Established Area Local-sized Linear Levy Comprehensive Proposal

Infrastructure definitions:

Public water and sanitary infrastructure is categorized by The City into two size categories which relates to the servicingfunctions the infrastructure performs, and the population serviced:

> **Capital sized** infrastructure (500mm or larger water pipes, 600mm or larger wastewater pipes) are the larger water feedermains that supply the water distribution system and sanitary trunks that collect from the sanitary transmission system. They do not typically have any direct customer service connections.
>
> **Local sized** infrastructure (less than 500mm water pipes, less than 600mm wastewater pipes) are the smaller water and sanitary pipes that are directly connected to customers.

There are two types of local sized upgrades that may be triggered by development:

> **Upgrades** refer to an increase in capacity through an increase in pipe size. Pipes are replaced with largersized pipes.
>
> **Extensions** refer to new pipe installations in areas that currently do not have any pipes to extend the existing local sized network. Extensions are often required to strengthen the water network “grid” to be able to providean increase in available fire flow.

Background:

When subdivisions or communities are originally designed, the smaller, local water and sanitary pipe networks are sized based on the land use at the time. The communities in the Established Area within Calgary, were designed to a lower density land use compared to current day, and the associated local sized water and sanitary pipes were sized accordingly. The existing local water and sanitary networks within the Established Area have adequate capacity to support the existing built form and customer usage. However, as redevelopment occurs and land use amendments enable greater development capacity, the capacity needed in these pipes increases. For an example, when single detached homes are replaced with a medium density multi-residential development the fire flow capacity needed to support the new development is significantly higher. Similarly, when single detached homes or lower density residentialunits are replaced with industrial or commercial developments (e.g. brewery, grocery store, or strip mall) additional capacity in the form of an upgrade to the sanitary local sized pipe may be required.

The source of investment funding for upgrades to water and sanitary infrastructure depends on the size categorizationnoted above. Currently, the utility rate funds the proportion of capital sized extensions or upgrades for linear water or sanitary pipes required to support growth in the Established Area. The average amount of investment for this infrastructure is approximately $10-15 million per year (average of $14,228,000 per year using historical 2016-2020 actual spend data). In contrast, this type of infrastructure in greenfield communities is funded through the offsite levy.

Currently, local sized water and sanitary infrastructure extensions or upgrades required to support growth in the Established Area is the responsibility of the developer, as these upgrades are triggered by redevelopment. This is consistent with greenfield development, where the developer is responsible

for the construction of 100% of the local sized infrastructure to service the new development. Historically, the average developer cost for local sized extensions/ upgrades in the Established Area has ranged from $0 to $650,000 per year with an average annual cost borne by developers of $240,000 annually (using historical 2009-2018 Indemnification Agreement data for the current EstablishedArea[1]). It is important to note that this range and average does not include any costs for upgrades that were not completed when a project was no longer viable and did not move forward.

In addition to the upgrades that are triggered directly in response to specific development applications (reactive upgrades), The City also invests in proactive upgrades which support redevelopment overall and often benefit multiple sites. These upgrades are often done in support of corporate growth initiatives in order to prepare areas for densification in anticipation of future growth while reducing future disruption to the community and businesses.

These investments range from $300,000-2,870,000 per year (average of $1,646,000 annually – using historical 2015-2018 actual spend data).

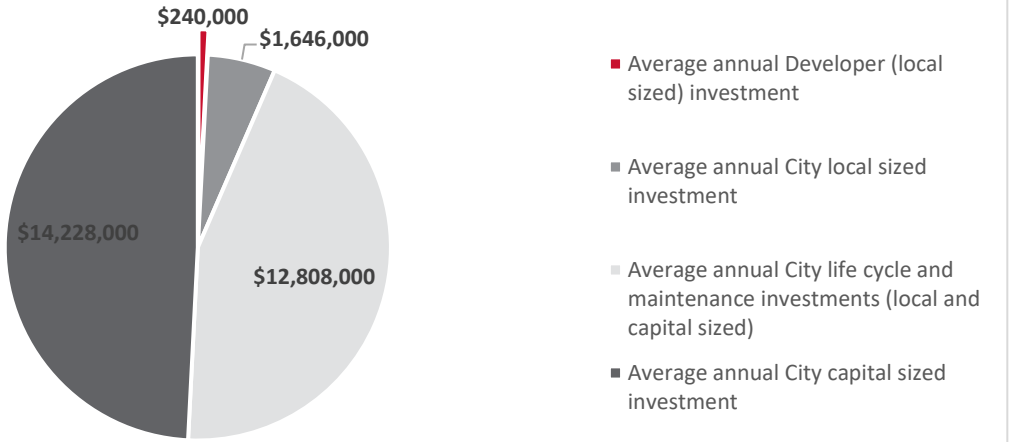
Separate from the growth related investments noted above, The City has targeted annual capital investment programs aimed at addressing maintenance issues and extending the life of assets (e.g. Lining programs),with replacements as a last resort. The City invests between $8,357,000-14,737,000 per year (average of $12,808,000 annually) in life cycle and maintenance programs for the Established Area that extend the life of the infrastructure (using historical 2009-2018 actual spend data). Through these programs, on average, only approximately 1% of the existing water distribution and sanitary collection networks are replaced annually. These investment programs are funded by the utility rate and are excluded from the growth-related costs noted in this memo. While theinfrastructure in Established Area vary in age, the local sized infrastructure is generally in good condition. A high-level analysis of all local sized water infrastructure assets in the Established Area, showed that over 85% had at least 50 years of remaining life. In other words, if redevelopment growth was not triggering capacity upgrades, these pipes would not require replacement for the foreseeable future.

The Development Industry and The City both support redevelopment in the Established Area by improving the existing utility systems. To date, The City has had the most significant contribution to linear upgrades required for growth in the Established Area which is ultimately paid for by utility rates. Outlined in Graph 1 is the average annual distribution of investment between the Development Industry and The City.

[1] The current boundary for the Established Area will be updated as part of the Off-site Levy Bylaw review work. A draft boundary has been included in this proposal for consideration in Attachment 3.

Established Area Local-sized Linear Levy Comprehensive Proposal

Graph 1: Average annual investment for the Established Area by pipe size and contributor



Throughout 2019, Administration worked with members of Industry and the community through the Established Area Growth and Change Strategy(EAGCS) Utility Working Group. They explored opportunities to develop sustainable utility planning and funding tools that would continue to meet theservicing needs of existing customers, regulatory and safety requirements, while also successfully supporting growth to achieve Calgary's MDP targets.

The Utility Working Group identified a first-in issue which occurs whena new proposed development or redevelopment triggers the need for additional capacity in the local water or sanitary network that necessitates aninfrastructure upgrade. Currently, the developer is then required to fund the entire upgrade, to support their proposed development. This first-in issue hastwo known challenges:

1. **Uncertainty** – The trigger and scope of local sized pipe upgrades is site specific and dependent on the built form of the proposed development and the available capacity in the existing systems. In some cases, confirmation of a triggered upgrade is not verified until a development application is submitted and during review the extent of the upgrade is clarified, which is late in the development. These unexpected costs identified late in the process result in financial uncertainty for developers. Depending on the order of magnitude for the upgrade, it can resultin the abandonment of a project due to lack of financial viability.

2. **Fairness and Equity** - The local pipe upgrades are triggered by and necessary to serve the proposed redevelopment and so they are a developer obligation. However, it is possible that further development in the area may benefit from this upgrade without future developers having to contribute to the costs paid for by thefirst developer. Currently there is no mechanism for development to recover any of these costs from future developers in the Established Area.

The Utility Working Group identified a levy tool as a potential mechanism to address the two key

challenges related to the first-in local sized water and sanitary pipe upgrades issue. On April 29, 2020, Council directed Administration to
continue exploration work on a local sized water and sanitary pipe levy as part of the Off-site Levy Bylaw Review work in progress.

Understanding the Issue:

Trying to predict the scale, location and timing of triggered local sized upgrades within the Established Area is inherentlydifficult. Different factors need to be considered for water versus sanitary infrastructure, and in both cases details
are needed on proposed development design (i.e. number of units, land use, building materials, site specific details regarding existing density and built form) and timing to determine impact on the capacity of the systems.

Over the last five years, Water Resources has explored various mechanisms and options to the first-in issue. This includes reviewing what other Canadian municipalities are doing, piloting different funding mechanisms, an in-depth review of past triggered upgrades, a review of existing infrastructure condition/age and reviewing existing mechanisms such as the Centre City Levy to garner learnings that may be adapted on a broader scale. Industry has been part of this work through the Utility Working Group.

Previous pilots included attempts to predict and quantify the future benefit of infrastructure upgrades. These pilots highlighted challenges with predicting a proportion of benefit to future developments, making it difficult to estimate the time horizon for future cost recovery. The proportional benefit for future redevelopment was challenging to predict givenuncertainty related to how much of the existing area serviced by the pipe will eventually redevelop, to what extent (land use and built form) and within what time horizon. The pilots also highlighted administration/scalability challenges with site specific analysis and customized cost recovery for each site. Throughout the work pursued by the Utility Working Group, stakeholders agreed that any future tool needed to be easy to administer and predict.

The review of other Canadian municipalities demonstrated there is a relationship between the funding source for the local sized pipe upgrades/extensions and the rate of redevelopment. In cities that experience low levels of redevelopment, such as Red Deer, the utility rate is used to cover the costs. Cities that experience a medium level of redevelopment, including Calgary, Surrey and the Region of Peel, the developer is responsible for the costs of the upgrades. In cities that experience high rates of redevelopment such as Vancouver and Toronto, the developer is stillresponsible for the costs of the local sized upgrades; however, a levy mechanism is used to share the costs amongstdevelopers.

Based on Water Resources' learnings to date, to adequately address the first-in issue and advance towards the MDP targets, a two-pronged approach is necessary for local sized pipes. Given the large area included in the Established Area,and the high variability in where redevelopment occurs, the two pronged approach supports the outcome of achieving the overall MDP goal by driving strategic investment into priority areas, while also supporting development in the broader Established Area:

1. A **proactive investment program** targeted at strategic infrastructure upgrades in priority Established Areacommunities that are likely to be triggered at some point in the future by development. The program will
support a broad level of development in the community (i.e. not just one lot) and align with other infrastructure projects where possible (e.g. Main Street or other public infrastructure projects). This investment program willbe developed in alignment with the Established Area Growth and Change Strategy and be supported by the infrastructure analyses being completed for Local Area Plans (LAPs) that are underway.

   Over time, this proactive investment program will help attract more development within the Established Area by making it easier to develop and will minimize repeated disruptions to the community.

2. A **reactive investment program** that will enable cost sharing between developers for infrastructure upgrades triggered by a development application in a defined area. This program will build off of the success experiencedthrough the Centre City Levy and will provide more certainty to developers working within the Established Area.

   Based on the historical review of triggered upgrades, these reactive infrastructure upgrades triggered by development, typically have a negligible benefit to existing customers given the age/condition of the existing infrastructure and that the existing capacity is enough for the current use.

It is important to note that as more development occurs within the Established Area, there will be more pressure placed on the capital sized network as well. Capital sized upgrades do require much more extensive planning and delivery considerations given the broader impacts, scope and costs. The City's investment levels in capital sized upgrades has been consistent over the last ten years, and projects are prioritized within the available budget based on risk and the pace of development. As the rate of redevelopment increases, the available budget for the capital sized upgrades will need to increase proportionally to ensure continued support of growth in the Established Area.

It is also important to acknowledge that utility upgrades, lifecycle, capacity and redevelopment is a complex and interwoven network. Accordingly, it is not reasonable to expect detailed and exact assessments of intents and outcomes in this context. Therefore, some broad assumptions have been made to simplify the discussion and to account for the variability of the utility system and redevelopment potential. Capital sized upgrades are easier to predict based on capital modelling which has large catchment areas that each upgrade services. In contrast, Established Area development and the local-sized upgrades triggered have smaller catchment areas so local sized upgrades cannot be accurately modelled. Additionally, Administration cannot predict where development will proceed (both location and timing) so therewill always be a need to address reactive local sized upgrades triggered by development.

Administration's Proposal:

To address the first-in challenge and support The City's MDP targets, Administration is proposing an Established Area Levy to address local sized water and sanitary pipes. This memo provides the full

context of the proposed levy to enable a more robust discussion with stakeholders.

The proposal continues to be grounded in the principles approved by Council to guide the Offsite Levy work. In particular, the principle related to shared cost, shared benefit, shared risk related to offsite infrastructure notes that the cost of off-site infrastructure should be allocated to, and shared by, those who benefit. The proposal also aligns with The City's overall vision to achieve MDP targets by enabling more development in the Established Area.

In addition to continuing to invest an average of $10-15M per year in capital sized upgrades for the Established Area, theWater Utility proposes the following two new programs:

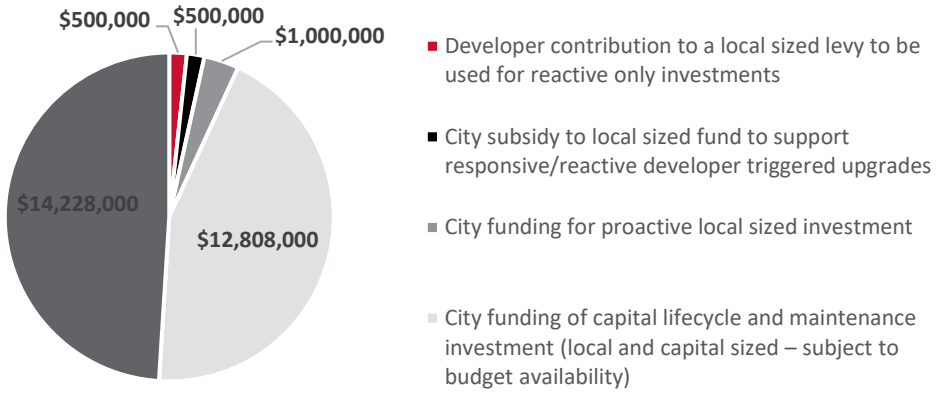
1. An **annual investment program** ranging between $1-4M per year for **proactive** local investment that is fundedby The City through utility rates. This annual program proactively and strategically invests in upgrades that support priority Established Area communities, to alleviate growth related capacity pressure and incentivize short term growth. Investments are preferably aligned with other public infrastructure or public realm projects to minimize disruption to the community and increase infrastructure delivery efficiency.

   Infrastructure analyses that Water Resources is undertaking as part ofthe LAPs will be used to inform the investment program in the future.

   As LAP analysis is completed, the results will be used to update and inform the investment strategy and estimated total investment amounts required for proactive local pipes. The range of investment will enable The City to be flexible and nimble.

   As a result, this initial investment level will be updated where possible when more information is available and projects will be prioritized within available capital budget funding. As proactive upgrades are completed, there will be a direct impact (in the form of reduction) over time to the number of reactive upgrades triggered. This is a long-term investment strategy aimed at advancing The City towards achieving MDP targets by incentivizing development that aligns with City growth strategies.

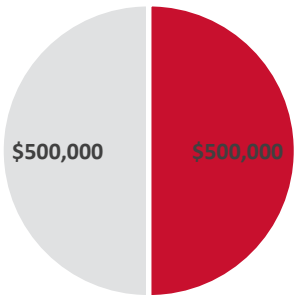
Graph 2: Proposed Established Area annual investment in utility infrastructure by size and contributor (City or Developer)



2. A **dedicated reactive fund** of approximately $1M per year that can be used to share the costs of infrastructure capacity upgrades triggered by development applications. All developments[2] within the Established Area will pay into the levy through a per unit or square footage charge, and any developments[3] that trigger an eligible upgrade will qualify for reimbursement from the fund. The per unit and square footagecharges for this levy will be calculated based on the collections required to meet the target using historical empirical data.

Over the past ten years, Calgary's growth pattern has seen approximately90% to Greenfield and 10% to Established Areas, while the long-term target, as identified in the MDP, is 50% Greenfield and 50% Established Area. In the interest of achieving MDP targets Administration recognizes that it will be beneficial for the Development Industry for The City to subsidize this fund to support strategic growth and encourage redevelopment. Administration proposes an annual subsidy of 50% or $500,000 per year to reduce the developer contribution total target amountto $500,000/year (as shown in Graph 3).

Graph 3: Total target reactive fund annual amount



It is recommended that each program start with these amounts to allow Administration and Industry time to test these new tools and methodologies in real time against the rate of growth in the Established Area. This will allow for an update to the methodology (including inputs) to ensure the programs are the right size and that the methodology reduces the 'first in' barrier. Administration proposes initiating the review and update to this local-sized levy tool and methodology two years after the program is implemented.

Eligibility:

The premise of the structure for this levy, including eligibility to pay into and use the levy fund, is that those who could benefit from reactive local sized investments pay into the fund. All redevelopment in the Established Area from single detached homes to multi-unit developments will contribute on a sliding scale based on density with a few noted exceptions (below). Mixed-use buildings and those with industrial and commercial uses will also contribute to the fund in alignment with the treatment

[2] Exception – Master Planned Communities and net zero redevelopments (e.g. Single detached home to a single detached home will not be levied while a single detached home split into 2 homes would be levied for the net increase)

[3] Exception – Master Planned Communities and net zero redevelopments (e.g. Single detached home to a single detached home will not be levied while a single detached home split into 2 homes would be levied for the net increase)

plant methodology, where the impact to the system (and who pays) is calculated based on the net change in people (net increase). For example, if a large single detached lot is replaced by two single detached infill homes, the net difference in people (equivalent of one single family detached home) will be levied during the redevelopment process.

An exception to both contributing to and benefiting from the levy fund will be any master planned communities including but not limited to: University District, Currie Barracks, East Village, Garrison Green, Garrison Woods, Douglasdale/Glen (Quarry Park) etc. Master planned communities will be excluded from contributing to, and receiving benefit from, the proposed levy because they construct all required infrastructure needed to support the redevelopment as part of their Development Agreement, similar to a subdivision in a greenfield development. The Centre City Levy area is also excluded because the Centre City Levy collects funds for the same infrastructure (local sized water and sanitary pipes).

Proposed draft eligible infrastructure types and exceptions:

To be eligible to use the reactive fund to pay for growth-related upgrades in the Established Area, the developer must contribute to the fund. Additionally, for infrastructure to be eligible it must be a requirement of The City and be included as part of the development permit as a condition for approval. These upgrades are triggered to service the site being redeveloped but may in future provide benefit to other development in the same area.

Eligible infrastructure includes:

- **upgrades to increase the diameter of a local sized water pipe to meet required fire flow needs for a site,**
- **new extensions to the water system for looping and to increase the available fire flow (including new cross ties), and**
- **upgrades in diameter to a sanitary main (wastewater).**

Infrastructure that is triggered by a site being redeveloped but that has limitedor no benefit to future development is not eligible for levy funding, such as a pipe extension needed solely for a service connection.

Ineligible infrastructure includes:

- **water and/or sanitary main extensions needed solely to service un-serviced lot(s),**
- **water upgrades needed to support fire flows beyond 20,000L/min,and**
- **any privately owned water or sanitary pipes.**

It is important to note that the maximum fire flow that The City system will provide is up to 20,000L/min. This means that there will still be instances where a local sized upgrade alone will be insufficient to provide the required fire flow for certain built forms and changes to the built form may still be required.

Established Area Local-sized Linear Levy Comprehensive Proposal

Construction and timing for repayment:

In alignment with the current practice, the developer who triggers the upgrade will be responsible for building and front ending the cost of the upgrade.

This will allow developers to continue to have control over the timing of construction for the infrastructure needed to service their development. Each developer that triggers an upgrade and is eligible for reimbursement from the reactive fund will enter into a construction agreement with The City at the development permit stage. The agreement will outline the obligations for the construction of the infrastructure and timing and amounts eligible for repayment from the reactive fund.

Please note that timing for repayment will depend on availability of funding from levies received and the annual subsidyfrom The City. This is further explored below in the “Implementation of new levy fund” section.

Proposed draft structure for the levy:

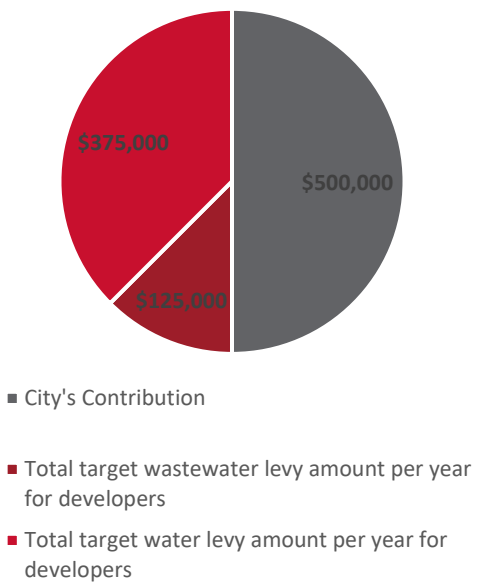
The proposed levy will apply to all residential and ICI (Industrial, Commercial,and Institutional) redevelopments with a proportional allocation based on current historical data. Additionally, the levy is expected to support both waterand wastewater independently.

To create an annual fund that totals $1M to support local sized reactive pipes a calculation has been completed that considers both The City subsidycontribution and the developer contribution. In addition to this split of fundingsources, there is a requirement to split the funding by infrastructure type (water and wastewater). Administration proposes a split of 25% for wastewaterand 75% water. This will equate to an approximate total funding of $250,000 per year for wastewater and $750,000 per year for water. The rationale for these percentages is that historically wastewater upgrades while higher dollar amounts (e.g. $1-2M) are triggered less frequently while water upgrades (fire flow for example) are triggered more frequently and tend to have a low to medium dollar investment amount ($30-750K).

Of the total $1M/year Established Area local sized fund the developer portion($500,000) will be collected through levies. As described above, the levy will be based on a split so that wastewater receives 25% of the funds, or $125,000/year and water receives 75% of the funds, or $375,000/year. Pleasesee Graph 4 for a visual representation of the proposed levy contribution broken down by infrastructure type (water and wastewater).

Established Area Local-sized Linear Levy Comprehensive Proposal

Graph 4: Developer target annual contribution amount to levy fund



To set the rates, a calculated average of growth by unit type from 2017-2020 inside the current Established Area Boundary was used. This uses residential,industrial, commercial, and mixed-use (industrial/commercial & residential) redevelopment to determine the split of each unit's share. Additionally, the unitfactors established in 2016 as part of the Off-site Levy Bylaw exploration workwere used to set a sliding scale (Table 2 below) that weights a higher per unit cost to lower density projects and a lower per unit cost to higher density projects. This approach allocates proportional benefit to those receiving it while also promoting higher density redevelopment.

As a result of the above split and based on a sliding scale of density that matches the existing Treatment Plant Off-site Levy methodology, a sample rate calculation by residential unit and industrial or commercial space is shown in Tables 2 and 3.

Table 2: Draft residential levy rates by unit type

		Single Detached	Semi-Detached/ Duplex	Multi-Residential Grade Oriented	Multi-Residential Non Grade-Oriented (2 bedrooms or more)	Multi-Residential Non Grade-Oriented (1 Bedroom or Less)	
	$/Person	**2.9**	**2.6**	**1.8**	**1.5**	**1.2**	Unit factor
Wastewater	$58.00	**$168.21**	**$150.81**	**$104.41**	**$87.01**	**$69.60**	Wastewater cost by unit type
Water	$174.01	**$504.63**	**$452.43**	**$313.22**	**$261.02**	**$208.81**	Water cost by unit type
		$672.84	**$603.24**	**$417.63**	**$348.03**	**$278.41**	Total Local Sized Pipe Off-site Levy per unit type

Table 3: Draft industrial and commercial levy rates by type*

Commercial	$0.32/square meter
Industrial	$0.32/square meter

*Further refinement required

In addition to the proposed rates above, we have created a few examples to demonstrate how different types of developments will contribute to and benefit from the levy. Please see **Levy proposal examples document**: "Examples of the levy rate applied" for more information.

Implementation of the new levy fund:

There are many considerations to include in creating a new levy to ensure it is efficient and that the transition into the new bylaw is smooth. At this time, Administration has included a few considerations which are noted below but we wantto acknowledge that we are aware not every consideration has been included in this memo and further refinement
will be required. It is our intent that through consultation and discussion with stakeholders we may include additionalconsiderations in our recommendation to Council, if appropriate, to ensure that this is a robust levy program.

Seed funding – Administration's proposal is to recommend that Council consider and approve a seed fund of $2M for the first two years of the levy, to be created upon approval of the bylaw so it can be used by developers who trigger upgrades right away. Please note that in the event that seed funding is exhausted and there arenot enough levies collected to reimburse a developer for an upgrade, the developer will be required to wait ina first come first served order (with a proposed annual cap outlined below in more detail under "Repayment Mechanism") until sufficient funding becomes available in subsequent year(s).

Density considerations - As you will note in Table 2 above, this methodology uses the same unit factors as the Off-siteLevy treatment plant methodology that proportionately distributes costs against those receiving benefit based onintensification. This benefits higher density redevelopments with a lower per unit levy rate. It is also important to note that higher density redevelopments are more likely to trigger an upgrade, and will therefore, be more likely to be eligible for reimbursement from the fund.

Fund balances and shortfalls – Similar to the Centre City Levy, any levy funds collected that are not completely used in the year that they were collected, will carry forward and continue to build a balance year over year. Inyears where The City's subsidy portion of $500,000 is not used fully, it will not be carried forward. If the fund is exhausted in a particular year, the subsequent year's funding may be used to pay for a previous year's investment on a first come first served basis (subject to a cap per year amount outlined in the "Repayment Mechanism" section below).

Repayment mechanism – Eligible upgrades will receive payment through the reactive fund and will be outlined in each individual construction agreement between The City and the developer with the

timing of repayment subject to fund availability. Each agreement will be reimbursed in the order of construction agreement signing except for larger outlier projects that will effectively exhaust the fund. To promote fairness, Administration recommends introducing a maximum amount that can be withdrawn from the fund per year, per project (e.g. $300,000/year/ project) which means that any large outlier upgrades (e.g. a $1M sanitary upgrade) will be prioritized to be paid back over a number of years (subject to fund balance availability). This mechanism is being proposed to providecertainty of repayment to developers while also trying to ensure funds remain available for all eligible projects.

Conclusion:

Considerable work has been completed to understand this issue facing Industry and to propose a balanced tool that will immediately address the ‘first-in’ issue while supporting MDP targets. Incorporation of feedback from manydiscussions both at the EAGCS Utility Working Group and the Established Area local-sized levy working group, and consideration for the future uptake of this reactive fund was included while developing this funding tool proposal. Striking a balance between all inputs is critical and as a result the levy rate amounts and the reactive levy fund total proposed, should be sufficient to test this new funding tool. In the event that the entire $2M seed funding and subsequent levies raised whileredevelopment occurs in the first 2 years is insufficient to support repayment of upgrades to developers, Administrationis committed to revisiting and reviewing the levy rates and fund amounts through a consultation process with Industry and other stakeholders.

As part of the consultation work mentioned above to collect feedback on exploration of a levy, Administration would liketo acknowledge that there is differing opinions within Industry on how best to address this challenge. Significant effort both from Industry representatives and Administration has been spent attempting to align all parties to a solution that will work for most impacted stakeholders however, alignment has not been realized. In the spirit of problem solving, Administration has created this proposal which outlines a clear and direct path forward for this exploration work. There is still refinement and consideration for updates to the approach required to set up this new investment tool however, Administration is confident that this proposal best represents a solution which will adequately mitigate the ‘first-in’ challenge in the Established Area fairly and equitably for the Development Industry.