DRAINAGE INDICATIVE RATE REVISED FOR 2017 AND 2018

2016 SEPTEMBER 19

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1.0 INTRODUCTION

This report presents Administration's analysis and recommendations regarding opportunities to reduce the annual increase to the monthly charge for the Drainage line of service (Drainage) in 2017 and 2018. Through the process leading up to presentation of the Action Plan 2015-2018 budget and business plan, Water Resources received Council approval for an increase to the Drainage monthly charge in each year of the 2015-2018 business cycle. The increase approved by Council was specifically 19.1 per cent which translates into an incremental $2.49 per month in 2017 and $2.97 per month in 2018, and supports Drainage's compliance with its financial plan. The financial plan is comprised of financial policy areas, targets and timeline for achieving financial sustainability and is a long term plan to manage financial risk.

In 2016 May through UCS2016-0414, progress towards compliance with policy targets and the timeline set out in Drainage's financial plan was reported to Council. Drainage's progress on the financial plan was based on the approved Action Plan increases.

1.1 CONTEXT FOR REVIEW OF DRAINAGE'S ACTION PLAN APPROVED INCREASES

In response to the financial impacts felt by the Calgary community related to the current economic conditions, Administration has undertaken a review of all opportunities to reduce the magnitude of annual Drainage charge increases. The important role that The City of Calgary has in providing stimulus through investment during the economic downturn has been considered. This includes the need to invest in community drainage improvements and flood resiliency. Managing financial risk and delivering on action plan commitments are being balanced with the need to keep increases in the drainage charge low for Calgarians.

2.0 THE DRAINAGE BUSINESS MODEL

Together, the Water Services and Water Resources business units manage and operate the Drainage line of service as a self funded activity. In this model, drainage revenue needs to recover the costs of providing drainage services. Key differences between the self funded activity and the full utility financial models include the payment of franchise fees and return on equity to The City within the utility model.

Priority services in Drainage and the resources required to implement them are in part defined by watershed management planning activities and as such, this is a line of service which has evolving requirements. The integrated watershed management goals are to:

1. Protect our water supply by reducing upstream risks to our water source;
2. Use water wisely through responsible and efficient use;
3. Keep our rivers clean by reducing Calgary's impacts on the rivers; and
4. Build resiliency to flooding.

The key components of the Drainage model include:

- Self funded - Drainage revenues must cover all of the costs to provide Drainage services. Revenue is generated from the Council-approved monthly drainage charge. Additionally Drainage collects an off-site levy on greenfield development. The off-site levy is used to fund the full cost of infrastructure investments required to support new growth.
- Cost of service basis - A Cost of Service Study is carried out to ensure costs are being recovered appropriately by customer classes and that the right mix of charges are in place. The ultimate goal of the cost of service analysis in Drainage is to understand revenue requirements based on drainage service levels, and transition towards an increasingly equitable rate structure.
- Capital intensive - The nature of stormwater services requires ongoing capital investment in infrastructure. The demand for new drainage services continues to grow in response to population growth, environmental objectives, and the 2013 flood event, over and above the requirement to provide reliable service to Calgarians.
- Financial policies - In addition to complying with relevant Council and Administrative policies, Drainage maintains financial policies specific to its operations. Financial policies articulated in the Drainage Financial plan include policies around the management of debt, debt servicing and equity ratios, as well as a maintaining a sustainment reserve to offset operating and capital needs in the business in the event of a shortfall in revenue.

These elements of the Drainage business model can all present opportunities to manage or adjust the required drainage charge increases; however it is necessary to also consider what impact these smaller increases will have on charges in the next business cycle.

2.1 SELF FUNDED

2.1.1 Drainage revenue

There is currently a single customer class for drainage service where the same flat rate is charged to all residential, industrial, commercial and institutional customers. Revenue from the drainage service charge is used to fund operations, maintenance, riparian work, the Community Drainage Improvements program, flood mitigation, and water quality improvement projects.

2.1.2 Off-Site Levies

In accordance with C2016-0023, Bylaw 2M2016, the full cost of growth-related infrastructure is recovered through the collection of off-site levies from developers. Off-site levy revenue is used to pay principal and interest charges for major Drainage infrastructure to service new growth.

Even though Drainage is recovering 100 per cent of costs through off-site levies, the current economic environment injects uncertainty and risk into actual revenue collections. Off-site levies are charged when developers enter into a development agreement for greenfield areas. If development does not materialize as projected, the result would be an unfavourable revenue variance, which would require

mitigation. The current 2016 year-end projection of off-site levy revenues for 2016 is $3.9 million unfavourable to budget.

2.2 COST OF SERVICE BASIS

Cost of service is a methodical process by which the costs of providing a service are assigned to customer classes in proportion to the benefit derived by that customer class. In addition to ensuring the equitable allocation of costs, these studies are an analytical tool to support financial management, and provide validation and documentation for ratemaking decisions.

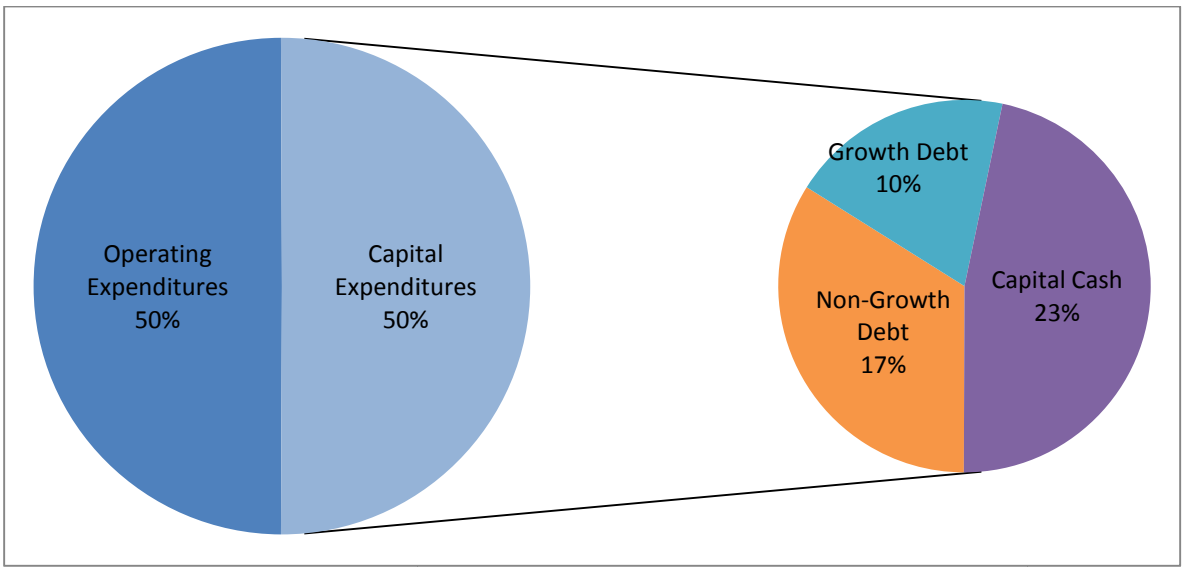
The drainage charges approved by Council as part of the 2015-2018 Action Plan were set to meet the drainage service levels and financial targets adopted by Council (C2014-0324) as part of the 2014 Cost of Service Study.

The ultimate goal of the cost of service analysis is to transition towards an increasingly equitable rate structure where customers contribute for their share of the system costs in proportion to their use of the system.

2.3 CAPITAL INTENSIVE

As the city continues to grow, so too does the requirement for infrastructure necessary to provide reliable service to Calgarians. The nature of stormwater management service requires significant ongoing capital investment in infrastructure. Of the current Drainage operating budget, approximately 50 per cent is capital related, as shown in Figure 1.

Figure 1: Drainage - Expenditure Breakdown 2015 Actual



The capital requirements for Drainage continue to experience increased pressure due to factors such as:

- Aging infrastructure, which impacts the ability to operate efficiently and effectively without service interruptions;
- Changes to regulatory and environmental requirements, which necessitate infrastructure upgrades or the construction of additional infrastructure;
- Introduction of new services or service levels, which require new or upgraded infrastructure; and
- Continued population growth, which triggers capacity upgrades and expansions.

These factors are summarized in Figure 2.

Figure 2: Investment Drivers

Investment Driver	Objective	Percentage of Water Infrastructure Investment Plan (WIIP)
Maintain assets	Maintaining, protecting and extending the life of infrastructure investments.	15 % - 20%
Regulatory & Environmental Protection	Continuing to meet increasingly stringent regulatory and environmental protection requirements.	15% - 20%
Service	Continuing to provide reliable and high quality services to meet the needs of citizens.	25% - 30%
Growth	Providing infrastructure to meet the needs of a growing city.	35% - 40%

Each investment driver provides a different perspective on when and where infrastructure investments are needed. The process to prioritize investments considers the need and timing of investments in light of the four drivers. The desired outcome is to meet customer and environmental priorities while staying within the financial capacity of Drainage.

2.3.1 Community Drainage Improvements

The Community Drainage Improvement (CDI) program delivers stormwater infrastructure upgrades in older communities that were built prior to the use of modern drainage techniques and standards. These communities typically have a service level of 1 in 2 year event to 1 in 5 year event (flooding for storm events) as opposed to current service standards of 1 in 100 year event for new communities. The planning and delivery of the CDI program is proceeding according to plan, and opportunities to accelerate projects in the CDI stream of work are evaluated on an ongoing basis.

Through delivery efficiency, savings of $10 million were realized in 2015 from a favorable construction tender for the Rosemont upgrades, and a redesign of the Westgate upgrades. These cost savings were redirected to advance work earlier than anticipated in the communities of Woodlands, Woodbine, Cedarbrae and Braeside. Further efficiencies will be realized by integrating stormwater planning with community level flood management to achieve synergies with water quality improvements.

2.3.2 Flood

Capital investments to recover from flood events, or minimize the impact of future flood events are an integral part of the Utilities and Drainage services provided by The City of Calgary. Provincial and federal funding is essential for these investments, and The City continues to try to secure funding though all orders of government. Presently, flood recovery, mitigation and resilience investments are planned with the Utilities and Drainage investment plans. They are funded through a variety of mechanisms including:

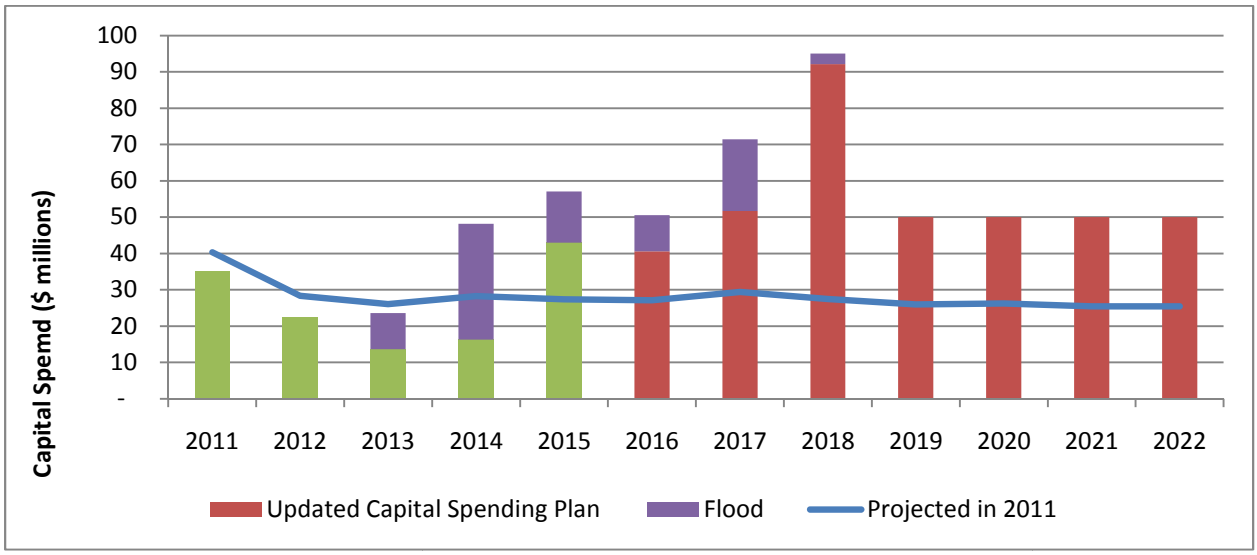
- Provincial disaster recovery programs;
- Asset specific insurance;
- Provincial Flood Recovery Erosion Control Program;
- Alberta Community Resilience Program;
- Fiscal Stability Reserve (set aside in 2014 for flood) and
- Utility and Drainage rates for portions of projects ineligible for grant program funding.

Through processes to recast and reprioritize capital projects, the Utilities and Drainage will further integrate these planned flood investments into existing services, and report on them through Watershed Management Planning and Flood Resilience and Mitigation updates, and also as a part of drainage investment overall.

2.3.3 Annual Spending Plan

To accomplish investments per these capital program drivers for the remainder of the 2015-2018 business cycle, Drainage will deliver annual capital spending plans of, on average, $70 million (Figure 3). The current Water Infrastructure Investment Plan (WIIP) allocates about 40 per cent of the investments to support growth. Within this planned annual capital spend, focus will be put on highest priority projects and any opportunity to accelerate service levels in the Community Drainage Initiatives program.

Figure 3: Drainage – Capital Spending Plan



2.3.4 Operating Cost of Capital Program

Over the remainder of this business cycle the capital spending plan is on average $70 million annually and, on average, 40 per cent of the investments support growth. The operating cost of these investments and an increased focus on risk based maintenance planning and asset life cycle planning will continue to be a key focus the Drainage line of service.

2.4 FINANCIAL POLICIES

In addition to complying with relevant Council and Administrative policies, Drainage has financial policies specific to their operations. Specific financial policies are approved by Council, and the requirement to achieve or maintain compliance is a driver for the drainage charge.

2.4.1 Financing and Use of Debt

An appropriate mix of debt and cash financing derived from maximum debt limits and minimum cash requirements is necessary to deliver Drainage services. A good mix of financing strengthens the financial position of the line of service while providing greater flexibility when planning for future capital requirements.

Cash financing is used for capital projects that are part of an ongoing improvement program, or will reduce operating and maintenance costs. The Drainage Financial Plan outlined a policy that Drainage will have a target of cash financing 100 per cent of the capital maintenance projects identified in the capital budget.

Debt financing is used for capital projects that are substantial in cost and size, and where the benefits will extend over a relatively long period; this spreads the costs of the infrastructure over an appreciable portion of the useful life of the assets.

Drainage has a maximum debt limit of $300 million, and debt to equity target ratio of 60 per cent. A target of 40 per cent of revenues was set for Drainage debt servicing.

2.4.2 Amortization and Depreciation

Drainage employs amortization accounting practices, and maintains depreciation rates that are aligned with generally accepted accounting principles.

2.4.3 Reserves

Drainage maintains sufficient reserves to mitigate risk. The size of the reserve is set at 10 per cent of total revenues. The purpose of this reserve is to provide cash flow to fund minor fluctuations in both operating and capital budget expenditures, and to mitigate the risk of period shortfalls in projected revenue.

3.0 ACTION PLAN APPROVED INCREASES

3.1 APPROVED INCREASES

In 2014 May, C2014-0324, Council directed administration to develop the 2015-2018 Action Plan based on monthly drainage charge increases that enabled the desired service level in five program areas in the Drainage line of service. The program areas and desired service levels are detailed in Appendix A, however, generally the Drainage charges for the 2015-2018 Action Plan were based on the meets requirements and standards service level for community drainage improvements and flood recovery and resiliency programs; the revised accelerated delivery service level for the regulatory and environmental protection and maintaining assets programs; and the accelerated delivery service level for compliance with financial targets program.

The resultant increases for 2017 and 2018, and total monthly drainage charges, are summarized below in Figure 4.

Figure 4: Action Plan Approved Monthly Drainage Charge Increases

	2016 (current)	2017	2018
Incremental Increase		$2.49	$2.97
Monthly Drainage Charge	$13.05	$15.54	$18.51

3.2 PROGRESS ON FINANCIAL TARGETS

The Drainage Financial Plan sets out specific financial targets to be met by 2018, in line with the Utilities Financial Plan. Figure 5 shows that overall, Drainage is on track to meet the timeline for financial policy and target compliance by 2018.

Figure 5: Drainage Financial Targets

Policy Area	Financial Plan Target	2015 Actual
Debt limit	Maximum $300 million	$169 million
Debt service	Maximum 40% of total revenues	31.3% of total revenues
Cash financing of capital maintenance	100%	100%
Sustainment reserve	10% of total revenues	17.5% of total revenues

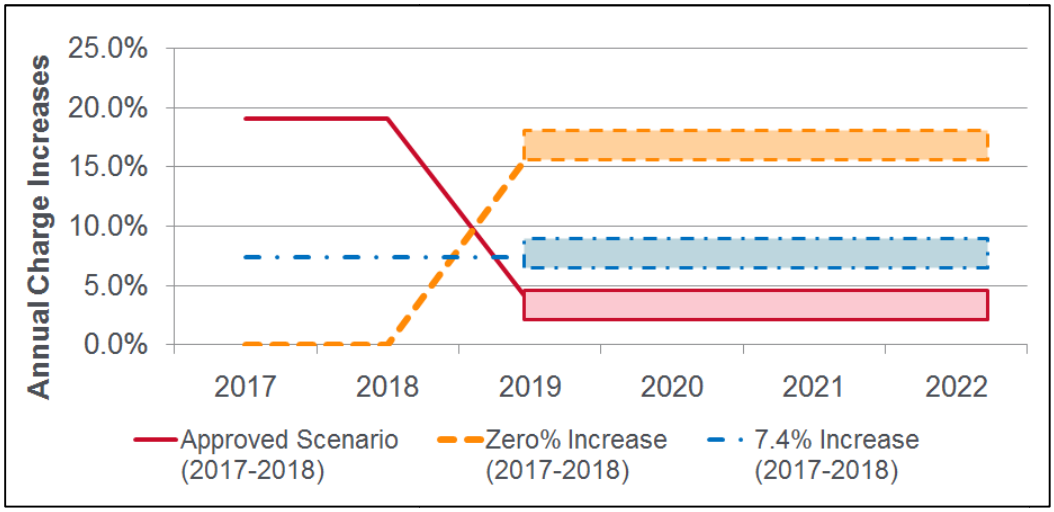
3.3 INDICATIVE INCREASES FOR 2019-2022

Once the targets established in the Drainage financial plan have been achieved and can be maintained (by 2018) it is anticipated that the increases required to maintain the current level of drainage services will be closer to inflation, assuming that the level of capital investment and levels of service remain relatively consistent year over year.

4.0 REVISED INCREASE SCENARIOS

Elements of the Drainage business model do present opportunities to manage or adjust the required drainage charge increases. However, reducing charge increases in the short term will have an impact on drainage charges in the next business cycle, as shown in Figure 6 below depicting options for drainage charge increases.

Figure 6: Options for Drainage Charge Increases



4.1 POSSIBLE MITIGATIONS

4.1.1 Efficiencies and Service Reductions

Administration targeted finding the equivalent of a 1 per cent reduction in operating expenditures in order to ease the impact of reduced drainage charge increases for 2017 and 2018. These reductions were focused on efficiencies, totalling $0.4 million annually. The rationale for targeting efficiencies rather than service reductions was a specific effort to maintain the service levels in Council's priority program areas of regulatory and environmental protection and maintaining assets programs. Maintaining these ensures the same level of priority is placed on these program areas as was indicated in the Action Plan approved drainage charges.

4.1.2 Capital Related

Per the recommendation approved by Council on 2015 November 25 in the Proposed Adjustments to the 2016 Budget (C2015-0855), Water Resources is undertaking a recast of the capital budget for the Drainage line of service. This will result in a capital budget more closely aligned with anticipated capital spend, targeting an annual spend of approximately $70 million, and ensuring that the investment commitments made in Action Plan are fulfilled. This magnitude of annual capital spend includes flood projects that are funded through a variety of mechanisms including disaster recovery programs, funding from other levels of government for Drainage and flood resilience projects as well as the drainage charge.

With a corporate focus on The City's role in economic stimulus and job creation through increasing investment in the economic downturn, and because of the ability to take advantage of the favourable

market for construction project pricing, it is not recommended to reduce capital investment at this time, even to mitigate the impact of reduced drainage charge increases in 2017 and 2018.

Drainage will deliver capital projects through a process with additional controls that ensure that budget is allocated to highest priority projects when they are ready to proceed and with the most accurate cost estimates available.

4.1.3 Financial Policy

Although the previously approved Drainage charges were based in part on the priority of compliance with financial policy, there is currently an opportunity to mitigate the impact of reduced drainage charge increases by leveraging the funds currently in the sustainment reserve and delaying building the 10 per cent sustainment reserve balance from 2018 to 2022.

4.2 SCENARIO ANALYSIS

Based on ability to vary factors and drivers that impact the Drainage charge, Administration presents two options for reducing the currently approved monthly drainage charge increases.

Scenario A – Zero% Increases: Reduces the currently approved monthly drainage charge increase in 2017 and 2018 to zero in 2017 and 2018, with higher increases required for 2019-2022. This reduces the drainage charge increase from the approved increase of 19.1 per cent to zero per cent.

Scenario B – 7.4% Increases: Reduces the currently approved monthly drainage charge increase in 2017 and 2018 to $0.97 in 2017 and $1.03 in 2018, with similar increases forecast for 2019-2022. This reduces the drainage charge increase from the approved increase of 19.1 per cent to 7.4 per cent.

Each of these can be accomplished through the one per cent operating efficiencies, while maintaining the Action Plan approved capital budget priorities, but requires leveraging the funds in the drainage sustainment reserve, and delaying re-building the 10 per cent sustainment reserve balance from 2018 to 2022.

The key difference between these scenarios is in their impact to the charge increases predicted for the 2019-2022 timeframe.

4.2.1 Scenario A – zero per cent increases in 2017 and 2018

This scenario reduces the currently approved monthly drainage charge increase in 2017 and 2018 to zero in 2017 and 2018, with higher increases required for 2019-2022. Scenario A is summarized in Figure 7.

Figure 7: Scenario A - Zero% Increases

	2016 (current)	2017	2018
Approved Incremental Increase		$2.49	$2.97
Scenario A Incremental Increase		$0.00	$0.00
Monthly Drainage Charge	$13.05	$13.05	$13.05

The financial implications of a zero drainage charge increase in 2017 and 2018 are as follows:

- Compliance with financial policies is maintained with the exception 10 per cent of revenues sustainment reserve balance by 2018, as shown in Figure 8.

Figure 8: Zero% Increases Scenario - Financial Policy Compliance

2017 and 2018 increases	Operating Budget	Capital Priorities	Cash for Capital Maintenance	Maximum Debt $B (Year)	Max Debt Service % (Year)	10% of Revenue Reserve Balance
Zero %	99% of Action Plan	100%	100%	$0.286 (2022)	29.5% (2019)	2022

- Drainage revenue is reduced by $10.9 million in 2017 and $24.0 million in 2018 from currently approved charges. This will need to be offset by reducing operating and deferring the building of the 10 per cent of revenues balance in the sustainment reserve.
- Reduced revenue requirement translates into savings for all customers, summarized in Figure 9.

Figure 9: Zero% Increases Scenario - Drainage Charge Customer Impacts

Monthly Drainage Charge	2017	2018
Zero %: Monthly savings from approved	$2.49	$5.46
Annual savings from approved	$30	$66

- Overall outstanding debt required to support capital investment, and debt service ratio, are forecast to be higher than with approved drainage charge increases. These can be accommodated within the overall debt and debt servicing limits of the corporation.
- An indicative drainage charge increase in the range of 16 to 17 per cent per year in 2019-2022 assuming that the level of capital investment and levels of service remain relatively consistent year over year.

4.2.2 Scenario B – 7.4% increases in 2017 and 2018

This scenario reduces the currently approved monthly drainage charge increase in 2017 and 2018 to $0.97 in 2017 and $1.03 in 2018, with similar increases forecast for 2019-2022. Scenario B is summarized in Figure 10.

Figure 10: Scenario B – 7.4% Increases

	2016 (current)	2017	2018
Approved Incremental Increase		$2.49	$2.97
Scenario B Incremental Increase		$0.97	$1.03
Monthly Drainage Charge	$13.05	$14.02	$15.05

The financial implications of a scenario that reduces the drainage charge increase from 19.1 per cent to 7.4 per cent are as follows:

- Compliance with financial policies is maintained with the exception 10 per cent of revenues sustainment reserve balance by 2018, as shown in Figure 11.

Figure 11: 7.4% Increases Scenario - Financial Policy Compliance

2017 and 2018 increases	Operating Budget	Capital Priorities	Cash for Capital Maintenance	Maximum Debt $B (Year)	Max Debt Service % (Year)	10% of Revenue Reserve Balance
7.4%	99% of Action Plan	100%	100%	$0.293 (2022)	27.3% (2021)	2022

The financial implications of 7.4 per cent annual increases in 2017 and 2018 are as follows:

- Drainage revenue is reduced by $6.7 million in 2017 and $15.2 million in 2018 from currently approved charges. This will need to be offset by reducing operating and deferring the building of the 10 per cent of revenues balance in the sustainment reserve.
- Reduced revenue requirement translates into savings for all customers, summarized in Figure 12.

Figure 12: 7.4% Increases Scenario - Drainage Charge Customer Impacts

Monthly Drainage Charge	2017	2018
Scenario B: Monthly savings from approved	$1.52	$3.46
Scenario B: Annual savings from approved	$18	$42

- Overall outstanding debt required to support capital investment, and debt service ratio, are forecast to be higher than with approved drainage charge increases. These can be accommodated within the overall debt and debt servicing limits of the corporation.
- An indicative drainage charge increase in the range of 7 to 8 per cent per year in 2019-2022, assuming that the level of capital investment and levels of service remain relatively consistent year over year.

5.0 RECOMMENDATIONS

Administration is recommending that the Action plan approved 2017 and 2018 19.1 per cent drainage charge increases be revised to reflect a 7.4 per cent increase in 2017 and 2018. This scenario leverages efficiencies, while maintaining capital investment required to build, upgrade and maintain infrastructure to provide high quality services to customers. It maintains service levels in the program areas of regulatory and environmental protection, maintaining assets, community drainage improvements and flood recovery and resiliency, by adjusting the timeframe for financial plan compliance. In comparison to a zero per cent increase scenario, a 7.4 per cent per year increase offsets some risk of off-site levy revenue not materializing due to the uncertainty of growth and development, and will have less impact on the drainage charge increases for the 2019-2022 timeframe.

Compliance with financial policies is maintained with the exception of the requirement to build the 10 per cent of revenues sustainment reserve balance by 2018, which will be delayed until 2022. Delaying building the sustainment reserve balance from 2018 to 2022 does extend the period of time in which

the utilities do not have reserve funds to provide cash flow for minor fluctuations in operating and capital budget expenditures, or to mitigate the risk of periodic shortfalls in projected revenue.

This will result in the monthly drainage charges summarized in Figure 13, for 2017 and 2018:

Figure 13: Recommended Drainage Charge Increases

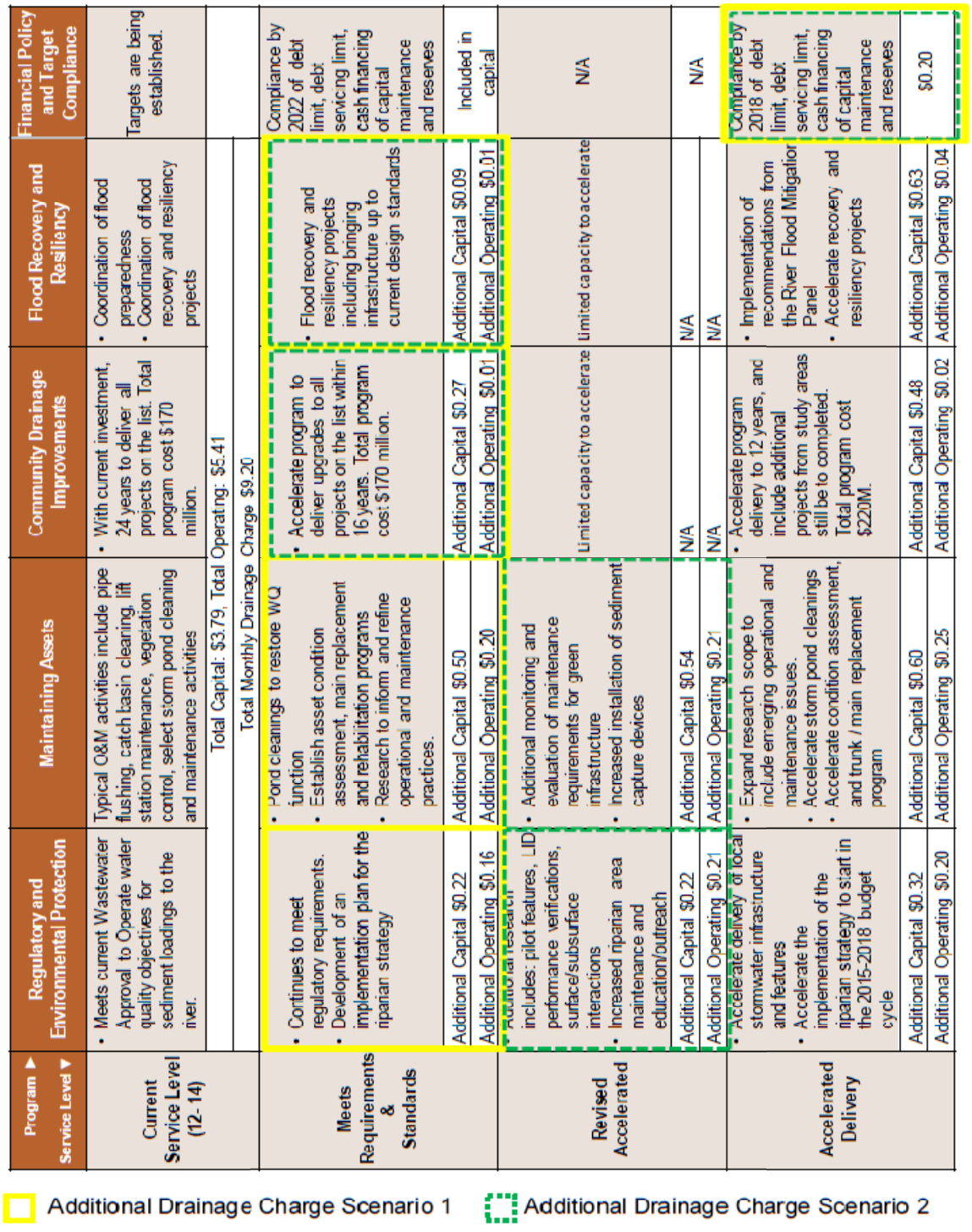
	2016 (current)	2017	2018
Incremental Increase above approved		$0.97	$1.03
Monthly Drainage Charge - 7.4% Increases Scenario	$13.05	$14.02	$15.05

Administration will present an operating budget adjustment for 2017 and 2018 and related bylaw amendments based on the recommended revised Drainage charge increases above as part of Mid Cycle Adjustments.

Administration will also report back in Q1 2017 with revisions to the Drainage Financial Plan that integrate industry best practice and the change to timeframe of building the sustainment reserve balance.

For the 2019-2022 business cycle, within the Drainage line of service will maintain a focus on managing increasing cost pressures and market uncertainty while providing high quality services to Calgarians. Progress on financial plans and the indicative charges for future years will be presented to Council during the development of the 2019-2022 budget and business plan.

Appendix A – Drainage Program Service Level Matrix for Action Plan Approved Rates (2015)



Program ▶ / Service Level ▼	Regulatory and Environmental Protection	Maintaining Assets	Community Drainage Improvements	Flood Recovery and Resiliency	Financial Policy and Target Compliance
Current Service Level (12-14)	• Meets current Wastewater Approval to Operate water quality objectives for sediment loadings to the river.	Typical O&M activities include pipe flushing, catch basin cleaning, lift station maintenance, vegetation control, select storm pond cleaning and maintenance activities	• With current investment, 24 years to deliver all projects on the list. Total program cost $170 million.	• Coordination of flood preparedness • Coordination of flood recovery and resiliency projects	Targets are being established.
	Total Capital: $3.79; Total Operating: $5.41				
	Total Monthly Drainage Charge $9.20				
Meets Requirements & Standards	• Continues to meet regulatory requirements. • Development of an implementation plan for the riparian strategy	• Pond cleanings to restore WQ function • Establish asset condition assessment, main replacement and rehabilitation programs • Research to inform and refine operational and maintenance practices.	• Accelerate program to deliver upgrades to all projects on the list within 16 years. Total program cost: $170 million.	• Flood recovery and resiliency projects including bringing infrastructure up to current design standards	Compliance by 2022 of debt limit, debt servicing limit, cash financing of capital maintenance and reserves
	Additional Capital $0.22	Additional Capital $0.50	Additional Capital $0.27	Additional Capital $0.09	Included in capital
	Additional Operating $0.16	Additional Operating $0.20	Additional Operating $0.01	Additional Operating $0.01	
Revised Accelerated	• Additional research includes: pilot features, LID performance verifications, surface/subsurface interactions • Increased riparian area maintenance and education/outreach	• Additional monitoring and evaluation of maintenance requirements for green infrastructure • Increased installation of sediment capture devices	Limited capacity to accelerate	Limited capacity to accelerate	N/A
	Additional Capital $0.22	Additional Capital $0.54	N/A	N/A	N/A
	Additional Operating $0.21	Additional Operating $0.21	N/A	N/A	
Accelerated Delivery	• Accelerate delivery of local stormwater infrastructure and features • Accelerate the implementation of the riparian strategy to start in the 2015-2018 budget cycle	• Expand research scope to include emerging operational and maintenance issues. • Accelerate storm pond cleanings • Accelerate condition assessment, and trunk / main replacement program	• Accelerate program delivery to 12 years, and include additional projects from study areas still be to completed. Total program cost $220M.	• Implementation of recommendations from the River Flood Mitigation Panel • Accelerate recovery and resiliency projects	Compliance by 2018 of debt limit, debt servicing limit, cash financing of capital maintenance and reserves
	Additional Capital $0.32	Additional Capital $0.60	Additional Capital $0.48	Additional Capital $0.63	$0.20
	Additional Operating $0.20	Additional Operating $0.25	Additional Operating $0.02	Additional Operating $0.04	

Additional Drainage Charge Scenario 1 Additional Drainage Charge Scenario 2