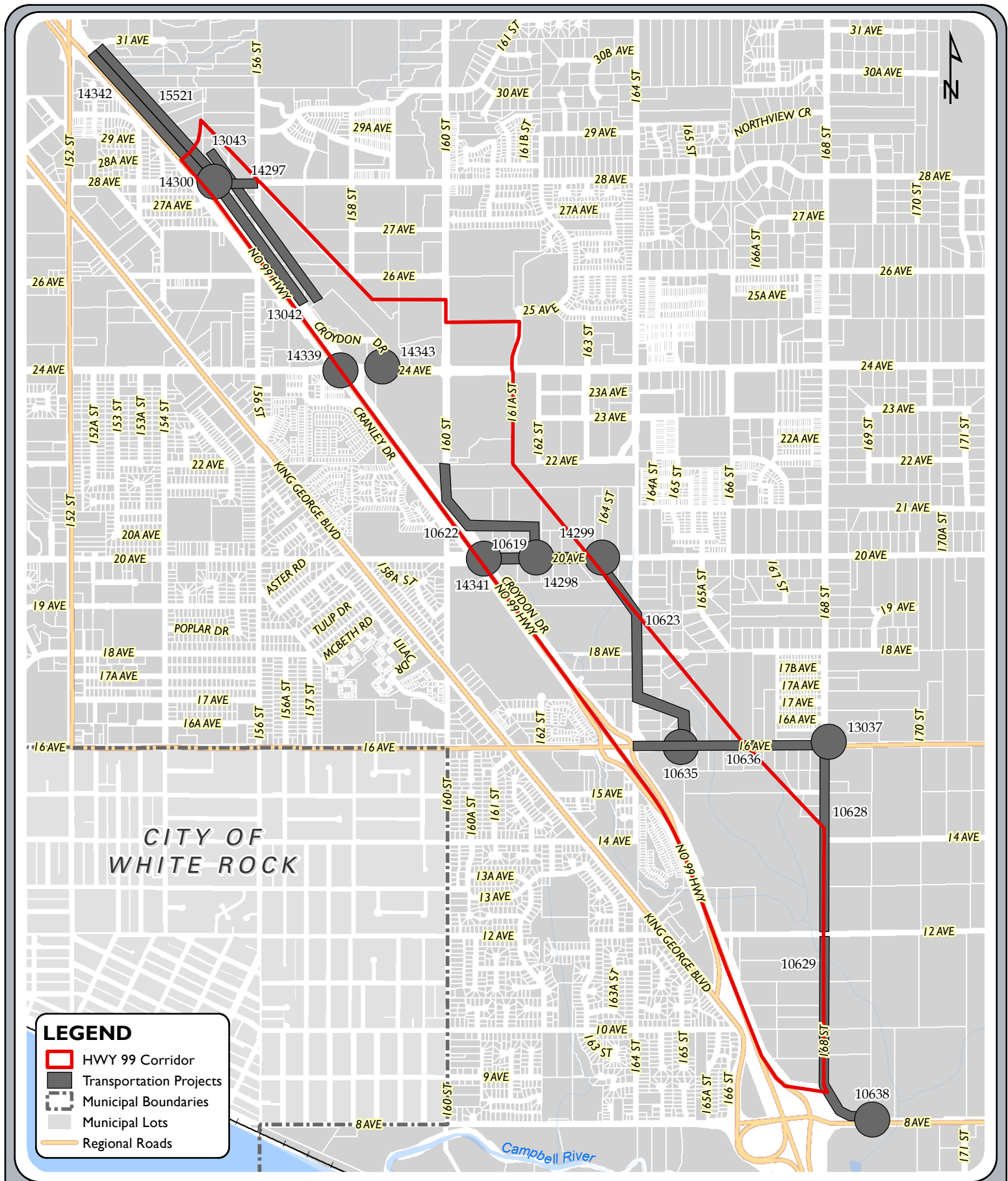
### 7.1 Highway 99 Corridor Projects by Program

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 2018 dollars (subject to change at the actual time of construction).

The costs are comprised of growth, non-growth, external and 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.



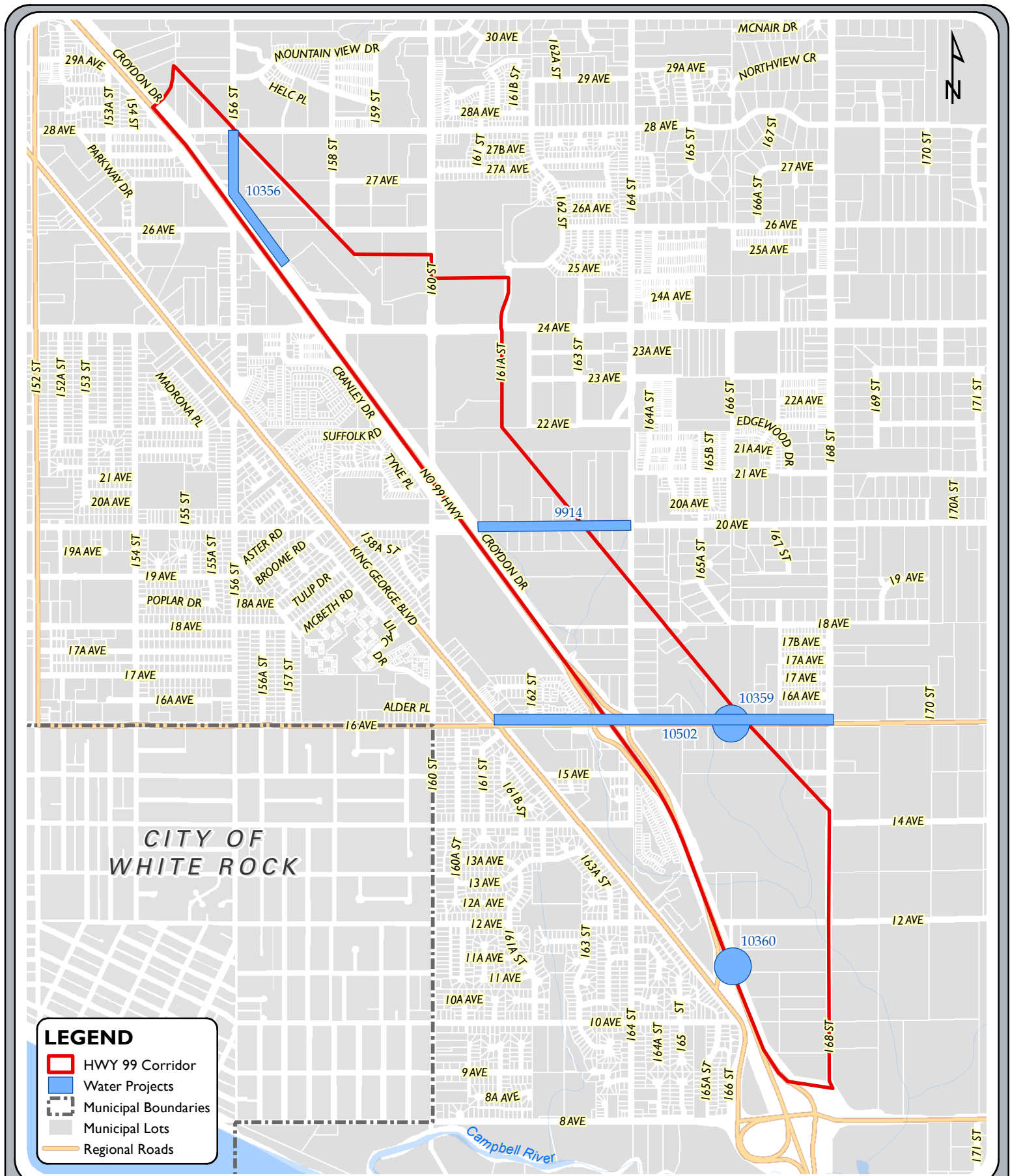
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## Transportation

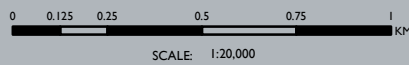
### Program 1019 - Highway 99 Corridor

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
10619	Major Collector Ultimate Widening	020 Ave: 161 St - 164 St	NCP Driven	\$4,500,000	\$4,500,000	\$0	\$0	\$0
10622	Collector Upsizing (5 Lane)	Croydon Dr: 020 Ave - 2200 Blk	NCP Driven	\$3,500,000	\$1,750,000	\$0	\$1,750,000	\$0
10623	Collector Upsizing (5 Lane)	164 St Realignment: 016 Ave - 020 Ave	NCP Driven	\$7,000,000	\$3,500,000	\$0	\$3,500,000	\$0
10628	Arterial Ultimate Widening (3 Lane)	168 St: 012 Ave - 016 Ave	NCP Driven	\$3,200,000	\$3,200,000	\$0	\$0	\$0
10629	Arterial Ultimate Widening (3 Lane)	168 St: 008 Ave - 012 Ave	NCP Driven	\$3,200,000	\$3,200,000	\$0	\$0	\$0
10635	Arterial Intersection Improvements	016 Ave / 164A St	NCP Driven	\$500,000	\$500,000	\$0	\$0	\$0
10636	Arterial Ultimate Widening (50% share w/ ID 10627)	016 Ave: Hwy 99 - 168 St (2 to 5 Lanes)	NCP Driven	\$6,000,000	\$1,500,000	\$0	\$1,500,000	\$3,000,000
10638	Arterial Intersection Improvements	008 Ave / 168 St	NCP Driven	\$1,000,000	\$1,000,000	\$0	\$0	\$0
13037	Arterial Intersection Improvements	016 Ave / 168 St	NCP Driven	\$500,000	\$250,000	\$0	\$0	\$250,000
13042	Collector Ultimate Widening (50% share)	Croydon Dr: 2500 Blk to 28 Ave	NCP Driven	\$1,250,000	\$1,250,000	\$0	\$0	\$0
13043	Collector Upsizing (2 to 3 lanes)	Croydon Dr: 2500 Blk to 28 Ave	NCP Driven	\$375,000	\$375,000	\$0	\$0	\$0
14297	Collector Upsizing	028 Ave: Croydon Dr - 156 St (South Side)	NCP Driven	\$300,000	\$300,000	\$0	\$0	\$0
14298	Roundabout	020 Ave / Croydon Dr	NCP Driven	\$750,000	\$750,000	\$0	\$0	\$0
14299	Roundabout	020 Ave / 164 St	NCP Driven	\$750,000	\$750,000	\$0	\$0	\$0
14300	Traffic Signal	028 Ave / Croydon Dr	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0
14339	Interchange Ramps (50% share w/Citywide ID 10056)	024 Ave / Hwy 99	NCP Driven	\$5,000,000	\$2,500,000	\$0	\$2,500,000	\$0
14341	New Crossing (50% share w/ ID 14247)	020 Ave Overpass Hwy 99	NCP Driven	\$10,000,000	\$5,000,000	\$0	\$5,000,000	\$0
14342	Collector Ultimate Widening (West Side)	Croydon Dr: 028 Ave to 031 Ave	NCP Driven	\$0	\$0	\$0	\$0	\$0
14343	Arterial Intersection Improvements	024 Ave / Croydon Dr	NCP Driven	\$1,500,000	\$1,500,000	\$0	\$0	\$0
15521	Collector Widening	Croydon Dr: 028 Ave - 032 Ave	Short Term (1 - 3 Yrs)	\$245,000	\$245,000	\$0	\$0	\$0





**FIGURE 7.2 - Water Highway 99 Corridor (Program 1619)**



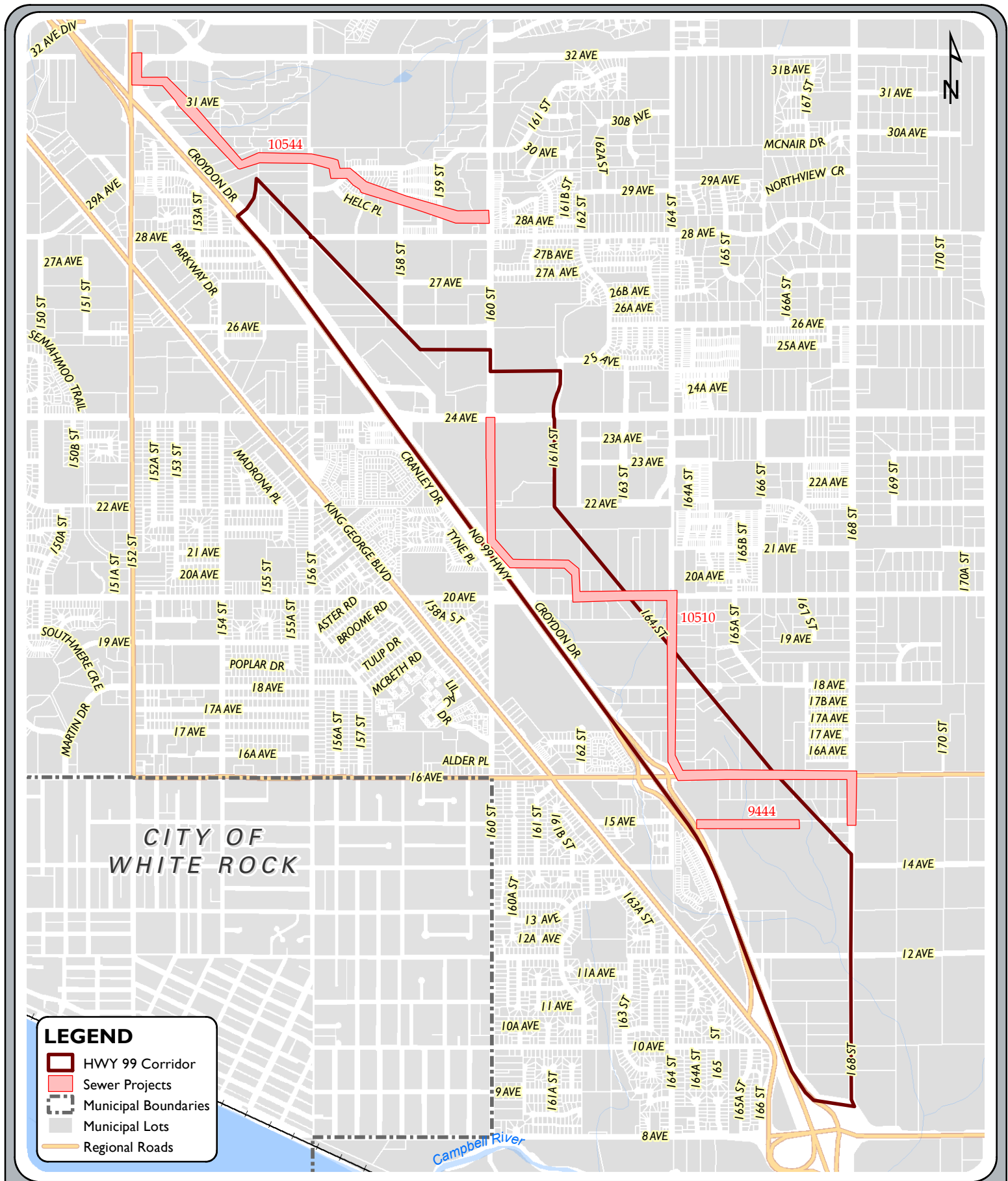
The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office.

Date Printed: 20/11/2017 Cartographer: C9W © City of Surrey  
Source: G:\MAPPING\GIS\Maps\Recurring\10YrServicingPlan2018-27\Figure7-2\_Hwy99Corridor-W.mxd

## Water

### Program 1619 - Highway 99 Corridor

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
9914	1,000m of 400mm diameter	020 Ave: Croydon Dr - 164 St	NCP Driven	\$1,400,000	\$1,400,000	\$0	\$0	\$0
10356	400m of 350mm diameter	Croydon Dr: 026 - 028 Ave	NCP Driven	\$500,000	\$500,000	\$0	\$0	\$0
10359	Pressure Reducing Valve	016 Ave / 16600 blk	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
10360	Hwy 99 watermain crossing	011 Ave / Hwy 99	NCP Driven	\$120,000	\$120,000	\$0	\$0	\$0
10502	1,300m of 300mm diameter	016 Ave: KG Hwy - 168 St	NCP Driven	\$1,600,000	\$1,600,000	\$0	\$0	\$0
16138	Jericho Reservoir - City of Surrey Contribution (Highway 99)	Township of Langley (20400 - 73A Avenue)	NCP Driven	\$510,000	\$510,000	\$0	\$0	\$0

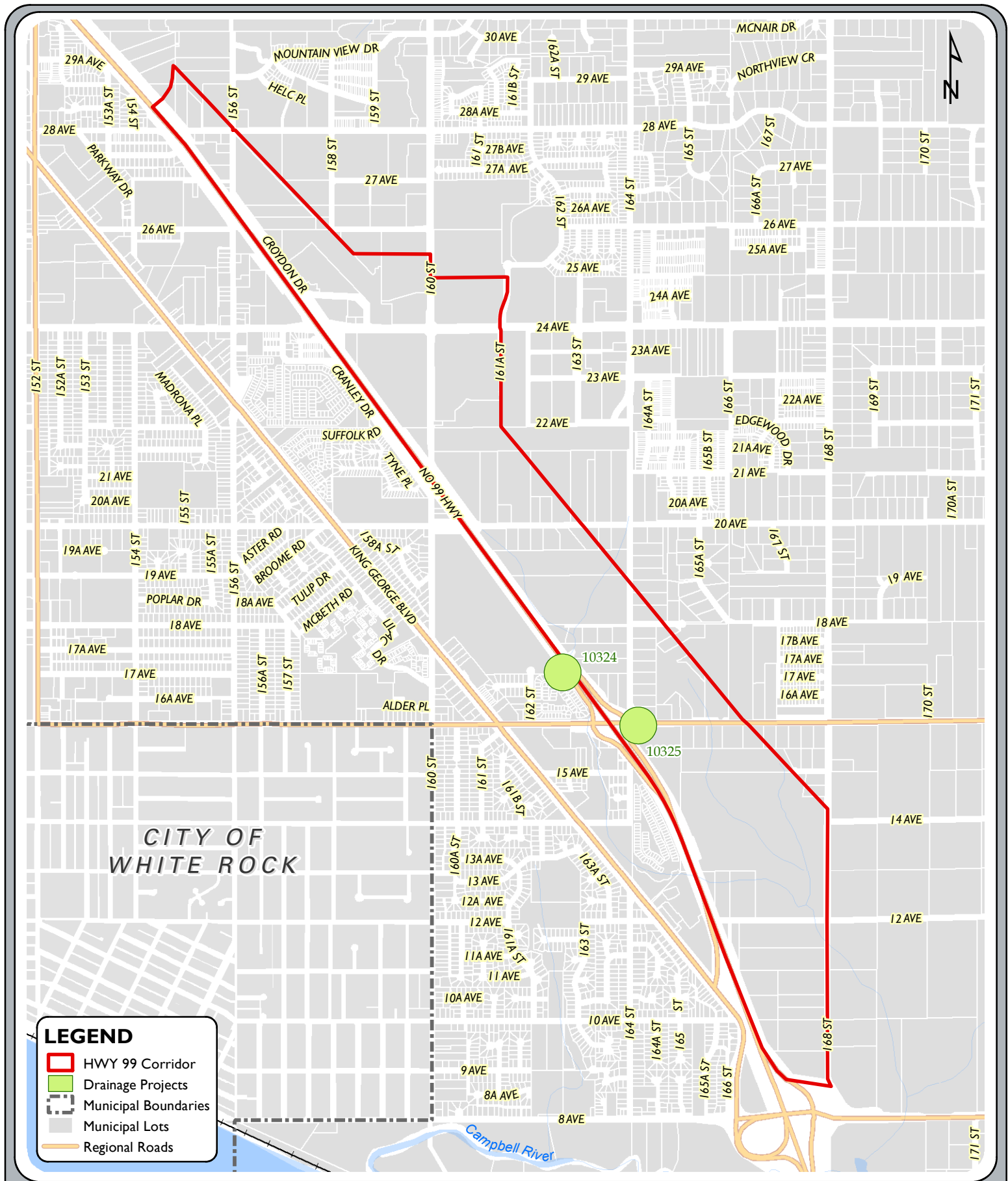


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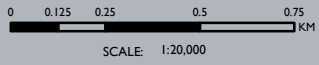
## Sewer

### Program 1639 - Highway 99 Corridor

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
9444	670m of 450mm diameter gravity sewer	15 Ave/Hwy 99 - 168 St/1200 blk (Grandview South PS)	NCP Driven	\$1,447,900	\$1,447,900	\$0	\$0	\$0
10510	Hwy 99 pump station and forcemain (partial cost)	164 Street/1200 blk	NCP Driven	\$5,049,450	\$5,049,450	\$0	\$0	\$0
10544	DCC F/End - North Grandview Interceptor Phase 1	152 St / 032 Ave to 156 St/2900 blk to 160 St/2800 blk	NCP Driven	\$630,000	\$630,000	\$0	\$0	\$0



**FIGURE 7.4 - Drainage Highway 99 Corridor (Program 1669)**



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**Drainage**

**Program 1669 - Highway 99 Corridor**

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
10324	Flow Splitter and Ditch along Hwy 99	017 Ave / 162 St	NCP Driven	\$400,000	\$400,000	\$0	\$0	\$0
10325	Diversion Channel to Fergus	016 Ave / 164 St	NCP Driven	\$200,000	\$200,000	\$0	\$0	\$0

## 8. ANNIEDALE-TYNEHEAD

The Anniedale-Tynehead 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 DCC 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 new sanitary sewer pump stations, three low pressure systems and a network of gravity trunk sewers and forcemains;
- Two new water supply sources, and a network of distribution and feeder mains;
- Eight 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	0	116,275,000	25,560,000	265,835,000
1621	Water	20,500,000	0	0	0	20,500,000
1641	Sewer	29,293,000	0	0	0	29,293,000
1676	Drainage	26,637,000	0	0	0	26,637,000
	<b>Total</b>	<b>200,430,000</b>	<b>0</b>	<b>116,275,000</b>	<b>25,560,000</b>	<b>342,265,000</b>

### 8.1 Anniedale-Tynehead Projects by Program

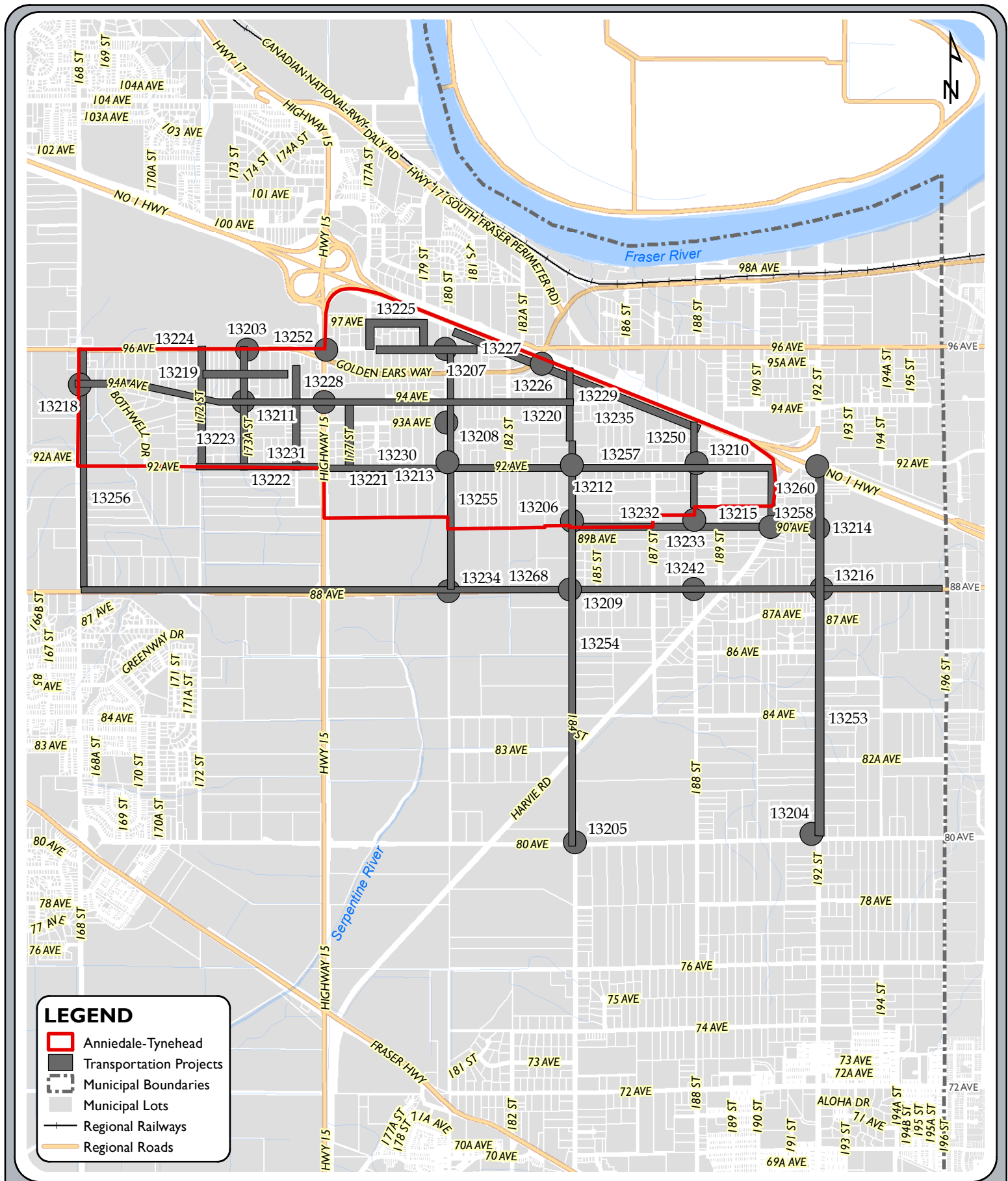
The following tables and figures identify the projects under the Anniedale-Tynehead programs for transportation, sanitary sewer, water and stormwater. The tables provide the following information:

- 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 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

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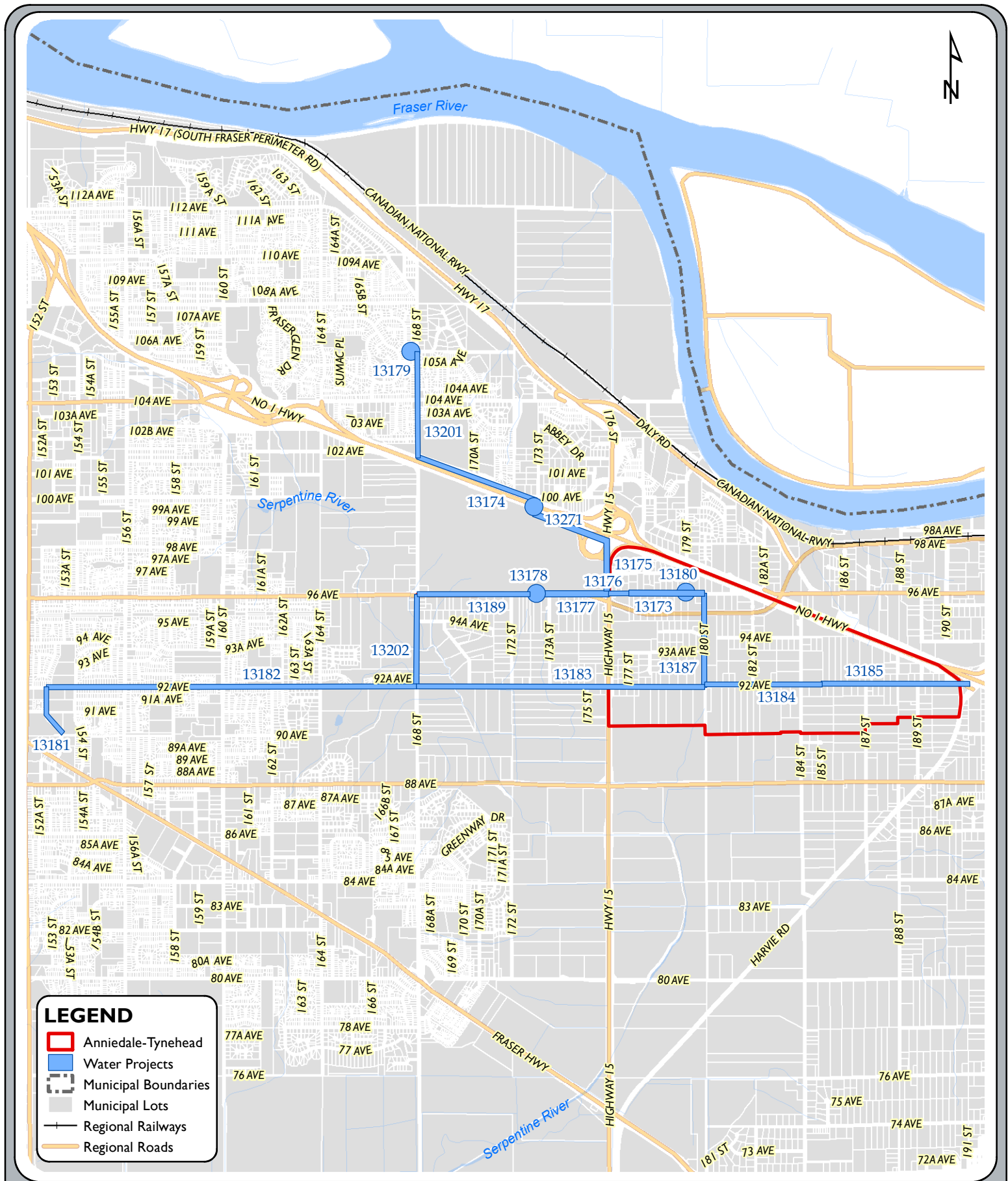
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Source: G:\MAPPING\GIS\Maps\Recurring\10yr\Servicing\Plan2018-27\Figure8-1\_AnniedaleTynehead-TMxd

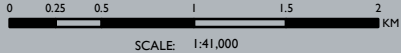
## Transportation

### Program 1021 - Anniedale - Tynehad

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
13203	Traffic Signal	096 Ave / 173A St	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13204	Traffic Signal	192 St / 080 Ave	NCP Driven	\$180,000	\$90,000	\$0	\$90,000	\$0
13205	Traffic Signal	184 St / 080 Ave	NCP Driven	\$180,000	\$90,000	\$0	\$90,000	\$0
13206	Traffic Signal	184 St / 090 Ave	NCP Driven	\$180,000	\$90,000	\$0	\$90,000	\$0
13207	Traffic Signal	180 St / 096 Ave	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13208	Traffic Signal	180 St / 93A Ave	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13209	Traffic Signal	088 Ave / 184 St	NCP Driven	\$180,000	\$72,000	\$0	\$18,000	\$90,000
13210	Traffic Signal	092 Ave / 188 St	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13211	Roundabout/Intersection Improvements	094A Ave / 173A St	NCP Driven	\$750,000	\$750,000	\$0	\$0	\$0
13212	Traffic Signal	092 Ave / 184 St	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13213	Traffic Signal	092 Ave / 180 St	NCP Driven	\$180,000	\$180,000	\$0	\$0	\$0
13214	Traffic Signal	090 Ave / 192 St	NCP Driven	\$180,000	\$126,000	\$0	\$54,000	\$0
13215	Traffic Signal	090 Ave / Harvie Rd	NCP Driven	\$180,000	\$126,000	\$0	\$54,000	\$0
13216	Traffic Signal	088 Ave / 192 St	NCP Driven	\$180,000	\$72,000	\$0	\$18,000	\$90,000
13218	Traffic Signal	168 St / 94A Ave	NCP Driven	\$180,000	\$90,000	\$0	\$90,000	\$0
13219	Upsizing (Special Section DD)	095 Ave: 172 - 175 St	NCP Driven	\$1,120,000	\$168,000	\$0	\$952,000	\$0
13220	Upsizing	184 St: 92A Ave - Hwy 1	NCP Driven	\$1,475,000	\$310,000	\$0	\$1,165,000	\$0
13221	Upsizing	177 St: 092 - 094A Ave	NCP Driven	\$1,005,000	\$211,000	\$0	\$794,000	\$0
13222	Upsizing (Special Section EE)	175 St: 092 - 095 Ave	NCP Driven	\$1,545,000	\$351,000	\$0	\$1,194,000	\$0
13223	Upsizing	173A St: 092 - 096 Ave	NCP Driven	\$2,870,000	\$603,000	\$0	\$2,267,000	\$0
13224	Upsizing	172 St: 092 - 096 Ave	NCP Driven	\$2,870,000	\$603,000	\$0	\$2,267,000	\$0
13225	Anniedale Triangle Upsizing	097 Ave: 177A - 179 St; 177A St: 96 - 97 Ave; 179 St: 96 - 9	NCP Driven	\$3,000,000	\$675,000	\$0	\$2,325,000	\$0
13226	Frontage Road Overpass Structure	Hwy 1 / Golden Ears Way	NCP Driven	\$5,500,000	\$5,500,000	\$0	\$0	\$0
13227	Upsizing	096 Ave: 177A - 181A St	NCP Driven	\$2,515,000	\$527,000	\$0	\$1,988,000	\$0
13228	Overpass Structure	094 Ave / Hwy 15	NCP Driven	\$6,500,000	\$6,500,000	\$0	\$0	\$0
13229	Upsizing & South Side of 94A Ave (Special Section AA)	094A Ave: 168 - 176 St and 93A Ave: 176 - 184 St	NCP Driven	\$13,200,000	\$2,973,000	\$0	\$10,227,000	\$0
13230	Upsizing	092 Ave: 176 - 180 St	NCP Driven	\$3,112,000	\$654,000	\$0	\$2,458,000	\$0
13231	Upsizing & South Side (Special Section CC)	092 Ave: 172 - 176 St	NCP Driven	\$2,230,000	\$670,000	\$0	\$1,560,000	\$0
13232	Upsizing (Special Section KK)	090 Ave: 184 St - Harvie Rd	NCP Driven	\$1,810,000	\$325,000	\$0	\$1,485,000	\$0
13233	Roundabout/Intersection Improvements	090 Ave / 188 St	NCP Driven	\$750,000	\$750,000	\$0	\$0	\$0
13234	Traffic Signal	088 Ave / 180 St	NCP Driven	\$180,000	\$72,000	\$0	\$18,000	\$90,000
13235	Upsizing of Frontage Rd (Special Section GG)	South of Hwy 1: 181 - 188 St	NCP Driven	\$6,370,000	\$3,188,000	\$0	\$3,182,000	\$0
13242	Traffic Signal	088 Ave / 188 St	NCP Driven	\$180,000	\$72,000	\$0	\$18,000	\$90,000
13250	Upsizing	188 St: 090A Ave - Hwy 1	NCP Driven	\$3,533,000	\$742,000	\$0	\$2,791,000	\$0
13252	Interchange	Hwy 15 / GEW / 96 Ave	NCP Driven	\$47,500,000	\$11,870,000	\$0	\$35,630,000	\$0
13253	Arterial Ultimate Widening	192 St: 080 - 088 Ave	NCP Driven	\$19,200,000	\$9,600,000	\$0	\$9,600,000	\$0
13254	Arterial Ultimate Widening & New Arterial	184 St: 080 - 093 Ave	NCP Driven	\$21,600,000	\$10,800,000	\$0	\$10,800,000	\$0
13255	Arterial Ultimate Widening (Special Section HH)	180 St: 088 - 096 Ave	NCP Driven	\$12,800,000	\$12,800,000	\$0	\$0	\$0
13256	Arterial Ultimate Widening	168 St: 088 - 096 Ave	NCP Driven	\$14,400,000	\$7,200,000	\$0	\$7,200,000	\$0
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	\$0	\$0	\$0
13258	Arterial Ultimate Widening	090 Ave: Harvie Rd - 192 St	NCP Driven	\$2,700,000	\$1,890,000	\$0	\$810,000	\$0
13260	Interchange	Hwy 1 / 192 St	NCP Driven	\$16,000,000	\$4,000,000	\$0	\$12,000,000	\$0
13268	Arterial Ultimate Widening	088 Ave: 168 - 192 St	NCP Driven	\$50,400,000	\$20,160,000	\$0	\$5,040,000	\$25,200,000



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

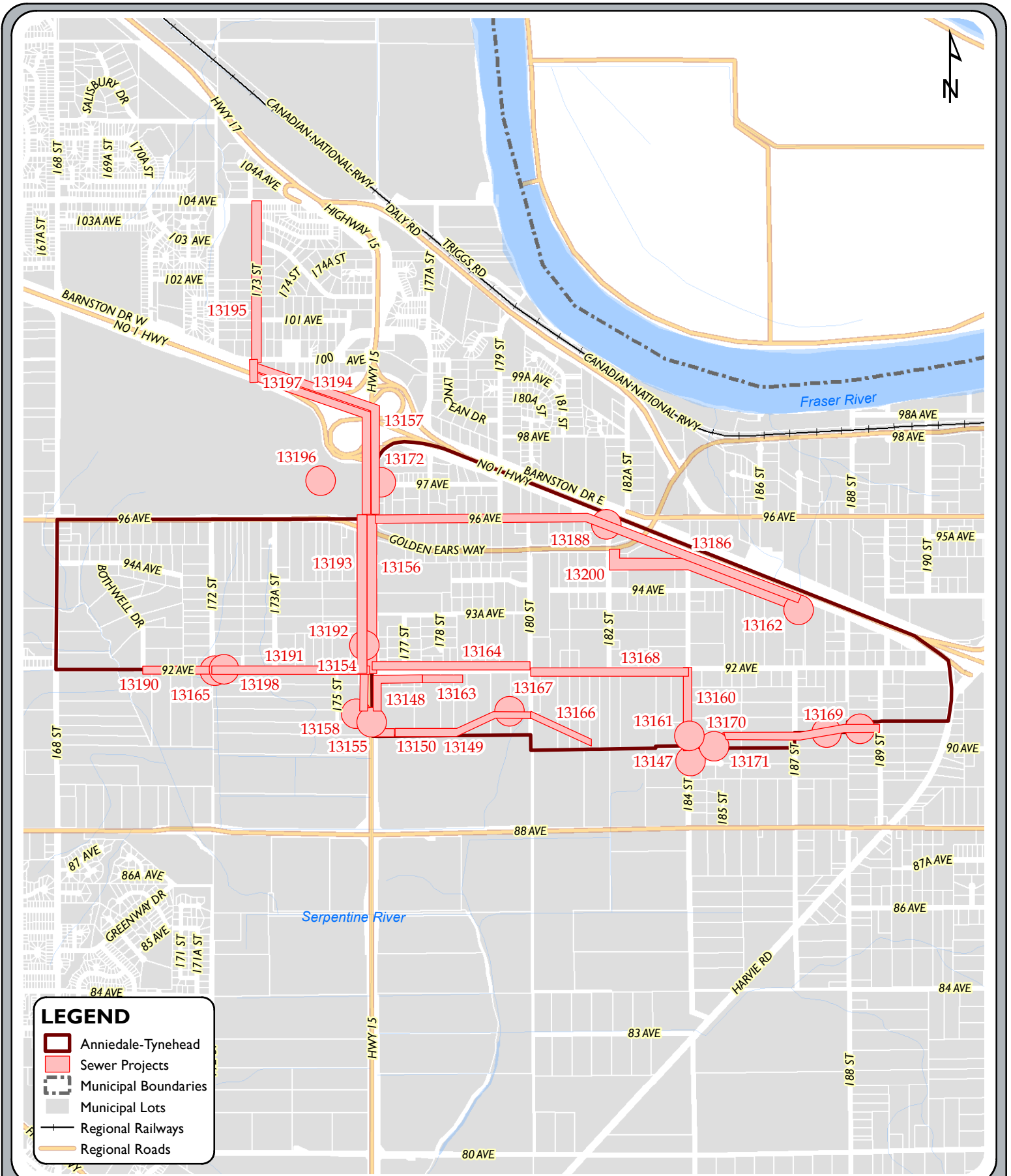


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## Water

### Program 1621 - Anniedale - Tynehead

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
13138	Upsizing 9,345m of 300mm diameter	Various Locations	NCP Driven	\$1,870,000	\$1,870,000	\$0	\$0	\$0
13145	Upsizing 1,595m of 300mm diameter	Various Locations	NCP Driven	\$160,000	\$160,000	\$0	\$0	\$0
13173	440m of 300mm diameter	096 Ave: 177 - 180 St	NCP Driven	\$325,600	\$325,600	\$0	\$0	\$0
13174	1,060 of 450mm diameter	Hwy 1: 168 - 173 St	NCP Driven	\$901,000	\$901,000	\$0	\$0	\$0
13175	1,060 of 450mm diameter	South of Hwy 1: 173 -176 St; 176 St: South of Hwy 1 - 96 Ave	NCP Driven	\$901,000	\$901,000	\$0	\$0	\$0
13176	350m of 450mm diameter	096 Ave: Hwy 15 - 178 St	NCP Driven	\$297,500	\$297,500	\$0	\$0	\$0
13177	505m of 300mm diameter	096 Ave: Hwy 15 - 173A St	NCP Driven	\$373,700	\$373,700	\$0	\$0	\$0
13178	PRV station	096 Ave/173A St	NCP Driven	\$115,000	\$115,000	\$0	\$0	\$0
13179	80m of 450mm diameter	Cherry Hill Cr/Cherry Hill Ct - 168 St/106 Ave	NCP Driven	\$102,500	\$102,500	\$0	\$0	\$0
13180	PRV station	096 Ave/179 St	NCP Driven	\$115,000	\$115,000	\$0	\$0	\$0
13181	550m of 750mm diameter	153 St: 90 - 92 Ave	NCP Driven	\$935,000	\$935,000	\$0	\$0	\$0
13182	3,000m of 750mm diameter	092 Ave: 153 - 168 St	NCP Driven	\$5,100,000	\$5,100,000	\$0	\$0	\$0
13183	2,405 of 750mm diameter	092 Ave: 168 - 180 St	NCP Driven	\$4,087,000	\$4,087,000	\$0	\$0	\$0
13184	955m of 600mm diameter	092 Ave: 180 - 185 St	NCP Driven	\$1,260,600	\$1,260,600	\$0	\$0	\$0
13185	780m of 450mm diameter	092 Ave: 185 - 191 St	NCP Driven	\$663,000	\$663,000	\$0	\$0	\$0
13187	770m of 350mm diameter	180 St: 96 - 92 Ave	NCP Driven	\$592,900	\$592,900	\$0	\$0	\$0
13189	1,095m of 300mm diameter	096 Ave: 173A - 168 St	NCP Driven	\$814,000	\$814,000	\$0	\$0	\$0
13201	1,060m of 450mm diameter	168 St: 106 Ave - Hwy 1	NCP Driven	\$901,000	\$901,000	\$0	\$0	\$0
13202	760m of 350mm diameter	168 St: 96 - 92 Ave	NCP Driven	\$585,200	\$585,200	\$0	\$0	\$0
13271	Hwy 1 Crossing	Hwy 1 / 173 St	NCP Driven	\$400,000	\$400,000	\$0	\$0	\$0

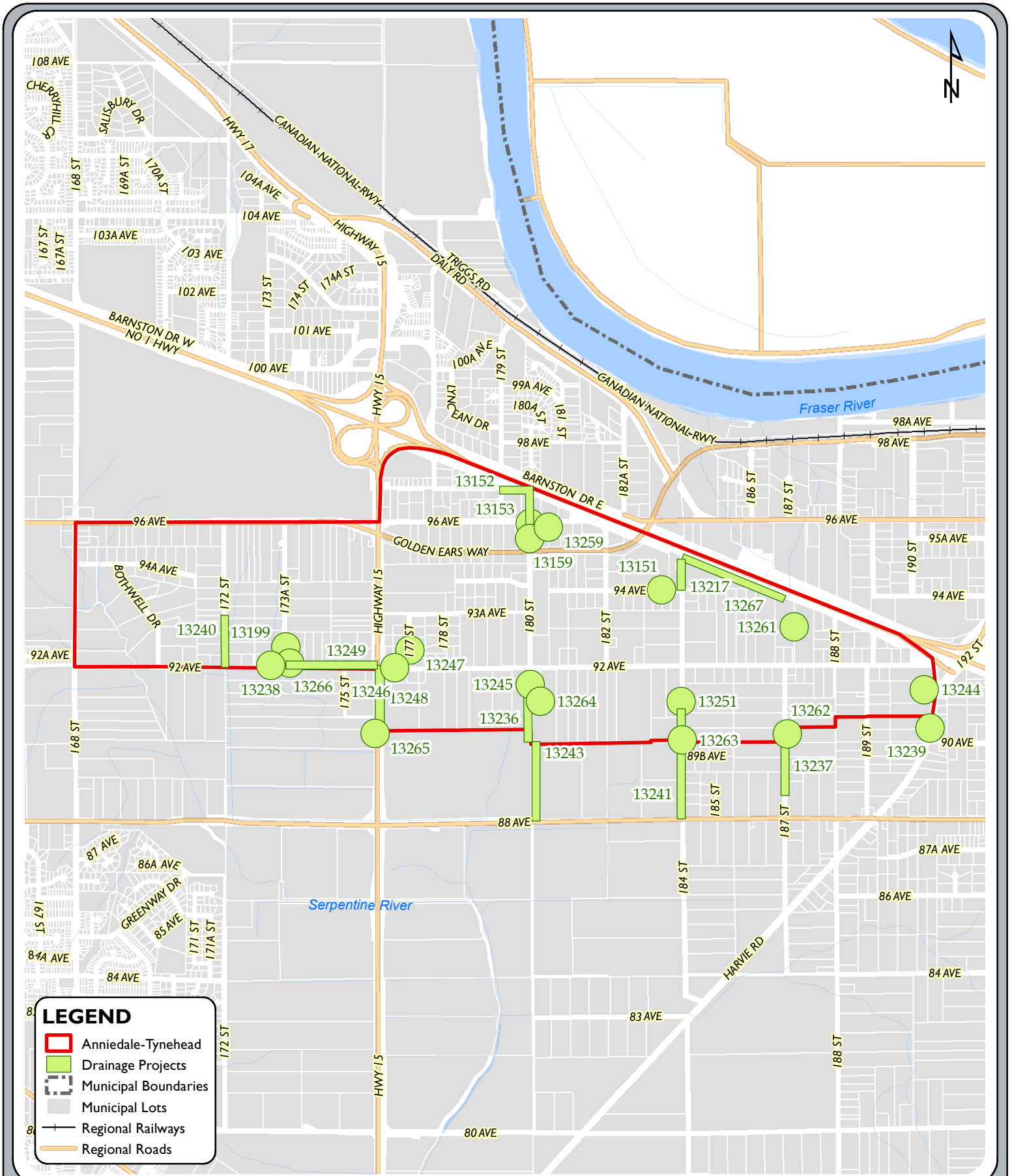


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**Sewer**

**Program 1641 - Anniedale - Tynehead**

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
13139	AT: 435m of 375mm diameter	Tynehead 375mm diameter upsizing	NCP Driven	\$150,000	\$150,000	\$0	\$0	\$0
13140	AT: 160m of 300mm diameter	Tynehead 300mm diameter upsizing	NCP Driven	\$75,000	\$75,000	\$0	\$0	\$0
13141	AT: 270m of 250mm diameter	Tynehead 250mm diameter upsizing	NCP Driven	\$75,000	\$75,000	\$0	\$0	\$0
13142	AT: 1,135m of 250mm diameter local main upsizing	Anniedale A/B1/B4	NCP Driven	\$218,300	\$218,300	\$0	\$0	\$0
13143	AT: 350m of 300mm diameter local main upsizing	Anniedale A/B1/B4	NCP Driven	\$67,000	\$67,000	\$0	\$0	\$0
13144	AT: 75m of 375mm diameter local main upsizing	Anniedale A1/B1/B4	NCP Driven	\$23,000	\$23,000	\$0	\$0	\$0
13146	AT: 100m of 300mm diameter local main upsizing	Anniedale B3	NCP Driven	\$50,000	\$50,000	\$0	\$0	\$0
13147	AT: Anniedale B2 pump station	184 St / 089 Ave	NCP Driven	\$2,098,200	\$2,098,200	\$0	\$0	\$0
13148	AT: 390m of 375mm diameter Anniedale B4 Trunk -2	092 Ave: 177 - 176 St	NCP Driven	\$140,100	\$140,100	\$0	\$0	\$0
13149	AT: 690m of 300mm diameter Anniedale B3 Trunk -2	091 Ave: 180 - 178 St	NCP Driven	\$126,300	\$126,300	\$0	\$0	\$0
13150	AT: 135m of 375mm diameter Anniedale B3 Trunk -3	090A Ave: 178 - 176 St	NCP Driven	\$49,200	\$49,200	\$0	\$0	\$0
13154	AT: 200m of 400mm diameter Anniedale B4 Forcemain	Hwy 15: 091 -092 Ave	NCP Driven	\$304,800	\$304,800	\$0	\$0	\$0
13155	AT: Anniedale B4 FM odour control	Hwy 15 / 091 Ave	NCP Driven	\$89,300	\$89,300	\$0	\$0	\$0
13156	AT: 980m of 500mm diameter Forcemain Twin	Hwy 15: 092 - 096 Ave	NCP Driven	\$1,604,500	\$1,604,500	\$0	\$0	\$0
13157	AT: 1150m of 650mm diameter South Port Kells FM Twin	Hwy 15: 096 Ave - S. of Hwy 1; S. of Hwy 1: Hwy 15 - 173 St	NCP Driven	\$2,171,000	\$2,171,000	\$0	\$0	\$0
13158	AT: Anniedale B4 Pump Station	176 St / 091 Ave	NCP Driven	\$5,279,400	\$5,279,400	\$0	\$0	\$0
13160	AT: 400m of 250mm diameter Anniedale B2 Forcemain	184 St: 090 -092 Ave	NCP Driven	\$320,000	\$320,000	\$0	\$0	\$0
13161	AT: Anniedale B2 FM odour control	090 Ave / 184 St	NCP Driven	\$89,300	\$89,300	\$0	\$0	\$0
13162	AT: Anniedale Pump Station	South of Hwy 1 / 187 St	NCP Driven	\$3,816,000	\$3,816,000	\$0	\$0	\$0
13163	AT: 265m of 375mm diameter Anniedale B4 Trunk -1	092 Ave: 178 - 177 St	NCP Driven	\$123,700	\$123,700	\$0	\$0	\$0
13164	AT: 850m of 250mm diameter Anniedale B forcemain	092 Ave: 180 - 176 St	NCP Driven	\$646,000	\$646,000	\$0	\$0	\$0
13165	AT: Tynehead Pump Station	092 Ave / 172 St	NCP Driven	\$3,634,800	\$3,634,800	\$0	\$0	\$0
13166	AT: 220m of 300mm diameter Anniedale B3 Trunk -1	091 Ave: 180 - 181 St	NCP Driven	\$41,500	\$41,500	\$0	\$0	\$0
13167	AT: Anniedale B3 Trunk ROW	091 Ave / 179 St	NCP Driven	\$239,000	\$239,000	\$0	\$0	\$0
13168	AT: 920m of 250mm diameter Anniedale B2 forcemain	092 Ave: 184 - 180 St	NCP Driven	\$918,400	\$918,400	\$0	\$0	\$0
13169	AT: 890m of 525mm diameter Anniedale B2 Trunk-2	090A Ave: 189 - 186 St	NCP Driven	\$596,700	\$596,700	\$0	\$0	\$0
13170	AT: 190m of 600 diameter Anniedale B2 Trunk -2	090 Ave: 186 - 184 St	NCP Driven	\$828,900	\$828,900	\$0	\$0	\$0
13171	AT: Anniedale B2 Trunk ROW	089 Ave / 185 St; 90A Ave / 188 St; 91 Ave / 188A St	NCP Driven	\$700,500	\$700,500	\$0	\$0	\$0
13172	AT: Hwy 15 crossing	Hwy 15 / 097 Ave	NCP Driven	\$273,000	\$273,000	\$0	\$0	\$0
13186	AT: 2140m of 400mm diameter Anniedale A Forcemain	South of Hwy 1: 182 - 187 St and 096 Ave: 182 St - Hwy 15	NCP Driven	\$2,744,800	\$2,744,800	\$0	\$0	\$0
13188	AT: Anniedale A forcemain odour control	096 Ave / 182 St	NCP Driven	\$89,300	\$89,300	\$0	\$0	\$0
13190	AT: 355m of 375mm diameter Tynehead Trunk	092 Ave: 171 - 172 St	NCP Driven	\$54,300	\$54,300	\$0	\$0	\$0
13191	AT: 835m of 400mm diameter Tynehead Forcemain	092 Ave: 176 - 172 St	NCP Driven	\$1,071,000	\$1,071,000	\$0	\$0	\$0
13192	AT: Tynehead forcemain odour control	Hwy 15 / 092A Ave	NCP Driven	\$89,300	\$89,300	\$0	\$0	\$0
13193	AT: 980m of 400mm diameter	Hwy 15: 096 - 092 Ave	NCP Driven	\$1,382,600	\$1,382,600	\$0	\$0	\$0
13194	AT: 1150m of 400mm diam South Port Kells Forcemain	S. of Hwy 1: 176 - 173 St and Hwy 15: 096 Ave - S. of Hwy 1	NCP Driven	\$1,622,500	\$1,622,500	\$0	\$0	\$0
13195	AT: 800m of 600mm diam South Port Kells Trunk Sewer	173 St: Hwy 1 - 104 Ave	NCP Driven	\$1,648,900	\$1,648,900	\$0	\$0	\$0
13196	AT: Tynehead Trunk ROW	097 Ave / 175A St	NCP Driven	\$96,000	\$96,000	\$0	\$0	\$0
13197	AT: Hwy 1 crossing	Hwy 1 / 173 St	NCP Driven	\$682,500	\$682,500	\$0	\$0	\$0
13198	AT: South Port Kells odour control	173 St / 092A Ave	NCP Driven	\$1,797,100	\$1,797,100	\$0	\$0	\$0
13200	AT: 1000m of 375mm diameter upsizing	South of Hwy 1: 182 - 187 St	NCP Driven	\$240,000	\$240,000	\$0	\$0	\$0



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## Drainage

### Program 1676 - Anniedale - Tynehead

PTS ID	Project Name	Location	LRP Priority	LRP Grand Total	Growth	Non-Growth	External	GVTA
13151	200m of 1050mm diameter	094 Ave: 183 - 184 St Anniedale NCP	NCP Driven	\$371,000	\$371,000	\$0	\$0	\$0
13152	250m of 900mm diameter	097 Ave: 179 - 180 St; 180 St: 97 - 96 Ave Anniedale NCP	NCP Driven	\$347,000	\$347,000	\$0	\$0	\$0
13153	65m of 1050mm diameter	096 Ave / 180 St Anniedale NCP	NCP Driven	\$108,000	\$108,000	\$0	\$0	\$0
13159	160m of 1050mm diameter	180 St: 96 Ave - Golden Ears Way. Anniedale NCP	NCP Driven	\$297,000	\$297,000	\$0	\$0	\$0
13199	150m of 900mm diameter	173A St: 92 - 93 Ave Anniedale NCP	NCP Driven	\$249,000	\$249,000	\$0	\$0	\$0
13217	150m of 1050mm diameter	184 St: 94 - 95 Ave Anniedale NCP	NCP Driven	\$279,000	\$279,000	\$0	\$0	\$0
13236	270m of 525mm diameter	180 St: 91 - 90 Ave Anniedale NCP	NCP Driven	\$266,000	\$266,000	\$0	\$0	\$0
13237	250m of ditch improvement	187 St: 89 - 90 Ave. Anniedale NCP	NCP Driven	\$34,000	\$34,000	\$0	\$0	\$0
13238	200m of ditch improvement	092 Ave: 173 - 173A St Anniedale NCP	NCP Driven	\$27,000	\$27,000	\$0	\$0	\$0
13239	100m of ditch improvement	Harvie Rd: 91 -90 Ave Anniedale NCP	NCP Driven	\$14,000	\$14,000	\$0	\$0	\$0
13240	150m of 750mm diameter	172 St: 93 - 92 Ave Anniedale NCP	NCP Driven	\$220,000	\$220,000	\$0	\$0	\$0
13241	400m of ditch improvement	184 St: 90 - 88 Ave Anniedale NCP	NCP Driven	\$54,000	\$54,000	\$0	\$0	\$0
13243	400m of ditch improvement & ROW	180 St: 90 - 88 Ave Anniedale NCP	NCP Driven	\$509,000	\$509,000	\$0	\$0	\$0
13244	Anniedale 6 detention pond	191 St / 91 Ave	NCP Driven	\$3,279,000	\$3,279,000	\$0	\$0	\$0
13245	150m of 450mm diameter	180 St: 91 - 92 Ave Anniedale NCP	NCP Driven	\$134,000	\$134,000	\$0	\$0	\$0
13246	150m of 750mm diameter	092 Ave: 176 - 177 St Anniedale NCP	NCP Driven	\$220,000	\$220,000	\$0	\$0	\$0
13247	170m of 600mm diameter	177 St: 93 - 92 Ave Anniedale NCP	NCP Driven	\$217,000	\$217,000	\$0	\$0	\$0
13248	350m of 900mm diameter	176 St: 90A - 92 Ave Anniedale NCP	NCP Driven	\$809,000	\$809,000	\$0	\$0	\$0
13249	350m of ditch improvement	092 Ave: 173A - 176 St Anniedale NCP	NCP Driven	\$47,000	\$47,000	\$0	\$0	\$0
13251	290m of 900mm diameter	184 St: 91A - 90 Ave Anniedale NCP	NCP Driven	\$482,000	\$482,000	\$0	\$0	\$0
13259	Anniedale 7 detention pond	096 Ave / 180 St Anniedale NCP	NCP Driven	\$4,888,000	\$4,888,000	\$0	\$0	\$0
13261	Anniedale 8 water quality pond	187 St / 93 Ave	NCP Driven	\$2,217,000	\$2,217,000	\$0	\$0	\$0
13262	Anniedale 5 water quality pond	090 Ave / 187 St	NCP Driven	\$1,439,000	\$1,439,000	\$0	\$0	\$0
13263	Anniedale 4 water quality pond	184 St / 90 Ave	NCP Driven	\$1,679,000	\$1,679,000	\$0	\$0	\$0
13264	Anniedale 3 water quality pond	180 St / 91 Ave	NCP Driven	\$1,738,000	\$1,738,000	\$0	\$0	\$0
13265	Anniedale 2 water quality pond	90A Ave / Hwy 15	NCP Driven	\$2,967,000	\$2,967,000	\$0	\$0	\$0
13266	Tynehead 1 water quality pond	173A St / 92 Ave Anniedale NCP	NCP Driven	\$2,122,000	\$2,122,000	\$0	\$0	\$0
13267	1050m of 1050mm diameter	South of Hwy 1: 184 - 187 St Anniedale NCP	NCP Driven	\$1,624,000	\$1,624,000	\$0	\$0	\$0





[surrey.ca/strategies](http://surrey.ca/strategies)



CITY OF SURREY

BYLAW NO. 19478

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, 2018, No. 19478".

**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, 2018.

**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) the value of the work authorized by the permit does not exceed \$100,000;
  - (c) the size of the dwelling unit is no greater than 312.2 ft<sup>2</sup> [29 m<sup>2</sup>];
  - (d) 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, 2017, No19107*, 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, 2017, No. 19107*, and all amendments thereto, shall apply. *Surrey Development Cost Charge Bylaw, 2017, No. 19107*, and all amendments thereto, shall be wholly repealed one year from the Effective Date.

PASSED FIRST READING on the \_\_\_\_th day of \_\_\_\_\_, 2018.

PASSED SECOND READING on the \_\_\_\_th day of \_\_\_\_\_, 2018.

PASSED THIRD READING on the \_\_\_\_th day of \_\_\_\_\_, 2018.

APPROVED BY THE DEPUTY INSPECTOR OF MUNICIPALITIES on the \_\_\_\_th day of \_\_\_\_\_,  
2018.

RECONSIDERED AND FINALLY ADOPTED, signed by the Mayor and Clerk, and sealed with the  
Corporate Seal on the \_\_\_\_th day of \_\_\_\_\_, 2018.

\_\_\_\_\_MAYOR

\_\_\_\_\_CLERK

**SCHEDULE "A"**

**LIST OF ZONES**

**SURREY ZONING BYLAWS 12000 AND 5942**

	Name of Zone	Bylaw 12000 Zone	Bylaw 5942 Zone
<b>Residential Zones</b>	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)	
<b>Institutional Zones</b>	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
<b>Commercial Zones</b>	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
<b>Industrial Zones</b>	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
<b>Comprehensive Development Zone</b>	Comprehensive Development	CD	C-D

**Schedule "B"  
City Wide**

**Surrey Development Cost Charge Bylaw No. 19478, 2018**

No	Zones and Land Uses	DCC Components						Total	Units for Each Column
		Water	Sewer	Arterial Roads	Collector Roads	Drainage	Parkland Acquisition		
<b>Agricultural (except for lines 33, 34 &amp; 35)</b>									
1	A-1, A-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	/lot
<b>Single Family Residential (except for lines 33, 34 &amp; 35)</b>									
2	RA, RA-G, RH, RH-G, RC (Types I and II), RF-O	\$2,687	\$3,552	\$17,055	\$3,896	\$6,986	\$5,019	\$39,195	/lot
3	RF, RF-G, RF-SS, RF-12, RF-12C, RF-13, RF-Q	\$2,687	\$3,552	\$17,055	\$3,896	\$3,992	\$10,038	\$41,220	/lot
4	RF-10, RF-10S, RF-9, RF-9C, RF-9S, RF-SD, RM-23	\$2,420	\$3,198	\$15,531	\$3,548	\$2,355	\$9,141	\$36,193	/lot
5	RM-D	\$2,420	\$3,198	\$15,531	\$3,548	\$2,355	\$9,141	\$36,193	/DU (a)
<b>Multi Family Residential (except for lines 33, 34 &amp; 35)</b>									
6	RM-M	\$1,433	\$1,894	\$7,782	\$1,778	\$878	\$9,141	\$22,906	/pad or /DU
7	RM-10, RM-15, RM-30, RC (Type III) (except line 8)	\$1.16	\$1.54	\$6.42	\$1.47	\$1.49	\$9.20	\$21.28	/sq.ft. of DU (b)
8	RM-30 (in City Centre)	\$1.16	\$1.54	\$6.42	\$1.47	\$1.49	\$9.20	\$21.28	/sq.ft. of DU (b)
9	RM-45, RM-70 (except lines 10,11,12, & 13)	\$1.51	\$1.99	\$8.34	\$1.91	\$1.05	\$9.38	\$24.18	/sq.ft. of DU (c)
10	RM-45, RM-70 (for Seniors Apartments not in City Centre)	\$1.69	\$2.23	\$5.43	\$1.24	\$1.17	\$10.48	\$22.24	/sq.ft. of DU (c)
11	RM-45, RM-70 (for Assisted Living Residences)	\$1.69	\$2.23	\$5.43	\$1.24	\$1.17	\$3.49	\$15.25	/sq.ft. of DU (c)
12	RM-45, RM-70 (in City Centre, except for lines 11 & 13)	\$1.69	\$2.23	\$5.93	\$1.36	\$1.17	\$5.59	\$17.97	/sq.ft. of DU (d)
13	RM-45, RM-70 (for Seniors Apartments in City Centre)	\$1.69	\$2.23	\$5.43	\$1.24	\$1.17	\$5.59	\$17.35	/sq.ft. of DU (d)
14	RM-135, RMC-135, RMC-150 (except lines 15, 16, & 17)	\$1.62	\$2.14	\$7.41	\$1.69	\$0.46	\$10.30	\$23.62	/sq.ft. of DU (e)
15	RM-135, RMC-135, RMC-150 (for Seniors Apartments not in City Centre)	\$1.62	\$2.14	\$5.56	\$1.27	\$0.46	\$10.30	\$21.35	/sq.ft. of DU (e)
16	RM-135, RMC-135, RMC-150 (Assisted Living Residences)	\$1.62	\$2.14	\$5.56	\$1.27	\$0.46	\$3.43	\$14.48	/sq.ft. of DU (e)
17	RM-135, RMC-135, RMC-150 (in City Centre) (except for line 16)	\$1.62	\$2.14	\$4.74	\$1.08	\$0.46	\$5.45	\$15.49	/sq.ft. of DU (f)
18	RMS-1, RMS-2, RMS-1A	\$0.69	\$0.91	\$1.30	\$0.30	\$1.00	\$0.00	\$4.20	/sq.ft. of BA
<b>Commercial Zones excluding CTA, CPG, CPM, CPR, and CCR (except for lines 33, 34 &amp; 35)</b>									
19	Commercial - Ground floor	\$0.69	\$0.91	\$6.34	\$1.45	\$2.59	\$0.00	\$11.98	/sq.ft. of BA (g)
20	Commercial - All other floors	\$0.69	\$0.91	\$4.00	\$0.91	\$0.52	\$0.00	\$7.03	/sq.ft. of BA (g)
<b>CTA, CPG, CPM, CPR, and CCR (except for lines 33, 34 &amp; 35)</b>									
21	CTA	\$1,030	\$1,360	\$3,890	\$890	\$880	\$0	\$8,050	/pad (h)
22	CPG, CPM, CPR, CCR	\$0.75	\$0.91	\$5.04	\$1.15	\$1.56	\$0	\$9.41	/sq.ft. of BA
<b>Dwelling Units in Non Residential</b>									
23	DU in Non Residential Zones (excluding line 24)	\$1.51	\$1.99	\$8.34	\$1.91	\$1.05	\$9.38	\$24.18	/sq.ft. of DU (c)
24	DU in Non Residential Zones (in City Centre)	\$1.69	\$2.23	\$5.93	\$1.36	\$1.17	\$5.59	\$17.97	/sq.ft. of DU (d)
<b>Industrial (except for lines 33,34 &amp; 35)</b>									
25	All Industrial Zones & Land Uses - Developed Area	\$6,855	\$9,060	\$34,156	\$7,802	\$33,934	\$0	\$91,807	/acre (g)
26	All Industrial Zones & Land Uses - All other floors	\$0.16	\$0.21	\$0.49	\$0.11	\$0.16	\$0	\$1.13	/sq.ft. of BA (g) (i)
<b>Institutional (except for lines 33, 34 &amp; 35)</b>									
27	PA-1, PA-2, PC	\$0.75	\$0.91	\$0.00	\$0.00	\$1.56	\$0.00	\$3.22	/sq.ft. of BA (g)
28	Public & Private Schools (to grade 12)	\$0.75	\$0.91	\$0.00	\$0.00	\$1.56	\$0.00	\$3.22	/sq.ft. of BA (g)
29	Public & Private Schools (Post Secondary)	\$0.75	\$0.91	\$4.04	\$0.92	\$1.56	\$0.00	\$8.18	/sq.ft. of BA (g)
30	Hospitals	\$0.75	\$0.91	\$2.02	\$0.46	\$1.56	\$0.00	\$5.70	/sq.ft. of BA (g)
31	Federal and Provincial Buildings	\$0.75	\$0.91	\$3.96	\$0.91	\$0.52	\$0.00	\$7.05	/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
<b>Highway 99 Corridor</b>									
33	All Commercial Zones & Land Uses	\$19,870	\$31,435	\$107,576	\$60,229	\$0	\$11,332	\$230,442	/acre (g)
34	All Industrial Zones & Land Uses	\$19,870	\$31,435	\$31,640	\$17,714	\$0	\$11,332	\$111,991	/acre (g)
<b>Campbell Heights</b>									
35	All Zones & Land Uses	\$15,587	\$18,750	\$104,694	\$0	\$8,806	\$0	\$147,837	/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"**

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

- (a) Rate to be charged per DU, with an ultimate of 2 DU per lot.
- (b) Rate to be charged based on the total sq. ft. of DU to a maximum of \$37,240/DU.
- (c) Rate to be charged based on the total sq. ft. of DU to a maximum of \$32,643/DU.
- (d) Rate to be charged based on the total sq. ft. of DU to a maximum of \$24,260/DU.
- (e) Rate to be charged based on the total sq. ft. of DU to a maximum of \$29,525/DU.
- (f) Rate to be charged based on the total sq. ft. of DU to a maximum of \$19,363/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, 2018, No. 19478**

No	Zones and Land Uses	DCC Components		Total	Units for Each Column
		Sewer	Drainage		
<b>Single Family Residential</b>					
1	RA, RA-G, RH, RH-G, RC (Types I and II)	\$1,911	\$2,957	\$4,868	/lot
2	RF, RF-G, RF-SS, RF-12, RF-12C, RF-13, RF-Q	\$1,911	\$1,690	\$3,601	/lot
3	RF-10, RF-10S, RF-SD, RM-23	\$1,699	\$997	\$2,696	/lot
4	RM-D	\$1,699	\$997	\$2,696	/DU (a)
<b>Multi Family Residential</b>					
5	RM-10, RM-15, RM-30, RC (Type III)	\$0.96	\$0.63	\$1.59	/sq.ft. of DU (b)
6	RM-45, RM-70 (except lines 7 & 8)	\$0.93	\$0.44	\$1.37	/sq.ft. of DU (c)
7	RM-45, RM-70 (for Seniors Apartments)	\$1.04	\$0.50	\$1.54	/sq.ft. of DU (c)
8	RM-45, RM-70 (for Assisted Living Residences)	\$1.04	\$0.50	\$1.54	/sq.ft. of DU (c)
9	RMS-1, RMS-2, RMS-1A	\$0.42	\$0.42	\$0.84	/sq.ft. of BA
<b>Commercial Zones</b>					
10	Commercial - Ground floor	\$0.42	\$1.10	\$1.52	/sq.ft. of BA (d)
11	Commercial - All other floors	\$0.42	\$0.22	\$0.64	/sq.ft. of BA (d)
13	CPG, CPM, CPR, CCR	\$0.42	\$0.66	\$1.08	/sq.ft. of BA
<b>Dwelling Units in Non Residential</b>					
14	DU in Non Residential Zones	\$0.93	\$0.44	\$1.37	/sq.ft. of DU (c)
<b>Institutional</b>					
15	PA-1, PA-2, PC	\$0.42	\$0.66	\$1.08	/sq.ft. of BA (d)
16	Public & Private Schools (to grade 12)	\$0.42	\$0.66	\$1.08	/sq.ft. of BA (d)
17	Public & Private Schools (Post Secondary)	\$0.42	\$0.66	\$1.08	/sq.ft. of BA (d)
18	Hospitals	\$0.42	\$0.66	\$1.08	/sq.ft. of BA (d)
19	Federal and Provincial Buildings	\$0.42	\$0.22	\$0.64	/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) Rate to be charged per DU, with 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, 2018, No. 19478**

No	Zones and Land Uses	DCC Component	Total	Units for Each Column
		Local Road		
	<b>Multi Family Residential</b>			
1	RM-10, RM-15, RM-30, RC (Type III)	\$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)
	<b>Commercial Zones</b>			
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)
	<b>Dwelling Units in Non Residential</b>			
6	DU in Non Residential Zones	\$2.62	\$2.62	/sq.ft. of DU (b)
	<b>Institutional</b>			
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, 2018, No. 19478**

No	Zones and Land Uses	DCC Components						Total	Units for Each Column
		Water	Sewer	Arterial Roads	Collector Roads	Drainage	Parkland Acquisition		
<b>Agricultural</b>									
1	A-1, A-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	/lot
<b>Single Family Residential</b>									
2	RA, RA-G, RH, RH-G, RC (Types I and II), RF-O, RF-Q	\$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	\$2,826	\$4,042	\$17,060	\$4,417	\$2,810	\$5,612	\$36,767	/DU (a)
<b>Multi Family Residential</b>									
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 (d)
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 (d)
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 (d)
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
<b>Commercial Zones excluding CTA, CPG, CPM, CPR, and CCR</b>									
12	Commercial - Ground floor	\$0.97	\$1.38	\$8.25	\$2.14	\$3.10	\$0.00	\$15.84	/sq.ft. of BA (e)
13	Commercial - All other floors	\$0.97	\$1.38	\$5.20	\$1.35	\$0.62	\$0.00	\$9.52	/sq.ft. of BA (e)
<b>CTA, CPG, CPM CPR, and CCR</b>									
14	CTA	\$1,450	\$2,080	\$5,060	\$1,310	\$1,050	\$0	\$10,950	/pad (f)
15	CPG, CPM, CPR, CCR	\$1.06	\$1.38	\$6.56	\$1.70	\$1.86	\$0.00	\$12.56	/sq.ft. of BA
<b>Dwelling Units in Non Residential</b>									
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)
<b>Industrial</b>									
17	All Industrial Zones & Land Uses - Developed Area	\$9,679	\$13,844	\$60,928	\$15,773	\$40,489	\$0	\$140,713	/acre (e)
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 (e) (g)
<b>Institutional</b>									
19	PA-1, PA-2, PC	\$1.06	\$1.38	\$0.00	\$0.00	\$1.86	\$0.00	\$4.30	/sq.ft. of BA (e)
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 (e)
21	Public & Private Schools (Post Secondary)	\$1.06	\$1.38	\$5.25	\$1.36	\$1.86	\$0.00	\$10.91	/sq.ft. of BA (e)
22	Hospitals	\$1.06	\$1.38	\$2.62	\$0.68	\$1.86	\$0.00	\$7.60	/sq.ft. of BA (e)
23	Federal and Provincial Buildings	\$1.06	\$1.38	\$5.16	\$1.33	\$0.62	\$0.00	\$9.55	/sq.ft. of BA (e)
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) Rate to be charged per DU, with 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 \$25,175/DU.

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

(f) 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.

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