



 **Watson
& Associates**
ECONOMISTS LTD.

Development Charges Background Study – Marriott Drive, Harrisville Boulevard, Shediac Drive, and Moncton Industrial Park Trunk Sewer Upgrade Charge Areas City of Moncton

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Watson & Associates Economists Ltd.
905-272-3600
info@watsonecon.ca



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Chapter 1

Introduction



1. Introduction

1.1 Purpose of this Document

Many municipalities across Canada seek to recover the cost of growth-related infrastructure by imposing capital charges. These charges are referred to as Development Charges (henceforth 'DCs'), development cost charges, off-site levies, or impact fees; but all seek to recover the capital costs related to providing infrastructure for growth. In New Brunswick, the Province adopted the new *Community Planning Act, 2017* (henceforth the *Act*, put into effect on January 1, 2018), which now allows municipalities to implement DCs.

Prior to adopting the new *Act*, the City recovered some infrastructure costs from developing landowners via capital charges through subdivision charge areas under the Subdivision By-law (subdivision agreements) and development agreements through the rezoning process. Although there are transitional provisions for existing subdivision charge areas, the legislative authority for the municipality to implement new charge areas is now prescribed under Division G – Development Charge By-laws of the *Act*.

This Background Study is based on consultations with City Administration and local stakeholders. The Background Study was prepared with direction from the Principles Framework (adopted by Council on January 20, 2020, as amended on July 19, 2021¹).

This Background Study has been prepared to provide the DC calculations for the following development areas:

- Harrisville Boulevard area;
- Marriott Drive area;
- Moncton Industrial Development Trunk Sewer Upgrade; and
- Shediac Road area.

¹ Note: refinements to the Principles Framework are being proposed for 2023. This is discussed further in Section 2.1 of this report.



A discussion of these four development areas, the associated infrastructure requirements, the detailed calculations and resulting DCs are provided in sections 3 to 6 of this report.

1.2 Summary of the Process

An amendment to the Development Charge By-law is bound by the same provincial legislative process as initially bringing the By-law into force and effect. This process is outlined in the *Development Charge Regulation – Community Planning Act* and Division G of the *Community Planning Act*. Subsection 5(2) of the *Regulation* requires a council of a local government to “(a) establish the development charge in a fair and equitable manner” and to “(b) consult in good faith with stakeholders.” As per subsections 93(1) and (2) and paragraph 112(1)(a) of the *Act*, an amendment to the Development Charge By-law requires public notice, a public hearing, ministerial approval, and registration at the land registry office. This process is summarized below in ‘Figure 1-1: City of Moncton – Process for Establishing the Charge Areas.’

Figure 1-1
Process for Establishing the Charge Areas

Development Charge Process	Key Dates
Initial Staff Discussions and Input	March 2022 to May 2023
Landowner Meetings	November 21-22, 2022, and September 28 2023
Introduction of By-law / 1 st Reading (Public Meeting)	October 16 2023
Statutory Public Notice of By-law	October 17 2023
Planning Advisory Committee Meeting for By-law Recommendation (Views)	October 25 2023
Public Hearing / 2 nd and 3 rd Readings (Public Meeting)	November 20 2023
Ministerial Approval of By-law	TBD
Registration of By-law	TBD



Chapter 2

Principles Framework and Methodology Overview



2. Principles Framework and Methodology Overview

2.1 Principles Framework

The initial Principles Framework was developed to provide guidance in calculating DCs based on the Province's changes to the legislation in 2018. Based on discussions with staff, a number of refinements have been identified for both current and future charge areas. These proposed changes are as follows:

- Inclusion of active transportation infrastructure as part of the definition of capital costs for roads (refer to page 3-8 of the Principles Framework Dated July 19, 2021 for the definition of potential eligible costs for roads);
- Provide for arterial trails to be recovered through ADC's and neighbourhood trails to be recovered through local cost sharing DCs (note: in the prior Principles Framework, both types of trails were recovered through local cost sharing DCs);
- Provide for intersection improvements of arterial and collector roads with arterial or collector roads external to development area to be recovered through ADCs;
- Encourage annual payments for DC deferral agreements.

For reference, the proposed Principles Framework is provided in 'Figure 2-1: Proposed Local Service Hierarchy Schematic.'



Figure 2-1
Proposed Local Service Hierarchy Schematic

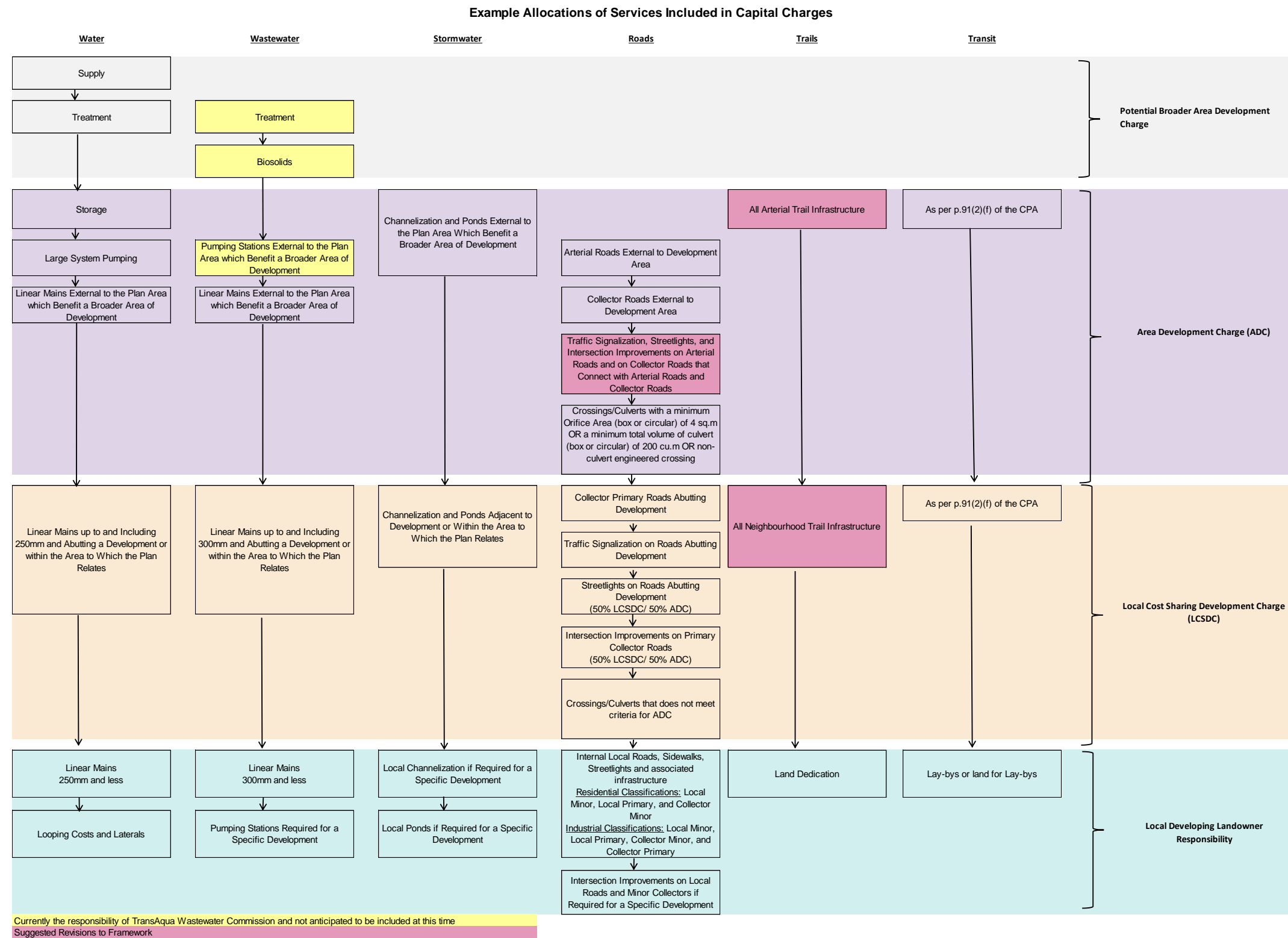




Table 2-1
Proposed Local Service Hierarchy

Service Category	Capital Assets	Basis for Recovery
Local Developing Landowner Responsibility		
Water	<p>Linear mains 250mm and less: If required for specific development (note minimum pipe size could be higher if specifically required for an individual development), developer responsibility</p> <p>Looping Costs: Developer responsibility</p> <p>Laterals: Connecting laterals, developer responsibility</p>	Developer Responsibility to Construct/Provide
Wastewater	<p>Linear mains 300mm and less: If required for specific development (note minimum pipe size could be higher if specifically required for an individual development), developer responsibility</p> <p>Pumping Stations: If required for specific development, developer responsibility</p>	
Stormwater	<p>Channelization: If required for specific development; developer responsibility</p> <p>Stormwater Management Ponds: If required for specific development; developer responsibility</p>	
Roads	<p>Roads Internal to Development - Residential: (Classifications as per Street Classification Table in the City of Moncton Subdivision Development Procedures, Standards, and Guidelines) Local minor, Local Primary, and Collector Minor; sections of road across City-owned land taken as Land for Public Purposes (LfPP) through the subdivision approval process; developer responsibility</p> <p>Roads Internal to Development - Industrial: (Classifications as per Street Classification Table in the City of Moncton Subdivision Development Procedures, Standards, and Guidelines) Local minor, Local Primary, Collector Minor, and Collector Primary; sections of road across City-owned land taken as Land for Public Purposes (LfPP) through the subdivision approval process; developer responsibility</p> <p>Intersection Improvements – Local Roads and Minor Collectors: if required for specific development; developer responsibility</p>	
Trails	<p>Land for Trails: developer required to provide land for public purposes and may be required to grade the land prior to dedication</p> <p>Trail Infrastructure: In some instances, the developer may construct the trail infrastructure and would be provided a credit against the LCSDC</p>	
Transit	<p>Lay-bys: If developing in a new development area fronts onto an existing or planned transit route; developer responsibility. If developing in an existing development area fronts onto existing transit route; developer to provide land required for lay-by.</p>	



Service Category	Capital Assets	Basis for Recovery
Local Cost Sharing Development Charge		
Water	Linear mains up to and including 250mm and abutting a development or within the area to which the plan relates: If 250mm or less is required, the cost will be included in a LCSDC. Any oversizing costs will be included in the ADC.	Development Charge calculated based on frontage of the benefitting properties. Any oversizing for other areas to be based on land area and collected by an ADC. (Except stormwater ponds)
Wastewater	Linear mains up to and including 300mm and abutting a development or within the area to which the plan relates: If 300mm or less is required, the cost will be included in a LCSDC. Any oversizing costs will be included in the ADC.	
Stormwater	Channelization adjacent to the development or within the area to which the plan relates: Include in LCSDC Stormwater Management Ponds adjacent to the development or within the area to which the plan relates: Include in LCSDC based on flow (i.e. land area) multiplied by the runoff coefficient.	
Roads	Roads Fronting and Abutting a Development – Residential: (Classifications as per Street Classification Table in the City of Moncton Subdivision Development Procedures, Standards, and Guidelines) Collector; sections of road across City-owned land taken as Land for Public Purposes (LfPP) through the subdivision approval process, the total cost of which is to be proportionally shared by the benefitting landowners based on the frontage of lands abutting the non LfPP sections of the road; include cost in LCSDC. Streetlights* on Roads Fronting and Abutting a Development: 50% of the costs are included in the LCSDC and 50% in the ADC Intersection Improvements – Primary Collectors: 50% of the costs are included in the LCSDC and 50% in the ADC Crossings/Culverts: if crossing/culvert does not meet criteria to include in ADC, then include in LCSDC	
Trails	Trail Infrastructure: All neighbourhood trails to be included in the LCSDC.	
Transit	Transit Facilities as per paragraph 91(2)(f) of the <i>Community Planning Act, 2017</i>	



Service Category	Capital Assets	Basis for Recovery
Area Development Charge (ADC)		
Water	Linear mains external to the plan area which benefit a broader area of development and mains above 250mm: Include in an ADC	Development Charge calculated based on: Weighted Land Areas (Except stormwater ponds)
Wastewater	Linear mains external to the plan area which benefit a broader area of development and mains above 300mm: Include in an ADC Pumping Stations external to the plan area which benefit a broader area of development: Include in ADC	
Stormwater	Channelization external to the plan area which benefit a broader area of development: Include in ADC Stormwater Management Ponds external to the plan area which benefit a broader area of development: Include in ADC based on flow (i.e. land area) multiplied by the runoff coefficient.	
Roads	Roads External to Development: (Classifications as per Street Classification Table in the City of Moncton Subdivision Development Procedures, Standards, and Guidelines) include in ADC Traffic Signalization, Streetlights*, and Intersection Improvements on Arterial Roads and on Collector Roads that Connect with Arterial Roads: Include in ADC Crossings/Culverts: with a minimum Orifice Area (box or circular) of 4 sq.m OR a minimum total volume of culvert (box or circular) of 200 cu.m OR non-culvert engineered crossing – Include in ADC	
Trails	Trail Infrastructure: all arterial trails to be included in ADC	
Transit	Transit Facilities as per paragraph 91(2)(f) of the <i>Community Planning Act, 2017</i>	

*Note: The collection of development charges for streetlight infrastructure shall be limited to costs related to equipment that are non-reimbursable from NB Power. As per the City for Moncton Subdivision Development Procedures Standards and Guidelines, this includes, for example, decorative streetlights that are not rented to the City from NB Power.



2.2 Methodology Overview

Sections 3 to 6 present the methodology and detailed calculations for the DCs for the four charge areas. The calculations provided herein are based on the Principles Framework as per subsection 2.1 of this Background Study, including the proposed amendments to the Framework. As the capital works required in each of the charge areas generally benefit a broader area, the costs related to all works are to be recovered through an ADC (discussed further in subsequent sections). For most charge areas, the DC is based on the acreage of the benefitting properties, weighted for density considerations as stated in section 5(2) of the Development Charge Bylaw and as noted in subsection 2.1 of this Background Study. Note: the exception to the above methodology is the calculation for the Moncton Industrial Development Trunk Sewer Upgrade area where costs are recovered based on the proportion of flows from benefitting properties. This is discussed further in section 5.

2.2.1 Deductions

Subsection 4.7 of the Principles Framework outlines required deductions from the increased need for service. Potential benefits include:

- Benefit to existing development;
- Anticipated grants, subsidies and other contributions; and
- Benefit to growth outside of the forecast period (Post-period Benefit)

Note, the specific deductions made for each of the four charge areas are discussed in the respective sections of this report, however, a high-level description of each of these deductions is provided below.

2.2.1.1 Reduction for Benefit to Existing Development

This step involves a further reduction in the need by the extent to which such an increase in service would benefit existing development. Water and wastewater trunks, and drainage infrastructure, for example, are highly localized to growth areas and can be readily allocated in this regard.

Where existing development has an adequate service level that will not be tangibly increased by an increase in service, no benefit would appear to be involved. For example,



where expanding existing facilities simply replicates what existing residents are receiving, they receive very limited (or no) benefit as a result. On the other hand, where a clear existing service problem must be remedied, a deduction should be made accordingly.

2.2.1.2 Reduction for Anticipated Grants, Subsidies and Other Contributions

This step involves reducing the capital costs by capital grants, subsidies, and other contributions (including direct developer contributions required due to the local service framework) made or anticipated by Council. In addition, these reductions would also be considered in accordance with various rules such as the attribution between the share related to new versus existing development. That is, some grants and contributions may not specifically be applicable to growth or where Council targets fundraising as a measure to offset impacts on taxes.

2.2.1.3 Reduction for Post-period Benefit

Generally, as the cost of the works is spread amongst the landowners in the DC area, the forecast period of development is not applicable and no post-period benefit deduction is applied (note: the exception to this is the charge for Harrisville Boulevard Area, where a post-period deduction has been applied to the calculation. See Section 3.5.3 for additional details).



Chapter 3

Development Charge Calculations – Harrisville Boulevard



3. Development Charge Calculations – Harrisville Boulevard

3.1 Development Area

In order to facilitate development in the project area, the City has identified the need for a road upgrade of Harrisville Boulevard. The study area is a broad area across the City located south and west of the TransCanada Highway, north of Veterans Highway and east of Elmwood Drive. (see 'Figure 3-1: Harrisville Boulevard Development Charge Area').

The lands consist of a mix of existing residential and non-residential built-up areas, in addition to development areas. The delineation of the development lands and existing built-out lands that comprise the Harrisville Boulevard Development Charge area are outlined in 'Figure 3-2: Harrisville Boulevard Built out and Development Lands'. Note that the development lands are approximately 1,246 acres of the total area, whereas the existing built-out lands are approximately 1,470 acres (including the existing roads in the area). Further discussion on infrastructure requirements is provided in the next section.



Figure 3-1
Harrisville Boulevard Development Charge Area

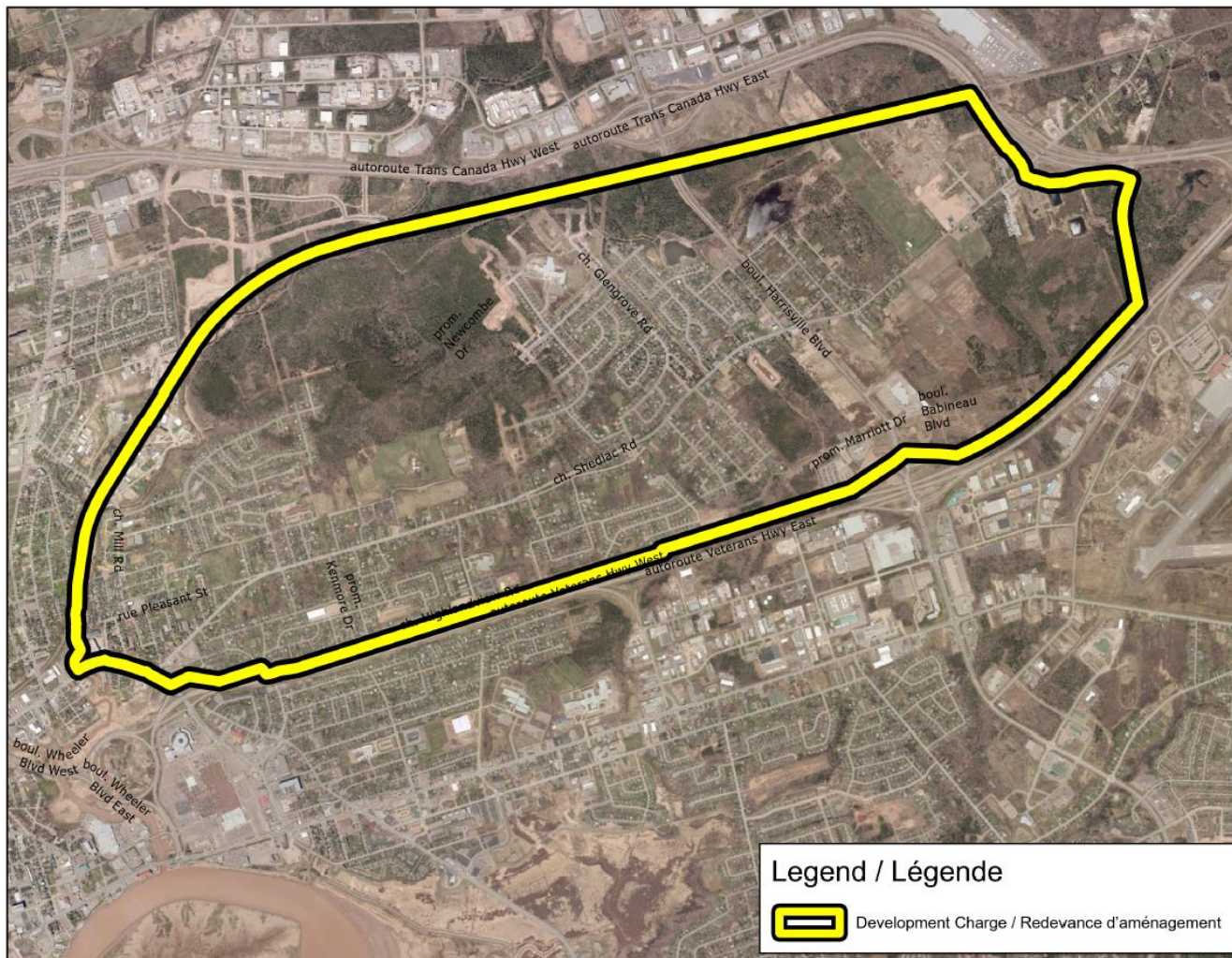
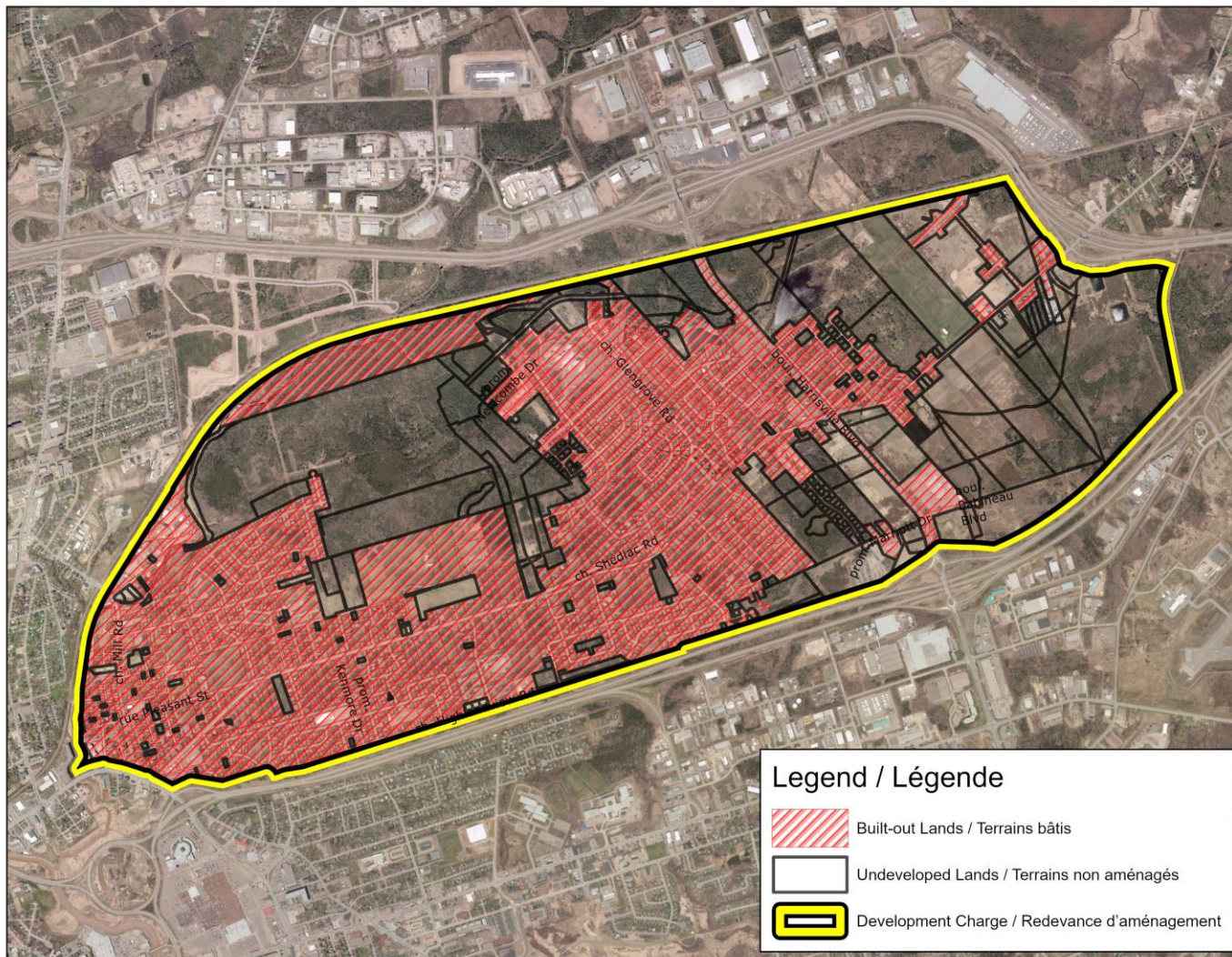




Figure 3-2
Harrisville Boulevard Built out and Development Lands





3.2 Infrastructure

The City has identified a road upgrade that would be required for the development of the planning area. This work will add two through lanes in each direction on Harrisville Boulevard. A widening of the road as a six-lane cross section at the intersections with Shediac Road and Marriott Drive will also be needed. Two signalized intersections will be required in addition to a multi-use/active transportation trail on the west side of Harrisville Boulevard. In addition, a new stormwater pond will be required to accommodate the additional runoff as a result of the road widening. In total, this work is estimated to cost \$11.7 million (in 2023 dollars) as presented in 'Table 3-1: Required Infrastructure – Harrisville Boulevard DC Area.' This work is also identified in 'Figure 3-3: Harrisville Boulevard – Road Infrastructure.'

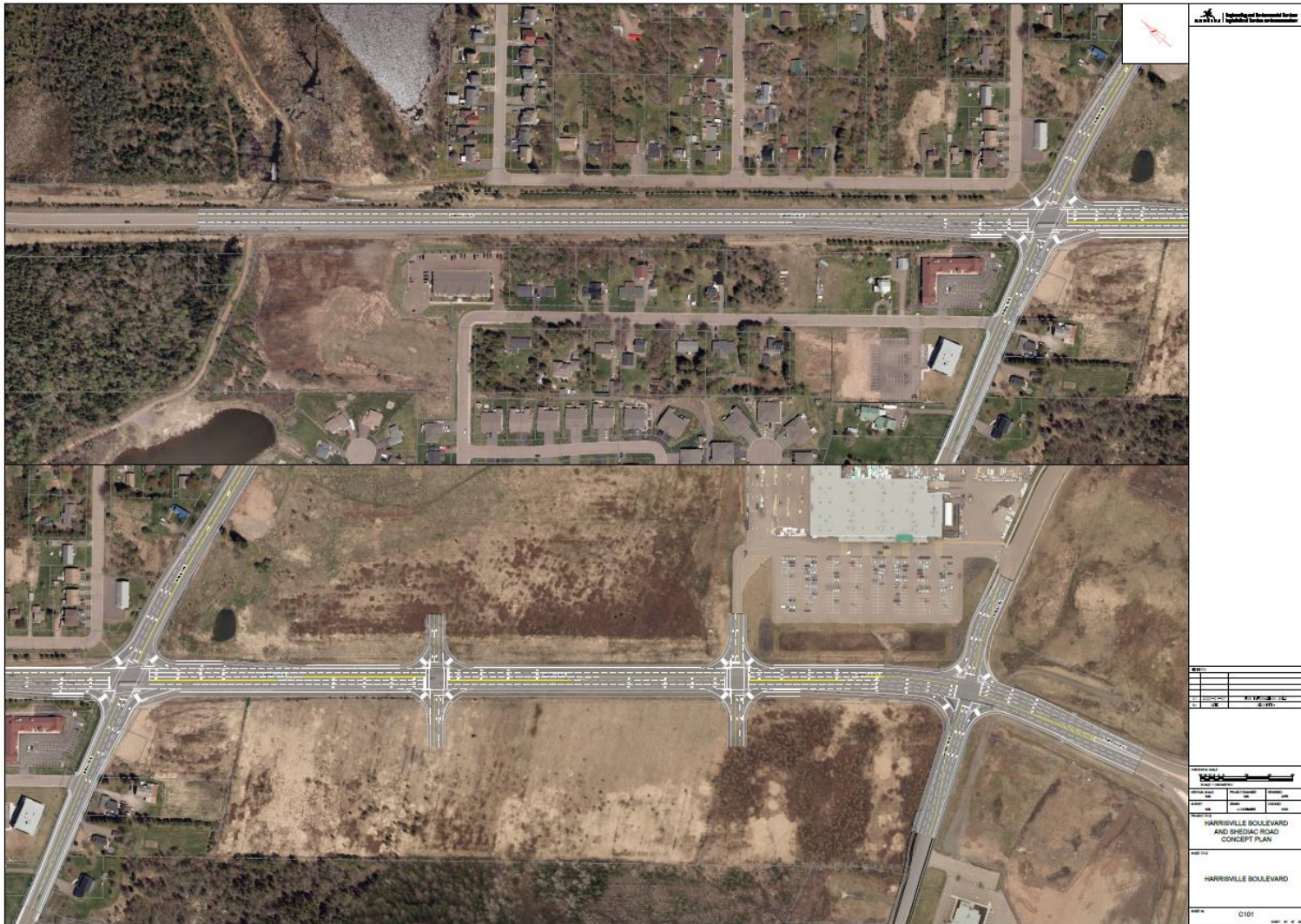
Table 3-1
Required Infrastructure – Harrisville Boulevard DC Area

Infrastructure Project	Description	Cost (Including HST) 2023\$
Harrisville Boulevard	Road widening/upgrade. 2 signalized intersections. Multi-use path and sidewalk.	11,700,000

Source: City of Moncton



Figure 3-3
Harrisville Boulevard – Road Infrastructure





3.3 Basis for Recovery

Based on the Principles Framework in Section 2.1 of this document, the infrastructure identified for inclusion in this charge area is proposed to be recovered through an ADC, given that this an improvement to an arterial road.

Table 3-2
Required Infrastructure – Basis for Recovery

Infrastructure Project	Description	Basis for Recovery
Harrisville Boulevard	Road widening/upgrade. 2 signalized intersections. Multi-use path and sidewalk.	ADC

3.4 Capital Costs

To allow for the development of the area, the City has identified the capital costs necessary to provide the increased services. These capital costs relate to transportation (roads) only. Subsection 3.4 of the Principles Framework provides the eligible capital costs that may be included for each service and subsection 2.1 of this document outlines the Principles Framework hierarchy.

The infrastructure required for development, as noted above is anticipated to cost \$11.7 million and will be recovered from benefiting landowners through an ADC. ‘Table 3-1: Capital Infrastructure Required to Service Growth’ provides a summary of the infrastructure costs and the method for DC recovery.

Table 3-3
Capital Infrastructure Required to Service Growth

Project	Service	Method for DC Recovery	Gross Capital Cost Estimate (2023\$)
Harrisville Boulevard	Transportation	Area DC	11,700,000
Total ADC			11,700,000



3.5 Deductions

Subsection 4.7 of the Principles Framework outlines required deductions from the increased need for service. Potential benefits include:

- Benefit to existing development;
- Anticipated grants, subsidies and other contributions; and
- Benefit to growth outside of the forecast period (Post-period Benefit)

In addition, a deduction related to the regional benefit from infrastructure development for arterial roads has also been identified.

These deductions are discussed in more detail below.

3.5.1 Reduction for Benefit to Existing Development

The new infrastructure identified to service the charge area benefits all properties in the charge area. As a result, a portion of the costs need to be allocated to the existing developed properties. To calculate the share of the costs that are a benefit to existing development, the developed property areas of the overall Harrisville Boulevard Charge Area have been included in the calculations (noted as the hatched area in the 'Harrisville Boulevard Built out and Development Lands' map). The share of the costs attributable to these areas are to be funded by the City from non-DC sources (e.g. existing reserves).

3.5.2 Reduction for Anticipated Grants, Subsidies and Other Contributions

No grants are anticipated to be received for these projects. Additionally, all works deemed a local service under the Principles Framework have been excluded from the calculations. As a result, no deduction is required.

3.5.3 Reduction for Post-period Benefit

A deduction has been made to account for lands that are expected to build out beyond the buildout forecast period. These "post-period benefit lands" have been excluded from the DC calculation, in addition to the associated costs. These costs are to be cash-flowed by the City until the lands are developed. The developing landowner would be required to pay the applicable DC, and the City can then recover these growth-related costs.



3.5.4 Broader Area Benefit of Infrastructure Development – Arterial Roads

This deduction relates to the portion of the capital costs that would benefit the broader area, outside of the defined DC area for the expansion/creation of arterial roads. Given that arterial roads provide a level of service to areas beyond the defined DC area, a proportionate share of costs of identified improvements can be allocated at a broader area level. This results in a reduction of the capital costs allocated to the benefitting and existing lands identified within the defined charge area.

Although this benefit to the broader area is considered partially growth-related, these types of Broader Area DCs are not currently in place. It is noted that Moncton does have the legislative authority to impose Broader Area DCs (e.g. City-wide) and could recover costs from the broader area in the future, based on Council direction.

Traffic counts and estimates can be prepared by City/Council to determine the proportionate share for the broader area for the anticipated use of an arterial road. The proportionate share calculated would be attributed to the City as the Broader Area Benefit cost (or potential Broader Area Development Charge). The DC calculations will then include the proportionate share of the capital costs for each of the following areas:

- Development lands within the charge area (funded by developing landowners through the ADC);
- Existing development within the charge area (funded by the City); and
- Broader area benefiting from the arterial road infrastructure (funded by the City or a potential Broader Area Development Charge).

3.6 Development Areas

The developable lands total approximately 1,246 acres; The existing built-out lands have a total area of approximately 1,470 acres and includes a mix of residential and non-residential development in addition to existing roads within the development area. The total benefitting area is 2,716 acres.

In general, for areas that have more density, a larger share of the costs in the charge area will apply. Each property in the charge area has been broken down into the zoning components that comprise the total land area. 'Table 3-4: Total Area by Zoning' provides



for this breakdown and 'Figure 3-4: Harrisville Boulevard – Area Development Charge (ADC)' provides a zoning map of the area.

To apply a weighting to each of the zoning categories, consideration was given to the development density as well as the number of trips anticipated to be generated by each land-use. Generally, residential density targets for each zoning type are provided on a "unit per acre" basis and non-residential targets are provided on a "1,000 sq.ft. per acre basis". Density assumptions have been estimated by City staff. For existing built-up areas, density is based on actual units per acre or sq.ft. per acre. These densities are then multiplied by the trip generation rates provided in the latest version of the Institute of Engineers Trip Generation Manual. The result is the weighting factor for each of the zoning types. These calculations are provided in 'Table 3-5: Land Area Weighting for Area DC Calculations.'

The zoning category weighting is then multiplied by each of the land areas in 'Table 3-4: Total Area by Zoning' to calculate the weighted land area to be used for the ADC calculations. These final calculations are provided in 'Table 3-6: Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting.'



Figure 3-1
Harrisville Boulevard – Area Development Charge (ADC)

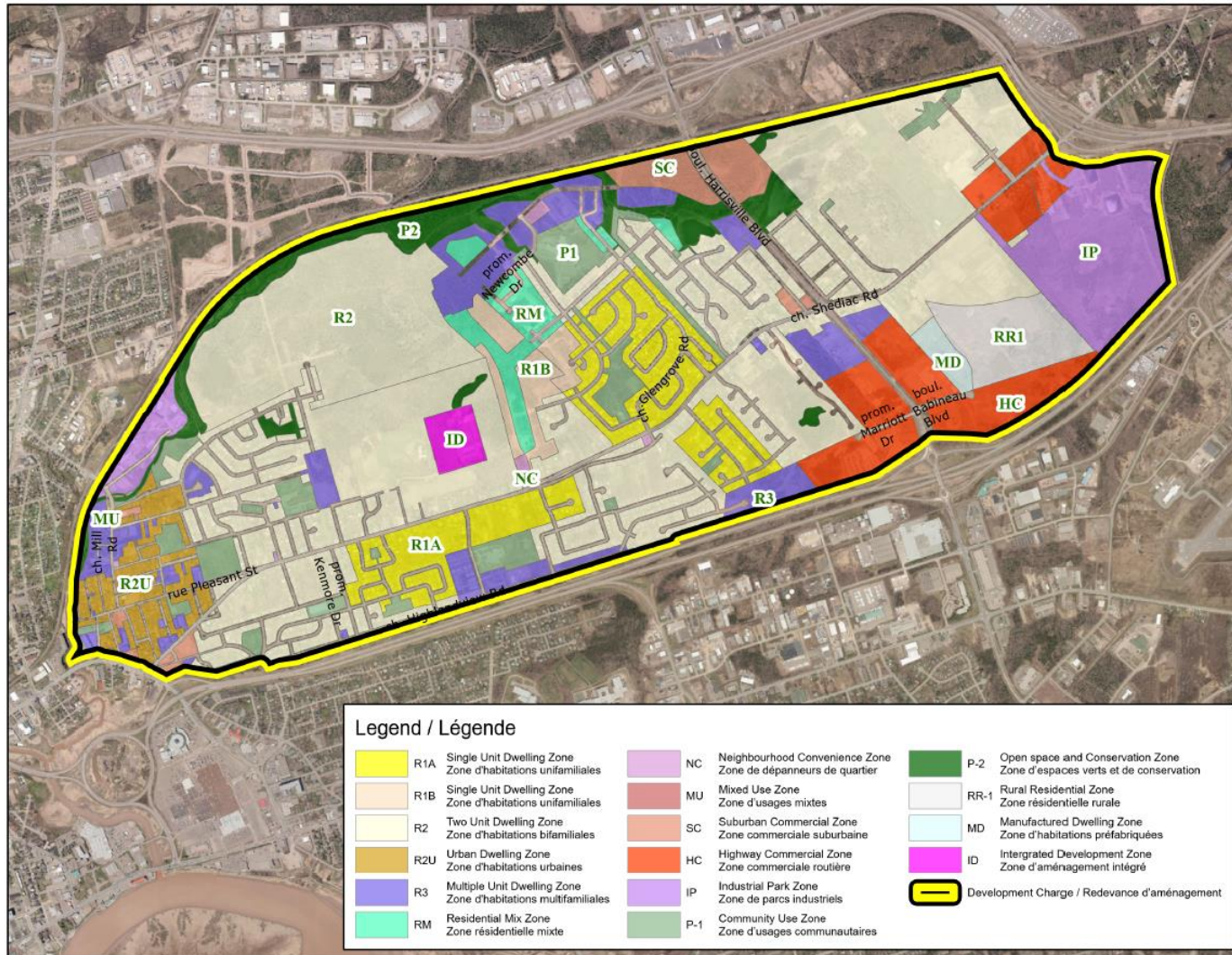




Table 3-4
Total Area by Zoning

Area by Zoning	Total Area (Acres)
Single Unit Dwelling (R1A)	2.18
Single Unit Dwelling (R1B)	40.98
Two Unit Dwelling (R2)	582.51
Urban Dwelling (R2U)	4.79
Multiple Unit Dwelling (R3)	110.46
Residential Mix (RM)	38.83
Rural Residential (RR1)	64.72
Neighbourhood Convenience (NC)	5.35
Suburban Commercial (SC)	48.71
Highway Commercial (HC)	145.93
Industrial Park (IP)	152.55
Community Use (P1)	1.71
Open Space and Conservation (P2)	33.90
Manufactured Dwelling (MD)	13.95
Built-up Areas - Single Unit Dwelling (R1A)	175.83
Built-up Areas - Single Unit Dwelling (R1B)	1.86
Built-up Areas - Two Unit Dwelling (R2)	532.58
Built-up Areas - Urban Dwelling (R2U)	61.23
Built-up Areas - Multiple Unit Dwelling (R3)	72.43
Built-up Areas - Residential Mix (RM)	11.38
Built-up Areas - Neighbourhood Convenience (NC)	1.08
Built-up Areas - Mixed Use (MU)	0.50
Built-up Areas - Suburban Commercial (SC)	15.54
Built-up Areas - Highway Commercial (HC)	29.86
Built-up Areas - Industrial Park (IP)	30.22
Built-up Areas - Community Use (P1)	117.97
Built-up Areas - Open Space and Conservation (P2)	107.28
Built-up Areas - Integrated Development (ID)	19.99
Built-up Areas - Roads	292.04
Total	2,716.37

Note: Zoning categories are based on the City of Moncton's Zoning By-law.



Table 3-5
Land Area Weighting for Area DC Calculations



Property Zoning	Basis for Density Assumption ¹	Density Assumption ¹	Basis for Trip Generation Rates ²	Trip Generation Rates ²	Weighting Factor for ADC
Single Unit Dwelling (R1A)	units per acre	6.00	trips per unit	0.52	3.11
Single Unit Dwelling (R1B)	units per acre	6.00	trips per unit	0.52	3.11
Two Unit Dwelling (R2)	units per acre	10.00	trips per unit	0.52	5.18
Urban Dwelling Zone (R2U)	units per acre	12.00	trips per unit	0.52	6.22
Multiple Unit Dwelling (R3)	units per acre	40.00	trips per unit	0.29	11.78
Residential Mix (RM)	units per acre	15.00	trips per unit	0.52	7.77
Rural Residential (RR1)	units per acre	1.00	trips per unit	0.52	0.52
Neighbourhood Convenience (NC)	1,000 sq.ft. per acre	13.07	trips per 1,000 sq.ft	0.66	8.59
Suburban Commercial (SC)	1,000 sq.ft. per acre	8.56	trips per 1,000 sq.ft	0.66	5.63
Highway Commercial (HC)	1,000 sq.ft. per acre	8.56	trips per 1,000 sq.ft	0.66	5.63
Industrial Park Zone (IP)	1,000 sq.ft. per acre	24.71	trips per 1,000 sq.ft	0.06	1.60
Community Use (P-1)	n/a	-	n/a	-	-
Open Space and Conservation (P-2)	n/a	-	n/a	-	-
Manufactured Dwelling Zone (MD)	units per acre	12.00	trips per unit	0.31	3.70
Built-up Areas - Single Unit Dwelling (R1A)	units per acre	3.12	trips per unit	0.52	1.62
Built-up Areas - Single Unit Dwelling (R1B)	units per acre	3.23	trips per unit	0.52	1.67
Built-up Areas - Two Unit Dwelling (R2)	units per acre	3.56	trips per unit	0.52	1.84
Built-up Areas - Urban Dwelling (R2U)	units per acre	7.81	trips per unit	0.52	4.04
Built-up Areas - Multiple Unit Dwelling (R3)	units per acre	14.57	trips per unit	0.29	4.29
Built-up Areas - Residential Mix (RM)	units per acre	9.49	trips per unit	0.52	4.92
Built-up Areas - Neighbourhood Convenience (NC)	1,000 sq.ft. per acre	6.24	trips per 1,000 sq.ft	0.66	4.10
Built-up Areas - Mixed Use (MU)	units per acre	4.02	trips per unit	0.66	2.64
Built-up Areas - Suburban Commercial (SC)	1,000 sq.ft. per acre	6.70	trips per 1,000 sq.ft	0.66	4.41
Built-up Areas - Highway Commercial (HC)	1,000 sq.ft. per acre	3.45	trips per 1,000 sq.ft	0.66	2.27
Built-up Areas - Industrial Park (IP)	1,000 sq.ft. per acre	5.41	trips per 1,000 sq.ft	0.06	0.35
Built-up Areas - Community Use (P1)	n/a	-	n/a	-	-
Built-up Areas - Open Space and Conservation (P2)	n/a	-	n/a	-	-
Built-up Areas - Integrated Development (ID)	n/a	-	n/a	-	-
Built-up Areas - Roads	n/a	-	n/a	-	-

1: Densities of development areas based on best estimates. Density of built-up areas based on actual units per acre/square footage per acre.

2: Based on Institute of Transportation Engineers, Trip Generation, 11th Edition



Table 3-6
Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting

Zoning	Total Area (Acres)	Weighting Factor for ADC	Weighted Area
Single Unit Dwelling (R1A)	2.18	3.11	6.78
Single Unit Dwelling (R1B)	40.98	3.11	127.36
Two Unit Dwelling (R2)	582.51	5.18	3,017.42
Urban Dwelling (R2U)	4.79	6.22	29.75
Multiple Unit Dwelling (R3)	110.46	11.78	1,300.99
Residential Mix (RM)	38.83	7.77	301.71
Rural Residential (RR1)	64.72	0.52	33.53
Neighbourhood Convenience (NC)	5.35	8.59	46.00
Suburban Commercial (SC)	48.71	5.63	274.10
Highway Commercial (HC)	145.93	5.63	821.19
Industrial Park (IP)	152.55	1.60	243.51
Community Use (P1)	1.71	-	-
Open Space and Conservation (P2)	33.90	-	-
Manufactured Dwelling (MD)	13.95	3.70	51.56
Built-up Areas - Single Unit Dwelling (R1A)	175.83	1.62	284.38
Built-up Areas - Single Unit Dwelling (R1B)	1.86	1.67	3.11
Built-up Areas - Two Unit Dwelling (R2)	532.58	1.84	981.61
Built-up Areas - Urban Dwelling (R2U)	61.23	4.04	247.60
Built-up Areas - Multiple Unit Dwelling (R3)	72.43	4.29	310.64
Built-up Areas - Residential Mix (RM)	11.38	4.92	55.94
Built-up Areas - Neighbourhood Convenience (NC)	1.08	4.10	4.42
Built-up Areas - Mixed Use (MU)	0.50	2.64	1.31
Built-up Areas - Suburban Commercial (SC)	15.54	4.41	68.48
Built-up Areas - Highway Commercial (HC)	29.86	2.27	67.78
Built-up Areas - Industrial Park (IP)	30.22	0.35	10.56
Built-up Areas - Community Use (P1)	117.97	-	-
Built-up Areas - Open Space and Conservation (P2)	107.28	-	-
Built-up Areas - Integrated Development (ID)	19.99	-	-
Built-up Areas - Roads	292.04	-	-
Total	2,716.37		8,289.76



3.7 Development Charge Calculation

As noted above, the DCs are to be calculated as an ADC as per the Principles Framework. The total estimated project cost of \$11.7 million is shared among all properties in the charge area, in addition to the broader benefitting region. A deduction of \$2.7 million has been made to account for the costs attributable to development within the post-period benefit lands, and a deduction of \$2.3 million has been made to account for the region-wide benefit of the arterial road. When the net growth related cost is divided by the total net weighted land area (i.e. less post-period benefit lands and the broader regional benefit), this results in a net ADC per weighted area of \$1,058. This is then multiplied by the total weighted area for each zoning category to calculate the ADC for each category.



Table 3-7
DC Calculations for Harrisville Boulevard

Project	Gross Capital Cost Estimate (2023\$)	Post-Period Benefit Deduction (2023\$)	Net In-Period Growth-Related Cost (2023\$)	Region Wide Benefit Deduction (2023\$)	Net Growth-Related Cost (2023\$)
Harrisville Boulevard	11,700,000	2,680,000	9,020,000	2,255,000	6,765,000

	Local Developing Landowner	LCSDC	ADC
Development Charge Allocation	0%	0%	100%
Total LCSDC and ADC	-	-	6,765,000

ADC Calculation	
ADC Recoverable Costs	\$6,765,000
<i>Total Weighted Area</i>	<i>8,289.76</i>
<i>Post-Period Benefit Land (Weighted Area)</i>	<i>1,895.39</i>
Total Weighted Area less Post-Period Benefit Lands	6,394.37
Net ADC per Weighted Area	\$1,057.96

Property	Weighted Area**	ADC \$	ADC per Actual Acre \$
Single Unit Dwelling (R1A)	6.78	\$7,169	\$3,288
Single Unit Dwelling (R1B)	38.46	\$40,690	\$3,288
Two Unit Dwelling (R2)	1,514.44	\$1,602,217	\$5,480
Urban Dwelling (R2U)	29.75	\$31,477	\$6,576
Multiple Unit Dwelling (R3)	1,186.85	\$1,255,640	\$12,461
Residential Mix (RM)	136.01	\$143,892	\$8,220
Rural Residential (RR1)	33.53	\$35,468	\$548
Neighbourhood Convenience (NC)	22.35	\$23,642	\$9,089
Suburban Commercial (SC)	274.10	\$289,992	\$5,954
Highway Commercial (HC)	821.19	\$868,786	\$5,954
Industrial Park (IP)	243.51	\$257,628	\$1,689
Community Use (P1)	-	\$0	\$0
Open Space and Conservation (P2)	-	\$0	\$0
Manufactured Dwelling (MD)	51.56	\$54,553	\$3,911
Built-up Areas - Single Unit Dwelling (R1A)	284.38	\$300,865	\$1,711
Built-up Areas - Single Unit Dwelling (R1B)	3.11	\$3,288	\$1,768
Built-up Areas - Two Unit Dwelling (R2)	981.61	\$1,038,506	\$1,950
Built-up Areas - Urban Dwelling (R2U)	247.60	\$261,955	\$4,278
Built-up Areas - Multiple Unit Dwelling (R3)	310.64	\$328,650	\$4,537
Built-up Areas - Residential Mix (RM)	55.94	\$59,187	\$5,202
Built-up Areas - Neighbourhood Convenience (NC)	4.42	\$4,673	\$4,341
Built-up Areas - Mixed Use (MU)	1.31	\$1,391	\$2,794
Built-up Areas - Suburban Commercial (SC)	68.48	\$72,450	\$4,663
Built-up Areas - Highway Commercial (HC)	67.78	\$71,710	\$2,401
Built-up Areas - Industrial Park (IP)	10.56	\$11,171	\$370
Built-up Areas - Community Use (P1)	-	\$0	\$0
Built-up Areas - Open Space and Conservation (P2)	-	\$0	\$0
Built-up Areas - Integrated Development (ID)	-	\$0	\$0
Built-up Areas - Roads	-	\$0	\$0
Total	6,394.37	\$6,765,000	

*Built-up Areas share to be funded by Moncton

**Adjusted for lands to be developed outside of the forecast period



It is noted that the costs attributable to the existing developed residential and non-residential properties within the development area are \$2.0 million and \$162,000, respectively. As a result, the City of Moncton would contribute this amount for the Harrisville Boulevard ADC capital costs (in addition to the \$2.3 million of costs which benefit the broader region).

3.8 Sample Charge Calculations

The following 'Table 3-8: Sample Development Charge Calculations' provides examples of various developments and the applicable development charges.

For example number one, we have the following information:

Type: Single Detached Dwelling
Zoning: R1A
Area (acres): 0.229
Weighting: 3.108
Weighted Acres (Area x Weighting): 0.710
ADC per Weighted Acre: \$1,058

To calculate the applicable ADC payable, the following steps are undertaken:

1. Identify the appropriate area weighting factor based on the zoning (as presented in 'Table 3-5: Land Area Weighting for Area DC Calculations').

Weighting factor for R1A zoning = 3.108

2. Multiply the lot area in acres, by the weighting factor to get the weighted acres.

0.229 acres x 3.108 = 0.710 weighted acres

3. Multiply the weighted acres by the ADC per weighted acre to get the ADC applicable to the property.

0.710 weighted acres x \$1,058 = \$752


As there is only one unit, the charge per unit is also \$752. For examples 2, 3, and 4 in 'Table 3-8: Sample Development Charge Calculations', the ADC per property may be divided by the number of units to calculate the ADC on a per unit basis. Similarly for non-





residential development, the charges may be calculated to show them on a per sq.ft. of development basis.




Table 3-8
Sample Development Charge Calculations

Example #	Example Development Picture	Details	Applicable DC Charge
1		<p>Type: Single Detached Dwelling Zoning: R1A Area (acres): 0.229 Weighting: 3.108 Weighted Acres (Area x Weighting): 0.710 ADC per Weighted Acre: \$1,058</p>	<p>Charge per Development Area: \$752 Per unit charge: \$752</p>
2		<p>Type: Townhouse Dwelling (3 units) Zoning: R3 Area (acres): 0.282 Weighting: 11.778 Weighted Area (Area x Weighting): 3.318 ADC per Weighted Acre: \$1,058</p>	<p>Charge per Development Area: \$3,510 Per unit charge: \$1,170</p>



Example #	Example Development Picture	Details	Applicable DC Charge
3		<p>Type: Townhouse Dwelling (4 units) Zoning: R3 Area (acres): 0.284 Weighting: 11.778 Weighted Area (Area x Weighting): 3.350 ADC per Weighted Acre: \$1,058</p>	<p>Charge per Development Area: \$3,544 Per unit charge: \$886</p>
4		<p>Type: 46 Unit Apartment Zoning: R3 Area (acres): 1.740 Weighting: 11.778 Weighted Area (Area x Weighting): 20.489 ADC per Weighted Acre: \$1,058</p>	<p>Charge per Development Area: \$21,677 Per unit charge: \$471</p>
5		<p>Type: Suburban Commercial Zoning: SC Area (acres): 0.577 Weighting: 5.627 Weighted Area (Area x Weighting): 3.245 ADC per Weighted Acre: \$1,058</p>	<p>Charge per Development Area: \$3,433 Per sq.ft. charge: \$0.46</p>



Example #	Example Development Picture	Details	Applicable DC Charge
6		<p> Type: Industrial Park Zoning: IP Area (acres): 1.956 Weighting: 1.596 Weighted Area (Area x Weighting): 3.122 ADC per Weighted Acre: \$1,058 </p>	<p> Charge per Development Area: \$3,303 Per sq.ft. charge: \$0.24 </p>



Chapter 4

Development Charge Calculations – Marriott Drive



4. Development Charge Calculations – Marriott Drive

4.1 Development Area

In order to facilitate development in the project area, the City has identified the need for a road widening of Marriott Drive, land acquisition to facilitate the widening, a roundabout, and a new multi-use trail. The study area is North of Veterans Highway, south of Shediac Road, west of Harrisville Boulevard and east of Georgia Lane/Magnolia Crescent. (see 'Figure 4-1: Marriott Drive Development Charge Area').

The lands consist of a mix of existing residential and non-residential built-up areas, in addition to development areas. The delineation of the development lands and existing built-out lands that comprise the Marriott Drive Development Charge area are outlined in 'Figure 4-2: Marriott Built out and Development Lands'. Note that the development lands are approximately 113 acres of the total area, whereas the existing built-out lands are approximately 85 acres (including the existing roads in the area), a total of 218 acres. Further discussion on infrastructure requirements is provided in the next section.

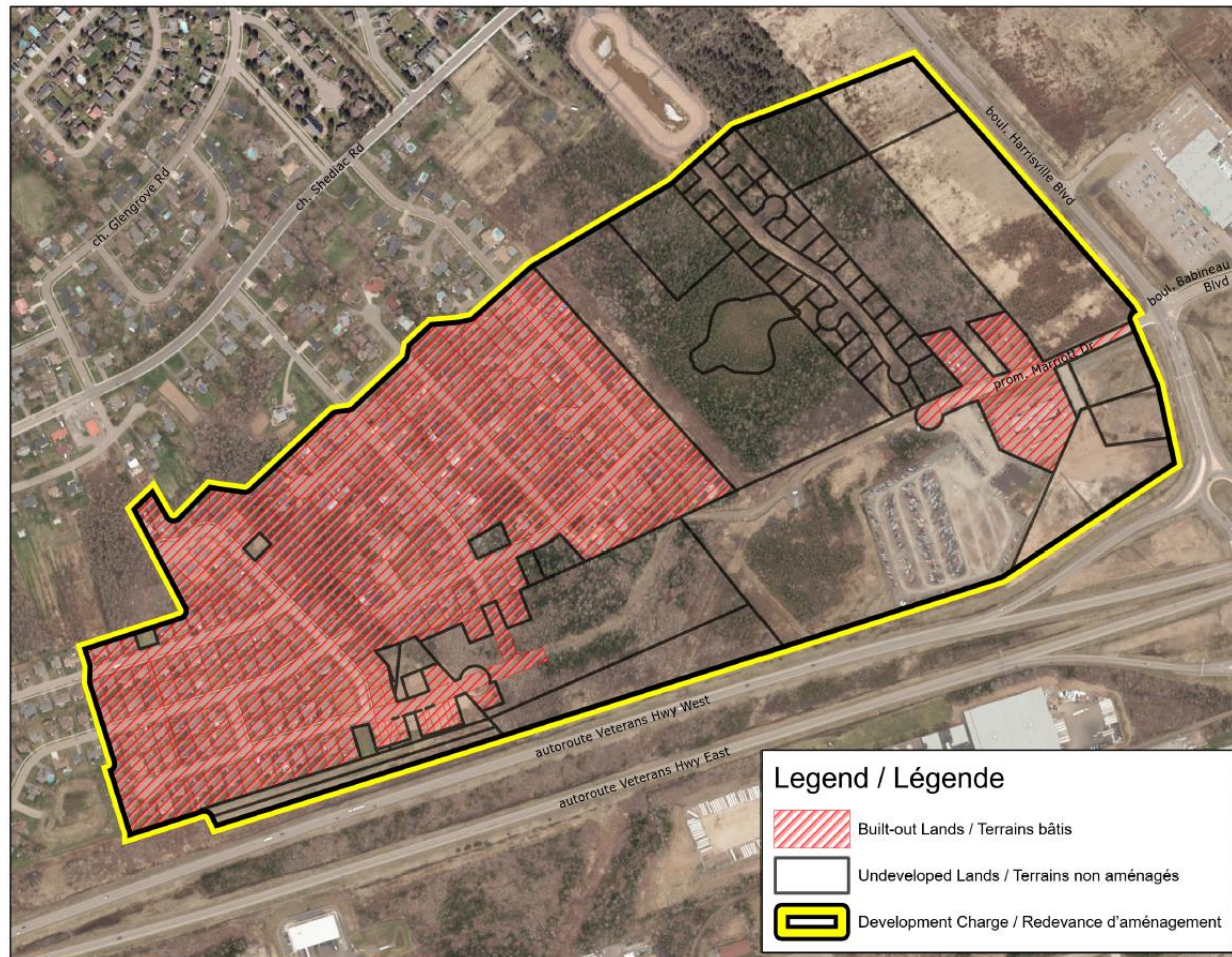


Figure 4-1
Marriott Drive Development Charge Area





Figure 4-2
Marriott Drive Built out and Development Lands





4.2 Infrastructure

The City has identified a number of works that are required for the development of the planning area. There is a need to widen Marriott Drive to include a left-turn and right-turn lane at the intersection with Harrisville Boulevard. The costs identified below include land acquisition required to facilitate the widening. In addition, a roundabout at the first intersection of Marriott Drive with future streets is required. A multi-use trail on the north side of Marriott, extending up to Shediac Road has also been identified. This work is estimated to cost \$2.35 million (in 2023 dollars) as presented in 'Table 4-1: Required Infrastructure – Marriott Drive DC Area.' This work is also identified in 'Figure 4-3: Marriott Drive – Road Infrastructure.'

Table 4-1
Required Infrastructure – Marriott Drive DC Area

Infrastructure Project	Description	Cost (Including HST) 2023\$
Transmission Line Trail	Active Transportation connection from Marriott to Shediac	320,000
Roundabout - Warner Street and Marriott Drive	Sustainable road network connection to other development areas.	1,100,000
Marriott Drive	Upgrade to 4 lanes at Harrisville Blvd.	930,000
Total		2,350,000

Source: City of Moncton



4.3 Basis for Recovery

Based on the Principles Framework outlined in section 2.1, the following table summarizes the basis for recovery for the infrastructure identified for inclusion in this charge area. This DC is proposed to be calculated as an ADC based on the following:

- Transmission Line Trail: arterial trail infrastructure
- Roundabout: Intersection improvement on an arterial road
- Marriott Drive: improvements to an arterial road external to development area

Based on the Principles Framework in Section 2.1 of this document, these works are all to be included in an ADC.

Table 4-2
Required Infrastructure – Basis for Recovery

Infrastructure Project	Description	Basis for Recovery
Transmission Line Trail	Active Transportation connection from Marriott to Shediac	ADC
Roundabout - Warner Street and Marriott Drive	Sustainable road network connection to other development areas.	ADC
Marriott Drive	Upgrade to 4 lanes at Harrisville Blvd. Multi-use path on north side	ADC

4.4 Capital Costs

To allow for the development of the area, the City has identified the capital costs necessary to provide the increased services. These capital costs relate to transportation (roads) and trails. Subsection 3.4 of the Principles Framework provides the eligible capital costs that may be included for each service and subsection 2.1 of this document outlines the Principles Framework hierarchy.

The infrastructure noted above required for development in the Marriott Drive area is anticipated to cost \$2.35 million and will be recovered from benefiting landowners through an ADC.

‘Table 4-3: Capital Infrastructure Required to Service Growth’ provides a summary of the infrastructure costs and the method for DC recovery.



Table 4-3
Capital Infrastructure Required to Service Growth

Project	Service	Method for DC Recovery	Gross Capital Cost Estimate (2023\$)
Transmission Line Trail	Trails	Area DC	320,000
Roundabout - Warner Street and Marriott Drive	Transportation	Area DC	1,100,000
Marriott Drive	Transportation	Area DC	930,000
Total ADC			2,350,000

4.5 Deductions

As discussed in section 2.2.1 a number of deductions from the increased need for service are required. These deductions are discussed in more detail below.

4.5.1 Reduction for Benefit to Existing Development

The new infrastructure identified to service the charge area benefits all properties in the charge area. As a result, a portion of the costs need to be allocated to the existing developed properties. To calculate the share of the costs that are a benefit to existing development, the developed property areas of the overall Marriott Drive Charge Area have been included in the calculations (noted as the hatched area in the 'Marriott Drive Built out and Development Lands' map). The share of the costs attributable to these areas are to be funded by the City from non-DC sources (e.g. existing reserves).

4.5.2 Reduction for Anticipated Grants, Subsidies and Other Contributions

No grants are anticipated to be received for these projects. Additionally, all works deemed a local service under the Principles Framework have been excluded from the calculations. As a result, no deduction is required.

4.5.3 Reduction for Post-period Benefit

As the cost of the works is spread amongst the landowners in the DC area, the forecast period of development is not applicable in this case. Therefore, no deduction for future development lands is required.



4.6 Development Areas

The developable lands total approximately 113 acres; The existing built-out lands have a total area of approximately 85 acres and includes a mix of residential and non-residential development in addition to existing roads within the development area. The total benefiting area is 218 acres.

In general, for areas that have more density, a larger share of the costs in the charge area will apply. Each property in the charge area has been broken down into the zoning components that comprise the total land area. 'Table 4-4: Total Area by Zoning' provides for this breakdown and 'Figure 4-4: Marriott Drive – Area Development Charge (ADC)' provides the zoning map of the area.

To apply a weighting to each of the zoning categories, consideration was given to the development density as well as the number of trips anticipated to be generated by each land-use. Generally, residential density targets for each zoning type are provided on a "unit per acre" basis and non-residential targets are provided on a "1,000 sq.ft. per acre basis". Density assumptions have been estimated by City staff. For existing built-up areas, density is based on actual units per acre or sq.ft. per acre. These densities are then multiplied by the trip generation rates provided in the latest version of the Institute of Engineers Trip Generation Manual. The result is the weighting factor for each of the zoning types. These calculations are provided in 'Table 4-5: Land Area Weighting for Area DC Calculations.'

The zoning category weighting is then multiplied by each of the land areas in 'Table 4-4: Total Area by Zoning' to calculate the weighted land area to be used for the ADC calculations. These final calculations are provided in 'Table 4-6: Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting.'



Figure 4-4
Marriott Drive – Area Development Charge (ADC)

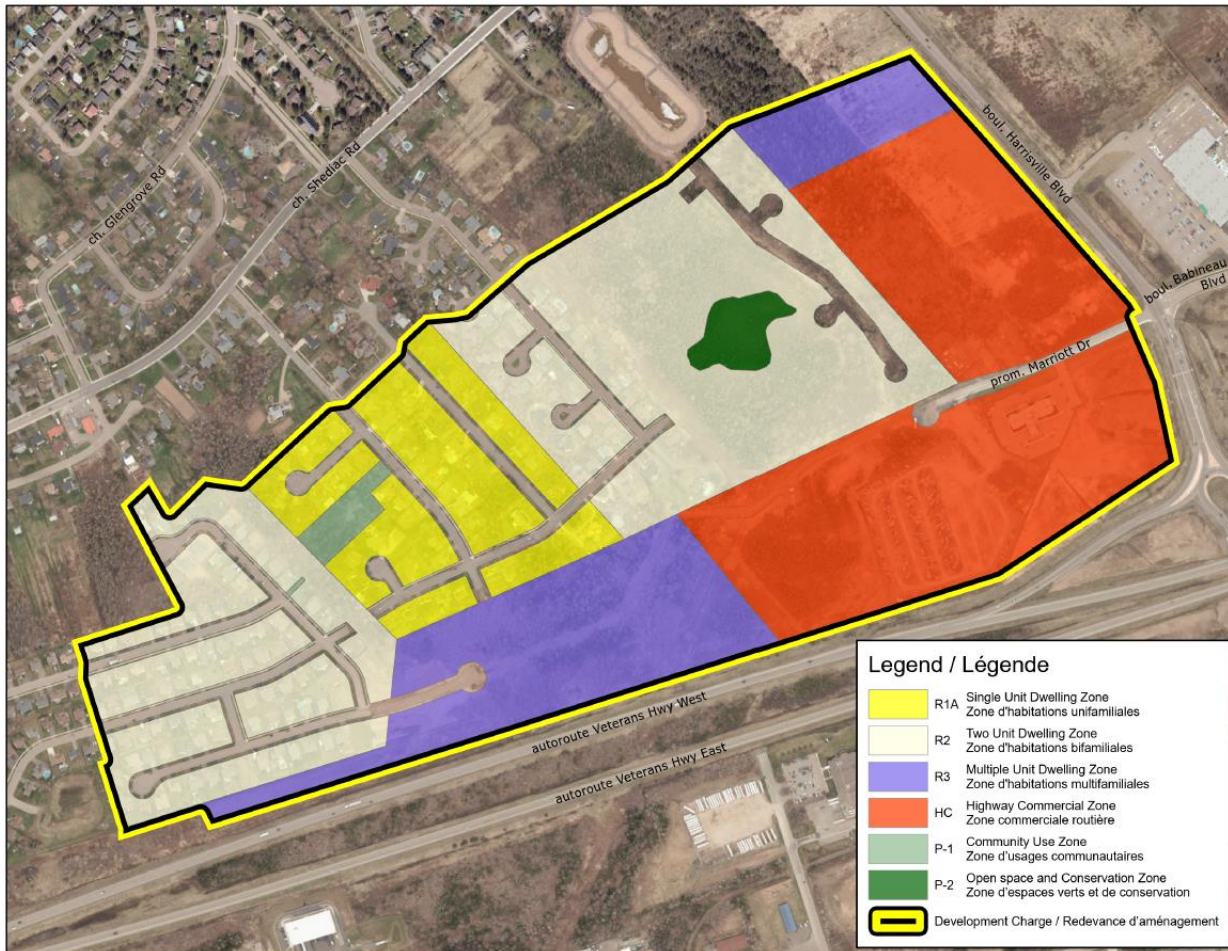




Table 4-4
Total Area by Zoning

Area by Zoning	Total Area (Acres)
Single Unit Dwelling (R1A)	1.09
Two Unit Dwelling (R2)	29.52
Multiple Unit Dwelling (R3)	27.66
Highway Commercial (HC)	52.06
Open Space and Conservation (P2)	2.27
Built-up Areas - Single Unit Dwelling (R1A)	18.40
Built-up Areas - Two Unit Dwelling (R2)	34.62
Built-up Areas - Multiple Unit Dwelling (R3)	1.90
Built-up Areas - Highway Commercial (HC)	4.51
Built-up Areas - Community Use (P1)	1.66
Built-up Areas - Roads	23.68
Total	197.37

Note: Zoning categories are based on the City of Moncton's Zoning By-law.



Table 4-5
Land Area Weighting for Area DC Calculations

Property Zoning	Basis for Density Assumption ¹	Density Assumption ¹	Basis for Trip Generation Rates ²	Trip Generation Rates ²	Weighting Factor for ADC
Single Unit Dwelling (R1A)	units per acre	6.00	trips per unit	0.52	3.11
Two Unit Dwelling (R2)	units per acre	10.00	trips per unit	0.52	5.18
Multiple Unit Dwelling (R3)	units per acre	40.00	trips per unit	0.29	11.78
Highway Commercial (HC)	1,000 sq.ft. per acre	8.56	trips per 1,000 sq.ft	0.66	5.63
Open Space and Conservation (P-2)	n/a	-	n/a	-	-
Built-up Areas - Single Unit Dwelling (R1A)	units per acre	3.21	trips per unit	0.52	1.66
Built-up Areas - Two Unit Dwelling (R2)	units per acre	4.02	trips per unit	0.52	2.08
Built-up Areas - Multiple Unit Dwelling (R3)	units per acre	11.57	trips per unit	0.29	3.41
Built-up Areas - Highway Commercial (HC)	1,000 sq.ft. per acre	2.80	trips per 1,000 sq.ft	0.66	1.84
Built-up Areas - Community Use (P1)	n/a	-	n/a	-	-
Built-up Areas - Roads	n/a	-	n/a	-	-

1: Densities of development areas based on best estimates. Density of built-up areas based on actual units per acre/square footage per acre.

2: Based on Institute of Transportation Engineers, Trip Generation, 11th Edition



Table 4-6
Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting

Zoning	Total Area (Acres)	Weighting Factor for ADC	Weighted Area
Single Unit Dwelling (R1A)	1.09	3.11	3.40
Two Unit Dwelling (R2)	29.52	5.18	152.92
Multiple Unit Dwelling (R3)	27.66	11.78	325.75
Highway Commercial (HC)	52.06	5.63	292.94
Open Space and Conservation (P2)	2.27	-	-
Built-up Areas - Single Unit Dwelling (R1A)	18.40	1.66	30.56
Built-up Areas - Two Unit Dwelling (R2)	34.62	2.08	72.00
Built-up Areas - Multiple Unit Dwelling (R3)	1.90	3.41	6.48
Built-up Areas - Highway Commercial (HC)	4.51	1.84	8.29
Built-up Areas - Community Use (P1)	1.66	-	-
Built-up Areas - Roads	23.68	-	-
Total	197.37		892.34



4.7 Development Charge Calculation

As noted above, the DCs are to be calculated as an ADC as per the Principles Framework. The total estimated project cost of \$2.35 million is shared among all properties in the charge area. This results in a net ADC per weighted area of \$2,634. This is then multiplied by the total weighted area for each zoning category to calculate the ADC for each category.

Table 4-7
DC Calculations for Marriott Drive

Project	Gross Capital Cost Estimate (2023\$)
Transmission Line Trail	320,000
Roundabout - Warner Street and Marriott Drive	1,100,000
Marriott Drive	930,000
Total	\$2,350,000

	Local Developing Landowner	LCSDC	ADC
Development Charge Allocation	0%	0%	100%
Total LCSDC and ADC	-	-	2,350,000

ADC Calculation	
ADC Recoverable Costs	\$2,350,000
Total Weighted Area	892.34
Net ADC per Weighted Area	\$2,633.53

Property	Weighted Area	ADC \$	ADC per Actual Acre \$
Single Unit Dwelling (R1A)	3.40	\$8,947	\$8,185
Two Unit Dwelling (R2)	152.92	\$402,714	\$13,642
Multiple Unit Dwelling (R3)	325.75	\$857,877	\$31,018
Highway Commercial (HC)	292.94	\$771,458	\$14,820
Open Space and Conservation (P2)	-	\$0	\$0
Built-up Areas - Single Unit Dwelling (R1A)	30.56	\$80,486	\$4,373*
Built-up Areas - Two Unit Dwelling (R2)	72.00	\$189,619	\$5,477*
Built-up Areas - Multiple Unit Dwelling (R3)	6.48	\$17,060	\$8,972*
Built-up Areas - Highway Commercial (HC)	8.29	\$21,840	\$4,847*
Built-up Areas - Community Use (P1)	-	\$0	\$0
Built-up Areas - Roads	-	\$0	\$0
Total	892.34	\$2,350,000	

*Built-up Areas share to be funded by Moncton



It is noted that the costs attributable to the existing developed residential and non-residential property areas is \$287,000 and \$22,000, respectively. As a result, the City of Moncton would contribute this amount for the Marriott Drive ADC capital costs.

4.8 Sample Charge Calculations

The following 'Table 4-8: Sample Development Charge Calculations' provides examples of various developments and the applicable development charges.

For example number one, we have the following information:

Type: Single Detached Dwelling
Zoning: R1A
Area (acres): 0.229
Weighting: 3.108
Weighted Acres (Area x Weighting): 0.710
ADC per Weighted Acre: \$2,634

To calculate the applicable ADC payable, the following steps are undertaken:

1. Identify the appropriate area weighting factor based on the zoning (as presented in 'Table 5-5: Land Area Weighting for Area DC Calculations').

Weighting factor for R1A zoning = 3.108

2. Multiply the lot area in acres, by the weighting factor to get the weighted acres.

0.229 acres x 3.108 = 0.710 weighted acres


3. Multiply the weighted acres by the ADC per weighted acre to get the ADC applicable to the property.

0.710 weighted acres x \$2,634 = \$1,871

As there is only one unit, the charge per unit is also \$1,871. For examples 2, 3, and 4, the ADC per property may be divided by the number of units to calculate the ADC on a per unit basis. Similarly for non-residential development, the charges may be calculated to show them on a per sq.ft. of development basis.



Table 4-8
Sample Development Charge Calculations

Example #	Example Development Picture	Details	Applicable DC Charge
1		<p>Type: Single Detached Dwelling Zoning: R1A Area (acres): 0.229 Weighting: 3.108 Weighted Acres (Area x Weighting): 0.710 ADC per Weighted Acre: \$2,634</p>	<p>Charge per Development Area: \$1,871 Per unit charge: \$1,871</p>
2		<p>Type: Townhouse Dwelling (3 units) Zoning: R3 Area (acres): 0.282 Weighting: 11.778 Weighted Area (Area x Weighting): 3.318 ADC per Weighted Acre: \$2,634</p>	<p>Charge per Development Area: \$8,738 Per unit charge: \$2,913</p>



Example #	Example Development Picture	Details	Applicable DC Charge
3		<p>Type: Townhouse Dwelling (4 units) Zoning: R3 Area (acres): 0.284 Weighting: 11.778 Weighted Area (Area x Weighting): 3.350 ADC per Weighted Acre: \$2,634</p>	<p>Charge per Development Area: \$8,822 Per unit charge: \$2,206</p>
4		<p>Type: 46 Unit Apartment Zoning: R3 Area (acres): 1.740 Weighting: 11.778 Weighted Area (Area x Weighting): 20.489 ADC per Weighted Acre: \$2,634</p>	<p>Charge per Development Area: \$53,959 Per unit charge: \$1,173</p>
5		<p>Type: Suburban Commercial Zoning: SC Area (acres): 0.577 Weighting: 5.627 Weighted Area (Area x Weighting): 3.245 ADC per Weighted Acre: \$2,634</p>	<p>Charge per Development Area: \$8,545 Per sq.ft. charge: \$1.13</p>



Chapter 5

Development Charge Calculations – Moncton Industrial Development Trunk Sewer Upgrade



5. Development Charge Calculations – Moncton Industrial Development (MID) Trunk Sewer Upgrade Area

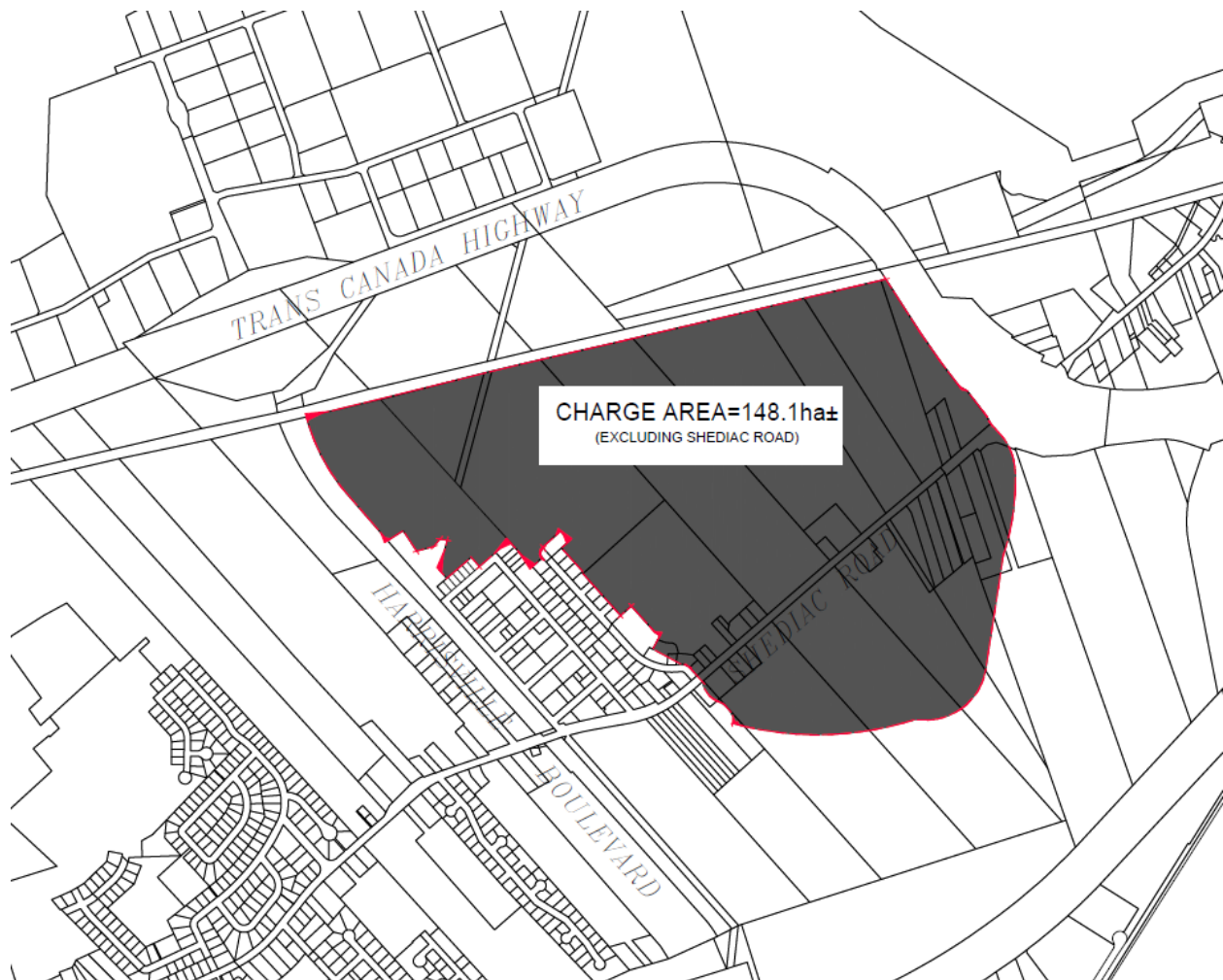
5.1 Development Area

In order to facilitate development in the project area, the City has identified the need for an upgrade to an existing trunk sewer along Shediac Road. The study area is mainly within the MID lands south of Shediac Road, north of Veterans Highway, east of Harrisville Boulevard, and west of the TransCanada Highway. In addition, this trunk sewer upgrade will benefit development lands north of Shediac Road and southwest of the TransCanada Highway.

The Shediac Road area currently has a subdivision charge in place (since 2008) for the installation of the original trunk sewer (see Figure 5-1: Shediac Road Subdivision Charge Area'). The remaining capacity in this trunk sewer is reserved for the remaining developable lands within this existing subdivision charge area. The upzoning of the MID lands to develop the new industrial park triggered the need for the trunk sewer upgrade to accommodate the additional projected flows from the park development. This upgrade, however, will bring additional wastewater capacity and the ability to accommodate additional benefitting lands outside of the original subdivision charge area (i.e. lands east of the Metepenagiag First Nation, Urban Reserve #3).



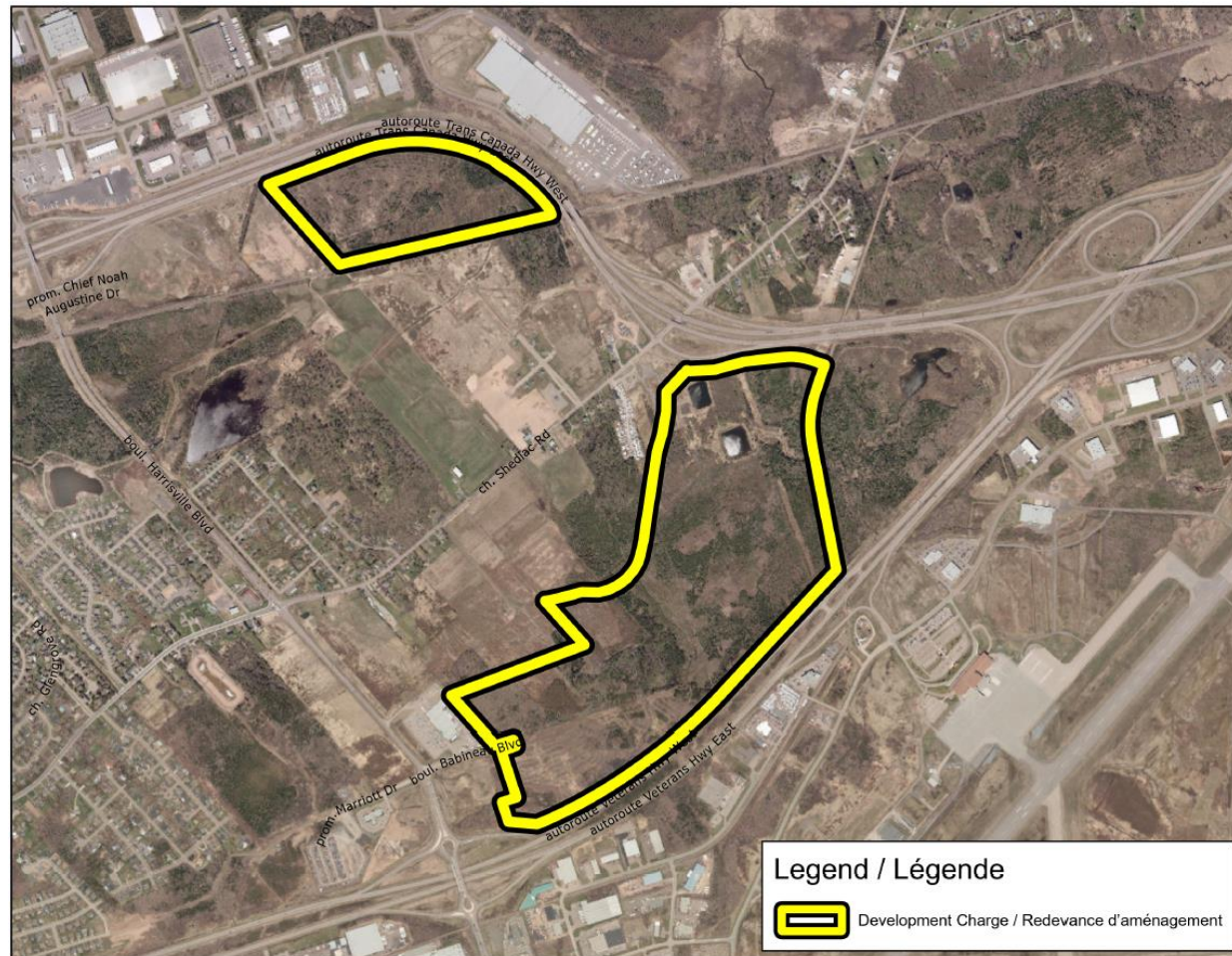
Figure 5-1
Shediac Road Subdivision Charge Area



Given that only the costs related to the upsizing of the existing trunk sewer to accommodate flows for new development have been identified, the benefit of these works can be solely attributed to undeveloped lands. As such, there are no existing built-out lands that benefit from the upsizing of the trunk sewer (see 'Figure 5-2: MID Trunk Sewer Upgrade Charge Area').



Figure 5-2
MID Trunk Sewer Upgrade Charge Area





5.2 Infrastructure

As noted, the City has identified an upgrade to an existing trunk sewer that would be required for the development of the planning area. This work will accommodate the increase in sanitary flows as a result of new development both north and south of Shediac Road. This work is estimated to cost \$3.2 million (in 2023 dollars) as presented in 'Table 5-1: Required Infrastructure – MID Trunk Sewer Upgrade DC Area.' This work is also identified in 'Figure 5-3: MID Trunk Sewer Upgrade – Sanitary Sewer Trunk Infrastructure.'

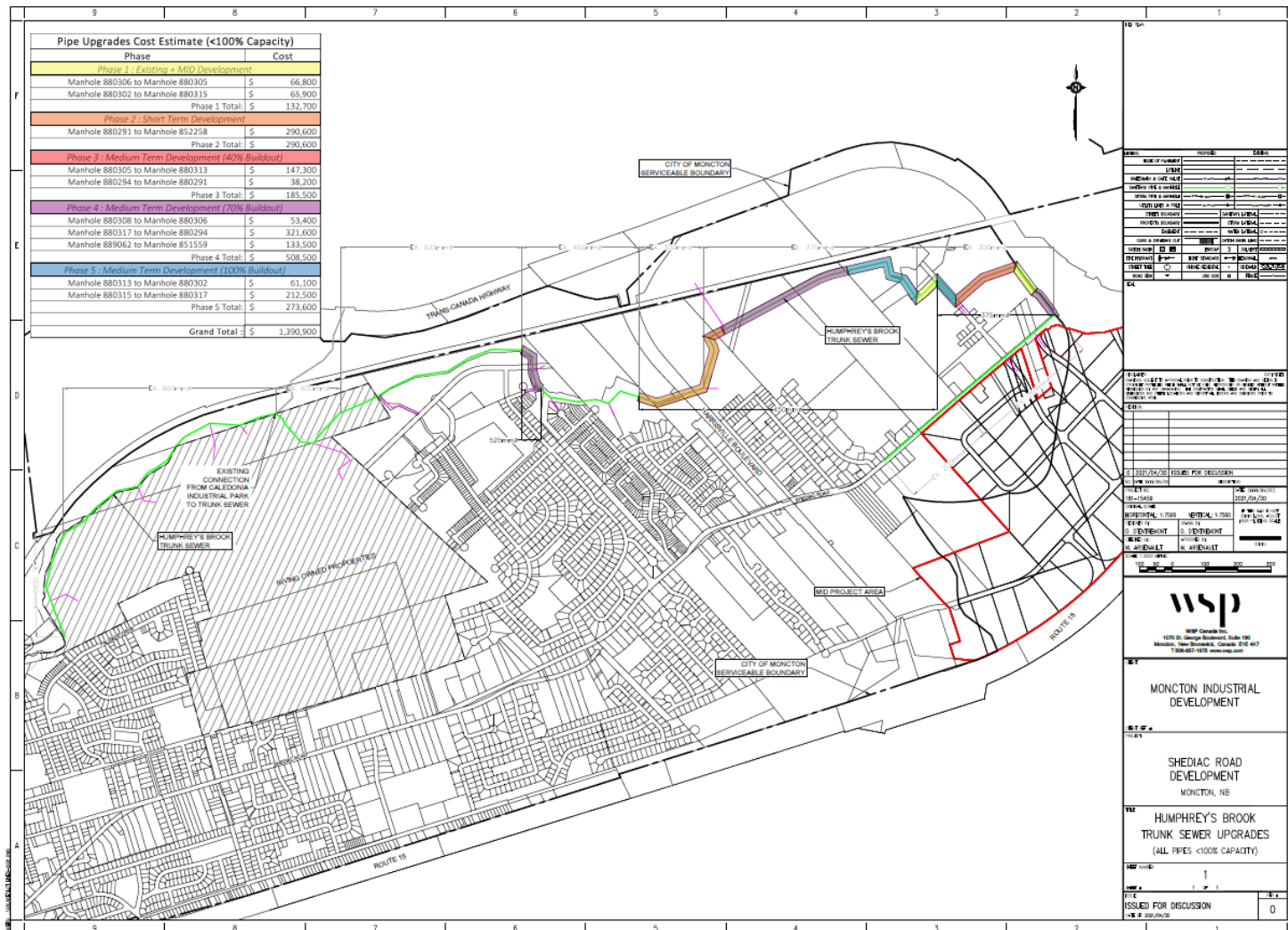
Table 5-1
Required Infrastructure – MID Trunk Sewer Upgrade DC Area

Infrastructure Project	Description	Cost (Including HST) 2023\$
Upgrade to existing trunk sewer	Upsizing of existing trunk sewer along Shediac Road	3,200,000
Total		3,200,000

Source: City of Moncton



Figure 5-3
MID Trunk Sewer Upgrade – Sanitary Sewer Trunk Infrastructure





5.3 Basis for Recovery

Based on the Principles Framework, the following table summarizes the basis for recovery for the infrastructure identified for inclusion in this charge area.

Table 5-2
Required Infrastructure – Basis for Recovery

Infrastructure Project	Description	Basis for Recovery
Upgrade to existing trunk sewer	Upsizing of existing trunk sewer along Shediac Road	ADC

5.4 Capital Costs

As mentioned, an upsizing of an existing trunk sewer along Shediac Road is required to allow for development within the planning area. This infrastructure is anticipated to cost \$3.2 million and will be recovered from benefiting landowners through an ADC.

'Table 5-3: Capital Infrastructure Required to Service Growth' provides a summary of the infrastructure costs and the method for DC recovery.

Table 5-3
Capital Infrastructure Required to Service Growth

Project	Service	Method for DC Recovery	Gross Capital Cost Estimate (2023\$)
Upgrade to existing trunk sewer	Wastewater	Area DC	3,200,000
Total ADC			3,200,000

5.5 Deductions

As discussed in section 2.2.1 a number of deductions from the increased need for service are required. These deductions are discussed in more detail below.



5.5.1 Reduction for Benefit to Existing Development

The costs associated with the new infrastructure identified to service the charge area are related to the development lands in the charge area. As a result, no deduction for benefit to existing development is required.

5.5.2 Reduction for Anticipated Grants, Subsidies and Other Contributions

No grants are anticipated to be received for these projects. Additionally, all works deemed a local service under the Principles Framework have been excluded from the calculations. As a result, no deduction is required.

5.5.3 Reduction for Post-period Benefit

As the cost of the works is spread amongst the landowners in the DC area, the forecast period of development is not applicable in this case. Therefore, no deduction for future development lands is required.

5.6 Development Charge Calculation

As noted above, the DCs are to be calculated as an ADC as per the Principles Framework. The total estimated project cost of \$3.2 million is allocated to the different areas based on the proportionate share of future sanitary flows. The development within the MID East Lands will account for approximately 84% of future flows, whereas Lands East of the Urban Reserve (i.e. north of Shediak Road) would account for 16% of future flows. The total ADC attributed to each area is based on these proportionate shares, resulting in an ADC payable for the MID East Lands as \$2.68 million and Lands East of the Urban Reserve as \$522,000. With respect to the lands east of the Urban Reserve, the ADC has been allocated to the various PIDs based on the area of each property. This is outlined in 'Table 5-5: Cost per PID for Lands East of the Urban Reserve'.



Table 5-4
DC Calculations for MID Trunk Sewer Upgrade

Project	Gross Capital Cost Estimate (2023\$)
Upgrade to existing trunk sewer	3,200,000

	Local Developing Landowner	LCSDC	ADC
Development Charge Allocation	0%	0%	100%
Total LCSDC and ADC	-	-	3,200,000

Property	Proportionate Share of Flows	ADC \$
MID East Lands	83.7%	\$2,678,400
Lands East of Urban Reserve	16.3%	\$521,600
Total		\$3,200,000

Table 5-5
Cost per PID for Lands East of the Urban Reserve

PID	Zoning	Area (sq.m)	Area (acres)	ADC per Acre	Total ADC Payable
1002369	HC	129,515.22	32.00	\$9,019.36	\$288,654
930156	HC	33,939.54	8.39	\$9,019.36	\$75,642
70237706	HC	26,205.39	6.48	\$9,019.36	\$58,405
70317508	HC	22,180.52	5.48	\$9,019.36	\$49,434
70237722	HC	22,194.03	5.48	\$9,019.36	\$49,464
Total		234,034.70	57.83		



Chapter 6

Development Charge Calculations – Shediac Road



6. Development Charge Calculations – Shediac Road

6.1 Development Area

In order to facilitate development in the project area, the City has identified the need to upgrade Shediac Road. The study area is North of Veterans Highway, south and west of the TransCanada Highway, and east of Harrisville Boulevard. (see 'Figure 6-1: Shediac Road Development Charge Area').

The lands consist of a mix of existing residential and non-residential built-up areas, in addition to development areas. The delineation of the development lands and existing built-out lands that comprise the Shediac Road Development Charge area are outlined in 'Figure 6-2: Shediac Road Built out and Development Lands'. Note that the development lands are approximately 627 acres of the total area, whereas the existing built-out lands are approximately 107 acres (including the existing roads in the area). The total benefitting area is 734 acres.

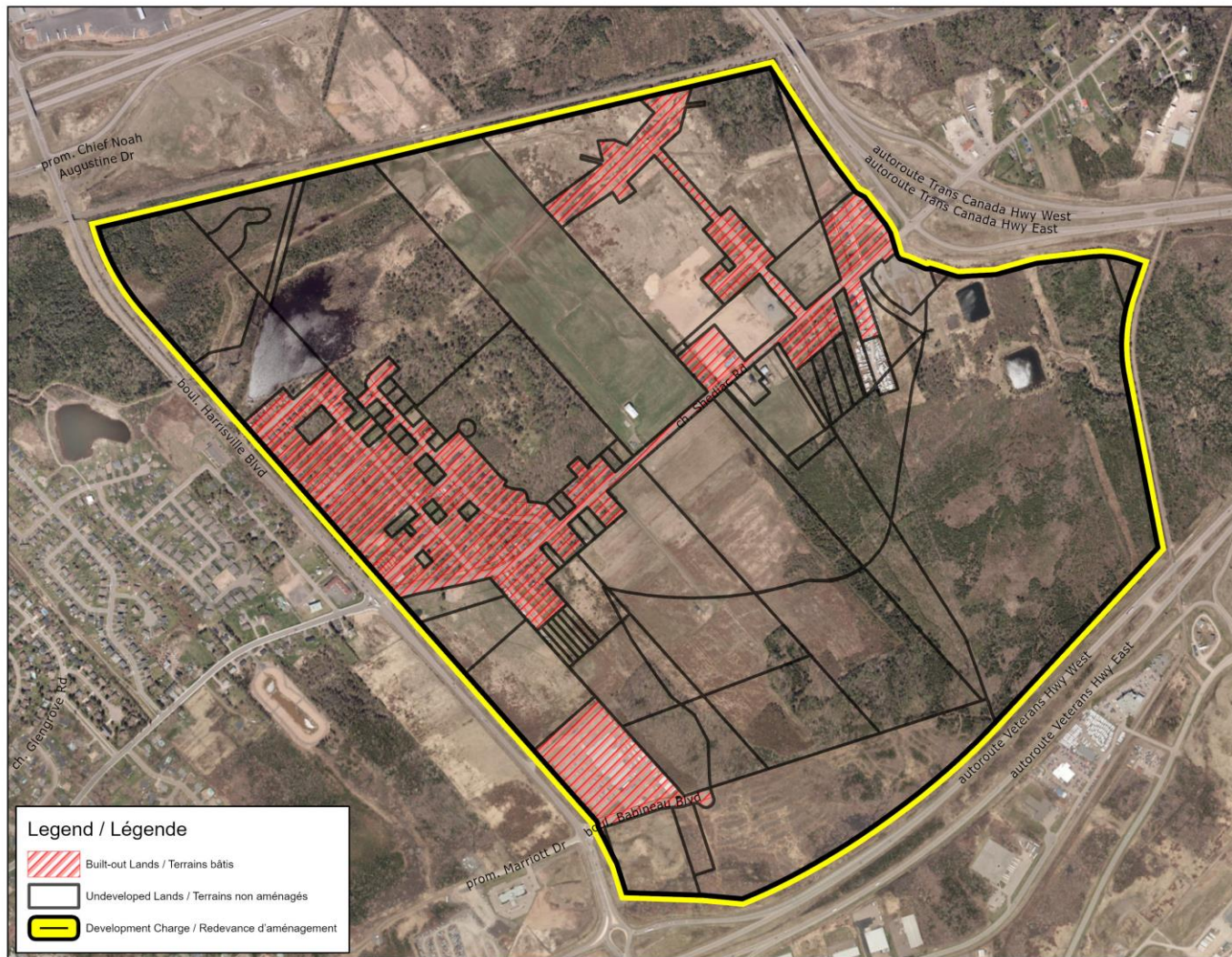


Figure 6-1
Shediac Road Development Charge Area





Figure 6-2
Shediac Road Built out and Development Lands





6.2 Infrastructure

As noted above, the City has identified the need for upgrades to Shediac Road which is currently constructed to a rural two-lane cross section. In order to accommodate development in the area, Shediac Road needs to be upgraded to a three-lane cross section. Two signalized intersections will also be required between TransCanada Highway and Harrisville Boulevard. The work includes a multi-use path on the north side of the road and a sidewalk on the south side. Stormwater management works related to the runoff from the road have been included in the cost estimate. This work is estimated to cost \$9.5 million (in 2023 dollars) as presented in 'Table 6-1: Required Infrastructure – Shediac Road DC Area.' This work is also identified in 'Figure 6-3: Shediac Road – Road Infrastructure.'

Table 6-1
Required Infrastructure – Shediac Road DC Area

Infrastructure Project	Description	Cost (Including HST) 2023\$
Shediac Road	Upgrade to 3-lane urban cross section. 2 signalized intersections. Multi-use path and sidewalk. Stormwater management for road included in cost.	9,500,000

Source: City of Moncton



Figure 6-3
Shediac Road – Road Infrastructure





6.3 Basis for Recovery

Based on the Principles Framework in Section 2.1 of this document, the infrastructure identified for inclusion in this charge area is proposed to be recovered through an ADC, given that these are improvements to an arterial road.

Table 6-2
Required Infrastructure – Basis for Recovery

Infrastructure Project	Description	Basis for Recovery
Shediac Road	Upgrade to 3-lane urban cross section. 2 signalized intersections. Multi-use path and sidewalk. Stormwater management for road included in cost.	ADC

6.4 Capital Costs

To allow for the development of the area, the City has identified the capital costs necessary to provide the increased services. These capital costs relate to transportation (roads) only. Subsection 3.4 of the Principles Framework provides the eligible capital costs that may be included for each service and subsection 2.3 of this document outlines the Principles Framework hierarchy.

As previously noted, various upgrades are required to Shediac Road. This infrastructure is anticipated to cost \$9.5 million and will be recovered from benefiting landowners through an ADC. 'Table 6-3: Capital Infrastructure Required to Service Growth' provides a summary of the infrastructure costs and the method for DC recovery.

Table 6-3
Capital Infrastructure Required to Service Growth

Project	Service	Method for DC Recovery	Gross Capital Cost Estimate (2023\$)
Shediac Road	Transportation	Area DC	9,500,000



6.5 Deductions

As discussed in section 2.2.1 a number of deductions from the increased need for service are required. In addition, a deduction related to the regional benefit from infrastructure development for arterial roads has also been identified.

These deductions are discussed in more detail below.

6.5.1 Reduction for Benefit to Existing Development

The new infrastructure identified to service the charge area benefits all properties in the charge area. As a result, a portion of the costs need to be allocated to the existing developed properties. To calculate the share of the costs that are a benefit to existing development, the developed property areas of the overall Shediac Road Charge Area have been included in the calculations (noted as the hatched area in the 'Shediac Road Built out and Development Lands' map). The share of the costs attributable to these areas are to be funded by the City from non-DC sources (e.g. existing reserves).

6.5.2 Reduction for Anticipated Grants, Subsidies and Other Contributions

No grants are anticipated to be received for these projects. Additionally, all works deemed a local service under the Principles Framework have been excluded from the calculations. As a result, no deduction is required.

6.5.3 Reduction for Post-period Benefit

As the cost of the works is spread amongst the landowners in the DC area, the forecast period of development is not applicable in this case. Therefore, no deduction for future development lands is required.

6.5.4 Broader Area Benefit of Infrastructure Development – Arterial Roads

This deduction relates to the portion of the capital costs that would benefit the broader region, outside of the defined DC area for the expansion/creation of arterial roads. Given that arterial roads provide a level of service to areas beyond the defined DC area, a proportionate share of costs of identified improvements can be allocated at a broader



area level. This results in a reduction of the capital costs allocated to the benefitting and existing lands identified within the defined charge area.

Although this benefit to the broader area is considered partially growth-related, these types of Broader Area DCs are not currently in place. It is noted that Moncton does have the legislative authority to impose Broader Area DCs (e.g. City-wide) and could recover costs from the broader area in the future, based on Council direction.

Traffic counts and estimates can be prepared by City/Council to determine the proportionate share for the broader area for the anticipated use of an arterial road. The proportionate share calculated would be attributed to the City as the broader area benefit cost (or potential Broader Area Development Charge). The DC calculations will then include the proportionate share of the capital costs for each of the following areas:

- Development lands within the charge area (funded by developing landowners through the ADC);
- Existing development within the charge area (funded by the City); and
- Broader area benefiting from the arterial road infrastructure (funded by the City or a potential Broader Area Development Charge).

6.6 Development Areas

The developable lands total approximately 626 acres; The existing built-out lands have a total area of approximately 107 acres and includes a mix of residential and non-residential development in addition to existing roads within the area.

In general, for areas that have more density, a larger share of the costs in the charge area will apply. Each property in the charge area has been broken down into the zoning components that comprise the total land area. 'Table 6-4: Total Area by Zoning' provides for this breakdown and 'Figure 6-4: Shediac Road – Area Development Charge (ADC)' provides the zoning map of the area.

To apply a weighting to each of the zoning categories, consideration was given to the development density as well as the number of trips anticipated to be generated by each land-use. Generally, residential density targets for each zoning type are provided on a "unit per acre" basis and non-residential targets are provided on a "1,000 sq.ft. per acre basis". Density assumptions have been estimated by City staff. For existing built-up



areas, density is based on actual units per acre or sq.ft. per acre. These densities are then multiplied by the trip generation rates provided in the latest version of the Institute of Engineers Trip Generation Manual. The result is the weighting factor for each of the zoning types. These calculations are provided in 'Table 6-5: Land Area Weighting for Area DC Calculations.'

The zoning category weighting is then multiplied by each of the land areas in 'Table 6-4: Total Area by Zoning' to calculate the weighted land area to be used for the ADC calculations. These final calculations are provided in 'Table 6-7: Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting.'



Figure 6-4
Shediac Road – Area Development Charge (ADC)

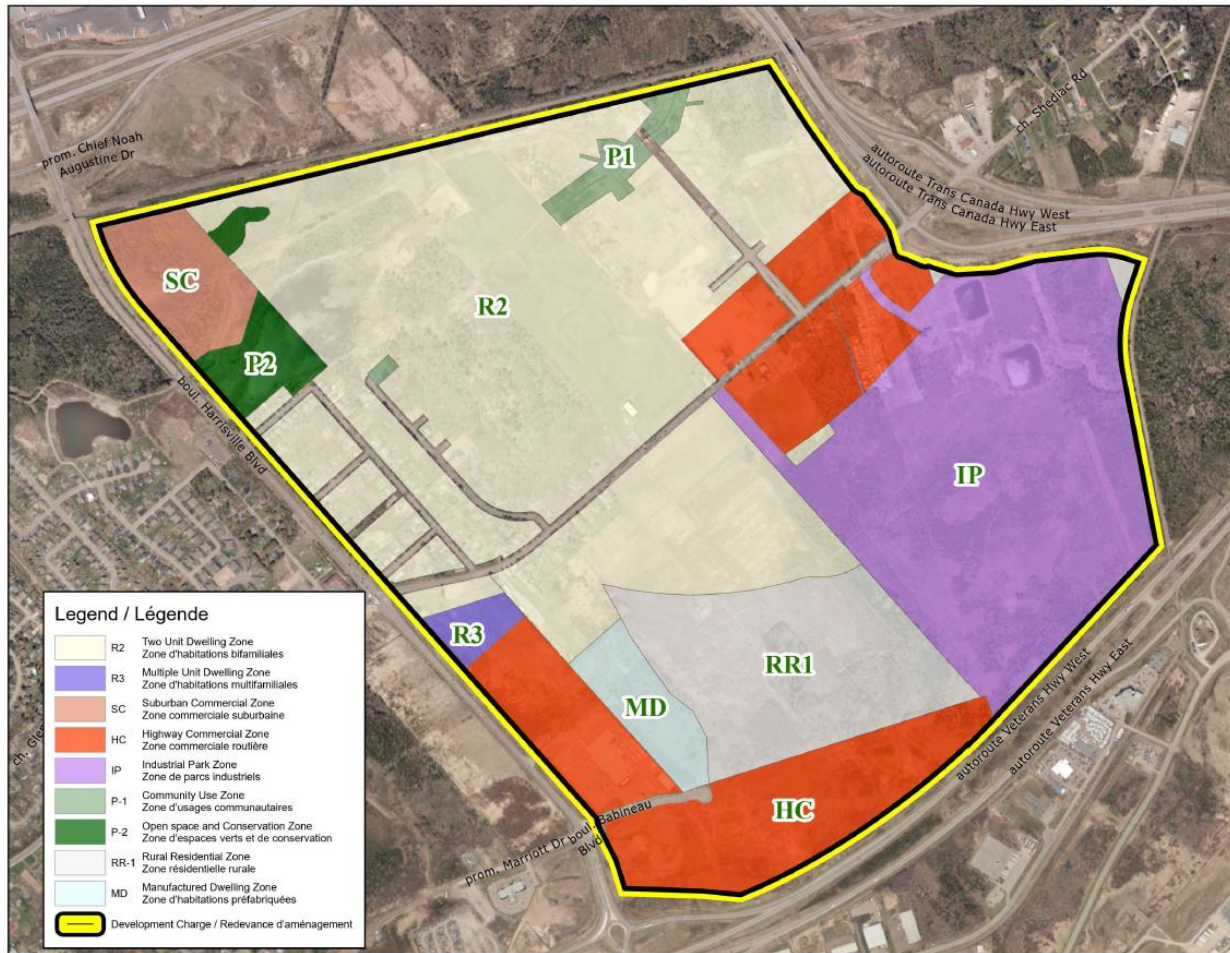




Table 6-4
Total Area by Zoning

Area by Zoning	Total Area (Acres)
Two Unit Dwelling (R2)	262.02
Multiple Unit Dwelling (R3)	6.29
Rural Residential (RR1)	64.72
Suburban Commercial (SC)	22.28
Highway Commercial (HC)	93.87
Industrial Park Zone (IP)	150.03
Open Space and Conservation (P-2)	13.66
Manufactured Dwelling Zone (MD)	13.95
Built-up Areas - Two Unit Dwelling (R2)	44.74
Built-up Areas - Highway Commercial (HC)	25.36
Built-up Areas - Community Use (P1)	9.27
Built-up Areas - Roads	28.18
Total	734.37

Note: Zoning categories are based on the City of Moncton's Zoning By-law.



Table 6-5
Land Area Weighting for Area DC Calculations

Property Zoning	Basis for Density Assumption ¹	Density Assumption ¹	Basis for Trip Generation Rates ²	Trip Generation Rates ²	Weighting Factor for ADC
Two Unit Dwelling (R2)	units per acre	10.00	trips per unit	0.52	5.18
Multiple Unit Dwelling (R3)	units per acre	40.00	trips per unit	0.29	11.78
Rural Residential (RR1)	units per acre	1.00	trips per unit	0.52	0.52
Suburban Commercial (SC)	1,000 sq.ft. per acre	8.56	trips per 1,000 sq.ft	0.66	5.63
Highway Commercial (HC)	1,000 sq.ft. per acre	8.56	trips per 1,000 sq.ft	0.66	5.63
Industrial Park Zone (IP)	1,000 sq.ft. per acre	24.71	trips per 1,000 sq.ft	0.06	1.60
Open Space and Conservation (P-2)	n/a	-	n/a	-	-
Manufactured Dwelling Zone (MD)	units per acre	12.00	trips per unit	0.31	3.70
Built-up Areas - Two Unit Dwelling (R2)	units per acre	2.56	trips per unit	0.52	1.33
Built-up Areas - Highway Commercial (HC)	1,000 sq.ft. per acre	3.57	trips per 1,000 sq.ft	0.66	2.35
Built-up Areas - Community Use (P1)	n/a	-	n/a	-	-
Built-up Areas - Open Space and Conservation (P2)	n/a		n/a	-	-
Built-up Areas - Roads	n/a	-	n/a	-	-

1: Densities of development areas based on best estimates. Density of built-up areas based on actual units per acre/square footage per acre.

2: Based on Institute of Transportation Engineers, Trip Generation, 11th Edition



Table 6-6
Total Weighted Area by Zoning, Adjusted for Trip Generation Weighting

Zoning	Total Area (Acres)	Weighting Factor for ADC	Weighted Area
Two Unit Dwelling (R2)	262.02	5.18	1,357.27
Multiple Unit Dwelling (R3)	6.29	11.78	74.14
General Residential (RR1)	64.72	0.52	33.53
Suburban Commercial (SC)	22.28	5.63	125.40
Highway Commercial (HC)	93.87	5.63	528.25
Industrial Park Zone (IP)	150.03	1.60	239.49
Open Space and Conservation (P-2)	13.66	-	-
Manufactured Dwelling Zone (MD)	13.95	3.70	51.56
Uplift Areas - Two Unit Dwelling (R2)	44.74	1.34	60.09
Uplift Areas - Highway Commercial (HC)	25.36	2.35	59.49
Uplift Areas - Community Use (P1)	9.27	-	-
Uplift Areas - Roads	28.18	-	-
Total	734.37		2,529.22



6.7 Development Charge Calculation

As noted above, the DCs are to be calculated as an ADC as per the Principles Framework. The total estimated project cost of \$9.5 million is shared among all properties in the charge area, in addition to the broader benefitting region. A deduction of \$2.4 million has been made to account for the region-wide benefit of the arterial road improvement. This is to be funded by the City or a potential Broader Area Development Charge. This results in a net ADC per weighted area of \$2,820. This is then multiplied by the total weighted area for each zoning category to calculate the ADC for each category.

Table 6-7
DC Calculations for Shediac Road

Project	Gross Capital Cost Estimate (2023\$)	Region Wide Benefit Deduction (2023\$)	Net Growth-Related Cost (2023\$)
Shediac Road	9,500,000	2,375,000	7,125,000

	Local Developing Landowner	LCSDC	ADC
Development Charge Allocation	0%	0%	100%
Total LCSDC and ADC	-	-	7,125,000

ADC Calculation	
ADC Recoverable Costs	\$7,125,000
Total Weighted Area	2,529.22
Net ADC per Weighted Area	\$2,817.08

Property	Weighted Area	Total ADC by Area \$	ADC per Actual Acre \$
Two Unit Dwelling (R2)	1,357.27	\$3,823,523	\$14,592
Multiple Unit Dwelling (R3)	74.14	\$208,861	\$33,180
Rural Residential (RR1)	33.53	\$94,443	\$1,459
Suburban Commercial (SC)	125.40	\$353,256	\$15,853
Highway Commercial (HC)	528.25	\$1,488,126	\$15,853
Industrial Park Zone (IP)	239.49	\$674,675	\$4,497
Open Space and Conservation (P-2)	-	\$0	\$0
Manufactured Dwelling Zone (MD)	51.56	\$145,259	\$10,415
Built-up Areas - Two Unit Dwelling (R2)	60.09	\$169,273	\$3,784 *
Built-up Areas - Highway Commercial (HC)	59.49	\$167,584	\$6,609 *
Built-up Areas - Community Use (P1)	-	\$0	\$0
Built-up Areas - Roads	-	\$0	\$0
Total	2,529.22	\$7,125,000	

*Built-up Areas share to be funded by Moncton



It is noted that the costs attributable to the existing developed residential and non-residential properties within the DC area are \$169,000 and \$168,000, respectively. As a result, the City of Moncton would contribute this amount for the Shediac Road ADC capital costs, in addition to the \$2.4 million of costs related to the regional benefit of the infrastructure.

6.8 Sample Charge Calculations

The following 'Table 6-8: Sample Development Charge Calculations' provides examples of various developments and the applicable development charges.

For example number one, we have the following information:

Type: Three Unit Dwelling

Zoning: R3

Area (acres): 0.282

Weighting: 11.778

Weighted Acres (Area x Weighting): 3.318

ADC per Weighted Acre: \$2,817

To calculate the applicable ADC payable, the following steps are undertaken:

4. Identify the appropriate area weighting factor based on the zoning (as presented in 'Table 7-5: Land Area Weighting for Area DC Calculations').

$$\text{Weighting factor for R3 zoning} = 11.778$$

5. Multiply the lot area in acres, by the weighting factor to get the weighted acres.

$$0.282 \text{ acres} \times 11.778 = 3.318 \text{ weighted acres}$$

6. Multiply the weighted acres by the ADC per weighted acre to get the ADC applicable to the property.

$$3.318 \text{ weighted acres} \times \$2,820 = \$9,347$$




The ADC per property may be divided by the number of units to calculate the ADC on a per unit basis. Therefore, the charge per unit is \$3,116. Similarly for non-residential





development, the charges may be calculated to show them on a per sq.ft. of development basis.



Table 6-8
Sample Development Charge Calculations

Example #	Example Development Picture	Details	Applicable DC Charge
1		<p>Type: Townhouse Dwelling (3 units) Zoning: R3 Area (acres): 0.282 Weighting: 11.778 Weighted Area (Area x Weighting): 3.318 ADC per Weighted Acre: \$2,817</p>	<p>Charge per Development Area: \$9,347 Per unit charge: \$3,116</p>
2		<p>Type: Townhouse Dwelling (4 units) Zoning: R3 Area (acres): 0.284 Weighting: 11.778 Weighted Area (Area x Weighting): 3.350 ADC per Weighted Acre: \$2,817</p>	<p>Charge per Development Area: \$9,437 Per unit charge: \$2,359</p>
3		<p>Type: 46 Unit Apartment Zoning: R3 Area (acres): 1.740 Weighting: 11.778 Weighted Area (Area x Weighting): 20.489 ADC per Weighted Acre: \$2,817</p>	<p>Charge per Development Area: \$57,720 Per unit charge: \$1,255</p>



Example #	Example Development Picture	Details	Applicable DC Charge
4		<p> Type: Highway Commercial Zoning: HC Area (acres): 0.577 Weighting: 5.627 Weighted Area (Area x Weighting): 3.245 ADC per Weighted Acre: \$2,817 </p>	<p> Charge per Development Area: \$9,140 Per sq.ft. charge: \$1.21 </p>
		<p> Type: Industrial Park Zoning: IP Area (acres): 1.956 Weighting: 1.596 Weighted Area (Area x Weighting): 3.122 ADC per Weighted Acre: \$2,817 </p>	<p> Charge per Development Area: \$8,794 Per sq.ft. charge: \$0.64 </p>



Chapter 7

Development Charge Principles, Recommendations, and By-law Rules



7. Development Charge Principles, Recommendations, and By-law Rules

7.1 Introduction

Rules can be developed to determine if a DC is payable in any particular case and to determine the amount of the charge subject to any limitations. In general, the rules may provide for exemptions, phasing in, and/or indexing of charges. It is recommended that the application, indexing, and timing of collection of DCs be in accordance with subsection '3.3 Other Principles' of the Principles Framework.

7.2 Collection of Development Charges

7.2.1 Imposition and Timing of Development Charges

The Development Charge By-law sets out the conditions for the imposition and timing of collecting DCs.

Sections 5 and 6 of the By-law read:

Imposition of development charge

5(1) Development charges listed in Schedule "C" shall be imposed and collected from an applicant prior to the approval of a subdivision plan by the development officer or the issuance of a development permit under the Zoning By-law.

5(2) For the development of components of benefiting areas as set out in Schedule "B", Area Development Charges shall be calculated based on the Area Development Charge per weighted acre and imposed and collected from an applicant prior to the approval of a subdivision plan by the development officer or the issuance of a development permit under the Zoning By-law. 2021, Z-1519.1

Development charge agreement

6(1) Despite the imposition of the development charges herein, Council, by agreement, may give a credit towards a development charge in exchange for an



applicant constructing services identified for growth in the City's capital budget, at the applicant's expense.

6(2) Council may consider entering into a development charge agreement providing for delayed payment for up to 50% of the development charge.

For example, if no DCs were collected at subdivision stage, the remaining balance would be required to be paid at the building/development permit issuance stage. The delayed payment provision via agreement under subsection 6(2) may be used in instances where the landowner requests that the imposition of the DC be distributed equally (50-50) at subdivision and building/development permit stages. However, where such agreement is not in place, the City shall collect the DCs at the first subdivision stage. Note: development charge agreements for delayed payments will be considered for DC amounts in excess of \$500,000, subject to City staff and/or Council's discretion, as per subsection 3.3.3 of the Development Charge Principles Framework.

7.3 By-law Structure

In order to implement the Development Charge for the five development areas as per the recommendations in this Background Study, it is recommended that the Development Charge By-law # Z-1519 be amended to:

- I. Add the following sub-schedules under 'Schedule "A": Designated Municipal Services,' which shall designate the following recoverable services:
 4. Harrisville Boulevard
 - (1) Transportation: Harrisville Boulevard Upgrades
 5. Marriott Drive
 - (1) Transportation: Marriott Drive Upgrades
 - (2) Transportation: Roundabout – Warner Street and Marriott Drive
 - (3) Trails: Transmission Line Trail



6. MID Trunk Sewer Upgrade

(1) Wastewater: Upgrade to Existing Trunk Sewer

7. Shediac Road

(2) Transportation: Shediac Road Upgrades

II. Add the following sub-schedules under 'Schedule "B": Benefitting Areas':

'4 Map of Harrisville Boulevard Benefitting Area'

'5 Map of Marriott Drive Benefitting Area'

'6 Map of MID Trunk Sewer Upgrade Benefitting Area'

'7 Map of Shediac Road Benefitting Area'

III. Add the following sub-schedules under 'Schedule "C": Development Charges per Benefitting Area,' the charge types and rates of which are based on the recommendations outlined in this Background Study.

'4 Harrisville Boulevard Benefitting Area (2023 Rates)'

'5 Marriott Drive Benefitting Area (2023 Rates)'

'6 MID Trunk Sewer Upgrade Benefitting Area (2023 Rates)'

'7 Shediac Road Benefitting Area (2023 Rates)'