

**City of Ottawa
Area-specific Development
Charge Background Study
for Leitrim Stormwater
Facilities**

City of Ottawa

December 14, 2017

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List of Acronyms and Abbreviations

| | |
|--------|-----------------------------|
| D.C. | Development Charge |
| D.C.A. | Development Charges Act |
| M.O.E. | Ministry of the Environment |
| L.D.A. | Lietrim Drainage Area |
| m.m. | millimetre |
| O.P.A. | official plan amendment |
| s.m. | square metre |
| S.U.C. | South Urban Community |
| S.W.M. | Stormwater Management |

1. Introduction

This Background Study has been prepared pursuant to Section 10 of the Development Charges Act, 1997 (D.C.A.) and, together with the proposed by-law, is being made available to the public, as required by the D.C.A. at least two weeks prior to the public meeting of Council and at least 60 days prior to the passing of the development charge by-law.

This document encompasses the revised stormwater management requirements for the Leitrim drainage areas in the South Urban Community. The proposed by-law, which will be provided at least two weeks prior to the public meeting, will replace existing By-law No. 2014-231. That by-law was supported by Chapter 2 of the 2014 Background Study entitled “City of Ottawa Area-Specific Development Charge Background Study for Individual Ponds and Drainage Systems.”

Stormwater management (S.W.M.) has been addressed separately from the City’s overall D.C. Background Study, given its unique features, i.e. a wide range of development and area-specific S.W.M. requirements and solutions with widely-varying costs. Also, some developments outside of these areas provide fully for their own S.W.M. needs, pursuant to individual development agreements or use existing previously-funded capacity and are therefore exempt from these area-specific by-laws.

In addition to these two sets of circumstances, there are a number of stormwater drainage works which are City-wide or large-area in nature (e.g. Environmental compliance and master planning studies) which provide broad benefits to development in the City and are included separately in the City-wide Development Charge (D.C.) Background Study and by-law.

The calculation of stormwater management development charges in the City of Ottawa has been undertaken generally as follows:

- a) The system requirements have been described and costed, with timing estimated.
- b) These requirements have been clustered into defined D.C. recovery areas which are small enough to reflect related requirements, but large enough to make administration of the cost recovery system workable.
- c) The benefiting area comprising each recovery area has been measured with respect to the development potential in terms of the land area, number of

residential units by type and the floor area of non-residential development. The costs have been allocated between residential and non-residential development.

- d) The average storm run-off requirement of each residential use has been measured as a means of fairly apportioning the costs between one type of residential use and another.
- e) For residential development, run-off co-efficients for each land use type were selected based on published values within City of Ottawa Sewer Design Guidelines. Multiplying the unbuilt land area (in hectares) by the run-off co-efficient for each dwelling type, produced the share of total flow and cost attributable to that type of development, which when divided by the number of units to be built (“Actual Units”), produced the appropriate development charge by dwelling type. While the unit occupancy is often used as an alternative means of allocating costs by type of development, the above-referenced approach is more precise in the case of stormwater management works.
- f) In the case of non-residential development, the applicable cost share has been divided by the remaining gross floor area development potential, to yield an average cost per square foot of floor area.
- g) The annual rate of development by type has been estimated, in order to permit the cost recovery stream to be estimated, in instances where the recovery of financing costs is required. This cash flow D.C. calculation has not been made at this time, however, given the variability which exists in terms of the rate of development. As a result, with few exceptions, net financing costs have not been incorporated in the calculation of the charges.
- h) Reserve fund adjustments have been made as applicable. Positive balances have been subtracted from the amount to be recovered, whereas negative balances have been added.
- i) Reference is also made to the City’s proposed local service policy for S.W.M. which sets out the requirements of individual subdividers. This policy, which was included in Appendix D of the City of Ottawa’s 2014 Development Charge Background study, requires servicing by landowners beyond payment of the D.C. The policy dealing with Criteria for Arterial Road Stormwater Management Costs has been updated. The revised policy is included in Chapter 2 of this report.

2. Local Service Policy

The following text sets out the revised policy regarding “Criteria for Arterial Stormwater Management Costs.”

- i. As part of the construction or widening of an arterial road, stormwater management and off-site storm sewer costs are to be considered a development charge project based upon the proportionate cost of the S.W.M. pond and the storm sewers, as defined below.
- ii. The cost contribution from development charges for the S.W.M. will be the area of the arterial road right-of-way times the run-off co-efficient divided by the total drainage area times the overall run-off coefficient of the drainage area contributory to the storm water facility.
- iii. The cost for storm sewers required to convey water from the arterial road to the S.W.M. pond will be estimated as follows: a) the shortest route from the arterial road to the S.W.M. pond will be assumed to be a maximum distance of 500 metres; b) the cost is based on the area of the arterial road right-of-way times the run-off co-efficient divided by the total area times the overall run-off coefficient of the drainage area contributory to the storm water facility; and c) costs will be based on reasonable sizing of the storm sewer, with consideration of nominal size sewers and oversizing requirements where appropriate, and will not include such things as upsizing for hydraulic grade line issues and to limit earth fill.
- iv. Monies reimbursed pursuant to this provision shall be deducted, in respect of storm sewers leading to the storm water facility in question, from payment the developer would otherwise receive pursuant to an oversizing schedule of any applicable area specific stormwater development charge by-law.
- v. For arterial roads that are widened, upsizing costs for S.W.M. ponds and downstream sewers will be for the widened portion only and will not include the portion of existing road.
- vi. As part of new construction or widening of an arterial road, stormwater management and off-site storm sewer costs are to be considered a development charge project commencing for works approved after June 12, 2014. Robert Grant Avenue is expressly included as an eligible project.

- vii. Monies to be reimbursed pursuant to this provision shall be allocated in the annual budget or a specific report approved by Council with the upset limit based on the amount shown in the Roads and Related Services capital project template.
- viii. The costs to be allocated for a stormwater water facility or storm sewer pursuant to this provision shall include construction costs, land costs, engineering costs, project management cost and contingencies.

3. Project Description and D.C. Calculation

The “Final Serviceability Report Leitrim Development Area City of Ottawa,” (IBI Group, March 2007) identified the preferred stormwater management strategy for the Leitrim community. This report recommended 2 stormwater management ponds and related trunk storm sewers, along with the tributary catchment area corresponding to each pond. Pond 2 will be located at the northwest corner of White Alder Drive and Kelly Farm Drive. Pursuant to a Front-Ending agreement, Pond 1 is fully constructed and operational with development charge repayments underway. Construction related to original Pond 1 storm sewers, a wetland berm, and fish compensation has been completed. The expansion to Pond 1, however, is still required and is addressed in this report.

The S.U.C. Leitrim drainage area is generally bounded by Leitrim Road to the north, Albion Road to the west, and the urban boundary to the east and south, and is illustrated in Schedule 1. This drainage area has been revised to reflect the addition of the urban expansion lands as identified in O.P.A. 76. These include Areas 9a and 9b south of Analdea east of Bank Street and Area 8a on the southern limit west of Bank Street. The stormwater ponds and trunk storm sewers shown in Schedule 1 for Leitrim drainage area (L.D.A.) are consistent with the *Updated Serviceability Report (Class EA OPA 76 Areas 8a, 9a and 9b) Leitrim Development Area* (IBI Group, September 2016) and include the servicing of the O.P.A. 76 expansion lands as well as the proposed expansion of Pond 1.

This project has been identified as the S-2 benefiting charge area and is illustrated on Schedule 1. Schedule 1 identifies the stormwater infrastructure works required. This includes the portion of the north-south swale between Leitrim Road and White Alder Avenue as well as the storm drainage system on the north side of Leitrim Road, between Albion Road and the City’s Public Works site. The infrastructure and associated cost tables for Area S-2 found in the report entitled “City of Ottawa: Development Charges Study - Volume II,” dated April 30, 2013, prepared by Stantec Consulting Ltd were revised. The new tables reflect current cost information and indexing. The revised table identifies the stormwater infrastructure works required and associated costs of these works and are used as the basis to establish the D.C.s.

The 2017 growth projections provided in Schedule 2 have been adjusted upwards from the 2014 D.C. Background Study. There is anticipated

development potential in this area beyond 2031 and it was included in the unit cost calculation. There has been no industrial development in the L.D.A. since 1991. Therefore, the projections are for no future industrial development for the period 2015 to 2031. Industrial development is entirely post 2031. It is estimated that 70% of the stormwater costs will be recovered by 2031.

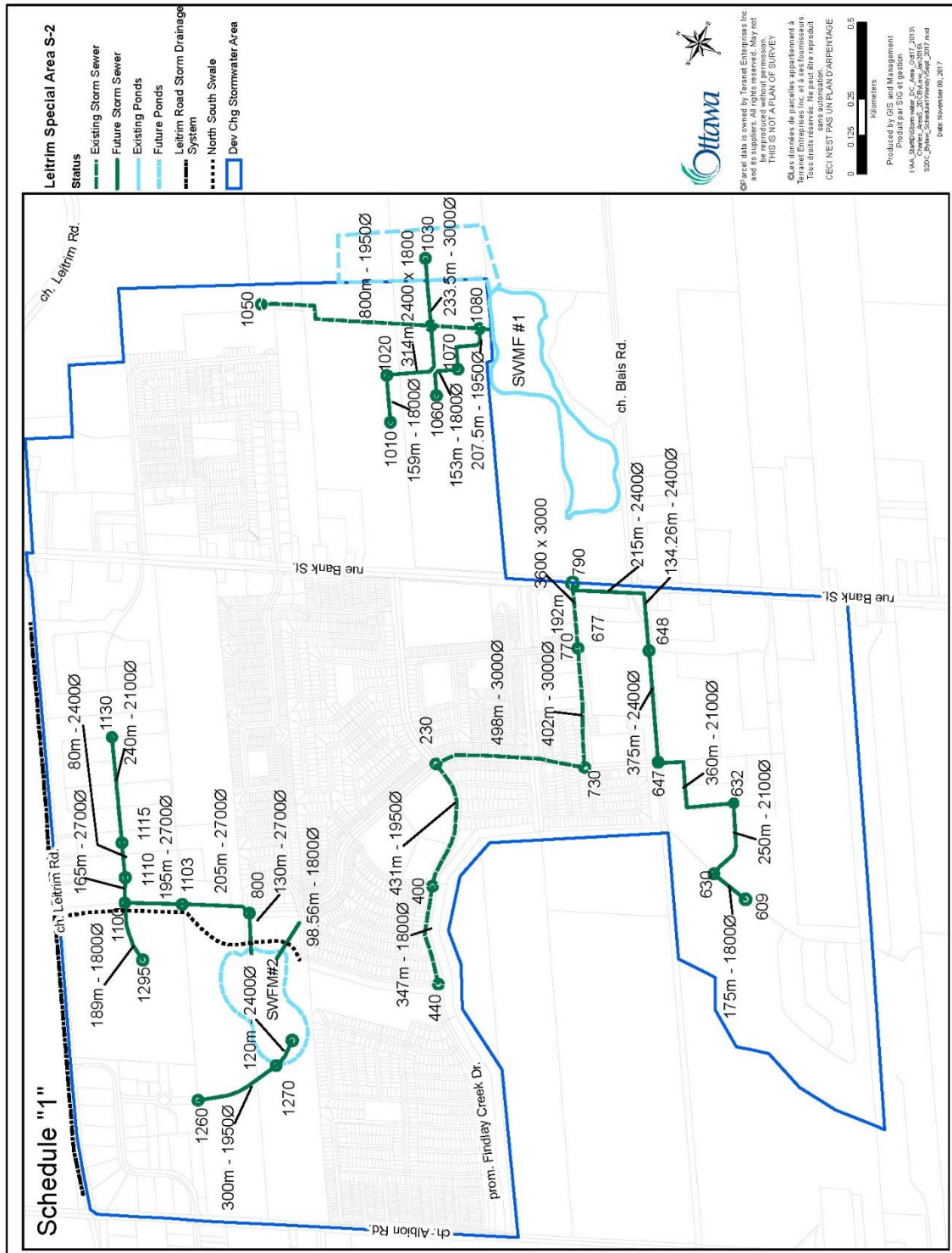
Schedule 3 identifies the stormwater infrastructure works required and includes the full costs associated with each project, for which D.C.s are calculated. It also includes indexing provision for the storm sewer over sizing and stormwater Pond 1. Schedule 4 establishes the D.C. rates in accordance with the methodology outlined earlier.

Relevant Studies/By-laws

- Updated Serviceability Report (Class EA OPA 76 Areas 8a, 9a and 9b) Leitrim Development Area (IBI Group, September 2016)
- Final Serviceability Report Leitrim Development Area City of Ottawa, IBI Group, March 2007.
- City of Ottawa By-Law No. 2006-153 for the imposition of development charges for Gloucester South Urban Centre Storm Water Facilities, April 26, 2006.
- Leitrim Community Design Plan, City of Ottawa, July 2005.
- City of Ottawa Report to Planning Committee and Council ACS2011-ICS-PGM-0220 “Front-Ending Agreement – Stormwater Management Pond 2 and Oversized Trunk Storm Sewers, Leitrim Community,” November 4, 2011. Amendment to Development Charges By-Law 2004-303 Leitrim and Front-Ending Agreement Storm Water Management Pond 1,” March 2006.
- City of Ottawa Report to Corporate Services and Economic Development Committee and Council ACS2006-PGM-APR-0061 – “Amendment to Development Charges By-Law 2004-303 Leitrim and Front-Ending Agreement Storm Water Management Pond 1,” March 2006.
- Background Study Update February 1, 2006 South Urban Community Leitrim (Area S-2), By-Law 2004-303 and Amending By-Law 2005-489, City of Ottawa.
- City of Ottawa By-Law No. 2005-489 to amend By-Law No. 2004-303 for the imposition of development charges for Leitrim Storm Water Facilities, November 9, 2005.
- City of Ottawa By-Law No. 2004-303 for the imposition of development charges for Leitrim Storm Water Facilities, July 14, 2004.

- City of Ottawa Area-Specific Development Charge Background Study for SUC-Leitrim (Area S-2) Storm Water Management Ponds and Drainage Systems, City of Ottawa in consultation with C.N. Watson and Associates Ltd., June 28, 2004.
- Former City of Gloucester Development Charges Background Study, August 1999, in association with Stantec Consulting Ltd.

Schedule 1: S.U.C. Leitrim (Area S-2)



| Schedule 2: Stormwater Management Pond/Drainage System | | | | |
|---|--------------------------|--------------------------------|-----------------------------|--|
| #2 SUC - Leitrim (Area S-2) Full Build Out | | | | |
| Projected Growth | | | | |
| | 2017 Existing | 2017 to 2031 Growth | Post 2031 Growth | Total Growth from 2017 to Build Out |
| 1 Residential Units | | | | |
| Single Detached | 1,293 | 1,580 | 283 | 1,863 |
| Semi Detached | 538 | 324 | 0 | 324 |
| Row/Town | 1,012 | 1,854 | 426 | 2,280 |
| Stacked Row | 216 | 36 | 0 | 36 |
| Apartment | 4 | 402 | 0 | 402 |
| Total | 3,063 | 4,196 | 709 | 4,905 |
| 2 Developed Residential Land Area (Net Ha) | | | | |
| Single Detached | 58.80 | 71.82 | 11.79 | 83.61 |
| Semi Detached | 16.80 | 10.13 | 0.00 | 10.13 |
| Row/Town | 23.00 | 42.14 | 9.47 | 51.60 |
| Stacked Row | 2.90 | 0.48 | 0.00 | 0.48 |
| Apartment | 0.00 | 3.22 | 0.00 | 3.22 |
| Total | 101.50 | 127.78 | 21.26 | 149.03 |
| 3 Developed Non-Residential Land Area (Net Ha) | | | | |
| Industrial | 20.00 | 0.00 | 24.00 | 24.00 |
| Commercial | 4.50 | 11.20 | 2.00 | 13.20 |
| Institutional | 19.20 | 9.80 | 1.00 | 10.80 |
| Total | 43.70 | 21.00 | 27.00 | 48.00 |
| 4 Non-Residential GFA (sq.ft.) | | | | |
| Industrial | 936,000 | 0 | 756,479 | 756,480 |
| Commercial | 249,683 | 624,022 | 120,000 | 744,022 |
| Institutional | 167,070 | 237,315 | 56,000 | 293,315 |
| Total | 1,352,753 | 861,337 | 932,479 | 1,793,817 |

**Schedule 3: Stormwater Management Pond/Drainage System
#2 SUC - Leitrim (Area S-2)
Cost Information \$'000s**

| Item No. | Project Description | Gross Capital Cost | Less: | | | Net Recoverable Capital Costs | 73.70% Residential Share | 26.30% Non-Residential Share |
|----------|--|--------------------|---------------------------------|------------------------------|-----------------|-------------------------------|--------------------------|------------------------------|
| | | | Benefit to Existing Development | Grants & Other Contributions | Repayments | | | |
| S2-1 | SWM Pond 1 | 11,613 | 0 | 0 | 11,613 | 0 | 0 | 0 |
| S2-2 | SWM Pond 1 Indexing Costs | 759 | 0 | 0 | 692 | 67 | 49 | 18 |
| S2-3 | SWM Pond 1 Expansion | 6,228 | 0 | 0 | 0 | 6,228 | 4,590 | 1,638 |
| S2-4 | SWM Pond 2 | 18,285 | 0 | 0 | 0 | 18,285 | 13,476 | 4,809 |
| S2-12 | North/South Swale | 3,042 | 0 | 0 | 0 | 3,042 | 2,242 | 800 |
| | Trunk Storm Sewers: | | | | | | | |
| S2-5 | Leitrim Road Drainage System | 2,219 | 0 | 0 | 0 | 2,219 | 1,635 | 584 |
| S2-6 | Trunk Storm Sewer Indexing | 1,930 | 0 | 0 | 0 | 1,930 | 1,422 | 508 |
| S2-7 | Leitrim Storm Sewers on Tartan Lands | 12,121 | 0 | 6,959 | 1,938 | 3,224 | 2,376 | 848 |
| S2-8 | Findlay Creek Drive Storm Sewers | 3,454 | 0 | 2,945 | 0 | 509 | 375 | 134 |
| S2-9 | Storm Sewers on Tartan/Reimer Lands | 7,034 | 0 | 4,279 | 0 | 2,755 | 2,030 | 725 |
| S2-10 | Storm Sewers East of Bank Street to Pond 1 | 8,827 | 0 | 5,742 | 0 | 3,085 | 2,274 | 811 |
| S2-11 | Storm Sewers to Pond 2 | 9,242 | 0 | 4,929 | 0 | 4,313 | 3,179 | 1,134 |
| | SUBTOTAL | \$84,754 | \$0 | \$24,854 | \$14,243 | \$45,657 | \$33,648 | \$12,009 |
| | Tax (1.76%) | 1,492 | | | | | | |
| | Reserve Fund Balance | | | | | 805 | 593 | 212 |
| | TOTAL | \$86,246 | \$0 | \$24,854 | \$14,243 | \$44,852 | \$33,055 | \$11,797 |

**Schedule 4: Stormwater Management Pond/Drainage System
#2 SUC - Leitrim (Area S-2) Total Build Out
Development Charge Calculation**

| Residential | Unbuilt Ha | Run-off coefficient | Ha x co-efficient | % (rounded) | Residential share x percentage | Actual units | 2017 Calculated DC Rates per Unit | 2017 Current DC Rates |
|--------------------|-------------------|----------------------------|--------------------------|--------------------|---------------------------------------|---------------------|--|------------------------------|
| Net cost | | | | | \$33,055,000 | | | |
| Single Detached | 83.61 | 0.55 | 45.98 | 50.5% | 16,678,253 | 1,863 | \$8,634 | \$5,897 |
| Semi Detached | 10.13 | 0.60 | 6.08 | 6.7% | 2,203,360 | 324 | | |
| Row/Townhouse | 51.60 | 0.70 | 36.12 | 39.6% | 13,100,977 | 2,280 | \$5,746 | \$4,057 |
| Stacked Row | 0.48 | 0.80 | 0.38 | 0.4% | 139,274 | 36 | | |
| Apartment | 3.22 | 0.80 | 2.57 | 2.8% | 933,136 | 402 | | |
| Total | 149.03 | | 91.14 | 100.0% | \$33,055,000 | 4,905 | | |

| Non-Residential | 2017 Calculated DC Rate per GFA | Current DC Rate |
|---------------------------|--|------------------------|
| Net Cost | \$11,797,000 | |
| Actual GFA (sqft) | 1,793,817 | |
| DC Per GFA (sq.ft) | \$6.58 | 5.02 |

4. Impact on Assessment Management Plan

On December 3, 2015, the Province passed Bill 73 which amended the Development Charges Act. Subsequently, on December 18, 2015, Ontario Regulation 428/15 was published which amended Ontario Regulation 82/98 (i.e. the D.C.A. Regulation) and provided additional directives for the amended Act. The amendments require that a development charge background study include an asset management plan related to new infrastructure. Specifically, it requires the asset management plan to “a) deal with all assets whose capital costs are proposed to be funded under the development charge by-law;” and to “demonstrate that all the assets mentioned in (a) are financially sustainable over their full life cycle.”

In regard to the City’s assessment management practices for life cycle costing and risk-based decision making for existing and planned infrastructure, actions to date or underway are summarized below:

In 2012, the City implemented the Comprehensive Asset Management (CAM) Program, CAM policy and a Supporting Strategy for senior management to ensure achieving the policy objectives;

The last iteration of the infrastructure master plan, completed in 2014, took into consideration the future costs of new infrastructure (i.e. life cycle costing) as a future burden to tax-payers to ensure financial sustainability and adjusted (reduced) the quantity of future planned works accordingly; and

The City has a program in place and initiatives are underway to be compliant with Bill 6 requirements regarding infrastructure asset management planning.

The Comprehensive Asset Management Program, referred to above, establishes Council’s expectations with regard to the management of the City’s physical assets. This policy specifically states: “...asset related decisions are founded on a sustainable approach to ensure that asset base increases or enhancements consider the impact on the ability of the City to fund future maintenance and rehabilitation.” Further, the City continually inspects and assesses asset conditions and completes risk based reviews and renewal programming on that basis. The City regularly updates long-term asset needs forecasts to establish long range financial plan requirements.

The City regularly establishes long range financial plans. These reports provide a series of financing strategies that balance the need to maintain and build capital assets

with the need to manage debt, reserve balance and rate increases. The most recent plan addressing storm water management works was completed in 2012: “Long Range Financial Plan IV – Water and Sewer Rates Supported Programs.”

At the present time, the replacement cost of stormwater assets is funded through the sewer surcharge rate. The funding strategy outlined in the 2012 Long Range Financial Plan anticipates a need to increase rates over the 2012 to 2021 period. For 2015 and 2016, the increase was projected to be 6% annually (including inflation) and from 2017 to 2021, a 5% annual increase was projected. The City also has a water, wastewater, and stormwater rate structure review underway where Council has agreed that financial sustainability is a guiding principle for assessing potential structures. Furthermore, the City is considering adopting a dedicated stormwater fee to fund stormwater operations and capital costs as part of this review.

An estimate has been prepared of the life cycle sinking fund costs for the assets to be funded (in part) from the D.C.s calculated in Chapter 3, based on the City’s amortization periods by asset type within their asset management plan. On this basis, it was calculated that the estimated incremental annual costs to address the long-term life cycle needs of these assets would be in the range of \$1.3 million. The City’s long range financial plan has adopted a funding strategy to increase the level of funding made available to maintain existing and new assets in a state of good repair. As such, in the context of the requirements of the D.C.A., we would conclude that the capital assets contained herein can be addressed in a financially sustainable manner over the asset life cycle.